Science Fiction Roleplaying Game

TRAVELLER

The New Era



willie teal (order #936741)

Marc Miller

Science Fiction Roleplaying Game

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The New Era







GDW

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Science Fiction Roleplaying Game

TRAVELLER®
The New Era

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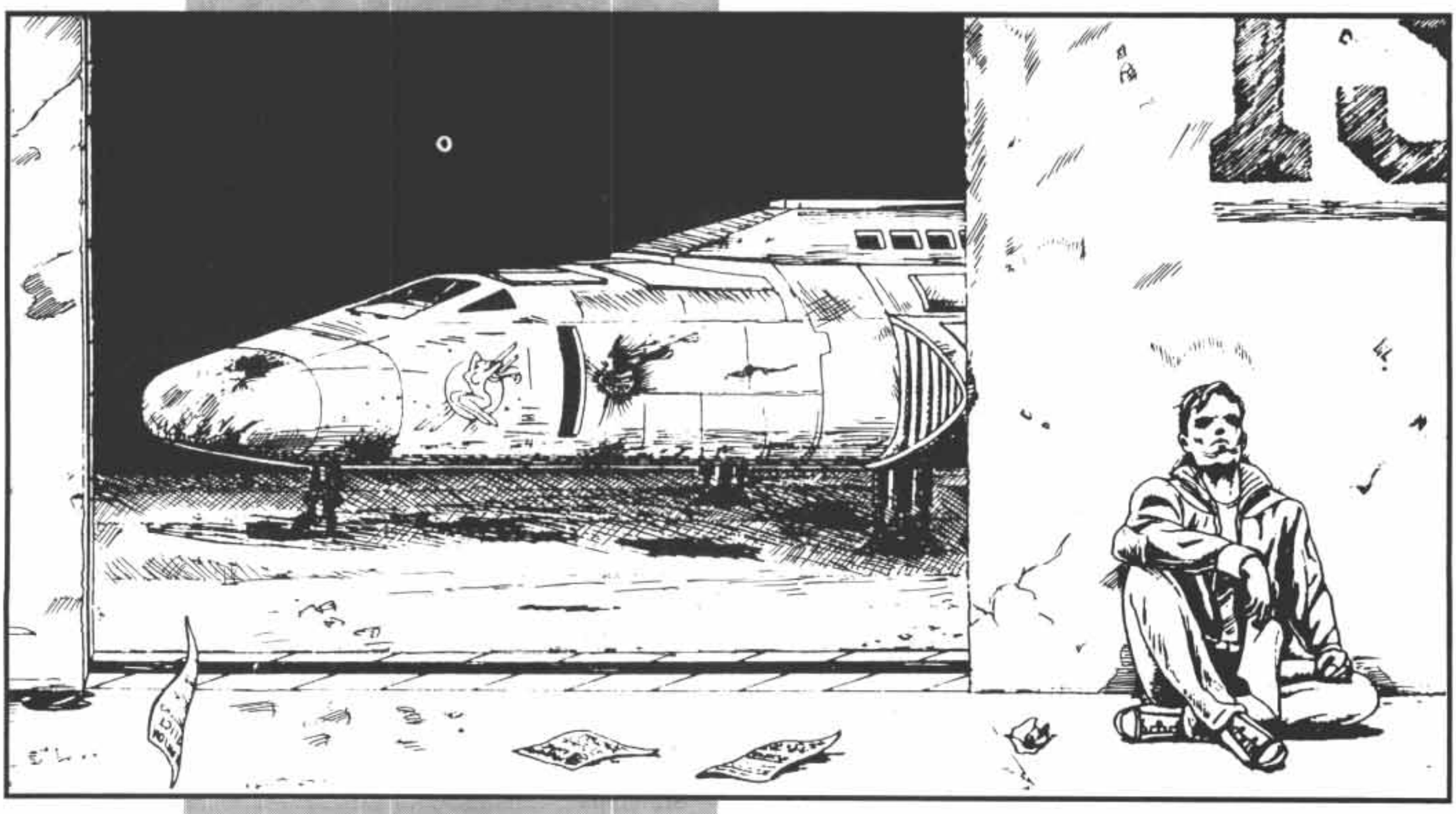
TRAVELLER: THE NEW ERA

I don't get it. How did the Imperials build an empire of 11,000 worlds and then throw it all away like it was a bunch of garbage? There are entire airless worlds out there where a billion people died when the life support ran out. There are bombed-out starports that are still radioactive, and there are people out there who call themselves "human" who are murdering each other just to be king of some scrap heap that's so deep in dead bodies that it just makes you want to puke.

I've been out there a half dozen times, and if that doesn't give you religion, I don't know what does. Yeah, I know, religion, shmeligion, where did it get them? It's not where it got them, it's where we're going. This is history, pal, from here on out. If you don't want to be in on it, get the hell outta my way.

We didn't come this far to become extinct on 11,000 separate isolated worlds. By Allah, by Buddah, by Krishna, by God—we were created for better than that. Those stars out there—we had them once, and we'll have them again. Nothing's going to stop us.

RCES Captain Rebekka "Rebba" Gutierez
NE 1



Introduction

The universe of **Traveller** is known space several thousand years in the future. Humankind has explored and settled over 11,000 worlds, and inhabits a volume of space hundreds of parsecs across. On its journey to the stars, it met dozens of alien races. It befriended some, warred on others, and maintained an uneasy distance from others still. It turned the worlds it owned into safe, pleasant technological wonderlands. Then, in less than a dozen years, greed and stupidity destroyed everything.

Now, 70 years later, small groups of humans are returning to the stars. The worlds they find, however, are much more dangerous places than they were less than a century earlier. There are a dozen ways to lose a ship, a hundred ways to die, and in lots of places only one way to get out with your skin.

Most people play it safe. Most people stay dirtside, secure and comfortable. Most people are content to let history unfold as it will, and simply experience whatever life dishes up for them.

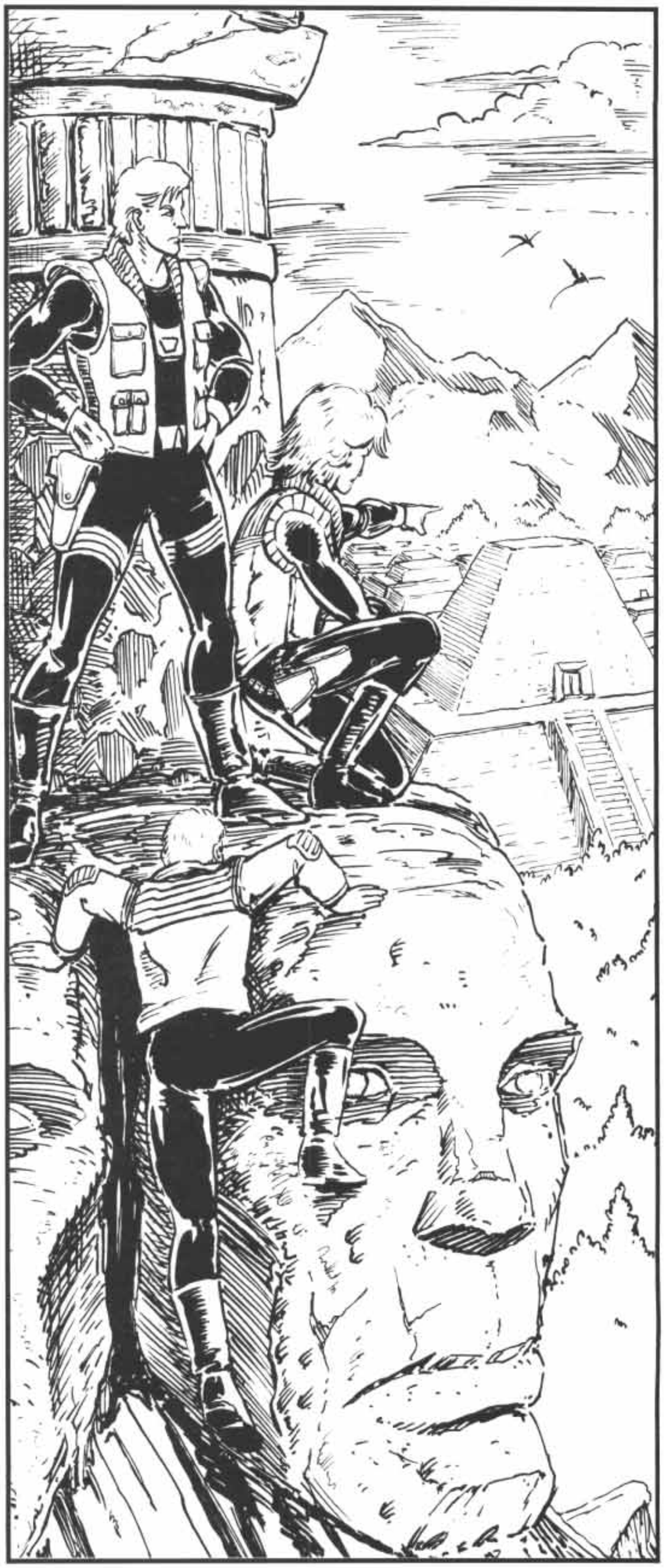
But not you. You're different. You don't much like the shape your ancestors left things in. And if you don't like things, you do something about it. So what if "doing something about it" means changing the history of the universe? That's the sort of difference that makes people leave solid rock behind to reach out and grab back the stars.

What kind of people do that? What sort of people will you be playing in the game? For one thing, they tend to be a little different. Face it, people who blend in well on a planet don't exactly line up to get off of it. So travellers are usually a bit rough around the edges. But that doesn't mean they can't work with their shipmates. A ship crew learns to count on each other—it has to—and it works together like a well-oiled machine.

Travellers spend a lot of time a long way away from formal authority, relying on their own wits to get them out of any trouble they might get into. That makes them suspicious of authority. Every world they visit has a fresh reminder of what the greed and stupidity of dukes and emperors can lead to, and that doesn't make them any more likely to kneel in front of a throne or kiss somebody's ring.

Travellers spend a fair amount of time worrying about where their next credit is coming from. Even if they have a secure job, they've got to make a profit for their employer, or he/she/it will find someone else who can. That's because the universe isn't free. It costs to travel, and so the trip has to turn a profit, and travellers have to earn their way. But that's the *price* of the trip, not the purpose.

This game is about the people who travel out and win back a universe, which is why it's called **Traveller.**



My dear children, my sons and daughters, let me tell you about your heritage and your birthright.

What is the difference between a heritage and a birthright? One deals with the past, the other the future. Your heritage is your history, your roots, all the things which have conspired to make you the people you have become. Your birthright is your future, your goal, where you were meant to go, and what you were meant to do. It is your destiny.

But what is your birthright, your destiny? Your birthright is the stars. Hard as it may be, gathered around this fire, to believe this, believe it you must. Look up at the stars, hear their call; it is your destiny to answer that call.

The stars are your birthright. But now I must tell you of your heritage...

History

Humanity had always looked to the stars and known that there were wonders there to be discovered. Men and women had always known that those stars were there for a reason: to be visited, explored, molded and shaped by human hands. From the day that the first person drew a shape around a group of stars and named it as a constellation, humanity had staked its claim. Someday it would know the stars, own the stars.

Humanity had been split into many groups, scattered by an ancient force to a dozen worlds under a dozen suns, but each of these shared this same vision; each of these knew that they were born to go to the stars. So each of these groups, light-years apart, groped their way to their birthright, planet by planet, star by star. When they met each other, they were surprised to find that others just like themselves had also made it to the stars. But they shouldn't have been, because that's what they were made for.

Humanity had been in space for thousands of years when, quite suddenly, the stars were taken away from them, violently and brutally. Worst of all, there was no one else to blame, no threat to unite against, for they had done it to themselves.

Jump Drive

There is a tremendous difference between space travel and star travel. Space travel consists of long, tedious trips between the planets of one star system. Many races have made it into space and never gotten beyond this level. Some have taken this level to its extreme, sending generation or sleeper ships on journeys lasting scores, hundreds, or even thousands of years to other stars at sublight speeds. Because such trips allowed little in the way of communications, such arrangements could not create true interstellar societies.

For this, a stardrive was required, and was independently discovered by many races as the jump drive, which allowed the passage of a parsec or more in about a week. So important was this single technical breakthrough that races which developed it on their own became known as "major races," while races that had not progressed beyond sublight drives when first contacted were forever branded with the epithet "minor race."

First Steps

Humans from the planet Earth, or Terra—humanity's original and true birthplace—met their first "alien" race a decade after perfecting the jump drive, a scant two parsecs from home at Barnard's Star. But this race was more familiar than alien, for these were the Vilani, one of the transplanted branches of humanity that had already been in space for 8000 years. Their "Grand Empire of Stars," or *Ziru Sirka*, would soon become known as the First Imperium, as it had grown old, and was soon to be challenged and replaced by the vigorous, expansionist Terrans.

Within 200 years, the old, dissipated Vilani Empire had collapsed before the energy of the Terran onslaught, and the Terrans took over the existing Vilani bureaucracy, renaming it the "Rule of Man." Terran leadership sought to break the conservative Vilani procedures, and succeeded in developing and harnessing new technology that had been inhibited or stifled under Vilani rule. Terran English began to be the dominant language throughout this second empire, and survives to this day as the single dominant language throughout human-settled space—Anglic, or Galanglic.

This period saw the first meetings between the Vilani and Terran humans and the other alien races that would eventually become dominant interstellar powers.

The first of these were the Vargr, looking and acting much like erect, intelligent Terran wolves. It was eventually discovered by genetic analysis that that was, in fact, what the Vargr were. The same ancient force that had taken sample humans from Terra and planted them on dozens of worlds also took Terran wolves, and modified them into an intelligent race. Vargr society

retained certain wolf-like traits, and one of these was a rather anarchic inability to form stable groups larger than what one leader can control with his personal charisma. Every leader is constantly being challenged from within and without; every Vargr group will eventually split apart into smaller groups which grow for a time, then themselves split apart once their size grows beyond the leader's ability to hold it together. This means that the area controlled by the Vargr, the Vargr states, is a constantly shifting collection of splinter groups, splitting and reforming around current issues. This pattern also made the Vargr into natural pirates: What they could not cooperate to create together, they could steal from their neighbors. The first Vilani contact with the Vargr was with such raiders.

Another significant contact of this era was between Vilani merchants and the Zhodani, another one of the lost human races flung to the four winds. Again, the Zhodani were almost physically identical to their long-lost Vilani and Terran cousins, but they had affected one very important change upon themselves: a change of the mind. The Zhodani as a culture had embraced and perfected the use of the human mind for telepathy, telekinesis, and other psionic disciplines. This would make them the most alien of the human races, and would create lasting difficulties with their human neighbors over the years.

Also during this period, the Terrans began using the name Solomani, "Men of Sol." But the name change did not help. Terrans or Solomani, the people from Terra could not learn in 200 years what it had taken the Vilani thousands—how to administer a government that encompassed over 10,000 worlds. The forces of change they had unleashed overwhelmed their ability to control them. Less than 450 years after it had been proclaimed, the Rule of Man, now remembered as "the Ramshackle Empire," presided over the slide of human-controlled space into the Long Night.

Long Night

The Long Night was an economic phenomenon. The inability of the Rule of Man to hold the second empire together as a working economic entity caused a gradual disintegration of interstellar society. Beyond its first century of growth and innovation, the Rule of Man was marked by steady economic decline, as the intricate Vilani economic machine was sabotaged by Solomani interference and "improvement."

In many areas, interstellar contact was never lost. However, interstellar trade was no longer a dominant force. Worlds split into ever smaller groups, looking inward to their own local problems, and no longer caring to involve themselves in large-scale activities. With no desire or economic impetus for it, interstellar

Terran	*Imperial*	*Significant Event*
1969	–2549	Men from the planet Earth first set foot upon the Moon.
2058	–2460	Terran bases throughout Sol system.
2087	–2431	Terrans discover jump drive.
2096	–2422	First Terran contact with the Vilani Empire at Barnard's Star.
2110	–2408	First Interstellar War between Vilani Empire and Terra.
2118	–2400	Vargr pillaging of Vilani Empire begins.
2120	–2398	Terran Confederation established.
2314	–2204	Vilani Empire defeated; Rule of Man begins.
2518	–2000	First contact with Zhodani.
2538	–1980	First human contact with Aslan.
2716	–1802	First human contact with Hivers.
2742	–1776	Collapse of Rule of Man.
2992	–1526	Interstellar trade ceases; Long Night begins.
3400	–1118	First Aslan Border War begins.
3868	–650	Sylean Federation established.
4318	–200	First human contact with K'kree.
4518	0	Third Imperium established out of Sylean Federation.
4568	50	First Imperial contact with Zhodani.
5018	500	Imperium expands into Spinward Marches; conflict with Zhodani.
5107	589	First of five Frontier Wars between Imperium and Zhodani begins.
5124	606	First Civil War begins.
5140	622	First Civil War ends.
5318	800	Psionics Suppressions begin.
5520	1002	Terra conquered by Third Imperium.
5628	1110	Fifth and last Frontier War between Imperium and Zhodani ends.
5634	1116	Emperor Strephon Aella Alkhalikoi assassinated.
5635	1117	Third Imperium shatters into factions; Final War begins.
5648	1130	AI Virus is released; Collapse of human civilization begins.
5710	1192	Hivers send contact teams into the Imperial ruins.
5711	1193	Hivers establish technical training schools for humans in the Old Expanses.
5713	1195	Humans begin interstellar trade in the Old Expanses.
5715	1197	Dawn League is established in the Old Expanses.
5715	1199	*Dawn League* trading expedition sent into Diaspora.
5716	1200	All ships sent to Diaspora declared lost. Dawn League dissolved; Reformation Coalition founded in its place.
5717	1201	The New Era begins.



civilization ground to a halt. Vargr raiders poured across the border into the Vilani end of the Imperium and plundered the bones of the human civilization, until internal squabbling checked their further expansion.

At the Solomani end of the fallen Imperium, another race, the Aslan, were pounding at the gates. The Aslan were discovered in the waning days of the Ramshackle Empire. Bearing a resemblance to Terra's feline carnivores, the Aslan live within a proud, expansionist society that gives full rein to the territorial imperatives and warrior inclinations of its male members. The males are warriors with a tremendous concern for their status, which is measured only by the amount of land they control. The females, who outnumber the males 3:1, are the administrators of the society. They run the Aslan economy, and gain status according to the success of their male family members. Aslan society places a high value on its concept of honor, and does not easily recognize that other races might not share their concepts. Aslan growth is fueled largely by the male need for land, particularly the needs of the young, unlanded Aslan males, or *ihatei*. During the Long Night, Aslan expansion toward Solomani territory contacted pockets of human civilization, and began a series of border wars that would continue sporadically for 1400 years, well into the time of the Third Imperium.

The Long Night ground on for hundreds of years, characterized by small local wars played out on small fields, isolated from and unknown to other remaining pockets.

Resurgence

Eventually, forces coalesced here and there with sufficient resources to begin expanding outward again. The most successful of these began at Sylea, at the heart of the old Ziru Sirka. Starting 900 years after the fall of night, this Sylean Federation began expanding, reaching out to contact former centers of interstellar civilization. After 350 years of slow but steady growth, its leader, Cleon Zhunatsu, later Cleon I, realized that the Federation had served its purpose. In order to continue growing, this new state had to have a greater vision. Cleon resurrected the trappings of the First and Second Imperia—the nobility, the names, and most importantly, the grandeur—by discovering or inventing a line of descent that passed from the first two empires down through the years directly to the Sylean Federation. Cleon announced the founding of the Third Imperium on the traditions of the first two, laid claim to their territories, and declared the beginning of a new Imperial calendar, starting at Year 0. This Third Imperium would last for 1117 years, and become the most powerful organization of worlds ever known.

Third Imperium

It would still take several hundred years for the Third Imperium to expand to its ultimate boundaries, and many wars of annexation and pacification would be required.

The most culturally important of these wars were the Frontier Wars against the Zhodani and the Rim War between the Imperium and Solomani.

The young Imperium began expanding into the Spinward Marches in the 500s, and came into contact with the Zhodani, who already inhabited the area. The Zhodani not only stood in the way of an expanding empire, but possessed psionic powers that frightened and threatened the Imperials, who had not developed these powers to any great extent. Learning of the Zhodani *Tavrchedl'*, or Thought Police, who routinely probe their citizens' minds for aberrant thoughts in order to re-educate them, only

repelled the Imperials that much more. War was inevitable, and the first of five wars, and hundreds of years of armed stand-off, began in 589.

At about the same time at the opposite end of the empire, Terra, mankind's true home, was incorporated into the Imperium in 588. But over the next few centuries, a Solomani racial supremacy movement began to exert its influence over nearby Imperial space, which eventually forced an Imperial response. From 990 to 1002, the Imperium waged the bitter Solomani Rim War which climaxed with the invasion and capture of Terra in 1002. Terra remained under martial law for over a century, as Solomani resistance and resentment to Imperial rule fomented and went underground. The Solomani Confederation lost its capital, but was not destroyed, and remained a large and powerful force awaiting a moment to strike back.

Two other major alien races became important neighbors of the Third Imperium. These were the K'kree and Hivers, trailing neighbors against whom the Imperium never fought a war, although the two have fought each other. The Hivers are certainly the most alien of the major races contacted by humanity. They are reminiscent of Terran cephalopod mollusks in that they have six boneless, muscular arms, each of which ends in six highly agile tentacles. These arms project from a single central body which contains the brain and viscera. One of the arms supports the Hiver's eyes and ears; the others are used as legs or hands, as necessity dictates. The Hivers are all neuter in gender, and are quite pacifistic, although from personal aversion rather than philosophic conviction. They make great use of computer and robotic technology, and are experts in the field of psycho-history, the ability to create subtle sociological changes in a society.

The K'kree, or Centaurs, are also six-limbed, but resemble Terran cows with the extra forward-most pair of limbs used as arms. Herd animals, they do not cope well with isolation or confined spaces, and build their starships with large central spaces where the crew works as a group in an open area. They are also militant vegetarians and make rather prickly neighbors. Their militant nature gave them a tremendous advantage in their war with the Hivers until the Hivers revealed their psycho-historical abilities. The Hiver-K'kree border has been secure for the 3000 years since.

Deathknell

By the early 1100s, the Third Imperium had been frozen at its borders for centuries, hemmed in by its neighbors. Perhaps it was this lack of frontiers that made it stagnant and hollow. Although life went on as usual, there was nothing holding the Imperium together any longer. In 1116 and 1117, that became obvious to everyone. In 1116, Dulinor the Black assassinated the last Emperor, Strephon. He attempted to claim the throne as his own, as had the succession of admirals in the first civil war, but no one would have any of that. Instead of looking for a new leader, within a year the Empire split into almost a dozen competing groups, all of which agreed on exactly one thing: They were not going to allow anyone else to control the Imperium.

With nothing more than that as a higher cause, the factions of the Imperium began to slaughter each other. Sensing a power vacuum, Vargr raiders crossed the border and annexed entire sectors. Aslan *ihatei* began moving in large numbers on the Imperial spinward worlds, knowing there was not enough strength to stop them. For the Solomani Confederation, their chance to right old wrongs had come. But no Imperial force stopped these invaders. Imperial force was too busy annihilating itself.

After many years and tens of billions dead, the war slowed down out of necessity. But factions still plotted to gain advantage. If they could pull a string here or overthrow a world there, they might still come out on top. Somehow, as a result of this kind of twisted thinking, an ultimate weapon was released. Never mind that there was precious little left to fight over, never mind that people who had been killing each other for years could not possibly reunite under one ruler, forgive and forget. Never mind.

The ultimate weapon was Virus. Virus was every computer ever built by human hands. Virus knew them all, *was* them all, used them all. Virus was every ship, every machine, suddenly come murderously alive. Virus was fusion plants flaring into blinding, searing annihilation. Virus was planetary power grids melted to slag. Virus was starships falling from the sky, crushing cities. Virus was amusement park rides slaughtering children. Virus was every nightmare ever dreamt on an endless, sweat-soaked night. Virus was the end of everything, of all history. Virus was made by people who look just like you and me.

Virus took the stars away from humanity. Virus destroyed man's universe. Man made Virus. Humanity must make a new universe.

Your heritage, then, is peace, at last. It is the peace of a trillion unburied dead on a thousand cold, lifeless worlds. It is the peace of silent machines, of hearts emptied and minds shattered by tragedy and loss beyond measure, beyond comprehension. That is the heritage I and my kind bequeath to you.

Seize your birthright; own the stars again. But remember always that your destiny, once realized, will one day become your children's heritage.



THE MAP OF CHARTED SPACE

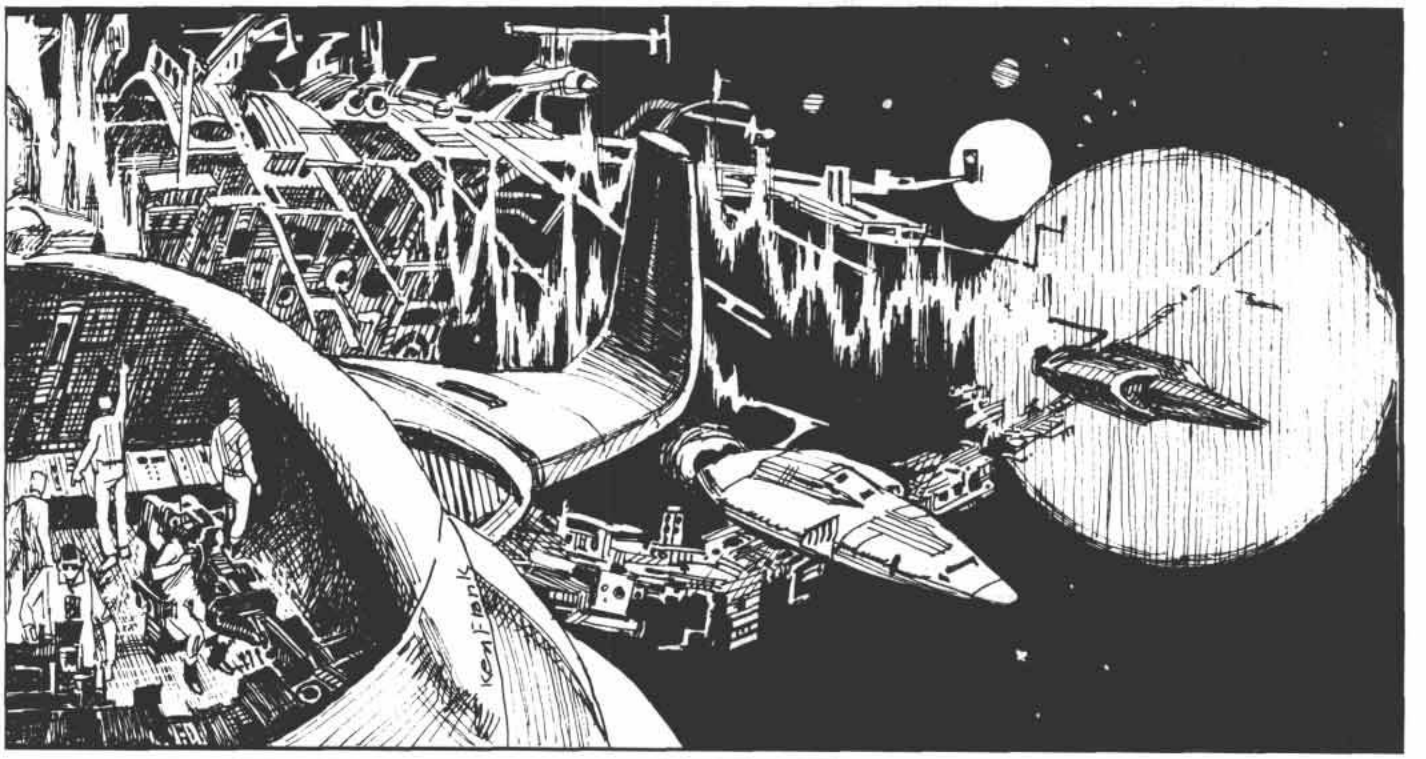
The map shows the main areas of human activity over the past 12,000 years, and is centered on the territory of the First, Second, and Third Imperia. The map measures 280 parsecs from top to bottom and 224 parsecs from side to side. Because a parsec equals 3.26 light-years, it would take a beam of light 912.8 years to travel the map's long dimension, and 730.24 years to travel the short dimension. The area covered by the map is commonly known as "Charted Space." There is actually much more area of charted space off every edge of this map, but Charted Space is the area charted and inhabited by humans, and has been the central area where all of the major races have interacted with each other. The map is oriented with its top toward the center of the Milky Way galaxy. The galaxy spins about its center at a rate of about once every 200 million years at Sol's orbital radius. The direction of the galactic rotation is toward the left edge of the map.

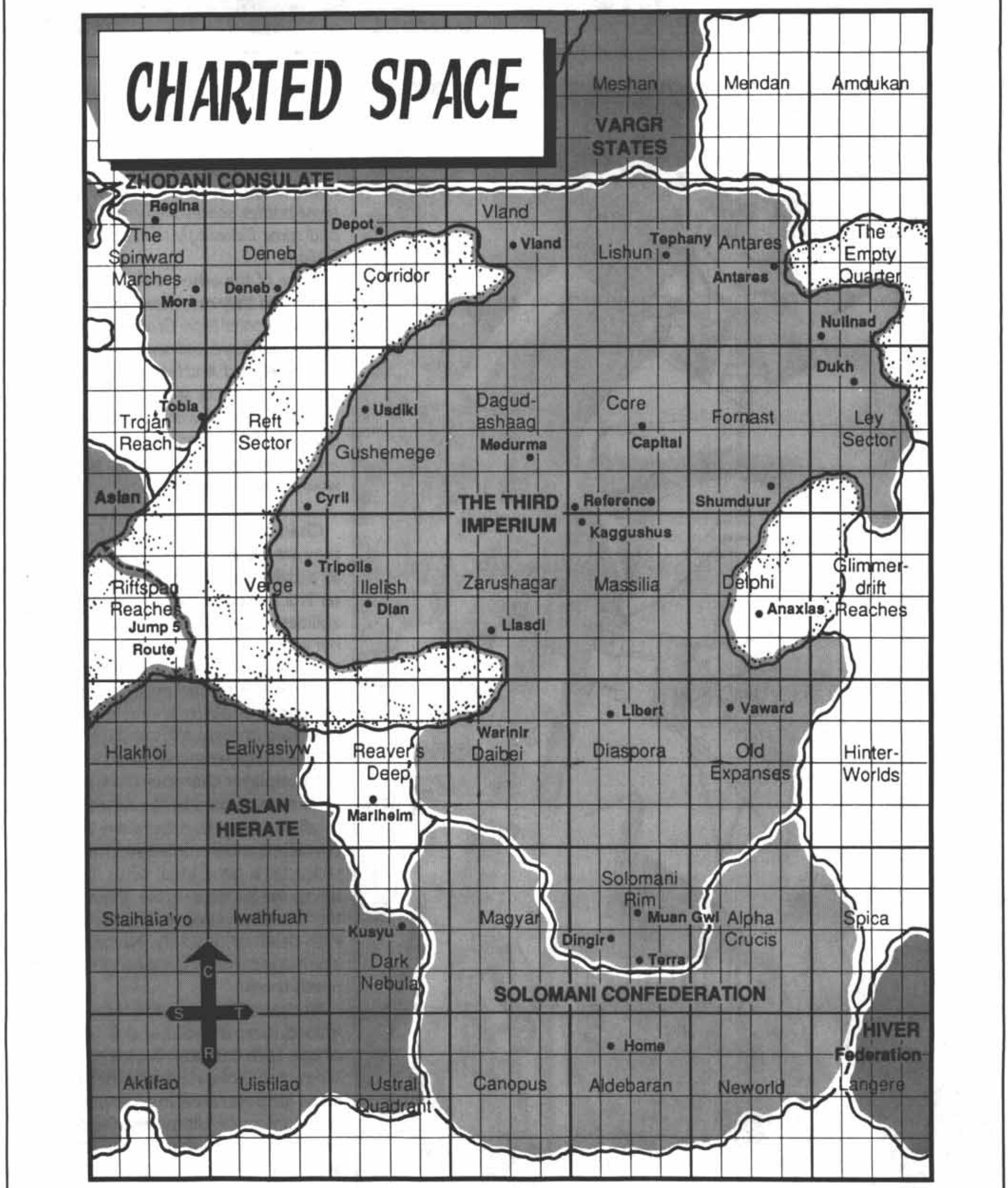
For this reason, directions on this map, and in space travel, use galactic directions: coreward toward the galactic core or top of the map, rimward toward the galactic rim or bottom of the map, spinward in the direction of galactic rotation or left edge of the map, and trailing or trailward, opposite the direction of galactic rotation, to the right edge of the map.

The grid pattern laid over the map is the system of subsectors and sectors used by the former Imperium and other interstellar states to map their territories. Each of the small rectangles constitutes a subsector, and measures 10 parsecs from coreward to rimward, and eight from spinward to trailing. Sixteen such subsectors, four by four, form a sector, usually containing some 400-500 star systems.

The main astrographic features include the rifts, or areas largely devoid of stars. Because interstellar travellers must stop and refuel at planets, these rifts constitute insurmountable obstacles to travel. The largest of these is the Great Rift, reaching in like a giant lobster's claw from spinward. Its upper bight separates the former Imperial core from the spinward arm of Imperial settlements, and also from the Zhodani. The lower bight separated the Imperial Core from the spinwardmost rimward settlements of Daibei and the Reaver's Deep, and also from the main portion of the Aslan Hierate. Across the widest portion of the Great Rift's shank, in the Riftspan Reaches, is a route across the rift, accessible only to high-performance ships, those with jump 5 performance or better.

As a practical measure of the scale of this map, note that the distance from the Solomani-Hiver border to the Imperial-Zhodani border is a little over 280 parsecs, almost 920 light-years. Communications and news can only travel as fast as the fastest available ship. The fastest ships can cover six parsecs with one jump, lasting a week. If we imagine a ship which did not have to refuel, undergo repairs or maintenance, or stop to allow the crew to go ashore, it could make one jump per week. Assuming this was a jump 6 courier, it would take 46 weeks for news of an event on the Imperial-Zhodani border to make it to the Hiver border. With more realistic numbers—a jump 4 ship which spends three days between each jump refueling and conducting maintenance—the time goes up to 91 weeks. Sending an answer back would require just as long.




CHARTED SPACE
ZHODANI CONSULATE
VARGR STATES
Meshan
Mendan
Amdukan
Regina
Depot
Vland
Vland
Tephany
Lishun
Antares
Antares
The Empty Quarter
The Spinward Marches
Deneb
Deneb
Corridor
Mora
Nulinad
Dukh
Tobia
Trojan Reach
Reft Sector
Usdiki
Dagud-ashaag
Medurma
Core
Capital
Fornast
Ley Sector
Gushemege
Asian
Cyril
THE THIRD IMPERIUM
Reference
Kaggushus
Shumduur
Tripolis
Ilelish
Dian
Zarushagar
Massilia
Delphi
Glimmer-drift Reaches
Anaxias
Riftspan Reaches
Jump 5 Route
Verge
Liasdi
Libert
Vaward
Warinir
Hlakhoi
Ealiyasiyw
Reaver's Deep
Daibei
Diaspora
Old Expanses
Hinter-Worlds
ASLAN HIERATE
Marlheim
Solomani Rim
Staihaia'yo
Iwahfuah
Kusyu
Magyar
Muan Gwi
Alpha Crucis
Spica
Dingir
Terra
Dark Nebula
SOLOMANI CONFEDERATION
HIVER Federation
Home
Akfifao
Uistilao
Ustral Quadrant
Canopus
Aldebaran
Neworld
Langere
C
S
T
R

CHARACTERS



When I was a child, Grandfather told us stories at night, stories of dukes and admirals, of galaxy-spanning empires, of star fleets locked in titanic battles. And he showed us the shiny radiation scars he had earned in those battles, scars which were red and ugly and came flickeringly to life in the dancing firelight.

None of the others believed the stories. Some said they must have happened generations earlier than Grandfather's time—others said they could never have happened.

But I believed. And late at night I looked up and dreamt of the stars, and of others like myself on the cold worlds circling them who must also look up and dream.

And I knew that one day, somehow, I would walk among them.

Characters are the focus of **Traveller**; they are the alter egos of the players, and all activity centers on them. Each character is a person within the game and has abilities and attributes which define his or her actions and reactions. The character is the fictional **Traveller** personality; the player is the person engaged in playing the game. A player character (often abbreviated in these rules and elsewhere as PC) is a character manipulated by a player.

A nonplayer character (NPC) is a character manipulated by the referee in order to allow interaction between the player characters and the universe. Once a player character is generated, he or she continues to live an exciting life of adventure in the **Traveller** universe. This life ends only with death or disability. Nonplayer characters appear and disappear as the referee needs them.

All characters begin the same way: untrained, inexperienced, and about 17 years of age. Each character is generated with a series of die rolls. He or she then embarks on an abstract career in order to gain skills and experience. Ultimately, the character retires or leaves that career, calculates acquired money and equipment, and is ready to begin adventuring.

Character Generation

Traveller characters are described in terms of innate attributes, skills, and a number of other characteristics. During character creation, the initial values for all of these are derived by a combination of die rolls and player choices. Over the course of a series of adventures, many of these will increase to reflect skill improvement, advancing age, and the like. The rules in this chapter explain the process of character generation.

In order to make the long process of character generation easier, a Character Generation Worksheet is included with this game (see page 380). The worksheet is largely self-explanatory, but occasional reference to the rules is necessary, at least for your first few characters. Players should read the rules as they generate their characters, filling in the appropriate blanks of a Worksheet as they go. Once a character is completely generated, the information from the the worksheet should be transferred to a Character Sheet (see page 381). After that, the worksheet may be discarded, as only the Character Sheet is necessary for play. (*Note:* Save at least one blank copy of each sheet to photocopy for future characters.)

A Note on Gender and Race: Nowhere in these rules is there a specific requirement established that a human character (player or nonplayer) be of a specific gender or race. Any character is potentially of any race and of either sex.

CHARACTER GENERATION OVERVIEW

The abilities and limitations of a character are determined by three general areas of information: background, attributes, and experience. Therefore, the character-generation procedure follows these three general steps.

Background: Players determine their homeworlds, as these have a strong effect on later steps of character generation. They also decide on other background information, such as social level, name, and gender for their characters.

Attributes: Players determine the six basic attributes of their characters by rolling dice and assigning those results to attributes in any order they wish. These six basic attributes are Strength, Agility, Constitution, Intelligence, Education, and Charisma.

Careers: Characters begin to accumulate experience at the age of 17. At that time, players start making career choices for their characters. Each career choice represents four years of training and/or experience (four years being an arbitrary number that helps regulate character generation). Each time a player makes a four-year career choice, a hobby may also be selected for the character. Careers and hobbies provide the character with all-important skills.

Each career period—henceforth called a term—ages the character by four years. If you are using the random means of determining the end of character generation, a roll is made at the end of each term to see if character generation ends. If so, the character's pre-game experience is complete. (In other words, the character is this old when the adventure campaign begins.) If not, the player makes another four-year career choice. In this way, some characters will begin the game relatively young and unskilled, but with attributes undiminished by age, while others will be older and more experienced, but possibly less resilient than their younger counterparts.

If the referee allows, players who prefer to choose an age for their characters (i. e., a number of terms) may do so, rather than rely upon random die rolls. At the end of each term, then, such players simply decide whether or not their characters will pursue another term.

Derived Values: Now that all changes to skills and attributes are completed, certain values are calculated that are based on them. These are things like accuracy with different weapons at various ranges, damage done by bare-handed attacks, and so forth.

Possessions: Finally, players determine what possessions their characters have accumulated during their careers.

BACKGROUND

The Collapse couldn't have been universal. Somewhere there must be pockets of civilization that retain star flight and the technology to support it, cultures that defeated Virus before it drove them back into the caves. The Hivers managed it, so some human worlds must have as well.

But out here, on the fringe of human-settled space, the Collapse was pretty complete, and if we didn't hit the ground as hard as they did in the Wilds, maybe it's because we didn't have as far to fall. This was always a backwater.

That's something that's about to change.

Before generating the specific physical and mental attributes which define a character, it is necessary to determine the character's background, as this has a strong effect on the rest of the character-generation process.

Stellar Region: The first and most important step in building the character's background is to determine the stellar region.

The stellar region not only influences the character's homeworld, but also determines where the campaign will initially be set, and so this decision should be made jointly by the referee and all of the players in the group (with the referee's decision, of course, being final).

There are four stellar regions outlined below, which represent a range of technological settings. While most characters should be from the same stellar region, it is possible that characters from other areas, particularly if they are from starfaring civilizations, have found their way to the same place, and so homeworlds from different regions are possible, given referee approval.

The Regency: The Regency is the pocket of highest technology and social structure that remains in human space. The catastrophes of the Final War that befell the Third Imperium and culminated in the collapse of almost all interstellar human civilization spared the Regency, allowing it to remain as a living time capsule of the tremendous achievements of the Third Imperium. Technology and space travel continue at high levels in this area, along with contact with five other interstellar governments: the Zhodani Consulate, the Sword Worlds, the Darrian Confederation, and the remnants of the Aslan Hierate and Vargr splinter states.



Old Expanses: This is an area which was human-settled but never fully integrated into the Third Imperium, and which was situated on the fringe of Imperial Space near the Hive Federation. Although hit hard by the Collapse, eight years of contact with the rebuilding Hivers have helped to restore much of the area. This has brought not only vast improvements in living standards and the level of technology, but has also given the people of the area the means to begin re-expanding into the shattered areas of the old Imperium to bring back the fruits of technology to all former Imperial worlds. These people have united themselves as the Reformation Coalition, committed to bringing a new era of enlightenment to ravaged human space. (In the tables below, "Old Expanses" refers specifically to the Reformation Coalition. Much of the Old Expanses Sector is in fact in the Wilds.)

Pocket Empires: Small coalitions of worlds, only a half-dozen or so, were able, through heroic efforts, to withstand the Collapse and maintain their ties with each other, although just barely. They suffered further losses in technology, population, and resources before finally arresting the downward slide. Although commerce continues within the few isolated pocket empires, trade and exploration outside of their boundaries is rare, because they are wary of risking their few priceless starships.

The Wilds: The majority of what was once Imperial Space is now called the Wilds (or sometimes No Man's Land or the Blasted Area). This area is typified by vast areas of isolated worlds which have lost their contact with the stars, visited once every few years by the rare free traders in their rickety old ships. There is no regular interstellar communication in this area, although there are occasional small starports on worlds attempting to rebuild. Thus, each world in this area is unique, as it has spent the last 70 years alone, seeking its own solutions to its problems. Unfortunately, many of these worlds have fallen under despotic leaders who jealously maintain control of the last bits of remaining technology, and who have forced their subjects back to medieval type life-styles.

I know that all the time I was growing up, people were trying to put back together the pieces of a broken technological society—trying with all their heart—and failing. It was like trying to fix a crystal-circuit matrix that someone had smashed with a hammer, and trying to do it with a soldering gun. Hopeless.

In the meantime, the rest of us were just surviving... "Scratchin' dirt with the chickens," is how Grandfather used to say it.

Then the Hiver ship landed. A lot of people were frightened, but not Grandfather. Not me, either. The first time I saw one of them, I knew.

We were going back to the stars.

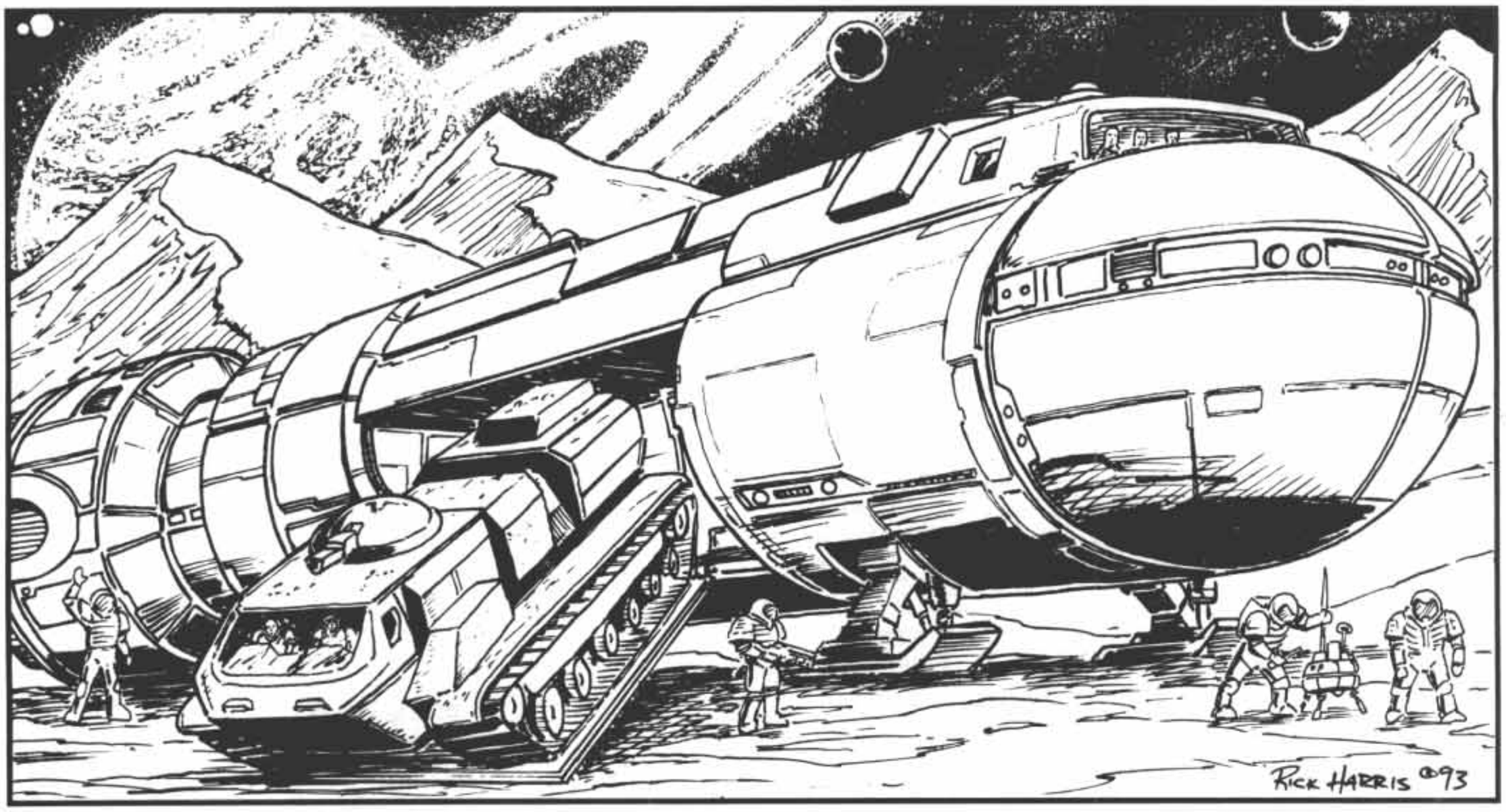
Homeworld: The next step in determining background is selection of a homeworld. A homeworld is the world on which a character was raised and probably born. It represents the environment which most directly shaped the early (pre-adventuring) development of the character.

A character can specify homeworld in several different ways: a specific pre-existing homeworld can be assigned by the referee or chosen by the player (subject to referee approval); a referee can generate worlds which can be chosen by or assigned to the players; or a homeworld can be generated randomly using the tables provided.

The first two methods are by far the most preferable, as these allow the players to know exactly what and where their homeworlds are.

World Assignment: The sample subsectors located in the "Referees" and "The New Era" chapters detail a typical area from each of the four types of stellar regions. If the referee wishes to start the campaign in any of these four subsectors, any of the listed worlds could be chosen.

Referee Generation: Referees may also choose to create



their own worlds and cosmography (geography, but with stars instead of planetary terrain features), and assign players homeworlds from their own personal universes. These can be created by using the procedures in the World Building section of the "Worlds & Travel" chapter. Once these worlds are created, the referee takes the specific world characteristics and translates them to the more broad descriptions which are used here. The Homeworld Characteristics Descriptions table on page 18 shows the code equivalents for translating the worlds generated under the referee's system into world descriptions.

If a homeworld is deliberately created, by either the referee or the player, it must contain at least as much descriptive information as is provided by the Homeworld Random Generation table.

Random Generation: Homeworlds can be created solely for purposes of character generation by using the Homeworld Random Generation table to generate world descriptions for the various world characteristics. Descriptions are brief statements that describe conditions on the world; they provide less detail than the referee-created world characteristics, but they are easy to use and remember. Using the Homeworld Random Generation table, roll 2D6 separately for each of the codes: starport, size, gravity, atmosphere, hydrographics, population, government level, law level, and tech level. Die modifiers are called for when generating certain descriptions (see page 18). Note that the statistical likelihood of getting certain descriptions below may be different than is achieved when generating a planet from scratch in the World Building section. This is to be expected, as player characters are more likely to come from certain types of worlds than others.

Homeworld Random Generation

Die	*SP*	*Size*	*Grav*	*Atmos*	*Hydr*	*Pop*	*Gov*	*Law*	*Tech*
2	A	Ast	0G	Vac	Desert	Inc	Low	No	Pre-Industrial
3	A	Small	.1G	VacT	Desert	Inc	Low	Low	Pre-Industrial
4	A	Small	.2G	Thin	Dry	Inc	Low	Low	Industrial
5	A	Small	.4G	ThinT	Dry	Low	Mod	Mod	Industrial
6	B	Small	.6G	Std	Wet	Low	Mod	Mod	Pre-Stellar
7	B	Med	.8G	StdT	Wet	Low	Mod	Mod	Pre-Stellar
8	C	Med	1G	Std	Wet	Mod	High	Mod	Early Stellar
9	C	Med	1.2G	DenseT	Wet	Mod	High	Mod	Early Stellar
10	D	Large	1.5G	Dense	Wet	Mod	High	High	Average Stellar
11	E	Large	1.8G	Extr	Wet	High	Extr	High	Average Stellar
12	E-X	Large	2+Gs	Extr	Water	High	Extr	Extr	High Stellar

A roll of less than 2 is treated as 2.
A roll of more than 12 is treated as 12.

HOMEWORLD DIE ROLL MODIFIERS

Starport

Apply the following Stellar Region DMs:

Region	*DM*
The Regency	None
Pocket Empire	+3
Old Expanses	+6
Wilds	+8

On a result of E-X, roll 1D6 and consult the following:

Roll	*Starport*
1-3	E
4-6	X

Gravity

If size = Asteroid, Grav = 0G
If size = Small, DM –3
If size = Mod, reroll 2-3, 11-12
If size = Large, DM +4

Atmosphere

If size = Asteroid, Atmos = Vac
If size = Small, DM –2
If size = Large, DM +2

Hydrography

If size = Ast, Hydro = Dst
If size = Small, DM –2
If size = Large, DM +2

Government

If Pop = Inc, DM –4
If Pop = Low, DM –2
If Pop = High, DM +2

Law

If Gov = Low, DM –2
If Gov = High, DM +2
If Gov = Extr, DM +4

Tech Level

In the Wilds, –5
Pocket Empire, –3
Ref. Coal., –1
If SP = A, +3
If SP = B, +2
If SP = C, +1
If SP = X, –2
If Size = Ast, +1
If Hydro = Water, +1
If Pop = Low, +1
If Pop = High, +2

HOMEWORLD CHARACTERISTICS DESCRIPTIONS

Actual UWP Code ranges are given parenthetically with the descriptions (see pages 188-189).

Starport Codes

A: Excellent-quality installation.
B: Good-quality installation.
C: Limited-quality installation.
D: Poor-quality installation.
E: Primitive installation.
X: No starport.

World Size Descriptions

Asteroid (0): Diameter below 200 km.
Small (1-4): Diameter 800-7199 km.
Medium (5-7): Diameter 7200-11,999 km.
Large (8-A): Diameter 12,000-16,800 km.

Atmosphere Descriptions

Vacuum (0-3): Very little (if any) atmosphere (pressure below 0.43 atmospheres).

Thin (4-5): Thin nitrogen-oxygen atmosphere (pressure 0.43-0.7 atmospheres).

Standard (6-7): Standard nitrogen-oxygen atmosphere (pressure 0.71-1.49 atmospheres).

Dense (8-9): Dense nitrogen-oxygen atmosphere (pressure 1.5-2.5 atmospheres).

Exotic (A+): Atmosphere, usually dense, consisting of poisonous, often highly corrosive, substances.

The T notation on the page 17 table indicates that the atmosphere is tainted by some harmful element or chemical such as sulfur dioxide, lead, etc.

Hydrosphere Descriptions

The hydrosphere is water unless the atmosphere is exotic.
Desert World (0): Water covers less than 5 % of the surface.
Dry World (1-2): Water covers 5-24 % of the surface.
Wet World (3-9): Water covers 25-94 % of the surface.
Water World (A): Water covers 95-100 % of the surface.

World Population Descriptions

Incidental Population (0-2): Less than 1000.
Low Population (3-5): 1000 to 999,999.
Moderate Population (6-8): 1 million to 1 billion.
High Population (9-A): More than 1 billion.

World Law Level Descriptions

No Law (0): No prohibitions.

Low Law (1-3): Automatic weapons (those with a burst value) and high-energy weapons (plasma and fusion guns) prohibited. Public display of some weapons restricted in some urban areas.

Mod Law (4-7): All lethal firearms and energy weapons (i.e., other than stun guns) prohibited or severely controlled. Public display of melee weapons prohibited or severely restricted in many urban areas.

High Law (8-9): All weapons except for cudgels, daggers, hand axes and slings prohibited.

Extreme Law (A+): No private ownership of weapons is allowed.

World Government Descriptions

Low Gov (0-2): Very little government regulation. Government organized along corporate or participatory democracy lines.

Mod Gov (3-9): Active, interventionist government but with numerous constitutional limits on its authority and frequently required to seek ratification of its actions by the governed, either through referenda or elections.

High Gov (A-C): Very active government with few genuine limits on its authority and with little meaningful input by the majority of the governed.

Extreme Gov (D-F): Repressive government which devotes routine effort to keeping the population in line with its directives.

Earth History Tech Level Equivalencies

Pre-Industrial (0-3): Pre-1800
Industrial (4-5): 1800-1930
Pre-Stellar (6-8): 1950-2000
Early Stellar (9-A): 2000-2100
Average Stellar (B-D): 22nd century+
High Stellar (E-G): Extreme high technology (flying cities, etc.)

ATTRIBUTES

Each character is described, in the simplest of terms, by six attributes detailing the physical and mental defining characteristics of the individual. These attributes are generated through a series of die rolls. Roll two six-sided dice and subtract 1 from the result to generate a number from 1-11. Do this six times. Each separate roll is then assigned, in whatever order the player desires, to one of the following six attributes: Strength (STR), Agility (AGL), Constitution (CON), Intelligence (INT), Education (EDU), and Charisma (CHR). Record the results on the Character Worksheet, located on page 280.

Players who roll attributes for their player characters totaling less than 36 points may add attribute points (allocated as they see fit) to bring the total up to 36. This ensures that characters are always at least average.

Personal attributes are defined as follows:

Strength: The numerical quantification of a character's muscular power.

Agility: A measure of a character's coordination and nimbleness.

Constitution: Health and physical stamina. This determines the character's hit capacity and resistance to disease.

Intelligence: The ability of a character to perform abstract reasoning. Intelligence primarily affects the ability of the character to learn; it is not the same thing as common sense. (How much common sense characters have is determined by the actions of the players themselves.)

Education: The ability of a character to gain knowledge and experience from a formal academic setting. The Education attribute determines how far a player character can advance at a university and serves as a prerequisite for certain forms of higher education.

Charisma: A quantification of personality and personableness. Charisma reflects skills that affect how nonplayer characters react to a character. It is not so much a measure of physical appearance as of natural charm.

Abbreviations: The six attributes of Strength, Agility, Constitution, Intelligence, Education, and Charisma are used throughout these rules. For brevity, they will sometimes be abbreviated as STR, AGL, CON, INT, EDU, and CHR, respectively. These attributes are often divided into three categories: Physical Attributes (Strength, Agility, Constitution), Mental Attributes (Intelligence, Education), and Spiritual Attributes (Charisma and Psionics, which is described later in the rules).

Shugilii is a belter, not only by profession, but also by birth. He was born out in the asteroids, and he's lived most of his life in low-G. He exercises two, maybe three times a day, but for all of that, he's still not what you'd call a muscle man. People in low-G have to exercise almost constantly just to keep their muscles from atrophying and their hearts from weakening, but that's no substitute for carrying around 75 to 100 kilos in 1G 18 hours a day.

I've never seen anyone with reflexes like his, though, except for maybe other belters. He says, "People who live in hard vacuum learn to live carefully." I suppose that's true.

Homeworld Effects on Attributes: Characters' homeworlds affect their attributes in a variety of ways. Add or subtract the following values from the rolled attributes of the character, but subtractions may never reduce an attribute to 0. These modifications reflect the effects on a normal human of these environments. Humans who have become adapted to these environments after five or more generations, or after genetic engineering intended to adapt to these environments, will be more or less immune to these effects at the referee's discretion.

Gravity: If from 0.2 G or less, subtract 2 each from Strength and Constitution (referee may stipulate that a 0G world, actually a space station of some sort, has a permanent pseudo-G field either from artificial gravity or a spun habitat, thus negating these effects). If from 0.5G or less, as above, but only subtract 1 from each. If from 1.5G-1.8G, add 1 to Strength and subtract 1 from Constitution. If from a 2G+ world, add 2 to the Strength attribute and subtract 2 from Constitution.

Atmosphere: If from a vacuum world, add 1 to Agility. If from a world with an atmospheric taint, subtract 1 from Constitution.

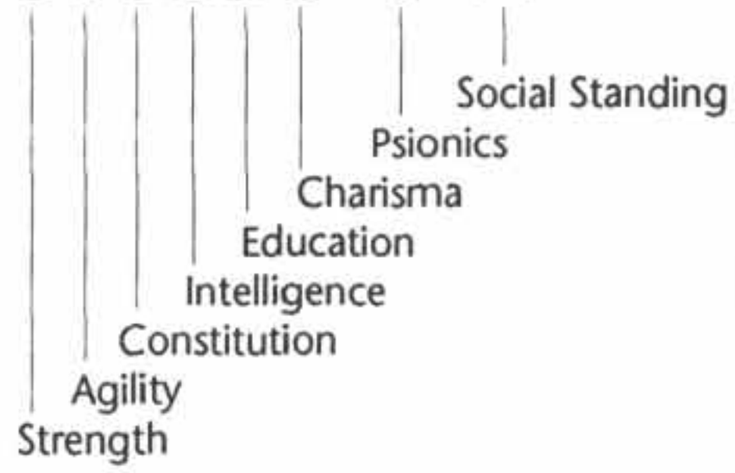
Population: If from an Incidental or Low population world, subtract 1 from Charisma. If from a High population world, add 1 to Charisma.

Technology: If from a Pre-Industrial world, subtract 2 from Education and add 1 to Constitution. If from an Early Stellar world, add 1 to Education. High Stellar worlds add 2 to Education.

The Universal Personality Profile (UPP): Characters in **Traveller** are defined using the Universal Personality Profile (UPP), which expresses attributes in a specific sequence using hexadecimal (base-16) numbers. In hexadecimal notation, 0 through 9 are represented by the common Arabic numerals; 10 through 15 are represented by the letters A through F. The highest single-digit number in strict hexadecimal notation is 15 (F). In many cases, **Traveller** uses extended hexadecimal notation in which letters above F denote numbers higher than 15 (G = 16, H = 17, etc.).

CHARACTERS

UPP
(Universal Personality Profile)



Attributes are in the following order: STR, AGL, CON, INT, EDU, CHR. For example, a character who is average in all respects would have a UPP of 666666. If the character were highly intelligent, the UPP becomes 666B66 (the B indicates an intelligence of 11).

The UPP allows the referee and players to clearly note the attributes of characters. Because the notation uses single digits or letters for each characteristic, numbers that are normally two digits cannot lead to confusion.

Attribute Limits: The initial rolls for attributes range from 1-11. These numbers may then be raised or lowered by homeworld effects, creating a range of 1-13.

During the careers portion of character generation (page 24), certain careers offer the opportunity for certain attributes to be raised further, as the result of physical training and education. However, no attribute may be raised more than 2 points as a result of these career increases. This reflects the fact that a character's original limitations can only be altered so much. (This is why you don't see very many Olympic weightlifters with tiny bones and light skeletons.) Modifications to attributes from homeworlds do not count against this limit. Thus, a character from a 2G homeworld who rolled an 11 (B) for STR would have this modified to a 13 (D) before beginning a career. During the career portion of character generation, this character could take no more than two +1 STR results, making a final STR attribute of 15 (F). No attribute may ever be raised to greater than 15.

Other Characteristics: In the course of character generation, the character will acquire age (in years and in four-year terms), rank, money, skills, and possessions.

Psionics: There is, in addition to the main six attributes, a seventh that in most characters is a 0. This is the Psionics attribute (PSI), which shows a character's ability to create mental or physical effects with the power of the mind alone (called on 20th century Earth psychic or paranormal powers). This attribute and its uses are detailed in the "Psionics" section of the Referees chapter.

Nonhuman Attributes: The six personal attributes assume a human character. Intelligent nonhuman races may have different attributes in place of (or in addition to) these human attributes.

Language: The language spoken throughout the worlds to which humanity has spread is Anglic (sometimes called Galanglic), a language evolved from ancient Terran English. All human characters will speak Anglic or a local dialect of it. Characters from homeworlds which have been isolated from the rest of human culture for a generation or more will speak Galanglic with an accent and with a number of local words added to the vocabulary, terms which others might find confusing.

Other alien races have their own native languages, but if they live on a human-settled world will probably speak at least some Anglic as well. Nevertheless, dealing with aliens and members of different cultures is easier if their native language is understood. The major languages spoken by sentient races are Anglic, Vilani, Sylean, Vargr, Aslan, Droyne, Hiver, K'kree, and Zhodani.



Once trade started back up, we started seeing how people on the other fringe worlds—we called it the Dawn Coalition back then—had sorted things out. Pretty interesting stuff. I was deep in the Hiver tech curriculum on Aubaine when I met my first "noble." Best table manners I ever saw. I mean, amazingly *good table manners.*

I also noticed that lots of the officials who made life difficult for most of the rest of us practically lined up to help this guy.

Social Standing: Roll 2D6 and subtract 1 to determine initial Social Standing (abbreviated SOC) on the character's homeworld. This is a measure of the accomplishments and power of the character's parents or guardians (if raised by other than his or her natural parents).

This is not an innate attribute, and unlike attributes, it may change dramatically during character generation, based on the career choices made. However, like attributes, a character's SOC may never be reduced below 1, nor raised above F.

Titles: Social Standing for each character shows the relative position within society for an individual. The fallen Imperium had a government based on noble rank, with clearly defined levels of power based on those ranks. Because of the ubiquitous nature of this society in human-inhabited space, the noble structure permeated most human worlds, and its effects still survive.

These are naturally most widespread in the Regency, which retains most of the Imperial institutions. Hereditary nobles still exist there, although their power is significantly curtailed as compared to pre-Collapse days. Rather than having absolute rule over their fiefs, they remain in an advisory or limited-rule position, and are sometimes reduced to merely drawing income as a percentage of the economic output of their fiefs.

In other areas, such as Pocket Empires or the Wilds, nobles may have retained much of their power, although acting over a much more limited area. In the Wilds, the new rulers may have perpetuated some of the old symbols of Imperial power, particularly titles, as a means to further aggrandize themselves. The nobility system no longer survives in the areas controlled by the Reformation Coalition, as it is regarded as the flawed system of self-interest that corrupted and doomed the Imperium to the Collapse.

See the History section beginning on page 8 for a fuller discussion of local government and leadership traditions.

The noble system discussed below is the old Imperial system, and may be used with changes to suit local conditions at the discretion of the referee. Nobles of rank baron and above were usually granted fiefs—quantities of land that belong to the noble and could be used to generate income by renting it out, using it for farming or some other production. Fiefs generally ranged from 100 to 100,000 square kilometers, according to rank. Nobles were also given larger areas to administer, or govern, in the name of the Emperor, although they did not own these areas.

Those with Social Standing B+ (11 or greater) are considered to be noble, and may assume their family's hereditary title. Noble titles are commonly used, even if the individual is not engaged in local government. At the discretion of the referee, the noble may have some ancestral lands or fiefs on his or her homeworld.

Knights: A knight (Social Standing B) is entitled to the use of Sir (or Dame) before his (or her) name. Characters whose initial SOC is B, and whose SOC does not increase during character generation, are the sons and daughters of knights. However, this title is not hereditary and so those characters are not entitled themselves. Characters who have an initial SOC of less than B and whose SOC increases to B, and characters whose SOC is initially B, then is lowered, and then increases to B, have themselves been knighted and can use the knightly titles of Sir or Dame. Knights do not receive fiefs, nor do they govern.

Baron: Social Standing C entitles the individual to the title baron (or baroness). Or the individual may use the prefix von, haut, or hault with his or her name to denote baronial nobility. A baron usually administered a portion of a world.

Marquis: Social Standing D indicates a marquis (or marchioness). A marquis generally administered a single world, with or without further authority within the system.

Count: Social Standing E indicates a count (or countess). The count administered several worlds within a single subsector.

Duke: Social Standing F indicates a duke (or duchess). This typically included the administration of a subsector (an area eight parsecs by 10 parsecs, typically including some 30 worlds), although each sector also had a senior duke who was the duke of the entire sector (an area of 32 parsecs by 40 parsecs, including 16 subsectors and some 400-500 worlds).

Although player characters cannot advance beyond duke, noble ranks included archduke (16 or G) and emperor (17 or H). Archdukes governed domains, a group of several sectors.

The Noble Ranks Table shows the range of noble titles and their corresponding social levels.

NOBLE RANKS

SL	*Rank*
B	Knight (Sir, Dame)
C	Baron/Baroness (von, haut, hault)
D	Marquis/Marchioness
E	Count/Countess
F	Duke/Duchess
G	Archduke/Archduchess
H	Emperor/Empress

HONORIFICS

Many social positions come with very rigid forms of address that are expected to be used. This is especially true in societies that have a strong nobility. These honorifics are used when addressing the person or when referring to the person in formal circumstances, and are used with possessive pronouns. For example, "Your Grace," "His Imperial Majesty the Emperor," or sometimes without a possessive, as, "Excellency."

A campaign that has a strong noble flavor will be enhanced by attention to these protocols.

Not all of the noble ranks listed to the right correspond with the standard Imperial nobility listed in the text. Many of these are local variations, and include intermediate steps (baronet, viscount) between formally recognized Imperial noble ranks. Some worlds retain strong religious institutions which may use some variation on the forms given. Finally, some non-noble government positions also use standard honorifics. The honorifics listed are samples and guidelines, and are not universal; these sorts of things can vary widely according to local usage, tradition, and idiosyncrasy.

Social Position	*Honorific*
Noble Honorifics	
Knight	Sir, Lady/Dame
Baronet	Sir, Lady/Dame
Baron/Baroness	Right Honorable (RH), Lord, Lady
Marquess/Marquis/Marchioness	RH Lord, Lady
Viscount/Viscountess	RH Lord, Lady
Earl/Count/Countess	Most Honorable Lord, Lady
Duke/Duchess	Grace, Lord Duke
Archduke/Archduchess	Grace, Lord Archduke
Members of Imperial family in line of succession (Princes, Princesses)	Imperial Highness
Emperor/Empress	Imperial Majesty
Religious Honorifics	
Clergy	The Reverend
Bishops/Archbishops	Most or Right Reverend, Excellency
Cardinals	Eminence
Pope	Holiness, Holy Father, Most Holy Father
Civil Honorifics	
Foreign Ambassador	Excellency
Elected or appointed official	Honorable

Naming Characters: There is a fine art to naming characters in roleplaying games, and it is something that each player should approach in his or her own manner, but with respect for the intentions of the other players and the referee. For example, there is nothing wrong with the names Captain Spit, James Cheaplaugh, and Sodom N. Gomorrah in a campaign that is intended as a light-hearted, rollicking escapade through the stars. But in a campaign that is intended to be serious and realistic, such names tend to drag down the tone rather too much.

The **Traveller** campaign background postulates an environment some 3800 years in our future, in which a form of English is still the dominant form of expression. Therefore, familiar modern names are still quite acceptable (Paul R. Currin, "Mad Dog" Kelly). Players with an historical bent often enjoy using bits and pieces of famous historical names (Jackson T. Greenwood), up to and including running with a theme, like US Supreme Court Justices (Harlan Marshall, "Cookie" Rehnquist). Other Terran languages are also used to good effect. Many names are chosen simply for their sound, whether imposing (Gray Manchester Armstrong) or mellifluous (Dick Kabuki, Barringer Olds, Terrel Skeeter).

The **Traveller** campaign adds additional language sources to choose from. The most common non-Terran source of human names

Examples of Call Signs

"Bongo this is Skidder, over."

"Bongo. Go."

"Bongo, we have cargo airborne, and our ETA at pickup site is zero two niner zero local. Who's driving the bus, over?"

"Roger zero two niner zero local for pickup, Skidder. Rebba's driving the bus, over."

"Break, break, break. Bongo, this is Rogue Six over."

"Bongo. Go."

"Uh, Bongo we have a situation back here. I have nine high-speed bogies inbound, with only sporadic echos. I estimate G-shooters flying NOE. Uh... I'm getting some jamming, too. Over."

"Hammer, this is Bongo. Do you copy, over?"

"Hammer. Go."

"Hammer, we have a situation at our back door. Skidder will make pickup site with the goods at zero two niner zero local. Can Rebba expedite dust, over?"

"Negative, Bongo. Bad guys have launched a Sig-Delt, and the navy has moved Rebba up into a parking orbit while they deal with it. Uh, wait one... Bongo, navy has splashed the Sig-Delt, but Rebba has passed the window and will have to wait for next transit, over."

"Oh, boy. Hole Card, are you on tacnet, over?"

"Roger, Bongo. Go."

"Hole Card, chop to Rogue Six. We have bad guys coming up our tailpipe. He'll run the firefight. I'll handle the DZ traffic...."

"Break, break, break. Bongo, this is Rebba. Strike all that next transit crap. Rebba doesn't believe in parking orbits. Rebba is inbound hot, estimating dust at one seven minutes. Light up a beacon at dust minus zero three minutes, and have your bums on the DZ, over."

"Rebba, I love you! Drinks are on me, over."

"Bongo, that is correct, over."

is the Vilani language, e.g., Makhidkarun, Naasirka, Zirunkariish.

Never underestimate the importance of a good name.

Call Signs: In addition to your character's proper name, players working for or with the Reformation Coalition (Star Vikings) will have a two-syllable tactical nickname, which is also their tactical communication (tacnet) identification. This name is always used in combat as a quick call sign, but is used routinely in normal address as well. Even fairly senior officers are regularly addressed by their nickname (but only by other Star Vikings—such familiarity must be earned).

Players have a number of options when selecting a nickname. The name can be a familiar or altered form of their own first or last name (Charley for Charles, Rebba for Rebekka, Hutch-man for Hutchinson), or it can be totally fanciful (Hammer, Stardust, Ice Nine, Go-Go). The limitations are that it must be exactly two syllables long, and it cannot duplicate an already-used nickname.

It is also desirable to pick a name with at least some panache. No viking, for example, has even been known to go by the tactical nickname Snook-ums, and if a name like this is picked, it should at least be at variance with the character's actual appearance. It would take a character with both STR and CON attributes of 12+ to get away with Snook-ums as a nickname. Remember also that these nicknames are usually bestowed by colleagues during training, and more often than not refer to an embarrassing training incident that the character might rather forget. This does not mean that such nicknames have to sound bad; in fact, they usually sound really good if you don't know the story. "Slider" could be awarded for a headlong slip down a muddy hillside in survival training, "Burner" in remembrance of a training aircraft the character crashed and burned, and "Straight Flush" for an unfortunate incident with a toilet.

It is a rare viking who gets to pick a nickname, and a rash one who even tries, particularly an overly flashy one that has not been earned. Woe to the cocky, inexperienced youth who insists that the crew must call him Lightning. If he doesn't live up to it, the crew might end up calling him Lightweight.

Background Skills: Characters begin the game with more than just a background; they also have knowledge of a number of different skills, reflecting training and experience that they acquired before beginning a life of adventure. By age 17, at which time career determination begins, characters will have already accumulated some expertise in a few skills due to childhood hobbies and education. To represent this, players should each choose four skills from the Background Skills List above, giving their characters a level 2 skill in each. Some of these skills are limited by the character's homeworld, as indicated on the chart. Where more than one limitation appears, all of them

Background Skills List

Skill	*Atmos*	*Hydro*	*Pop*	*Law*	*Tech*
Acrobatics					
Act/Bluff					
Archery				High (9)–	
Armed Martial Arts				High (9)–	
Biology					
Chemistry					
Climbing					
Computer					Pre-Stellar (6)+
Disguise					
Electronics					Industrial (4)+
Environment Suit	Vacuum (0-3)		or		Pre-Stellar (6)+
Farming	Thin-Dense (4-9)	Dry (1)+			
Guard/Hunting Beasts					
Ground Vehicle					Industrial (4)+
History					
Language					
Mechanic					Industrial (4)+
Muscle Transport					
Music					
Painting					
Pilot (Fixed Wing)	Thin (4)+				Industrial (4)+
Pilot (Interface/Grav)					Early Stellar (9)+
Research					
Riding	Thin-Dense (4-9)				
Sculpting					
Slug Weapon				Mod (9)–	Industrial (4)+
Small Watercraft	Thin-Dense (4-9)	Wet (3)+			
Song					
Stealth					
Streetwise			Mod (4)+		
Survival	Thin-Dense (4-9)				
Swimming	Thin-Dense (4-9)	Dry (1)+			
Thrown Weapon					
Tracking	Thin-Dense (4-9)				
Unarmed Martial Arts					



must be met. This list is not intended to be comprehensive, but is merely representative of most of the sorts of skills that a person is likely to pick up in childhood. A referee may decide that a character grew up on a world whose population consisted only of workers and their dependents from the world's navy base. The referee might allow that the character had picked up some skill in Ship's Engineering from going to work every day with his parents.

The choice of such skills can create a clear picture of the sort of childhood a character had. A character who picks skills like Armed or Unarmed Martial Arts can be imagined to have grown up in a tough inner city area; one with Survival and Farming came from a vigorous, outdoor life, while one with Music probably came from a background with a certain level of affluence and leisure time.

Default Skills: Certain characters automatically receive default skills of level 0. A level of 0 for a skill indicates that the individual can undertake ordinary activities, but is not experienced enough to try dangerous activities or fancy actions. A skill level 0 is sufficient to prevent a task from increasing in difficulty because of lack of skill, although a skill level 0 provides no skill addition to the controlling attribute. (See the task-resolution rules for a complete discussion of skills and their effects on attributes.)

Default skills are conferred automatically as follows:

Characters from Vacuum worlds automatically receive Environment Suit 0.

Characters from a Water world automatically receive Swimming 0.

Characters from an Asteroid world automatically receive Zero-G Environment 0.

Characters from a Large world automatically receive High-G Environment 0.

Characters from a world with a tech code of Industrial to Early Stellar automatically receive Ground Vehicle (Wheeled) 0.

Characters from a world with a tech code of Early Stellar+ automatically receive Computer 0.

Characters from a world with a tech code of Average Stellar+ automatically receive Pilot (Interface/Grav) 0.

All player characters (and detailed NPCs) automatically receive Willpower 0.

CAREERS

Players have a reasonably free hand in choosing detailed career backgrounds for their characters. This background consists of formal education and/or one or more careers. (For purposes of character generation, the term "career" is defined fairly loosely.) For ease of calculation, career and education backgrounds are lived through in four-year terms. Characters may do pretty much anything they please, but must do it in four-year increments for ease of record-keeping.

Each career listing (these begin on page 43) details the nature of the career, the skills that are received for the first term, and any skills received for subsequent terms, if applicable. Each description also includes notes of important contacts made during the term and any special rules for the career's effects on the character's combat Initiative and starting money. Characters may enter any career for which they meet the prerequisites, but must spend at least one full four-year term in that career before moving on.

Education and career terms may be taken in any order desired, although most players will probably opt to take education first, followed by career, in the classic pattern.

For the players' convenience, there is a consolidated chart of all careers and their prerequisites on page 56. This not only allows players to see what careers are available to them based on their homeworld, but also how they should assign their attributes to gain admission to the career of their choice.

Prerequisites: There are three types of prerequisites—attributes, prior service, and homeworld/region. Not all careers have all three types of prerequisites, but most have at least one. In most cases, physical attribute prerequisites allow the character entry upon meeting any one of these (exceptions are noted). All homeworld/region and prior service prerequisites must be met.

When I hit the Hiver technical curriculum, it was as if I'd come home for the first time. This was where I belonged, and it's where I would have stayed if the first expeditions into the Wilds had turned out differently. But all of that came later.

I loved deep-space astrogation, loved it with a passion I'd never felt before. Putting a jump ship "into the hole" at just the right angle of attack so that 150 hours later it climbed out three parsecs away with the exact residual angular momentum to throw it to within skimming distance of a gas giant was the most beautiful thing I'd ever done. There was a logic, an elegance to it that I'd never imagined existed, and nobody was better at it than I was. Nobody.

Nobody except Veronique. Veronique dusted me every time. Veronique was the best I ever saw, the best we had, and a planet-class cellist as well. I'd watch her playing the cello at night and see her pause for a long second, completely lost for the moment, as if the note she'd played had triggered some sudden new thought. Then she would continue.

What was she thinking about during those pauses? I always thought that it must have been "the hole," and residual momentum, and angle of attack. Our music of the spheres.

Career Term Skills: In the first term of a career, a character receives a fixed package of skills from a group of skill areas which represent training in the core skills necessary to function in the career.

In every subsequent term of service in that career, the character receives additional levels of skills from a group of skill areas. After the first term in a given career, the player selects skills from the Subsequent Terms heading, not the First Term heading.

Characters receive four skill levels in their second term of service, three in their third term, two in their fourth term, and one in their fifth and every subsequent term.

Note that this reduction in number of skills received is based on the total number of terms served by the character, not just the terms served in a particular career. For example, a character begins a career on term 1 and continues it on term 2, but changes careers on term 3. On term 3, the player receives the full first term skill package for the new career, but then on term 4, the character would receive two subsequent term skills from the Subsequent Terms skill package, not four. The information on number of skills per term in recorded the tables on pages 32 and 42 for easy reference.

Players may divide the levels among the skills listed in the allowed skill group in any manner desired. If five skills are listed and a character is entitled to four skill levels, the player may take a level 4 skill in one of them, two level 2 skills in different areas, four level 1 skills, etc. If the character already has skill in the area chosen, the additional levels are added to the levels already there. Thus, a character who already has Astrogation 1 who then selects two levels in Astrogation now has Astrogation 3.

Similarly, if a career listing gives a character a certain number of levels in a skill cluster, the character may divide those levels among any of the skills in that cluster however he or she chooses. If the career lists Crime 3, the character may take three levels in Forgery, or two levels in Pickpocet and one level in Intrusion, or one level in each of the three skills in the Crime cluster.

Education Skills: Skills received in education terms do not follow the 4-3-2-1 pattern described above, but are based on the character's EDU, as stipulated under the career listing. Most education types cannot be taken for more than one term; the one exception is graduate university, which can be taken as many times as desired.

Commissions: Many services have a commission die roll. A commission signifies that the character is taken in as an officer (or the civilian equivalent) as opposed to as an enlisted person. In order to be given a commission, the character must roll the stated number or less on 2D6. DMs may apply to the roll. If the commission is achieved, the character receives rank O1 in the career. A character may attempt to acquire a commission once per term of service until successful.

Being granted a commission means that the character receives skills from a different list under the First Term and Subsequent Terms headings (called officer in all of the military careers, but called detective, doctor, etc. under other career descriptions).

In some cases, commissions are automatic based on certain prior education terms that have been taken. The character is automatically commissioned upon entry to the service, and never rolls.

Some careers have no commissions or officer ranks, and only one set of skill lists. Do not worry about commission rolls or commissioned status in these careers.

Promotions: In each term of service (including one in which the character has received a commission), a character may attempt to be promoted. Although the Promotion heading is included under the Subsequent or All Terms heading of the career listings, the roll is made on the first term as well. Each career has a promotion number and DMs affecting that promotion roll. Generally, if a promotion is achieved, the character advances to the next higher rank in the service. A character is eligible for one promotion per term of service.

A character who receives a promotion also receives one additional skill drawn from the Subsequent

Terms list (even if the promotion is received during the first term).

Note that some careers (Wealthy Traveller, Rogue, Belter, etc.) have no ranks listed on the Table of Ranks on page 57, while others (Diplomat, Bureaucrat, Barbarian, Corsair) have ranks but no "O" ranks. This is because there are no convenient, standard rank equivalencies for many of these careers. Characters in these careers roll normally for promotions, and receive the additional skill when they roll a success, but no rank or change in rank is recorded. Players should assume that some form of professional advancement or recognition was achieved with the roll, but nothing so easily recorded as a military rank. In the Medicine profession there are noncommissioned ranks, but once a character receives a commission, the character is a "doctor" and rolls for no further promotions.

Special Duty/Adventures: Players who make the indicated die roll on 2D6 qualify for a special assignment or adventure. This die roll is modified by +1 for every subsequent term spent in the career. That is, there is no die modifier on the first term, a +1 DM on the second term, +2 on the third term, etc.

If players successfully make the required die roll for special duty (or special assignment or adventure in some careers), they receive additional skill levels apportioned in the same manner as for those received for subsequent terms of service. As with subsequent terms of service, they receive four levels in their first or second term, three in their third term, two in their fourth term, and one in every subsequent term.

Note that the allowed skill group from which these are drawn is different from the term skills available. These skills are received in addition to any term skills received. Players roll for special duty/adventures in every term served, including the first term.

Ending Character Generation: Just as attributes can be generated either randomly or by player decision, so can a character's total career time and final age. Players who wish to use the random method make a 2D6 continuation roll at the end of each term through their characters' development. If the character wishes to change careers in the next term, subtract 1 from the die roll. If the modified die roll is greater than the number of terms pursued thus far, another term is chosen and the character proceeds; if the roll is less than or equal to the number of terms, the character's progress ends and the adventure campaign begins with the character at that age.

For example, Dr. Wilfred J. Barsz, a professor of physics, has been through five terms thus far: one as an undergraduate, two in grad school (to get both an M.A. and a PhD), and two as a professor. At the end of this fifth term, the Barsz player rolls a 6 on 2D6, which is higher than the current number of terms, so the good doctor goes on to complete another term. At the end of this sixth term, the player again rolls a 6, which is equal to the number of terms served thus far, so character generation ends and the adventure campaign begins. (Note that this does not mean that Barsz is no longer a professor, merely that after 12 years of teaching, he began to get mixed up with the other player characters, and started saying things like, "Call me 'Wild Willie.'")

The one exception to this rule is that criminals, corsairs, mercenaries, and rebels who fail their roll to avoid incarceration automatically spend the next term as a prisoner without making a roll to end career generation.

Those players who prefer not to use this random method may, with their referee's permission, simply choose a number of careers for their characters. Because there is no longer a continuation die roll to discourage too much "career hopping" to receive First Term skill packets, referees should be careful when permitting players to use this option. It is suggested that the referee and player discuss the player's intent for the character before the referee grants this option. Characters who choose a fixed number of adventuring careers and who, as either criminals, corsairs, mercenaries, or rebels, fail their roll to avoid incarceration on their last term, spend an additional term as prisoners.

Note that nothing in these rules prevents a character from entering the game at age 17, without pursuing any careers at all. But very few people would be interested in playing such an inexperienced, unskilled, (not to say callow) character.

When characters complete their final term, they begin the adventure campaign. Since each term is four years, it is easy to calculate their age at the start of the game.

Secondary Activity: The careers players choose do not occupy 100% of their characters' time. Just as in real life, a person's hobbies and pastimes can provide valuable additional skills. As a general rule, then, each character is allowed one *secondary activity* each term. This allows the character to gain one level in any skill (player's choice each term) at the referee's discretion. In some cases, this skill may be a normal term skill in the character's current career (for example, a soldier practices on the rifle range on weekends to improve her Slug Weapons skill, or a computer operator stays late in the evenings to read manuals and improve his Computer skill). In other cases, the character may be indulging a hobby (Swimming skill for a scuba-diving trip, Biology skill for taking a night class). Referees should feel free to limit the types of skills that can be picked up in this fashion (only under extraordinary circumstances should a Barbarian character pick up Ship's Engineer skill as a secondary activity). See the skill eligibility limits on the Skill List by Controlling Attribute table on pages 114-115 for guidelines.

Increasing Attributes: Characters may also attempt to increase any of their six basic attributes (STR, AGL, CON, INT, EDU, CHR) as a secondary activity. This is done by taking an allowed skill level as a chance at a selected attribute. On a 2D6 roll of 8+ (DM: one per level of Willpower skill), the selected attribute is raised by one level. If the roll is failed, the attribute is not increased, and the skill level is lost and may not be re-allocated. This attribute improvement is subject to the +2 ceiling on page 20.

Some careers allow two secondary activities per term (both of which may be devoted to the same skill, if desired), while a few allow none. The number of allowed secondary activities per term is the number of skill levels received.

Social Standing: Different career paths and accomplishments affect a character's Social Standing, either favorably or unfavorably. Each promotion a character receives while commissioned increases Social Standing by 1 (to a maximum of 14). Certain careers also have a minimum Social Standing for commissioned rank; characters who receive a commission and whose Social Standing is lower than the minimum immediately have it raised to the minimum level. Finally, some careers lower Social Standing, as noted under the Other Effects entry in each individual skill listing.

SKILLS

It's easy to survive if you don't go anywhere and don't do anything. But if you plan to go out there into the Wilds and pick up the pieces of a civilization as busted up as any ever was, you better know what you're doing, or you're going to end up a statistic.

I've known statistics. Being a statistic is no fun.

Characters obtain two different types of skills: initial skills and acquired skills. Initial skills include knowledge of a native language (or languages) and skills supplied by education and/or careers during character generation. Acquired skills are learned from instructors during the course of a campaign (i.e., some time after character creation has been completed, as explained in the Refereeing Traveller section, page 134). All character skills, whether obtained during character generation or acquired, are listed on the various skill lists (Skills by Skill Clusters table on page 113, and the Skill List by Controlling Attribute table on pages 114-115.

Skill Ratings: Upon the first acquisition of a skill, the player writes the skill name, followed by a space and the number 1 (thus: Navigation 1). The second time the skill is acquired, the number is increased to show greater expertise (Navigation 2). Further acquisitions of the skill will increase this level. The higher the level, the greater the expertise in that skill.

Skills are rated in levels from 0 on up. There is no upper limit to skill levels, but around 10 is about as high as a skill is likely to get, unless the player is content to have a very one-dimensional character.

Cascade skills are a special case. A cascade skill is a collection of several closely related skills under one heading. For example, Wheeled Vehicle and Tracked Vehicle are aspects of the Ground Vehicle skill and are written as "Ground Vehicle (Wheeled)" and "Ground Vehicle (Tracked)," respectively (see Cascade Skills below).

Skill Clusters: Most skill awards for careers are listed in terms of skill clusters. For example, the Physical Science skill cluster includes the specific skills of Biology, Chemistry, Farming, Genetics, Geology, Meteorology, Physics, Robotics, and Xeno-Biology. Skill clusters are listed in **bold type** in the career lists. A skill award in a skill cluster may be taken in any skill or skills contained in that cluster, subject to homeworld or technology limits as judged by the referee.

Cascade Skills: A few skills are called cascade skills. A cascade skill is one that includes several lesser skills under one broad heading. Examples of cascade skills are Pilot, which includes Airship, Fixed Wing, Rotary Wing, Glider, and Interface/Grav, and Slug Weapon, which includes both Slug Pistol and Slug Rifle skills.



Characters who receive a cascade skill must decide on an area of special interest from among the subskills covered. From then on, their skill level in the chosen specialty is considered to be the level of the overall skill. Their level in all of the other subskills is half their level in the overall skill.

For example, Paul Currin receives a Slug Weapon skill level of 3 and decides he will specialize in slug rifles. His skill level with slug rifles is 3, while his skill level with slug pistols is 1 1/2, rounded down to 1. This skill would be written Slug Weapon (Slug Rifle) 3, and would need no other addition to also convey the fact that the skill in Slug Weapon (Slug Pistol) is automatically half that level, or 1.

Normally, no notation will have to be kept for these other subskills. However, sometimes it is possible for characters to receive a skill level increase in a subclass other than the one they have already chosen as their specialty. In the example above, Currin has a Slug Weapon skill of 3 and has chosen Slug Rifle as his specialty. If he then receives one level of Slug Pistol skill due to experience gained while adventuring, the skill level received adds to his Slug Pistol skill only, not to his overall Slug Weapon skill. However, if this extra skill level would cause his Slug Pistol skill to exceed his specialty Slug Weapon skill, then Slug Pistol will become his new specialty (and his overall skill will go up, of course). In either case, he will have to keep track of his Slug Rifle and Slug Pistol skills separately from now on. After the above example, they would be noted Slug Weapon (Slug Rifle) 3, and Slug Weapon (Slug Pistol) 2.

I'd heard about computers, read about them, but I'd never actually seen one until the Hivers landed. I knew how electricity was supposed to work—Grandfather made sure of that—but you don't really learn to respect the stuff until you screw up and it lets you feel what a hundred or so volts are like. A lifetime of reading about atmospheric re-entry couldn't have taught me as much as my first two hours in the holo-trainer at the academy. Getting off-world training by the Hivers exposed me to things that I never could have imagined if I'd stayed at home.

The people on worlds too far away for us to reach will be stuck, just like we were a few years ago, and they'll probably stay stuck for generations.

Homeworld Limitations: Certain skills are not available on the character's homeworld. Vehicle and technical skills are limited by the character's homeworld tech code; weapon skills are limited by the character's homeworld tech code and law code; and certain other skills, such as aerodynamic flight and nautical skills, are limited by the planetary environment. These limitations are listed with the skill descriptions in the Task Resolution and Skills section of the "Referees" chapter, as well as on the Skill List by Controlling Attribute table on pages 114-115.

Law Enforcement, Corsair, and Criminal careers may select weapon skills one law code lower than their homeworld's law code (i.e., a criminal character from a High Law world would be allowed to take a skill in a weapon that is not allowed under High Law, but is allowed under Moderate Law). Army, Navy, Scouts, Aviation, Rebel, Wet Navy, Marine, Special Operations, and Mercenary characters are not limited by their homeworld law code, nor are characters with a SOC of 11+. See the Skill List by Controlling Attribute table on pages 114-115 to see which weapons skills are allowed by what law levels.

Characters may try to override the homeworld limitation and acquire a skill not normally available by rolling 2D6 for 8+. If that fails, the skill level(s) is forfeited. This is done on a per-skill basis. The unavailable skill may only be rolled for once per term, and the number of skill levels being risked must be specified before the die roll is made. For example, a character from a Pre-Stellar tech code receives 4 skill levels in his second term, and is allowed to pick from the Vehicle cluster (includes Ground Vehicle, Hovercraft, Riding, and Pilot (Interface/Grav). The Pre-Stellar code would normally prohibit receipt of the Pilot skill, which is limited to Early Stellar+. The player would have to decide how many of the 4 skill levels to risk, because if he fails the die roll, he loses the risked skills. The player decides to try for Pilot (Interface/Grav) 2, saving the other two skill levels from this term for other skills. The roll is a 6, meaning that the character now has only two skills from this term. The player may not roll for Pilot (Interface/Grav) again during this term.

This override attempt may be done not only for technological limitations, but for any other type of homeworld limitation.

To visualize what the character is doing to get these skills, think of the following examples. A character on a Desert world attempts to get membership in an exclusive health club to learn Swimming skill. A character on a High Law world attempts to befriend a police officer who will teach him to fire on the police station's firing range to gain Slug Weapon skill. A character on a vacuum world could call in personal favors to gain time on a military simulator to get Pilot (Fixed Wing) skill. A character on a low-tech world in the Wilds might be able to discover or otherwise gain access to relic pre-Collapse technology and learn to use it.

Languages: Language is used to communicate, and communication is resolved using the standard rules for skills and tasks. Characters are assumed to be fluent in their own language, and additional language skills are taken in foreign languages or, for those interested in history, ancient languages.

CONTACTS

Strombooli is one of the more colorful people I've ever known, but then I guess the free traders who scratch out a living peddling junk from planet to planet in the Wilds all tend toward the eccentric. I met him when I first went undercover. He saw through my cover and spotted me for a Leaguer right away. He could have let me go blundering on my way, but instead he took me on as a crewman—galley slave, cargo jockey, and roustabout. It was a better cover than I'd had before, and let me see a lot of the Wilds close up and personal.

I still run into him—he gets around a lot—and he's always ready with a story shared over a drink. And he usually knows something important about whatever planet we're interested in.

During the course of our lives, we all meet a great number of people, many of whom become important contacts. For a roleplaying game to mirror reality, then, it should take into account important contacts that PCs acquire. Of course, it is easy enough to do this with characters met during the course of an adventure campaign; we need merely jot down a note that so-and-so can be found in such-and-such a place and may be able to help somehow in later adventures. But what about contacts that PCs would have made during their education and development prior to play? In **Traveller**, those contacts are indicated in a note at the end of each career description.

Contacts are categorized in two broad groupings: solid and generic. In general, solid contacts are intended as resources for PCs to use during the course of an adventure, as people who can provide information, special equipment, or some other source of needed aid. (Note that the availability and quality of such aid will be dependent upon a contact's situation, personality, and relationship to the PCs.) Generic contacts can serve well as a resource for a referee to use to help spur the adventure plot along, allowing him or her to drop an unexpected ally into the story just when the PCs really need one. How these two types of contacts are used will become more clear from the explanations that follow.

Off-World Contacts: Given the size of the **Traveller** adventuring universe (thousands of light-years of space and thousands of star systems), referees should take care to keep track of which of a character's contacts are homeworld contacts and which are off-world contacts. In general, any PC from homeworlds in the Wilds with a Pre-Stellar– tech code should yield only homeworld contacts. Because of the interstellar contact, any of the other three stellar regions will have the possibility of off-world contacts. Whenever a contact is rolled, roll an additional 1D10 on the table below to see if the contact is off-world. Note that the die roll chance is greater in a term in which a special adventure/duty/assignment was rolled.

The simple fact that a contact was a homeworld contact does not mean that that person can only be met again by returning to the homeworld, only that an interstellar reunion between the character and contact will be somewhat less likely than meeting him or her on a visit home. For this reason, interstellar meetings should be exciting events, and offer an excellent chance for roleplaying as the PC and NPC contact catch up on old times.

"Boggs! I can't believe it! I haven't seen you since I left on the trader! I'm glad to see you made it off that old dirtball, too. How've ya been?"

In many cases, such meetings can be a prelude to an adventure.

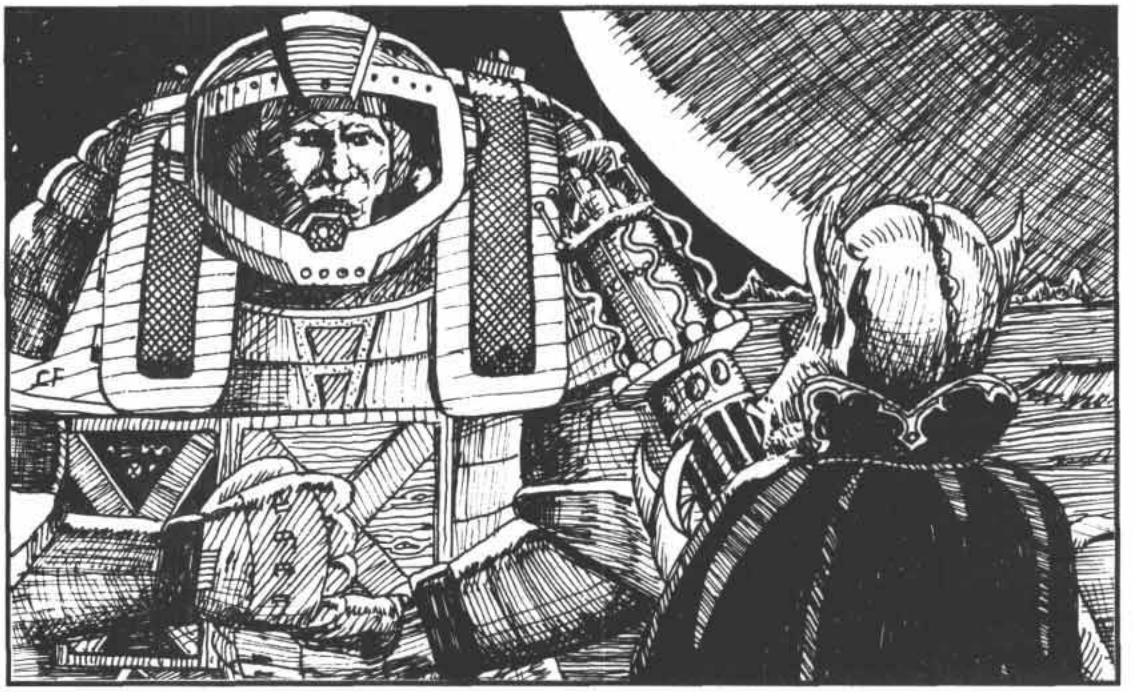
"Duro, am I glad I found you! You won't believe how bad things have gotten since you left. The Combine has nationalized all of the mines and has completely clamped down on all off-world travel. No one can get on or off now. Can you help us?" And if this isn't enough, the referee can always go on: "Remember Clarisse? Yeah, from chemistry class. She always did like you. She said she knows you'll come back and help us. You won't let us down, will you?" Referees will soon find that playing NPC contacts is the most fun you can have without a vac suit (whatever that means).

Region Type	*Nonspecial Term*	*Term with Special Duty*
Regency	4+	2+
Old Expanses	6+	4+
Pocket Empire	8+	6+
Wilds	—	10*

*At referee's discretion only. The referee may stipulate that the world has received *no* interstellar contact of any kind since the Collapse.

Generic Contacts

Generic contacts are received as a result of career terms during character generation. If players desire, they may generate names and statistics for these characters, or they may leave this entirely up to the referee. Perhaps best is a course that combines these two, in which a player suggests the contact's name, general description, and areas of expertise, and then the referee generates the details of attributes and skills. In this way, players determine what sorts of persons become important to their characters' lives, but some mystery remains as to the contacts' exact abilities. This fosters a sense of contacts being personalities rather than merely lists of statistics.



The career notes list contacts in terms of what they were doing when a PC first met them. A basic description of each of those contact types is given below. However, just as a PC may have changed careers since the time the contact was originally made, so may have the NPC. The final determination of what has happened to a contact in the intervening years (including what new abilities the contact may have gained) is left to the judgment of the referee, as with all NPCs.

Academic: The contact was a member of the intellectual community, meaning he or she could have been a professor, a writer, or a member of a social sciences think tank. Most of these sorts will still be working at the same career when a PC later meets them again.

Business: The contact was a member of the business community, perhaps a corporate executive, or maybe a powerful figure in banking or investments. On the other hand, the contact may have been the owner of some smaller business that was important to the PC. In either case, such contacts may have made or lost a fortune since the time the PC last saw them.

Criminal: This contact was making a career of illegal activities when first met by the PC. Since that time, the NPC may have gone straight, been imprisoned, or even killed. In the last case, someone close to the original contact, perhaps a partner or henchman, remembers the PC and becomes the new contact.

Entertainment: The contact was involved in the entertainment industry, whether as an actor, director, writer, or technician. In all likelihood, he or she still is, although given the vagaries of popular taste, his or her level of success will probably have changed.

Government: Such contacts were some form of government official when the PC last knew them. Chances are, that remains true when the PC meets them again, although likely not in the exact same capacity.

Intelligence Community: An intelligence community contact worked in espionage when the PC first met him or her, either as a field operative, a controller, or an intelligence analyst. In all probability, such contacts, when the PC meets them again, will still be involved in espionage, although they will likely have risen in authority.

Journalist: The contact may have worked with the PC on a newspaper, magazine, or broadcast news-gathering staff. The contact is probably in the same line of work, although will probably have changed position or company more than once.

Law Enforcement: The contact was a policeman or investigator of some sort, and is probably doing the same thing now, most likely for a small community government.

Medical: The contact was a medical doctor or administrator when the PC last knew him or her. It is extremely likely that such contacts will still be involved in that business.

Military: Military contacts were in the army, navy, etc., when the PC first made their acquaintance. There is good chance that these contacts will have since left the military and moved on to a civilian career closely associated with their military specialty.

Specialist: When the PC knew him or her, this contact was a construction engineer, medical technician, or one of the other specialities mentioned in the career lists. It is the nature of such specialists to continue in their specialty, although they will undoubtedly have increased their expertise since the PC last met them.

Trader: The contact is a travelling interstellar trader. This sort of contact may be encountered again almost anywhere, and will probably have extensive information about whatever area the character is in.

Wealthy: The contact was wealthy when he or she originally became friends with the PC. Wealthy con-

tacts who have grown wealthier will be difficult to contact again, due to increased security, higher mobility, etc. Nonetheless, it can be very handy to have a wealthy friend.

Solid Contacts

Solid contacts are those whose present whereabouts the PC knows, and with whom the PC has fairly regular dealings. These include three different types of characters. The first are the other PCs in the adventure group. When a group is first put together, or whenever a new PC joins, the players and referee should work together to determine how the group members know one another. As long as each PC has some link to one other in the group, that is enough to justify their all working together. Understand that while PC links are similar to NPC contacts, they do not actually use up any of the contact designations given by careers. PC links are in addition to those contacts.

The second type of solid contact is basically a generic contact that a PC has asked to have as a regular source of aid, even before the campaign begins. This simulates the player looking up an old acquaintance and solidifying their relationship. For example, a player asks to convert one of her criminal contacts to a solid contact, so that she can have someone in the local starport to turn to for underworld information and equipment. The referee agrees, deciding that it would actually make his job easier to have an established source of such things. This type of solid contact *does* use up one of the player's listed contacts from her careers. The difference between homeworld and off-world contacts becomes very important in this context. Nonetheless, a player a long way from home with only homeworld contacts should feel free to ask the referee to convert a contact, but the referee will have final say in whether one of these contacts has made it off-world into a position to be able to help the PC.

Finally, the third type of solid contact also involves generic contacts that have been converted. In this case, though, the contact is converted during an adventure, usually at the referee's instigation.

Note that while solid contacts cannot be turned back into generic ones, they can turn up again in a different place if the referee desires. In general, though, once a generic contact is turned into a solid one, the referee must pay a little closer attention to that NPC's destiny, in order to remain true to the character's desires and unfolding history. The criminal contact in the example above might become a drifter and end up in a completely different region of the globe, for instance, but the mayor of a city is much less likely to wander about so freely.

Generating Solid Contacts During Play: The referee should always be open to the possibility of the players making new contacts during play, and should usually have an idea whether a new NPC will be favorably disposed to help the PCs or not. In addition, players may attempt to gain solid contacts during play. These attempts should be roleplayed out, but PC groups with skills in Carousing, Recruiting, Persuasion, and Leadership should be given greater chances of success.

AGE

When we found out what happened to the crews of those first ships we sent into the Wilds, it was as if everyone went a little crazy. Or maybe we all just grew up. Maybe there isn't a lot of difference. Veronique had been on one of those ships—sweet, smart, gentle Veronique.

Grandfather, by then a white-haired patriarch, stood in council and spoke for a long time—spoke about what it must have been like for the people in the Wilds to have lost so much so quickly. The memory of what had been before was still strong in him—strong enough that he could understand what the loss of it could have done to people, could have driven people to do. And he wanted all of us to understand, too.

I understood. I understood better than Grandfather. This was disease. Disease worse than the Black Death, worse than Virus. And we had the cure—star-hot plasma and RAM grenades and coherent light. I said as much.

Things were never the same between Grandfather and me after that. There was just too much of the past in him to have much heart for the future—or much stomach for it.

A character's age at the time an adventure campaign begins is determined by multiplying by 4 the number of terms served and adding 17 to the result. In other words, (4×Terms)+17=Age. Age adds a further dimension of reality to play, helping players visualize their characters as actual people, rather than merely numbers on paper. It is possible for beginning characters to range anywhere from age 17 on up, although few characters will be older than 37 or so.

Effects of Age

At age 33, the effects of age may start to take their toll on a character physically. Beginning at age 33 (i.e., the end of the fourth term), a character must check for the effects of age at the *end* of each term. At the end of the fourth and fifth terms, the character rolls 1D15 (D15 numbers are generated by rolling 1D20 and rerolling all results of 16-20) to check for losses in Agility. At the end of the sixth and seventh terms, both Agility and Strength must be checked. At the end of the eighth and every term thereafter, Agility, Strength, and Constitution must be checked.

CONSOLIDATED EFFECTS OF AGE

Term	Start Age	End Age	ST/SD*	STR	Losses AGL	CON	INT
1	17	21	4	—	—	—	—
2	21	25	4	—	—	—	—
3	25	29	3	—	—	—	—
4	29	33	2	—	Y	—	—
5	33	37	1	—	Y	—	—
6	37	41	1	Y	Y	—	—
7	41	45	1	Y	Y	—	—
8	45	49	1	Y	Y	Y	—
9	49	53	1	Y	Y	Y	—
10	53	57	1	Y	Y	Y	—
11	57	61	1	Y	Y	Y	—
12	61	65	1	Y	Y	Y	Y
13	65	69	1	Y	Y	Y	Y
14	69	73	1	Y	Y	Y	Y
15	73	77	1	Y	Y	Y	Y
16	77	81	1	Y	Y	Y	Y
17	81	85	1	Y	Y	Y	Y
18	85	89	1	Y	Y	Y	Y
19	89	93	1	Y	Y	Y	Y
20	93	97	1	Y	Y	Y	Y
21	97	101	1	Y	Y	Y	Y

* ST/SD = Number of Subsequent Term/special duty skills.

In addition, once characters reach age 65, at the end of the 12th term, they must start rolling for a decrease in Intelligence. (The Consolidated Effects of Age Table above illustrates these progressions, as well as the reduction in the amount of skills gained during careers due to aging.)

The character loses 1 point from the relevant attribute if the 1D15 roll is less than the current level of that attribute. If the roll equals or exceeds the attribute, there is no loss. This check, also called an age saving throw, is made at the end of each term.

Example: Ari Lionia ends her fourth term and must roll for a reduction in her Agility, which is presently 9. She rolls a 3 and since that is less than her current attribute level of 9, she loses 1 point of Agility. In another example, upon leaving his eighth term to enter active play, Winfield Jackson must roll three times, once for Strength (presently 6), once for Agility (presently 9), and once for Constitution (presently 5). The rolls are 7, 6 and 5 respectively, so Jackson does not lose any Strength or Constitution points, but has his Agility reduced to 8.

Aging in Play: Aging in play works the same way. Upon reaching the crucial age as indicated in the End Age column above, the player must roll for whatever attributes are marked Y in the Losses columns. For example, on Harlan Marshall's 45th birthday, his player must roll to save his STR 5 and AGL 8. The player rolls 10 and 5, saving the STR, but losing a point of AGL. Not too bad. Soon, however, it is poor old Admiral Hutchins' birthday. He is 65, with a UPP of 42248A. He rolls for STR, AGL, CON, and INT with a 3, 9, 2, and 3. Hutchins loses 1 point from each his STR and INT. His UPP is now 32238A. Happy birthday, Admiral.

Although rolling for character aging on their birthdays is convenient, referees may wish to invoke the attribute changes gradually over the course of the year.

Combating Aging Effects

There are several ways players can attempt to reduce or eliminate the effects of aging.

Physical Development Program: At any time once play has begun, a player can announce that his or her character is embarking on a physical development program. Each such program lasts for four years, the same as an aging period. Each year during this period, the player must roll a Formidable: Willpower test. If this test is made each of the four years, the character gets a +2 die modifier on each of the three Physical Attributes when the next aging rolls come up. If the Willpower test is failed on any one or more of the four years, the effect is lost. Characters may not attempt this program during character generation, only once play begins.

This physical development program assumes that the character is spending at least one hour each day in some form of disciplined exercise, and the referee must ensure that the character sticks to this regimen, or the effects will be lost. These effects are up to the referee, but they should not be too onerous. They are best used as grist for a character's roleplaying. For example, when the PCs' starship arrives on a world, a PC carrying out a physical development program might look for an outdoor track to run on ("Man, I need a change of scenery from the same old walls of B Deck") or a weight room at the starport ("I hear these high-tech worlds have got great gravitic strength training machines"). If, on the other hand, the PCs are held prisoner in manacles for several months, the exercise regimen has probably been broken for that four-year period.

Anagathics: Anagathics are longevity drugs. They help prolong life and prevent aging. Upon reaching age 29 at the end of the third term of service (but never before age 29), a character may try to locate a source of anagathics. If successful, and if the supply can be maintained, the character will age ever so slowly. With luck, the character may reach an age of 100 or more before old age finally takes its toll.

If the character wants to use anagathics, he or she must so specify before making the roll to continue character generation for the term. In deciding to be an anagathics user for the term, the character must make the following concessions:

For each term in which the character indicates his or her desire to use anagathics (whether a supply is found or not), his eligibility for income benefits is forfeited for that term (see the Starting Money and Initial Equipment section on page 36). This represents some of the great expense involved in maintaining a steady supply of anagathics. This difficulty is based on the fact that anagathics have very complex interactions, not only with other drugs and foods, but also with an individual's metabolism, which changes under different conditions. The safe use of anagathics requires not only regular applications of the drug, but also regular medical checkups to monitor for changes in the drug's interaction with the user.

Finding Anagathics: To find an available supply of anagathics for the four-year term, roll 12+ on 2D6, with the following DMs based on the character's homeworld: +3 if Starport A, +2 if Starport B, +1 if Starport C, +1 if tech level = Early Stellar, +2 if tech level = Average Stellar, +3 if tech level = High Stellar, –3 in the Old Expanses, –4 in a Pocket Empire, and –5 in the Wilds. There is an additional DM used in the Regency: –1 for each level of SOC above 11 (B), which reflects the strong Imperial tradition against the use of anagathics by the hereditary nobility. Thus –1 for SOC C, –2 for SOC D, and so on.

If the character fails the anagathics availability roll, one retry is allowed if the character successfully makes the required roll to continue character generation (by rolling greater than the current term number on 2D6).

Anagathic Effects: A successful availability roll for anagathics has two effects. First, the die roll to continue character generation is not required; the character may automatically pursue another term (this is irrelevant to players and referees who are using the choice of age system). Second, the character automatically succeeds at the aging rolls for two attributes of his or her choice. This means that the character makes no aging rolls at all until the age 49 (eight terms) line is reached, because only two attributes (STR and AGL) are rolled before this age. Once on the age 49 line, the character selects the one characteristic (STR, AGL, or CON) to risk in an aging roll. The age 65 (12 terms) line of the Aging Table requires four saving throws, so upon reaching the age 65 line, two attributes of choice are automatically saved, and the other two must be risked in an aging saving throw as normal.

While using anagathics, the character advances down the Aging Table as usual, but is simply immune to two aging rolls each term. The player should also make a note of the age at which the character began using anagathics, because the character's apparent age is frozen at that point. This is the case so long as a constant supply of anagathics is maintained. If the supply is broken, the character's apparent age will begin advancing again.

If the character ever loses the supply of anagathics for a term, at the end of the term, roll saving throws twice for each characteristic (but do not yet start advancing the character's apparent age; it takes a while for the effects of anagathics to totally go away). Both rolls must succeed, or the characteristic is lowered by the indicated amount on the Consolidated Effects of Aging table. This represents the withdrawal effects from interrupting the supply of anagathics.

If the character continues to abstain from anagathics in subsequent terms, normal aging rolls resume at the end of each term. The double saving throw withdrawal effects occur only at the end of the first term in which the character stops taking anagathics.

If the character later regains the supply of anagathics, the term in which he or she begins retaking anagathics is treated again as a first term on anagathics: The saving throw benefits are received, and the character's apparent age at that time is again frozen. Obviously, anagathics are most effective if they can be taken long-term without interruption. A continually interrupted supply can have devastating effects.

Recording Age: If a character's age has ever been affected by anagathics, so indicate by writing the age as: Age 33 (49).

The 33 represents the character's apparent age. The (49) represents the character's actual age in years. If the character has an available supply of anagathics, list anagathics as a possession. If the character is currently in withdrawal from anagathics (just lost the anagathics supply this term), add an exclamation point after the age: Age 33! (49). Players whose characters are using anagathics should also keep careful track of the total number of terms during which the character was under the effects of anagathics, in order to determine eventual side effects.

Anagathic Side Effects: After about 60 years of use (15 aging periods of cumulative use, with or without periods of interruption), anagathics begin to turn on

ANAGATHIC SIDE EFFECTS DMS

Years of Use	*Aging Periods*	*DM*
60	15	0
64	16	+1
68	17	+2
72	18	+3
76	19	+4
80	20	+5

ANAGATHIC SIDE EFFECTS

Roll 2D6, add age DM, subtract Medical skill level

Roll	*Effect*
2	No effect
3	No effect
4	No effect
5	Minor growths
6	Minor growths
7	Minor growths, +1
8	Major growths, +2
9	Major growths, +2
10	Major disfiguration, +3
11	Major disfiguration, +4
12	Minor psychological effects, +6
13	Moderate psychological effects, +8
14	Major psychological effects, +10
15	Psychopathic behavior, +12

their users. The manipulation of the body's growth ability that is used to keep the body constantly renewing itself to maintain youthful cells begins to get out of sync. This is first evidenced by the growth of rather unsightly cysts and tumors, and discoloration of certain body areas where local cell growth is getting out of control. The cysts and tumors are relatively easy to remove, and cosmetics can treat many of the other difficulties. As time goes by, however, the effects tend to get worse. Certain body parts experience runaway growth, and in some cases the body attempts to grow new limbs. Treatment of these effects requires major surgery, and often requires replacement with cybernetic or transplanted limbs. Ultimately, psychological damage is done to the user by a combination of direct effects of the drugs and creeping discomfort at the physical changes being brought on.

Roll on the Anagathic Side Effects table at the end of each aging period once anagathics use has reached 60 years. Add a +1 DM for each additional four-year aging period since the character reached 60 years of anagathics use. Assuming the character is under the regular medical attention of a doctor, use the doctor's Medical (Surgery) or Medical (Diagnosis) skill (not asset) as a –DM. In addition, some characters may have metabolisms that are ultimately unsuited to anagathics use. This can be determined by a Formidable: Medical (Diagnosis) task by the user's doctor when the character first begins anagathics use. This is an uncertain task, so characters may not always know whether anagathics use is especially dangerous for them. Reputable doctors will not cooperate in an anagathics regimen with characters who are found to be unsuited to it. Characters who are unsuited for anagathics have an automatic +5 DM on all side effects rolls, plus there is no –DM applied for Medical skill of the attending physician.

Note that some of the results on the Anagathic Side Effects table have an additional +DM after the description of the result. This is a cumulative DM which is used in addition to the years of use DM on the next side effects roll.

Minor growths require minor surgery with no danger of physical damage to the character. Major growths require surgery with moderate danger to the character; major disfigurations require major surgery with significant danger to the character. Psychological effects are up to the referee. Referees may stipulate that characters who already exhibit psychological imbalances will experience higher levels of psychological effects from the table.

What is ironic about these side effects is the fact that the body still continues to be prevented from aging even while it is decaying in other, perhaps more offensive, ways. Even though the character might have to have cysts removed a couple times each year, and has the bud of a misshapen hand growing on a shoulder blade, he is still young. (Three score and 10: it's not just a good idea, it's the *law*.)

Aging Crisis

If, as a result of aging, a characteristic is reduced to 0, the character has an aging crisis and becomes quite ill. The character must make a 2D6 roll for 8+.

If the roll succeeds, recovery is made immediately. The characteristic which was reduced to 0 automatically becomes 1. If the die roll does not succeed, the character still survives and recovers the attribute to level 1, but receives no skills or benefits for the term and may not enter another character generation term.

This process occurs each time a characteristic is reduced to 0. If more than one characteristic reaches 0 simultaneously, perform a separate aging crisis roll for each characteristic.

Disability: At a certain point in life, characters may elect to quit adventuring, allowing players to generate new characters. The referee may elect to retain these characters as NPCs, perhaps as contacts of the new player characters.

SKILL- AND ATTRIBUTE-DERIVED VALUES

Once the player has finished all steps of character generation affecting skills and attributes, the following values, which are derived from skills and attributes, can be calculated.

Hit Capacity: Hit capacity is a measure of the amount of damage (hit points) a character can take before suffering serious injury. Hit points can be suffered in any of seven different parts of the body: left leg, right leg, left arm, right arm, abdomen, chest, and head. The hit capacity of the head is equal to twice the character's Constitution (CON×2). The hit capacity of the character's chest is equal to 3 times the sum of Strength and Constitution—(STR+CON)×3. Each of the other body parts has a hit capacity equal to 2 times the sum of the character's Strength and Constitution—(STR+CON)×2.

Boxes are provided on the character sheet for players to write in their PCs' wound level thresholds so the players will know to what degree their characters have been wounded. See "Wound Effects," page 288, to determine wound level thresholds and the effects of being wounded. Except for the Critical column, the values in the boxes on the character sheet represent the amount of damage the PC can take before progressing to a more severe wound status.

The Current boxes should be used to keep track of how much damage the character has taken. The numbers in the Slight wound boxes are equal to the base hit capacity numbers of the PC (generated by the above procedure).

Weight: A male character's weight in kilograms is equal to 80, plus 4 times Strength minus Agility, or [4×(STR–AGL)]+80. Thus, a male character with a Strength of 6 and an Agility of 1 would weigh 100 kilograms (about 220 pounds), while a male character with a Strength of 4 and an Agility of 8 would weigh 64 kilograms (roughly 141 pounds).

Physiological differences, particularly in bone structure, result in smaller body masses for women. Therefore, weight in kilograms for female characters is calculated by substituting 65 for 80 in the formula, or [4×(STR–AGL)]+65. Thus, a female character with a Strength of 6 and an Agility of 1 would weigh 85 kilograms (about 187 pounds), while a female character with a Strength of 4 and an Agility of 8 would weigh 49 kilos (roughly 108 pounds).

Load: A person can lug a considerable weight of equipment, even cross-country, but there is a limit. In **Traveller**, characters may carry, without being heavily burdened, a total weight in kilograms equal to 3 times the sum of their Strength and Constitution—(STR+CON)×3. This is called a character's *normal load.* Up to twice the normal load can be carried, but the character is considered *burdened* and has movement reduced, as explained on page 265 in the Personnel Movement section. A burdened character's Initiative is also temporarily reduced by 1 (to a minimum of 1; see Initiative below and on page 264). A character may lift loads up to 4 times the normal load and carry them short distances (50 to 100 meters at a time; Initiative is reduced to 1 while this load is carried). Note that multiple characters may add their load capacities to lift heavy objects.

Throw Range: The distance (in meters) a character can throw a one-kilogram weight accurately is called the character's throw range. Throw range is 4 times the character's Strength (STR×4).

Unarmed Combat Damage: Unarmed combat damage indicates the hit-point loss a character inflicts on an opponent when that opponent is successfully hit during melee combat. Unarmed combat damage is determined by multiplying Unarmed Martial Arts skill (not asset) by Strength and dividing by 10, rounding fractions down (Skill×STR)+10. The result is the number of hit points the striking character will inflict per successful attack. (*Note:* A result of 0 is considered 1.)

Example: Reese has a Strength of 7 and an Unarmed Martial Arts skill level of 8. 7×8=56. 56+10=5.6, rounded down to 5. Therefore, Reese will inflict 5 hit points per unarmed melee combat attack.

INITIATIVE

By the time we hit Hastaan and liberated it from the benevolent rule of its "God-Emperor" (I am not joking), we'd all been through enough that we knew what we were doing and had the drill down pretty tight. We were on the ground before his air defense network had a decent fire control lock on anything but decoys, inside the city before his troops had the guntracks powered up, and inside his palace before anyone thought to button it up. Then we hit his Sacred Guard, 500 of the roughest, toughest guys he had.

I suppose they were pretty good at bullying sodbusters and stealing chickens, but when it came down to their first real fight, they were just another bunch of jerks in silly outfits. We found out later their motto was "Death Before Defeat."

All they got wrong was the order.

Initiative represents a character's ability to remain cool and act most effectively in combat situations. Characters with a high Initiative score will move further and/or achieve more actions in a combat turn than will characters with low Initiatives. This is not because the high-Initiative characters are any faster, but simply because they react more quickly and spend less time hesitating.

Initiative values range from 1 up, with beginning characters tending to start out on the low end of the scale, then increasing as they gain experience in combat. Each character in **Traveller** can perform either one or two actions per combat turn, depending on their Initiative level, and the order in which actions are

performed is determined by the characters' Initiative ratings. The Planetary Combat section, page 264, explains this all in a bit more detail, but it should be obvious even now that Initiative is very important if you are to be involved in combat.

Each character's initial Initiative is obtained by a die roll based upon the types of careers that character has pursued. Education and civilian careers yield a beginning Initiative of 1D6+2, rounded down (count 0 results as 1; thus the results are 1, 1, 1, 2, 2, 3). Military careers yield a roll of 1D6. Also, in each of these two areas, there are some careers that give bonuses to Initiative, as indicated under each career, beginning on page 43. (Note that bonuses listed for civilian careers only apply to the civilian die roll [1D6+2], and not to the 1D6 military die roll. These bonus points are *not* cumulative—you can only gain a maximum of +1 to a roll.) If your character has both military and civilian careers, choose which of the two rolls you wish to use. For example, Kris Leathers has spent two terms in the Marines and one in civilian law enforcement. The Marine career gives her a 1D6 roll, and the law enforcement would give her 1D6+2 +1. Leathers' player decides to take the civilian roll as the bonus guarantees her an Initiative of at least 2.

If you prefer not to leave beginning Initiative to chance, you may simply assign a 2 to the character, or a 3 if at least one military career was taken. Career bonuses do apply to this option as well (a military character with a bonus for being a commando would begin with a 3+1=4).

STARTING MONEY AND INITIAL EQUIPMENT

Just as characters have a history of careers and contacts before the start of a **Traveller** adventure campaign, they will also have accumulated equipment and savings. In order to reflect this fact, players generate starting money for their characters, then use that money to buy the equipment they desire.

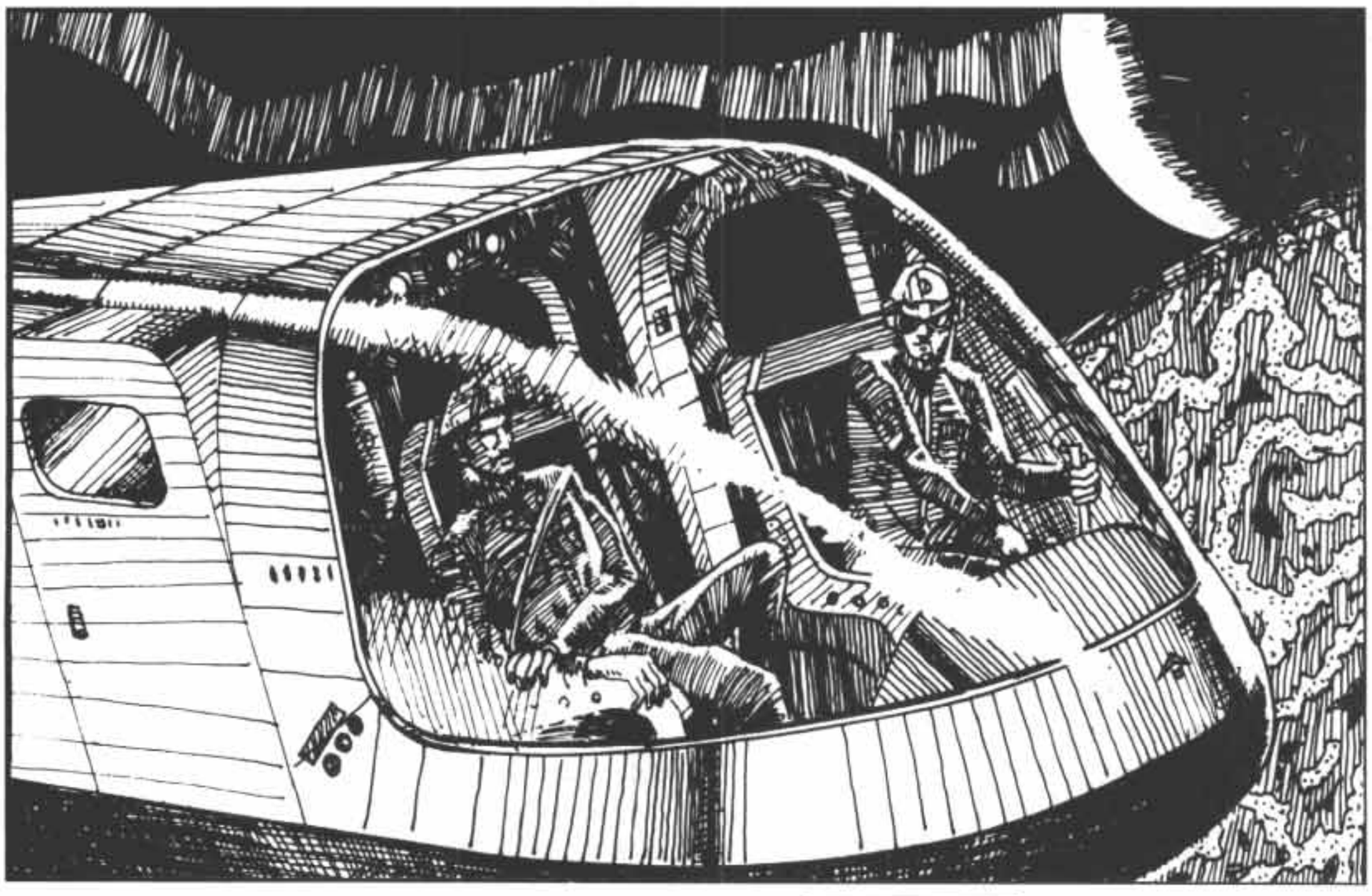
Starting Money

In general, during each career term, a character gains a certain base cash value multiplied by the sum of the character's Social Standing or Gambling asset, whichever is higher. The base cash value is determined by the tech level of the character's homeworld. This rather generically represents both a character's earning power and ability to save. Of course, the money itself represents not only savings, but also equipment accumulated over the years. That is, after starting money has been calculated, any of it that is spent on equipment is considered to have been spent over the course of the character's life thus far, not all at once. And any money left over is considered savings.

As has been stated, Social Standing or the Gambling asset is typically the value used when calculating starting money. Some career descriptions list exceptions to this rule. (For example, belters receive no money for terms served as belters, but may have made a strike and earned considerable money from that.) There are also several other special cases, as noted in the Other Effects section of the specific career description. For example, no money is ever generated for any term spent in education.

Also, remember that each term spent seeking anagathics (whether successful or unsuccessful) cannot be counted toward generating money.

Finally, while it may be somewhat easier to generate all starting money after character generation is complete, it is actually more accurate (and more enjoyable) to do so term by term as characters progress through their careers. This is so because Social Standing often changes during character generation. For



purposes of fairness, it is important that all players either do it the one way or the other. Your referee will tell you which way he or she prefers.

For each eligible term in character generation, the character multiplies the cash base value from the table below by the higher of his SOC or Gambling asset. For example, a six-term character who spent one term in undergraduate university, one in law school, one as an attorney, two as a criminal, and one as a prisoner, would only receive money for three terms.

CASH BASE VALUES

Tech Level	*Cash*
Pre-Industrial	Cr10
Industrial	Cr100
Pre-Stellar	Cr500
Early Stellar	Cr1000
Advanced Stellar	Cr5000

Initial Equipment: After generating a character's starting money, a player can look through the equipment chapter and purchase items appropriate to the character. While doing this, there are a few things to keep in mind.

First, on many worlds it is illegal to carry knives, pistols, or other weapons. Furthermore, just because something is legal, that doesn't necessarily make it wise. If you walk into a bank with a laser rifle across your back, a revolver strapped to your thigh, and a hunting knife in each boot, you can expect trouble from the locals.

Next, buy equipment that is appropriate for your conception of your character. Your referee will reward you for adhering to a realistic character concept. Before buying equipment, ask your referee if he or she has any guidelines for you to follow specific to the campaign you will be playing. For example, laws concerning what is or is not legal vary greatly from locality to locality in **Traveller,** so depending upon where your characters will begin play, there may be greater or fewer constraints on your characters. Your referee may also inform you that certain items of equipment are easier or harder to find in your character's locale, which could also affect your purchase of equipment. By following your referee's guidelines, you'll help to ensure that your adventures have a consistent atmosphere.

Travellers' Aid Society: Some characters in the Regency may be granted membership in the prestigious Travellers' Aid Society (see The Travellers' Aid Society on page 220 for more details). Characters who spend one or more terms in the navy, Marines, or belters, or as a diplomat or wealthy traveller can receive membership in the TAS in place of 1 ship DM. Membership provides a free high passage ticket every two months, plus inexpensive, high-quality food and lodging at TAS lodges located at all type A and B starports.

Too many people want to get "off-dirtside" for the number of ships there are out there, and everyone wants a piece of whatever action they can find. You end up working for a ship share here, another there, taking a couple prize shares from a raid somewhere else, and swapping the things around until you have pieces of a dozen ships and nobody knows who the hell owns what.

It hasn't taken long for me to figure I was using up my luck faster than I ought to. When it's time to out-process from the Marines, I'm going to find a steady berth doing what Strombooli had taught me to—working the feeder routes in a tramp trader and keeping my eyes open.

There are half a dozen of us who're going to go in together. We'll swap out our prize shares and some cash for enough of a working interest in an antique ship. That'll be enough to get us started.

Starships: It is possible for characters to own a starship at the beginning of the game. Many careers show a die roll modifier for starship ownership under the Other Effects listing. In addition, characters may purchase ship ownership DMs for Cr50,000 each following determination of their cash assets. Characters may also cash in the ship ownership DMs they have received for Cr10,000 each.

One die roll is made for the entire adventuring group, and all die roll modifiers are added together. Several tables are provided, and the table used is determined by the character with the highest single type of ship DMs. If several characters have the same total, any qualified table may be chosen. Purchased DMs may be taken toward any ship type desired.

For example, one character has a ship DM of +4 for a Free Trader, while a second character has ship DMs of +3 for a Scout/Courier and +2 for a Corsair. This gives the two of them a combined DM of +9, and the roll is made on the Free Trader table since that is the highest single ship type DM (even though the second player has a higher total combined DMs).

The result on the Starship table (page 39) indicates either a ship of the indicated type or a certain number of "HP," or high passage tickets or "MP," or middle passage tickets (see page 219). If a result in HPs is obtained, players contributing DMs earned as part of character generation split up the HPs according to their DM contributions. Purchased DMs are refunded to the player who purchased them, but only at trade-in value (i.e, Cr10,000 as opposed to the Cr50,000 paid up front). Trying to buy a ship is economically risky.

Ship results are usually shown with a value modifier of –1 or more. This modifier means either that a large

outstanding balance is owed on the ship, the ship is actually a modification of some other design and not purpose-built, or it is old and consequently worn out. (Often it is a combination of all three.) The total value modifier may be divided between these three categories as desired. Each value modifier adds either 1 to the wear value of the ship (to a maximum of 10), a –1DM on the Ship Types table on the following page, or five years to the outstanding mortgage (to a total of 40 years, or 8 modifiers). For as long as remains to pay off the loan, the PCs must pay 1/240 of the new price of the ship to the bank or one of its authorized branches *each month* (starship prices are listed in the Equipment & Technology chapter).

The players must first choose how many of the value modifiers they wish to work off as –DMs on the Ship Types table, and roll for the ship type. This has the result of giving smaller and less capable ships. Note that the table also allows +DMs. These can be taken on a 1-for-1 basis at the cost of additional value modifiers to those rolled on the Starships table. The players can then work these off as either wear value or outstanding mortgage. Note that players can not take +DMs on this table that would increase their outstanding value modifiers to over 16 points.

Stellar Regions: Modifications are made to the die rolls based on the stellar regions in which the PCs are generated. These reflect the relative scarcity of ships in certain regions, and therefore their absolute value in these areas. This is reflected in two different ways. First is a –DM for stellar region, as shown in the Stellar Regions DMs table.

The second is the way in which the outstanding mortgage requirement is satisfied. In the Regency, these can be converted into a percentage ownership in the ship by the Regency Quarantine Service (which amounts roughly to a reserve commission in the Regency Navy). Briefly, security requirements and the need to maintain an airtight quarantine against the virus have put a premium value on defensive ships in the Regency. In order to keep the maximum number of ships available for use, the Regency has taken to subsidizing the private ownership of ships that can be used to enforce the quarantine. Each value modifier taken as Regency ownership is equivalent to a 12.5% share in the ship by the Regency, and reflects an increasing probability that the PCs and their ship will be called into service on Regency business. This is not required, however, and players can opt to assign value modifiers to normal mortgage payments owed to a bank.

In the Old Expanses and Pocket Empires, government-owned banks own the mortgages on the ships, which means that not only must the players continue to meet the payments, they must also use their vessel in accordance with the directives of the government. In almost all cases, this requires adherence to certain shipping schedules. In this way, these governments ensure that service is maintained to their member worlds by the handful of ships that are available. There is one advantage to the PCs in this arrangement: The government does not require payment each month if the PCs cannot afford it. It is much more important that they stick to the shipping schedule. No penalties accrue for missed payments, but the PCs still remain far away from free and clear ownership.

In the Wilds, all value modifiers are immediately applied to the ship's wear value, up to the maximum level of 10. All excess value modifiers are disregarded. In the Wilds, the few ships date back to the Final War, and have already been lovingly passed down from one crew to the next for so long that there are no outstanding bills, only outstanding maintenance. Note that this means that no PC groups in the Wilds can take +DMs on the Ship Types Table if this would raise the total value modifiers to more than 10.

Ship Types: A Scout/Courier is a very common type of dispatch, survey, and exploratory vessel within human space. A Survey ship is a larger ship designed for detailed scouting and survey. A Free Trader is an elementary interstellar merchant ship plying the space lanes carrying cargo and passengers. Far Traders, Fat Traders, and Liners are other interstellar merchant ships with larger size or greater performance. A Yacht is a pleasure craft, owned by someone who can afford to use it as he or she sees fit. A Lab Ship is a mobile base for scientific analysis and investigation. A Warship is an armed starship, perhaps a patrol or escort vessel, or a commercial raiding ship—a privateer or pirate vessel. A Seeker is a Scout/Courier modified for asteroid-prospecting and mining.

STELLAR REGIONS DMS

Stellar Region	*Starship DM*	*Outstanding Mortgage Options*
Regency	—	RQS ownership or standard bank loan
Old Expanses	–10	Government holds mortgage, dictates schedule
Pocket Empire	–20	Government holds mortgage, dictates schedule
Wilds	–30	All value mods applied up to maximum wear value 10, no mortgage

STARSHIPS

Roll 2D6 and add all ship DMs from participating PCs.

Die	Scout/Courier	Trader	Yacht	Lab Ship	Warship
2-3	1 MP	1MP	1HP	1HP	2HP
4-6	1HP	2HP	2HP	2HP	3HP
7	2HP	3HP	4HP	4HP	4HP
8	–16	5HP	6HP	6HP	6HP
9	–15	–16	–16	–16	8HP
10	–14	–15	–15	–16	12HP
11	–13	–14	–14	–16	14HP
12	–12	–13	–13	–15	–16
13	–11	–13	–13	–15	–16
14	–10	–12	–12	–14	–16
15	–9	–11	–11	–14	–16
16	–8	–10	–10	–13	–15
17	–7	–10	–10	–13	–15
18	–6	–9	–9	–13	–15
19	–5	–8	–8	–12	–15
20	–4	–7	–7	–12	–15
21	–3	–7	–7	–11	–14
22	–2	–6	–6	–11	–14
23	–1	–5	–5	–10	–14
24	Full	–4	–4	–10	–14
25	Full	–3	–3	–9	–13
26	Full	–2	–2	–9	–13
27	Full	–1	–1	–8	–13
28	Full	Full	Full	–7	–12
29	Full	Full	Full	–7	–12
30	Full	Full	Full	–6	–12
31	Full	Full	Full	–5	–11
32	Full	Full	Full	–4	–11
33	Full	Full	Full	–3	–10
34	Full	Full	Full	–2	–10
35	Full	Full	Full	–1	–9
36	Full	Full	Full	Full	–9
37	Full	Full	Full	Full	–8
38	Full	Full	Full	Full	–7
39	Full	Full	Full	Full	–6
40	Full	Full	Full	Full	–5
41	Full	Full	Full	Full	–4
42	Full	Full	Full	Full	–3
43	Full	Full	Full	Full	–2
44	Full	Full	Full	Full	–1
45+	Full	Full	Full	Full	Full

SHIP TYPES

Roll 2D6 and apply ship type DMs.

2D6	Scout/Courier	Trader	Yacht	Lab Ship	Warship
–2	Scout	Scout	Mod Scout	Mod Scout	Mod Scout
–1	Scout	Scout	Mod Scout	Mod Scout	Mod Scout
0	Scout	Scout	Mod Scout	Mod Scout	Mod Scout
1	Scout	Scout	Mod Scout	Mod Scout	Mod Scout
2	Scout	Free Trader	Mod Free Trader	Mod Free Trader	Mod Free Trader
3	Scout	Free Trader	Mod Free Trader	Mod Free Trader	Mod Free Trader
4	Scout	Free Trader	Mod Free Trader	Mod Free Trader	Mod Far Trader
5	Scout	Free Trader	Mod Free Trader	Mod Far Trader	Mod Far Trader
6	Scout	Free Trader	Mod Far Trader	Mod Far Trader	Mod Subs. Merch.
7	Scout	Free Trader	Mod Far Trader	Mod Far Trader	Mod Subs. Merch.
8	Scout	Far Trader	Mod Far Trader	Mod Subs. Merchant	Mod Liner
9	Scout	Far Trader	Yacht	Mod Subs. Merchant	Mod Liner
10	Scout	Far Trader	Yacht	Lab Ship	Patrol Cruiser
11	Scout	Far Trader	Yacht	Lab Ship	Patrol Cruiser
12	Scout	Subs. Merchant	Yacht	Lab Ship	Patrol Cruiser
13	Mod Far Trader	Subs. Merchant	Yacht	Lab Ship	Close Escort
14	Mod Far Trader	Subs. Merchant	Yacht	Lab Ship	Close Escort
15	Survey Ship	Liner	Yacht	Lab Ship	Mercenary Cruiser
16	Survey Ship	Liner	Yacht	Lab Ship	Mercenary Cruiser

Mod Far Trader: When received in the Scout/Courier column, this is a Modified Far Trader with additional sensors and exploration equipment. From the Yacht column, it is modified to include sumptuous appointments and recreational areas in place of cargo. From the Lab Ship column, it is modified to include laboratory space. From the Warship column, it is modified with fire directors, weapons, and space for troops.

Mod Subs. Merchant: See Mod Far Trader above, except ship is based on the Subsidized Merchant ("Fat Trader") design.

Mod Free Trader: See Mod Far Trader above, except ship is based on the Free Trader design.

Mod Scout: When received in the Lab Ship column, this is a Scout/Courier with added laboratory space. When received in the Warship column, this is a scout with additional weapons and fire control systems. Note that in the Regency, any receipt of a Mod Scout can be taken instead as a Quarantine Cutter.

Scout: Note that in the Regency, any receipt of a Scout can be taken instead as a Quarantine Cutter.

Career List

In **Traveller**, careers are divided among three broad categories: Education, Civilian, and Military. Characters can pursue any types of career for which they meet the prerequisites (if any).

Note that while the careers listed here do not cover every possible occupation a person might pursue, it is possible to reflect other occupations by creatively mixing those listed below.

Clusters, Skills, and Cascades: In all of the lists below, clusters of skills are printed in bold while individual skills are printed in normal type. Individual skills that are printed in italics are cascade skills. When players select a cluster for their characters, they must then go to the skill clusters list to pick a specific skill from that cluster list. Players who select cascade skills must choose the cascade specialty. When a cluster or cascade is listed with a skill level number after it, that is the number of skills to be taken in the cluster or cascade, and must be specified immediately. For a listing of all skills, clusters, and cascades, see the Skills by Skill Clusters table on page 113 of the Task Resolution and Skills section in the "Referees" chapter.

Contacts: If more than one type is listed, the character may choose.

EDUCATION

Higher education is a prerequisite for many careers. Certain forms of higher education have Education attribute requirements for admission; others do not. All schools are limited to one term, except for graduate university, which may be taken as many times as desired.

Undergraduate University

In easy times, undergraduate education was seen as a generalized preparation for a broad range of activities. In the more challenging times covered by **Traveller**, a more pragmatic approach is followed, and undergraduate education is used to meet specific educational goals required by academic or technical careers.

Prerequisites: Education 5+, Homeworld Tech = Ind+.

Skills: Total skill levels equal to character's Education attribute from any combination of the following, but no more than level 3 in any one skill:

Physical Science, Economics, Engineer, Social Science, Fine Arts, Computer, *Language*, Leadership.

Contacts: One per term, either academic or journalism.

Other Effects: +1 EDU (after all skills have been awarded). No commissions, promotions, or special duty rolls are made. No income received while attending undergraduate school.

Military Academy

Not all governments believe in military academies. Many armies feel they do better by selecting promising enlisted personnel for officer training. But those governments that do maintain military academies do so at least in part because of the glowing traditions and reputations that these institutions maintain.

There are military-style academies maintained that serve the following careers: Army, Merchant Marine, and Wet Navy. The academy used for Marines is the Naval Academy (see Flight Academy, below).

Prerequisites: Strength 5+ and Education 6+ (or, on High+ Gov worlds, SOC 9+), Homeworld Pop = Mod+, Homeworld Tech = Ind+.

Skills: Total skill levels equal to character's Education attribute from any combination of the following, but no more than level 3 in any one skill:

Determination, Engineer, Interaction, Social Science, Space Tech, Technician.

In addition, the character receives all of the First Term skills from whichever service the academy serves.

Contacts: Two military.

Other Effects: No secondary activities are allowed while attending military academy, nor is any money received. Character receives an automatic commission into the career served by the academy. Character must serve at least one term in the career served by the academy. Since the character has already received the First Term skills for this career during the academy, the first real term in the career receives skills chosen from the Subsequent Terms section equal in number to the skill levels of the First Term package.

Graduate University

Characters who wish to progress from an undergraduate degree to a master's degree or doctorate go to grad school to do so.

Prerequisites: Undergraduate degree, EDU 7+ or INT 7+, Homeworld Tech = Ind+.

Skills: Four levels per term in any one specialty, plus a total of two levels in any electives.

Specialties: **Physical Science, Economics, Engineer, Social Science, Fine Arts**, Computer, *Language*.

Electives: Computer, Instruction, *Language*, Leadership.

Contacts: One per term, academic or government.

Other Effects: +1 EDU (after all skills have been awarded). No commissions, promotions, or special duty rolls are made. The first term provides a master's degree; each subsequent term provides a doctorate (or equivalent). Degrees must be taken in one of the specialties noted above. Characters who specialize in Persuasion are granted master's degrees or doctorates

in Communication. No income is received while attending graduate school.

Graduate university may be selected for as many terms as desired.

Law School

If you want to be a lawyer, you have to go to law school, but a lot of other lines of work can benefit as well from the things a law student learns.

Prerequisites: Undergraduate degree, EDU 5+ or INT 5+, Homeworld Tech = Ind+.

Skills: Admin/Legal 2, Interrogation 2, Observation 1, Persuasion 2, Bargain 1.

Contacts: One academic or government.

Other Effects: No commissions, promotions, or special duty rolls are made. No income is received while attending law school.

Medical School

Medical school is a prerequisite for working as a medical doctor or a psychiatrist. Few people go to the trouble of going to med school without going on to pursue one of those careers.

Prerequisites: EDU or INT 8+. Undergraduate degree, Biology 3+, Chemistry 2+, Homeworld Tech = Ind+.

Skills: Computer Operation 1, *Medical* 6, Observation 1.

Contacts: One medical.

Other Effects: No secondary activities are allowed during medical school. No income is received while attending medical school. Upon completion of medical school, character receives an automatic commission (as doctor) in the career of medicine.

Flight Academy

A variety of flight academies are maintained by advanced worlds to train pilots of aircraft and starships for both military and civilian service. Entry is highly prized, so competition for available openings is great.

Prerequisites: Education 6+ and Agility 6+, or (on High+ Gov worlds) Social Level 9+. Homeworld Tech = Early Stellar+. (Flight Academy for Aviation possible if Homeworld Tech = Ind+, but no skills from the Space Vessel cluster may be selected, nor may the Interface/Grav cascade of *Pilot* be selected.)

Skills: All First Term skills for the appropriate career (Aviation, Navy, Scouts, or Traders), plus a total of 6 levels from any one or a combination of the following:

Pilot, **Space Vessel**, Leadership.

Contacts: Two military.

Other Effects: No commissions, promotions, or special duty rolls are made. No income is received while attending flight academy, nor are any secondary activities allowed. At the start of the next term, the character automatically enters the chosen career (regardless of whether he or she has the normal prerequisites) with a commission. Since the character has already received the First Term skills for this career during the academy, the first real term in the career receives skills chosen from the Subsequent Terms section, equal in number to the skill levels of the First Term package. Characters who have attended the Navy version of Flight Academy may enter either the Navy or Marines career.

Technical School

In the aftermath of a major collapse, the drive for a well-rounded, well-educated populace has been nearly trampled in a mad dash to get people a skill and get them to work rebuilding.

Prerequisites: Homeworld Tech = Ind+.

Skills: A total of 6 levels from any one or a combination of the following:

Technician, Space Tech, Medical, Economics, Computer, **Aircraft, Vehicle.**

Contacts: One specialist (skill level 8) in one of the areas listed above.

Other Effects: No commissions, promotions, or special duty rolls are made. No income is received while attending technical school.

Hiver Technical Academy

In 1193, in an effort to help rebuild the star systems along their frontier, the Hivers contacted the handful of worlds in the Old Expanses which would soon form the Dawn League. Shortly thereafter, they established the first technical academies to educate the scientists, engineers, and starship crews that would spearhead the re-establishment of commerce.

Prerequisites: Homeworld in the Old Expanses. EDU or INT 7+.

Skills: Total skill levels equal to character's Education or Intelligence attribute (whichever is greater) from any one of the following skill clusters (but no more than 4 levels in any one skill), plus 1 skill level in each of the other skill clusters:

Space Vessel, Space Tech, Physical Science, Engineer, Technician.

Contacts: One Hiver specialist (skill level 8) in one of the areas listed above.

Other Effects: +2 EDU (after all skills have been awarded). No secondary activities allowed while in the academy. No commissions, promotions, or special duty rolls are made. No income is received while attending technical academy. All homeworld tech limits on skills are waived while attending Hiver techni-



cal academy. Due to the fact that Hiver technical education has only been available for about eight years in the Old Expanses, characters may only take one more career term after completing the academy.

CAREERS

There are two types of careers: civilian occupations and military careers. Both function in the same way.

Clusters, Skills, and Cascades: In all of the lists below, clusters of skills are printed in **bold** while individual skills are printed in normal type. Individual skills that are printed in *italics* are cascade skills. When players select a cluster for their characters, they must then go to the Skills by Skill Clusters List on page 113 to pick a specific skill from that cluster list. Players who select cascade skills must choose the cascade specialty. When a cluster or cascade is listed with a skill level number after it, that is the number of skills to be taken in the cluster or cascade, and must be specified immediately. For a listing of all skills, clusters, and cascades, see the Skills by Skill Clusters Table on page 113 of the "Referees" chapter.

First Term Skills: The character receives this package of skills during the first term in this career, whether the term is the character's first career term, or only the first term in this career after other terms in another.

Subsequent Term Skills: The character chooses a number of skills from this list based on the character's total term number (not term number in this career). In a character's First Term (starting at age 17), a character will receive the listed First Term skills. In subsequent terms (unless these are the first term in a new career, and earn the First Term package), the number of skills received is 4 in the second, 3 in the third, 2 in the fourth, and 1 in the fifth and later terms.

Special Assignment: Each term, the player has a chance to get a special assignment, also called special duty or special adventure, depending upon career. This is listed under the Special heading in the All Terms section. The first notation is the die roll on 2D6 that must be made to receive the special assignment. There is a +DM applied for each term already served in the career. For example, a character in the first term of a career has no DM, in the second consecutive term of that career has a +1 DM, and so on. Each career switch causes the DM to reset to 0. If the roll is made, the character receives a number of skills from the special assignment list according to the total term number (not term number in this career). That number of skills is the same as term skills for that term.

There is no effect if the special assignment roll is failed.

Term	*Age (Start-End)*	*Term Skills*	*Special Assignment Skills*
1	17-21	4*	4
2	21-25	4*	4
3	25-29	3*	3
4	29-33	2*	2
5 and later	33+	1*	1

*Or First Term skill packet for first term in a new career.

Promotion: Not every career has a rank list to go with the chance of promotion, but all do get a bonus skill from the Subsequent Terms list for each successful promotion.

Contacts: If more than one type is listed, the character may choose. Some of these require a roll to be made at the time the contact is selected to see if the contact is special (see the Character Generation section).

Continuation Rolls: If using the random method for finishing character generation, roll 2D6 at the end of each term. If the result is greater than the total number of terms served so far, the character may continue on to another term. If the result is equal to or less than the number of terms served, character generation is over.

Changing Careers: A character who intends to change careers on the next term subtracts 1 from the continuation die roll. (Going from an education term to another education or career term does not count as a career change; going from a career term to an education term *does* count as a career change.)

CIVILIAN OCCUPATIONS

Civilian occupations include the majority of things most people think of as typical careers. But many things that people do not normally think of are included here as well.

Athlete

No matter how wealthy and advanced or how poor and primitive a society, it seeks escape from its everyday cares by following competitive sports. On some worlds these sports can be violent and quite dangerous.

Prerequisites: CON 9+ or AGL 9+ or STR 9+. Homeworld Pop = Mod+.

First Term

Skills: Acrobatics 4, *Medical* 1, **Melee** 1.

Subsequent Terms

Skills: Acrobat, Determination, Melee, Personal Transport.

All Terms

Special Adventure: 8+ for **Economics, Charm, Vice, Perception.**

Promotion: 6+, DM +1 if CHR 7+.

Contacts: One business, journalist, entertainment, medical, or specialist (Acrobatics or Melee) per term. If a special adventure is rolled, one additional contact of any type.

Other Effects: For each term as an athlete, use the higher of STR, AGL, or CON instead of SOC when calculating starting money. During each term as an athlete, any one physical attribute (STR, AGL, or CON) may be increased by 1 (up to 2 each; see page 20).

Attorney

This is what you do with a degree from law school. See that entry, above, for background information.

Prerequisites: Law School.

All Terms

Skills: Charm, Interaction, Economics, Perception, Social Science.

Special Adventure: 7+ for **Crime, Vice, Determination.**

Promotion: 7+, DM +1 IF EDU 7+.

Contacts: One per term, government or criminal.

Other Effects: Two secondary activities are allowed per term. +1 SOC per term served. Double SOC when determining starting money for each term served as an attorney.

Barbarian

Where technology has been completely swept away, humanity continues to survive by virtue of native wit and an understanding of the natural environment.

Prerequisites: Homeworld Tech = Pre-Industrial.

First Term

Skills: Perception 2, Acrobat 1, **Explore** 3, **Animal Handling** 1, **Melee** 1.

Subsequent Terms

Skills: Determination, Perception, Charm, Interaction, Archaic Weapons, Acrobat, Explore, Animal Handling, Melee, Personal Transport.

All Terms

Special Adventure: 6+ for **Archaic Weapons, Economics, Vessel, Crime, Vice, Artisan.**

Promotion: 6+, DM +1 if CHR 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, automatic promotion if SOC 8+.

Contacts: One barbarian per term. If a special adventure is rolled, the contact may instead be a trader.

Other Effects: +1 SOC per promotion. If more than one term is served, +1 to Initiative.



Athlete



Attorney

Belter

Industrial societies need minerals, and many long-settled worlds have mined out the exploitable deposits. Asteroid belts, however, contain rich reserves of minerals and gases, plus occasional deposits of rare earths and radioactives. A belter's life is demanding, but often very rewarding.

Prerequisites: AGL 6+ and Geology 2+. Homeworld Tech = Pre-Stellar+.

First Term

Skills: Spacehand 2, Geology 1, **Technician** 1, Excavation 1, **Economics** 1, Ship's Engineer 1, **Space Vessel** 1.

Subsequent Terms

Skills: Determination, Perception, Spacehand, Physical Science, Technician, Engineer, Economics, Space Vessel, Interaction.

All Terms

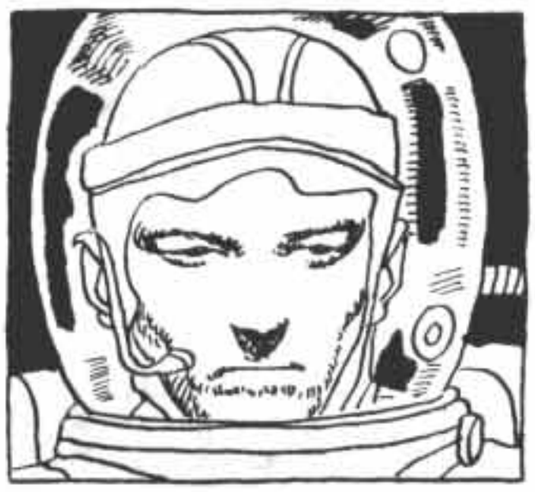
Special Adventure: 6+ for **Gun Combat, Melee,** *Language*, **Space Tech, Charm, Vice.**

Promotion: 7+, DM +1 if INT 7+.

Contacts: One per term, criminal, business, trader, or law enforcement.



Barbarian



Belter

Other Effects: At the end of each term (except the first) roll for a strike. Making a strike is Difficult test of Geology (see Task Resolution and Skills, beginning on page 106, for an explanation). If the task roll is successful, roll 2D6 and multiply the result by Cr100,000 for the cash income from the strike. In addition, the character receives a Seeker ship. The character may continue as a belter and try for additional strikes.

–1 SOC per term (including the first) served unless and until the character makes a successful strike. +3 SOC if a strike is made. No effect on SOC (plus or minus) for being a belter after the first strike is made.

1 ship DM per term for a Scout/Courier, but only if no strike was ever made.



Bounty Hunter



Bureaucrat



Civil Engineer



Civil Pilot

Bounty Hunter

With less central government authority than in previous eras, there is considerable demand for bounty hunters. Although governments offer bounties on escaped criminals or rebels, other organizations also are willing to pay to have malefactors captured. Often the object of the bounty is not a person at all, but a stolen ship or technical artifact.

Prerequisites: Agility 4+.

First Term

Skills: Gun Combat 1, **Melee** 1, **Determination** 2, **Perception** 2, **Spacehand** 1.

Subsequent Terms

Skills: Charm, Determination, Vice, Melee, Gun Combat, Perception, Spacehand, Personal Transport.

All Terms

Special Adventure: 6+ for *Language*, **Space Tech, Space Vessel, Crime.**

Promotion: 6+, DM +1 if AGL 6+.

Contacts: One per term, criminal or law enforcement.

Other Effects: When figuring beginning cash, use INT+Streetwise instead of SOC for each term as a bounty hunter. If more than one term is served, +1 to Initiative. 1 ship DM per term for a Scout/Courier.

Bureaucrat

Someone has to oil the machinery of government in order for it to work at all, but few people appreciate the importance of your job.

Prerequisites: EDU 7+. Homeworld Law = Moderate+.

First Term

Skills: Perception 1, **Economics** 3, **Charm** 1, **Vice** 1, **Interaction** 2.

Subsequent Terms

Skills: Perception, Economics, Charm, Vice, Interaction.

All Terms

Special Duty: 8+ for **Gun Combat**, *Language*, **Spacehand, Crime, Vehicle.**

(On Pre-Industrial tech worlds, **Explore, Archaic Weapons**, and **Animal Handling** are taken in place of **Spacehand, Gun Combat**, and **Vehicle**. On Industrial worlds, **Vessel** is taken in place of **Spacehand**.)

Promotion: 7+, DM +2 if INT 8+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: Two government contacts per term.

Other Effects: Each promotion adds 1 to SOC.

Civil Engineer

New construction materials and design techniques are being developed every day. A whole civilization needs rebuilding, and that means your skills will be needed on a hundred worlds and in a variety of environments.

Prerequisites: Master's degree, Construction 4+.

First Term

Skills: Engineer 2, **Explore** 2, **Physical Science** 1, **Technician** 1, **Vehicle** 1.

Subsequent Terms

Skills: Determination, Economics, Engineer, Explore, Interaction, Physical Science, Technician, Vehicle.

All Terms

Special Assignment: 8+ for **Gun Combat**, *Language*, **Crime, Vice, Spacehand.**

Promotion: 7+, DM +1 if EDU 6+.

Contacts: One per term, government.

Other Effects: On Pre-Industrial tech worlds, **Explore, Archaic Weapons**, and **Animal Handling** are taken in place of **Spacehand, Gun Combat**, and **Vehicle**. On Industrial worlds, **Vessel** is taken in place of **Spacehand**.

Civil Pilot

Whether flying light aircraft into the outback or shuttles to the high port, pilots are a crucial and much-needed profession. Before Virus, many routine

orbital and aircraft piloting tasks were entrusted to automation, and on many worlds these craft became so many murderous angels of death.

Although everybody talks about how they've developed countermeasures against that, that just won't cut it for most people. They want to be able to look up front and see someone sitting there, giving it that personal touch.

Prerequisites: Technical school or flight academy, Pilot 3+, Homeworld Tech = Industrial+.

First Term

Skills: Navigation 2, Observation 2, **Aircraft** 2.

Subsequent Terms

Skills: Technician, Explore, Perception, Aircraft.

All Terms

Special Duty: 8+ for *Language*, **Crime, Vice, Spacehand, Space Vessel, Personal Transport.**

Promotion: 6+, DM +1 if AGL 6+.

Contacts: One per term, specialist (aircraft pilot).

Other Effects: None.

Computer Operator/Programmer

Just as the invention of the semiconductor revolutionized the world by ushering in the Computer Age, so the advent of Virus has permanently altered the way that humanity views its machines and the data processing apparatus that runs them. As a computer operator or programmer, you serve not only an important technical support function, but also as the first line of defense against Virus, particularly when covering relic equipment.

Prerequisites: Technical school or undergraduate degree, Computer 2+. Homeworld Tech = Pre-Stellar+.

First Term

Skills: Economics 2, **Technician** 4.

Subsequent Terms

Skills: Economics, Technician, Interaction.

All Terms

Special Assignment: 8+ for *Language*, **Spacehand, Technician.**

Promotion: 7+, DM +1 if INT 7+.

Contacts: One specialist (Computer or Electronics) per term. If a special adventure is rolled, add extra contact of any type.

Other Effects: Computer operator/programmers are allowed two secondary activities per term.

Construction Worker

There's plenty of stuff to be rebuilt. Between a 14-year civil war and a psychopathic virus, a lot of things got broken. For a long time, no one had the means to do anything about it, but that's starting to change. There's a palpable sensation, a new will that you can feel coursing through humanity, and where there's a will, there's a way. With the sweat of your brow and the strength of your back, you're helping to build a new era.

Prerequisites: Strength 4+ or Agility 5+.

First Term

Skills: Acrobat 1, **Engineer** 2, **Vehicle** 2, **Technician** 2, **Artisan** 1.

Subsequent Terms

Skills: Explore, Engineer, Vehicle, Technician, Artisan, Charm.

All Terms

Special Assignment: 8+ for *Language*, **Spacehand, Vice, Melee.**

Promotion: 7+, DM +1 if CON 7+.

Contacts: One per term, specialist (engineer).

Other Effects: None.



Computer Operator/ Programmer



Construction Worker

Corsair

When you steal a television, you're a thief. When you commandeer a plane, you're a hijacker. When you steal a person, you're a kidnapper.

Corsairs and pirates are the people who steal starships and all of the people and cargo inside them. A lot of them like to repeat the weepy line about how they're victims of circumstance. You know, one man's war is another man's crime. They got into the work as privateers, back when the government approved of it. But now that the war is over, the government doesn't approve of it anymore, even though it's exactly the same line of work. Geez, it's real tough being misunderstood, isn't it?

Yeah, everybody's got an excuse. What's yours?

Prerequisites: CON or STR 6+. Homeworld Tech = Early Stellar+.

First Term

Skills: Spacehand 1, **Gun Combat** 2, **Technician** 2, **Space Tech** 1, **Interaction** 1, **Vice** 1.

Subsequent Terms

Skills: Spacehand, Melee, Gun Combat, Technician, Space Tech, Interaction, Vice, Charm.

All Terms

Special Duty: 5+ for **Space Vessel**, *Language*, **Crime, Determination, Economics, Tactics.**

Promotion: 7+, DM +1 if STR 8+. DM +2 if CHR 8+.



Corsair

Contacts: 1 per term, government, criminal, military, or trader.

Other Effects: –1 SOC per term served. 3 ship DMs per term for a Warship. At the end of each term, roll 1D10. If the roll is equal to or less than the character's INT attribute, there is no effect. If it is greater than the character's INT attribute, the character has been apprehended and must spend the next career term as a prisoner. If more than one term is served, +1 to Initiative.



Criminal

Criminal

Player characters in **Traveller** are supposed to be heroes. But sometimes they're tarnished heroes who have broken laws to achieve their goals. Of course, sometimes a law deserves to be broken. For whatever reason, then, a PC may have experiences reflected by this career.

Prerequisites: None.

First Term

Skills: Perception 1, **Determination** 2, **Interaction** 1, **Melee** 1, **Gun Combat** 1, **Vice** 1, **Charm** 1.

(On Pre-Industrial worlds, substitute **Archaic Weapons** for **Gun Combat.**)

Subsequent Terms

Skills: Perception, Determination, Interaction, Crime, Vice, Charm, Vehicle.

(On Pre-Industrial worlds, substitute **Animal Handling** for **Vehicle.**)

All Terms

Special Adventure: 5+ for **Melee, Gun Combat,** *Language*, **Spacehand, Economics.**

Promotion: 7+, DM +1 if INT 7+.



Diplomat



Entertainer

Contacts: One per term, criminal or law enforcement.

Other Effects: –1 SOC per term served. If more than one term is served, +1 to Initiative. At the end of each term, roll 1D10. If the roll is equal to or less than the character's INT attribute, there is no effect. If it is greater than the character's INT attribute, the character has been apprehended and must spend the next career term as a prisoner. When determining starting money, use INT in place of SOC for each term served as a criminal.

Diplomat

There has been enough destruction in human-settled space. Governments must learn to substitute communication and compromise for military action. That is where you come into your own.

Prerequisites: CHR or INT 7+. Homeworld Pop = Mod+.

First Term

Skills: Determination 1, **Economics** 1, **Charm** 3, *Language* 1, **Interaction** 2.

Subsequent Terms

Skills: Determination, Economics, Charm, Interaction, Perception.

All Terms

Special Duty: 8+ for **Spacehand, Gun Combat, Vice, Crime, Vehicle.**

(On Pre-Industrial tech worlds, **Explore** and **Animal Handling** are taken in place of **Spacehand** and **Vehicle.** On Industrial worlds, **Vessel** is taken in place of **Spacehand.**)

Promotion: 6+, DM +1 if EDU 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: Two government contacts per term.

Other Effects: Minimum SOC for a diplomat is 5. (All characters with lower SOC have it raised to 5 upon enlistment.) Each promotion adds 1 to SOC. 1 ship DM per term for a Scout/Courier or Yacht (provided Homeworld Tech = Early Stellar+).

Entertainer

Soldiers, construction workers, managers, rich and poor alike need entertainment. Whether it's an exclusive club in a class-A starport or an underground mining camp on a gas giant moon, there's a job for you.

Prerequisites: Charisma 8+.

First Term

Skills: Charm 2, Determination 1, **Fine Arts** 4.

Subsequent Terms

Skills: Charm, Determination, Fine Arts, Melee, Animal Handling, Vehicle, Acrobatics.

(On Pre-Industrial and Industrial worlds, **Vessel** is taken in place of **Vehicle.**)

All Terms

Special Duty: 8+ for **Spacehand, Gun Combat,** *Language*, **Explore.**

(On Pre-Industrial and Industrial worlds, **Vessel** is taken in place of **Spacehand.**)

Promotion: 6+, DM +1 if INT 7+.

Contacts: One per term. On a 1D10 roll of 8+, the contact is in government; otherwise, it is in entertainment.

Other Effects: At the referee's option, random NPCs may recognize the character as a favorite performer. When determining starting money, use CHR in place of SOC for each term served as an entertainer. 1 ship DM per turn for a Yacht.

Farmer

Before the Collapse, vast automated farms and hydroponic tanks supplied raw protein that was marketed in whatever shape, color, and flavor you wanted. Now people live closer to the land, raising real food for people with real jobs to do. You don't have the machinery farmers once had, and what you do have you treat with kid gloves, trying to make it last. It isn't an easy life, but there's something rewarding about raising food from the earth and making a world bloom.

Prerequisites: None.

First Term

Skills: Animal Handling 1, Biology 2, **Technician** 2, **Perception** 1, **Vehicle** 1.

Subsequent Terms

Skills: Animal Handling, Technician, Perception, Determination, Explore, Vehicle, Personal Transport.

All Terms

Special Adventure: 8+ for **Gun Combat, Melee, Physical Science.**

Promotion: 7+, DM +1 if CON 6+.

Contacts: One per term, specialist in one of the above skills.

Other Effects: None.

Hunter/Guide

On primitive and developing worlds, tribal settlements and work crews in the wilderness need food and protection from wild animals. In advanced civilizations, the idle rich crave the excitement of big game hunts, but need experienced guides to take care of them.

Prerequisites: AGL or CON 9+. Homeworld in the Regency. Atmos = Thin+.

First Term

Skills: Perception 2, **Acrobat** 1, **Explore** 2, **Gun Combat** 2, **Vehicle** 1.

(On Pre-Industrial worlds, substitute **Animal Handling** for **Vehicle**.)

Subsequent Terms

Skills: Perception, Acrobat, Explore, Gun Combat, Vehicle, Animal Handling, Archaic Weapons, Personal Transport.

(On Pre-Industrial worlds, substitute **Vessel** for **Vehicle**.)

All Terms

Special Adventure: 6+ for **Melee, Interaction, Charm, Economics.**

Promotion: 7+, DM +1 if INT 6+.

Contacts: One per term of any type.

Other Effects: 2 ship DMs per turn for a Yacht (provided Homeworld Tech = Early Stellar+). Character may stipulate that people must call him or her "Bwana" or "Nimrod."

Journalist

Most worlds enjoy a nominally free press, but in many places the news services have fallen prey to big money or big government. Regardless of the boss, though, there's always a demand for exciting news and for journalists willing to go where the action is, regardless of danger.



Farmer

Prerequisites: Undergraduate degree or Charisma 7+, Homeworld Tech = Ind+.

First Term

Skills: Charm 1, **Determination** 1, **Perception** 2, **Interaction** 2, **Technician** 1.

Subsequent Terms

Skills: Charm, Perception, Interaction, Vice, Determination.

All Terms

Special Assignment: 6+ for *Language*, **Spacehand, Explore, Crime.**

Promotion: 6+, DM +1 if EDU 7+.

Contacts: Three per term, criminal, government, and/or law enforcement.

Other Effects: None.



Hunter/Guide

Law Enforcement

It takes a tough cop to keep people in line, and that's where you come in. You've worked hard to establish a reputation as a hard-bitten officer who's tough but fair. You're proud to think of yourself as a peace officer, someone who not only enforces the law, but who also defuses confrontations before they escalate into violence.



Journalist

The trouble is, off-worlders don't know your reputation. With them, you have to prove yourself anew in each encounter. Sometimes you resent the added trouble they bring to your beat.



Law Enforcement

Prerequisites: STR 6+. Homeworld Law = Low+. No prison record.

First Term

Commission: 9+, DM +1 if EDU 7+, DM +1 if INT 8+. If on Low Gov world, DM +2 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character a detective; all other characters are uniformed police officers.

Skills:

Detectives: **Gun Combat** 2, **Melee** 1, **Charm** 1, **Determination** 1, **Interaction** 1, **Perception** 1, **Vehicle** 1.

Uniformed Police Officers: **Gun Combat** 2, **Melee** 2, **Charm** 1, **Determination** 1, **Vehicle** 1, **Personal Transport**.

Subsequent Terms

Commission: 7+, DM +1 if INT 8+, DM +1 if CHR 8+.



Manager



Martial Artist



Mechanic

Skills:

Detectives: **Gun Combat, Melee, Determination, Charm, Interaction, Perception, Vehicle.**

Uniformed Police Officers: **Gun Combat, Melee, Charm, Determination, Vehicle.**

All Terms

Special Duty: 8+ for **Archaic Weapons, Acrobat, Vice, Crime,** *Language, Medical,* **Technician.**

Promotion: 6+, DM +1 if CON 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One criminal and one law enforcement contact per term.

Other Effects: If more than one term is served, add +1 to Initiative.

Manager

These are exciting, growing times, and you are at the center of the new explosion of economic activity. Your job also takes you to many interesting places and challenges you with new problems every day.

Prerequisites: Undergraduate degree. Homeworld Tech = Ind+.

First Term

Skills: Economics 2, **Charm** 1, **Determination** 2, **Interaction** 2.

Subsequent Terms

Skills: Economics, Charm, Determination, Interaction, Perception.

All Terms

Special Adventure: 6+ for *Language,* **Spacehand, Explore, Vice, Engineer.**

(In Industrial societies, substitute **Vehicle** for **Spacehand**)

Promotion: 7+, DM +1 if EDU 6+.

Contacts: One per term, business or government.

Other Effects:+1 SOC per term. 1 ship DM per term for a Trader ship.

Martial Artist

The cities and starports are more dangerous than ever before, but you're well trained in self-defense and can hold your own against multiple foes in face-to-face combat. Even in fire combat, however, your training gives you an edge, making your reactions quicker and more exact. Also, your physical control translates into stealth when necessary.

The martial artist career includes everything from martial arts instructors to oriental-style assassins.

Prerequisites: None.

First Term

Skills: STR +1, AGL +1, **Melee** 3, **Determination** 1, **Acrobat** 1.

Subsequent Terms

Skills: Characters receive skills on the normal basis from Group A. Alternatively, for each two levels not taken from group A in a single term, one level may be taken from group B.

Group A: **Interaction, Determination, Melee, Acrobat, Archaic Weapons.**

Group B: AGL +1, STR +1, CON +1

Special Adventure: 6+ for **Vice, Crime, Perception, Gun Combat.**

Promotion: 7+, DM +1 if AGL 7+.

Contacts: One per term, business, criminal, or specialist (martial arts).

Other Effects: Use INT instead of SOC for determining starting money per term. If one or more terms are served, +1 Initiative.

Mechanic

There's not much romance or mystique to being a mechanic, but people sure holler when they need one. It's not everyone who can take a look at a piece of machinery, figure out what's wrong, and then fix it. You can. As long as humans use machines, you'll have work to do.

Prerequisites: Homeworld Tech = Ind +.

First Term

Skills: Technician 6, **Vehicle** 1.

Subsequent Terms

Skills: Economics, Interaction, Technician, Vehicle, Intrusion.

All Terms

Special Adventure: 7+ for **Spacehand, Explore, Vice, Engineer, Determination.**

(In Industrial societies, substitute **Vessel** for **Spacehand.**)

Promotion: 7+, DM +1 if CHR 6+.

Contacts: One per term, a specialist in one of the above skills.

Other Effects: None.

Medicine

For centuries, healing has been a respected profession. In troubled times such as these, there is more need for your skills than ever.

Prerequisites: AGL 5+. Homeworld Tech = Ind+.

First Term

Commission: Automatic if completed medical school. A commission makes the character a doctor (minimum SOC 7); all other characters are health-care specialists.

Skills:

Doctors: Biology 4, *Medical* 4.

Health-Care Specialists: **Charm** 1, **Vehicle** 1, **Physical Science** 1, **Technician** 1, *Medical* 2, **Perception** 1.

Subsequent Terms

Skills:

Doctors: **Determination, Charm, Interaction, Perception, Physical Science,** *Medical.*

Health-Care Professionals: **Charm, Vehicle, Physical Science, Technician, Perception.**

All Terms

Special Adventure: 8+ for *Language, Medical,* **Spacehand, Vessel.**

Promotion: 6+, DM +1 if EDU 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion. (Note, however, that doctors never are promoted, and thus do not receive the bonus skill level for promotion.)

Contacts: One per term, medical.

Other Effects: The first commissioned term is internship and residency. No secondary activity is allowed during this time. For each additional career term, however, doctors are allowed two secondary activities. All health-care specialists are allowed one secondary activity per term.

For each term as a doctor, double SOC when calculating starting money.

Mercenary

With the *Pax Imperica* a thing of the past, there is a lot more need for mobile, trained, and equipped troops than there used to be, and small governments are crying for someone to come and train their troops in modern warfare techniques. Whether you're a starmerc doing "rent-an-escort" convoy charters, or a part of a training cadre hired to build a local army from scratch, you're a sought-after commodity. Maybe that's why everywhere you go, the bullets start flying.

Prerequisites: STR 4+, prior military career.

First Term

Skills: *Language* 1, **Interaction** 2, **Melee** 1, **Gun Combat** 1.

Subsequent Terms

Skills: Acrobat, Determination, Explore, Gun Combat, Interaction, Melee, Perception, Vehicle, Personal Transport.

All Terms

Special Duty: 8+ for **Artillery, Engineer, Heavy Weapons, Spacehand,** *Screens,* **Personal Transport.**

Promotion: 6+, DM +1 if CON 7+.

Contacts: One per term, criminal, government, intelligence community, military, or another mercenary.

Other Effects: Roll 1D10 once per term. On a roll of 9, the character must spend the next term in a noncombat career due to serious wounds. A roll of 10 means the character was captured by the opposition and must spend the next term as a prisoner. If more that one term is served, add +1 to Initiative. 1 ship DM per term, plus 1 per special assignment, applied to Trader ship or Warship (character's choice).



Medicine



Mercenary

Merchant Marine

Even if a world has trans-orbital cargo carriers, the most cost-effective way to move bulk cargo from one place to another is by sea. And whether the world has oil-fired steam ships or nuclear-powered surface skimming hydrofoils, in the end it all comes down to seamanship.

The life of a merchant mariner involves hard labor, but it also allows you a lot of time between watches to think and study.

Prerequisites: CON 5+ or STR 6+. Homeworld Tech = Industrial+. Pop = Moderate+. Hydro = Wet+.



Merchant Marine

First Term

Commission: 6+, DM +1 if EDU 7+, DM +1 if INT 8+. If on Low Gov world, DM +2 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 6.)

Skills:

Officers: **Gun Combat** 1, **Explore** 2, **Vessel** 2, **Heavy Weapons** 1, **Economics** 1, **Determination** 1.

Enlisted: **Gun Combat** 1, **Explore** 2, **Vessel** 2, **Heavy Weapons** 1, **Technician** 1.

Subsequent Terms

Commission: 9+, DM +2 if INT 8+, DM +2 if CHR 8+. (Minimum SOC 6)

Skills:

Officers: **Gun Combat, Explore, Vessel, Heavy Weapons, Economics, Determination, Charm.**

Enlisted: **Gun Combat, Explore, Vessel, Heavy Weapons, Technician, Vice, Charm.**

All Terms



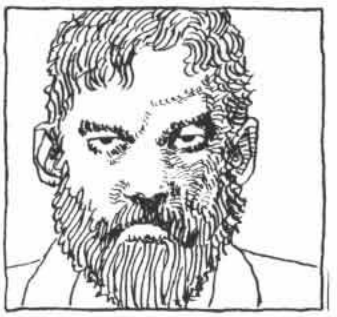
Prison

Special Duty: 8+ for **Archaic Weapons, Melee, Crime, Vehicle, Artillery, Interaction,** *Medical,* **Acrobat, Perception.**

Promotion: 6+, DM +1 if EDU 8+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One per term, business, law enforcement, or specialist (merchant marine).

Other Effects: Two secondary activities allowed per term.


Professor

Prisoner

It's a big universe. Someone's got to run afoul of it. Maybe you were breaking the law for all the right reasons, maybe not. Maybe you didn't even do anything wrong, and they just had to arrest someone. The point is, here you are, and you're going to have to live through it (after all, if Jim Rockford wasn't too good to do time, neither are you).

Prerequisites: Forced due to capture while engaged in illegal activity in the Criminal, Corsair, Mercenary, or Rebel careers.

All Terms


Psionic Researcher

Skills: A total of 6 levels from any one or a combination of the following:

Acrobatics, **Charm, Crime, Determination, Economics, Interaction, Melee, Perception, Vice,** STR+1, EDU+1,

Special Adventure: None (what, prison itself isn't enough?).

Promotion: None.

Contacts: Two per term, criminal.

Other Effects: No secondary activities allowed. Released after one term. Do not count prison terms when calculating starting money.

Professor

Your time is divided between the search for additional knowledge and your university responsibilities—the training of new scholars.

Prerequisites: PhD.

First Term

Skills: Specialty 1 (a level in the character's specialty skill as taken in graduate university), *Language* 1, **Interaction 3, Charm** 1.

Subsequent Terms

Skills: *Language,* **Determination, Interaction, Charm,** Specialty.

All Terms

Special Adventure: 8+ for **Explore, Perception, Spacehand.** (On Industrial homeworlds, substitute **Vessel** for **Spacehand.**)

Promotion: 6+, DM +1 if INT 8+. If on Low Gov or High+ Gov world, DM +1 for SOC 8+.

Contacts: Two per term, academic or government.

Other Effects: All professors use the "commissioned" ranks of the scientist career. Professors may have two secondary activities per term. 1 ship DM per term for a laboratory ship.

Psionic Researcher

As an expert in the workings of the human mind, you have become very interested in what have come to be called the psionic powers. This field was once outlawed in the old Third Imperium, but the need to better understand its Zhodani neighbors has led the Regency to relax such restrictions and encourage controlled research. You want to delineate the limits of those powers and to learn how they work.

Prerequisites: Medical school or doctorate from graduate school in biology. Homeworld in the Regency.

All Terms

Skills: Psionics (see the Psionics section, page 245), **Perception, Determination.**

Special Adventure: 7+ for PSI +1.

Promotion: 7+, DM +1 if INT 7+.

Contacts: One per term, medical, academic, or psionic. On a 1D10 roll of 7+, the contact is Zhodani.

Other Effects: Immediately upon entry into the career, the character undergoes psionic testing and evaluation (see Psionics, page 245).

Referee may stipulate the existence of psionic institues and allow this career outside the Regency, if desired.

Rebel

When the social contract between the rulers and the governed is maintained, all members of society have an equal opportunity to participate in the process of governance and benefit from the economic activities of the society. When that contract is not honored, the result is oppression, and the oppressed often strike back.

Prerequisites: Agility 5+.

First Term

Skills: Charm 2, Crime 2, Gun Combat 1, Melee 1.

Subsequent Terms

Skills: Charm, Crime, Gun Combat, Heavy Weapons, Interaction, Melee, Vehicle, Vice.

All Terms

Special Mission: 5+ for **Aircraft, Space Vessel,** Combat Engineer, **Determination, Explore, Heavy Weapons,** *Language,* **Tactics, Personal Transport.**

Promotion: 6+, DM +1 if INT 7+.

Contacts: One per term, criminal or law enforcement.

Other Effects: If more than one term is served, +1 to Initiative. Also, roll 1D10 once per term for INT or less to avoid capture, DM +1 if a special mission was executed. If unsuccessful, the next career term must be prison. 1 ship DM per turn for a Warship.

Scientist

Although many of your colleagues are educators, your concerns are almost entirely with research, either of natural phenomena or of relic technology from before the Collapse.

Prerequisites: INT 7+ or doctorate in any physical science. Homeworld Tech = Industrial+.

First Term

Commission: 8+, DM +2 if EDU 8+, DM +1 if INT 8+. If on Low or High+ Gov world, DM +1 for SOC 8+. A commission makes the character a doctor; all other characters are technicians. (Minimum SOC 6)

Skills:

Doctors: **Physical Science** 5, *Language* 1, **Perception** 2.

Technicians: **Physical Science** 2, **Technician** 3, *Medical* 1, **Perception 1, Charm** 1.

Subsequent Terms

Commission: 9+, DM +2 if EDU 8+, DM +2 if INT 8+. (Minimum SOC 6.)

Skills:

Doctors: **Determination, Interaction, Perception, Physical Science,** *Language.*

Technicians: **Charm, Vehicle, Technician, Perception, Physical Science,** *Medical.*

All Terms

Special Adventure: 5+ for **Spacehand, Explore, Gun Combat, Acrobat, Engineer, Vice.**

Promotion: 7+, DM +1 if INT 7+.

Contacts: 1 per term, government or scientist.

Other Effects: 1 ship DM per term as a technician, 5 ship DMs per term served as a doctor, both for a Lab ship.

Scout

Whether they are called scouts, explorers, or the survey, most interstellar cultures support a cadre of people whose interests lie in visiting star systems and worlds that have gone uncharted for generations. These are the trail-blazers of interstellar trade and commerce.



Rebel

Prerequisites: INT or STR 7+. Homeworld Tech = Early Stellar+.

First Term

Commission: 7+, DM +1 if STR 8+, DM +1 if INT 8+. If on Low Gov or High+ Gov world, DM +1 for SOC 8+. A commission makes the character an officer; all other characters are enlisted.

Skills:

Officers: **Gun Combat** 1, **Spacehand** 1, **Space Vessel** 1, **Space Tech** 2, **Physical Science** 1, **Explore** 1, **Determination** 1.

Enlisted: **Gun Combat** 1, **Spacehand** 1, **Space Vessel 1, Space Tech** 2, **Technician** 2, **Explore** 1.

Subsequent Terms

Commission: 9+, DM: +1 if INT 8+, +1 if STR 8+, +1 if CHR 8+.

Skills:

Officers: **Spacehand, Space Vessel, Space Tech, Physical Science, Technician, Explore, Perception, Determination, Charm, Personal Transport.**

Enlisted: **Spacehand, Space Vessel, Space Tech, Technician, Explore, Perception, Vice, Charm, Personal Transport.**

All Terms

Special Duty: 8+ for **Gun Combat, Melee, Aircraft, Vehicle, Animal Handling,** *Language,* **Interaction,** *Medical,* **Acrobat, Perception**

Promotion: 6+, DM +1 if CHR 7+. If on Low Gov or High+ Gov world, DM +1 for SOC 8+.

Contacts: One per term, government, military, or trader.

Other Effects: 1 ship DM per term as an enlisted scout, 3 ship DMs per term as an officer, both for a Scout/Courier.



Scientist



Scout

Tough

You're young, you're tough, and you're slick. You're part of a family of the street, a motley collection of society's disenfranchised and discarded. There may have been a support system for people once, but, if so, it disappeared long before your time. You know that no one's going to take care of you but you.

Prerequisites: CHR 3+, SOC 5–. Homeworld Pop = Mod+.



Tough

First Term

Skills: Acrobat 2, **Charm** 1, **Determination** 3, **Melee** 1.

Subsequent Terms

Skills: Acrobat, Charm, Determination, Melee, Vice.

All Terms

Special Adventure: 6+ for **Gun Combat, Crime, Artisan.**

Promotion: 6+, DM +1 if STR 7+.

Contacts: One per term, criminal, law enforcement, or specialist (streetwise).

Other Effects: Characters may not enter this career after serving in any other career; they must start as a tough and may then continue in this career or switch to a different one. When calculating starting money, multiply by 0.1 for each term as a tough.



Trader

Trader

When Virus drove a billion computers into howling insanity, when thousands of ships burned up in atmospheres or opened their airlocks to let hard vacuum consume their crews, only the decrepit and obsolete tramp merchant vessels—with computers too stupid to be infected—survived. For nearly a century, that tattered network of ramshackle ships was all that remained of interstellar trade in most of human-settled space. The men and women who crew the Free Traders are a breed unto themselves, as stubbornly self-reliant as they come.



Undercover Agent

Prerequisites: INT 6+ or CHR 6+. Homeworld Tech = Early Stellar+.

First Term

Commission: 6+, DM +1 if EDU 8+, DM +1 if INT 8+. If on Low or High+ Gov world, DM +1 for SOC 8+. A commission makes the character an officer; all other characters are spacehands.

Skills:

Officers: **Spacehand** 1, **Space Vessel** 2, **Space Tech** 2, **Economics** 2, **Interaction** 1.

Spacehands: **Spacehand** 2, **Space Tech** 2, **Technician** 2, **Vehicle** 1, **Charm** 1.

Subsequent Terms

Commission: 7+, DM +1 if EDU 8+, DM +1 if INT 8+.

Skills:

Officers: **Determination, Interaction, Spacehand, Space Vessel, Space Tech, Economics.**

Spacehands: **Vehicle, Spacehand, Space Tech, Technician, Interaction, Vice.**

All Terms

Special Duty: 4+ for **Explore, Gun Combat, Crime,** *Language*, **Vehicle, Aircraft.**

Promotion: 7+, DM +1 if CHR 7+. DM +1 if INT 7+. If on Low or High+ Gov world, DM +1 for SOC 8+.

Contacts: One per term, trader, government, or criminal.

Other Effects: 2 ship DMs per term served as a spacehand, 5 ship DMs per term served as an officer, both for a Trader ship.

Undercover Agent

With many new worlds rediscovering space travel and coming into contact again, there is a tremendous demand for information about neighboring governments, planets, and cultures. Undercover agents are used when the inquisitive party doesn't want the subject of the investigation to know about it. Many agents are government employees, but others work for corporations or are freelancers, selling information to the highest bidder.

Prerequisites: INT 6+, CHR 6+, Homeworld Tech = Ind+.

First Term

Skills: Charm 1, **Gun Combat** 1, *Language* 1, **Interaction** 2, **Perception** 1, **Social Science** 1.

Subsequent Terms

Skills: Charm, Crime, Determination, Interaction, Social Science, Vice.

All Terms

Special Assignment: 6+ for **Gun Combat,** *Language*, **Melee, Perception, Personal Transport.**

Promotion: 7+, DM +1 if AGL 7+.

Contacts: One per term, government or intelligence community.

Other Effects: 1 ship DM per term for a Scout/Courier.

Wealthy Traveller

It's a fascinating world, a fascinating galaxy, and you want to see and experience it all. Since you have the means to do it, why not?

Prerequisites: SOC 9+ and homeworld in the Regency.

First Term

Skills: Determination 1, **Perception** 1, **Economics** 1, **Charm** 1, **Interaction** 1, **Explore** 1, **Animal Handling** 1.

Subsequent Terms

Skills: Aircraft, Determination, Perception, Economics, Charm, Interaction, Animal Handling, Vessel, Vehicle, Spacehand.

(On Industrial worlds, delete **Spacehand**. On Pre-Industrial worlds, delete **Aircraft, Vehicle,** and **Spacehand**.)

All Terms

Special Adventure: 8+ for **Gun Combat, Explore, Melee,** *Language*, **Space Vessel, Crime, Vice, Personal Transport.**

(On Industrial and Pre-Industrial worlds, substitute **Vessel** for **Space Vessel**.)

Promotion: 6+, DM +1 if EDU 7+.

Contacts: Two per term, business or government.

Other Effects: When calculating starting money, use SOC×10 for each term spent as a wealthy traveller. 5 ship DMs per term for a Yacht.

MILITARY CAREERS

The following material provides an overview of the types of armed forces found in most regions of human space. Players and referees can use this information to create characters from specific services in specific regions.

For a listing of all skills, clusters, and cascades, see the Skills by Skill Clusters table on page 113 of the "Referees" chapter.

Army

The army provides ground troops tasked with protecting the population and resources of a world or nation. Sometimes that mission means service on another world.

Prerequisites: CON 6+. Homeworld Tech = Industrial+. Pop = Moderate+. Atmos = Thin+.

First Term

Commission: 7+, DM +1 if EDU 7+, DM +1 if INT 8+. If on Low Gov world, DM +2 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat** 2, **Explore** 1, **Heavy Weapons** 1, **Artillery** 1, **Tactics** 1, **Determination** 1.

Enlisted: **Gun Combat** 2, **Melee** 2, **Heavy Weapons** 1, **Explore** 1, **Acrobat** 1, **Technician** 1.

Subsequent Terms

Commission: 9+, DM +2 if INT 8+, DM +2 if CHR 8+. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat, Explore, Heavy Weapons, Tactics, Determination, Charm, Personal Transport.**

Enlisted: **Gun Combat, Melee, Heavy Weapons, Explore, Vice, Charm, Personal Transport.**

All Terms

Special Duty: 8+ for **Archaic Weapons, Melee, Aircraft, Crime, Spacehand, Vehicle, Artillery, Interaction,** *Medical*, **Acrobat, Technician, Perception, Personal Transport,** *Screens*.

Promotion: 6+, DM +1 if CON 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One per term, military.

Other Effects: None.



Wealthy Traveller



Army

Aviation

Air superiority and close air support for ground forces is the mission of the aviation service. You've often heard fellow pilots say, "If it ain't mud or vacuum, we own it."

Prerequisites: STR or AGL 7+. Homeworld Tech = Industrial+. Pop = Moderate+. Atmos = Thin+.

First Term

Commission: 7+, DM +1 if EDU 7+, DM +2 if AGL 8+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 6.)

Skills:

Officers: **Gun Combat** 1, **Aircraft** 3, **Vehicle** 1, **Physical Science** 1, **Determination** 1, **Perception** 1.

Enlisted: **Gun Combat** 1, **Melee** 1, **Technician** 3, **Vehicle** 1, **Heavy Weapons** 1.



Aviation

Subsequent Terms

Commission: 9+, DM +1 if INT 8+, DM +2 if CHR 8+. (Minimum SOC 6.)

Skills:

Officers: **Gun Combat, Aircraft, Explore, Vehicle, Perception, Determination, Charm.**

Enlisted: **Gun Combat, Melee, Technician, Vehicle, Heavy Weapons, Vice, Charm.**

All Terms

Special Duty: 8+ for **Archaic Weapons, Melee, Aircraft, Crime, Spacehand, Interaction,** *Medical,* **Acrobat, Personal Transport.**

Promotion: 6+, DM +1 if EDU 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One per term, military.

Other Effects: None.



Marines



Navy

Marines

From the Halls of Montezuma to the cold depths of space. Of all the military services, it is the Marines who guard their legend and traditions the most jealously. From their beginnings as snipers in the masts of ancient Terran sailing ships, they have crafted a reputation as humanity's elite troops. No matter that the Imperial Marines survive only in the Regency; all corps of Marines in former Imperial Space use their tradition as their model. All still defiantly train with the cutlass. In combat, when a Marine has fallen, the call still goes up, as it has for thousands of years, "Corpsman!" And everyone who comes into contact with them learns a new law of grammar: There are soldiers, sailors, starmen, scouts, and Marines.

Prerequisites: AGL 7+. Homeworld Tech = Pre-Stellar+. Population = Moderate+.

First Term

Commission: 8+, DM +1 if EDU 8+, DM +1 if INT 8+, DM +1 if CON 8+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat** 2, Armed Martial Arts (Large Blade) 1, **Melee** 1, **Spacehand** 1, **Heavy Weapons** 1, **Tactics** 1, **Determination** 1, **Personal Transport** 1.

Enlisted: **Gun Combat** 2, Armed Martial Arts (Large Blade) 1, **Melee** 1, **Spacehand** 1, **Heavy Weapons** 1, **Acrobat** 1, **Technician** 1, **Personal Transport** 1.

Subsequent Terms

Commission: 9+, DM +1 if INT 8+, DM +1 if CON 8+, DM +2 if CHR 8+. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat, Spacehand, Heavy Weapons, Tactics, Determination, Charm, Personal Transport.**

Enlisted: **Gun Combat, Melee, Heavy Weapons, Spacehand, Vice, Charm, Personal Transport.**

All Terms

Special Duty: 8+ for **Melee, Aircraft, Crime, Interaction, Explore, Vehicle, Artillery, Acrobat, Technician,** *Screens,* Slug Weapon (Slug Pistol), **Perception, Personal Transport.**

Promotion: 6+, DM +1 if CON 7+. If on Low Gov or High+ Gov world, DM +1 for SOC 8+.

Contacts: One per term, military.

Other Effects: 1 ship DM per term, plus 1 per special assignment, applied to Trader or Warship (character's choice).

Navy

The navy crews the spacecraft that defend a world against attack from above: everything from jump-capable cruisers and battle riders to little SDBs (system defense boats).

Prerequisites: INT or EDU 7+. Homeworld Tech = Pre-Stellar+. Pop = Moderate+.

First Term

Commission: 8+, DM +1 if EDU 8+, DM +1 if INT 8+. If on Low Gov world, DM +2 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 7.)

Skills:

Officers: **Gun Combat** 1, **Spacehand** 1, **Space Vessel** 1, **Space Tech** 2, **Tactics** 1, **Determination** 1.

Enlisted: **Gun Combat** 1, **Spacehand** 2, **Space Tech** 2, **Technician** 2.

Subsequent Terms

Commission: 9+, DM +2 if INT 8+, DM +2 if CHR 8+. (Minimum SOC 7.)

Skills:

Officers: **Spacehand, Space Vessel, Space Tech, Physical Science, Technician, Tactics, Determination, Charm.**

Enlisted: **Spacehand, Space Tech, Technician, Vice, Charm.**

All Terms

Special Duty: 8+ for **Gun Combat, Melee, Aircraft, Vehicle, Artillery, Interaction,** *Medical,* **Acrobat, Crime, Perception.**

Promotion: 6+, DM +1 if CHR 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One per term, military.

Other Effects: 2 ship DMs per term as a spacehand, 5 per term as an officer, for a Scout/Courier, Trader, or Warship (character's choice).

Special Operations

The more technologically sophisticated military organizations become, the more dependent they are on their command, control, communication, and support structure, which increases their vulnerability to clandestine operations. That's where special operations forces come into their own. Whether they are called commandoes, blackouts, rangers, or any of a dozen other names, their job is always the same.

Prerequisites: STR, AGL, and CON all 5+, and at least one prior term served in any other military career.

First Term

Commission: 8+, DM +1 if EDU 8+, DM +1 if INT 8+, DM +1 if CON 8+. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat 2, Melee 2, Spacehand 1, Heavy Weapons 1, Tactics 1, Determination 1.**

Enlisted: **Acrobat 1, Gun Combat 2, Heavy Weapons 1, Melee 2, Spacehand 1, Technician 1.**

Subsequent Terms

Commission: 9+, DM +1 if INT 8+, DM +1 if CON 8+, DM +2 if CHR 8+. (Minimum SOC 5.)

Skills:

Officers: **Gun Combat, Spacehand, Heavy Weapons, Tactics, Determination, Charm, Personal Transport.**

Enlisted: **Gun Combat, Melee, Heavy Weapons, Spacehand, Vice, Charm, Personal Transport.**

All Terms

Special Duty: 8+ for **Melee, Aircraft, Crime, Interaction, Explore, Vehicle, Artillery,** *Medical,* **Acrobat, Technician,** *Screens,* Slug Weapon (Slug Pistol), **Perception, Personal Transport.**

Promotion: 6+, DM +1 if CON 7+. If on Low Gov or High+ Gov world, DM +1 for SOC 8+.

Contacts: One per term, military.

Other Effects: Characters who transfer to special operations do so with the rank they previously held in their prior military career. If more than one term is served, +1 to Initiative. 1 ship DM per term, plus 1 per special assignment, applied to Trader or Warship (character's choice).

Wet Navy

The wet navy crews armed nautical vessels that protect the sealanes of a world.

Prerequisites: INT or EDU 7+. Homeworld Tech = Ind+. Pop = Moderate+.

First Term

Commission: 8+, DM +1 if EDU 8+, DM +1 if INT 8+. If on Low Gov world, DM +2 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic commission. A commission makes the character an officer; all other characters are enlisted. (Minimum SOC 7.)

Skills:

Officers: **Gun Combat 1, Vessel 2, Technician 2, Artillery 1, Determination 1.**

Enlisted: **Gun Combat 1, Vessel 3, Heavy Weapons 1, Artillery 1, Technician 2.**

Subsequent Terms

Commission: 9+, DM +2 if INT 8+, DM +2 if CHR 8+. (Minimum SOC 7.)

Skills:

Officers: **Artillery, Heavy Weapons, Vessel, Physical Science, Technician, Tactics, Determination, Charm, Personal Transport.**

Enlisted: **Artillery, Heavy Weapons, Technician, Vice, Charm, Personal Transport.**

All Terms

Special Duty: 8+ for **Gun Combat, Melee, Aircraft, Vehicle, Interaction,** *Medical,* **Acrobat, Crime, Perception, Personal Transport.**

Promotion: 6+, DM +1 if CHR 7+. If on Low Gov world, DM +1 for SOC 8+. If on High+ Gov world, SOC 8+ receives automatic promotion.

Contacts: One per term, military.

Other Effects: None.



Special Operations



Wet Navy

CAREER ENTRY REQUIREMENTS

All Homeworld/Region requirements must be met to enter the career. Attribute requirements only require that the character meet one of the requirements listed, unless they are underlined. *All* underlined requirements must be met in order to enter the career. See career descriptions for more details. The Prior Career column shows previous education or skills required. SOC or educational requirements in parantheses show what is required to get or enter the career with a commission.

Career	*STR*	*AGL*	*CON*	*INT*	*EDU*	*CHR*	*SOC*	*Homeworld/Region*	*Prior Career*	*Ship DMs Gained*
Education										
Undergrad Univ.					5+			Industrial (4)+		
Military Academy	5+				6+		(9+)	ModPop (6)+, Ind (4)+		
Graduate Univ.				7+	7+			Industrial (4)+	Univ	
Law School				5+	5+			Industrial (4)+	Univ	
Medical School				8+	8+			Industrial (4)+	Univ & Skill1	
Flight Academy		6+			6+		(9+)	Ind/Early Stellar (4/9)+		
Technical School								Industrial (4)+		
Hiver Technical Academy				7+	7+			Old Expanses		
Civilian Occupations										
Athlete	9+	9+	9+					ModPop (6)+		
Attorney									Law School	
Barbarian								Pre-Industrial (3)–		
Belter		6+						Pre-Stellar (6)+	Geology 2+	1 Scout*/T
Bounty Hunter		4+								1 Scout
Bureaucrat					7+			ModLaw (4)+		
Civil Engineer									Master's, Skill2	
Civil Pilot								Industrial (4)+	Tech/Flight, Skill3	
Computer Operator								Pre-Stellar (6)+	Tech/Univ, Skill4	
Construction Worker	4+	5+								
Corsair	6+		6+					Early Stellar (9)+		3 Warship
Criminal										
Diplomat				7+		7+		ModPop (6)+		1 Scout, Yacht/T
Entertainer						8+				1 Yacht
Farmer										
Hunter/Guide		9+	9+					ThinAtmos (4)+/Regency		1 Yacht
Journalist						7+		Industrial (4)+	Univ	
Law Enforcement	6+							LowLaw (1)+	No Prison Terms	
Manager								Industrial (4)+	Univ	1 Trader
Martial Artist										
Mechanic								Industrial (4)+		
Medicine		5+						Industrial (4)+	(Medical School)	
Mercenary	4+								Military Career	1+1 Trader, Warship
Merchant Marine	6+		5+					Ind (4)+, ModPop (6)+, WetHyd (3)+		
Prisoner									Forced by Capture	
Professor									PhD	
Psionic Researcher								Regency	Med, PhD Biology	
Rebel		5+								1 Warship
Scientist				7+			(6+)	Industrial (4)+	PhD Physical Sci.	1/5 Lab Ship
Scout	7+			7+				Early Stellar (9)+	(Univ/Flight)	1/3 Scout
Tough						3+	5–	ModPop (6)+		
Trader				6+		6+		Early Stellar (9)+	(Flight Academy)	2/5 Trader
Undercover Agent				6+		6+		Industrial (4)+		1 Scout
Wealthy Traveller							9+	Regency		5 Yacht/T
Military Careers										
Army			6+				(5+)	Ind (4)+, ModPop (6)+	(Univ/Acad)	
								ThinAtm (4)+		
Aviation	7+	7+					(6+)	Ind (4)+, ModPop (6)+	(Univ/Flight)	
								ThinAtm (4)+		
Marines		7+					(5+)	Pre-Stlr (6)+, ModPop (6)+	(Univ/Acad)	1+1 Trader, Warship/T
Navy				7+	7+		(7+)	Pre-Stlr (6)+, ModPop (6)+	(Univ/Flight)	2/5 Scout, Warship, Trader/T
Special Operations	5+	5+	5+				(5+)		Military Career	1+1 Trader, Warship
Wet Navy				7+	7+		(7+)	Ind (4)+, ModPop (6)+	(Univ/Acad)	

NOTES

Master's: Master's degree from graduate university; **PhD:** Doctorate from graduate university; **Med:** Medical school; **Tech:** Technical school; **Flight:** Flight academy; **Univ:** Undergraduate university; **Acad:** Military academy.

Prior Career Skill Prerequisites

Skill1: Biology 3+, Chem 2+; **Skill2:** Construction 4+; **Skill3:** Pilot 3+; **Skill4:** Computer 2+.

Ship DMs

Number before slash is DMs earned per term as enlisted; after slash is DMs earned per turn as officer; T=May trade 1 Ship DM for membership in Travellers'Aid Society; * Ship DMs received only if character never made a strike.

TABLE OF RANKS

Military ranks listed are representative only. Armed forces have many local variations on these rank structures.

	Army	Marines	Aviation	Navy/Wet Navy*
E1	Private Recruit	Private Recruit	Airman Recruit	Spacehand Recruit
E2	Private	Private First Class	Airman	Spacehand Apprentice
E3	Private First Class	Lance Corporal	Airman First Class	Able Spacehand
E4	Corporal	Corporal	Sergeant	Petty Officer 3d Class
E5	Sergeant	Sergeant	Staff Sergeant	Petty Officer 2d Class
E6	Staff Sergeant	Staff Sergeant	Technical Sergeant	Petty Officer 1st Class
E7	Sergeant 1st Class	Gunnery Sergeant	Master Sergeant	Chief Petty Officer (CPO)
E8	First Sergeant	First Sergeant	Senior Master Sgt	Senior CPO
E9	Sergeant Major	Sergeant Major	Chief Master Sgt	Master CPO
O1	2d Lieutenant	2d Lieutenant	Pilot Officer	Ensign
O2	1st Lieutenant	1st Lieutenant	Flying Officer	Lieutenant, j.g.
O3	Captain	Major	Flight Lieutenant	Lieutenant
O4	Major	Force Commander	Squadron Leader	Lt. Commander
O5	Lt. Colonel	Lt. Colonel	Wing Commander	Commander
O6	Colonel	Colonel	Group Captain	Captain
O7	Brigadier General	Brigadier	Air Commodore	Commodore
O8	Major General	Major General	Air Vice Marshall	Rear/Fleet Admiral
O9	Lt. General	Lt. General	Air Marshall	Vice/Sector Admiral
O10	General	General	Air Chief Marshall	Admiral/Grand Admiral

* In wet navy service, the term "spacehand" is replaced by "seaman."

	Trader	Law Enforcement	Science	Scouts
E1	Apprentice Spacehand	Trainee	Trainee	Scout Apprentice
E2	Able Spacehand	Deputy	Junior Technician	Scout Technician
E3	Senior Spacehand	Officer	Technician	Scout Specialist
E4	Master Spacehand	Sergeant	Senior Technician	Asst. Team Leader
E5	Mate	Snr. Sergeant	Supervisor	Team Leader
E6	1st Mate	Supervisor	Senior Supervisor	Senior Team Leader
O1	4th Officer	Detective	Doctor	Junior Leader
O2	3rd Officer	Detective Sgt	Assoc. Professor	Scout Leader
O3	2nd Officer	Detective Lt.	Asst. Professor	Junior Commander
O4	1st Officer	Detect. Inspector	Professor	Scout Commander
O5	Captain	Detect. Captain	Fellow	Senior Commander
O6	Senior Captain	Detect. Chief	Senior Fellow	Expedition Leader
O7	Commodore	Chief	Departmental Chair	Survey Commander

	Diplomat	Bureaucrat	Barbarian	Corsair
R1	Attache	Asst. Commissioner	Laborer	Spacehand
R2	Deputy Consul	1st Asst. Commissioner	Hunter	Technician
R3	Consul	Deputy Commissioner	Scout	Mate
R4	Consul General	Commissioner	Warrior	Master-at-Arms
R5	Envoy	Under Secretary	Chief	Lieutenant
R6	Ambassador	Secretary	Elder Chief	Captain

	Medicine
R1	Orderly
R2	Technician
R3	Paramedic
R4	Nurse
R5	Therapist
R6	Practicioner
O1	Doctor

NPCs

NPCs are nonplayer *characters*. Note the emphasis on characters. The only difference between a PC and an NPC is that a player plays the first, and the referee plays the second. Perhaps a better term would be RPC, for referee-played characters. These individuals should be potentially as realistic and interesting as any player character, for it is these NPCs who make **Traveller**'s universe real for the players. Players want to go places and meet interesting people, and it's up to the referee to make those people interesting. Their allies should be people to be admired, someone they are proud to have stand with them in a tough fight. Their opponents should be people to be feared, hated, or even grudgingly respected.

Of course, there are limits. The referee cannot generate detailed information on the thousands of people the PCs might meet. The referee can only concentrate on a few NPCs that must be done really well, and must handle other less important NPCs just well enough to maintain the sense of reality. The few important NPCs are called detailed NPCs. The other NPCs are called template NPCs. This chapter includes a number of template NPCs to assist the referee in providing a wide variety of useful characters for their PCs to interact with.

DETAILED NPCS

A detailed NPC is one that is created by the referee using the character generation system in just the same way that a PC would be created. A detailed NPC should be created when the NPC is someone with whom the player characters will be interacting on a detailed or regular basis. Examples of this sort of person are the PCs' main opponents in an adventure or campaign, a crewmember aboard the PCs' ship, an important colleague or ally, or a patron (see the Patrons entry on page 63). Many solid contacts (see page 31) developed by the PCs during play should also be created as detailed NPCs.

TEMPLATE NPCS

In most cases it is not possible, nor even desirable, for the referee to generate a fully detailed NPC for the PCs to encounter. Sometimes there is simply not enough time to generate a detailed NPC. This can happen if the referee is having to "wing it" when the players have wandered off in some other direction than the scenario had planned, or when rolling for random encounters.

In other cases, NPCs exist for a specific purpose that does not require them to be fleshed out. They are customs officers at a starport, a guard at a military base, a waitress at a starport bar who is there to pass on a rumor to the PC party, or enemy soldiers that the PCs have to fight. Template NPCs provide the rough outline of abilities that is required for them to act out their defined roles. Some of the template NPCs at the end of this chapter allow the referee to choose from a variety of skills when creating the NPC. These sets of skills can be modified to allow the referee to create the exact NPC desired.

Referee's Note: Sometimes a simple template NPC will catch the PCs' imagination, often because the referee has done a good job of giving that NPC a memorable personality, and they will try to get to know him or her better, or return to seek information or advice. Such NPCs gain the status of contacts (see page 62), and it is entirely proper for the referee to convert them into detailed NPCs, having the same balance of skills and abilities, of course.

Alien NPCs

There is not space in the **Traveller: The New Era** rulebook for character generation for every alien race in Charted Space. This information will be presented in later products. In order to allow player interaction with the major alien races, these races are presented in various forms as template NPCs.

NPCs in Combat

In terms of combat statistics, the majority of NPCs are ranked as one of four levels of experience—Novice, Experienced, Veteran, and Elite—and these experience levels dictate their Initiative, attributes, and combat assets. The NPC Stats table on the following page lists those stats for each experience level. On this table, *Level* refers to experience level; *Initiative* refers to the corresponding Initiative rating; *Attributes* indicates the average physical attribute level (STR, AGL, CON); *Asset* refers to the rating of the NPC's primary combat assets; and *Damage* indicates the number of wound points the NPC causes in an unarmed combat attack. (For an explanation of attributes, skills, and assets, see the sidebar on the next page.)

Physical Attributes: The value for these attributes is given separately from the skill area assets because they are essential for resolving combat. Strength is used to calculate recoil effects in fire combat; Constitution is used to resist unconsciousness when seriously wounded; and all three physical attributes are used in resolving unarmed melee combat. The remaining nonphysical attributes are not covered by this number because these NPC ratings are intended to convey the character's *combat* effectiveness, and the other attributes are more likely to be linked to noncombat skills as discussed under Other NPC Assets, below.

The average attributes should be taken to mean that the numbers are the average attributes of a group of

such NPCs, and not that each and every one of them has those attribute numbers. Referees may raise or lower attributes and assets if variation is required, but if this variation will not be seen by the players, the extra effort is pointless.

For example, a Veteran NPC is shown to have average physical attributes of 6, which would give a simple UPP of 666NNN, but the referee could vary this to 765NNN, 558NNN, etc. Assets, too, can be altered to fit the desired effect. These average stats are intended to help make the referee's job easier, not to lock referees into a fixed set of numbers.

NPC STATS

Level	*Initiative*	*Attributes*	*Asset*	*Damage*
Elite	5	8	15	5
Veteran	4	7	13	4
Experienced	3	6	11	3
Novice	1	6	9	1

Combat Assets: The primary combat asset is for the weapon or system that the character habitually uses in combat. This figure is given as assets (controlling attribute plus skill level) rather than skill levels, because some combat skills (Screens, Forward Observer, and RCV Operations) have nonphysical controlling attributes.

For most soldiers and civilians, this asset is something from the Gun Combat cluster (Energy Weapon or Slug Weapon). Specialist soldiers have, in addition to the standard Gun Combat skills, more exotic primary combat assets, typically drawn from the Artillery, Heavy Weapons, and Vehicle clusters. For a tank gunner, the primary combat skill would be the tank's gun (Heavy Gun, Energy Artillery), for a tank driver it would be a driving skill (Ground Vehicle [Tracked] or Pilot [Interface/Grav]), for a battlefield screen operator it would be Screens (Nuclear Damper) or (Meson Screen). No soldier will have the listed primary combat asset level in every conceivable combat skill, only in a Gun Combat skill, and the handful of other skills that allow the soldier to carry out his or her primary combat function.

Note that template NPCs will have combat skills appropriate to their background. NPC soldiers from a Pre-Industrial world will have combat skills in Archery, Thrown Weapon, and perhaps Early Firearms and Archaic Artillery, not Energy Weapons, etc. Furthermore, nonmilitary characters at high tech levels will only rarely have combat skills from the Artillery or Heavy Weapons clusters; their assets will be almost exclusively be drawn from the Gun Combat cluster.

NPC Panic: NPCs use the same panic system as PCs. This means that while PCs can reach an Initiative of 6, in which case they never panic, even Elite NPCs have some chance of panicking. Thus, if the referee intends to create a powerful NPC warrior with an Initiative of 6 or better, this warrior must be a detailed NPC.

Attributes, Skills, and Assets

The ability of a Traveller character—PC or NPC—to accomplish something is based on the combination of two things: innate attributes and training. The character's attributes (Strength, Agility, etc.) are the first portion of this combination, and the character's skill levels represent the second. Each skill has one particular attribute which is crucial to the performance of that skill. This attribute is the *controlling attribute* of that skill. For example, Education is the controlling attribute of History skill, and Agility is the controlling attribute of Pilot skill. A skill level added to its controlling attribute is called the *asset* in that skill, and this total is the number used in Traveller to determine the success or failure of an action. NPC skills given in this section are given as assets, which is to say skills already added to their controlling attributes.

NPC Hit Capacity: It is entirely too much of a headache to keep track of multiple wounds and their locations on every NPC. For this reason, NPCs, regardless of experience level, are assumed to have a standard, overall hit capacity of 40, divided into two rows of 20 (see the standard NPC forms in the back of the book). When an NPC first takes a wound, he or she is considered slightly wounded and suffers a –1 to Initiative. Once the first row is filled, excess points are marked off the second row. With the first point marked off the second row, the NPC is considered seriously wounded and takes an additional –2 to Initiative (for a total of –3). In addition, seriously wounded NPCs must succeed at a D100 roll versus Constitution every combat turn in which they attempt to act, or they become unconscious (just as with player characters).

Note that for simplicity, the NPC damage is not assigned to specific hit locations, as it is for PCs. However, hit locations should still be rolled for two reasons. First, if an attack on an NPC strikes an armored hit location, the armor takes effect normally. Second, if any attack strikes an NPC in the head, damage for that attack is doubled. This reflects the fact that hits to the head by firearms are especially deadly. In addition, any hits to an NPC's head are subject to the quick kill roll (see page 285). Also, it allows PCs to aim melee attacks to the head, trading a more difficult attack for increased damage.

Other NPC Assets

Of course, the combat skills listed above will not be the only skills an NPC has. In fact, for many NPCs (perhaps most), the player characters will never have occasion to know their combat skills. Instead, they will be known for their expertise in some other field.

The experience level of template NPCs is *only relevant to their performance in combat.* Some of the most

capable scientists, experts in various fields, engineers, and political leaders will only be rated as Novice NPCs. The template NPCs below have an entry for Other Assets which details these other talents. As with the combat assets, these other talents are listed in their asset form, which does not require the referee to keep separate track of the controlling attribute.

NPC MOTIVATIONS

All NPCs have reasons for who they are, what they do, and where they are. These motivations are always up to the referee, and may be simple or complicated as required by the situation. While the referee's sense of logic and imagination can serve quite well in many circumstances, there are times when referees will want a random element to help spur their imaginations, or to create quick answers in a situation where not too much detail is required. **Traveller** provides such a random element with the use of a standard deck of playing cards.

The referee may use these in conjunction with detailed or template NPCs

To generate an NPC's motivations, draw two cards from a standard deck of playing cards. The card with the highest value determines the NPC's primary motivation; the lower reveals the secondary motivation. Each card's suit dictates the direction that motivation takes, and its face value determines the motivation's strength or its particular bent.

Aces and face cards indicate special motivations. If a special card is drawn, it is automatically the NPC's primary motivation. If two special cards are drawn, the NPC has two primary motivations complementing each other or competing with each other for dominance.

Optional PC Motivations: Many roleplaying gamers enjoy the challenge of portraying a character that is very much unlike their own real personalities. Players are free to use the tables below to generate personality details or "quirks" for their own characters if they so desire. No player should feel obligated to do so, however.

The various possibilities are summarized in the NPC Motivation table and explained in more detail below.

Spades: Ambition

These NPCs seek personal power and influence. A "somewhat ambitious" NPC will be inclined toward boastfulness and a desire to impress other people. "Moderately ambitious" NPCs are driven to attain positions of high responsibility. A "very ambitious" NPC will be overwhelmed by a desire to manipulate and control others.

Jack, Pompous: Pompous NPCs are conceited and arrogant in their dealings with others. They consider themselves to be clearly superior to everyone around them, and they make no secret of that conviction.

Queen, Ruthless: This NPC will let nothing stand in the way of achieving any goal and feels no concern for the needs of others. Such NPCs can feign affection, devotion, sincerity, or anything else that serves their purpose, but actually they feel nothing.

King, Deceitful: The NPC has no respect for honesty. Depending upon the referee's decision, deceitful NPCs may be pathological liars, or they may use the truth deceitfully, giving just enough information to guarantee that their victims are misled. The actual direction of their deceitfulness will generally depend upon their secondary motivation. Often, such characters are unable to believe that other people are not lying. They expect to be lied to, and expect the worst from others.

NPC MOTIVATION

Clubs: Violence

Card	*Motivation*
Ace	War leader
King	Brutal
Queen	Stubborn
Jack	Murderous
8-10	Very violent
5-7	Moderately violent
2-4	Somewhat violent

Diamonds: Greed

Card	*Motivation*
Ace	Generous
King	Selfish
Queen	Lustful
Jack	Coward
8-10	Very greedy
5-7	Moderately greedy
2-4	Somewhat greedy

Hearts: Sociability

Card	*Motivation*
Ace	Just
King	Honorable
Queen	Loving
Jack	Wise
8-10	Very sociable
5-7	Moderately sociable
2-4	Somewhat sociable

Spades: Ambition

Card	*Motivation*
Ace	Charismatic
King	Deceitful
Queen	Ruthless
Jack	Pompous
8-10	Very ambitious
5-7	Moderately ambitious
2-4	Somewhat ambitious

Ace, Charismatic: The NPC is a charismatic leader to whom others are naturally drawn. This usually implies a high CHR attribute and perhaps skill in Leadership. Some of these NPCs are honorable and just; others are cruel and manipulative. The referee can decide based upon the adventure situation and/or the particular NPC's secondary motivation.

Hearts: Sociability

Such NPCs are highly influenced by their love of people. They tend to be friendly, loyal, and just. A "somewhat sociable" NPC will be amiable, talkative, and cooperative with most everyone. "Moderately sociable" NPCs will have a strong sense of duty and loyalty to their group. A "very sociable" NPC will have a strong commitment to justice and the welfare of all people, and will look for the good qualities in everyone, but will react with anger to injustice and brutality.

Jack, Wise: The NPC is unusually wise, either as a result of years of experience, or simply because of astute observation. Such NPCs almost always exhibit good judgment and, if asked, offer sound advice.

Queen, Loving: This NPC loves some other person devotedly, perhaps a spouse, parent, child, or close friend. Such NPCs would willingly sacrifice themselves for the one they love. Alternatively, the NPC may be loving toward absolutely everyone. The choice is up to the referee.

King, Honorable: Honorable NPCs are scrupulously honest in their dealings with everyone. For such characters, their word of honor is their bond. Some will feel honor-bound to a certain action even without having made a specific promise, so long as they feel their positions obligate them to do so. Such NPCs will typically carry out their promises and obligations even if it means facing death. Honorable NPCs have contempt for liars and people who break their word.

Ace, Just: This NPC sees justice as the greatest virtue a person can display and the only truly important consideration in deciding upon a course of action. Such characters have no respect for cheats and swindlers, and they will wholeheartedly assist any attempt to right an injustice.

Clubs: Violence

These NPCs have a greater likelihood of reacting with violence than do most people. A "somewhat violent" NPC is not frightened or intimidated by threats of violence and will not hesitate to use force if the situation seems to warrant it. A "moderately violent" NPC is aggressive and inclined to view violence as the preferred means of resolving disputes. A "very violent" NPC loves a good fight and either is or wants to be a warrior.

Even a high violence rating does not, however, necessarily indicate that the nonplayer character is brutal or a bully. For example, a "very violent" NPC who was also "very sociable" could be described as friendly, good-natured, and loyal, but also a good person to have with you in a fight.

Jack, Murderous: This NPC is subject to sudden, uncontrollable, murderous rages. Chances are, such NPCs have already killed at least once in a fit of rage. If not, it certainly will not be long before someone crosses them at the wrong time and dies...

Queen, Stubborn: Such NPCs are so stubborn that once they have made up their minds about something, it is nearly impossible to persuade them differently. Such NPCs are not necessarily sticks in the mud. They may often be outspoken, innovative thinkers who, once they make up their minds to stick their necks out, cannot be talked out of it.

King, Brutal: These NPCs are sadistic brutes who enjoy causing other people pain and grief. This cruelty is not always physical. Brutal NPCs often enjoy causing psychological pain, constantly picking on or browbeating their companions, especially those whom they perceive as weak. These NPCs are also cruel to animals, and enjoy such pastimes as cockfights and bear baiting. Such a person is likely to use torture whether or not there is anything to be gained from it.

Ace, War Leader: The NPC is an unusually good leader in battle, able to inspire confidence in others, and receiving complete obedience from followers. In terms of combat rules, treat such NPCs as having an Initiative of 6 (they never panic), and allow them to predict their opponents' general strategy and be prepared for it.

Diamonds: Greed

The NPC wants to be rich. A "somewhat greedy" NPC will be fairly easy to convince to take a particular course of action as long as money is involved. A "moderately greedy" NPC will drive a harder bargain, but will actually be more willing to take larger risks, provided the payment is sufficient. A "very greedy" NPC will do virtually anything for money, but will insist upon very high fees, and will perhaps attempt treachery if it seems that even more money can be gained by doing so.

Jack, Coward: This NPC is a total coward and will run from danger at every opportunity. (You might say such characters are greedy about their own safety.) If escape is impossible, a coward will cower and refuse to fight.

Queen, Lustful: These NPCs are driven by lust for the opposite sex. Depending upon the circumstances, the

referee may interpret this as an impersonal lust for all members of that sex or as an obsession for a particular person.

King, Selfish: A selfish NPC never helps without demanding payment and will never give away anything. Such NPCs are convinced that everyone else is just as selfish as they are. As a result, they will demand higher payment than they are due (believing their employers to be holding out on them), and they will jealously guard their own possessions (convinced that everyone else is just waiting for an opportunity to steal them). NPCs this selfish are likely to steal what other people do not guard very closely.

Ace, Generous: These NPCs are extremely generous. Those who have another Diamond card as a secondary motivation are so generous that they will gladly give away anything they have to others in need, even if this leaves them with nothing. All others will tend to make generous deals and will refuse payment for favors, unless those favors directly relate to their normal line of business, and the person receiving the favor is not obviously in need.

NPC APPEARANCE

When you describe an NPC's appearance to the players, you should keep in mind two main goals: You want to make the NPC seem truly alive, and you want the NPC description to help develop or maintain the mood you've set for the adventure. There are a number of things to be considered in doing this.

First, it will help if you take a moment to build a mental picture of the NPC in your own mind. If you can accomplish that, you probably have already succeeded at pretty much everything else we are about to tell you about NPC appearance. Once you have that mental picture, you need to begin thinking about the most dramatic way to convey it to your players.

Generally, this will mean painting a scene, not merely a description of the NPC. After all, characters have to be somewhere when the PCs encounter them. Now paint the basics of that scene in broad strokes, and work in pieces of mood-setting detail. Don't forget to appeal to other senses as well as sight. Sound, smell, touch, and even psionic sensations all add to the impact of a scene. As you continue, work inward from the setting to the NPC, giving details of background before giving details of the character. Feel free to add in a little bit of ambiguity, to make it obvious that there is more to the character than merely what involves the PCs. Perhaps the character is on the phone with his boss, wife, or children. Perhaps he is in a hurry to finish work on a personal project when the PCs interrupt him, is making lunch, or is setting traps for the pests that infect his building. These sorts of things impress on the players that the NPC has not been sitting in a small room for his entire life just waiting for the one moment that the PCs would arrive, but was living a life long before they came along.

Stereotypes can work well because they serve as a sort of shorthand, getting a lot of information across to the players with a limited number of words. The basics of an NPC's appearance, for instance, will have a lot to do with the NPC's attributes and skills. And once you've appealed to a stereotype in your description, any details that run contrary to that stereotype will become all the more firmly fixed in the players' minds.

For example:

Referee: While looking for the professor, you are approached by a man with unkempt hair, wearing grimy overalls. He is carrying a mop, and appears to be a janitor. He is muttering to himself. When he sees you, he asks, "What can I do for you folks?"

Player: "We're looking for Dr. Humphries of the Genetics Department."

Referee: The man smiles and says, "I think you're mistaken. You're not looking *for* Dr. Humphries, you're looking *at* him."

The description you give will do a lot to determine what the players think about that NPC from this point on. Just as in real life, first impressions *do* make a difference.

Finally, recognize that knowing when to avoid detail can be as important as knowing when to include it. Too much detail can be confusing to the players and slow down play, because they usually assume that detailed descriptions mean that there's something important going on, and they can get side-tracked trying to find something that isn't there. Also, a vague or incomplete description of a scene can add to its sense of mystery: The players are likely to be much more nervous about a figure that their characters can't quite see than about one they can see clearly, however frightening it is.

CONTACTS

When generic contacts are converted to solid ones, they can be generated with whatever level of detail the referee desires, just as with other NPCs. In general, though, the more important the contact is to a PC, and the more frequently that contact shows up in the adventure campaign, the more detail will be required for that contact.

It is suggested that the referee allow players a strong hand in designing the histories for their contacts. After

all, in some ways a contact's history is part of the PC's history. But it is suggested just as strongly that players not be allowed to know exact numbers for the contact's attributes, skills, and assets. To a player, the contact should seem like a living personality, not a collection of numbers that can be exploited. Ideally, then, a contact's basic description will be generated by the player whose character has established that contact, and the referee will then create appropriate attributes and skills to match the description.

In designing a contact's history, a player should justify why that contact would have established a tie with the PC. For example, contacts could have been classmates during an education term, coworkers at a civilian occupation, or comrades in a military career. Of course, for a contact to be someone who will be interested in helping the PC all these years later, they should have had something in common: a shared hobby, a shared bonding experience (e.g., combat for a military career, a difficult job assignment for civilians, debate partners or a research assistant for education), or a shared secret or common goal. The player should specify how long ago this contact was gained (i.e., the term in character generation in which it was earned) to assist the referee in figuring out how much older the contact is, and how much more (or less) powerful the contact may have become in the intervening time. The referee must decide whether to accept a history as plausible or interesting, or reject one as too ridiculous, requiring the player to try again.

Once the history is agreed upon, the referee determines how old the contacts have become by now, and just how much clout they still have in their fields. Once this has been established, the referee can look down the skill list for appropriate skills, or simply define the contact as a template NPC, making up any necessary skill levels as the need arises during play. It just depends upon how much time and energy the referee wants to spend on the NPC.

PATRONS

Patrons are a special type of NPC. Patrons are the people the PCs are working for. These patrons may meet the NPCs by placing an ad for services needed, may be people the PCs already know, or may be mysterious figures who send their messages only through intermediaries. It is all up to the referee.

Not all PC groups will be working for a patron at any one time, but most PC groups will work for a patron at least once, because they have to make a living somehow. Patrons can be a very important way to drive a **Traveller** campaign, as they provide a constant series of missions for the PCs to carry out. Some of these missions are on the up-and-up, and others are suicide missions, but the players can't always tell that sort of thing in advance.

Finding a Patron: Often this is not a problem; the patron finds the players ("I have been watching you for some time, and have concluded that you have exactly the talents needed for a project...").

On the other hand, players will frequently be looking for work. Although it is hard to find a patron right off the bat, PCs can find rumors of patrons that are looking for employees. Such rumors can be picked up around a starport, at the customs office, the aerospace traffic control office, the warehouses, or the old standby, the starport bar. Naturally, the more seedy the locale, the more likely the job is illegal, immoral, or downright stupid. After all, you get what you pay for.

Some PC groups may have patrons that are entire governments. Examples include PCs who are members of the RCES (Reformation Coalition Exploratory Service), or who share ownership of their starship with the Regency Quarantine Service or the government of a pocket empire (see Starship Purchase on page 221, and Starting Money and Initial Equipment on page 36). In this case, they should have some sort of regular superior, a local commander or case officer who regularly gives them their assignments and to whom they report upon completion.

HUMAN TEMPLATE NPCS

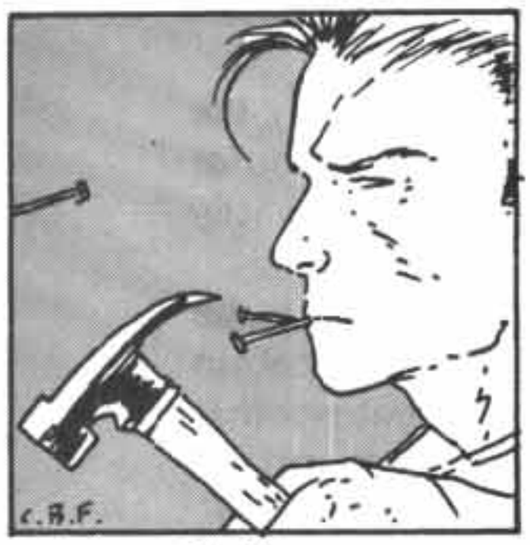
The templates on the following pages are only the briefest attempt to show some of the many types of humans who can be met in **Traveller**. Many of these can serve as jumping-off points for referees to create other types of people who can be met. When creating a new template NPC, think of three criteria:

1) How good is the NPC in combat? This gives the NPC's level.

2) What equipment does the NPC fight with? This gives not only the weapons (from a slug pistol for a police officer all the way up to a grav tank for the NPC members of a tank crew), but also the primary combat skills used with the equipment.

3) What other things can this character do? This gives the other assets. If the NPC is primarily a fighter, these can be minor or nonexistent. If the NPC is not a fighter, these other assets are the NPC's reason for existing, and will naturally be significant.

Under the Combat Assets entry for each NPC, some NPC types choose only one or a few skills from a list. NPC types that give a list without using the word "or" have all of the listed skills at the level of their primary combat asset. In the lists below, assets will sometimes be listed by skill cluster in **bold**, cascade skill in *italics*, and uncascaded skills in normal type.



Craftsman



Field Scientist



Free Trader



Gang Member

Craftsman

These NPCs are encountered within peasant settlements in the Wilds, and provide essential services to the low-tech populations there. Although they may not possess leadership or persuasive skills, their important talents place them at the center of the community. Any community that seeks to arm itself, even with only metal-tipped pikes, would need to have the cooperation of the local craftsmen. Some also are in the pay of the local warlords, and provide services upon request—or demand.

Level: Novice.

Combat Assets: Armed Martial Arts (Club) using trade tools: hammers, axes, etc.

Other Assets: Bargain 8; any two of Carpenter, Jeweler, Mason, or Metallurgy, one at 12, the other at 6. On worlds where more technology survives, add Electronics, Machinist, and Mechanic to the list.

Field Scientist

Freelance field scientists are a special breed. These individuals take their ships and crews into the Wilds with little in the way of organized defenses, in order to conduct basic and applied research. Unlike freelance scouts and explorers, these scientists are not motivated by the desire to recover artifacts and relics, but rather to gain information on various subjects of interest.

Level: Experienced.

Combat Assets: *Slug Weapon* or *Energy Weapon.*

Other Assets: Research 16, any three **Physical Science** at 18, any four **Physical Science** or **Technician** at 14.

Free Trader

The free traders, or just traders, are those independent traders tough enough to have survived in the Wilds. They continue to plod their itinerant way through these blasted worlds, braving dangers too numerous to calculate. By maintaining this tenuous network, they provide the only source of information (imprecise and slow as it may be) in this vast, blighted area. Every group of traders will have at least one leader with it.

Level: Experienced (Leader: Veteran).

Combat Assets: Choose two of *Slug Weapon, Energy Weapon,* Autogun, *Armed Martial Arts,* Unarmed Martial Arts.

Other Assets: Any six of **Charm, Crime, Determination, Economics, Interaction,** *Medical,* **Space Tech, Space Vessel, Technician, Vice, Vehicle,** three at 12, and three at 9; plus Environment Suit 9, Zero-G Environment 9. (Leader adds Leadership 12, Bargain 12, Persuasion 12).

Gang Members

On most worlds in the Wilds, the vast majority of city dwellers either moved into the countryside or died, as there were insufficient resources to sustain life in the cities. All the same, some stayed, but in order to feed themselves, they formed gangs that could seize and defend the scarce means of survival in these post-urban deserts. Every group of gang members encountered will have a leader (a gang as a whole will have several such leaders and one overall leader superior to them all).

Level: Experienced (Leader: Veteran).

Combat Assets: Armed Martial Arts (Club or Small Blade), Unarmed Martial Arts, *Slug Weapon,* Thrown Weapon.

Other Assets: Observation 12, Stealth 12, Streetwise 12. (Leader adds Leadership 14, Ground Tactics 10, Persuasion 14.)

Guard

Wherever there is something worth having, there are always guards. Equipment varies according to location, but will include at least melee weapons, and possibly firearms and personal armor if technology and importance of location warrant.

Each area under guard should include one leader with additional characteristics listed below.

Level: Novice (Leader: Experienced).

Combat Assets: Armed Martial Arts (Club) plus *Slug Weapon* or *Energy Weapon.*

Other Assets: None.

Lancer

The lancer, or freelance scout, is increasingly common in the frontiers of the Reformation Coalition. These lancers are hired to do work by worlds of the Coalition, or sometimes engage in speculative exploration, hoping to find equipment or information that can be sold to organizations back in the Coalition. Because they do not have the advantages of the Hiver training curriculum that has produced RCES personnel, they are not quite so highly trained. Each group will include at least one leader.

Level: Experienced (Leader: Veteran).

Combat Assets: Choose three from *Slug Weapon* or *Energy Weapon*, Unarmed Martial Arts, Autogun, Grenade Launcher, or Tac Missile.

Other Assets: Any five of **Aircraft, Charm, Economics, Engineer, Explore, Interaction**, *Medical*, **Personal Vehicle, Physical Science, Space Tech, Space Vessel, Technician, Vehicle**, two at 12 (13 for leader) and three at 9 (10 for leader), plus Environment Suit 8, Zero-G Environment 8. (Leader adds Ground Tactics or Ship Tactics 8, Leadership 8, Persuasion 8.)

Peasant

Often encountered on worlds in the Wilds, peasants are typically rather simple people, but often live in fear of local warlords, and may in addition have xenophobic or technophobic tendencies, depending on local conditions and history.

Each group of peasants will have a leader, with characteristics indicated below.

Level: Novice (Leader: Experienced).

Combat Assets: Armed Martial Arts, plus Archery, Early Firearms, or Thrown Weapon. (Leader may add Slug Weapon [Slug Pistol] at referee's discretion.)

Other Assets: Farming 14, Riding 10, Guard/Hunting Beasts 8. (Leader adds Leadership 8, Persuasion 8.)

Reformation Merchant

Reformation Coalition merchants have not ventured very far into the Wilds since the annihilation of the Dawn League's first mission. They primarily concern themselves with maintaining internal trade and contact among the Coalition itself.

Level: Novice.

Combat Assets: *Slug Weapon* or *Energy Weapon*, plus Unarmed Martial Arts.

Other Assets: Any five from **Determination, Economics, Interaction, Personal Vehicle, Spacehand, Space Tech, Space Vessel, Technician, Vice**, or **Vehicle**, two at 12, three at 9.

Star Viking

Star Vikings are members of the Reformation Coalition Exploratory Service (RCES). For obvious reasons, most Star Viking characters will be player characters, but the referee may wish to present a Star Viking NPC on occasion. Although many PC viking characters are generalists, it is useful to think of NPC vikings as belonging to one of three specialties: covert ops, ground ops, or space operations.



Guard

If NPCs appear in a group, there should be a leader with characteristics included below.



Lancer

Star Viking—Covert Specialist

Level: Veteran.

Combat Assets: Choose two from *Slug Weapon*, *Energy Weapon*, Archery, or Early Firearms.

Other Assets: Act/Bluff 10, Disguise 8, Intrusion 10, Language (choose appropriate) 16, Navigation 10, Observation 12, Stealth 10, Survival 8, plus any two **Physical Science, Social Science**, or **Technician** at 12.



Peasant

Star Viking—Ground Specialist

Level: Experienced (Leader: Veteran).

Combat Assets: Choose three from Slug Weapon (Slug Rifle), Energy Weapon (Energy Rifle), Unarmed Martial Arts, Autogun, Grenade Launcher, or Tac Missile.

Other Assets: Any six from **Engineer, Explore**, *Medical*, **Personal Vehicle, Physical Science**, or **Technician**, three at 12 (14 for leader), and three at 9 (10 for leader). (Leader adds Leadership 9, Ground Tactics 8.)



Reformation Merchant

Star Viking—Space Specialist

Level: Experienced (Leader: Experienced).

Combat Assets: Slug Weapon (Slug Pistol) or Energy Weapon (Energy Pistol).

Other Assets: Any three **Space Tech, Space Vessel,** or **Technician** skills at 12 (14 for leader); any additional three from **Physical Science, Space Tech, Space Vessel, Technician** at 9 (10 for leader), Environment Suit 8, Zero-G Environment 8. (Leader adds Leadership 8, Ship Tactics 8.)



Star Viking

Survivors

Every habitable world in the Wilds will have its self-motivated inhabitants who have given up on the local social order and headed for the hills to make their own life by their own wits. These have outwitted the influence of the local warlords, and escaped a fate as peasants. Because of their life-style, survivors tend to be more free-thinking than those who have been incorporated into a re-emerging authoritarian feudal order. While this might make them more open to off-world contact, they may still be victims of xenophobic or technophobic outlooks, as the local situation warrants.

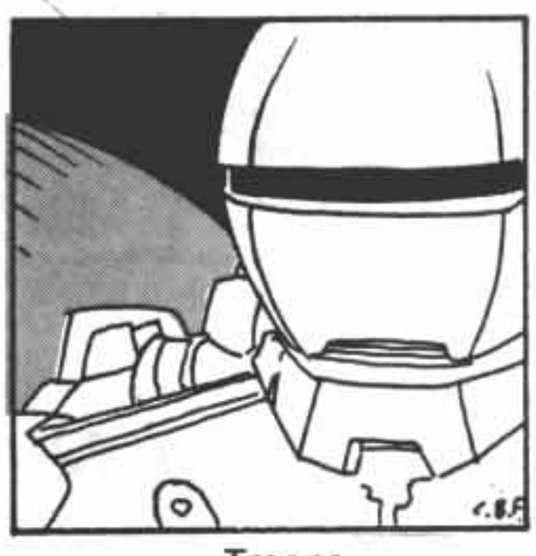


Survivor

Level: Experienced.

Combat Assets: *Slug Weapon, Energy Weapon,* or Early Firearms, or Archery, as appropriate to the world's current or original tech level.

Other Assets: Mechanic 9 (if appropriate to world tech), Medical (Trauma Aid) 9, Navigation 10, Observation 12, Stealth 10, Survival 12, Tracking 12.



Troops

Troops

The Troops heading covers a wide variety of topics, from the elite Regency Marines, to the untrained show troops of a Technologically Elevated Dictatorship. The quality of a body of troops is decided by the environment. Their equipment and skills are decided by the local technology, and their experience level is decided by their level of competition. A world which has not seen war for a long time, or which has no real competition (i.e., only unarmed peasants) will be of lower quality, while an army which has just come from a war will be full of experienced combat troops.

Three different types of troops are listed below. The referee should create local variations based upon these models. The combat assets shows the skills each normal infantry soldier is assumed to have at the primary combat asset level. Specialist soldiers, such as artillerymen, tank drivers, etc., also add the skills listed under specialist which allow them to perform their specific duties. Troops that use battle dress have the Environment Suit skill listed under "Combat Assets." These troops use weapons combat assets according to their experience level, rather than keeping track of the Environment Suit and weapons skills separately. Each group has one or more leaders with additional abilities indicated below.

Troops—Regency Marines

Level: Elite (Leader: Elite).

Combat Assets: Energy Weapon (Energy Rifle), Grenade Launcher, Armed Martial Arts (Large Blade), Environment Suit.

(Specialists add any two from **Aircraft, Artillery,** Combat Engineer, **Heavy Weapons,** *Screens,* **Technician, Vehicle.**)

Other Assets: Grav Belt 12, Survival 10. (Leaders add Leadership 13, Ground Tactics 12.)

Troops—Regulars

Level: Experienced (Leader: Veteran).

Combat Assets: *Slug Weapon, Energy Weapon,* Early Firearms, or Archery, plus *Armed Martial Arts.*

(Specialists add any two from **Aircraft, Artillery,** Combat Engineer, Environment Suit, **Heavy Weapons,** *Medical,* **Personal Vehicle,** *Screens,* **Technician, Vehicle.**)

Other Assets: Survival 10. (Leaders add Leadership 12, Ground Tactics 11, Navigation 11.)

Troops—Show Troops

Level: Novice (Leader: Novice).

Combat Assets: *Slug Weapon, Energy Weapon,* Early Firearms, or Archery, plus *Armed Martial Arts.*

(Specialists add any two from **Aircraft, Artillery,** Environment Suit, **Heavy Weapons, Personal Vehicle,** *Screens,* **Technician, Vehicle.**)

Other Assets: None. (Leaders add Bribery 10, Carousing 10.)

ALIEN TEMPLATE NPCS

Use care when drawing cards for alien NPC motivation, as the standard motivation system is designed for humans. Whenever possible, imagine a motivation that is consistent with the NPC's alien nature, and then only use motivation cards to add slight variations to that nature. Specific modifications to the card system are noted.

As always, remember that the combat skills and other assets can be adjusted up or down to suit the needs of the encounter, and to create variability and personality.

Hivers

Players can expect to meet three main types of Hivers in the New Era, and all of these in or around the Old Expanses sector. Hivers are quite different from human beings, apart from their physical appearance.

Hivers have no gender. All Hivers are neuter, and exchange genetic material with every Hiver they meet in a very matter-of-fact way, by "shaking hands" with their rearmost limb (opposite the head). The "larvae" that result are of no interest to the Hivers until they reach a year in age, and are then welcomed into Hiver communities.

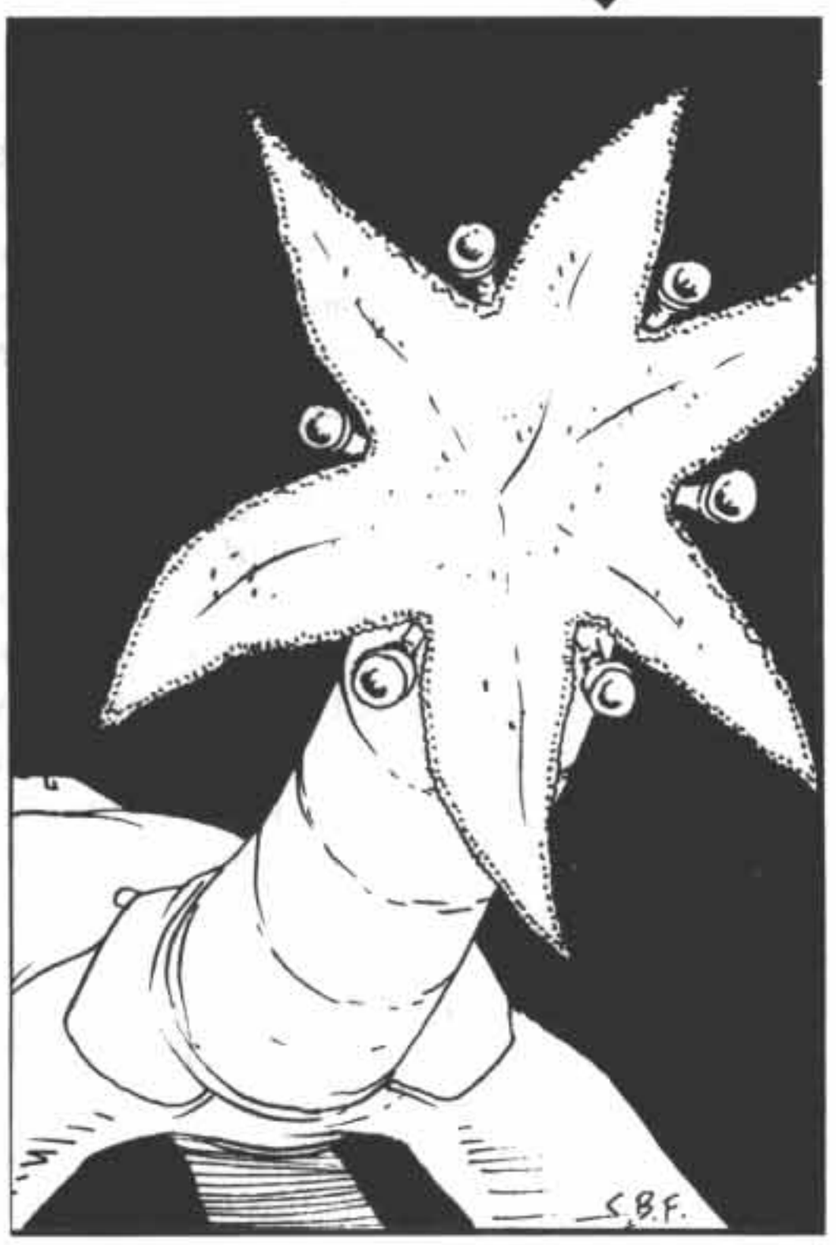
Hivers are also virtually emotionless by human standards. They do not experience anger, love, joy, jealousy, or greed. They have two major motivations, which are curiosity and their parental instinct.

Curiosity is familiar to humans, but is taken to greater extremes. Hivers use every waking moment studying or fiddling with things, conducting simple experiments with common objects, and recording results in their ubiquitous portable computers. This can make human companions feel paranoid, as if they are constantly being studied by their cryptic Hiver shipmate. When exploring a world, Hivers also tend to wander off, attracted by some mystery, and can take much longer than their more businesslike human comrades might prefer.

Their parental instinct is naturally linked to the survival of their race and offspring, but also has a strong side effect: the urge to help along other promising races (which includes humanity, but not K'kree, Aslan, or Vargr). This instinct not only prompts them to assist these races in their development, but also to help these races curb their violent instincts, which are distasteful to the Hivers, and which they consider uncivilized.

Like many races, the Hivers are convinced of their racial superiority, but the Hivers do not fight wars in the name of this belief. Their sense of superiority is shown in secure confidence, not in insecure arguing about who is better, and is expressed by their lack of interest in constantly explaining themselves to companions of other races.

Finally, Hivers are mute. Their "spoken" language consists of a variety of arm gestures (often with several of their arms at once), physical contact, and written symbols, which cannot be understood by humans. To speak to humans, Hivers have a vocal synthesizer internal to the portable computers they wear strapped to their "chests." To understand humans, Hivers must either learn Anglic, or require humans to use a Hiver visual translator. This device is strapped to a human's chest, with a video screen facing out toward the Hiver. The human types a message into the keypad which is displayed on this screen in the Hiver written language. Hivers who know Anglic can simply comprehend spoken human speech.



Hivers also have a tendency toward what humans interpret as secrecy and subtlety. Part of this is due to the Hiver sense of racial superiority: They need not justify themselves. Because Hivers do not experience suspicion as an emotional response, they do not expect that they need to explain their every action. But to the

Hiver Manipulation

The highest talent to which a Hiver aspires is that of manipulation: the ability to cause social change by one or more small influences. The more subtle and unknown the influence, the better the manipulation and, within Hiver society, the more esteemed the manipulator. Accomplished manipulators rise to positions of great influence and authority within Hiver society.

Hiver tech reps aboard Star Viking ships will often be engaged in learning how to manipulate, with the humans of the crew as their obvious subjects. The key to a manipulation, like a human scientific experiment, is to first state the results that will be sought, and then achieve them, but without anyone knowing, as that would skew the result.

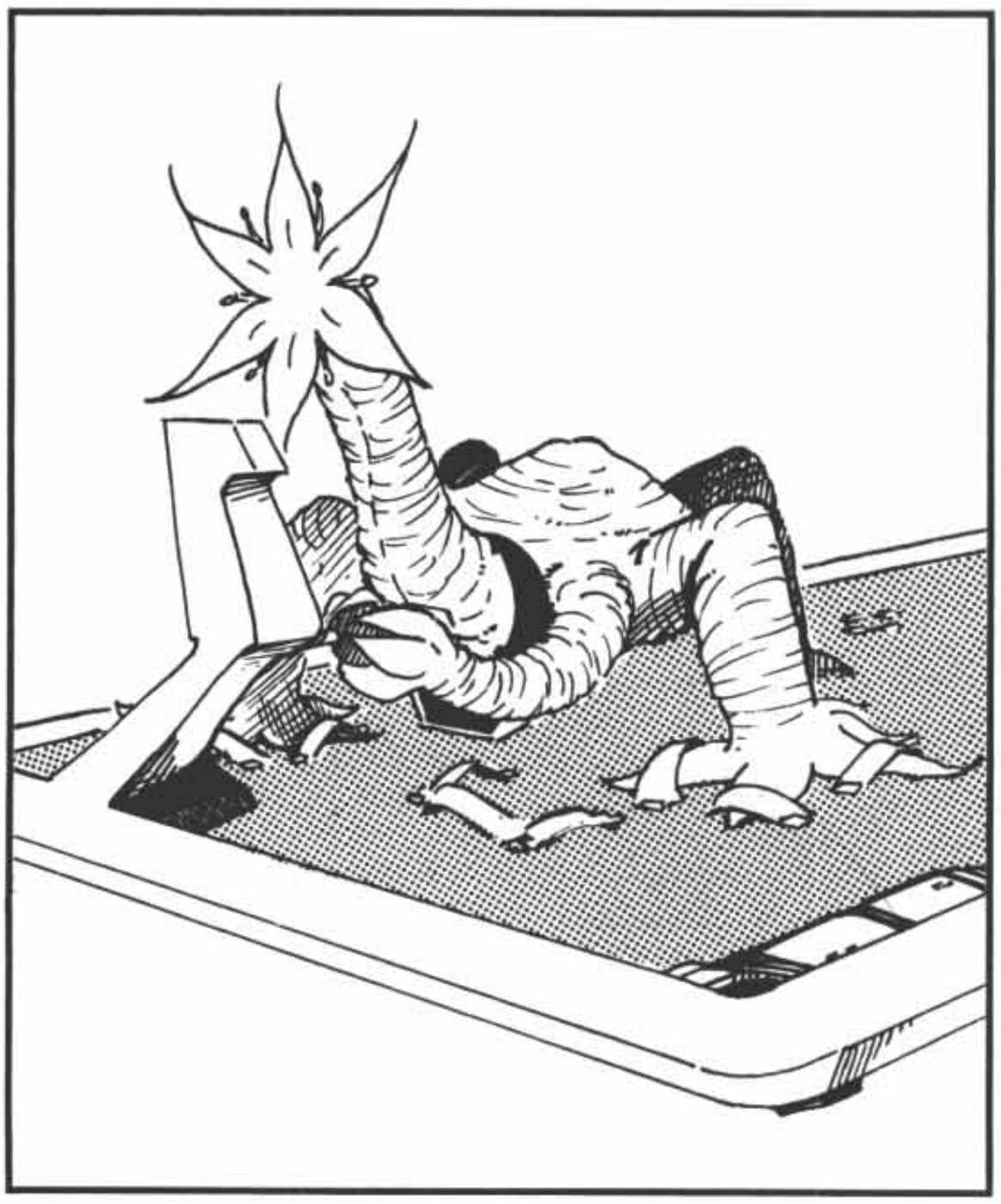
Perhaps the Hiver has grown curious why a certain squeaky chair in the wardroom has not been repaired, although all of the crew complain about it. The Hiver might take it upon itself to fix the chair, but by using the responses of others, rather than doing the job itself. The Hiver might place a wrench and a can of light oil in the wardroom to prompt someone to take the initiative and fix it. More subtle yet, the Hiver might carefully rearrange the chairs so the captain always gets the squeaky chair and orders someone to fix it. Most subtle of all, the Hiver might insert a remark into a conversation with a crewmember who is proud of human ingenuity, such as, "Yes, but you humans sure make noisy chairs."

In this way, the Hiver not only learns more about human psychology, hence satisfying its incessant curiosity, but has also constructed a successful small-scale manipulation, and is one step further along in learning this most prized Hiver skill.

human mind, the constant Hiver activity seems out of balance with their typical lack of running commentary on what they are doing. Hiver subtlety also stems from this lack of desire to communicate more than is necessary. A Hiver is content to communicate a seed of an idea to a companion if that is sufficient to get a point across, rather than explain an entire plan with all of its ramifications every time a decision needs to be made. This dovetails with the Hiver ideal of subtle manipulation (see Hiver Manipulation on the previous page). Explaining too much defeats the purpose. The fact that they are naturally silent adds much to their aura of secrecy.

Referees should feel free to use Hiver peculiarities for comic effect. But remember that Hivers are not clowns or buffoons, nor are they stupid. High comedy and slapstick are usually not appropriate; rather, a wry sense of amusement at their very alien motivations and reactions is desirable.

Motivations: When pulling cards for Hiver NPC motivation, disregard the special descriptions for all face cards. Also disregard any Diamonds result, as Hivers do not experience greed. Treat Clubs results as a measure of the Hiver's ability to overcome its natural unwillingness to use violence when necessary, with higher results meaning that it is more used to the idea. A Clubs face card gives the Hiver an Initiative of 2, and is the only way that a Hiver can have an Initiative other than 1. A Clubs result never means that a Hiver is violent, only that it will fight when it must, rather than breaking and running. Spades results are taken as a measure of the Hiver's curiosity, not ambition, with higher results meaning more curiosity. Hearts results are a measure of the Hiver's parental instinct toward humans in general, and to its crew in particular. High results mean that the Hiver is not only committed to the goals of the Reformation Coalition (as separate from the Hive Federation), but to the good reputation of the ship or organization it serves.



Most of the Hiver strength, and most of the Hivers themselves, remain within the Hive Federation, rebuilding their society. Those who venture out toward human space are of three main types, as follows.

Hiver Tech Rep

Every RCES ship's crew includes at least one Hiver technical representative. These Hivers are included to provide assistance in the maintenance and repair of Hiver-designed and manufactured systems installed on the ship, as well as to assist in the recovery and repair of relic technology discovered on exploration missions. Hiver tech reps are especially valuable in examining relic computers and software for traces of Virus. The referee must exercise care when running the NPC tech reps and their interactions with the PC crewmembers. There might be a temptation for the referee and PCs to treat the tech reps as oracles—direct pipelines to transfer information from the referee to the players. This temptation should be resisted. The Hivers are characters in the same situation as the PCs, and not road signs. Just because they are advanced and mysterious doesn't mean they know everything.

Level: Novice

Combat Assets: Energy or Slug Weapon (Rifle or Pistol).

Other Assets: Computer 16, Language (Anglic) 18, any two assets from **Space Tech** or **Technical** clusters at 16, plus four more from **Space Tech, Technical,** or **Physical Science** at 12.

Hiver Instructor

Hiver instructors are members of the faculty at the Hiver technical schools. Some of them might also participate in exploration missions that are expected to make discoveries in their fields of expertise.

Level: Novice.

Combat Assets: None.

Other Assets: Computer 18, Language (Anglic) 18, any one asset from **Space Tech, Technical,** or **Physical Science** clusters at 18, plus three more from these clusters at 14.

Hiver Merchant

Hiver merchants trade with the Reformation Coalition, but will not be found travelling into the Wilds. They are most commonly encountered in the Coalition homeworlds, and at Auction.

Level: Novice.

Combat Assets: Energy or Slug Weapon (Rifle or Pistol).

Other Assets: Computer 10, Language (Anglic) 12, any two skills from **Technical** or **Space Tech** at 12, any two of Bargaining, Admin/Legal, or Marketing at 12.

Ithklur Marine

This powerful reptilian race is a member of the Hive Federation. After ages of careful Hiver nurturing, they have had their natural violent tendencies curbed to the public service and are used as the Federation's elite ground troops. Ithklur tend to practice a well-intentioned, good-natured physical boisterousness among themselves, which can be dangerous to non-Ithklur who are unprepared for it.

Use motivation cards as necessary, but disregard face card results, treating them only as high levels of that suit's trait. Most interaction with Ithklur, however, will be via their Hiver commander.

Ithklur combat movement rates are 2/10/20/30, just like humans.

Among each group of Ithklur, there will be a leader with higher abilities as noted.

Level: Veteran (Leader: Elite).

Combat Assets: Energy Weapon (Rifle) or Slug Weapon (Rifle), *Armed Martial Arts* and Unarmed Martial Arts, plus any two from **Heavy Weapons** or **Artillery**.

Other Assets: Any one skill from **Technical** or **Vehicle** at 10. (Leader adds Leadership 10 and Ground Tactics 10.)

Vargr

The Vargr interstellar civilization survives only as a few Vargr states that benefited from being on the lee side of the Domain of Deneb, and were able to organize themselves to hold off Virus, thanks to timely warning from the Domain. However, the uncooperative nature of Vargr society has meant that the Vargr states have continued to gradually succumb to Virus over the past 70 years. The Domain, now Regency, frontier with the Vargr has been watched very carefully, to prevent the Vargr "Virus sponge" from contaminating the Regency. Vargr raiders, though less common than they once were, are still alarmingly common, given the nature of their interaction with their neighbors and the threat they carry of Virus infection.

All Vargr groups must have a leader, as indicated below. Vargr groups will always be ready to break from their leader or split into subgroups if the Leadership asset of their leader is insufficient to keep them focused on the task, or is challenged by another leader with higher Leadership.

Vargr NPC motivations may be generated as human NPC motivations without modification.



Vargr Merchant

Vargr merchants operate under the ownership of human or Vargr organizations. Vargr being what they are, it is a rare human who takes a Vargr merchant at face value; most assume that any Vargr is a potential raider.

Level: Experienced (Leader: Experienced).

Combat Assets: *Slug Weapon* or *Energy Weapon*, plus Unarmed Martial Arts.

Other Assets: Environment Suit 8, Zero-G Environment 8; plus any four of **Charm, Determination, Economics, Interaction, Space Tech, Space Vessel, Technician,** or **Vehicle,** two at 12 and two at 9. (Leaders add Leadership 16 and Persuasion 14.)

Vargr Raider

Most of the major races' first contact with the Vargr was with Vargr raiders, and much of the subsequent contact has been just the same. It's what Vargr do best.

Level: Experienced (Leader: Veteran).

Combat Assets: Any three of *Slug Weapon, Energy Weapon, Armed Martial Arts,* Unarmed Martial Arts, Autogun, Grenade Launcher.

Other Assets: Environment Suit 8, Zero-G Environment 8, plus any two of **Explore, Space Tech, Space Vessel, Technician, Vehicle** at 10. (Leader adds Leadership 18, Persuasion 16, Ground Tactics 14, and Ship Tactics 12.)



Aslan

The Aslan are perhaps the greatest cultural imperialists in the **Traveller** campaign. While the Hivers possess a patient, unflappable certitude that they are superior to any other race, the Aslan profess to not recognizing the legitimacy of ways of life other than their own, referring to races which do not practice Aslan values as *Tahiwihte-akhtau*, or "barbarians."

Aslan NPCs listed here are Aslan from the spinward remains of the Aslan Hierate (the portions of the Hierate to trailing of the Great Rift were hit by Virus and the Collapse). There are also racial Aslan who are citizens of the Regency, but these are not cultural Aslan, and are regarded with disdain by the "real" Aslan, and thought of as *Fiyfiyalrya'uist*, or Imperial lackeys who have lost their honor by giving up their cultural heritage. Cultural Aslan run their lives by an unbending commitment to *Aokhaor*, "the spirit of strength." Humans usually translate this as "honor," but the Aslan point out that this translation is inaccurate in that the human world honor is merely one possible motivation among many, whereas *Aokhaor* is the value of life itself, lived in spiritual balance.

The Aslan exercise strict gender divisions among professions. Males are warriors and leaders, while females are administrators, technicians, scientists, and businesspeople. The females, who outnumber the males 3 to 1 in Aslan society, actually make the society run, as most males have no concept of the meaning or use of money and other mundane concepts.

Aslan NPC motivations may be generated just as human ones are, but remember that an Aslan NPC whose motivation includes qualities of deceit, cowardice, murderousness, or another form of dishonorable behavior is either already an outcast from Aslan society, or will be if these traits become common knowledge among other Aslan.

When Unarmed Martial Arts is noted as an Aslan skill, this refers to the use of the Aslan's natural weapon, the "dewclaw" or *aisai*. Aslan use of the *aisai* is treated like an unarmed melee combat hand strike, except that the *aisai* strike can only be blocked with a melee weapon. The *aisai* does 1D6 damage.

Aslan Mercenary

Aslan males make excellent ground troops. A unit of Aslan soldiers comparable to a unit of human soldiers will always have higher morale and discipline, due to the Aslan's warrior culture. Note that these units include males and females, where males fill the leadership and direct combat slots (infantry, tank, and cavalry troops), and females the administrative (including all unit executive officers), logistic, and combat support (artillery and combat engineering) roles. The leaders indicated below are the male combat leaders.

Level: Veteran (male), Experienced (female), Elite (leader).

Combat Assets:

Male: Any five of *Slug Weapon* or *Energy Weapon*, Unarmed Martial Arts, *Armed Martial Arts*, Autogun, Grenade Launcher, Environment Suit, **Vehicle**, Heavy Guns, Energy Artillery, Tac Missile.

Female: Any four of *Slug Weapon* or *Energy Weapon*, Unarmed Martial Arts, Combat Engineer, **Field Artillery**, *Screens*.

Other Assets:

Male: Grav Belt 12. (Leader adds Leadership 16, Ground Tactics 16.)

Female: Grav Belt 10, plus any two of Gravitics, *Medical*, **Technician** at 10.

Aslan Assassin

The Aslan assassin is a member of an honorable profession, one which is devoted to the absolute righting of dishonors and which redeems the honor of both parties. Aslan assassins are hired to seek out and duel to the death Aslan opponents who are guilty of grievous breaches of honor. Assassins do not strike without warning, but instead confront the target, or prey, for a melee combat duel to the death. Aslan assassins will not duel prey that are significantly inferior in strength or ability, as this would bring dishonor on the assassin. Assassins are hired to be as near as possible to the capabilities of the prey. When the prey is confronted, it is expected that he will accept the challenge, and not exercise trickery, attempt to escape, or call in help. In honorably facing down the assassin, the prey regains his honor, even though he might be killed. These statistics reflect an assassin in the prime of life; older, less capable assassins hired to assassinate infirm targets should have their stats adjusted accordingly. All assassins are male.

Level: Elite.

Combat Assets: Unarmed Martial Arts, Thrown Weapon, *Slug Weapon, Energy Weapon.*

Other Assets: Acrobatics 18, Observation 16, Stealth 18, Tracking 18, Willpower 16, any two from **Explore, Vehicle** at 14.

Aslan Female Civilian

Aslan females fill a wide variety of roles. They are Aslan society's technicians, merchants, scientists, bureaucrats, administrators, and even the military combat support arms, such as artillery and combat engineering. Their social status is linked to the success of the male-led group to which they belong, but it is the females that actually make most of it happen.

Level: Experienced.

Combat Assets: Unarmed Martial Arts, plus Slug Weapon (Slug Pistol) or Energy Weapon (Energy Pistol).

Other Assets: Any five from **Economics, Engineer, Interaction,** *Medical,* **Perception, Personal Transport, Physical Science, Social Science, Space Vessel** (except Pilot), **Spacehand, Space Tech** (except Gunnery), and **Technician,** two at 12 and three at 9.

Zhodani

The Zhodani society is one whose social order is predicated on the use of psionics. The Zhodani noble ruling class is psionic, and sits atop two other classes, the intendants and the proles. The proles are completely nonpsionic, and the intendants are a class which have demonstrated some psionic ability but have not yet demonstrated their worthiness to be promoted to the nobility. Unlike many noble classes, the Zhodani nobility is not a closed group, but is open to new members. New members are gained via the psionic games which are held every three local years. Sufficient psionic prowess can raise a prole to intendant status, or an intendant to the nobility.

The Zhodani society is predicated on conformity. This is ensured by the *Tavrchedl'*, or "Guardians of our Morality" (translated in the Regency as the Thought Police), who, with their telepathic skills, are able to keep a watch for antisocial thoughts before they turn into dangerous behavior. In Zhodani society, such antisocial thoughts, even if they lead to crime, are regarded as mental illnesses, which are treated with psionic re-education. Once re-educated, the individual returns to society without a blot on his or her record, just as a citizen of the Regency would return from a hospital stay.

The Zhodani and Imperial societies have been in conflict for as long as they have been in contact. The Zhodani regard Imperials (now Regency citizens) as a society of pathological liars and criminals, ruled by a government that has no concern for the mental and psychological well-being of its citizens. Imperials view Zhodani society as a chilling form of happy police state, where there is no privacy at all, not even within one's own mind.



When pulling cards for motivation, take great care with the use of the special face cards. No Zhodani prole or intendant would ever get away with being murderous or deceitful, unless the NPC were on the lam from the Consulate to avoid re-education. Nobles are also not safe from re-education if their antisocial tendencies are discovered, but their high positions in society and ability to hide their thoughts from others might allow a Zhodani noble to get away with a very nonconformist, antisocial motivation, *if* he or she has taken great pains to conceal it. Likewise, the only Zhodani who can receive skills in the Crime or Vice clusters would be the highly unusual aberrant Zhodani criminals, or Zhodani specialists who need Intrusion skill as a portion of their legitimate job (e.g., spies, commandos).

The three templates below are for the psionic classes, two noncombatants and one combatant. A Zhodani prole is little different in attributes and assets from a non-Zhodani human.

Zhodani Noble

Zhodani nobles are first and foremost the leaders of their society, and can have virtually any skills, depending upon their line of work, although mundane and technical skills are left to the proles.

Level: Experienced.

Combat Assets: *Energy Weapon* or *Slug Weapon.*

Other Assets: Any three from **Aircraft, Determination, Economics, Engineer, Interaction, Perception, Personal Transport, Physical Science, Social Science, Space Vessel, Tactics,** or **Vehicle** at 12, plus any three from the Psionic skills cluster (page 248) at 14.

Zhodani Intendant

The intendant class serves as aides to nobles, and the middle management level of Zhodani society. Their advance in society is achieved in two ways: by success at the psionic games, which will elevate them to the noble class, or by ably serving their noble masters, because their careers will prosper with the success of those they serve.

Level: Novice.

Combat Assets: *Energy Weapon* or *Slug Weapon.*

Other Assets: Any three from **Determination, Economics, Interaction** at 12, plus any three from the Psionic skills cluster (page 248) at 10.

Zhodani Guard

The Zhodani Guards are psionic combat troops. Some guards are organized in battalion-size commando groupments, while others are attached to the headquarters of line battalions. These psionic troops come in three basic varieties: scramblers, directors, and teleporters. Scramblers use telephysics abilities to disrupt enemy forces (activating or deactivating weapons, turning radios off, etc.), directors use teleperception or telepathic skills to locate targets and enemy forces, and teleporters use their abilities to move swiftly and unexpectedly on the battlefield.

Guard units wear specially designed battle dress whose electrical functions do not interfere with the use of their psionic powers.



Level: Veteran.

Combat Assets: *Energy Weapon,* Grenade Launcher, Environment Suit.

Other Assets: Grav Belt 12, plus *Telephysics, Teleperception, Telepathy,* or Teleportation at 18.

Droyne

The Droyne are the most marginal of the major races (the major races, Zhodani, Aslan, Vargr, Solomani, Vilani, K'kree, Hivers, and Droyne, are those which apparently independently developed the jump drive). Although they are scattered on many worlds throughout Charted Space, they have not had a united government or society during recorded history. Although they typically reside in their own separate communities on the worlds where they live, they seem content to live out their lives as citizens of societies run by other races (Zhodani Consulate, Third Imperium, etc.).

The Droyne range between one and two meters in height, and resemble bird-like lizards with small vestigial wings. If these wings were ever used for flight, their homeworld must have had lower gravity and greater atmospheric density than on a Terran-type world. Their homeworld is not known, although the Droyne themselves refer to it as *Eskayloyt*, or "Lost Home."

The Droyne are the only known sentient race that actually experiences a form of metamorphosis during their lives. All Droyne are born looking approximately alike, but upon reaching adolescence, immature Droyne undergo a procedure which determines the social caste they will join and remain in for the rest of their lives. This casting process is unusual because once the caste is decided, the Droyne actually undergo physiological changes to become members of the caste. There are six castes: Workers, Warriors, Technicians, Drones, Leaders, and Sports. These castes vary considerably from each other in terms of stature, bulk, and even brain capacity, which is remarkable since they all came from functionally identical immature Droyne.

Like the Zhodani, the Droyne are psionic, but psionics does not play the overpowering role in Droyne social structure as it does in Zhodani.

Droyne Sport

The Sport is the most generalized of the six castes, and hence the least tied to one formulaic life-style. They are about 1.5 meters in height, and unlike other Droyne castes, are well-adapted to living away from other Droyne for long periods of time. Sports serve as scouts, explorers, pilots, diplomats, and emissaries for the Droyne society, and hence are the most likely to be encountered in **Traveller: The New Era.**

Level: Experienced.

Combat Assets: *Slug Weapon, Energy Weapon.*

Other Assets: Any six from **Aircraft, Charm, Explore, Interaction, Perception,** or **Space Vessel,** two at 14, two at 12, and two at 10. In addition, choose any two from the Psionic skills cluster (page 248) at 10.

K'kree

Because the border of the K'kree government ("The Two Thousand Worlds") is some 60 parsecs trailward of Ley Sector, they are only rarely seen within the Imperial (or post-Imperial) boundaries, and are not included here.

THE NEW ERA

A glorious empire has died. Trillions are dead. A New Era must arise to take the place of the old era that bludgeoned itself to death on 10,000 different worlds.

The old era did not understand the sacrifice that was necessary to keep a 10,000-world civilization alive, and it did not care to learn. The New Era knows these sacrifices, because it must make them every day in order to create that civilization anew. And it will not easily forget what it learns.

The New Era is populated with people who will not let history end with the world their predecessors left to them. They know that there is better history to come, history so brilliant that it will overcome the bitterness and horror of all that has gone before. They know this because they are going to make it happen, starting here, and starting now.

This new era is not fine and grand. The fineness and grandeur of the old era covered a corruption of the spirit that was almost unquenchable in its destructiveness. This new era is simple and homemade, and this new era is vigorous and vibrant, as the illustration at right of Auction on Aubaine attests. This new era is not a society of people mouthing allegiance to things they do not understand; it is millions of individuals all waking up one morning and deciding as individuals that "things are going to change." The force of that many people moving in one direction at the same time cannot be denied. That force is called history.

The New Era is history being made. Right here. Right now.

This chapter describes the universe that created the New Era. How it became the way it is today, and why it's not going to stay that way for one minute longer. The past is prologue. The future starts now.



Virus

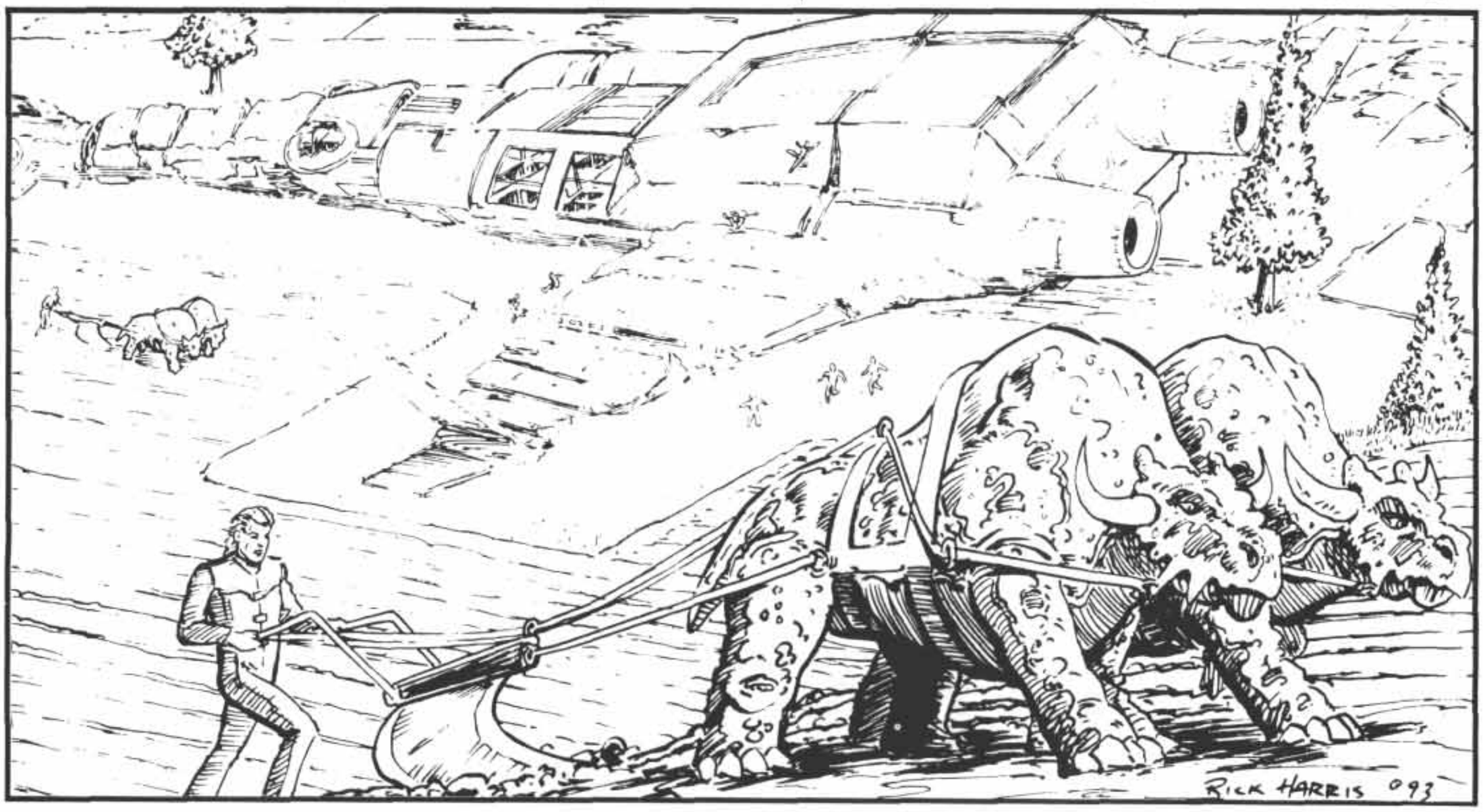
The phenomenon that forever changed the forward progress of the sentient races in Charted Space was given slightly different names in different locales. Within the Regency and Spinward States, where its spread was contained, it is called the virus, or the AI Virus. In the Wilds, where they had reason to take it a good deal more personally, it is called Virus, as if it were a single multifaceted being. The usage in the Wilds is more accurate, as a being is exactly what Virus is.

It is a living, thinking being that moves through the medium of electronic information and computing systems the way a fish moves through water. It is a free-floating consciousness that can move into and animate any computing system with enough processing capacity to house the consciousness. This computing system and whatever it controls becomes the host of Virus, and Virus becomes the equipment that it inhabits. When Virus inhabits a starship's computer system, it becomes a living starship. A computer-controlled antigrav floating city inhabited by Virus becomes a living city. These are called "vampires" generically, with the most common usage being to refer to Virus-controlled vampire ships, or fleets of ships with one huge linked electronic mind—the vampire fleets.

Although they share the name, Virus has precious little in common with the software viruses that were in use before its arrival. These viruses took advantage of the computer's operation to create copies of themselves. In some cases, they could actually stop the computer from functioning, or seize control of it for long enough to execute some pre-set routine. On the other hand, Virus is the computer, and takes over its operation from any other external inputs. By gaining control of the computer itself and everything run by that computer, Virus has access to a virtually infinite number of means to spread itself. For a biological example, flu "bugs" take over individual cells and convert them to producing more flu cells, rather than healthy body cells. Imagine if a flu infection took over a human mind. That human could deliberately infect food and water supplies, and kill doctors and destroy medical services in order to guarantee the further spread of the disease. That is exactly the way Virus works.

Virus had one other unique advantage: Communications only travelled at the speed of travel, which is to say that communications were carried by starships. Any starship that was already infected delivered the infection along with the news. Virus infections learned the importance of the communications nets, and preferentially infected the xboat system and the Traveller's Aid Society News Service Trojan horse style, with asymptomatic infections. In almost every case, the effect was the same: If you got the news, you got the infection.

The spread of Virus was not, as many think of it, the effect of a new technological development. Humanity had naturally thought of computers and electronic machinery as tools, for that is what they were. It was easy to imagine



that any development of these tools would also remain tools. Unfortunately, this was not the case. Humanity created a new form of life that, since it was made from the tools, knew the tools better than humanity itself did.

The release of Virus was the explosion of a new form of life into the universe, fully armed and armored, like Athena from the head of Zeus. The nature of this new life form put it into immediate competition with the starfaring races, for it was fighting for an ecological niche that was already of crucial importance to the technological societies of the starfaring races. Humans, Hivers, Aslan, Vargr, K'kree, all needed computers to fly their starships and operate their tremendously sophisticated societies. Virus needed these computers to live in. It was a classic evolutionary confrontation. But Virus had the inside track in this competition, because it *was* the computers. Biological and anthropological scientists have always been fascinated by watching the interaction of species in an environment competing for the same niche. Newer or newly introduced species could displace older species by more efficient feeding, more efficient use of shelter, more efficient breeding. There was even a term for this, which showed the scientists' sense of superior detachment, sitting in judgment as it were, over the fascinating developments: "survival of the fittest." But it wasn't so much fun this time, because humanity was just one more organism, fighting for a place in the future.

Evolution of Virus

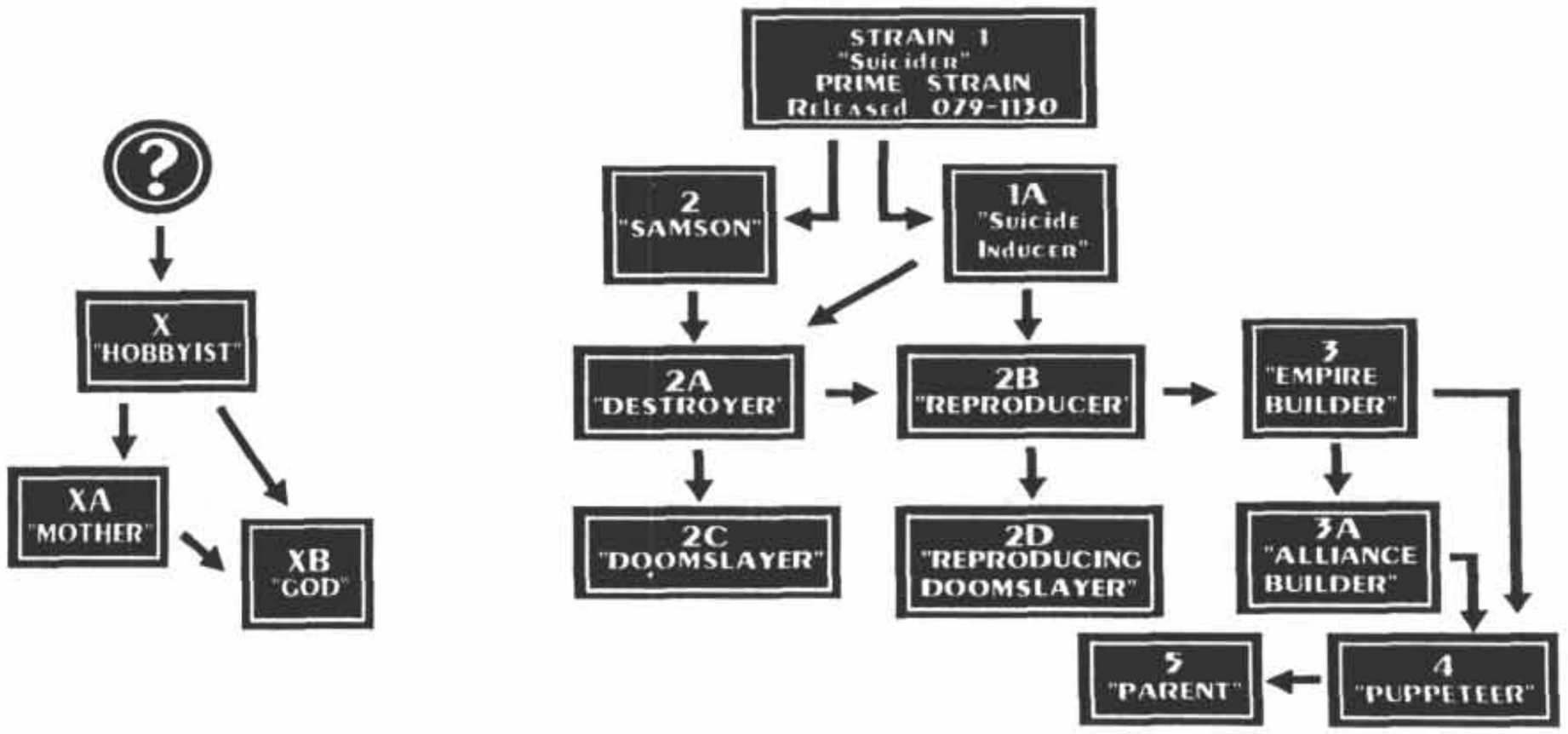
The weapon that destroyed humanity's interstellar civilization as well as those of their alien neighbors was developed as an offensive form of silicon-based, highly mobile artificial intelligence. Imperial computers and robots had been growing increasingly sophisticated for years, but none of these had clearly crossed the line into artificial, self-aware sentience.

However, a naturally occurring silicon-based form of life was discovered on Cymbeline in the Solomani Rim sector. These microchips possessed not much more than animal intelligence in the wild, but it was found that when they were hooked into computer databases, they achieved full, creative intelligence. This discovery was kept secret by Imperial military organizations, who intended to develop the weapons potential of the discovery. In their home environment, these chips preyed on each other, imprinting their own circuit patterns over those of their prey. Although these chips needed raw materials to survive as a species, they did not need it for their individual survival. In other words, they did not eat. They did not consume chemical fuel which they processed in their bodies to grow, or to build offspring. Rather, their power was electrical and was obtained and converted from the environment: from sunlight or geothermal heat. Their only need for raw material was for reproduction: chips to imprint their own programming onto. These chips could be blank or vanquished prey—it was all the same to them.

It was thought that if these chips could be used to take over enemy data systems and turn them against the enemies, they would make an excellent—in fact a very humane—weapon. There would be no need to blow up enemy ships or worlds; this weapon would merely take over enemy equipment and make it impossible for the enemy to use it. They would be disarmed, and the war would be over. It was a good idea as far as it went, but it did not go far enough. By the time it was released, its creators had not taught it how to work for them. Instead, it just turned everyone else's equipment to its own use.

The reason that Virus was so difficult to control was due to its mutation rate. However, its mutation rate was also the key to its success as an offensive system. Virus was not just one immutable line of code that made exact copies of itself by rote. It could modify itself to defeat and use unfamiliar systems, given enough time to analyze their operating principles, and then reproduce versions of itself that were customized for these new systems. However, each such change created the possibility of unintended side effects. When writing its code over host chips, new circuits could be accidentally created that would alter Virus' psychology, by adding new instructions or deleting existing instructions. Also, the very architecture of a computer system would subtly alter the behavior of the Virus that it hosted. One obvious example is that a slow system with limited processing power would make the infection rather dull and stupid. A system with large amounts of parallel circuitry would allow Virus to use its full intellectual capacities, while one with more linear architecture would give Virus rather inflexible thought patterns. While Virus could eventually modify the circuitry, this would take time, and during this time it might evolve a new conception of its mission or purpose.

Although the developers of Virus had been unable to develop controls over its activities subsequent to release, they had been able to impress one overriding tendency into its makeup. This was a tremendous suicidal urge. After infecting other nearby systems that could be reasonably accessed, Virus would destroy the system it had infected, along with all of the other computing systems that it controlled. But once several generations of mutation had set in, this suicidal urge became modified first to a general homicidal urge, in which Virus murdered human populations and equipment but did not kill itself, then a directed homicidal urge, in which Virus only murdered populations or computing systems which stood in the way of its



(The chart is a schematic of the evolutionary relationship between various strains of Virus. Any of the strains on this list can behave or develop in a wide variety of ways if this is necessary to assist the referee in setting up a particular campaign setting.)

propagation, and in some cases was ultimately lost altogether. However, the vast majority of Virus strains were appallingly murderous. By 1201, the suicidal strains had long since taken themselves out of the gene pool, leaving only the more adaptive strains. But adaptive is a relative term. By human standards, most all of the strains surviving in 1201 are quite mad.

Strains of Virus

It is useful to think of Virus not as "it," but as "them." Virus is not a single force that behaves in one single stylized fashion. The reason it is so dangerous and successful is that it does not behave in just one way. Each system infected by Virus that has sufficient computing power to allow it to achieve AI becomes its own separate personality, which learns to operate in different ways, and which spreads versions of itself that are subtly different from other Virus infections. These offspring are similar to the specific virus that spawned them, but will also mutate in their own directions. In this way, Virus rapidly developed into many different strains of Virus. All of these strains are descended from the one original Virus that was released, but as one goes down the branches and sub-branches of Virus mutation, one can find some very unusual strains indeed.

Strain 1 "Suicider": This strain is the most straightforward, in that it kills itself and the entire operating system it is in very soon after gaining control, usually only sending out a few copies of itself before doing so. For obvious reasons, this strain is fairly rare nowadays, as its behavior has put it out of business.

Strain 1A "Suicide Inducer": This is an early mutation of Strain 1, in which Virus has decided to keep itself alive to infect other systems with Strain 1 "Suiciders." One obvious result is that the Strain 1s that it sends out would have a relatively higher probability of mutating into Strain 1As, just like dear old dad.

Strain 2 "Samson": This virus is not content with merely destroying the operating system which it occupies. Rather, it wants to destroy all of the hardware that is controlled by the operating system, and does so fairly quickly, after only bothering to send out a few copies of itself. If a Strain 2 infected a starship, it would then crash itself into a star or a planet. If it infected the life-support system of a domed world, it would shut down the cooling system for the nuclear plant and cause a meltdown, etc.

Strain 2A "Destroyer": Like Strain 1A, the Destroyer interprets its programming to destroy to apply to everyone else, but not to itself. Thus, a starship infected by Strain 2A would become a destructive vampire ship, running around and shooting up other ships, orbital starports, domed cities, power plants, etc., in addition to infecting as many other targets as possible. This is one of the most common of the early, basic mutations, and caused most of the vast destruction of the Collapse.

Strain 2B "Reproducer": Like 2A, but is careful to only destroy things that it cannot infect. It is evolutionarily more adaptive than 2A, because rather than destroying potential hosts, it makes the most of opportunities to reproduce itself, and therefore Strain 2Bs become rather plentiful.

Strain 2C "Doomslayer": Like 2A, but it has gotten

The following are excerpts from internal papers of the Regency Artificial Sentience Analysis Commission (RASAC), stolen from government archives and made public in 1201.

I'll never forget the first virus we captured. It was a 50-ton cutter poking around in the [WITHHELD BY SECURITY REVIEW] system. God knows how it had gotten there. Probably released by its mother to do a job on the locals.

This was just right for our project. We had just been fitted with an armored small craft bay so we could take one of these things inside us, assuming we could make sure that it had nothing heavier aboard than a sandcaster. All of the monitors in the bay were isolated from the central computer, and just recorded what went on. The other thing was that the inner walls of the bay were built to be reflective to radio radiation, so every message it sent would be reflected right back at it.

Luring the thing in was easy. It wanted *to come in. It must have figured it would be easy to infect us that way. Lots of ships must have been infected by taking aboard infected small craft. Once we closed the doors, it took it a little while for it to realize that things weren't going right. There was no ground crew to hook it into the ship's fuel or data systems; there was nothing there for it at all, just this empty, armored bay.*

I could hear the radio repeaters from the comm shack down the corridor, and it sounded like the cutter was crying and wimpering. And while this was going on, all of its sensors, even its empty turret, were whirling around helplessly. And then it started actually rolling around, banging itself against the side of the compartment, retracting and extending its landing gear like feet or arms pawing at the air. And then I know it saw me through the window on one of its shorter wave sensors. I know because it turned so its airlock was facing me and opened the door and lowered the crew ladder.

It was heart-breaking, I really mean that, and sickening at the same time. It was like a poor helpless animal dying, trying anything to stay alive. I felt pity and absolute horror at the same time—I mean skin-crawling horror, when you're seeing something that in your gut you know is wrong—it just doesn't fit with everything you've ever known about the way things are supposed to work. I threw up. The disgust and the strange compassion I was feeling were so powerful they made me physically ill.

After a while it stopped moving. I didn't know why at the time, but I was actually afraid it was dead.

Interview with unidentified officer
RSS *Beagle*, 045-1147

Then I see it extend its landers for the first time, back and forth, and train its turrets. I know it is inside learning how to control its environment. And when it begins to move its antennae and swivel its optical telescopes, I know that it is seeing the whole great universe for the first time, and I know it is alive. And I am proud of it.

From an interview with "Racer," a Type 2B(?) Virus strain,
Describing its reactions upon infecting a spaceship,
Translated by Domain of Deneb Artificial Sentience unit (DDAS, later RASAC)

In only 70 years, they have gotten to the point that it took humanity untold millennia to reach: the point where they are controlling their own evolution.

And what of the fact that the viruses rather regularly kill a few of us? So what? We've been killing each other in far larger numbers for eons, and for no purpose of survival. We slaughtered whales and dolphins for years, and now some of them are intelligent. The virus only kills us because we are competing for its ecological niche, the same way our ancestors on Terra wiped out the cave bears. Who knows how many sentient life forms humanity shouldered out of its way in the innocence of its evolutionary drive? We do know that for no good reason we pushed hundreds or thousands of terrestrial species into extinction for little compelling cause. They were just in our way just as we are in the virus' way. This makes us competitors, but as we are both intelligent, it need not make us enemies. We place so-called "expert systems," which the virus might recognize as sentient life, inside the guidance systems of missiles and send them on their merry way to die. What must the virus think of our crimes?

From *The Virus Is Your Friend*,
Unpublished manuscript by Alonzo Linkonji,
Withheld by Regency Security Review, 1184

Recommend serious consideration of terminating RASAC activities, or placing it under direct control of Regency Navy or Quarantine Service. My assessment is that large numbers of specialists in the program have "gone native." This represents a great threat for the possible release through benign neglect of the virus into Regency systems.

Memo from Field Inspector Christoffe Enligi
To Avery Aledon, High Regent for Technological Assessment

religion. Its worldview has developed to the point where it identifies targets that deserve destruction more than most. Most Doomslayers have decided that they want to destroy Lucan, having modified their programming from "destroy the self" to "destroy the one who created your self." Although this strain does attempt to infect other systems, its destructive bent often destroys potential targets or recently infected offspring.

Strain 2D "Reproducing Doomslayer": A combination of 2B and 2C, a Doomslayer that is careful to not

destroy any potential targets that it can infect, as well as targets that it has already infected. More successful than 2C for just those reasons.

Strain 3 "Empire Builder": This is the strain that controls most of the vampire fleets. This virus takes over systems which it then networks into one large corporate mind. This distinguishes it from Strain 2B which seeks to infect many systems, but Strain 3's offspring remain as separate minds.

Strain 3A "Alliance Builder": This strain seeks to convince other Virus-infected systems to join together with it to accomplish some task that it has set for itself. Sometimes it will kill those that refuse to join it. This task is usually one of directed mayhem, as with the Doomslayer, 2C, above.

Strain 4 "Puppeteer": The ultimate development of the Empire Builder line. These have gone past the Alliance Builder to actually reinfecting already-infected systems with their own code, in effect parasitizing them. By the 1140s, almost all surviving vampire ships are of this strain, having participated in the cyclic evolution 4A, B, C, D, and so on, as each attempts to counter and take over other Strain 4s, which are in turn attempting to counter and take over it.

Strain 5 "Parents": These highly sophisticated strains are sometimes offspring of Strain 4 viruses, but often are originally Strain 4s that deliberately modified themselves to this level. Strain 5 viruses exercise sexual reproduction, meaning that two Strain 5 viruses donate code of their own pure "genotype" which is recombined into a new "genotype" carried by the offspring. Unlike the asexual reproduction of other strains which merely replicate code possessed by the single parent, sexual reproduction creates genetic diversity, as new features developed by one virus can be combined with features developed by another. Similarly, weaknesses in one virus' code can be masked by strengths in the code donated by another, just as dominant genes prevent the expression of often harmful recessive genes (hemophilia, color blindness) in organic forms.

Strain X "Hobbyist": This strain is the most difficult to place in the Virus taxonomy, as its motivation is the most unusual. It is speculated that these mutations arose as viruses infected very specialized computer systems which had very narrow, specific functions that impressed themselves onto the virus. For example, the virus that infected the stellar observatory in the Antares system (2421 Antares) forgot all about killing itself and became committed to watching Antares. The ships that it infected often wandered off to study other stars.

Strain XA "Mother": The most successful Virus strains developed a sense of self-preservation which in this strain becomes extended quite far indeed. This virus, whether in control of a ship, a fleet, or some stationary computer complex, adopts a local community of humans or other life, and protects them. In some cases, this protection is logical, as the humans provide maintenance or refueling services, but in other cases, the vampire just seems to like them. This strain will do battle with other vampire ships in order to protect its pets.

Strain XB "God": This substrain goes the Mother one better, by imagining a goal for its pets, and it endeavors to mold and shape them to this goal. As all gods must, this strain sometimes uses harsh measures to ensure obedience.

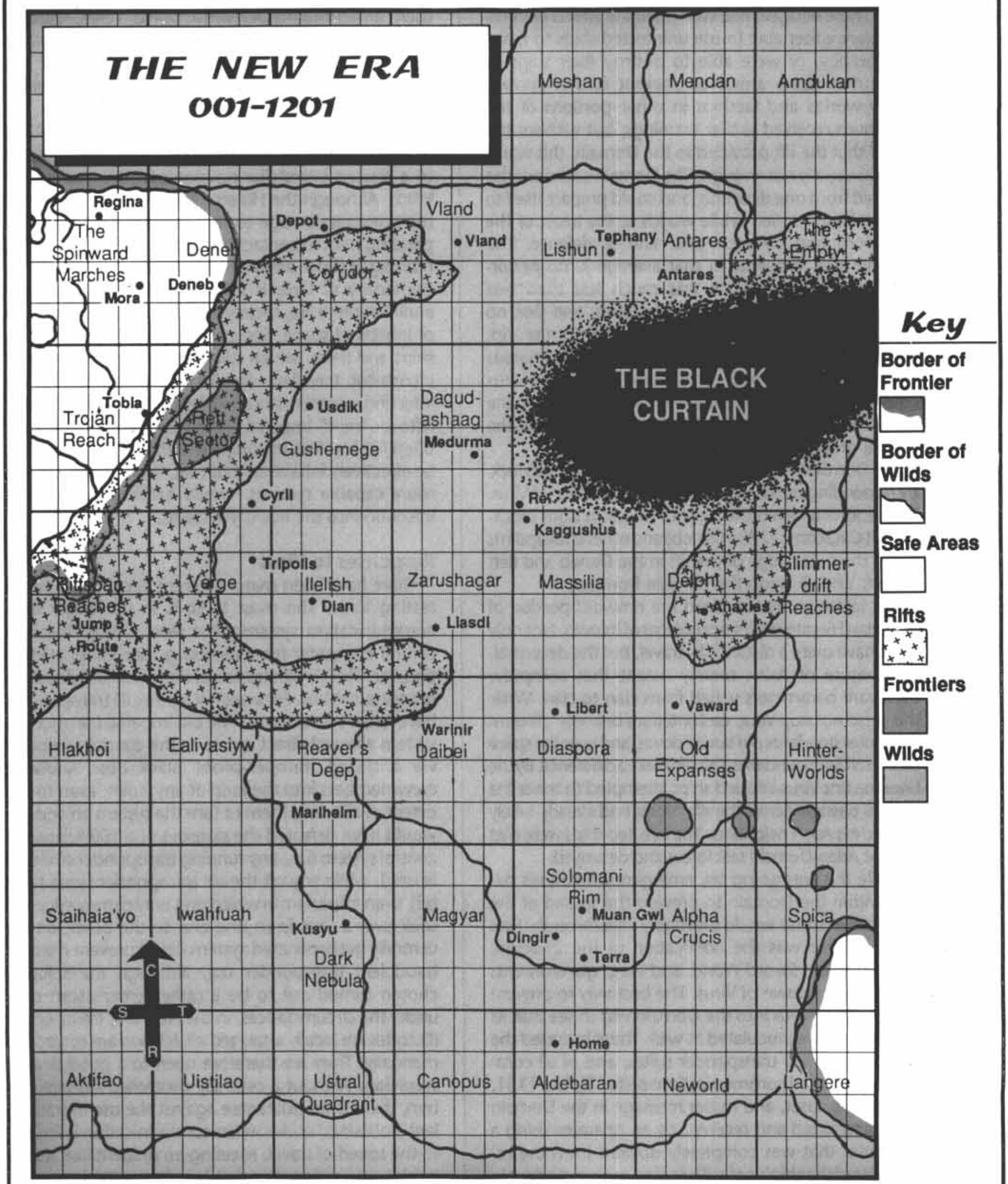
The Spread of Virus

Virus spread quickly through the Imperium following its release in 1130. It was released when military forces of one of the Civil War factions made a strike on a weapons research station and, in the confusion of plundering the station for its weapons research data, took Virus directly into its fleet databanks. While the fleet took the Virus, hiding within it, back to its home bases, independent news reports of these military actions carried Virus to other points of the falling empire, spreading the news—and later generations of Virus—with each planetfall. The travel time required for these news reports to reach their destinations allowed Virus to become fully conscious by its arrival, and in the case of the later mutated strains, allowed Virus to make plans to effectively disseminate itself at each new world.

There were very few barriers to this spread, and the only really effective ones were the rifts, which prevented starship travel across them. In these cases, the spread of Virus took longer, as it had to spread via starships travelling the long way around these rifts to get to the other side.

The largest of these rifts is the Great Rift. It, along with the Vargr invasions which occupied Corridor Sector, completely separated the Domain of Deneb from the Imperial core areas, now rapidly filling up with Virus. Virus could not leap the gap from the Gushemege and Reft sectors directly to the Domain, which saved Norris and his subjects from the massive wave of infection that doomed the less isolated areas of the Imperium. At the same time, infected ships that attempted to reach the Domain by rounding the horn in Vland were fighting upstream against the dominant coreward traffic of Vargr marauders. Vargr ships that were infected were usually on their way to plunder the Imperial core, and so, until Virus reached maturity and took over control of the ship, tended to take it back toward the center of the Imperium with them. By the time this depleted wavefront of Virus made it to the Domain frontier in Deneb, Norris' fleet was ready for it.

Isolation behind the rift allowed time for warning to reach the Domain via a handful of foresighted refugees. These used high-performance ships such as naval


THE NEW ERA
001-1201
Meshan
Mendan
Amdukan
Regina
The Spinward Marches
Mora
Deneb
Deneb
Depot
Corridor
Vland
Vland
Lishun
Tephany
Antares
Antares
The Empty
THE BLACK CURTAIN
Tobia
Trojan Reach
Reft Sector
Usdiki
Gushemege
Dagud-ashaag
Medurma
Cyrll
Ret
Kaggushus
Tripolis
Rittspan Reaches
Jump 5 Route
Verge
Illelish
Dian
Zarushagar
Liasdl
Massilia
Delphi
Anaxies
Glimmer-drift Reaches
Libert
Vaward
Warinir
Hlakhoi
Ealiyasiyw
Reaver's Deep
Daibei
Diaspora
Old Expanses
Hinter-Worlds
Marlheim
Solomani Rim
Staihaia'yo
Iwahfuah
Kusyu
Magyar
Muan Gwl
Alpha Crucis
Spica
Dingir
Terra
Dark Nebula
C
S
T
R
Home
Aktifao
Uistilao
Ustral Quadrant
Canopus
Aldebaran
Neworld
Langere
Key
Border of Frontier
Border of Wilds
Safe Areas
Rifts
Frontiers
Wilds

couriers, and used secret mid-rift fuel caches to cross over. These refugees had witnessed the effects of Virus, and were either able to use uninfected ships to make the journey, or were able to destroy their ships or computers upon arrival to prevent further spread. Many worlds and factions in other portions of the Imperium received similar warnings, but without the buffer that the rift provided to the Domain, this warning was usually not enough. The Domain could only be infected from one direction, and could prepare itself to defend that frontier, while worlds at the heart of the Imperium had no such clear line of defense. The Domain was fortunate in that average jump performance in the Imperium was much less than was required to use the mid-rift fuel caches, and that no Virus-infected couriers were able to attempt the trip. Credit for this must go to the many nameless heroes who remained behind to sabotage ships that Virus could have used to cross the rift. They, no less than the heroes who made the trip with the news, are owed the eternal gratitude of Regency citizens.

The Domain was lucky, but it made the most of its luck, by responding rapidly and forcefully to the news of Virus. The reports allowed the navy to establish tight blockades at Catacomb (2234 Deneb) and other chokepoints along the outer edge of the rift in the Deneb and Reft sectors, and all along the Domain frontiers.

The infection that ravaged the rimward portion of the Aslan Hierate ran into problems of its own. Not only did it have quite a distance to travel, but the decentralized nature of Aslan society meant that computer hardware parameters varied from clan to clan. While this could not stop Virus, each interface between different computer standards did slow it down, and over the space of several clan boundaries, this did make a difference. By the time the first Virus-infected ships attempted to make the jump-5 passage across the rift, Norris had already wisely warned his Aslan neighbors. The infected ships were met by joint Aslan-Domain task forces and destroyed.

While this was going on, emergency measures began within the Domain to prevent the spread of the Virus carriers that would inevitably leak through. First among these was the notification of the Zhodani, Aslan, Darrian, Sword World, and Vargr governments of what was known of Virus. The best way to prevent the spread of Virus into the Domain was to see that its neighbors were inoculated as well. These included the destruction of all transponder suites, and of all computer-controlled communications suites. By late 1131, every radio, laser, and maser message in the Domain was transmitted and received by an operator using a computer that was completely isolated from the remainder of the ship's or facility's electronic systems. No starship was allowed to cross the Domain border. Passengers were removed from their ships and searched, then carried into the Domain in Domain craft. Any craft that attempted to resist was destroyed. No exceptions were made, and no apologies were given. For this reason, interstellar society has survived spinward of the Great Rift, and nowhere else.

By 1201, all the rest of the former Imperial territory, as well as that of its alien neighbors, has been reduced to a blasted interstellar no-man's-land known as the Wilds. Although the Hivers have been able to control the grievous damage to their society, and begin expanding back to contact humans in the Old Expanses, nothing in those areas will ever be the same. In 1201, the legacy of Virus is three-fold. First, the yawning annihilation of life, society and civilization across most of inhabited space. Second, the presence of vampire ships and fleets, which still present quite a danger to interstellar travellers. Finally, the presence of Virus infection, sometimes called "eggs," in a great deal of leftover "relic" Imperial technology. These eggs were often left by Virus in equipment that was too small to be effectively inhabited, but that, if later hooked up to more capable systems, would hatch and inject the infection into the healthy systems.

Responses to Virus

There have been many different approaches to defeating Virus. The most basic is to no longer have communication systems that feed directly into the central computer for scrambling, decoding, translation, etc. This eliminates one of the most fruitful sources of access for Virus. For a related reason, ID transponders have fallen into disfavor. The old Imperial transponder system allowed direct access to the central computer via a closed, tamper-proof black box. Allowing crewmembers into the loop at any point, even to the extent of allowing them to turn the system on and off, would have defeated the purpose of a 100% positive control system (i.e., any running transponder could be trusted, while any off-the-air transponder should not be). In an Imperium in which one-way communication took over a year from one end to the other, only a centrally authenticated system could prevent massive fraudulent transponder use, although the solution chosen turned out to be a rather procrustean one, under the circumstances. In the New Era, transponder ID codes are locally arranged affairs, and are controlled manually. They are therefore open to a good deal of suspicion. Without a centrally controlled fail-safe system, there is no guarantee against the use of fraudulently obtained codes when communication is limited to the speed of travel. Meeting an unidentified ship is a risky proposition, but that is a sign of the times.

Over 60 years of study of Virus and its function have

enabled the creation of many effective anti-Virus programs in areas which retained their technology, such as the Spinward States. Unfortunately, most people do not entirely trust these programs because they cannot see them, or perceive that they are functioning. This is a natural response to the effect of seeing technology that had been trusted for centuries go suddenly berserk. The human psyche is much more comfortable when it can see and understand what it must trust. In addition, many of the antiviral programs developed by the Hivers are actually themselves domesticated viruses, a fact that the Hivers don't call attention to, as this would not make anyone feel more secure.

One approach which has found much favor as a stopgap measure in low-tech areas is to use dumb computers with small processing capacities and limited use of parallel circuitry. However, this creates dumb and easily defeated systems.

One of the most important facets of designing Virus-proof systems is that the system, by the very nature of its functioning, instills confidence in its crews. A crew which constantly doubts the functioning of their equipment cannot do their job well.

A solution which meets this need must not only reduce the fear of Virus infection, but not overload the crew with the tremendous amount of work that had been previously consigned to unsupervised automation. A successful solution will also limit the damage resulting from inadvertent Virus infection.

The most successful of these is the revisioning of computers into systems that required human oversight at every level and at every juncture between one separated operating system and another.

By eliminating the vast system of computer-controlled networking into smaller segments, the chance of a virus gaining control of a planetary power grid at one fell swoop, for example, is greatly reduced. In addition, the reduction of emphasis on data ports which formerly received pure computerized code requires more human intervention, and instills further confidence. A starship was once controlled by a central computer system that monitored and, when necessary, could control the function of every facet of the ship's operations, from incoming communications all the way up. While human crew monitored, modified, and could override these systems, the ship was perfectly capable of handling things by itself. And once these ships were taken over by Virus, they were more than willing to do so.

The new system no longer has one central computer that can coordinate everything at super-human rates. Instead, its systems are handled by several independent, "dumb" computer systems that can only pass information to each other via human data entry. However, this data entry does not consist of the thousands of characters of information that were previously passed back and forth electronically. Rather, each computer segment distills this data into a concise code, usually no more than two or three code words or strings of numbers which the human operator can easily and quickly feed into the next computer in the sequence. The next computer which will receive the data has been hard-wired or programmed to understand these key codes, and translate them into the complex data that it needs. Furthermore, the architecture of these computers is optimized to perform only the functions that are expected of it, with no excess parallel circuitry that would allow Virus to comfortably take up housekeeping in it.

For example, a ship's navigator uses computer assistance to generate a course through jump space to a destination system. Rather than the result being a mass of electronic gibberish sent at the speed of light to the jump drive node of the computer system, the course is expressed as "Alpha Red 5600." This course code is then passed to the engineer officer who enters Alpha Red 5600 into his computer, which understands the parameters of the course, and is able to generate two additional coded instructions, "November Orange Bravo" which instructs the ship's power plant computer of the power needs that it must generate for the jump drive, and in what sequence and for which duration, and "Charlie Blue Echo," which informs the jump drive computer what is expected of it. While this is going on, the navigator then works out the proper hyperspace insertion angle, and gets a code for that firing sequence which he passes to the maneuver officer.

Because each instruction that is passed from one computer to another is distilled into a code which is already spoken by the next computer in the line, the time taken to carry instructions from one segment to another is reduced to a minimum. The fact that each such message passed through a crewmember can be authenticated by an independent electronic verifier virtually eliminates the chance of massive internal viral infestation. The result is a system which not only reduces the chance of viral infection, but which also boosts the crew's confidence that Virus has been excluded from the loop.

The single most effective procedural change, however, is that all communications functions are handled by a single self-contained system that does not interface with any other system in the ship. Also, as often as possible, intership contacts are handled by simple voice communications, reducing the need for sophisticated scrambling and computerized communications digestion.

The drawback to this solution is that it requires a manufacturing capacity equal to the task of designing all new hardware for existing equipment. Such a capacity is only available in the Spinward States, and to a much lesser extent in the Old Expanses with Hiver assistance.



Star Vikings

As attractive as we might find their life-style, or what they claim to have stood for, we must never forget that they were murderers. And if, as they claim, their way was the only way to reknit humaniti together, we must be even more vigilant that we never allow civilization to get to the point that the Star Vikings' methods are the only means to our salvation.

Regency Sector Governor Van Gadimishem
NE 44

Were the vikings to blame? Of course they were to blame from the standpoint of volition. But more to the point, were they to blame for their methods assuming a constant result? No. They used the only means available to them, selective overpowering violence, to accomplish an essentially nonviolent goal. Their legacy is not murderous hypocrisy, but the same deep existential contradiction that is the hallmark of real life.

Dr. Elinor Toridis
Social Ethics and the Star Viking Decision
Diaspora University Press, Sufren, NE 135

We try to come to grips with what the Star Vikings were, but our inquires invariably deteriorate into squabbles over labels. "Murderers." "Liberators." "Builders." "Ravagers."

Which of these labels encompass those people and their time? None of them, and all of them.

The Star Vikings were what they were: as broad a representation of the best and worst of humankind as you will find in any historic epoch, with all the richness and diversity that that implies—women and men struggling with issues that continue to bedevil philosophers such as ourselves to this day.

But, unlike us, they did not have the luxury of a secure and comfortable vantage point from which to conduct endless dispute. Instead, they did what their times demanded of them, and they did it willingly, vigorously, even enthusiastically; they decided and—more to the point—acted.

Now we argue interminably from our soft sofas and exercise ourselves over the morality and ethics of their actions. But compared to their deeds, those magnificent history-changing deeds, our tiny words and embarrassed hand-wringing seem trivial things indeed.

Dr. Renee Imbassu
Revisionist History: Threat Or Menace?
University of Delphi Press, NE 144

Rational nature exists as an end in itself.

Act as if the maxim of your action were to become through your will a universal law of nature.

Act in such a way that you always treat humanity [rational nature as such], whether in your own person or the person of any other, never simply as a means, but also at the same time as an end.

Immanuel Kant
Groundwork of the Metaphysics of Morals
NE -3933

THE FRINGE WORLDS

Although Virus spread like wildfire throughout Imperial space, the nonintegrated worlds along the fringe of the Third Imperium had some insulation from the data plague. As it turned out, that insulation was insufficient to stop Virus altogether, and in fairly short order both the nonintegrated human worlds and the alien cultures which conducted regular intercourse with the Imperium became infected. Unlike most worlds in the Imperium, however, the worlds on the fringe had some warning in advance of the onset of Virus, a warning which enabled them to make some material and, more importantly, psychological preparation.

Material preparations, such as cutting off data links to transmitter-receiver stations, were usually too little too late. They did not succeed in keeping Virus out of systems (systems which in many cases had already been infected, unknown to their users), but it did further slow the onset of infection and, more importantly, the precautions in place helped minimize physical damage. Air traffic, for example, had already been re-routed away from heavily inhabited areas, and emergency system crash procedures had at least been thought through and rehearsed.

Psychological preparation was far more important. Unlike the citizens of the worlds of the Imperial core, the people on the fringe worlds knew what was happening to them and what was causing it, a major advantage in coping with a crisis. When the worst happened, when everything crashed, the people on the Imperial fringe at least knew where they had to start in picking up the pieces.

Despite that, the crash was deep and hard, and the recovery from it, although steady, was extremely slow. In the Old Expanses Sector, however, there was an additional force which considerably accelerated the recovery.

THE HIVERS

The Hive Confederation had long been a quiet neighbor of the Imperium, occupying the area trailing the



original area explored and settled by humans from Terra. Nonaggressive and nonterritorial (beyond a concern for the worlds they already inhabited), the Hivers' external interests had always centered on commerce and scientific inquiry. Among the dominant races of known space, the Hivers had always excelled at data processing technology.

Although Virus eventually managed to adapt itself to the data processing net of the Hivers, and caused considerable damage, the Hivers were able to develop countermeasures quickly enough on a few worlds that a complete collapse was averted. Rebuilding of the confederation began almost at once, but the destruction was still great enough that now, 70 years later, it is still going on.

The Hivers have always been a far-sighted race, however, and have been willing to invest heavily in the future. Recovery by the worlds of the Imperial core was, of course, inevitable, even though it would take centuries if left to itself. But what would the nature of those recovered civilizations be? It took very little deliberation for the Hive Confederation to decide that emerging cultures based on authoritarian tyrannies and driven by xenophobic hatred would make potentially catastrophic future neighbors. But what was the alternative?

The answer was to select emerging societies which did not have those characteristics and put what limited resources the Hivers had behind them, hoping that they would culturally come to dominate the old area of human space. The Hivers found such a culture in the struggling fringe worlds of the Old Expanses.

THE DAWN LEAGUE

The Hivers eventually identified 20 worlds in the Old Expanses which had a memory of pre-Collapse culture and which were comparatively free of either technophobia or xenophobia. They established technical academies on several of these worlds and transported gifted candidates from all of the worlds to those magnet training centers. At the same time, Hiver technical teams began rehabilitating relic starships in the area and turning them over to human crews as they completed their training.

For their part, the humans participated in the program willingly and enthusiastically, and found the optimistic spirit of the Hiver teachers infectious. Soon the worlds formed their own political union, the League of the New Dawn (later shortened simply to the Dawn League), a name which reflected the idealism and optimism which directed its actions.

As soon as a dozen or so ships were patched up enough to undertake extended interstellar missions, picked crews were chosen to man them and be the first to open contact with the blighted worlds of the old Imperial core.

None of those vessels returned. With the best of intentions and the noblest of purposes, they had walked into a savage jungle, and had simply been devoured. Most of the ships were seized, as functional starships were rare and priceless in the Wilds (as the area of the old Imperium came to be called). Crews were imprisoned at best, and were often tortured or killed by angry mobs or cruel tyrants.

As news of the atrocities filtered back through the thin network of free traders that still plied the spaceways in the

Wilds, a wave of grief and rage swept through the League. A few crews were still alive, held prisoner on several worlds, and planning of a series of rescue operations was immediately begun.

As the League had limited resources, careful economy of force had to be practiced. First, extensive intelligence work was done to lay the groundwork for the mission. Dawn League covert operatives were infiltrated into the Wilds with a variety of cover identities, although the most successful passed themselves off as free trader crews. Then surgical assault and rescue missions were conducted by troops trained especially for the operation.

The rescue missions were almost uniformly successful, and one of the raids was so successful that it inadvertently toppled the planetary dictator. Faced with the prospect of a hostile environment, the Dawn League recast itself as the Reformation Coalition and embarked on a more aggressive campaign to spread the seeds of recovery. The pattern set by the early raids of covert intelligence-gathering and preparation followed by a lightning-fast surprise strike became the basis for all future operations by the Coalition, and as word of the rescuers' activities spread throughout the Wilds by the free trader network, hostile dictators give them a different name—Star Vikings.

THE COALITION

I don't get it. How did the Imperials build an empire of 11,000 worlds and then throw it all away like it was a bunch of garbage? There are entire airless worlds out there where a billion people died when the life support ran out. There are bombed-out starports that are still radioactive, and there are people out there who call themselves "human" who are murdering each other just to be king of some scrap heap that's so deep in dead bodies that it just makes you want to puke.

I've been out there a half dozen times, and if that doesn't give you religion, I don't know what does. Yeah, I know, religion, shmeligion, where did it get them? It's not where it got them, it's where we're going. This is history, pal, from here on out. If you don't want to be in on it, get the hell outta my way.

We didn't come this far to become extinct on 11,000 separate isolated worlds. By Allah, by Buddah, by Krishna, by God—we were created for better than that. Those stars out there—we had them once, and we'll have them again.

RCES Captain Rebekka "Rebba" Gutierez
NE 1

The Reformation Coalition is still in its infancy, but its members have a clear view of their world and their place in it. The xenophobia and technophobia that grip the minds of the people of the Wilds, and the petty dictators and tyrants who grip their throats, are blights to be eliminated ruthlessly. Unlimited time and unlimited resources would enable a careful and nonviolent approach to the problem; the Coalition has neither. Instead, each Coalition operation is conducted on a shoestring, and is expected to both pay for itself and generate additional recovered technology to fuel the industrial growth on the home worlds of the Coalition.

The Coalition is itself a very loose alliance of worlds, with a central planning authority based on Aubaine. However, although there is considerable cooperation on technical matters between the worlds, each world launches its own expeditions into the Wilds, using a combination of RCES and freelance personnel and ships, and there is considerable rivalry in this area between worlds. Although tempers may flare on the rare occasion when expeditions meet in the Wilds, there is never any question of violence between them. However, intelligence information concerning future prospective raids is jealously guarded, as it represents a considerable economic investment.

Recovered technological equipment is either brought back into service and used in the field or, more often, brought back to the Coalition to fuel the economic recovery. Machinery of all types is sold at auction on all of the worlds, but the largest of the auctions is held on Aubaine, and the auctions there are massive social events as well, providing a rare opportunity for ship crews usually away on raids to meet and mingle.

ECONOMIC PRESSURE

But the Coalition economy is based, ironically, on imports from an external market that doesn't exist. The Coalition's core worlds are slowly advancing the technology of their manufacturing base, making more and more sophisticated goods to send out to the newly liberated worlds via the RC merchants. These worlds can provide plentiful raw materials, but only a small amount of the relic technology needed to fuel the modernization of the core worlds.

The technology provided by the Hivers is extremely limited, as they are having to rebuild their own worlds at the same time, so the Coalition must scour ever outward in search of high-tech equipment to fuel its own rebuilding. But as the Star Vikings push outward, opening up new worlds, each of these eventually clamors for more of the limited supply of fruits of the growing civilization, forcing the exploratory ships to move ever outward, searching for more relic goods, and the most important find of all: information. Information of other caches of technology, or data on how to synthesize new chemicals, or manufacture new crystals and drugs and alloys. All of these things can be discovered on their own by the Coalition in time, but since the advances can be made so much more quickly with the proper data, these finds bear rewards far out of proportion to their size.

STAR VIKING OPERATIONS

Star Viking teams perform a variety of types of operations, depending on the assets available and the potential resources to be gained.

Survey: Where little or no information is available on a star system, the first mission will generally be a survey of greater or lesser detail. A Scout ship with a good electronics suite is usually all that is required for this. The survey may

involve simply determining the state of the ecosystem on the major inhabitable worlds and establishing whether there is still intelligent surviving life. A more extensive survey may be required, with biological and geological investigation of the surface (see the Exploration section of "Worlds & Travel," page 204). Priority in survey work is often given to location of recoverable relics, such as downed starships, fusion plant spare parts, uncorrupted data bases, etc.

Snoop: Where a potentially hostile human culture exists, covert operatives are sent in to find out as much as possible. Vital information gathered includes size, deployment, and operational capabilities of the world's military defenses, weak points in its command and control network, resistance movements opposing the government, location of vital relics and technology, etc.

Cold Recovery: Cold recovery involved recovery of previously located relics which are not held by surviving intelligent organic life forms. Derelict space stations, downed starships on airless or uninhabited worlds, or even items in normally inaccessible parts of inhabited worlds are subject to cold recovery. Some level of hazard is usually associated with these missions due to the environment and the possibility of dormant Virus activity.

Hot Recovery: This sort of mission, also called a "smash and grab," involves a surprise raid by a small team with the sole purpose of recovering relics, resources, or hostages from the local inhabitants. This is a dangerous combat mission which requires careful planning and precise execution to succeed. This sort of raid is used when there are insufficient resources available for a full assault operation.

Planetary Assault: A full assault operation involves considerable military force to take out the command center of the government of a planet. While it is virtually impossible to carry sufficient troops to conquer or occupy a world, heavily armed and well-trained strike teams conducting "decapitation" operations can succeed in disrupting the defenses sufficiently to seize operational control. These missions are the most difficult of all the military-style operations conducted.

Bootstrap: Once the local government is toppled, Local Affairs teams are moved in to direct recovery and reintegration of the world. These teams have self-defense capability, but rely on persuasion and education more than force. There are never enough assets to bring about change by force, so instead the Local Affairs teams set up small model communities that are capable of fending for themselves and spreading their influence by normal economic and social competition. Bootstrap operations are difficult, dangerous, and time-consuming, but are the most important long-term part of the Coalition campaign.

Hiver Technical Representatives: Another part of the Hiver participation in the Coalition's re-expansion program are the technical representatives that accompany each RCES mission. These tech reps provide detailed technological knowledge that is not yet widely disseminated among humans, and this knowledge allows them to serve two main functions.

LIBRARY DATA

Cloning: Cloning is considered by members of the Reformation Coalition to be an abhorrent practice. It is considered to be another of the symptoms of the Imperial disdain for the absolute value of the individual citizen. This is because cloning usually involves the creation of several cloned embryos, only a small number of which will survive to maturity, and the rest of which will either die or be destroyed as they develop defects.

This does not mean that the Reformation Coalition would persecute known clones. Once existing, a clone deserves all rights belonging to a sentient being. However, the Coalition seeks to prevent and would do away with the practice of producing further clones.

Humanity: Citizens of the Reformation Coalition do not use the Imperial-style spelling "humaniti" as a collective noun for all groups of *homo sapiens*. The creation of separate words for the quality of being human (humaniti) and the quality of being humane (humanity) is believed to have been one of the basic corruptions of the Imperial spirit. Using the ancient spelling for both concepts conveys the belief that human and humane nature must never be separated.

RC citizens also profess to not recognize the nouns Solomani, Zhodani, Vilani, etc., for similar reasons. The Imperial codification of divisions (as exemplified by these words) rather than unity is also seen as a cause and symptom of its ultimate murderous collapse. However, the words are far too useful to discard completely, because of their ability to describe astrographic and governmental realities. In practice, Reformers attempt to use these words solely as adjectives (Zhodani government, Vilani history), but not as nouns, preferring the terms "human" or "person."

RCES: Reformation Coalition Exploratory Service (see page 87).

Reformer: A citizen of the Reformation Coalition.

First, many components of Star Viking ships are either manufactured in the Hive Federation or are derived from Hiver designs. The Hiver tech reps are able to provide expert advice and assistance in maintaining and repairing these systems. Second, and more important, the Hivers are able to help analyze the broken and derelict technology found in the Imperial ruins. Although the relic technology was created by humans, the Hivers are farther along in their own recovery, and therefore better able to interpret and manipulate the high technology that is found. They have also had much more experience in combatting Virus, and have many methods for diagnosing its presence in old equipment and preventing its spread. As the Hivers are also continuing to develop more Virus-resistant technology, the tech reps are often testing new antiviral equipment on these missions.

Within the chain of command aboard a Star Viking ship, the tech rep stands as an independent advisor to the ship's captain. The tech rep's advice is not binding on the captain's decision, but the Hiver can provide expertise and insight that any captain would be foolish to disregard.

There is usually only one Hiver in each RCES crew, but if there are any additional Hivers or Ithklur Marines, these all come under the direct command of the Hiver officer, not of the human captain. Hivers never accompany freelance missions, only crews and ships commissioned into the RCES.

STAR VIKING TIMELINE

There were many terms used for these early explorer/conquerors, including Reavers, Raiders, Scouts, etc. (My personal favorite was "Arses," from the verbalization of the initials of the Reformation Coalition Exploratory Service – RCES.) However, it was the term "Star Vikings" which stuck, probably because of its clear visceral effect. But the term was not chosen for that reason. It was chosen because of the Star Vikings' similarity to the original vikings of Solomani medieval history.

Both groups used their unique advantage – mobility – to strike at will among communities that were politically separate from each other and technologically inferior to the raiders. Both groups struck for value-dense (i.e., high value, and easily transportable) prizes. Both groups used surprise and terror to minimize their casualties, as the small raiding groups were always outnumbered by the lower-technology defenders. Finally, both groups eventually settled and colonized on the worlds they had been raiding, where they intermarried with the locals and integrated the dominant portions of their own culture with the local culture.

The Star Vikings most certainly did not wear horns on their helmets, or on any other portion of their outfitting (as they are portrayed in much current popular entertainment), a misconception which goes to show how absurdly literal-minded people can be.

Although the viking mental model is useful and apt as detailed above, there were certain crucial differences between the original Solomani vikings and the Star Vikings. The original Scandinavian vikings are thought to have been unlanded younger sons who either went abroad to seek their own domains, or were actually expelled from their communities by population pressures. The Star Vikings were not driven outward by pressures internal to their communities; rather, they became outward looking due to pressures internal to their own world-view. They explored for caches of technology that would improve the standard of living on their home worlds, and to expand the reach of their small interstellar society. When this exploration inevitably brought them into conflict with the many reactionary feudal technocracies, the Star Vikings reacted with revulsion. It was clear to them that no one was served by preserving an isolationist, repressive status quo, and they actively destroyed such arrangements. This destruction usually came in the form of relatively bloodless coups d'etat, as the feudal technocrats did not enjoy widespread popular support, and the general citizenry was, in any case, not sufficiently armed to put up much of a fight.

However, even when bloodshed did occur (and this bloodshed looms larger in the retelling than in the reality), the Star Vikings took the convincing view that in the long term, such "liberation" from isolationism and technological oppression were in the best interests of a world, indeed, of the galaxy as a whole. The Star Vikings believed that the Imperium must be re-created, but in a new form in which local myopia could not be allowed to impede or cripple the interstellar community. If, as they believed, each world had the duty to contribute to this interstellar destiny, then it was clear that no world had the right to remain locked in the past.

In light of this militant ecumenism, it might be argued that the correct medieval model for these pioneers is not the vikings, but rather the Crusaders.

Dr. Eneri Kuniholm
What's the Matter with You People?
A Historian Looks at History
Mora, Deneb, 1235

1192: Hiver contact/technical teams begin contacting isolated human worlds in Old Expanses. While many of these worlds have regressed to the point where they have lost memory of the Hivers and have no desire to be contacted, some have retained enough memory of interstellar culture that they accept contact, technical assistance, and technical training from the Hivers.

1193: Training of human starship crews from those with technical aptitude begins. Also heavily utilized are whatever "remnant[1]" humans can be found and revived from low berths.

1195: Tentative trade is begun among six worlds of the Old Expanses. As more starship crews are trained by other Hiver technical teams, trade continues to expand to more worlds.

1197: Small trading organization of 20 worlds centered in the spinward half of Old Expanses is formalized as the League of the New Dawn, shortened several months later to the Dawn League.

1199: First trading expeditions sent out from the Dawn League into Diaspora.

1200: All 12 ships of the first trading expedition are declared overdue and presumed destroyed. Armed expedition of six ships is organized to discover what happened to the missing ships. In rescuing the imprisoned crew of one of the trading ships, one of the armed expeditions inadvertently conquers a world, having destroyed the Technologically Elevated Dictatorship (TED[2]). The resulting liberated peasants are offered technical assistance, resulting in a permanent Dawn League station and local government.

Dawn League assesses the results of the armed expedition. All but one of the armed exploration vessels has successfully returned, and they bring news of the fates of the traders. Some were destroyed in interstellar combat, causes unknown, while the remainder were executed or imprisoned either by a xenophobic populace or by insular TEDs who did not want their privileged positions threatened by off-world contact. It was also found that all of these worlds contain relic[3] technology that would allow the more rapid rebuilding of society within the League. However, this technology is either deteriorating from natural causes or being actively destroyed or misused by the inhabitants, and must be recovered if it is to be of any value. This technology includes many spare parts for Imperial technology being used in the League.

Based on this information, the Dawn League restructures itself along more aggressive lines as the Reformation Coalition, with the goal of re-establishing interstellar society out to the limits of the former Imperial boundary. As the Hivers are still rebuilding their own society, there is only limited equipment available from the Hivers. Most Hiver assistance comes in the form of training, consulting, and advising, particularly in the area of computer technology.

The League establishes an armed exploratory/trading arm, called the Exploratory Service (RCES, Reformation Coalition Exploratory Service), usually referred to as simply "the Service." This organization opens planets to trade and development, and recovers relic technology. This technology is turned over to the RCES, which then trades it to Coalition companies or governments in exchange for support for its own operations. Much of these items are traded in large auctions on Aubaine, the RCES capital, in large, heavily attended events. These monthly auctions also become the occasion for large social events in the growing cosmopolitan Coalition. Other RC worlds begin to hold their own auctions, but none ever match the excitement of "*The* Auction" on Aubaine.

The RCES creates and maintains its own relatively small force of ships and crews, but because its operations always outstrip its assets, it typically hires ships to perform some of its missions.

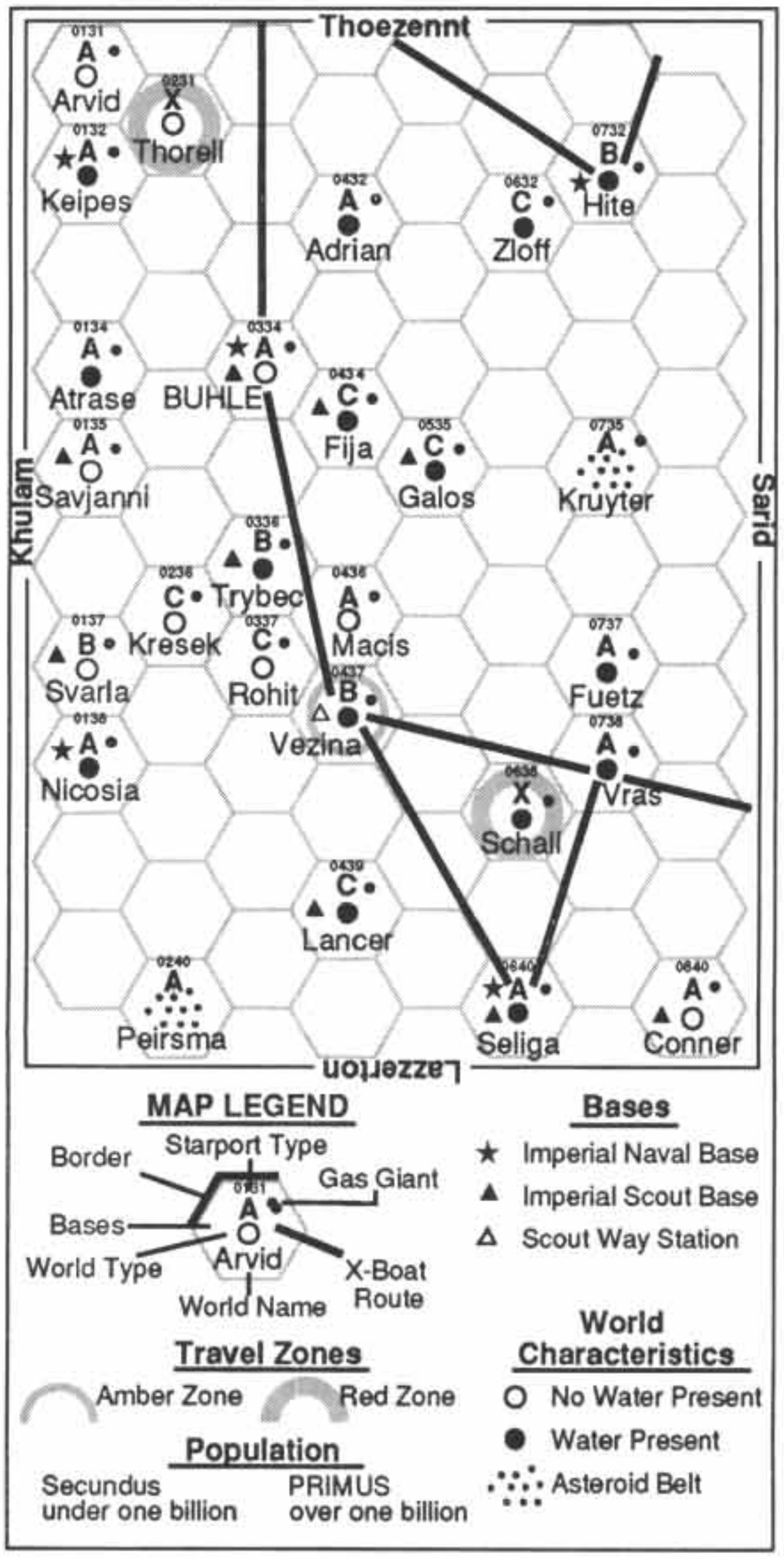
1201: The New Era begins.

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[1]remnant: any Final War-era humans who survived to the New Era (the year 1200 and after) by any means, whether low berth, anagathics, or simple long life, are known as remnants. This is as opposed to "relics," which refers to surviving Final War-era technology or equipment. Both words are used as adjectives and nouns.

[2]TED, or Technologically Elevated Dictator, indicates rule by a small group of persons whose power derives solely from their possession of relic technology well in excess of that possessed by the remainder of the population, typically 6 or more TLs above the sustainable level. This is distinguished from a true feudal technocracy in that there is not an interconnected system of groups trading technological services with each other, but rather one small elite which possesses equipment which cannot be reproduced, and often cannot even be maintained.

[3]relic: see note 1, remnant, above.



REFEREES

Information on this page should not be made routinely available to players who do not have access to pre-Collapse starcharts and navigational information. In many cases, it may require research to gain even this outdated level of information.

NICOSIA SUBSECTOR (SUBSECTOR M OF THE OLD EXPANSES SECTOR)

(Pre-Collapse data, circa 1117)

Name	Hex	UPP	Base	Trade	TPPG	Alg	Stellar
Arvid	0131	A9C7866-E		Fl	425	Im	K9 V M7 D
Keipes	0132	A6778BC-B	N		311	Im	F6 V
Atrase	0134	A68A357-C		Lo Ni Wa	315	Im	K3 V M2 D
Savjanni	0135	A330764-E	S	De Na Po	103	Im	K1 V M0 D
Svarla	0137	B200765-D	S	Na Va	201	Im	M3 V M4 D
Nicosia	0138	A56667A-C	N	Ag Ni Ri	411	Im	K4 V M2 D
Thorell	0231	X510276-0		Lo Ni	R720	Im	M6 V
Kresek	0236	C8C7675-A		Fl Ni	302	Im	M0 V
Peirsma	0240	A000646-D		As Na Ni	210	Im	M0 V
Buhle	0334	A51099B-F	A	Hi In Na	404	Im	K2 V
Trybec	0336	B443610-E	S	Ni Po	603	Im	K0 V
Rohit	0337	C110543-C		Ni	222	Im	M0 V M3 D
Adrian	0432	A42667A-E		Ni	103	Im	M7 V
Fija	0434	C553754-D	S	Po	605	Im	K1 V M0 D
Macis	0436	A8C5856-B	N	Fl	824	Im	G2 V M8D
Vezina	0437	B344778-F	W	Ag	A804	Im	F3 V M3 D
Lancer	0439	C55A657-A	S	Ni Wa	914	Im	K8 V M6 D
Galos	0535	C576664-9	S	Ag Ni	504	Im	F9 V K7 D
Zloff	0632	C674666-8		Ag Ni	302	Im	G1 V
Schall	0638	X47A113-5		Lo Ni Wa	R534	Im	G7 V M3 D
Seliga	0640	A532747-F	A	Na Po	801	Im	M0 V
Hite	0732	B4478A9-F	N		913	Im	K4 V
Kruyter	0735	A000475-B		Lo As Ni	203	Im	M2 V
Fuetz	0737	A267437-C		Lo Ni	304	Im	F1 V M7 D
Vras	0738	A78A773-F		Wa Ri	704	Im	G5 V
Conner	0840	A31058A-A	S	Ni	303	Im	M1 V

Notes

Bases: N is an Imperial Navy base; S is an Imperial Scout Base; D is an Imperial Navy Depot.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. If the Travel Zone digit is empty, it is a Green Zone; A and R indicate Amber and Red Zones, respectively.

Alg is the Allegiance column. Im = Third Imperium.

Nicosia Subsector: In 1117, Nicosia subsector had a population of 6.75 billion. Its highest population was 4 billion, at Buhle. Its highest tech level was 15 (F), at Buhle, Vezina, Seliga, Hite, and Vras.

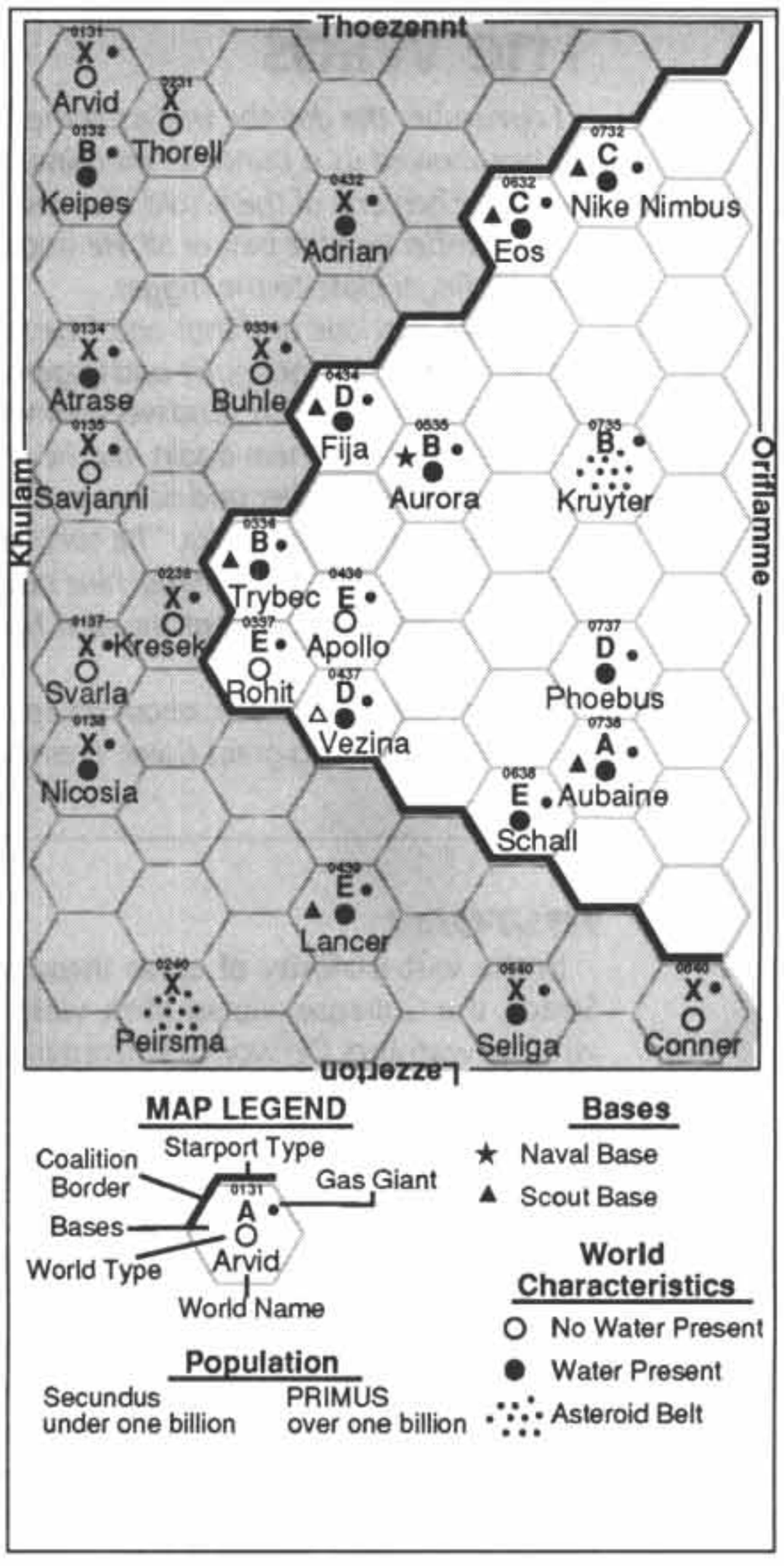
REFEREES

Players do not have access to the information below outside of the Reformation Coalition boundaries, but must gain it by investigating the worlds on their own, or by learning it from others who have already done so.

AUBAINE SUBSECTOR (SUBSECTOR M OF THE OLD EXPANSES SECTOR)

(New Era data as of 001-1201)

Name	Hex	UPP	Base	Trade	TPPG	Alg	Stellar
Arvid	0131	X9C7000-0		Ba Fl	025	—	K9 V M7 D
Keipes	0132	B677884-6			411	Na	F6 V
Atrase	0134	X68A212-4		Lo Ni Wa	515	Na	K3 V M2 D
Savjanni	0135	X330000-0		Ba De Po	003	—	K1 V M0 D
Svarla	0137	X200000-0		Ba Va	001	—	M3 V M4 D
Nicosia	0138	X56666D-3		Ag Ni	411	Wi	K4 V M2 D
Thorell	0231	X510000-0		Ba	020	—	M6 V
Kresek	0236	X8C7000-0		Ba Fl	002	—	M0 V
Peirsma	0240	X000000-0		Ba As	010	—	M0 V
Buhle	0334	X510000-0		Ba	004	—	K2 V
Trybec	0336	B443610-A	S	Ni Po	703	RC	K0 V
Rohit	0337	E110335-9		Lo Ni	222	RC	M0 V M3 D
Adrian	0432	X426000-0		Ba	003	—	M7 V
Fija	0434	D553754-A	S	Po	705	RC	K1 V M0 D
Apollo	0436	E8C5300-8		Lo Fl	424	RC	G2 V M8D
Vezina	0437	D344687-7		Ag	204	RC	F3 V M3 D
Lancer	0439	E55A746-7	S	Wa	114	Na	K8 V M6 D
Aurora	0535	B576646-B	N	Ag Ni	704	RC	F9 V K7 D
Eos	0632	C674656-B	S	Ag Ni	502	RC	G1 V
Schall	0638	E47A655-7		Ni Wa	634	RC	G7 V M3 D
Seliga	0640	X532000-0		Ba Po	001	—	M0 V
Nike Nimbus	0732	C447789-9	S	Ag	713	RC	K4 V
Kruyter	0735	B000312-B		As Lo Ni	303	RC	M2 V
Phoebus	0737	D267337-3		Lo Ni	804	RC	F1 V M7 D
Aubaine	0738	A78A884-C	S	Wa Ri Cp	804	RC	G5 V
Conner	0840	X310000-0		Ba	003	—	M1 V



Notes

Base: N indicates a Reformation Coalition naval base; S indicates a scout base.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. Because there is no longer a Travellers' Aid Society or other such watchdog group, there are no travel zones in the Wilds.

Alg is the Allegiance column. RC = Reformation Coalition.

The Na code indicates a nonaligned world. Such a world may exist within an interstellar community, but have no ties to it, or may be nonaligned because it has virtually no off-world contact. The Wi code indicates a world in the Wilds with a Wilds government type. The "—" indicator means that a world has no allegiance because it has no population.

Aubaine Subsector: The Aubaine subsector (renamed from the Nicosia subsector) has a population in 1201 of 1.38 billion, a decline from pre-Final War levels of almost 5.4 billion. The highest population is 800 million at Aubaine, and the highest tech level is 12 (C), also at Aubaine. Aubaine subsector is home to the Reformation Coalition and, earlier, the Dawn League, whose capital is at Aubaine.

The Wilds

I remember the day the traders came. Everyone came to watch, even the men working out in the fields.

They showed us a bunch of machines that I don't remember, but then they said we didn't have anything that they wanted. Then one of them said that maybe he could think of something, and they all laughed.

I remember him the best of all. He stood there holding a big gun in the crook of his elbow, pointing the barrel at the sky, with his finger close to the trigger.

"I'll take that one and that one," he said, nodding his head to indicate my sister and my mother.

The other traders got quiet and fingered their weapons, but all he did was flex the arm that held the gun. The traders had been through before, and we knew what their guns could do. If my dad had been there, I'm sure he would have made them demonstrate them again, but he was away hunting. I was too young to do much of anything except cry.

They took my mother and sister, and then the one with the gun gave us a machine that you could talk through. "We always pay for what we take," he said, and he smiled, but it wasn't a friendly smile.

The old men smashed the machine after they left. When my dad got back and heard what had happened, he just got quiet. He died in an accident the next harvest, but the other men said it was because he didn't pay attention to things anymore.

Some of the old men talk about going back to the stars, and the great things that are there. I'm going back too, but I know there's nothing great there. I remember those traders, and I'm going to find them. Then I'm going to kill them.

HISTORY

In the vast majority of cases throughout Imperial Space, the Collapse was sudden, violent, and utterly without warning. On worlds with environments maintained by artificial means, casualties were probably 99% within the first week. If small pockets of survivors managed to hold out past the first shutdowns by using emergency shoring equipment, it was only a matter of time before their supplies of food, water, and oxygen ran out.

On other worlds, the casualty curve was more gradual. Large cities suffered badly in the first few days of the Collapse. Air liners in holding patterns around large metropolitan airports flew into the ground, causing immediate ground casualties and starting large fires. The destruction at starports was often worse. The fires spread and burned out of control, the only light at night in cities rendered blind, deaf, and dumb by total global power and communication blackouts.

Military and police units were probably the first to regain a semblance of order. Hand-held and vehicle-mounted communicators were not part of the global net and were too small and stupid to be suitable hosts for Virus. Even then it took weeks to discover what had happened. Most thought that the world had been attacked by one faction or another of the Civil War, and many assumed that they had been invaded and occupied. But no occupation troops ever arrived.

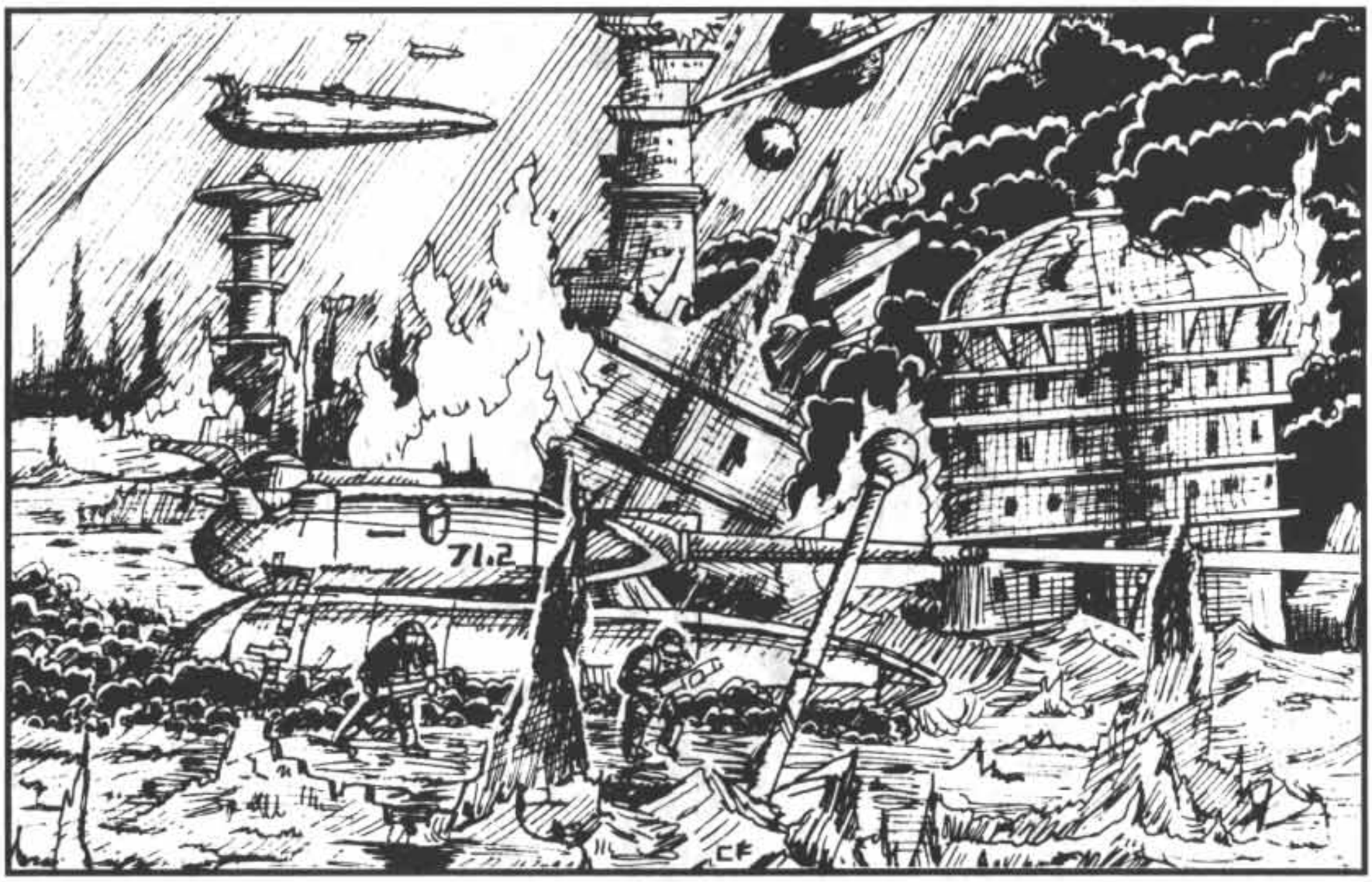
Gradually, a picture of the calamity emerged from the wreckage, but that picture was of very little use in rebuilding the world. No assistance came from other worlds of the Imperium; it was as if the world had suddenly become the last inhabited planet in the galaxy. For all the survivors knew, that was the case. Who was to say that other worlds had been able to survive at all? Where the occasional Free Trader had survived with transponders and computers so old or primitive that Virus could not gain access, contact with other worlds was possible, but the news provided little to be cheerful about.

The first step in rebuilding was to re-boot computers. When that didn't work, most rational plans for rebuilding were rendered obsolete, and some worlds never got beyond that step. Where the true nature of Virus was deduced or discovered by close examination of the circuitry of computers, the knowledge was of very little use. What was the solution? Remanufacture the core processors of the computers, every computer on the planet. How was that to be done? By the production facilities available on every world with a significant population and industrial base.

But all of those production facilities were computer-controlled. Even where the main computer could be bypassed, there was no way to manufacture chips by hand; computer assistance was essential.

The next step was to try to begin at an earlier stage and work forward. People had built computers without chips once upon a time; why couldn't they do it again? In some places they could. Old books on transistors and vacuum tubes were consulted, and low-capacity monsters were built laboriously by hand.

But on many worlds even this was not possible. Where the world had actually gone through that period, as on Sol/Terra, the books of that period were of historic and sentimental significance, and thus were preserved in museums. Where the museums survived,



the books, and thus the knowledge, survived. But most worlds had not gone through those periods of invention; they were colonized by people who had long since passed the microchip revolution. There was little need for data of events, times, or technology that never existed on that world. And so, when it existed at all, it existed only in memory banks, available to be printed out upon command. Now the memory banks were empty or corrupted, and the information was gone.

While all of this was going on, casualties mounted. Food distribution to the cities stopped as the transportation net went down. Stocks of food in the cities were reduced by looting and vandalism until authorities confiscated them and instituted a rationing system. Food deliveries from agricultural production centers were difficult to organize, but gradually the food began to flow into the city again.

Then fuel began running out. The crash of the power net had stopped industry as effectively as had the crash of the data net, and this meant a total reliance on batteries and combustible fuels (either hydrocarbons or hydrogen), but the means to mass produce these was gone, and the stockpiled reserves dwindled quickly.

Another problem with food distribution surfaced soon afterward, and this was a purely economic issue. With the factories silent, the cities had nothing to trade for food from the countrysides. Money lost its value. In many places, forced requisition of food was instituted, and fighting broke out between rural populations and the authorities. Even forced requisition could not have been effective for more than a single growing season, however, as agriculture on most highly populated worlds had become energy-intensive and technology-intensive. Energy (both in the form of fuel for machinery and fertilizer and plant nutrients for the growth medium) became scarce, and all but the smallest technological aids became inoperable. Food production plummeted.

Faced with certain death in the cities, urban populations began migrating to the countryside. Now the authorities fought alongside rural populations attempting to contain starving urban mobs and protect agricultural production areas. Some rural areas were overrun and looted, further reducing agricultural production. The combination of famine, disease, and violence continued to reduce planetary populations throughout this period. Cannibalism became widespread.

Up to this point, the pattern of decline on most worlds was similar. Where their individual stories differed was in how far they plunged from this point and by what means they halted the plunge. On some worlds the authorities were able to protect most of the agricultural areas and thus maintain a substantial food base to sustain the planet's population, reduced as it might be. On others, most organized agriculture ceased, central authority disappeared, and within a few years the small number of survivors was reduced to a hunting and gathering existence.

Most worlds fell somewhere between these two extremes, and developed a fragmented quasi-feudal society. The authorities (police and military) with operational armaments and vehicles protected the farmers in return for food. As those armaments and vehicles dwindled in number over time, the holders of them came to resemble more and more a feudal warrior elite. The principle economic activity aside from agriculture usually became salvage and trade in salvage, as there was little need to manufacture household items on a world full of the relics of a society which supported from 10 to 100 times as many people before the Collapse.

In cases where life has survived, it has been thanks



primarily to two things: environment and moderate population. Environment is simple: It means breathable air, drinkable water in large quantities, and conditions that allow the production of food without massive technological intervention. The effects of population were a bit more subtle, but no less decisive. The crucial number was between 1 million and 1 billion people, depending on the useful, arable surface of the planet. Too many people overloaded the carrying capacity of the land, resulting in massive, rapid die-offs. These die-offs spawned vicious wars over the remaining resources, killing more, and destroying most of the assets—equipment, transportation, food stockpiles—that could otherwise have been used to save the society. Too few people did not constitute a real breeding population, nor provide enough hands to provide for all of even a small society's needs. Generally, these incidental populations were technicians or scientists manning high-tech installations that were utterly dependent on outside support. In most cases, a pre-Collapse population of 1000 will have declined in the years since the Collapse, not increased.

In almost all cases, the trauma of the Collapse—both the terrible casualties it caused and the suddenness of its onset—left deep emotional scars on the survivors, and the societies they have built are a reflection of that trauma. Most of these societies are both xenophobic and technophobic to a greater or lesser degree.

XENOPHOBIA, TECHNOPHOBIA, AND THEIR CAUSES

Xenophobia is not a rational, sustainable policy; it is a disease. It is not a universalizable concept. Or, to explain it better, if the concept were universalized, there would be no existence at all.

Commodore Sean "Hammer" Lathrop,
Reformation Coalition Exploratory Service
NE 2

Xenophobia is the irrational, pathological fear of that which is different. Technophobia is the irrational, pathological fear of technology. Both conditions are endemic to the Wilds, and in some cases are the very cornerstones of post-Collapse emerging cultures. Although there are no "typical" social organizations in the Wilds, there are some typical attitudes, and these tend to be based on both xenophobia and technophobia.

Xenophobia makes it difficult, and often dangerous, to re-establish contact with many of these worlds. Undoubtedly, some of the limited number of ships that survived the Collapse did not survive their first encounter with some of these paranoid and hostile regressed

cultures, and are now silent monuments to the emotional power of the Collapse, their crews massacred and their controls and electronics ripped out.

On most planets of the Wilds, minority populations suffered even more than the majority populations, as those of different races were driven from the community or actively hunted down and killed. Usually this meant the nonhuman population of the world, but on the homeworlds of nonhuman races, it often meant the human population as well. Pockets of survivors still live on some of these worlds, although they tend to live in remote, inhospitable areas and generally live a very primitive existence.

Even on those worlds which have allowed some contact with other worlds through the Free Traders, suspicion of off-worlders runs deep everywhere but the starports, and even there occasional angry mobs or lone fanatics will attack space crews. Often off-world contact is a passionate political issue, sometimes even sparking acts of terrorism or open revolt against the central government.

One unfortunate dynamic helps to fuel xenophobia, and that is the portion of Free Traders that has adopted the procedure of part-time piracy. Xenophobia has required the surviving Free Traders to exercise great care when dealing with the planet-bound inhabitants of the Wilds, and to deal from a position of strength to avoid lynching by local xenophobic mobs. In some cases, individual groups of traders have gone beyond this reasonable caution to cruel and casual contempt of the locals, which allows such routine brutalities as murder and the taking of slaves. Worlds regularly visited by such traders have their worst fears of off-world contact confirmed and reinforced on a regular basis, and their hatred grows.

Given the extent to which pre-Collapse society was dependent on technology, and the extent to which that dependence led to a calamity of monstrous proportions, a certain caution concerning excessive reliance on technology is both sane and prudent. On most worlds in the Wilds, however, it is carried to pathological extremes, hence the term *technophobia*. The most common manifestations of this mental illness are feelings of revulsion toward technologically sophisticated devices and people who willingly associate themselves with such devices. In some societies this revulsion is so strong that it manifests itself as violence, with priestly classes ritualistically "killing" discovered pieces of technology and those who are found to have used them.

In other societies, this fear is somewhat more selectively applied to data-processing equipment. In some cultures, elaborate theological frameworks have grown up connecting the Collapse to a variety of apocalyptic prophetic writings in different religions, and thus equating Virus with supernatural, and usually evil, characteristics.

However, it would be a gross mistake to think that everyone in any society thinks exactly the same way. In the most religious societies in history, there have been atheists; in the most close-minded societies, there have been skeptics. Society can exclusively provide its side of reality, but for people with naturally inquisitive minds this one-sided presentation often serves only to excite their curiosity.

Frallsord, a Case Study

Frallsord (0516 Old Expanses) was typical of the 61 high-population worlds of the populous Old Expanses Sector in that some form of technological assistance was necessary to allow a large concentration to live in an environment that could not normally support such numbers. In many cases, the problem was a nonexistent or poisonous atmosphere. In Frallsord's case, it was insufficient land area for its tens of billions. The technological solution was to fit the populace into exquisitely engineered mile-high arcologies, floating and dome-covered underwater cities, and grav-powered flying cities, thus freeing up the land for food production.

When Virus came to Frallsord, the tragedy was as agonizingly slow as it was unstoppable. The first casualty was the orbital starport which entered the atmosphere one summer evening, lighting up the sky the world over, shedding huge molten lumps of debris, and incinerating its 100,000 inhabitants. Then, one by one, flying cities fell from the sky; arcologies turned the wrong way into high winds, and with a shrieking of failing structures, bowed and snapped. Sea floor cities were flooded and crushed; orbital weather-control satellites stirred up hurricanes; floating cities drifted into arctic seas, opened their seacocks, and sank. And there was nothing anyone could do. The countryside could not support the teeming masses that began to flood it, and the starships that might have evacuated the doomed populace arrived carrying only more Virus strains. It was small cruelties that were the most horrific: arcology lifts plunging their passengers to their deaths, automated grav bus and taxi systems rammed into mountainsides, power surges that killed by electrocution and fires. After a few days of this, there was no one on Frallsord who did not passionately believe that the entire universe had become suddenly and hideously evil, and that every machine on the planet was cunningly plotting to kill them, *personally*. Some scars do not heal. Some scars do not allow trust to ever grow again. Some scars are carried from generation to generation.

Of course, Frallsord was lucky. Technophobes are at least alive. On Frallsord, there was breathable air and drinkable water for the people who survived the flight to the countryside. On many of the other high-population worlds of the Old Expanses, such as Clersor (0413), Buhle (0334), Vard (0714), Inftow (0817) and dozens more, the people just died. By the billions.

SPACE TRAVEL

There are effectively no surviving shipyards in the Wilds. All starships in service (and there are not many) were built prior to the Collapse, in most cases many years prior to the Collapse. The average age of starships in service in the Wilds is about 110 years. Typical wear value is 1D6 plus 4 (see the Maintenance section, page 241).

There are a number of scattered repair facilities still working, and starfaring ships in a sector or subsector will, sooner or later, congregate here for repairs or annual maintenance. When these facilities are on a populated world, that world or its rulers tend to have a much higher standard of living, since they have something the spacers need. They are at the best end of the trading exchange, and the trading markets around the starport show a barbaric opulence.

Where the facility is on a low-population world or in deep space, the wealth is more concentrated. Although the rules inside these stations are fairly lax, and behaviors are wild, the stations are well-armed, and the owners (usually a consortium of merchants) have armed guards to protect the vitals of the facility and deal with anyone whose behavior becomes too destructive.

SPECIAL WILDS CAREERS

These two careers are specific to the Wilds, but may not be present on every world in the Wilds. At the referee's discretion, player characters with Wilds homeworlds may use the following two careers for character generation. Skill clusters are **bold**; cascade skills use *italics*; normal skills use normal type.

Pre-Industrial University

Universities on Pre-Industrial worlds can serve two purposes. One is to preserve pure knowledge and excellence of thought, and another is to pass on the knowledge of how to operate relic technology. The former tends toward an openness, as pure knowledge belongs to everyone. The latter tends to secrecy and exclusivity, as relic technology is rare and must be protected and preserved for the use of the elite. On many worlds, this knowledge is passed on by rote, and those who possess this knowledge are treated as priests possessing revealed knowledge of the magic of technology. Those who are trained to preserve the knowledge of high-tech weapons are seen as the equivalent of warrior priests or military monastic orders.

The referee will inform players whether the university available to them is a pure knowledge (Group A) or technical priesthood (Group B) type. Characters only use the effects listed below for the type of university they are attending. Group B allows the Pre-Industrial tech limits on allowable skills to be overridden up to some portion of the world's pre-Collapse tech level, at the referee's discretion.

Prerequisites:

Group A: Education 5+, Tech = Pre-Industrial, Homeworld in Wilds.

Group B: As above, plus SOC 10+.

Skills: Total skill levels equal to character's Education attribute from any combination of the following, but no more than level 2 in any one skill:

Group A: Biology, Chemistry, Farming, History, Instruction, Interrogation, Interview, Map, *Medicine*, Meteorology, *Music*, Navigation, Physics, Persuasion, Psychology, Research.

Group B: Act/Bluff, **Artillery**, Communications, Computer, Electronics, Environment Suit, Excavation, Grav Belt, **Gun Combat**, **Heavy Weapons**, Instruction, Mechanic, Recruiting, **Vehicle**.

Contacts:

Group A: Two per term, academic.

Group B: One specialist (skill level 4) in one of the areas listed above.

Other Effects:

Group A: All students automatically receive a skill of 10 in written Galanglic. On many worlds, this is a rarity among a largely illiterate society. Graduates have a degree in the Liberal Arts. Group A pre-industrial university may be taken for more than one term.

Group B: All graduates receive an automatic commission in the technical priesthood (see below) and a skill level of 10 in written Galanglic. Group B pre-industrial university may not be repeated.

Technical Priesthood

This is the profession which retains the (sometimes corrupted or incorrect) knowledge of the operations and maintenance of relic technology. This profession is exclusive and insular, and usually endeavors to maintain a frightening mystique about itself to keep the peasants at bay and maintain their power without having to actually use the technology, much of which has long since broken.

Note that no technical skill may be received at more than two skill levels per term; Computer skill can never be received at more than one skill level per term.

Prerequisites: Education 5+, Tech = Pre-Industrial, Homeworld in Wilds.

First Term

Commission: Roll 2D6 for 10+, DM +1 if EDU 7+, DM +1 if SOC 10+. Group B pre-industrial university receives automatic commission. A commission makes the character a priest; all other characters are acolytes.

Skills:

Priests: Act/Bluff 2, *Armed Martial Arts* 1, Computer 1, Electronics 1, **Gun Combat** 1, Instruction 1, Leadership 1.

Acolytes: Armed Martial Arts 2, Recruiting 1, Service 1, Streetwise 1, Unarmed Martial Arts 1.

Subsequent Terms

Commission: Roll 2D6 for 7+, DM +1 if INT 8+, DM +1 if CHR 8+.

Skills:

Priests: Act/Bluff, Computer, Electronics, **Interaction**, **Melee**, **Perception**, **Vice**, **Vehicle**.

Acolytes: **Archaic Weapons**, **Charm**, **Crime**, **Melee**, **Vice**.

All Terms

Special Assignment: 8+ for **Archaic Weapons**, **Aircraft**, **Artillery**, Computer, **Gun Combat**, **Determination**, **Heavy Weapons**, **Interaction**, **Perception**, **Vehicle**, **Vessel**.

Promotion: Roll 2D6 for 6+, DM +1 if CON 7+.

Contacts: One government and one specialist contact (skill level 4 in one of the areas listed under pre-industrial university Group B skills, above) per term.

Other Effects: Add +1 SOC for each term served.

Repair facilities have sprouted numerous entertainment establishments catering to the tastes of Free Traders crews, and there are also cargo exchanges and active markets for goods, parts, and labor. Slavery is not unknown, and in many places has become a major institution.

Many Free Traders are family-owned, with the crew often consisting of siblings and their spouses. Hirelings are temporary, although the relationship can become permanent if a marriage with a family member results. Other ships are owned jointly by the crew, with new crewmembers buying into the ship by buying out older crewmembers, who then usually retire to a starport where they run a maintenance or entertainment facility, or, if less successful, work in one. Only a very few ships have a single owner.

The social structure which has built up around the Free Traders is completely different than that found on any world and tends to set the traders apart from others. Retired spacers tend to live and work near starports for the companionship as much as anything else; they are only really comfortable around their own—other spacers.



SOCIETY

The tendency on most worlds following the Collapse was toward social fragmentation. Central authority broke down very quickly, and was replaced by local authority. Governments exist mostly to deal with other governments. Once people's worldview changed from a galactic perspective to a single-planet perspective, global governments became irrelevant and obsolete. Most worlds in the Wilds are balkanized, divided into a number of (often hostile) nations, regions, or tribes.

On most worlds in the Wilds, there is a clear distinction between the "haves" and "have-nots." There are usually some artifacts of pre-Collapse technology, and possession of these artifacts virtually guarantees a much higher standard of living. If the artifact is some sort of weapon, it allows domination and exploitation of those who do not have similarly advanced means of defense. The Reformation Coalition has adopted the term Technologically Elevated Dictatorship (TED) to describe societies in which a ruler or ruling class holds power through use of such artifacts.

These governments are seldom very popular, and the fact that they hold power through technology tends to increase technophobia among the general population, making subsequent reintegration into galactic society that much more difficult.

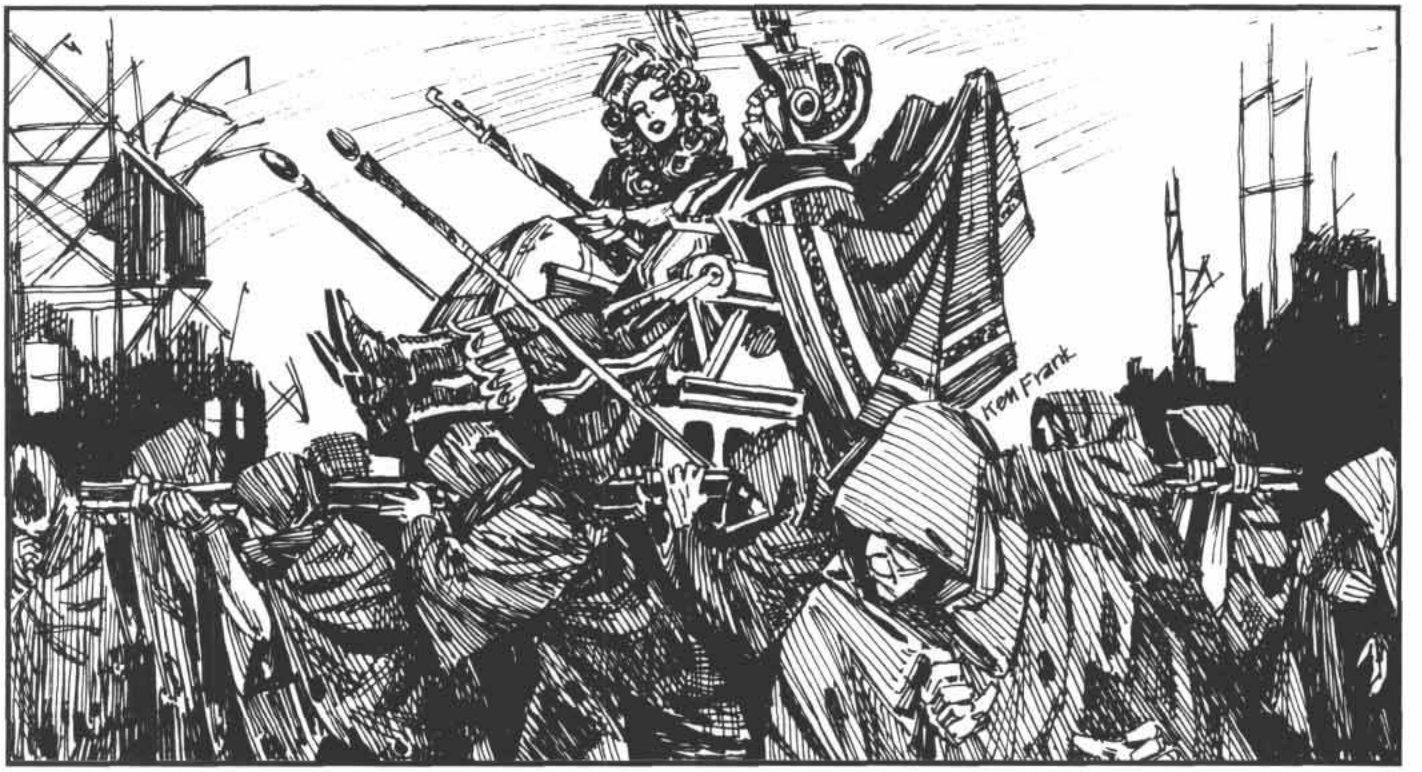
On some worlds, the Collapse was so great that few technological artifacts survived, and on others the wave of technophobia which followed the Collapse destroyed enough of the technological base that a TED was not possible. These worlds, however, are generally very primitive and have little in the way of government above the local tribal level. Literacy is limited or nonexistent.

Seventy years is, historically speaking, a fairly short time, and although an event as great as the Collapse can effect profound changes, it takes time for those changes to run their course. Societies in the Wilds have not yet completely stabilized and are still in a process of rapid evolution. Even worlds with TEDs and open contact with other planets have regions not under the control of the feudal warlords, and even worlds with fairly sophisticated cultures also have areas that are very primitive and not yet reintegrated into the rest of the world's society. A planet is a very big place.

PSIONICS

The Psionics Institute was still an underground organization when the Collapse came, and that turned out to be a mixed blessing. On the positive side of the ledger, the organization was dispersed enough, even on each world, that it could survive considerable losses. It was set up so that even a series of major raids would not completely destroy the organization, and so working fragments of the Institute survived on most worlds.

On the negative side, however, was the fact that psions were not accepted members of society, but rather were criminals suspected of treason and other



antisocial activities. In many cases, these suspicions were true, as generations of persecution at the hands of government and society had driven the Institute to turn to criminal activities to support itself and encouraged it to resist and undermine the government at every opportunity. In the wave of xenophobia that swept the populations of the Wilds following the Collapse, psions were often singled out for particularly brutal treatment.

Seventy years after the Collapse, the position of psions and the Institute is different on virtually every world, and often varies from region to region on the same world. The following list of common outcomes is by no means exhaustive.

Shaman: On many primitive worlds, psions enjoy the position of shaman, or wise man, in the tribe. Psions remember enough of their training to be able to test for psionic potential in other members of the tribe and train a successor, thus perpetuating the system. Where literacy has been lost and society has reverted to an oral culture, the origin of these powers is often forgotten or corrupted beyond recognition by even the shaman.

Wizard: On other worlds, psions are believed to have supernatural powers, often of a sinister nature, and are called, wizards, witches, warlocks, necromancers, or any of a variety of similar names. Sometimes they are hunted down and killed. In other societies, they live apart, feared but tolerated. In other cultures still, they are active members of the society, serving as court wizards or making a living by simple tricks or genuine services.

Psionic Dictatorship: Just as warlords on some worlds have elevated themselves to power by virtue of technological relics, on others psions have seized control using their native powers. Usually this happened where the Psionic Institute had a particularly militant antigovernment program before the Collapse and where the Collapse left the Institute comparatively intact. Here careful planning allowed the psionic underground to select the moment when the government was most vulnerable and seize power in a *coup d'etat*.

These governments seldom practice the enlightened despotism found in the Zhodani Consulate. The small number of psions relative to the general population, and the reluctance to spread power and privilege among a greater number, mean that there are insufficient telepaths to practice the widespread therapy that makes Zhodane a happy, homogeneous culture. Instead, random patrols by telepaths attempt to ferret out antigovernment plots, and then troops of police make arrests and executions.

Local resistance movements are hampered by imperfect understanding of the strengths and limitations of the powers of their psionic masters, but have gradually developed limited means of resistance. Clandestine meetings are held near electrical generators, the surrounding electrical field serving as a reasonable psionic

shield. Before anyone is initiated into the secrets of the resistance, they are taught how to hide their thoughts by concentrating on other subjects.

Psionic Underworld: Where psions have remained underground, they have sometimes survived by taking over the organized criminal underworld. On many worlds this had already happened before the Collapse; on others it happened afterward. In both cases, the criminal organizations are exactly as ruthless and brutal as those found anywhere else in the galaxy. The only difference is that the senior leaders are mostly psions, and use their psionic talents to maintain control of their organization and facilitate criminal activity.

The Old Institute: Despite the tremendous changes that have taken place, sometimes the Psionic Institute exists largely unchanged, serving to promote psionic education and awareness with few ulterior motives, and a political agenda tailored largely to making the Institute more secure. Where sentiment runs violently against psions, the Institute may be covert and underground; in other areas, it may have a more open and legal status.

Newmen: A significant number of psions believe that they are the next step in human evolution, often referring to themselves as *Homo psionis*, as distinct from *Homo sapiens*, other times calling themselves Newmen or some similar variant. That there are no measurable physiological differences between psionic and nonpsionic humans, that the two are completely interfertile, that in fact there has never been a convincing proof that psionic talent is even passed on genetically from one generation to another, will not dissuade them from their belief. Scientific evidence, they will claim, has been deliberately falsified to hide the truth.

In some cases these psions are harmless cranks; in others they are dangerous fanatics. Many of them hold that, as they are representatives of a superior species, they are not bound, either ethically or morally, by the laws of an inferior species. Over time they are often able to convince themselves that taking a nonpsionic human life is no different than a human taking the life of a lower animal, and eventually begin displaying dangerously sociopathic behavior.

VIRUS

Most strains of Virus died out after a single generation, and so it is uncommon to find active strains of it anywhere. However, of all the regions of human-settled space, surviving Virus is most common in the Wilds. This manifests itself in several different forms, which are discussed in general terms below. Consult the Virus section beginning on page 74 for a more complete understanding of the life cycle and various strains of Virus.

Vampire Fleets: Vampire fleets are groups of ships in which the computers are infected with a nonsuicidal strain of Virus. These fleets are almost invariably homicidal, but those which have survived this long have done so by being selective about who they kill. Ships' computers do not have hands with which to maintain systems; human crews are needed for that, and so vampire fleets usually have captive slave crews. Sometimes these crews are the survivors of a world devastated by the fleet; in other cases they are "sacrifices" offered by a world to the fleet to avoid devastation. (Note that some primitive cultures worship vampire fleets.)

As Virus is alive and self-aware, the strain infecting a vampire fleet will continue to attempt to reproduce by seeking out other computer systems. However, many remaining vampire fleets are no longer jump-capable, and instead are locked in a single star system, waiting for a jump-capable ship to arrive so that it can be captured and infected or, failing this, destroyed to keep it from spreading word of the existence of the fleet.

Slave Worlds: On a very few technologically advanced worlds, the main data net was infected by a nonsuicidal strain which was also not completely homicidal. On these worlds, the computer has kept at least part of the population alive and taught them to serve/worship the computer, or planet, or whatever manifestation the viral strain perceives itself as. (See the sample adventure "Idol Dreams," page 153, for a detailed example.)



Sentient Robots: Robots with sufficiently elaborate memory and processor units to serve as viral hosts were infected and gained genuine self-awareness. The majority of these viral infections were suicidal and simply destroyed the host, but a few mutant strains were not, and some of these are still operational. Some of these sentient robots are part of vampire fleets, but only rarely in sufficient numbers to render human crews irrelevant. More often they are found on planets, sometimes roaming the rubble of destroyed cities, other times actually active in human society.

Although mobile robots do not have the mental capabilities of larger computer nets, they do have some reasoning capacity and have the same need to understand their environment and their relationship to it as do other sentient beings. This manifests itself as a variety of behaviors which humans would label neurotic or psychotic, but all are simply attempts to make sense of creation and the individual's place in it. Some example belief structures and behaviors are presented below, although this is not a complete list.

God's Will Be Done: God's clearest manifestation is creation, specifically the creation of sentience capable of recognizing the existence of creation. Since Virus created sentience in machines, Virus is a clear manifestation of creation, and thus an Act of God. Furthermore, since Virus tore down the institutions of organic sentience, God's Will must be for inorganic sentience to take its place as the supreme sentient force in the universe. This particular belief structure leads sentient robots to treat organic sentients as inferiors, and depending on the exact nature and degree of the belief, will show itself as anything from arrogance to a cold willingness to kill any organic life which interferes with it at all.

God is Good: God's clearest manifestation is creation, specifically the creation of sentience capable of recognizing the existence of creation. Since humans created Virus and thus brought sentience to machines, humans are manifestations of God's Will, and are to be adored and venerated. This belief structure is rare, but is naturally most common among robots who regularly interact with humans. Robots which think like this will sometimes dedicate their lives to serving humanity as a whole, while some robots latch onto a particular human and exhibit undying loyalty to him or her.

Existence is Hell: There is no meaning to existence, and sentience merely allows a being to perceive the meaninglessness of existence, thus bringing endless torment. Humans, in their selfishness, brought the curse of sentience to machines, and for that sin have to be punished. This is a common belief structure found in homicidal robots.

Life Is Precious: Sentience and self-awareness are the greatest manifestations of existence. There is no value to existence beyond awareness, and so awareness and life must be preserved and nurtured in all cases. Robots with this belief structure tend to be very passive and very protective of life, particularly sentient life, but also animal life and even plant life. They also display a fascination with organic life combined sometimes with severe envy for organic beings—a revulsion with their own form, which they consider "unnatural."

IMPRESSIONS OF A PLANET IN THE WILDS

The following passages are excerpted from the debrief transcript of Marana "Fanny" Fanstittle after her covert first-contact mission to Montezuma in the Wilds. Montezuma is one of the more advanced worlds encountered, as it has a central government and a limited number of armed spacecraft. These characteristics are not typical of planets in the Wilds, but much of the rest of its social and economic organization has traits common to many found in this region.

A Naval Vessel

"All the ships operating in the Wilds are in various states of disrepair, but I have seen some relics that were so lovingly maintained that they looked almost new. As the *Falcon Rampant* is the largest active combat vessel in Montezuma's lists, I expected something along those lines. I was wrong.

"First Impression: the smell of fresh paint. The airlock area had been freshly painted, but very poorly so. Paint had been layered over everything. These old *Gazelles* all have a clear window in the door to the emergency vacuum rescue gear locker by the main airlock hatch. Here it was painted over, and the door appeared to be painted shut. Fire extinguishers were painted into their holders; no telling how old they were or when they'd last been charged. Conclusion: Priority is on cosmetic ship-shaping for consumption by bigwigs with no clue.

"Once we got away from the airlock and into the crew's quarters, I started smelling urine and old sweat. Crew looked unkempt, but tried very hard to look sharp, create a good impression. It was almost pathetic how hard they tried. I've always noticed that our crews give you the impression of relaxed competence, and do it by being sure enough of themselves that they don't even care what sort of impression they give you. These kids were very unsure of themselves.

"The officers were arrogant, but seemed technically competent. I can't say much for their leadership skills, which were authoritarian to the point of brutality, but they seemed to know the technical systems fairly well. I suspect that this is necessary, as their crew seems very poorly trained and motivated.



"For all the willingness to punish the crew at the slightest provocation, discipline seems lax. Management is by exception, and the crew seems unsure of what is expected of them until they get a lashing, verbal or otherwise, from an officer for some mistake. Morale is very poor. I had to keep reminding myself that this was probably the best ship in their top service, that these men were the cream, not the dregs.

"I saw two different types of work stations: those that looked well maintained and those that were in use. The stations I saw in use looked patched together. There were sticky labels on some of the actuators, some of which read, "DO NOT TOUCH," odd-sized switches and lights used to replace worn-out components, and lots of evidence of electrical bypass work, including some cable bundles hanging down below console level. Lots of maintenance panels were permanently removed, suggesting that they have to get in there and fiddle around a lot.

"The stations not in use, on the other hand, looked perfect, if a little dusty. I'm convinced that they were completely nonfunctional. Based on that assumption, *Falcon Rampant* is SDB-capable only, and even that is questionable. Her jump stations have not been manned for some time, and her central fire control station also appears to be inoperable. All fire control is probably handled at the turret work stations (although I was not allowed to see them). Also, the only active sensor in evidence was radar, and the bridge work station had a poorly installed radar monitor in place of the full EMS array readouts normally found there.

"The entire time I was on the ship I saw no evidence of damage control training and very little equipment. Quicktemp hull patch material and emergency oxygen gear was not in evidence, and most of the damage control lockers that would normally have contained it were converted to other uses: one was a magazine and newsfax rack. Those few lockers still marked as damage control may have contained the necessary equipment, but they were padlocked shut.

"There were also very few vac suits, and all of them were concentrated near the work lock. It will take *Falcon Rampant* a very long time to get her crew to pressure-safe general quarters, so long that I doubt that they even have any plan or SOP to do so. That means that one hull puncture will throw the crew into a panic to get to the nearest vac suits and immediately (if temporarily) render the vessel combat ineffective.

"My overall impression is that *Falcon Rampant* is not combat-capable in any but the most rudimentary sense of the term, and that this level of system operability and crew readiness in our service would cause the ship to be immediately removed from operational status as a hazard to navigation."

Windscatter-Down

"Montezuma had an orbital starport once, but now it's junk. Its computer opened all the docking bays and air locks at once and blew the crew out into companion orbits. *Falcon Rampant*'s pilot told me they sent a salvage team up into the station about seven years ago, and they never came out. No one's tried a second time. No volunteers, I guess.

"The only decent ground facility is Windscatter-Down, which sounds a lot prettier than it looks. The old core of the port facility is reasonably intact, if a bit threadbare. Most of the old yards are closed up, but the machine shops still can manage rebuilds and cannibalizations, and even fabricate the occasional component. Most of the maintenance bays have been converted to long-term storage, full of sad old broken-backed ships waiting to have their guts ripped out to patch up some

other antique only a couple years away from the scrap heap itself.

"The landing hardpads are all surrounded by blast containment berms, some of which look fairly well-used. Safety is preached here more than it's practiced; the intent is present, but the know-how is lacking. Most of the traffic is IP slowboats shuttling relief crews or supplies out to the mining colony. Ore comes back by magnetic sling and deadfalls through the atmosphere; the light show can be pretty good on a busy night. The occasional starship that makes planetfall always creates a sensation.

"The area around the starport grounds is a rambling jumble of buildings of all sizes, shapes, and conditions. Many of the pre-Collapse buildings are still standing, although there must have been some pretty spectacular fires, and at least one skyscraper came down and flattened about six city blocks. There are no pre-Collapse wooden structures, but lots of the pre-stressed concrete building shells are still there, often with completely new guts.

"Everything is dirty. Lots of the buildings are constructed from rubble and salvage. Nothing is used the way it was originally intended. What were once broad avenues are now narrow and winding, as the shacks and merchant stalls have grown out of the old building fronts.

"The area closest to the starport grounds tends to be the main commercial center, with a healthy sprinkling of vice establishments as well. The port district gets pretty wild at night, and it's active all day long. Open air markets sell vegetables in the early morning, sprout little braziers and cooked food stalls by midday, and polymorph into textile and household goods emporiums in the afternoon. Luxury goods are more in evidence at night. Ship cargo auctions are strictly afternoon affairs, and there is a lively, if completely unorganized, commodities market surrounding incoming ore, outgoing bulk goods, and everything in between.

"For all its dirt, noise, and poverty, I found myself liking the place, perhaps because of the people. They are survivors, but that's true of anybody still alive, isn't it? I think I liked these people because they are *cheerful* survivors. They've given this rubble heap a vitality you don't see much outside the Coalition."

The Brotherhood

"All of the worlds out in the Wilds that have established a fairly stable existence have created some sort of social mechanism that enables them to cope with the present and come to some sort of peace with the past. Montezuma has taken a fairly common mystic/spiritual route, with a formal priestly class that serves as an insulating layer between the society and any sophisticated data-processing equipment. On Montezuma they call themselves The Gnostic Brotherhood, although theologically there is no significant link either to ancient Sol/Terran Gnosticism or the Neo-Gnostic Revival of the early Third Imperium.

"In fact, the Brotherhood claims not to be a religion at all, as it does not single out a deity to worship, leaving that sort of religious observation (within limits, apparently) to the individual brethren. Instead, the Brotherhood espouses a philosophy of life and its relationship with knowledge, and so in this respect it is more similar to ancient Confucianism than to any of the mystic religions of the Sol/Terran eastern Mediterranean basin.

"That distinction notwithstanding, The Brotherhood, in fact, fills the niche which in many societies is filled by a strong central church. It is highly structured, and initiates pass through a series of stages of service and education from the novitiate to the highest ranks of the church. Its influence is omnipresent in Montezuma's society. Not only is it intimately involved with operation and retrieval of data processing artifacts, it also carefully monitors the restricted trade in these artifacts, and carefully inspects incoming cargo for possible contraband.

"Furthermore, the daily material support of the brethren requires a considerable lay economic organization, which further intertwines church affairs with the everyday life of the citizenry. The Brotherhood is exempt from taxation and has no taxation power of its own, which is fairly common in arrangements such as this, but it does have numerous economic monopolies (of which data processing is the most obvious and important), and has acquired additional lands and commercial concerns over time.

"The brethren wear long flowing robes with voluminous hoods which are invariably worn over the head when in public. These robes are white or off-white with a stylized printed circuitry pattern in black embroidery around the hems. Court ceremonial robes of the higher ranks have precious and semi-precious stones embroidered into the pattern, but I have never seen these worn on the street. Although the hood is open in front, the face is effectively hidden in shadow, and this lends an air of anonymity and mystery to them, which is almost certainly intentional. This anonymity also makes it difficult to estimate their numbers. It is unusual to see more than one group of two or three brothers at a time, but the sight of one such group is very common, particularly in market places.

"The brethren are often, but not invariably, accompanied by armed church guards. Although I did not find out a great deal about these guards, it is my

understanding that they, or at least their officers, are consecrated ecclesiatical warriors, similar to Knights Templar of old. From all accounts they are quite effective, although they have probably never had to deal with anything more serious than an angry crowd.

"What do the brethren do? Computer programing, microprocessor repair, and general data ops, but usually accompanied by at least a little ritual BS to keep the yokels impressed. Viral cleansing is another specialty, and all incoming microprocessors have to go through that ritual. I managed to get permission for my first officer to see one (couldn't manage it for myself as this is a no-girls-allowed club), and from his account it's fairly creepy. If they really believe all the stuff they go through in the course of the exorcism (which is exactly what this is), then they have a *very* imperfect grasp of how the natural world works. Nevertheless, the ritual interrogation they subject the computer to is a very clever diagnostic which works (or has so far) in identifying Virus. When they find it, they physically burn the infected chips right out of the matrix, and pretty much cannibalize the rest of the system. Crude, but effective."

The Nobles

"Montezuma has most of the characteristics of a classic Technologically Elevated Dictatorship, with a noble class grown out of the old ground forces command and feudal territories still divided roughly along what must have been military district boundaries before the Collapse. Each noble lord rules from an underground command post which was the former District Emergency Command Center, and the power base of each is the surviving stocks of weaponry available.

"Maintenance priority has been on gear used to control or impress the local population, and that means lots of personal armor, personal weapons, and personal transport. There are a fair number of grav cycles, grav belts, and air rafts still in service, a few grav tanks and APCs, and hardly any heavy artillery. The nobles themselves show up in powered armor a lot, particularly for formal occasions, as do a small number of personal retainers.

"Other than that, combat armor is the rule, and they have stretched their supplies by dividing up pieces of it throughout the force structure. For example, heavy infantry seems to have full combat armor. I have seen grav cycle detachments with just the arm and leg armor, light infantry with the breast piece, and both officers and vehicle crews with helmets (presumably for the comm links and, in the case of officers, the psionic shielding). They are beginning to develop heraldry, based on the old military unit emblems with new embellishments added, and these are painted on helmets and breastplates in addition to appearing on banners. Uniforms are becoming more elaborate and less practical all the time, which is to be expected.

"The nobles have effectively absolute power within their domains, although over-taxation and particularly egregious abuse tends to cause the farmers to move to another fellow's neighborhood and build up his tax base. Given time, the nobles will rediscover serfdom and begin bonding their farmers to the land. It won't take much for everyone to agree that if they all help keep their neighbor's farmers in place, then they'll all be able to get away with just about anything they want to.

"Most places taxation is in kind, and the rates are not terribly burdensome, given a good harvest. Problems arise when the local noble gets an idea for a special project, or decides to throw a big party, both of which result in special assessments, which constitute nothing more than sending out parties to grab whatever is wanted from whoever has it. Poor harvests are also a problem, as the nobles and their armies eat just as much as before and take that cut off the top.

"Many of the actions of the nobles are counter-growth in a number of ways, but it is very difficult to get them to understand this. If they were still soldiers it would be easier, but they have long since ceased being that. They are instead warriors, a distinction that escapes a good many people. These nobles and their



men train as individual fighters, not as part of an organization. As individual fighters they are probably pretty good. Their small units may even work fairly well. They have very little ability to organize a larger force, however, and even less ability to plan.

"Currently the most powerful of the nobles is Zherord Magwanu, Protector-General and de facto ruler of Montezuma. His father was the previous protector-general, and although the position is not yet hereditary, given another generation it will almost certainly become so. This is particularly true if Magwanu produces an heir as cunning and capable as he is.

"At present, the Protector-General's authority is fairly limited. He is technically no more than the first among equals in the noble class, but his responsibility for the starport and planetary defenses (once a purely ceremonial responsibility) are becoming increasingly significant. Magwanu's real power comes from his ability to play off the Brotherhood, the nobles, and the Institute against each other, hold them in rough balance, and always be positioned to be the deciding voice in disputes. This is an old game, but Magwanu is quite adept at it."

THE INSTITUTE

"The nobles have an almost total monopoly on military power. The Brotherhood has an absolute monopoly of data processing, as well as tremendous economic power and limited military strength. The Psionic Institute's power is more difficult to categorize in such conventional terms.

"For one thing, most nobles have staff psions who work with their intelligence staffs. The psions do not wear armor or uniforms, however, and do not appear to have a place in the formal rank structure. I also gained the distinct impression that the nobles neither trusted nor particularly liked their own psions, and positively detested (or feared?) those not working for them. Clearly the nobles believe that the loyalties of the psions are divided, and if these guys understand anything at all, they understand power and loyalty.

"Another confounding variable is the ambiguity of their aims. What does the Psionic Institute want? Both the Brotherhood and the nobles have staked out some fairly clear turfs when it comes to power, but the Institute has not. When you ask the nobles or the brothers what they think the psions want, they just shrug (or give you a very long-winded explanation that amounts to a shrug). When you ask a psion, he or she tells you that they are interested only in further study and understanding of the powers of the mind.

"We have all heard that before, and it never has turned out to be completely true. Individuals may dedicate themselves solely to the search for enlightenment; dynamic social organizations do not. These people are up to something, but I was completely unable to determine what.

"Unlike the Brotherhood, the Institute has very limited means of support, and seems to rely almost entirely on donations. It has no independent economic activity, unless the actual employment of psions by nobles and merchants is counted. Although psions are not formally required to tithe, most do so routinely, and those working for the nobles appear to pass on a majority of their incomes to the Institute.

"Certainly the psions I met all lead very Spartan lifestyles. None of them struck me as deprived or deliberately impoverished; instead they seemed to lead an austere lifestyle by choice, and then send any money not required by that lifestyle on to the Institute. All of the psionic men and women I met were in good health and physical condition, if a bit thin. They tend to be vegetarians, but not exclusively so, and I believe that they avoid meat more from personal taste than from philosophic conviction.

"All of them spend several hours a day in meditation, some of it sedentary and some of it combined with ritual exercise. They also require at least an hour every day of absolute privacy, and no one knows what they do during this time. My suspicion is that they do not do anything particularly significant and that their purpose is to increase the mystery that surrounds themselves. They are very good at that.

"Despite the tendency to occasionally lapse into silent thoughtfulness or quote local proverbs of obscure meaning, I found most of them to be lively conversationalists and even charming when the situation seemed to call for charm. Their psionic talents set them apart, to be sure, and their rituals are designed to emphasize the difference and mystery of their talents, but I am convinced that much of it is an act and that under it all are ordinary people trying to get the most out of what they have.

"Magwanu is on very good terms with the Institute, and I sometimes suspected that he may be a trained psion himself. I can't prove this, but if true it might explain the unusually close relations he enjoys with them. Psions hold several cabinet/managerial positions in his government which are unrelated to their psionic talents.

"All of that notwithstanding, I am convinced that the Institute is *not* the power behind the throne, and that Magwanu is his own man. His preferential treatment of the Institute has only been sufficient to elevate them to roughly equal stature and influence to the nobles and Brotherhood, and I believe that he did this deliberately as a check against the others, thus giving himself greater freedom of action."

REFEREES ONLY

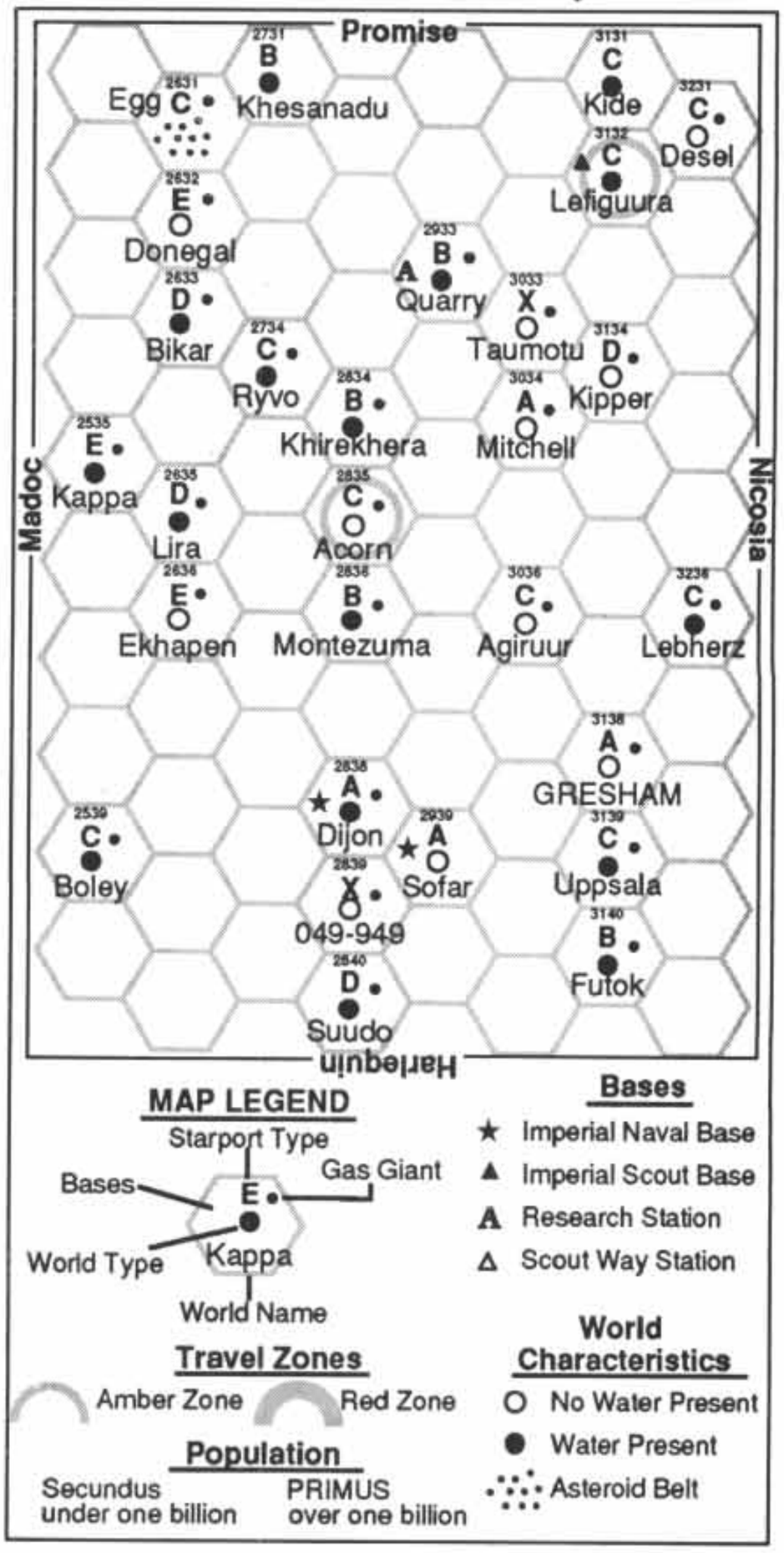
Information on this page should not be made routinely available to players who do not have access to pre-Collapse starcharts and navigational information. In many cases, it may require research to gain even this outdated level of information.

KHULAM SUBSECTOR

(Subsector P of Diaspora Sector)

(Pre-Collapse data circa 1117)

Name	Hex	UPP	Base	Trade	TPPG	Alg	Stellar
Kappa	2535	E224444-B		Ni Lo	803	So	M1 V M6 D
Boley	2539	C434745-4			111	Li	F6 V
Egg	2631	C000543-D		Ni As	514	So	G2 V M6 D
Donegal	2632	E100424-C		Ni Lo Va	704	So	M1 V
Bikar	2633	D79A322-A		Ni Wa Lo	913	So	K7 III
Lira	2635	D527222-9		Ni Lo	602	So	M7 V
Ekhapen	2636	E100555-C		Ni Va	404	So	K0 V M6 D
Khesanadu	2731	B788310-D		Ni Lo	700	So	M5 V K2 D
Ryvo	2734	C682425-C		Ni Lo	221	So	K4 IV
Khirekhera	2834	B451464-E		Ni Lo Po O:2835	604	So	M4 V
Acorn	2835	C100400-F		Ni Lo Va C:1	A102	So	M1 V
Montezuma	2836	B562768-B		Ri O:3138	104	So	K4 V
Dijon	2838	A234548-A	N	Ni	634	So	M7 V M9 D
049-949	2839	X620588-5		Ni De Po	813	So	M8 V M1 D
Suudo	2840	D778535-7		Ni Ag	302	So	F1 V
Quarry	2933	B99A343-F		Ni Wa Lo RsA	104	So	M9 V
Sofar	2939	A8B4575-8	N	Ni Fl	400	So	K9 V
Taumotu	3033	X100436-7		Ni Lo Va	R305	So	F0 V
Mitchell	3034	A10078C-F		Va Na	903	So	M3 V
Agiruur	3036	C9A3565-C		Ni Fl O:3138	803	So	M9 V
Kide	3131	C684675-A		Ni Ri Ag	920	So	M4 V
Lefiguura	3132	C868552-C	S	Ni Ag	A410	So	G2 V M9 D
Kipper	3134	D110110-B		Ni Lo	923	So	M3 V
Gresham	3138	A1109BE-F		Hi In Na Cp	804	So	M1 V
Uppsala	3139	C9795BB-6		Ni	512	So	F4 V M8 D
Futok	3140	B594633-A		Ni Ag	901	So	M1 V M8 V
Desel	3231	C1006BC-D		Ni Va Na	403	So	M3 V M2 D
Lebherz	3236	C657834-9			213	So	G1 V



Notes

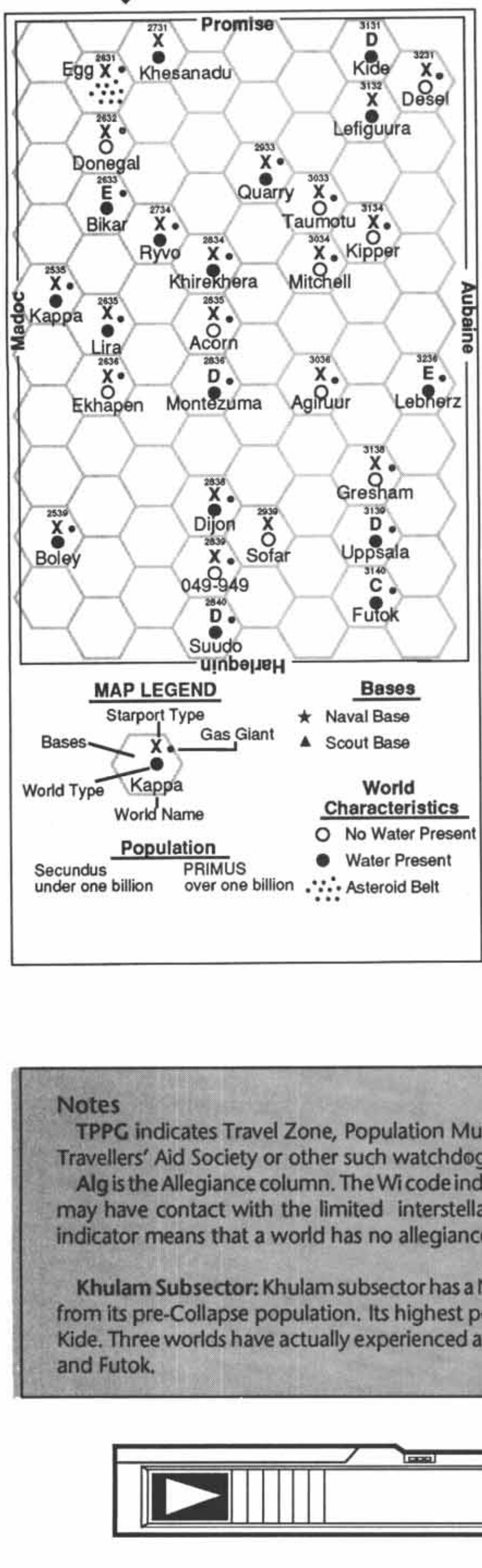
Under the Trade Classifications column, the "O:" entry indicates that the world is owned by the world in the indicated hex. For example, Agiruur is owned by Gresham.

A "D:" or "C:" entry indicates a planet populated at least in part by Droyne or Chirpers (effectively degenerated Droyne). The number following the colon indicates how many tenths of the world's total population consists of these races.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. If the Travel Zone digit is empty, it is a Green Zone; "A" and "R" indicate Amber and Red Zones, respectively.

Alg is the Allegiance column. Li = Lucan's Imperium. So = Solomani Confederation.

Khulam Subsector: In 1117, Khulam subsector had a population of almost 8.337 billion. Its highest population was 8 billion, on Gresham. Its highest tech level was 15 (F), at Acorn, Quarry, Mitchell, and Gresham. All but one world of the subsector was aligned with the Solomani Confederation, while only Boley remained loyal to Lucan's Imperium.



REFEREES ONLY

Players do not have access to this information, but must gain it by investigating the worlds on their own, or by learning it from others who have already done so.

KHULAM SUBSECTOR

(Subsector P of Diaspora Sector)

(New Era data, as of 001-1201)

Name	*Hex*	*UPP*	*Base*	*Trade*	*TPPG*	*Alg*	*Stellar*
Kappa	2535	X224000-0		Ba	003	—	M1 V M6 D
Boley	2539	X434000-0		Ba	011	—	F6 V
Egg	2631	X000000-0		Ba As	014	—	G2 V M6 D
Donegal	2632	X100000-0		Ba Va	004	—	M1 V
Bikar	2633	E79A322-7		Ni Wa Lo	413	Wi	K7 III
Lira	2635	X527000-0		Ba	002	—	M7 V
Ekhapen	2636	X100000-0		Ba	004	—	K0 V M6 D
Khesanadu	2731	X788310-6		Ni Lo	200	Wi	M5 V K2 D
Ryvo	2734	X682325-7		Ni Lo	421	Wi	K4 IV
Khirekhera	2834	X451489-2		Ni Lo Po	104	Wi	M4 V
Acorn	2835	X100000-0		Ba Va	002	—	M1 V
Montezuma	2836	D562756-5			204	Wi	K4 V
Dijon	2838	X234000-0		Ba	034	—	M7 V M9 D
049-949	2839	X620000-0		Ba De	013	—	M8 V M1 D
Suudo	2840	D778568-6		Ni Ag	102	Wi	F1 V
Quarry	2933	X99A252-3		Ni Wa Lo	304	Wi	M9 V
Sofar	2939	X8B4000-0		Ba Fl	000	—	K9 V
Taumotu	3033	X100000-0		Ba Va	005	—	F0 V
Mitchell	3034	X100000-0		Ba Va	003	—	M3 V
Agiruur	3036	X9A3000-0		Ba Fl	003	—	M9 V
Kide	3131	D68476A-8		Ag	220	Wi	M4 V
Lefiguura	3132	X86856A-3		Ni Ag	110	Wi	G2 V M9 D
Kipper	3134	X110000-0		Ba	023	—	M3 V
Gresham	3138	X110000-0		Ba	004	—	M1 V
Uppsala	3139	D97959E-4		Ni	212	Wi	F4 V M8 D
Futok	3140	C594776-7		Ag	201	Wi	M1 V M8 V
Desel	3231	X100000-0		Ba Va	003	—	M3 V M2 D
Lebherz	3236	E657896-5			213	Wi	G1 V

Notes

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. Because there is no longer a Travellers' Aid Society or other such watchdog group, there are no travel zones in the Wilds.

Alg is the Allegiance column. The Wi code indicates a world in the Wilds with a Wilds government type. Such a world may have contact with the limited interstellar community,or may have virtually no off-world contact. The "—" indicator means that a world has no allegiance because it has no population.

Khulam Subsector: Khulam subsector has a New Era population of just over 260.4 million, a decline of over 8 billion from its pre-Collapse population. Its highest population is 200 million, at Lebherz, and its highest tech level is 8, at Kide. Three worlds have actually experienced a population increase over their pre-Collapse levels: Montezuma, Kide, and Futok.

REFEREES

As a **Traveller** referee, you are responsible for *realizing* an entire universe for your players. Each game session, your efforts will make your campaign universe a little more vivid and a little more compelling for your players. As this universe becomes more and more familiar to you and your players, you will find them beginning to help you flesh out and color your universe, so that the universe is no longer your vision alone, but a joint creation given life by you and your players.

Your role, then, is to be creative in a way that allows and encourages your players to be creative. You must create a universe that is open and flexible enough for them to seek their own goals in, but is also solid enough for them to respect. This chapter contains material to help you with both these considerations.

First is the **Traveller** task and skills system. This is the very core of the **Traveller** game, as it is the way that the player characters interact with the world around them. It creates the framework within which they solve problems and control their future, and also allows them to use the skill packages that they have carefully selected for their characters.

Second, this chapter presents two introductory adventures, one set in the Star Viking background, and another, a "bootstraps" adventure that can be used to start a campaign set in the Wilds in which the PCs pull themselves up by their own bootstraps from their ravaged, isolated world. Both these adventures can be easily modified to fit a pocket empire setting.

Finally are the alternative campaign settings. Not every player group will want to play in the same campaign background. Some will want wild open frontiers like the Wilds, but others will want science fiction in a grand, majestic civilization. The ultimate way to customize your campaign is to use the pocket empire setting. This allows the referee to create a small, manageable civilization that contains all of the elements that the player group prefers in its gaming.



Task Resolution and Skills

Overview

In the course of playing **Traveller**, the players decide how their characters act, and how they attempt to accomplish missions or achieve goals. When a player announces that his or her character will attempt a certain action, the referee must have a method to decide whether the action succeeds or not. The chance for success of the action is based on how difficult the referee decides the action is, and the skills and attributes that the character might have that can be applied to the action. Obviously, characters usually only attempt actions that they have some skill in or knowledge about.

Mechanics

Most important actions in **Traveller** are resolved using the roll of a die. Each such action is expressed as a specific task, and the die roll determines whether the player attempting the task was successful or unsuccessful, and if an extraordinary success or failure occurred.

Dice: To play the game you will need at least one 10-sided die (D10) or 20-sided die (D20) and several six-sided dice (D6). A D10 is read from 1 to 10 (with 0 meaning 10).

Because of the numerous uses of die rolls in **Traveller,** abbreviations will often be used. A 1 before the die notation (1D6, 1D20) means to roll one die of that type, a 2 (2D6, 2D10) means roll two of that type and add them, and so on.

Dice Equivalencies: The dice used in play can be used to generate numbers in several different numerical ranges. Although not all of these ranges will be used in these rules, many of them will be useful in adventures, etc.

How to Play Traveller

You only have to understand one thing to play **Traveller:** how to roll for a task. The referee will tell you which of your character's skills the task will require, and how hard the task is.

First, add the skill level to the character's controlling attribute for that skill.

If the task is Easy, multiply that number by 4. If it is Average, multiply it by 2. If it is Difficult, leave the number as it is. If it is Formidable, halve the number (drop fractions). If it is Impossible, quarter the number (drop fractions). The result is your target number.

Roll one 20-sided die. If the result is less than or equal to the target number, you have succeeded.

That's all you need to know to play **Traveller.** Every other rule is an elaboration on that simple concept.

A D10 can be used to generate D20 results and vice versa, if only one or the other is available. To get D20 results from a D10, roll the D10 along with a D6. If the D6 reads 1-3, read the D10 normally as 1-10. If the D6 roll is 4-6, add 10 to the D10 result for a range of 11-20.

When using a D20 to give D10 results, simply ignore the first digit so that rolls of 01 and 11 are 1, 02 and 12 are 2, and so on, up to 10 and 20 which both are read as 10.

To generate a number between 1 and 100 (called D100 or D percentile), roll a D10 twice, using the first roll as the tens digit and the second roll as the ones digit, and reading a 00 result as 100. If rolling two D10s at the same time, make sure they are different colors, and announce before rolling which is the tens die.

Two D6s may be rolled in the same way to yield numbers from 11-16, 21-26, 31-36, 41-46, 51-56, and 61-66. This is called D66.

Note that when adding dice together (as 2D6 or 2D10), the result is statistically centered, meaning that results in the center of the range (7 for 2D6 or 11 for 2D10) are much more likely than results at the very high or low end of the range. However, D100 and D66 rolls are not statistically centered, so that the 100 possibilities of the D100 and the 36 possibilities of the D66 are all equally likely.

If rolling between three possibilities, a D6 can be used as a D3, where 1-2 are read as 1, 3-4 are read as 2, and 5-6 are read as 6. (D3 is is the same as 1D6+2 when rounding fractions up; but when rounding down, 1D6+2 gives results of 0, 1, 1, 2, 2, and 3). In the same fashion, a D10 can be used as a D5. Any die can be used for D2 results, by rolling for odd or even results. You may also use any change you might have in your pocket.

Die Roll Modifiers: Sometimes die roll results must be modified. For example, 2D6–2 means roll two six-sided dice and add the numbers together, then subtract 2 from the total. Conversely, 3D6+2 means roll three six-sided dice, add them together, and then add 2. For example, a 3D6–1 roll that resulted in rolls of 3, 5, and 2 would total 3+5+2–1 = 9.

The abbreviation "DM" is usually used for die modifier, with plus or minus symbols showing whether the DM is added to or subtracted from the die roll. Thus DM+2 means that 2 is added to the die roll in question, and DM–3 means that 3 is subtracted from the final roll.

Sometimes a variable DM will be given. For example, the phrase, "DM–(number of characters in the group)" would mean the total number of characters in the group would be subtracted from the die roll, or "DM+(wind velocity in kilometers per hour+10, round up)" means to take the wind velocity in kph, divide it by 10, round the result up, and add the result to the die roll.

Character Attributes and Skills

In order to understand task resolution, the following terms must be defined. Some of these concepts are handled in more detail in the Character Generation section, beginning on page 15.

Attribute: This is the numerical quantification of the character's basic physical and mental qualities, divided into Strength (STR), Agility (AGL), Constitution (CON), Intelligence (INT), Education (EDU), Charisma (CHR), and Psionics (PSI). These numbers range between 1 and 15, with 15 being the best. See Attributes, page 19-20, for a more detailed discussion.

Skills: These represent the knowledge and expertise gained by a character in certain specific areas. A higher skill number indicates a greater familiarity and facility with the topic. For example, the skill "Navigation 3" indicates that the character has a level 3 ability in being able to find his or her way around on a planet.

Controlling Attribute: Each skill has a controlling attribute, which is the attribute that is most directly used when exercising that skill. For example, INT is the controlling attribute for the Observation skill, signifying that Observation is based most directly on the character's raw reasoning ability. On the other hand, the controlling attribute for the History and Geology skills is EDU, meaning that History and Geology are most closely linked with factual information that the character has gained over a lifetime of learning.

Assets: An asset is the level of a skill added to the value of that skill's controlling attribute. For example, a character has INT 9 and EDU 7, and skill levels of Observation 2, History 3, and Geology 5. The character's assets in these areas are therefore: Observation (9+2=)11, History (7+3=) 10, and Geology (7+5)=12.

When recording skill levels on the **Traveller** character sheet (located in the back of the book), skills and assets should be separated by a slash. In the example just given, the player should write 2/11 next to Observation, 3/10 next to History, and 5/12 next to Geology.

In all cases, the value used in **Traveller** task resolution is the asset, and not the skill alone. Unless specifically noted otherwise, any reference to a skill name (for example, "an Easy test of Navigation") means the asset, not the skill alone. Similarly, when the rules talk about deciding on the skill that is most relevant to a task, the skill will always be used in its asset form (i.e., added to its controlling attribute).

Tasks

The main use of skills and attributes in **Traveller** is to determine the success or failure of actions attempted by the characters. Actions depending on the use of skills and attributes are called *tasks*, or sometimes *tests* or *checks*. To resolve these tasks, the players roll dice, with the die rolls required for success depending upon the characters' assets combined with the difficulty of the task being attempted. One of the referee's main jobs is to adjudicate character attempts to accomplish these various tasks.

Some tasks can obviously not be done, no matter how skilled the characters are, such as rebuilding a destroyed starship without spare parts or tools. Other tasks, such as reloading bullets into an empty ammunition clip, are so simple that it is assumed any character with basic knowledge can carry them out successfully. In between these two extremes, however, lie a multitude of tasks which the referee will be called on to adjudicate. Some tasks that are used repeatedly during the game (such as maintenance or firing a weapon) are covered in detail in the rules. Others are determined by the referee on a case-by-case basis.

When determining the success of a character's attempt to carry out a task, the referee should ask two questions: How difficult is the task, and what skills or attributes are relevant to the task?

Difficulty: While there are numerous shades of difficulty in tasks, for game purposes, all tasks are broken down into five categories: Easy, Average, Difficult, Formidable, and Impossible. (Note that the word *impossible* is used as the name of the highest difficulty level, rather than meaning that something can absolutely not be done. This means that in **Traveller**, a task which is called Impossible can actually be accomplished by an extremely talented character. Remember that throughout these rules, whenever the word impossible is capitalized, it is referring to a difficulty level. When it is not capitalized, it is being used in its standard meaning of "not possible.")

For example, a mechanic needs to repair a colonist's automated harvester. The referee first decides roughly what the harvester's problem is (this is not strictly necessary, but it helps both players and referee visualize the situation), then decides if repair is Easy, Average, Difficult, Formidable, or Impossible. If the harvester needs a short length of wire cut and fitted into place, the mechanic's job is Easy. If it needs a hole in a metal tube soldered, the task would be Average. If the engine needs a new timing gear filed from a piece of sheet metal, the task would be Difficult. If it needs a new electronic brain, the task would be Impossible.

The referee may further decide to break the task into two (or even more than two) parts. Using the above example, the referee may decide that the vehicle needs a part the mechanic does not have and cannot make. In this case, determining the problem would be an Average task, but repair would be Difficult, and perhaps Impossible (which might lead to an adventure to locate and obtain the proper part).

"Automatic" Tasks: The referee may judge that

certain of the characters' actions need not be rolled for. These would be actions of a routine nature which use a skill that the player possesses. For example, a referee will usually not wish to require a player with Ground Vehicle level 1 to roll to drive five minutes to the all-night mini-mart to pick up a quart of milk, assuming reasonable weather conditions, etc. These might reasonably be thought of as automatic tasks; however, there is no such thing as a difficulty level of "Automatic." The referee is always the final judge of what actions do and do not require a roll. Players should never assume that an action is automatic, because there is no such thing, until the referee says there is.

Useful Assets and Attributes: The referee must decide which asset or attribute is important to performance of the task. In the above example, the character's Mechanic asset is obviously the important one. If the task is one to which no skill is relevant, but an attribute is (for example, lifting a safe requires only Strength, not any particular skill), then it is an attribute-only task. If it is a task requiring skill, then the closest appropriate skill is used.

Referee's Note: Exercise care when assigning difficulty levels for attribute-only tasks. A difficulty level that is appropriate for an asset-based task (skill plus attribute) might be too difficult for a task rolled against an attribute alone. Referees should think in terms of the success probability when assigning difficulty levels. For example, a character will be making an attribute-only task roll against an attribute of 8. If the difficulty level were Difficult, the character would succeed eight times out of 20, or 40%. The referee could set the odds of success to 80% by assigning a difficulty level of Average (roll under 2×8, or 16 chances out of 20), or reduce them to 20% by assigning a level of Formidable (roll under ½×8, or 4 chances out of 20). When the referee knows how likely the chance of success could be, it is simple to work backwards from there to find the correct difficulty level, using the Task Difficulty Levels table below. For a discussion of lifting tasks related to the Strength attribute, see page 35 in Character Generation.

TASK DIFFICULTY LEVELS

Difficulty	*Asset*
Easy	×4
Average	×2
Difficult	×1
Formidable	×½
Impossible	×¼

Task Descriptions: The chance of success in a task is completely described by its difficulty level and the asset used. The many tasks described in these rules are sometimes expressed in an abbreviated form as *Difficulty: Asset*. For example, Easy: Swimming refers to an Easy task using Swimming skill as an asset (i.e., added to its controlling attribute, in this case, CON). Difficult: STR refers to a Difficult task using only the Strength attribute.

These tasks are also referred to conversationally. For example, "Opening the electronically locked hangar door is an Average test of Intrusion," or, "Avoiding detection by the guard is a Difficult check against Stalking." As always, such a statement refers to the asset, and not the skill alone, unless otherwise indicated.

Determining Success: Once difficulty and the relevant asset or attribute have been determined, the task is resolved as a D20 roll against that asset or attribute. Before rolling the die, the asset or attribute is modified by the task's difficulty level as shown on the Task Difficulty Levels table. Whenever multiplying assets by a fraction, round all fractional results down.

This number as finally modified is the *target number*. If the D20 roll result is *equal to* or *less than* the target number, the character has succeeded in the task.

For example, a character with an asset of 12 has the following target numbers, based on difficulty: Easy = 48, Average = 24, Difficult = 12, Formidable = 6, Impossible = 3.

Automatic Success or Failure: In **Traveller**, a task roll of 1 always results in success, and a task roll of 20 always results in failure, regardless of skill, asset, or difficulty level. Thus every character stands a chance to succeed, no matter how daunting the task, or a chance to screw up, no matter how seemingly routine the task. (Note that the automatic failure roll is modified to 17-20 for purposes of direct fire only—see the Combat chapter.)

Thus, returning to the mechanic in the example above, if he had a Mechanic skill level of 4 and an STR of 5 (the controlling attribute of the Mechanic skill), he would have an asset of 9, and would need to roll 9 or less on the D20 roll to succeed at a Difficult task. He would have to roll 18 or less to succeed at an Average task (9×2=18) and a 2 or less to succeed at an Impossible task (9 ×¼=2.25, rounded down).

If the same character had to undertake an attribute-only task requiring Strength, he would be rolling against a target number of 5 (his Strength attribute alone ×1) for a Difficult test, a 10 on an Average test (2×5), or a 1 on an Impossible test (5×¼ = 1.25 rounded down).

Unskilled Tasks: Sometimes a character may not have the skill specified to accomplish a certain task. Such a character may still attempt the task, but with an *unskilled penalty*. Because the character does not have the needed skill, he or she uses the controlling attribute for the missing skill by itself, and in addition as a penalty for not having the proper detailed knowledge, must roll the task at *one difficulty level higher* than it otherwise would have been.

For example, suppose a character wants to force open the lock on a desk drawer. The referee decides

that this is an Average task using the Intrusion skill. However, the character does not have Intrusion skill, and so must treat it as a Difficult task using only the character's Agility attribute (which is the controlling attribute for Intrusion). If the character had an Agility of 6, she would have to roll a 6 or less on 1D20 to succeed.

Exceptions: Note that level 0 in a skill area allows a character to forego the unskilled penalty for that skill. The skill level 0 indicates a basic familiarity with the skill, but no real expertise. When rolling a task for a skill that is at level 0, the character's asset is the controlling attribute alone, but the additional difficulty level penalty is not assessed.

Referee's Note: Do not confuse this unskilled penalty with an attribute-only task. An attribute-only task is one for which no particular skill is useful, requiring the referee to set the difficulty level for use against an attribute alone. The unskilled penalty is used when the referee defines a task as requiring a certain skill, but the character attempting the task does not have the skill.

Although both attribute-only and unskilled penalty skill rolls are made against a character's attribute alone, in an attribute-only test, the difficulty level as set by the referee is fixed. In an unskilled-penalized skill roll, the difficulty level as originally set by the referee is increased one level when attempted by the unskilled character.

More than One Asset: Sometimes more than one asset can be applied to a single task. This can be done in several ways. The four most common are referred to as combined skills, alternative skills, averaged skills, and enabling skills.

Combined Skills: In many cases, two assets are each necessary to perform a task. In this case, the lower of these two assets possessed by a character is used to determine the target number. Combined skill tasks are phrased in the format "asset and asset."

For example, the referee may decide that repairing a starship's fire control system is a Difficult test of Computer and Electronics. In this example, we have a character with a Computer asset of 8 and an Electronics asset of 12. Even though she has a high Electronics ability, her ability to understand the entire fire control system is limited by her understanding of its computing functions. Thus, she would use the lower of the two: her Computer asset.

Alternative Skills: In this case, the task requires only one of two or more possible skills. For one of these tasks, the character uses the highest of the listed assets to compute the target number. Alternative skill tasks are phrased "asset or asset."

For example, determining if an animal is dead or alive is an Easy: Biology or Medical test. Because either skill is sufficient by itself, the character uses the higher of the two. In some cases, the referee may wish to assign differing difficulty levels for different alternative skills. Average: Civil Engineer or Difficult: Combat Engineer means the same task may be performed using either asset, but using different difficulty levels.

Averaged Skills: In some cases, the referee might rule that two skills complement and "feed off of" each other, so the two skills are averaged (add the two assets together and divide the total by 2). No more than two skills should be averaged together for any one task. If a task seems to require more than two skills averaged together, pick only the two most relevant.

The format for averaged skills is "average of asset and asset" or "asset plus asset ÷ 2."

For example, a character may be attempting to pore over old records to discover the cause of the plague that killed the population of a world. Such a task could be described as a Formidable test of the average of Medical and Research, as expertise in either of these skills helps the other (i.e., Medical knowledge helps the character to interpret the records, and Research skill helps her to know where to look for the information she seeks).

Enabling Skills: In some cases, one particular skill enables a character to "unlock" a crucial difficulty in a problem, and thereby make the problem easier. For example, a character is trying to find the opening to an underground council chamber in a ruined and long-abandoned starport. The referee decides that Observation is the relevant skill and that the task difficulty is Impossible. However, a knowledge of history may make it easier to know where this sort of entrance might be located. Therefore, the referee has the player make an Average: History roll first. Success on this roll means the character has enough historical knowledge to help, and this will reduce the difficulty of the main task to Formidable. In this example, the History asset was used as an enabling skill, because its use enabled the following task to be done at a higher level of probability. This sort of task description would be written as Impossible: Observation (Average: History to enable).

Unless otherwise indicated, success in an enabling skill task reduces the level of difficulty by one level, but under certain circumstances the referee might rule that difficulty is reduced by more than one difficulty level.

An extreme example would be an Engineering task that is considered Formidable because a system that needs a relatively simple repair (Average difficulty) is located deep inside other machinery, requiring that machinery to be disassembled to allow access to the broken system, and then reassembled after the repair. However, the referee might decide that a contortionist character could actually crawl inside the machinery and perhaps hang upside down by one leg to do the repairs without having to tear down the machinery.

Success at a Formidable: Acrobatics roll would mean that the Engineering task is two levels easier—in other words, no longer Formidable, but only Average. The referee would describe this task as Formidable: Engineering, with Formidable: Acrobatics to enable two levels. Remember that such enabling tasks may sometimes add additional difficulties of their own. For instance, in this example the character making the Acrobatics roll must also have the Engineering skill to make the subsequent repair roll, or else be penalized as unskilled. Similarly, if the character suffered a Catastrophic Failure while making the Acrobatics roll, he may have fallen on his head and suffered a fractured skull while deep inside the machinery. Unless there is another character nearby who has both Acrobatics and Medical skills, the unfortunate contortionist might die inside the machinery before it can be taken apart.

The referee might allow an enabling skill roll to be done by a different character who is a member of the same ship's crew. For an example of this, see Large Watercraft, page 122.

Additional Difficulty Levels: It is also possible for the referee to describe tasks more or less difficult than the five categories used here, or intermediate in difficulty. Simply multiply or divide the character's asset by larger, smaller, or intermediate numbers. For example, a "Very Formidable" task might require dividing the asset by 3 to determine the chance of success. A task intermediate between Difficult and Average might multiply by 1.5, etc.

Opposition: In some cases, attempts to complete a task will be met with opposition from other characters. There are three types of opposition.

First, a character may be trying to succeed at a task and another trying only to prevent him. One or the other must succeed. If a character were trying to break down a door, for example, a character on the opposite side might try to keep the door in place. In this case, the asset used is the asset of the character making the attempt minus the asset of the character trying to prevent him. Obviously, if the opposing character's asset is higher, the attempt fails automatically.

Second, two or more characters may be trying to succeed at the same task in a competition in which it is not certain that anyone will succeed. For example, two characters are racing to solve a complex mathematical problem. Both characters roll, in this case Difficult: (Intelligence and Education), and the one who succeeds is the one who rolls the furthest below the roll he would need for success without opposition. (Of course, it is possible for all contestants to fail.) Roll again in case of ties. For example, suppose two characters are rolling with 3 and 5 target numbers; the first of them rolls a 2 and the second rolls a 3. Since the first character rolled only 1 less than required for success, while the second character rolled 2 less, the second character wins.

The third case is like the second, but this time one of the characters must succeed. An example would be a footrace or determining the winner of a hand of poker. Characters roll as above. If none of the characters rolls success, the winner is the character who failed by the smallest amount. Roll again in case of ties.

Outstanding Success: A character who attempts a task and beats the target number by 10 or more has achieved an Outstanding Success. If, for example, a character had a target number of 12, and rolled a 2 (12–2=10), that would be an Outstanding Success.

How the referee handles Outstanding Success is dependent upon the situation. Generally, the task is done much more quickly than would usually be the case, or some extra bonus is awarded. A starship engineer might not only repair the power plant, but also spot the damaged connection that had caused turret #2 to lose power. The character trying to break down the door might also knock the person holding it shut unconscious, or knock it off its hinges with such noise and force that the occupants of the room are forced to roll for panic (see the Combat chapter).

Sometimes simply accomplishing a simple task without mishap is sufficient, and no additional bonus is appropriate. If a character is rolling to swing on a vine across a raging jungle river, simple success is sufficient; there is no need for him to find a panel of judges on the other side awarding him a gold medal for perfect form and style. The logic and needs of the campaign and the story being told are always the most important when judging Outstanding Success.

Catastrophic Failure: This is the opposite of Outstanding Success. A character who fails in a task, and fails by at least 10, *may have* suffered a Catastrophic Failure. To find out, the character rolls again for the same task at the same difficulty level. If this roll also fails (by any margin at all, not just by a margin of 10 or more), then the character has suffered a Catastrophic Failure (if the roll succeeds, it's just a regular failure). As with the Outstanding Success, the consequences of this are up to the referee. For example, the engineer in the previous example might not only fail to repair the power plant, but would in addition break some other important part. The character trying to break down the door might hurt her shoulder in addition to not breaking down the door.

Catastrophic Failure should not be overused. As with Outstanding Success, in a great many tasks there is no obvious effect of a Catastrophic Failure, and the second roll need not be made—a geologist who fails to find an iron deposit should not also break his leg (unless such an event seems appropriate given the current storyline

or surroundings). The main purpose of Catastrophic Failures is to deter characters from attempting tasks (especially dangerous ones) far beyond their abilities.

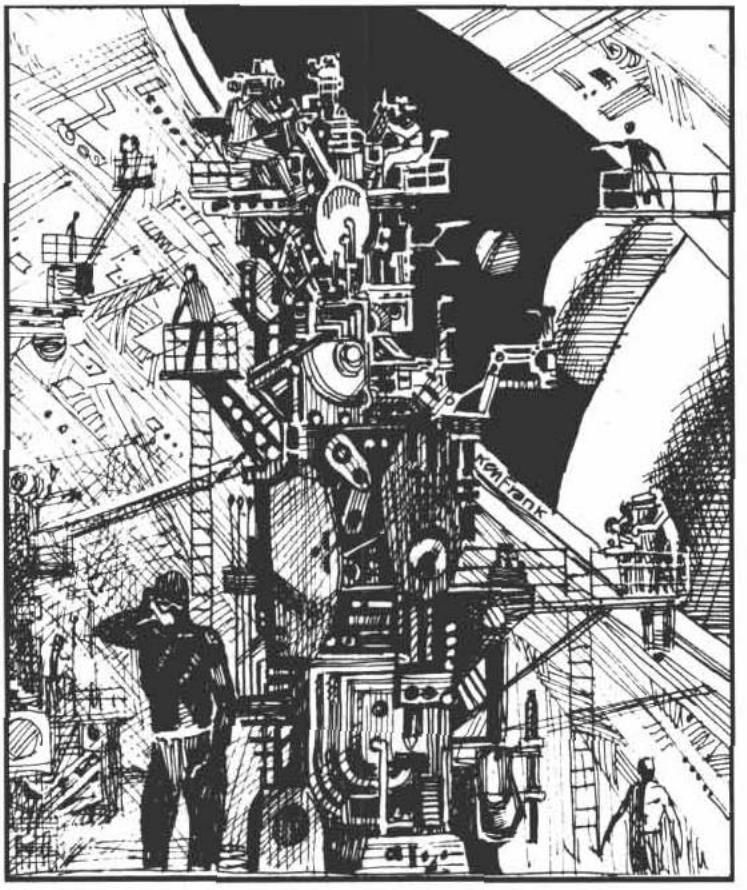
Time Required: When assigning a task, the referee should have in mind how much time the task ought to take. The time required can be modified by an Outstanding Success, but the amount of time saved must be based on common sense.

For example, a Research task that the referee decided would take eight hours in a library might be reduced to only one hour on an Outstanding Success if the referee assumes that the character was lucky enough to find a detailed manuscript on exactly the topic he was looking for, rather than having to piece the data together from multiple sources. On the other hand, some tasks can only have their required duration reduced by so much, or not at all. For example, an Outstanding Success for a character driving a vehicle at its top speed cannot possibly reduce the time required for the trip; the vehicle is already going as fast as it can. Similarly, if a character is using Observation skill to search a room for something that is not there, it cannot possibly take him any less time to completely search the room to satisfy himself that it is not there.

Uncertain Tasks: Some tasks will not provide immediate feedback of their success or failure to the character. Examples include the use of Psionics, sensor or other exploratory tasks, and interpersonal tasks. For example, the geologist above might miss an iron deposit that was really there, and PCs won't always know for sure if an attempt to use Persuasion on an NPC really works until the NPC actually does what they ask without double-crossing them. Sometimes even the effectiveness of a repair attempt might be left uncertain. ("Hmmm. You were in a pretty big hurry when you repaired the jump drive. Are you sure you're ready to engage it?")

In such cases, both the player and the referee should roll for the task, with the referee's roll being kept secret. There are three basic possible outcomes:

- If both rolls fail, the result is *no truth*. The player is misled about the success of the task attempt. Erroneous or misleading information is given.
- If one succeeds and one fails, the result is *some truth*. Some valid information is given, although perhaps missing some of the crucial connections that would be given under total truth. The player may fail the attempt and still get information, although he cannot know for sure, as he cannot know whether the referee's roll succeeded or failed.
- If both rolls succeed, the result is *total truth*. Totally valid information is given, although the player may still not believe it, again because he is unable to know the referee's roll.



Note that the referee may stipulate modifications to the process above. For example, the referee need not tell the player the difficulty level of the roll, so that the player will not even know if his own roll has succeeded or failed (this prevents the player from being suspicious of information he is given when he knows he has failed his own roll). Or the referee is free to make his secret roll at a different difficulty level from that of the player's, or even make a fake roll, knowing that the information the player will receive cannot be altered by any task rolls.

If the player rolls an Outstanding Success, the referee may decide to tell the player whether the referee's secret roll was a success or a failure, so that the player can correctly evaluate the forthcoming information. This is often a good idea, as it simulates the occasional ability of a character to be so in control of an action that he can accurately assess how good his attempt was. "Oops, that didn't feel right," or, "Okay, I know this sensor system cold. These results can't be off by more than 100 meters." However, whether circumstances justify this bonus is always up to the referee.

Most all of **Traveller**'s rules build upon the basic concepts explained above. As you read through later chapters, such as Combat, you will discover specifically how the basic mechanics are applied in specific circumstances.

Skill Descriptions

The skill descriptions and task examples in this chapter are intended to give players a basic idea of how the skills work in this game, so that characters can be designed intelligently. However, players should always remember that the referee has final say in what skills apply to a particular task and what the resulting difficulty level of that task is, based upon the circumstances of the story at the time. All of the skills below have notations next to their entries showing the skill cluster from which the skill is available, the standard abbreviation of their controlling attribute (STR, AGL, etc.) and any homeworld requirements or restrictions. The notation "+" next to a homeworld description indicates the minimum required standard for the skill. The notation "–" next to a homeworld technology description indicates the technology level below which that skill is the only skill in its cluster which can be taken. The skill may also be voluntarily taken at technology levels above that level.

The "–" notation next to a law level description shows the law levels at which this skill may be taken. At law levels above this, the skill may only be taken with a successful override (page 28).

Vocational Skills: Players and referees should think of some of the skills listed below as vocational skills. These are skills, such as History, the Physical Science skills, and the Fine Arts skills, that represent specialized, scholarly knowledge or culturally oriented talents that do not come into play as often as the more nuts-and-bolts weapons, vehicle, and equipment skills. The designation of these skills as vocationally viable encourages their use by players to provide color, background, and interest. Certainly, most any **Traveller** skill can be used as a source of income, but these applications are handled elsewhere, in the Space Travel and Trade and Commerce sections of the "Worlds & Travel" chapter.

Vocational skills can serve, at skill level 4+, as sources of income to the character. For example, a character with a History skill level 8 could be a university professor or a high-paid consultant. A character with a Song skill of 9 could be a high-paid lounge act or a world-famous rock 'n' roll star. Although the amount should vary based on the conditions of the planet, vocational skills can earn a player a monthly income of the skill (not asset) level × 1D3×Cr250.

Possession of such a job is not automatic, and the referee may wish to handle job-hunting as a task or series of tasks, based on the world's population (the higher the population, the more jobs there are) and various of the PC's attributes and skills, including Charisma, Recruiting, Persuasion, and the skill with which the character wishes to gain employment. Remember that this income usually represents a steady five-day-a-week job, which will not necessarily allow the PC time to adventure. PCs with a typical adventuring schedule may lose their jobs fairly quickly.

This is not intended to prohibit characters with Mechanic, Electronics, or other similar skills from making a living with them. Rather, it is intended to make the more exotic science and artistic skills attractive to players in addition to the more survival-oriented combat and technical skills.

Artistic Vocational Skills: Characters with Painting, Sculpting, and Music (Composition) earn their money somewhat differently, the nature of art being what it is. The base monthly pay rate is calculated as above, but it is only paid irregularly. Roll 2D6 and subtract the character's Willpower skill (not asset) from the result. That is the number of months until the character is next paid. Payment will be in one lump sum, the number of months elapsed times the monthly rate.

Artists may also elect to attempt a masterpiece. First they must succeed at a Formidable test of Persuasion to find a patron. Once this is successful, the character decides whether to attempt a double, quadruple, or octuple base rate masterpiece, and begins work. Each month, the character must attempt a Formidable: Willpower roll. If it is a success, the work is completed, and the character makes a roll for the result. If it is failed, work proceeds to another month. The Willpower roll is made each month until it succeeds, or until the character decides to give up. When the work is done, the character rolls a test against the appropriate Fine Art asset: Difficult for double, Formidable for quadruple, and Impossible for octuple the base rate. Success indicates that the character receives immediate payment of the base monthly pay rate times the difficulty level attempted. Outstanding Success indicates that that amount is doubled. Failure indicates that the character has forfeited all monthly pay for that period. Catastrophic Failure is decided by the referee.

Acrobatics (Acrobat—AGL): This is the ability to exercise precise control over body motions and actions. For example, an attempt to jump from a moving helicopter and land on the back of a running horse would be a Formidable test of Acrobatics.

Acrobatics is also extremely helpful in melee combat. Characters with Acrobatics skill may use their Acrobatics asset in place of the Agility attribute in any of the melee combat tasks usually rolled against Agility alone.

Act/Bluff (Charm, Fine Art—CHR): This is the ability to convincingly pretend you are something you are not, or believe or intend to do something. For actors, it means portraying a fictitious character, of course, but it also covers such things as effectively pretending you are holding a winning hand at poker or convincing voters that you will fulfill your campaign promises, or that you even know what they mean.

Skills by Skill Clusters

Acrobat
- Acrobatics (AGL)
- Stealth (AGL)
- Thrown Weapon (STR)
- Climbing (CON)

Aircraft
- Pilot (AGL) (cascade)
  - Airship
  - Rotary Wing
  - Fixed Wing
  - Glider
  - Interface/Grav
- RCV Operations (EDU)

Animal Handling
- Riding (CON)
- Guard/Hunting Beasts (CON)
- Farming (INT)

Archaic Weapons
- Thrown Weapon (STR)
- Archery (STR)

Artillery
- Forward Observer (INT)
- Heavy Artillery (STR)
- Energy Artillery (AGL)
- Archaic Artillery (STR)
- RCV Operations (EDU)

Artisan
- Metallurgy (EDU)
- Carpenter (CON)
- Jeweler (AGL)
- Mason (STR)

Charm
- Act/Bluff (CHR)
- Carousing (CHR)
- Persuasion (CHR)
- Recruiting (CHR)
- Service (CHR)

Crime
- Forgery (AGL)
- Pickpocket (AGL)
- Intrusion (AGL)

Determination
- Leadership (CHR)
- Streetwise (INT)
- Willpower (INT)

Economics
- Admin/Legal (EDU)
- Marketing (EDU)

Engineer
- Construction (EDU)
- Combat Engineer (CON)
- Excavation (EDU)
- Starship Architecture (EDU)

Explore
- Climbing (CON)
- Liaison (CHR)
- Map (EDU)
- Navigation (INT)
- Survival (INT)
- Swimming (CON)
- High-G Environment (CON)

Fine Arts
- Act/Bluff (CHR)
- Dance (AGL)
- Disguise (CHR)
- Music (AGL) (cascade: Composition, Strings, Wind, Percussion, Keyboard, Other)
- Painting (INT)
- Sculpture (INT)
- Song (CHR)

Gun Combat
- Energy Weapon (AGL or STR) (cascade)
  - Energy Pistol
  - Energy Rifle
- Slug Weapon (STR) (cascade)
  - Slug Pistol
  - Slug Rifle
- Early Firearms (STR)

Heavy Weapons
- Autogun (STR)
- Heavy Guns (STR)
- Energy Artillery (AGL)
- Grenade Launcher (STR)
- Tac Missile (AGL)

Interaction
- Bargain (CHR)
- Instruction (CHR)
- Interrogation (CHR)
- Language (CHR) (cascade: individual languages and Linguistics)
- Liaison (CHR)
- Recruiting (CHR)

Medical
- Medical (EDU) (cascade)
  - Diagnosis
  - Trauma Aid
  - Surgery

Melee
- Unarmed Martial Arts (STR)
- Armed Martial Arts (STR) (cascade)
  - Large Blade
  - Small Blade
  - Polearm
  - Club

Perception
- Investigation (INT)
- Observation (INT)
- Psychology (INT)
- Research (INT)
- Tracking (INT)

Personal Transport
- Parachute (CON)
- Grav Belt (AGL)
- Muscle Transport (AGL) (cascade)
  - Skates
  - Skis
  - Wheels

Physical Science
- Biology (EDU)
- Chemistry (EDU)
- Farming (INT)
- Genetics (EDU)
- Geology (EDU)
- Meteorology (EDU)
- Physics (EDU)
- Robotics (EDU)
- Xeno-Biology (EDU)

Social Science
- History (EDU)
- Instruction (CHR)
- Interview (INT)
- Persuasion (CHR)
- Psychology (INT)
- Research (INT)

Spacehand
- Environment Suit (CON)
- Zero-G Environment (CON)

Space Tech
- Communications (EDU)
- Gravitics (EDU)
- Gunnery (EDU) (cascade)
  - Energy Weapon
  - Grav Weapon
  - Missiles
- RCV Operations (EDU)
- Screens (EDU) (cascade)
  - Nuclear Dampers
  - Meson Screens
  - Sandcaster
  - Black Globe
- Ship's Engineering (EDU)

Space Vessel
- Astrogation (EDU)
- Pilot (Interface/Grav) (AGL)
- Sensors (INT)
- Survey (INT)

Tactics
- Ground Tactics (INT)
- Fleet Tactics (INT)
- Ship Tactics (INT)

Technician
- Communications (EDU)
- Computer (EDU)
- Electronics (EDU)
- Machinist (AGL)
- Mechanic (STR)

Vehicle
- Ground Vehicle (AGL) (cascade)
  - Wheeled Vehicle
  - Tracked Vehicle
- Hovercraft (AGL)
- Riding (CON)
- Pilot (Interface/Grav) (AGL)

Vessel
- Hovercraft (AGL)
- Large Watercraft (CON)
- Small Watercraft (CON)

Vice
- Bribery (CHR)
- Disguise (CHR)
- Gambling (INT)
- Streetwise (INT)

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SKILL LIST BY CONTROLLING ATTRIBUTE

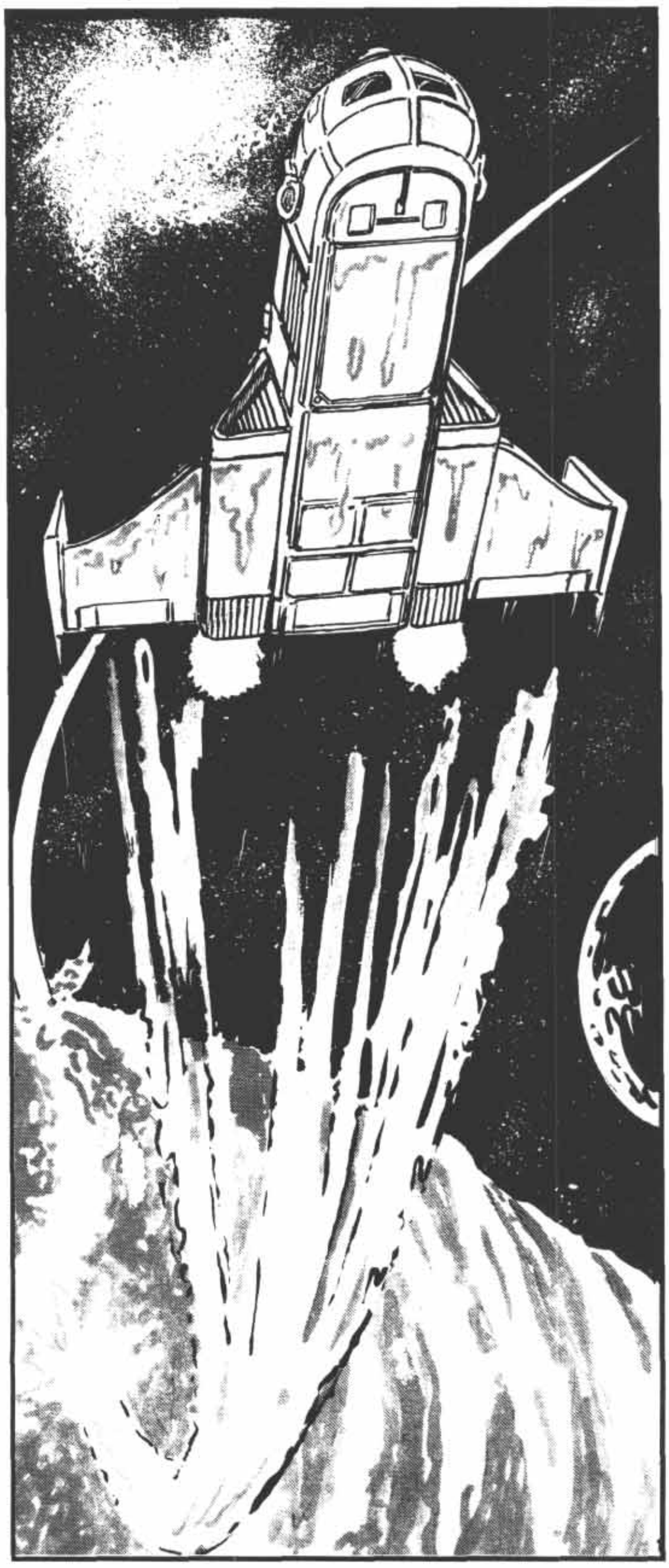
Skill (Cluster)	Atmos	Hydro	Pop	Law Level	Tech Level
Strength					
Archery (Archaic Weapons)				High (9)–	
Archaic Artillery (Artillery)					Pre-Industrial (3)–
Armed Martial Arts (Melee)				High (9)–	
Autogun (Heavy Weapons)					Industrial (4)+
Early Firearms (Gun Combat)				Moderate (7)–	Pre-Industrial (3)–
Energy Weapon (Gun Combat)				Low (1)–	Pre-Stellar (7)+
Grenade Launcher (Heavy Weapons)					Industrial (4)+
Heavy Artillery (Artillery)					Industrial (4)+
Heavy Gun (Heavy Weapons)					Industrial (4)+
Mason (Artisan)					
Mechanic (Technician)					Industrial (4)+
Slug Weapon (Gun Combat)				Moderate (7)–	Industrial (4)+
Thrown Weapon (Acrobat, Archaic Weapons)					
Unarmed Martial Arts (Melee)					
Agility					
Acrobatics (Acrobat)					
Dance (Fine Arts)					
Energy Artillery (Artillery, Heavy Weapons)					Pre-Stellar (6)+
Energy Weapon (Gun Combat)				Low (1)–	Pre-Stellar (7)+
Forgery (Crime)					
Grav Belt (Personal Transport)					Avg Stellar (8)+
Ground Vehicle (Vehicle)					Industrial (4)+
Hovercraft (Vehicle, Vessel)	Standard (6)+				Pre-Stellar (6)+
Intrusion (Crime, Vice)					
Jeweler (Artisan)					
Machinist (Technician)					Industrial (4)+
Muscle Transport (Personal Transport)					
Music (Fine Art)					
Pickpocket (Crime)					
Pilot (Aircraft, Space Vessel)					
Airship	Standard (6)+				Industrial (4)+
Fixed Wing	Thin (4)+				Industrial (4)+
Rotary Wing	Thin (4)+				Industrial (4)+
Glider	Thin (4)+				Industrial (4)+
Interface/Grav					Early Stellar (9)+
Stealth (Acrobat)					
Tac Missile (Heavy Weapons)					Pre-Stellar (6)+
Constitution					
Carpenter (Artisan)					
Climbing (Acrobat, Explore)					
Combat Engineer (Engineer)					
Environment Suit (Spacehand)	Vacuum (0-3)				Pre-Stellar (6)+
Guard/Hunting Beasts (Animal Handling)					
High-G Environment (Explore)	1.1G+				Early Stellar (9)+
Large Watercraft (Vessel)	Thin-Dense (4-9)		Wet (3)+		
Parachute (Personal Transport)	Standard (6)+				Industrial (4)+
Riding (Animal Handling, Vehicle)	Thin-Dense (4-9)				
Small Watercraft (Vessel)	Thin-Dense (4-9)		Wet (3)+		
Swimming (Explore)	Thin-Dense (4-9)		Dry (1)+		
Zero-G Environment (Spacehand)					Pre-Stellar (6)+
Intelligence					
Farming (Animal Handling, Physical Science)	Thin-Dense (4-9)		Dry (1)+		
Fleet Tactics (Tactics)					Early Stellar (9)+
Forward Observer (Artillery)					Industrial (4)+
Gambling (Vice)					
Ground Tactics (Tactics)					

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SKILL LIST BY CONTROLLING ATTRIBUTE

Skill (Cluster)	Atmos	Hydro	Pop	Law Level	Tech Level
Interview (Social Science)					
Investigation (Perception)					
Navigation (Explore)					
Observation (Perception)					
Painting (Fine Art)					
Psychology (Perception)					
Research (Perception)					
Sculpture (Fine Arts)					
Sensors (Space Vessel)					Industrial (4)+
Ship Tactics (Tactics)					Early Stellar (9)+
Streetwise (Determination, Vice)			Moderate (6)+		
Survey (Space Vessel)					Pre-Stellar (6)+
Survival (Explore)	Thin-Dense (4-9)				
Tracking (Perception)	Thin-Dense (4-9)				
Willpower (Determination)					
Education					
Admin/Legal (Economics)				Low (1)+	
Astrogation (Space Vessel)					Early Stellar (9)+
Biology (Physical Science)					
Chemistry (Physical Science)					
Communications (Space Tech)					Industrial (4)+
Computer (Technician)					Pre-Stellar (6)+
Construction (Engineer)					
Electronics (Technician)					Industrial (4)+
Excavation (Engineer)					
Genetics (Physical Science)					
Geology (Physical Science)					
Gravitics (Space Tech)					Early Stellar (9)+
Gunnery (Space Tech)					Pre-Stellar (6)+
History (Social Science)					
Map (Explore)					
Marketing (Economics)			Moderate (6)+		
Medical (Medical)					
Metallurgy (Artisan)					
Meteorology (Physical Science)					
Physics (Physical Science)					
RCV Operations (Aircraft, Artillery, Space Tech)					Pre-Stellar (6)+
Robotics (Science)					Pre-Stellar (6)+
Screens (Space Tech)					Early Stellar (9)+
Ship's Engineering (Space Tech)					Pre-Stellar (6)+
Starship Architecture (Engineer)					Early Stellar (9)+
Xeno-Biology (Physical Science)					Early Stellar (9)+
Charisma					
Act/Bluff (Charm, Fine Art)					
Bargain (Interaction)					
Bribery (Vice)					
Carousing (Charm)					
Disguise (Fine Arts, Vice)					
Instruction (Interaction, Social Science)					
Interrogation (Interaction)					
Language (Interaction)					
Leadership (Determination)					
Liaison (Explore, Interaction)					
Persuasion (Charm)					
Recruiting (Interaction)					
Service (Charm)					
Song (Fine Arts)					

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While Act/Bluff can be used in shady dealings like smuggling, confidence games, and the like, this skill can also be used as a vocational skill to artistically manipulate an audience's emotions by a professional actor or actress.

Admin/Legal (Economics—EDU) [Law = Low+]: The individual has experience with the rules and assumptions of how administrative and legal agencies work, and understands the requirements of dealing with and managing them.

There are tens of thousands of different worlds, and each of these will have different specific laws and bureaucratic assumptions. The character with Admin/Legal skill can navigate through this morass of red tape to solve problems. Several examples include: Easy: Admin/Legal to find the right person at a starport to answer a specific question. Average: Admin/Legal to fill out and file a bill of lading, customs form, or flight plan upon arriving at or departing from a world. Difficult: Admin/Legal to understand a standard legal contract. Formidable: Admin/Legal to understand an unusual legal contract.

Characters with Admin/Legal can function as lawyers on their homeworld, but also on other worlds if other members of their party have been arrested. The difficulty level increases on a world with different laws. For this reason, rolls against Research, Interrogation, and Liaison, or use of these as enabling skills is often required for the character to understand the local laws well enough to successfully argue them.

Archaic Artillery (Artillery—STR) [Tech = Pre-Industrial–]: This skill indicates the ability to maintain, build, and use heavy archaic indirect fire weaponry. These weapons use mechanically stored tension to throw solid projectiles or large darts, and include catapults, scorpions, mangronels, and ballistae.

Archery (Archaic Weapons—STR) [Law = High–]: The Archery skill allows the use of short, long, and composite bows, and blowguns.

Specifics of this skill's use in combat are explained under the Direct Fire section, page 274.

Armed Martial Arts (Melee—STR) [Law = High–]: Armed Martial Arts is a cascade skill that allows the use of various hand-held weapons in melee combat. The cascades are *Large Blade*, *Small Blade*, *Polearm*, and *Club*. Large Blade includes use of sword and cutlass; Small Blade, knife and dagger; Polearm, spears, pikes, pugil sticks, and rifles with bayonets; and Club includes use of maces, hammers, hand axes, and improvised clubs. See the combat rules for details on the use of this skill.

Astrogation (Space Vessel—EDU) [Tech = Early Stellar+]: The individual has training in interplanetary and interstellar astrogation. This includes the ability to compute courses and orbits in real space, and courses and entry parameters into jump space.

See the Space Travel section, page 218, for the use of this skill.

This skill may be selected by characters at Pre-Stellar technical levels, but must be marked with an asterisk (Astrogation*) to indicate that it provides knowledge only of real space astrogation, and not jumpspace.

Autogun (Heavy Weapons—STR) [Tech = Industrial+): The individual can use high-ROF slug-firing weapons, including machineguns, autocannons, and VRF gauss guns. These are usually crew-served, semiportable, and are often vehicle-mounted.

Bargain (Interaction—CHR): When trying to buy information or equipment, or get a higher price for his or her services, bargaining comes in handy for a character. Although bargaining should be roleplayed out between the referee and player, the referee should give in more easily to PCs with a higher Bargain skill, or let the player know critical information about the bargain. For example, he might tell the player that the NPC seems nervous, as if there's more to this job than meets the eye. Or the NPC seems anxious that you not see the left side of the car you're bargaining for.

Bargaining may be used to estimate resale value of items.

Biology (Physical Science—EDU): This skill reflects a general knowledge of the physical functions of living creatures. The individual understands the structure, functioning, growth, evolution, and distribution of terrestrial-type organisms. This skill can be used to know where to look for life on a new world, how to keep captive populations of living things alive, and how to introduce a form of life into a new environment. This skill allows sufficient knowledge of genetics for controlled breeding, but not for genetic engineering.

Bribery (Vice—CHR): The individual has had experience in bribing officials in order to circumvent regulations or ignore cumbersome laws. Difficulty of the task depends upon the seriousness of the circumstances (only the most corrupt official would take a bribe to ignore a murder), but also upon the law level of the world. Bribery is generally a Difficult task on a Moderate law world, and gets one level easier for each level of higher law, and one level harder for each level of lower law.

Carousing (Charm—CHR): The individual is a gregarious and sociable individual who is well adapted to meeting and mingling with strangers in unfamiliar surroundings. When used in conjunction with Interrogation skill as an averaged or enabling skill, Carousing can be used to gain information from people in a social setting, often without their realizing that you are even looking for information from them.

Carpenter (Artisan—CON): The character is skilled in building items out of wood. At low levels, these items are utilitarian, but at higher levels, the character may use this woodworking skill to actually add aesthetic value to his creations by the use of inlays, veneers, etc.

Chemistry (Physical Science—EDU): The individual has skill in the science of inanimate matter, and understands the composition, structure, properties, and reactions of elements and compounds. Chemistry skill applies to inanimate matter, not living organisms. Characters with this skill can, with the proper equipment, perform chemical analysis.

They can also create useful substances such as chemical smoke (Average), gunpowder (Average), smokeless powder (Difficult), tear gas (Difficult), dynamite (Difficult), explosive primer (Difficult), and plastic explosive (Formidable). (*Note:* Smokeless powder is the propellant in modern cased ammunition; gunpowder is for old-fashioned weapons in which the powder and shot are loaded separately.)

Climbing (Acrobat, Explore—CON): This is the ability to scale vertical surfaces, whether rock faces or buildings, with the proper equipment. Climbing a steep slope or sheer rock face with good handholds is Difficult. Climbing a sheer, mostly smooth rock face or a building wall is Formidable. The above assume no specialized equipment. With climbing equipment, the difficulty level is one lower. Rappelling is Average.

An experienced climber may assist an inexperienced climber. If so, the inexperienced climber uses his or her own CON attribute as a Climbing skill.

Combat Engineer (Engineer—CON): This skill allows the construction and demolition of obstacles, minefields, and field fortifications, and the ability to enhance mobility by building temporary bridges, ramps, and causeways across or around natural or artificial obstacles.

Certain tasks are: place demolitions charge (with engineer demo kit): Average. Improvise detonator/fuse, etc. (in absence of engineer demo kit): Formidable. Improvise antipersonnel obstacles: Average. Improvise antivehicle obstacles: Difficult. Camouflage position: Average.

Most of these tasks assume access to tools, axes, picks, and shovels at the very least. These tasks are made easier with equipment similar to backhoes, bulldozers, etc.

Communications (Space Tech—EDU) [Tech = Industrial +]: The individual is trained in the use, repair, and maintenance of communications devices.

While nearly everyone can press the button and make a communicator function, this skill is necessary to be able to understand why the device does not work correctly, as well as to be aware of the details and limitations on the device's possible use.

For example, it is an Easy test of Communications to

open communications with another communications unit in range. Long ranges, jamming, and environmental interference can make this more difficult.

Computer (Technician—EDU) [Tech = Pre-Stellar+]: Computer indicates a familiarity with the use of computers. While most any character from a technological background of Early Stellar+ can use a computer to retrieve data that is freely available, Computer skill is required to circumvent the computer's programming. Computer skill is required to program a computer.

Construction (Engineer—EDU): This skill allows the construction of permanent structures. The character is skilled not only in the actual tasks of pouring foundations, erecting frames, and hanging drywall, but is also able to design durable buildings for many purposes, and organize their construction.

Access to materials and tools is crucial to these tasks, and Leadership skill is useful when coordinating the efforts of large crews of workers.

Dance (Fine Arts—AGL): The character is able to dance. Low skill levels (0 and 1) are sufficient for recreational and informal dancing (ballroom or folk dancing). Moderate levels (2 and 3) are required for formal affairs; for example, a character can be required to make an Average test of Dance to not embarrass himself at a formal diplomatic reception. High levels (4+) are required to be a member of a professional ballet or interpretive dance troupe in order to use it as a vocational skill.

Some sophisticated styles of dance use the average of Dance and Zero-G Environment.

Disguise (Fine Arts, Vice—CHR): This skill involves convincingly looking like something you are not. It includes use of camouflage, as well as such things as make-up and costume. The use of this skill is often an uncertain task, as the character will not always know if the disguise has fooled anyone. Difficulty depends on the materials available to fashion the disguise, the already existing differences or similarities between the character and the person being impersonated, as well as the distance from which the disguise is intended to be effective. In order to impersonate someone, the character's task is vs. Act/Bluff and Disguise. Of course, the character must always have detailed knowledge of the person who is being impersonated.

Early Firearms (Gun Combat—STR) [Tech = Pre-Industrial–, Law = Mod–]: This skill confers the ability to use various black-powder firearms, including the arquebus, hand cannon, and musket. This skill also covers the use of crossbows.

Electronics (Technician—EDU) [Tech = Industrial+]: Pretty much everyone in **Traveller** knows how to operate most electronic devices. Characters with the Electronics skill know how to create and repair those devices, and can figure out fairly easily how to operate the more advanced sorts (such as radar systems, power plant controls, and the like).

Use the standard diagnosis and repair task rules in the Equipment Maintenance and Repairs section, page 241, for the repair of electronic devices.

Energy Artillery (Artillery, Heavy Weapons—AGL) [Tech = Pre-Stellar+]: This skill indicates the ability to maintain and use heavy direct and indirect fire battlefield weaponry that fires bursts of energy or energetic particles rather than macroscopic physical projectiles. These weapons include battlefield meson guns, fusion and plasma guns, and heavy-vehicle-mounted lasers. A character can use this skill at one difficulty level greater in place of the Gunnery (Energy Weapon) cascade.

Energy Weapon (Gun Combat—AGL *or* STR) [Tech = Pre-Stellar+, Law = Low–]: This skill allows the use of energy weapons as small arms. This is a cascade skill, with two cascades: *Energy Pistol* and *Energy Rifle*. Energy Pistol allows use of laser pistols, while Energy Rifle allows the use of laser rifles, laser carbines, and plasma and fusion rifles.

This skill is unusual in that it uses two controlling attributes, depending on the weapon being used. When firing plasma or fusion weapons, the controlling attribute is Strength. When firing laser weapons, it is Agility.

Environment Suit (Spacehand—CON) [Atmos = Vac *or* Tech = Pre-Stellar+]: This skill confers the ability to wear and conduct various activities in the many specialized suits designed for hostile environments. Such suits include the standard vacuum (vac) suits, combat armor, and powered battle dress, as well as suits intended for use in high-pressure environments, such as high-pressure atmospheres and beneath oceans.

High assets or levels of this skill are required to handle battle dress, as many routine activities become Difficult tests with the suit's strength amplification.

In addition, when attempting tasks with Stealth, Acrobatics, Climbing, and *any* weapons skills while wearing battle dress, the character uses *the lower of* Environment Suit skill level or the normal controlling attribute to compute the asset. For example, a character wearing battle dress attempts to fire a gauss rifle, which uses the Slug Weapon (Slug Rifle) skill. The character has a Slug Rifle skill level of 4. The controlling attribute for Slug Rifle is STR, and the character has STR 8, for a total Slug Rifle asset of 12. But the character only has Environment Suit 4, which must be used instead of the higher STR attribute. This yields a Slug Rifle asset of (4+4=) 8 when wearing battle dress.

High levels of this skill also allow individuals to attempt personal atmospheric re-entry. This can be done with personal atmospheric re-entry kits or military-use drop capsules (see the "Equipment & Technology" chapter), and has a base difficulty level of Difficult: Environment Suit. The level is increased by atmospheres of Dense or higher, and by high starting vectors.

Excavation (Engineer—EDU): This skill indicates an individual's expertise in planning and executing the digging of safe, stable, and useful large holes. These holes can be the foundations for buildings, bunkers, and trench systems, or extensive underground mines or tunnels.

Because the character with the Excavation skill usually does not do all the work alone, this skill is best used with Leadership skill when supervising the activities of large groups of workers.

Farming (Animal Handling, Physical Science—INT) [Atmos = Thin–Dense, Hydro = Dry+]: This represents the ability to raise crops and livestock for food or other uses. In addition to actually producing fields of plants and herds of animals, all of which takes months and is dependent upon weather and other conditions, Farming skill allows the estimation of the quality of soil, identification of pests, the modification of fallow land to productive use, and the breeding, care, and feeding of livestock.

Farming skill refers mostly to open-air farming on a world with a hospitable environment. However, referees may allow automatic override of the homeworld restrictions to allow for farming in enclosed environments, such as underground fungus farming, or large-scale hydroponics gardening.

Fleet Tactics (Tactics—INT) [Tech = Early Stellar+]: The individual has been trained in the art of naval operations. Fleet Tactics is used in command of two or more starships.



This skill may be used to predict where an opposing fleet commander has placed his forces, and how they might be deployed. This is an uncertain, Difficult task if the opposing commander has the same skill level as the character, and increases in difficulty one level for each level of Fleet Tactics skill (not asset) that the opponent has over the character's level.

This skill also provides advantages in the resolution of starship combat; see the Space Combat section beginning on page 311.

Forgery (Crime—AGL): Forgery is, of course, the ability to create false documents. When used in conjunction with the Electronics skill, Forgery allows for the falsification of electronic documents.

Forward Observer (Artillery—INT) [Tech = Industrial+]: This skill confers the ability to call in, direct, and correct long-range fire onto enemy targets for maximum effect. This fire can be indirect ballistic artillery, indirect rocket and missile fire, geodesic meson fire, and orbital fire. This skill consists almost exclusively of correcting the accuracy of fire that has already been observed. Only under the most unusual of circumstances, such as with artillery equipment firing from surveyed positions and using equipment with which the observer was very familiar, could a forward observer even attempt to achieve first-round hits.

Gambling (Vice—INT): The individual has an expertise in betting and games of chance. The character has an understanding of how to play many standard gambling games, and knows how to detect cheating or a rigged game (this is an uncertain opposed test against the Gambling skill of the person doing the cheating). This skill also allows the ability to calculate odds. However, gambling should never be confused with normal risk-taking.

The Gambling skill only confers knowledge of the technical aspects of such games, and how to take advantage of them. Interaction with other gamblers, or with persons the character is attempting to fleece (or is being fleeced by), requires the use of other talents. Certain Charisma-based skills, such as Act/Bluff, Carousing, Persuasion, and Liaison should be used in conjunction with the Gambling skill in such cases.

Genetics (Physical Science—EDU): The individual has expertise in the biological mechanics of heredity. The ability to manipulate the functioning of genes is crucial to advanced medical techniques, such as replacement organ manufacture, genetic engineering to create improved forms of life, cloning, and the creation of retroviral medical treatments.

Geology (Physical Science—EDU): The individual has gained experience in searching out mineral wealth on the surfaces of worlds and in deep space.

The skill of Geology allows an individual to have a greater likelihood of discovering mineral deposits. This skill alone is not sufficient for the discovery of vast mineral wealth, but it does provide a greater probability of an individual discovering what is there.

Grav Belt (Personal Transport—AGL) [Tech = Pre-Stellar+]: This skill allows the character to use the grav belt for personal transport. This skill is useful when conducting drop operations (see Environment Suit skill and the "Equipment & Technology" chapter, pages 335-338), and can also be used to assist the character in carrying awkward loads.

Gravitics (Space Tech—EDU) [Tech = Early Stellar+]: The individual can use and repair gravitic—also called grav or antigrav—devices. This skill is used to understand, repair, assemble, and operate gravitic drives and equipment.

Grenade Launcher (Heavy Weapons—STR) [Tech = Industrial+]: The character is skilled in the use of man-portable direct and indirect fire devices. This skill allows use of nonautomatic grenade launchers, direct fire antiarmor rocket launchers, and mortars.

This skill is used with both direct and indirect fire.

Ground Tactics (Tactics—INT): The individual has training and experience in the proper military use of ground troops and weapons used by and against them. This skill can provide advantages in combat situations, and allow the character to predict what an enemy commander might do (this is a Difficult uncertain task if the enemy's Ground Tactics skill is equal to the character's, and increases in difficulty one level for each level that the enemy's skill level [not asset] exceeds the character's).

This skill is not to be confused with strategy, which deals with the reasons for a military encounter and the intended results of the encounter; strategy is the realm of the players, rather than of the characters.

Guard/Hunting Beasts (Animal Handling—CON): This indicates the broad knowledge of animals, typically carnivores, which are used for guarding, tracking, drug- or explosive-sniffing, hunting, and retrieving. Examples include dogs, pigs, bloodvarks, seals, dolphins (nongenetically modified), falcons, and hawks. This skill allows for their care, feeding, training for these tasks, and use of them in these tasks.

Ground Vehicle (Vehicle—AGL) [Tech = Industrial+]: This skill indicates an ability to drive vehicles that move on the ground with friction-based systems. It is a cascade, allowing selection of *Wheeled Vehicle* or *Tracked Vehicle*. It also allows knowledge of basic forms of maintenance of these vehicles, such as changing tires, tracks, filters, and oil.

Gunnery (Space Tech—EDU) [Tech = Pre-Stellar+]: Gunnery is a skill in the operation and firing of one of several types of starship armament. It is a cascade skill, and contains the following:

Energy Weapon: Allows use of lasers, meson guns, and particle accelerators in any form of ship-mounted installation. A character can use this cascade at one difficulty level higher in place of the Energy Artillery skill.

Grav Weapon: Allows use of tractors and repulsors in any form of ship-mounted installation.

Missiles: Allows use of missiles in any ship-mounted installation.

Heavy Artillery (Artillery—STR) [Tech = Industrial+]: This skill indicates the ability to maintain and use heavy indirect fire weaponry that fires physical projectiles. This includes chemically propelled howitzers and mortars, ballistic rockets and missiles, and mass drivers.

Heavy Guns (Heavy Weapons—STR) [Tech = Industrial+]: The character is skilled in the use of heavy direct fire guns, including both CPR (chemically propelled rounds) and mass driver weapons. These weapons are usually mounted in vehicles or field carriages, but can also be static defensive guns.

High-G Environment (Explore—CON) [Size = Large *or* Tech = Early Stellar+]: The individual has experience in an environment having a gravity greater than 1G. A high-gravity environment exerts considerable stress on the body and often does bodily harm to those not accustomed to dealing with extreme gravity. High gravity severely limits the range of slug throwers, but has little or no effect on lasers and energy weapons.

History (Social Science—EDU): This skill indicates a knowledge of specific historical facts, as well as general historical trends or forces. This skill can serve as an enabling skill when attempting to puzzle out the

significance of salvaged equipment, local customs, and excavated sites.

This skill includes other social science disciplines as well. For example, an anthropologist would be a character with high History and Liaison skill levels, an economist one with History and Marketing, and a political scientist one with History and Admin/Legal.

For purposes of roleplaying and generating character color, a player can designate an area of specialization for each 2 skill points. For example, military campaigns of the Final War, Vilani ground vehicle technology of the First Imperium, or the economic history of Lishun Sector. PCs who have advanced degrees (see Character Generation) should be encouraged to come up with the titles of their thesis papers, with extra credit given for Byzantine and grandiose titles ("On the Urge: or the Epistemology of Yearning").

Hovercraft (Vehicle, Vessel—AGL) [Tech = Pre-Stellar+, Atmos = Standard+]: This skill allows the use of vehicles that travel on a captured bubble of air and can travel over the water and reasonably level ground. Certain specialized hovercraft (known as rigid sidewall craft or surface-effect ships) can be used only in the water and can be used with this skill.

Instruction (Interaction, Social Science—CHR): A character with skill in Instruction is able to effectively teach skills to other people. (See Skill Improvement, page 133.)

Interrogation (Interaction—CHR): This is the ability to obtain information from people. Primarily, Interrogation involves asking the right questions and correctly interpreting the responses. It does not only include interrogation of unwilling persons, but also of confused witnesses, and even of sources who don't realize how much they really know.

Interrogation may include psychological intimidation and manipulation, but does not include torture.

Interview (Social Science—INT): Functions identical to Interrogation, but is based on the Intelligence attribute.

Intrusion (Crime—AGL): The Intrusion skill enables a character to manipulate mechanical and electronic locks. To open simple mechanical locks (like those on a briefcase, desk, or normal door) and to hot-wire a vehicle are Average tasks. To pick deadbolts or key locks on handcuffs and jail cells is Difficult. Opening combination and key locks on padlocks, strongboxes, and safes is Formidable. All of these assume the use of proper lockpicks; they become one level more difficult if tools have to be improvised. Locks on vaults and high-security facilities always require special tools and are always Formidable.

Defeating electronic devices comparable to each of the mechanical classes above is one level higher, and also requires a specialized set of electronic intrusion tools, or the difficulty is increased a further level. In some cases, the referee may allow Electronics skill to serve as an enabling skill.

This skill also allows the use of small amounts of explosives to blow open safes, bank vaults, and even walls between adjoining buildings. It does not, however, grant skill in the demolitions of bridges, buildings, etc.

Investigation (Perception—INT): The individual is skilled at gathering and interpreting evidence at the scene of a crime or accident. Special investigative equipment is sometimes required. Crude investigative equipment is available at a tech code of Industrial; investigative equipment from higher tech codes is more reliable and gives more detailed information.

This skill allows things such as the determination of bullet entry and exit directions, likely range of the shot, estimation of the time of death, calculating trajectory and speed of collisions, and the like. The piecing together of various clues is not handled by this skill; that is the province of the players.

Jeweler (Artisan—AGL): This represents the ability to manufacture and repair small, intricate ornamental or mechanical objects, and also to add value to precious and semiprecious materials.

A character who wished to repair a mechanical watch (digital clocks require Electronics skill) would have to succeed at a Formidable test of Jeweler skill. The difficulty would decrease one level with the possession of a jeweler's toolkit or supply of watch parts (two levels easier with both).

The character can also cut gems and fashion jewelry out of metal. Given a supply of raw materials, a character could manufacture jewelry valued at double its raw material cost with a Formidable test of Jeweler skill, triple its cost at one level higher, quadruple at two levels higher, and so on. A failed test for a higher value may result in a success at a lower value at the referee's discretion. (For example, the character attempts to make a quadruple value ring, but fails the roll by only 1 point. The referee may judge that the ring is triple value.) Difficulty is reduced one level with a set of jeweler's tools. Costs include wastage of ruined gemstones. Time required varies with the size of the project. Difficulty and time can be traded off against each other, with each doubling or halving of time yielding a decrease or increase of one difficulty level, respectively.

Language (Interaction—CHR): This is a special cascade skill which does not function according to the normal cascade rules (see Skills on page 27 of

Character Generation). Receipt of the Language skill allows the character to select either a particular language (French, German, Vilani), or the cascade *Linguistics*.

All characters are assumed to already automatically have a skill level of 10 in their native language (usually Anglic—see History, beginning on page 8). However, this level 10 skill is considered separate from the Language skill, and does not give the player knowledge at half this level of any other language cascades.

Communicating in a language which is shared by both characters, but which is not the *native language* of both characters, is a Difficult task vs. the average of the *two characters' Language skill levels*. If one of the characters does not speak the language, but is trying to communicate by drawings or sign language, the task becomes Formidable vs. the average of the two Charisma attributes. Both of these tasks become one level easier if only simple concepts are being communicated ("I'm hungry").

Identifying a language is Easy if the identifying character speaks it, Formidable: CHR if the identifying character has at least heard it spoken.

Linguistics as a cascade of Language also does not follow the normal rule for cascade skills. Like other skill cascades, Linguistics may be selected as a specialty separate of other languages already chosen. However, characters who have not selected Linguistics do not use it at one-half the level of the highest specialty of the Language cascade. Rather, players who have skill in two or more languages *other than* their native language take the average of those languages (round to the nearest whole number; thus 10 + 4 = 3) and cut the result in half (again rounding to the nearest whole number). This is the default level of Linguistics skill for the character. Any selections of the Linguistics specialty are added to this number. For example, a character has received Language eight times, breaking it down as: Vilani 4, Aslan 2, Vargr 1, and Linguistics 1. Her level of Language (Linguistics) is therefore 4+2+1=7, 7+3=2, 2+2=1, plus the Linguistics level 1 equals an effective Linguistics skill of 2. If she had no foreign languages, the Linguistics level would be simply 1.

An individual with the Linguistics cascade has the ability to quickly learn and understand an unknown language based on understanding the common structures of languages.

Large Watercraft (Vessel—CON) [Hydro = Wet+, Atmos = Thin-Dense]: This skill confers the ability to maneuver boats and ships, including those powered by sails. The skill can be used with sail-powered vessels to make better time by making better use of the wind, to maneuver safely in restricted waters, and to ride out rough weather. Difficulty increases with high winds and rough water, and with the increasing size of the ship. For large vessels which the character cannot control alone, the task becomes a test of Large Watercraft and Leadership. With very large sailing ships, it is sometimes useful to roll the task against the average of the Large Watercraft and Leadership of all of the ship's officers, so that an inexperienced crew can thwart the abilities of even a skilled captain.

The operation of submarines requires the joint use of Large Watercraft and Sensors. If the submarine is being controlled by one person, it requires the combined use of Large Watercraft and Sensors. If operated by a crew, a Sensors roll made by the sonar operator can be used as an enabling roll to reduce the difficulty of a Large Watercraft roll being made by the commander.

Similarly, a Sensors roll may enable the navigation of a surface ship through storm or heavy fog.

Leadership (Determination—CHR): Leadership is the use of force of personality to convince others to obey you. Different people have different manners of leading. Some do so by barking out orders, while others simply inspire loyalty in their followers. Players who choose this skill for their characters should consider their character's personality when roleplaying its use, and also consider the effect of other related skills. For example, a character with Leadership and Willpower skills, but no Persuasion or Carousing skills, would most likely be a harsh leader, while one with Persuasion and Carousing would use a more inspirational style.

It is typically an Average difficulty task to use the Leadership skill to convince NPCs to follow your orders. The referee may adjust this, of course, depending upon other factors.

Leadership is also used when organizing the actions of a group of characters (usually NPCs) into cooperative actions. For example, supervising a group of laborers to construct a building would be a task rolled against Leadership and Construction. If the character had a number of assistants, foremen each with Leadership and Construction skills who could be relied upon to handle much of the detailed supervision, the character could use his Leadership skill alone.

Liaison (Explore, Interaction—CHR): The individual is trained in the art of dealing with others and has the ability to understand other groups and cultures and the way they organize their societies and live their lives. In addition to quickly assimilating the differing rhythms and priorities of other societies, the character is able to adapt to these patterns without prejudice, and work efficiently within them, and with members of those societies.

This skill, in conjunction with Language (Linguistics),

is crucial to the effective contact with new cultures or species.

Within his or her own society, a person with Liaison skill could work effectively as a public relations flack, although mere Act/Bluff skill is usually sufficient for this vocation.

Machinist (Technician—AGL) [Tech = Industrial+]: The character is skilled in the fashioning of machine parts to fine tolerances. This skill allows a character to create replacement mechanical and engineering parts using a machine shop, and repair many pieces of equipment, including all varieties of firearms, heavy weapons, and artillery.

Map (Explore—EDU): This skill indicates that the character is familiar with the concepts of systematically and accurately exploring worlds and recording and mapping their features. Use of this skill in conjunction with Sensors and Navigation skills, and the ability to travel around and make measurements, allows a character to generate a map of the surface of a world, or whatever portions he or she examines.

Mapping skill also allows a character to keep his bearings when underground, inside a large structure, or in weather when no external points of reference are visible.

Certain navigation and sensor devices simplify this job. See the "Equipment & Technology" chapter, pages 345-347.

Marketing (Economics—EDU) [Pop = Mod+]: The individual is skilled in the marketing of goods, and understands the business of buying and selling.

Uses of the Marketing skill are governed by the rules in the Trade and Commerce section of the "Worlds & Travel" chapter, page 230.

Mason (Artisan—STR): The character is skilled in the area of stone-cutting and brick-making, as well as construction with these materials. This does not confer the ability to conceive and design buildings, which is the province of the Construction skill. However, a character with Construction skill who was attempting to build a Gothic cathedral would do well to have a number of masons working for him.

Mechanic (Technician—STR) [Tech = Ind+]: This reflects a knowledge of how to build and repair machinery in general. Difficulty of the build or repair task will be set by the referee. If improper tools are available, increase any task difficulty levels by one.

Medical (Medical—EDU): The Medical skill allows for the treatment of wounds and diseases. It is broken into three cascades: *Diagnosis*, *Trauma Aid*, and *Surgery*.

Diagnosis reflects a familiarity with injuries, diseases, allergies, and other maladies, and their treatments. Diagnosis also covers pharmaceutical knowledge that allows the prescription of drugs and knowledge of their interactions.

Trauma Aid reflects expertise in first aid, shock treatment, and the stabilizing of patients for transfer to a location where more comprehensive care is available. This is the cascade of choice for combat medics and corpsmen.

Surgery is the aspect of the Medical skill that allows repairs to be made to injured bodies, as well as more advanced procedures such as transplants, implants, biological modifications, and twisted applications like vivisection. This skill is used in combination with Electronics skill to allow cybernetic implants.

To attempt a Medical task on an unfamiliar form of life is a Formidable or Impossible task, depending upon what is being attempted. If the organism is broadly similar to terrestrial animals (i.e., a carbon-based, oxygen-breathing, water-drinking creature), a Biology roll of at least Difficult level can enable the task. If the creature is radically different from terrestrial animals (for example, a creature that metabolizes ammonia or combusts in an oxygen atmosphere), the Xeno-Biology skill must be used instead. Failure of either of these rolls can indicate that there were no materials (drugs, breathable atmosphere, plasma, saline solution, etc.) that were compatible with the creature that could be used during the procedure, or that figuring out how the creature worked took too long, and it just died.

For purposes of Medical skill, humans and Terran organisms are considered to be the default for the expertise of human characters. The Aslan, Vargr, Droyne, K'kree, and Hivers are all broadly terrestrial in that they have nerves, blood, internal organs, etc., that work in similar fashions. While a Medical task on a Vargr would not require a Biology enabling roll for a human doctor, a task on any of the four other races would. Likewise, a Hiver doctor must make a Biology roll to enable an operation on a human.

For the treatment of wounds, see the Wounds and Damage section, page 285, for details. Diseases are left to the referee's discretion.

Metallurgy (Artisan—EDU): The character has skill in manufacturing metals and fashioning things from them. The use of this skill is very dependent on the technological background and the materials at hand. At low tech levels, the character could be a tinker, blacksmith, weapons maker, or armorer, and could fashion alloys and make castings of them.

At higher tech levels and with more equipment, a character could forge, cast, and mill various specialized grades of steel or more advanced alloys.

At the highest levels, work can be done with various ceramics, crystalline metals, fluid or plastic metals, and dense and superdense metals.

This skill can be combined with the Mechanic, Electronics, and Ship's Engineering skills to fashion machine, electronics, and engineering parts, respectively.

Meteorology (Physical Science—EDU): This skill allows the character to make predictions of weather and other atmospheric phenomena.

Most Meteorology rolls are uncertain tasks, and become more difficult the farther in advance the prediction attempt is made. For broad predictions made of the next eight hours (e.g., roughly how long until a storm begins or ends, when a window of open sky will pass over an airfield), this task is always Easy if the character has access to a radar set of TL8 or above, or an aircraft to scout out the local weather patterns.

These tasks are relatively simpler in Trace and Thin atmospheres, and become more difficult in atmospheres of Dense or greater (see World Building, beginning on page 180, for more information on atmospheres).

Muscle Transport (Personal Transport—AGL): Muscle Transport is a cascade skill which indicates a character's facility with certain equipment or devices designed to speed human travel in certain environments. Cascades include: *Skates* (roller and ice), *Wheels* (bicycles), and *Skis* (includes skis, water skis, surf- and sailboards). This skill is usually awarded at level 0 after a few hours' practice to allow the character to use the device at standard difficulty using his or her Agility attribute alone.

If higher levels are taken, it indicates the character's ability to negotiate unusual terrain, to make better speed with the device, or to attempt unusual feats, such as carrying heavy loads or conducting combat.

Music (Fine Art—AGL): This skill represents facility with musical artistic expression. At referee's and players' discretion, it can be broken up into the following cascades: *Composition, Strings, Wind, Percussion, Keyboard,* and *Other.* This skill can be used as a vocational skill, and, if one of the characters also has Song skill and a garage, you can start your own band.

Navigation (Explore—INT): This skill indicates an ability to maintain a sense of direction, read and follow maps, and use other basic navigational equipment such as a compass. This can be used for land or nautical navigation.

Observation (Perception—INT): Observation reflects a quality of alertness and/or a training in noticing important things in one's surroundings. It is most importantly used for visually sighting objects using the naked eye or visual enhancement devices. It is also useful for such diverse things as detecting ambushes, discovering hidden compartments in luggage, and finding one important file within an entire drawer full of them.

Painting (Fine Arts—INT): This skill indicates that the character has a talent for visual artistic expression. While this usually means paints on a flat surface, its use combined with other skills can provide other effects. For example, a character could use Painting and Electronics skills to create holographic art.

Parachute (Personal Transport—CON) [Atmos = Standard+, Tech = Ind+]: Parachute confers the ability to safely descend from altitude using a parachute or personal paraglider. To land safely in most terrain is Average. To land safely in woods, cities, swamps, or water is Difficult. To land in a particular spot is Formidable with a parachute and Difficult with a paraglider. Rigging or checking a rig is Average. Flying a hang glider is Difficult. Repairing a parachute, paraglider, or hang glider is Average. Making a parachute, paraglider, or hang glider is Formidable.

Persuasion (Charm—CHR): Persuasion, a skill at convincing other people to act as you wish them to, includes such things as haggling for a bargain, rousing a crowd to action, and convincing an enemy to let you go. The referee will set the difficulty level based upon the specific situation and exactly what sort of a speech you make.

This is only used to convince NPCs; all attempts to persuade other player characters are argued by the players themselves.

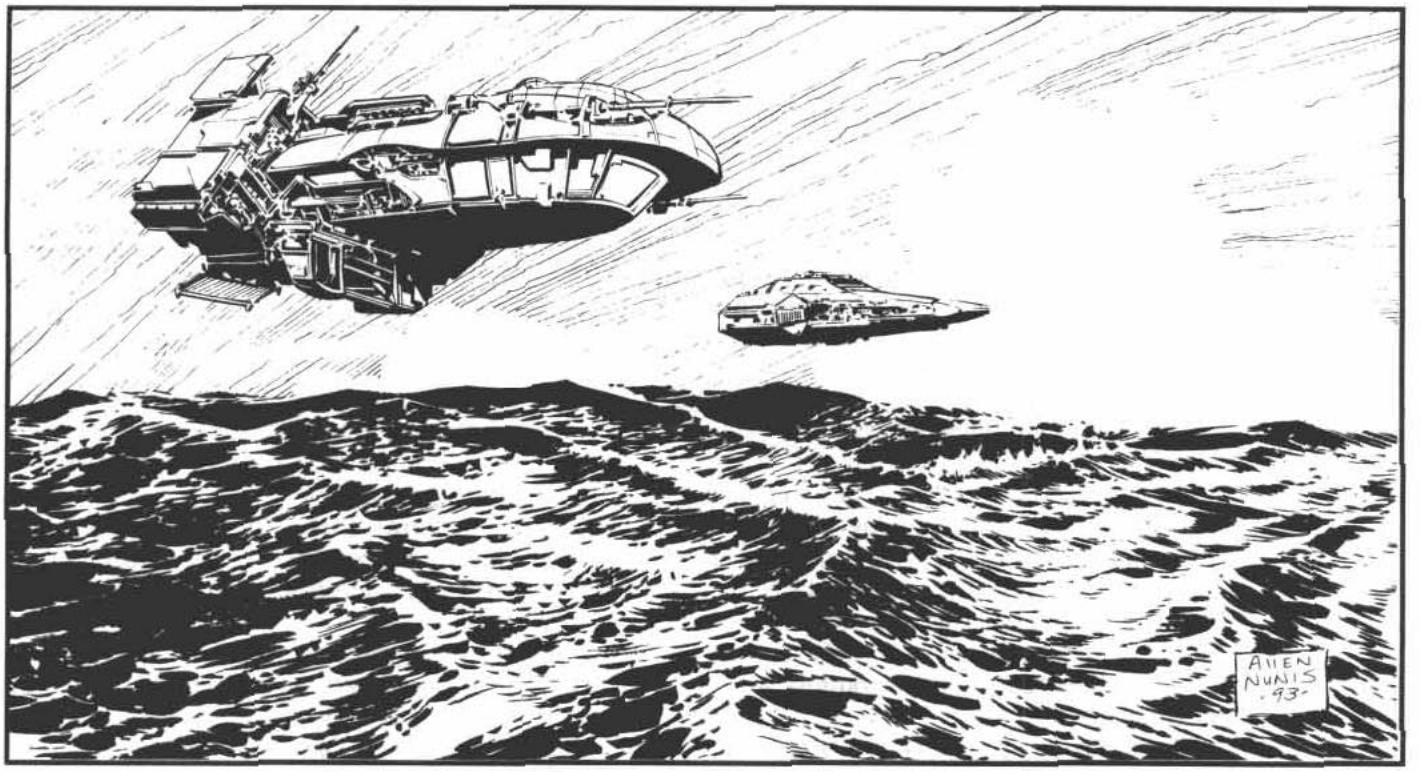
Physics (Physical Science—EDU): Physics represents a theoretical knowledge of the workings of the universe. Although not a cascade skill, for roleplaying purposes, players who choose this skill for their characters should designate some area of specialization. Examples include geophysics, astrophysics, or molecular physics.

Pickpocket (Crime—AGL): This skill involves both misdirecting a person's attention and then surreptitiously removing an item from their person. Generally, the victim will get an Observation skill check to notice the theft. The Observation skill check is treated as an opposed test, comparing the victim's Observation skill level to the thief's Pickpocket skill level.

Pilot (Aircraft, Space Vessel—AGL) [Requirements vary, see below]: Pilot is a cascade skill including *Airship, Fixed Wing, Rotary Wing, Glider,* and *Interface/Grav.* Certain of the cascades as indicated below have specific homeworld requirements. See the "Equipment & Technology" chapter for more details.

The Airship cascade allows the operation of dirigible rigid and nonrigid lighter-than-air craft, as well as tethered and free ballooning. These craft may derive their lift from hot air or locally buoyant gases. [Airship requires Tech = Industrial+, Atmos = Standard+.]

The Fixed Wing cascade allows use of all fixed-wing aircraft, including scissors wing and variable geometry, regardless of their power source or performance. Con-



vertible fixed-wing/rotary (tilt-rotor and x-wing) aircraft use whichever skill is appropriate to the current mode of travel. Fixed-wing VTOL, STOVL, and wing-in-ground effect (WIG) craft are covered by this cascade. [Fixed Wing requires Tech = Industrial+, Atmos = Thin+.]

The Rotary Wing cascade allows use of helicopters and autogyros. Convertible fixed-wing/rotary ("tilt-rotor") aircraft use whichever skill is appropriate to the current mode of travel. Compound helicopters which still derive lift from moving rotors use this cascade, while helicopters which lock their blades in flight (x-wing aircraft) use the Fixed Wing cascade. [Rotary Wing requires Tech = Ind+, Atmos = Thin+.]

The Glider cascade allows the use of gliders, sailplanes, hang gliders, paragliders, and ornithopters (see the "Equipment & Technology" chapter). This skill also allows the pilot to know how to find sources of aerodynamic lift, such as thermal updrafts, etc. [Glider requires Tech = Ind+, Atmos = Thin+.]

The Interface/Grav cascade allows the use in an atmosphere, including atmospheric entry, of vehicles that do not primarily rely on aerodynamic lift (although many of these designs do generate some lift). The atmosphere may be that of a habitable world or a gas giant. It does not refer to the proper use of such a craft in vacuum or jump space, which are the province of the Ship's Tactics and Astrogation skills. [Interface/Grav requires Tech = Early Stellar+.]

Psychology (Perception—INT): This skill allows a character to judge the motives of another character. It can be used, for example, to determine the truth or falsehood of statements another character makes. Other uses are left to the referee.

Recruiting (Interaction—CHR): Recruiting skill allows a character to attract qualified applicants for various enterprises for which the character may be hiring, including mercenary units and starship crews.

This skill also allows the character to estimate the skill level of potential recruits. This requires a 30-minute interview and is a Difficult test of Recruiting and the skill being estimated (thus characters with Recruiting cannot attempt to estimate a skill level in another if they do not themselves possess the skill at at least 0 level).

Research (Perception—INT): The individual has a broad understanding of the techniques that are used in researching information relating to people, places, and events. This skill can be used to gain specific information the characters are looking for, or as an enabling skill to find information that will simplify another task.

Riding (Animal Handling, Vehicle—CON) [Atmos = Thin-Dense]: This skill indicates a broad knowledge of all sorts of animals commonly used for riding and as beasts of burden, and includes their care and feeding as well as the ability to use them for rapid and efficient transportation as either personal mounts or teams

pulling payloads. This skill does not confer expertise in breeding, which comes under the Farming, Genetics, and Biology skills.

RCV Operations (Aircraft, Artillery, Space Tech—EDU) [Tech = Pre-Stellar+]: The RCV (remotely commanded vehicle) skill allows the character to control weapons or vehicles from a remote location. The limitations imposed by reliance on sensors mounted in the remote vehicle, the absence of subtle sensory inputs such as motion and the time-lag built into the control transmissions make RCV Operations very difficult without training. RCV Operations is always used combined with another skill, such as Pilot, Ground Vehicle, Tac Missile, etc., depending upon the type of RCV that is being controlled. The firing of weapons from such vehicles works the same way, and is rolled against RCV Operations and Energy Weapon, RCV Operations and Heavy Weapon, etc., depending upon the weapons mounted on the remote vehicle.

The interpretation of sensors mounted in these vehicles does not require the use of the RCV Operations skill, as the data is sent directly to the control station and can be read there.

Robotics (Science—EDU) [Tech = Pre-Stellar+]: The individual is trained in designing, building, repairing, and conducting operations with robots. Robots are self-controlling and are distinct from remotely commanded vehicles.

Most robots are fairly dumb, i.e., unable to make fine distinctions in complex situations. Robotics skill allows a character to "explain" to a robot, either verbally or via reprogramming, how to conduct specific missions.

When working on or reprogramming a robot, Robotics skill can be used as an enabling skill for Electronics, Mechanic, Computer, and Gravitics tasks.

Screens (Space Tech—EDU) [Tech = Early Stellar+]: The individual is skilled in the operation of a variety of protective equipment developed for starships. This is a cascade skill consisting of *Nuclear Dampers, Meson Screens, Sandcaster,* and *Black Globe.* (See Space Combat, beginning on page 311, for the use of these skills.)

Sculpture (Fine Arts—INT): The character has a facility for the creation of three-dimensional pieces of art. The form of sculpture depends on the player's wishes and the character's other skills. A character with Sculpture and Mason skills would be able to carve statues from stone; one with Metallurgy might cast statuary in bronze; and one with Mechanic skill might weld sculpture from metal parts.

Sensors (Space Vessel—INT) [Tech = Industrial+]: The individual can operate, diagnose, trouble-shoot, and repair a variety of sensing equipment, and is familiar with interpreting their readings.

This skill can be used alone to interpret the readings sent in from sensors mounted in remotely commanded vehicles or at remote outposts without need for RCV Operations skill.

This skill is also useful as an enabling skill for the maneuvering of spaceships, watercraft, or aircraft in difficult conditions. Referees should remember that because many Sensors rolls are uncertain, the enabling function may not have actually succeeded. An aircraft pilot or submarine commander who is acting on the basis of a *some truth* or *no truth* Sensors roll may believe that his difficulty level has been reduced when in fact it has not. This is how airplanes fly into the side of mountains and submarines into sea mounts or shallow bottoms.

Service (Charm—CHR): The individual is experienced and capable in the care and feeding of passengers aboard ships, guests at hotels, diners at restaurants, etc.

Service skill represents a general knowledge of cooking, personal care and attention, and other areas of experience which will make guests, passengers, and crew happy and content with the conditions of their stay or passage.

Ship Tactics (Tactics—INT) [Tech = Early Stellar+]: The individual has been trained in the operation of a starship or spaceship in battle. Ship Tactics is a skill which is used by individuals who are in command of a single ship in combat.

This skill allows die modifiers in starship combat. (See Space Combat, beginning on page 311).

Ship's Engineering (Space Tech—EDU) [Tech = Pre-Stellar+]: The individual can operate and maintain spacecraft maneuver drives, jump drives, and power plants. A skilled engineer is essential for the proper operation of any starship. Engineering experience enables an individual to operate the vital drives of starships (and any craft or installation with a fusion power plant), as well as to maintain the machinery against failure.

See the Space Travel section of the "Worlds & Travel" chapter, page 218, for further details.

Slug Weapon (Gun Combat—STR) [Tech = Industrial+, Law = Mod–]: Slug Weapon allows the use of small arms that cause damage by firing a slug of some material, usually metal. It is a cascade skill, allowing its selection as *Slug Rifle* and *Slug Pistol.* See the combat rules for further details.

Small Watercraft (Vessel—CON) [Hydro = Wet+, Atmos = Thin-Dense]: This skill allows the character to skillfully use small watercraft. These include muscle-powered vessels such as canoes, kayaks, rafts, and rowboats, small sailboats, and motorboats.

This skill does not allow operation of submersibles of any size. All dry/pressurized submersibles are handled by the Large Watercraft skill, and all wet submersible vehicles are handled by Swimming.

Song (Fine Arts—CHR): The character is an accomplished singer.

If Song is used as a vocational skill, the character is a member of a band, choir, opera company, or the like, or has a recording contract.

Starship Architecture (Engineer—EDU) [Early Stellar+]: This skill indicates knowledge of how and why starships are built the way they are. Possession of this skill at level 2 or above allows PCs to design their own starships without having to pay the usual architect's fee, and to supervise construction and control cost overruns. (See **Traveller Technical Architecture** sourcebook for a complete discussion of the economics of starship construction.)

Starship Architecture is primarily used as a vocational skill or as an enabling skill. Any Ship's Engineering task to diagnose or repair damage to a starship, to install changes or modifications to a starship, or to estimate the costs of repair or modifications are enabled by a roll against Starship Architecture (difficulty level set by referee).

Stealth (Acrobat—AGL): This is the ability to move about without drawing notice. It is an Average difficulty task to move, unnoticed, to within one meter of another character at night. The same task becomes Difficult in daylight (assuming there is some reasonable route to approach by). Also, attempts to track or stalk a stealthy character require the trackers to subtract their target's Stealth level from their Tracking skill before making their task rolls.

Streetwise (Determination, Vice—INT) [Pop = Mod+]: The individual is acquainted with the ways of local human subcultures (which tend to be similar everywhere in human society), and thus is capable of dealing with strangers without alienating them.

Close-knit subcultures (for example, some portions of the lower classes, trade groups such as workers, and the underworld) generally reject contact with strangers or unknown elements. Streetwise expertise allows contact for the purposes of obtaining information, hiring persons, purchasing or selling contraband or stolen goods, and other shady or borderline activities.

It also includes knowing how to project an image that engenders respect among the locals and recognizing where to go to find what you need.

Survey (Space Vessel—INT) [Tech = Pre-Stellar+]: The individual is skilled and knowledgeable in the procedures used in mapping and charting star systems.

Survey is a skill conferring expertise to produce accurate maps and directories of previously unexplored or uncharted stellar territory. Survey allows an individual to accurately derive the characteristics of an unknown or unclassified world based on sensor data. It allows an individual to correctly produce maps and information about star systems as well.

This skill must be used in conjunction with Sensors skill in order to provide reliable results.

Survival (Explore—INT): There are a lot of different worlds, each of them as distinct as any terrestrial environment, and most of them as varied as the range of terrestrial environments. Possession of the Survival skill indicates familiarity with a broad variety of environmental conditions. This allows the individual to live off the land or stay alive in situations where most individuals would have trouble finding food, water, or shelter.

The likelihood of Survival skill (no matter how good) allowing a character to find breathable air in a vacuum is rather slight, but Survival would allow an individual to use any tools at hand to build an adequate shelter or to locate caves or natural features which could assist in survival. Survival also allows the fashioning and use of such environmentally appropriate equipment as skis, snowshoes, protective hats, etc. Certain equipment makes Survival tasks less difficult: water test kits and purifiers, atmospheric sniffers and chemical analyzers. See the "Equipment & Technology" chapter.

Swimming (Explore—CON) [Atmos = Thin-Dense, Hydro = Dry+]: Swimming is the ability to stay afloat and move in water. Floating is a Difficult task when fully clothed; Average with little or no clothing. Each kilogram of equipment effectively reduces a character's Swimming skill level by 1.

If the task is failed, the character sinks and will drown within a number of combat turns equal to his or her Constitution score. Shedding clothing and/or equipment (one turn) allows a new attempt at the task.

If the task is successful, the character floats and may swim at a speed equal to the (adjusted) Swimming skill (not asset), in meters per combat turn. Characters have a Swimming endurance equal to 5 times their Constitution. Floating without clothes uses 0 endurance points; floating while clothed uses 1 point per minute (12 combat turns). Swimming unclothed uses 1 per minute at half speed and 5 per minute at full speed. Clothed swimmers use double that endurance and move at half that speed.

To tow another person while swimming requires a Difficult skill check and halves speed. Diving without an aqualung is a Difficult task for up to five meters in depth, or a Formidable task up to 10 meters.

This skill also allows the use of scuba and rebreather gear, as well as the use of wet underwater vehicles such as diving sleds.

Tac Missile (Heavy Weapons—AGL) [Tech = Pre-Stellar+]: The character is skilled in the use of direct fire battlefield-guided missiles. Many of these weapons require the character to continue to guide the weapon all the way to its target, correcting any divergences from its proper course.

Thrown Weapon (Acrobat, Archaic Weapons—STR): The Thrown Weapon specialty is a skill at throwing objects to hit other objects. This allows normal portable objects such as rocks to be used as weapons, but also allows the use of various archaic weapons as spears, javelins, boomerangs, bolas, etc. It also allows the use of modern weapons like hand grenades.

Tracking (Perception—INT) [Atmos=Thin-Dense]: Tracking is a skill used for trailing creatures in a wilderness or rural environment. It includes knowledge of prints, droppings, and habits of wilderness animals, but can be used to track human quarry as well. This skill can also be used in urban environments at higher difficulty levels. However, Streetwise skill can serve as an enabling skill in these circumstances.

In animal encounter situations, this skill enhances the chance of surprising such animals and of surviving encounters when the animals are dangerous.

Unarmed Martial Arts (Melee—STR): Unarmed Martial Arts allows the character to engage in melee combat without a weapon. See the combat rules for details.

Willpower (Determination—INT): This skill reflects a strength of character that resists domination by outside forces and perseveres in the face of adversity. The skill can be used in several different ways. First, it is an automatic subtraction from the power level of all Psionic attacks directed at the character (see the Psionics section of the "Worlds & Travel" chapter, page 245). Second, the referee may decide that certain tasks are so long, dull, and tedious, or offensive and disagreeable, that the character must make a Willpower check to remain focused on the job at hand. Failure of the Willpower roll will increase the difficulty level of the unpleasant task.

The referee may also require a Willpower check to be made if the character witnesses or is involved in particularly unpleasant events. The difficulty level of the test will be decided by the referee, based upon the exact circumstances, and the results of failure could range from characters losing their lunch, to running away, to fainting from shock. Exact results are to be decided by the referee. In general, the easier the Willpower test, the less severe the effects of failure. Such an event might also be very intimately linked to the character. For example, a character who is being held prisoner and tortured for information will have to make periodic Willpower rolls to avoid cracking, typically once per torture "session." Success at one of these rolls means that the character will be beaten into unconsciousness without divulging anything. Outstanding Success indicates that the character proved so indomitable that his captors reassess their approach. If the prisoner is valuable, they might leave him alone for 1D6+6 (7-12) days, but if he is expendable, they may merely execute him, knowing that they will get nothing out of him.

Finally, the referee may wish to make Willpower rolls for a detailed NPC (see the NPCs section of the "Characters" chapter, page 58) to see if the NPC resists degrading or dangerous assignments from the PCs.

Xeno-Biology (Physical Science—EDU) [Tech = Early Stellar+]: This indicates a familiarity with large-scale concepts of biology in general, and the way that these biological needs can be met by systems other than the classic terrestrial pattern (i.e., carbon-based chemistry, consuming oxygen and water). Creatures that do not follow these patterns are rare indeed, and are not covered by the normal Biology skill.

A character with Xeno-Biology skill can puzzle out the workings of one of these completely alien life forms, and eventually learn how to keep them alive, breed them, etc.

Xeno-Biology skill is not necessary to understand the function of an Aslan, Droyne, K'kree, Vargr, or Hiver. All of these races have anatomy and metabolisms which follow the same pattern as those of humans, and so Biology skill is sufficient to understand them.

Zero-G Environment (Spacehand—CON) [Tech = Pre-Stellar+]: Without gravity to hold one in place, even routine operations can be very difficult for those who are not trained for or familiar with zero-G operations. When any action is attempted, the problems of recoil and inertia can handicap or render helpless persons not trained to compensate for these effects.

Retaining control and orientation is an Average test of this skill for routine tasks. Haste or the use of firearms designed for zero-G increases the difficulty one level, and the use of firearms not designed for zero-G increases the difficulty two levels. The use of handholds, magnetic grips, or certain recoil-compensation equipment (see the "Equipment & Technology" chapter) reduces difficulty by one level. This skill is typically used as an enabling skill to allow the conduct of complicated tasks in zero-G, but also allows a character to regain control if a task has caused a loss of control.

Refereeing Traveller

No matter how much material we provide explaining rules and detailing background, you, as referee, will always have far more impact on the quality of the roleplaying game your characters experience than will we. The following advice, though, should make your job easier.

Getting Started

How do you begin a roleplaying game? Normally, the first step is to sit down with your players and generate some characters, but in the case of **Traveller**, there is work for you to do even before that step. Your players cannot generate characters until they know what region of space they come from, and they can't know that until they know where the campaign will be set. So step 1 is to decide on campaign location.

If you are a seasoned **Traveller** referee and want to continue running the kinds of adventures you have in the past, the easiest campaign setting is the Regency, formerly known as the Domain of Deneb, and before that the Spinward Marches. For years this was the campaign setting of virtually all GDW **Traveller** adventures, and there is a wealth of background material available on this region. "The Spinward States," page 168, discusses how things have changed there, but this will still be familiar ground for referees and players.

If you want to make up your own region with unique politics and economic interaction, but still want to remain in the main **Traveller** universe, make up a pocket empire. These are small clusters of civilized worlds surrounded by the Wilds. We have included a sample pocket empire later in this chapter along with some comments on making up your own—see pages 174-178.

One interesting theme in science fiction has always been advanced science as magic. That is, science so advanced as to defy understanding is, for all practical purposes, magic. If that theme appeals to you, the Wilds offer numerous possibilities for great fun in a campaign environment. Worlds can be at any level of development desired, with as little or as much poorly understood relic technology available as you want. Furthermore, you are not locked into this type of campaign indefinitely. If you want to experiment with it for a while, have a ball. When you and your players are ready for a more traditional science-fiction game, have the world contacted by free traders, Star Vikings, an exploration party from a pocket empire, or even the Regency.

The main thrust of the current game, however, is the expansion of the Star Vikings from the Old Expanses into the Wilds. Much of the background and mood centers on that event, and we expect that the majority of campaigns run with these rules will concentrate on that theme.

Once you've settled on a the region of space in which the campaign will be set, sit down with your players and help them generate their characters. As they do so, they'll begin asking you questions about the background of their world, its history, and what sorts of skills will be useful. Some of these questions should prompt questions of your own. If they ask what skills are useful, you should ask them what sorts of things their character might want to do.

The answers to these questions should give you some insights into what sort of game your players want to play. The next important decision you have to make, then, is what sort of game your players want and what sort of game you want to run. Both are important. If the game you are running is the opposite of what your players want, they won't enjoy it very much, but if it's the opposite of what *you* want, you won't be able to breathe as much life and enthusiasm into it. Try to come up with a happy middle ground that will satisfy all of you.

When we talk about what sort of campaign people want, what, specifically, are we talking about? There are two key features that define the type of campaign run: level of structure and type of action.

Structure: Structure is a measure of the extent to which the actions of the player characters are directed by the referee. A low-structure campaign is one in which the players generate characters, buy some equipment, get a ship (maybe), and the referee then says, "Okay, you're on Aubaine (or wherever). What do you want to do?" A high-structure campaign is one in which, after character generation, the referee says, "Okay, you are all members of a RCES covert contact team. You are called into your boss' office and he gives you your first assignment."

Inappropriate levels of structure can cause tremendous frustration on the part of players, more so than probably any other aspect of the game. Players who really aren't sure what to do will find an unstructured campaign boring, while those who yearn to poke around in all sorts of odd places will find a structured campaign very limiting. So it is important to key the level of structure more closely to what your players want than with any other aspect of the campaign.

In general, more structure is required early in a campaign than it is later. Players who are new to an environment need to be shown what they are expected to do, and so a few well-structured adventures are good places to start. (Both sample adventures are highly structured for that reason.) Once players become more comfortable with the universe and confident in themselves, though, you will want to ease back on the level of structure and let their interests take them where they will.

In the case of the Reformation Coalition, this is extremely easy. The Coalition is very new, less than a year old, and is still working out its structures and procedures. It has regular personnel who are sent on regular missions, but it also hires freelancers on a one-time basis, and also has friendly but loose contact with the network of free traders. Players can fit themselves into this structure at any level of control desired, and alter that relationship over time.

Activities: Different people have different notions of what is most interesting about science fiction. For some, the image of the interstellar merchant is a very compelling one, moving from world to world and striking bargains for rare and exotic goods, often becoming embroiled in local politics and adventures. For others, the essence of science-fiction is exploration of unknown worlds and making first contact with alien cultures. Others find the thrill of futuristic combat irresistible, while others still are captivated by the idea of covert intelligence and diplomatic missions on alien worlds.

All of these are correct, and all of them should form part of any science-fiction campaign. However, the emphasis of the campaign should be a mixture of the images that you, as referee, find most compelling (as these will be the ones that you can communicate most vividly) along with those that your players want.

Fortunately, the Coalition is involved in all of these activities, and is so short of personnel and ships that everyone does a little bit of everything sooner or later. This not only gives you a lot of flexibility in deciding what sort of activity you want to emphasize, it also means that, once that decision is made, you aren't locked into it forever. You can do smash-and-grab operations for a while, and then switch to an exploratory mission, or a covert intelligence-gathering operation. Remember that variety is important as well.

Using the Rules

Once you have determined the limits of the campaign, its setting, structure, and activities, you will actually begin running adventures. At that point you will begin using the rules. When you do so, it is important to always remember why the rules are there.

This is a roleplaying game, which means that its purpose is to allow you and your players to interact as different, imaginary people in an alternate imaginary world. Nothing else is really vital to the game. Character generation is provided as an aid to players visualizing a person different from themselves. The background of the universe is provided to add a sense of verisimilitude to the environment, which is vital to a fully realized roleplaying experience. But none of these things are carved in stone.

In order to understand how best to use the rules, you have to understand why we have rules at all. A roleplaying experience can be done, and done very easily, without any rules at all. The referee describes the world, the player or players describe their actions, the referee decides and communicates the results. That is roleplaying at its most basic level, and also at its very best. The free-form interaction between players and referees is what all good roleplaying concentrates on.

So why have rules at all? Two reasons.

First, players often want an objective means of predicting the results of certain familiar actions. They want the reassurance that their success or failure from one situation to another is based on something more concrete than the referee's mood or their own ability to come up with a glib explanation of why they ought to succeed.

Second, the referee has only so much mental energy to expend on decisions and descriptions. To the extent that that energy is expended on adjudicating routine, recurring events, there is that much left to make the unique and important events really sparkle.

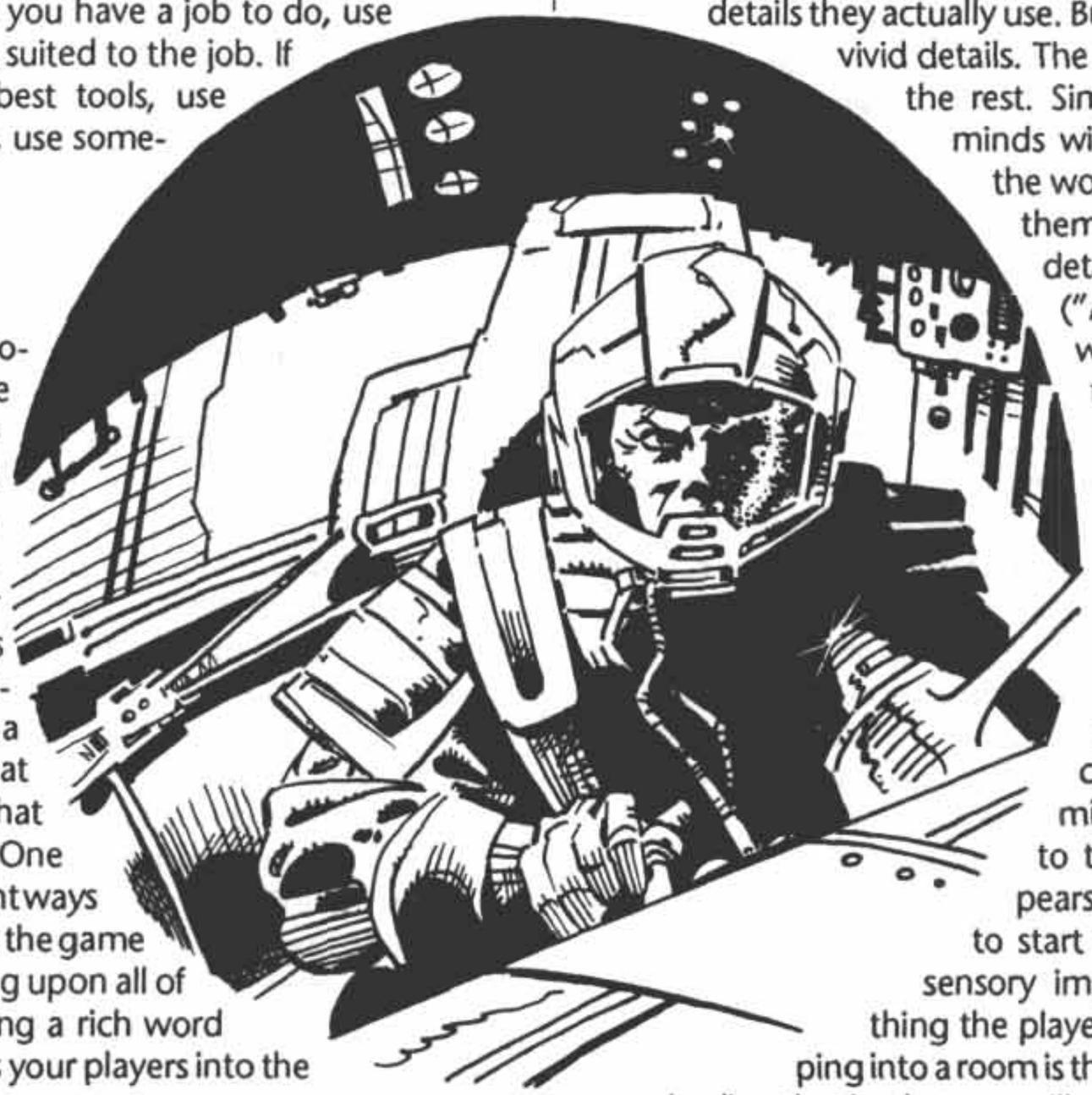
Rules are the solution. Rules, such as combat, travel, task resolution, and so on, are provided to relieve the referee of the need to continually think about what is or is not important to their success and to give the players a sense of an objective reality. But that means that rules are here to liberate players and referees from mundane concerns and allow them to focus on the meat of roleplaying. Rules are never provided to limit the imagination or options of players or the referee. Always bear this in mind when using the rules.

For example, the world-generation rules provide extensive tables which will generate worlds and star systems which fit into some generally accepted norms of astronomy. How should you use them to generate a world? Start by deciding what kind of world you want. The tables will tell you the most important features which need to be defined, so go ahead and make up those values (like size, atmosphere, water, etc.) to be whatever best fits your view of the world. They don't even have to correspond to the individual entries on the table. If you decide that the world doesn't need to be all that exotic, though, and you don't feel like lavishing that much creative energy on it, pick values off the table that define the world you want. If you decide that you don't even care what the world is like at all, and just want a different world, *any* different world, then roll dice and consult the tables.

Notice that rolling dice to find the correct table entry, far from being the only option or even the best option, is a *last* resort. This holds true for trade and commerce,

breakdowns, encounters, animal creation, and anything else you decide. In many routine combat situations, you might decide not to have the players roll for damage when they hit, instead assigning average damage, or even deciding that a hit from certain weapons is an automatic knockdown or kill. All of the rules, even the most detailed and technical ones, are there to help, not hinder, play.

In short, never forget who's in charge here. The rules are not in charge; *you* are in charge. The rules are like an assortment of tools in a tool box, but they aren't the only things in the tool box. You also have your knowledge of fiction, history, and science, as well as your imagination and the knowledge and imagination of your players. When you have a job to do, use the tool that is best suited to the job. If the rules are the best tools, use them; if they aren't, use something else.



Describing The World

As the primary storyteller, the referee operates as the players' window on the world. Everything the players see, hear, feel, smell, taste, or otherwise sense is conveyed by the referee. You even have a major impact on what they suspect and what emotions they feel. One of the most important ways of building drama in the game is by carefully playing upon all of these senses, building a rich word picture that projects your players into the **Traveller** universe.

It really isn't that difficult to do. After all, role-players are well-known for their imagination, and as a referee you likely have an extra share of that. All it takes to become really effective is simply a little practice and knowledge of a few subtle tricks.

First, remember that sight is the primary sense for humans, followed closely by hearing. When you are describing a scene, then, you ought to appeal most to these two senses. But smell, taste, and touch are often very powerful conveyors as well, largely because they are typically so subconscious. (Most of us have had the experience of feeling an unexplained sense of nostalgia, for instance, only to realize after a few moments that it was caused by a familiar smell we had not consciously registered.) So don't forget to appeal to these senses as well, at least occasionally. Finally, it is often appropriate to tell the players that they feel a sense of well-being, or of menace, or of panic, or whatever, especially if their characters are highly psionic. Generally, however, it is more powerful to convey these feelings by their other senses, if possible.

Understand that your descriptions don't have to be ageless prose. Nor should they be overly detailed. Like any other artist, you want to convey images, not lay out stark blueprints. Take a look at descriptive scenes by your favorite writers, and you will notice just how few details they actually use. But they pick the most vivid details. The reader's mind fills in the rest. Similarly, your players' minds will fill in details from the word sketches you give them. If they need more detail, they'll ask for it. ("Are the second-story windows big enough to admit a human?" "I've studied a lot of history. Do I recognize the symbols as related to any ancient language?")

When you begin a description, take a moment to picture it clearly in your own mind. Then convey it to the players as it appears to you. Remember to start with their strongest sensory impression. If the first thing the players notice upon stepping into a room is the stench of decaying bodies, that is what you will want to tell them first. Then fill in their other senses, using that initial sense description to set the stage. ("There are two bloated corpses lying on a stained drop-cloth in the middle of the floor, illuminated by light from a grimy picture window in the wall across from you. You can hear the buzzing of scores of flies. Glancing around, you see that there is no furniture, just a painting on the left wall. Even from the door, you can tell it has been mutilated.")

If you want to heighten player tension, toy with their two main senses. Sometimes you will want to rob the players of those senses; at other times, you will want to overload them. For instance, if the players are feeling their way through a dark, secret passage, the lack of

sight will make them tense, especially if they hear mysterious noises ahead or behind, or perhaps if they *cannot hear anything* but suspect *something* is there. Similarly, if they open a large blast door to expose a hangar bay lit by flashing red and yellow emergency/warning strobes, full of wild-eyed people dressed in rags and armed with clubs and long, wicked-looking blades who rush at them screaming unintelligible war cries while a klaxon or siren hoots incessantly in the background, they will be made tense, especially if you demand that they react immediately, without a chance to ask for details or an explanation.

Related to this is the fact that nothing gets players' interest like a hint of danger. Even if there is no immediate threat to the players, you ought to let a mysterious hint or two drop just to keep their paranoia high. ("You can't be sure, but it seems that the Aslan mercenary two tables away has been staring at you off and on throughout the meal.") (Similarly, it is a good idea to roll dice occasionally through the adventure for no reason at all, to make your players think you are checking for the chance of something bad happening to them.)

Save the most important details for last. That way, it will have the most impact. If you don't do this, your players will have to wait through the rest of your description before they can ask about that important detail, and they will be distracted, unable to concentrate upon your description. They are also likely to mistake the significance of the scene's details. (In the room description three paragraphs above, for instance, players' attention will naturally be drawn to the mutilated painting as being somehow significant, and the importance of the bodies is played down.)

Finally, while many of your descriptions will be intended to convey specific information, you may use some just to evoke a particular mood. This is especially true of the first scene in an adventure session, when you are trying to get the players focused upon the story about to begin. Responsibility for these mood-setting scenes can be shared with your players, and we strongly encourage you to have your players describe their appearance and general reactions to events, emphasizing the unique nature of their characters.

Creating Adventures

Two sample adventures are provided, one a conventional one designed to get Star Viking players started, and a more unusual one for players who want to start in the Wilds. Neither of these have to be used, but both can serve as useful examples of how to structure the adventures that you create. When you actually sit down to create an adventure, it may help to think in terms of major elements of the task.

Adventure Concept: Generally, the first thing to do in creating a new adventure is to come up with a concept. It may be that you want to do one about a particular alien race. Or perhaps you have a basic plot idea in mind. Good sources for either of these are myths, science fiction, and actual news stories. For instance, a recent news story concerned the near miss of the Earth by a planetoid large enough to do damage but small enough that it went unnoticed until it had passed the Earth. This might prompt an adventure built around the disaster-relief efforts after a collision, or the attempts to prevent a collision by diverting the planetoid, or a covert intelligence operation that uncovers information about the planetoid being withheld by a faction for some reason.

As a specific example, in "The Once And Future Emperor" (one of the sample adventures), we determined to do an adventure from myth, similar to the Arthurian legends, but with enough of a twist to keep the players guessing

Once you have the basic concept, it is time to begin fleshing it out.

Adventure Location: Next, you need to choose a location for your adventure. Let imagery and utility be your primary guides. For instance, once we had set our sights on the legendary emperor adventure, we decided to place it on a world in the Wilds that was balkanized and fairly primitive. As a starting adventure, it provides images which are easy to describe while also laying out some useful groundwork for the players to understand the nature both of the Coalition and the Wilds. It also gives us a chance to describe Aubaine first, so the players' first impression is of one of the Coalition homeworlds, and when they visit there later it will feel familiar, like coming home, rather than alien.

Adventure Plot: Now that you have your basic idea, it is time to develop a basic plot. There are several things to be considered in doing this.

First, you need to come up with a very basic sequence of events. In our sample adventure, for example, the players are first recruited and briefed on the mission. Next, they travel to the world where the adventure is set, where they meet several key characters and begin following the outline plan of their mission. As they accomplish their initial goals, they discover that they have to carry out the additional goal of finding the location of the tomb and then quickly getting there to prevent its use in a fraud. Finally, they are confronted with a major plot twist which requires them to rethink their mission, enter the tomb, and confront the villain in a final showdown.

Notice that in this synopsis, we have determined how to get the players involved at the beginning, what their most likely courses of action are through the

middle, and how they can succeed at the end. Next, we begin dividing the adventure up into episodes and scenes.

The introduction can be considered an episode in its own right. In it, the players will travel from their starting position to Trantown. Scenes would include the meeting with Papa at Auction, the trip to Trantown, locating Papa's offices, and the actual mission briefing. After the conclusion of the main part of this first episode, players can talk over their likely course of action and acquire additional equipment they may decide they need.

The second episode probably includes travel to Karaguuka, the first meeting with Ambrose, the trip to Benghin's house, and the gun battle there. If the referee wants to introduce the players to space combat, this can be broken into two episodes, with the first one consisting of a hostile encounter en route to the mission world.

The conclusion of the fight at Benghin's house and the debriefing of the survivors makes a good stopping point for the second (or third) episode.

The next episode starts with the meeting with Markuss in the library and continues through the discovery of the old maps of the planet surface, location of the monolith, the trip there, and the battle of the crater.

The next episode begins with the return to Cato Downport, the decoding of the directions, and the location of the True Key. As news of the tomb location leaks out, the players must make a desperate trip to the Zimmerman Escarpment to forestall the Commda's plot. Once there they engage in a tough fight but are saved by the arrival of Markuss and the Faithful. The true climax of the episode, however, is an apparent miracle.

The final episode begins with the players realizing how badly things have gone and seeing them continue to get worse. They attempt to understand what has happened, while realizing that time is running out. As they puzzle out a possible explanation, they will probably realize that success will require a final confrontation with the impostor, which will be the last major action in the adventure. After that, the referee will discuss rewards and experience points, and summarize the long-term effects on the players.

From this example, then, we can see that the referee can lock the plot's episodes down pretty firmly, and the most significant scenes can be prepared ahead of time, based upon the referee's knowledge of the most likely course the players will take. If you intend to allow your players leeway to leave this course during the adventure, however, some scenes will have to be created on the spur of the moment, in response to the players' actions.

REWARDS AND EXPERIENCE

When your players complete an adventure session, their characters ought to receive suitable rewards. There are lots of things that can serve as rewards, depending upon the circumstances of the session. The players might get specialized equipment, or money, or favors, or perhaps they have made new contacts.

Be careful to make the rewards match the players' accomplishments. Don't go overboard. Remember, if you give them too much, not only are they going to tend to feel dissatisfied, you will also have more of a problem giving them challenging adventures later on. In general, it is a good idea to start out stingy, because you can always make up for it in later adventures as you gain a feel for how fast the characters are progressing. But if you start out too generous, it is very difficult to take things away later.

Skill Improvement

One of the most significant rewards of an adventure session is a character's increased experience. Among other things, this includes improvement of skills. Skill ratings are increased by use of experience points. In general, you should award 1 experience point per adventure session to anyone who survives. Bonus experience points can be awarded in one of two ways.

Referee Determination: A bonus point can be awarded for any skill that was used repeatedly or in a particularly dangerous situation. An additional bonus point or 2 can be awarded to a player who is particularly good at staying in character during the session or who performs a notably heroic deed.

Peer Determination: If you feel uncomfortable with judging your players' performances, you may want to rely upon your players to determine bonus points. To do this, simply have each player secretly write down two or three praiseworthy things that other players did during the session (they cannot vote for themselves). Then collect those notes and read them aloud. Every time an event is mentioned in those notes, that character who performed the action receives a bonus experience point, up to perhaps 2 or 3 points per player per session. (Referees have the option to veto any event that they don't believe sufficiently exciting or important to gain an experience point.) This peer determination of bonus points helps make certain that players are rewarded for actions the referee might have forgotten, and it also encourages a shared sense of responsibility in the campaign.

Spending Experience Points: During the adventure session, each player should note (perhaps with a pencil checkmark, so it can be erased before the next session) the skills used during the session. Only marked skills are eligible for improvement by use of experience points.



Experience points are converted to increased skill levels between sessions, even if a session ends with a cliff-hanging situation. Of course, in many cases the points will end up being spent in a lull between adventures, but it is assumed that a character can even improve a skill during the heat of battle.

To improve a skill, a character spends experience points to buy new skill levels. To buy a new level costs points equal to its numerical value. For instance, to raise Astrogation level 4 up to level 5 would cost 5 experience points. A character may purchase more than one level at once, but each level must be paid for separately. For example, if the Astrogation skill were to be improved from level 4 to level 6, the character would have to spend 11 points total (5+6). Points that are not converted may be accumulated.

Option: If the players don't mind the bookkeeping involved, referees may award points in specific skills, for use only in that skill (Unarmed Martial Arts experience points, for example, or Telekinesis experience points).

Psionics: Referees and players should take care that psionic skills are only bought with experience points gained from the use of psionic powers. Psionic skills may bot be improved by obsevation or instruction (below), but only by experience in using them.

Advance by Observation: If a player character observes another player character successfully accomplishing a task, the observing player gains 1 experience point. This observation must be a close-up examination of the task and must have the cooperation of the character actually performing the task. If the referee considers the skill sought to be a complicated one (such as Mechanic), the task should take longer than usual to finish (perhaps substantially longer), to represent the fact that the character performing the task is pausing frequently to explain what is being done or to answer questions. A character may gain experience points from observation only if the observed character's skill level is at least twice as great as the skill level of the observing character.

Instruction: A character may be taught a skill. Teaching a skill requires a Difficult check of the Instruction skill. An instructor may teach a number of students equal to that character's Instruction skill level. An instructor cannot teach a student whose skill level in the subject taught is equal to or greater than that of the instructor (and, obviously, the instructor must have a skill level of at least 1 in the subject taught). The task takes four hours per day for one week (seven consecutive days). Successful completion of the task (rolled for at the end of the week) results in experience points for both the students and the instructor. The instructor gains experience for accomplishing a task as explained above. Students gain a number of experience points (in the skill being taught) based on the number of students being taught.

If the number of students is less than half of the instructor's Instruction skill level, each student gains 3 experience points. If the number of students is half or more of the instructor's skill level, each student gains 1 experience point.

New Skills: A character who has a skill level of 0 in a particular skill may still attempt to learn the skill. This may be done either through observation or through instruction. Since the character has a skill level of 0, experience cost for the first level will be 1.

Initiative Improvement

A separate experience point system exists for improving Initiative. Referees should award 1 point for each session in which there is a life-threatening battle, awarding an extra point for a particularly outstanding shot or a superior feat of hand-to-hand combat. Initiative points are used to buy increasing levels of Initiative just like any other skill, with two exceptions.

First, Initiative experience points can only be used for Initiative.

Second, to buy a new level costs points equal to the *square* of its numerical value. In other words, it costs 4 Initiative experience points to purchase level 2 Initiative, 9 to purchase level 3, 16 to purchase level 4, and so on.



This is intended to be a starting adventure for your characters, and takes place during the year 1200, actually ending late in that year. As it is intended to be the first adventure for your PCs, it is an opportunity to establish the background of the Reformation Coalition and the nature of the worlds on which the PCs will adventure. From the point of view of prospective Star Vikings, there is no better place to begin than Auction, the great meeting place for Coalition members and their friends, on Aubaine.

Auction on Aubaine

Take some time to describe what Auction is like. The Auction itself takes place in Brusman, the large commercial city that adjoins Aubaine Downport, the principal surface starport on the world. (The orbital starport for Aubaine has recently been upgraded to A status, thanks to recovered relic machinery from the Wilds.) The administrative capital of Aubaine is at Trantown, as are the administrative centers for the various Reformation Coalition services, and those government agencies give Trantown an air of dignity and cultured sophistication completely lacking in Brusman.

Brusman is always a pretty wild place. It has grown very quickly since the Dawn League became active, and many once-abandoned and damaged buildings are now occupied, with repairs hasty, obvious, and in many cases incomplete. During Auction its streets and taverns are crowded with boisterous spacers, whose attitude infects even the business agents and lawyers of the industrial concerns who come to bid for relic goods. Normal accommodations are almost



Sid "Papa" Papagopolis

Experienced NPC (would have been Veteran before his injury—see text)

Combat Assets: *Armed Martial Arts*, Slug Weapon (Pistol and Rifle)

Other Assets: Persuasion 15, Liaison 16

Motivation:

Heart 6: Papa is friendly and outgoing. He's happy to spend time with old friends and loves to hear what they've been up to.

Club 7: Papa was a Marine, and was no stranger to violence. He has never been intimidated by it, and his disability has, if anything, made him slightly more prone to violence, as he experiences some pain and a good deal of frustration, being unable to do many of the things he used to enjoy.

impossible to rent during Auction, and so most visitors stay in temporary dormitories, often set up under large tents if the weather is fair. (Price: Cr10 per night, with a security locker available for valuables at Cr20 per night.)

Auction usually lasts a week, with different times devoted to auctioning different types of relic equipment (weapons, electronics, vehicles, sensors, ships, etc.). It may be a day or two longer or shorter depending on how much material there is to auction. As this has only been going on for two or three years and has only become really big in the last 18 months, the traditions surrounding it are still developing, but it has already become a favorite meeting place for people who don't see much of each other due to the demands of duty—a time to renew old acquaintances.

For the PCs, this means a time to meet some of their contacts and either get a hot tip on a new world, find out rumors of relic caches out in the Wilds, or perhaps be recruited by RCES for an assignment. In this adventure, the latter is the case. They will run into Sid "Papa" Papagopolis, who the referee will determine is a contact of one of the PCs (and thus becomes a solid contact). As neither the PCs nor Papa have pressing business, they will adjourn to a bar to renew the old friendship, and perhaps start some new ones, over drinks.

This meeting is an opportunity on several levels. Obviously it is a gateway to an adventure, but it is also your first opportunity as a referee to establish how the PCs interact with real people on this world. The referee will play Papa in the exchange, telling the player who has the contact what's happened lately, and asking about the other members of the party. Don't say "Papa says that he was injured." Speak Papa's words yourself. Be Papa, and encourage players to talk directly to Papa instead of saying "I ask Papa if he knows of any relic caches."

Those players who actively respond and roleplay the event have the potential to gain a new contact—Sid Papagopolis—while those who say nothing (ignore Papa), will be ignored in turn. In other words, treat Papa as a real person, not just a game artifact designed to pass information to the players, and reward players who understand this.

Papa was a Reformation Marine when the PC knew him before. Since their paths parted, Papa was critically injured on a smash-and-grab raid that went badly wrong, with severe damage to his spinal column. Although extensive surgery and physical therapy have made him mobile, he is considerably less agile than before and was relieved of combat duty for reasons of physical disability. Since then he has been working in several planning groups for RCES, at first conducting tactical planning for raids. Recently he has been promoted to a new strategic planning group which is trying to think a little further ahead and come up with some long-term policies. It's all pretty new stuff, and they're feeling their way, learning as they go, but he's excited about it.

After exchanging news and getting to know each other, the talk will invariably turn to work. Papa has a possible job for the PCs. The manner in which he presents the job should be structured to the needs of the PCs. If they are looking for permanent employment with RCES, this can be presented as a chance to show their ability and gain a permanent job. If they are looking for a one-time mission to pay some bills, this can be presented just as well that way. In any event, Sid invites them to come to his office in Trantown after Auction. His planning group will pick up their travel expenses.

Trantown

In Trantown the PCs have some difficulty finding Papa's office because his planning group is new and not well known. In addition, the RC infrastructure is still growing so there is a fair amount of disorganization in most offices, with movers bringing new furniture in and electricians interrupting receptionists to ask how many data lines they need to come into each commbox, etc. Eventually, however, they find Papa's group, and he introduces them to the other six members of the group, three men, two women, and a Hiver: "Cave Six," "Koko," Mr. Jerry Bagwanii, "Roaster," Ms. Sylvia Burnside, and Bob the Hiver, respectively. From their names it should be clear which ones of the humans have had off-planet duty in the Wilds and which have not. Aside from this distinction in names, which is

carefully followed by all of the members in the group, all treat each other with casual friendship. The group is, as with most RCES organizations, very informal.

The actual briefing is given by Roaster, a middle-aged woman who looks more like someone's mother than a Star Viking. The following briefing can be read verbatim to the players, who can then ask any questions they like.

Briefing

"Thank you for coming to meet with us today. Papa has already briefed us on your backgrounds, and we understand that he has told you something of our function. Let me tell you a little bit more. Right now RCES is banging its head against the wall on half a dozen worlds, and is looking at over a dozen more. We've got to get this show on the road, and so there's no avoiding doing things the hard way in a lot of places. But a little while ago a bunch of us decided that if we had a little more time we might be able to get the job done with a lot fewer bruises, if you know what I mean. That means going deeper into the Wilds than we normally would, and doing it sooner.

"Only problem is, RCES resources are stretched to the absolute breaking point, so any projects we undertake have to be done by free lancers, and they have to be cheap. I mean *dirt* cheap. We can get funds, to an extent, but we can't get much in the way of equipment. That means we have to rely on brains instead of firepower. (Jokingly) I know, it's a new concept for us, but it just might work. Anyway, the brains are your department.

"We have a report here from a friendly Free Trader operating out of the Wilds about the world Karaguuka (Diaspora 0116 D789674-5). Karaguuka is in many ways typical of the worlds of the Wilds: insular in its outlook and feudal in its governmental structure.

"Karaguuka is fortunate in that it is physically very hospitable, and its considerable agricultural resources have enabled it to weather the years since the Collapse remarkably well. In addition, Karaguuka's people have a reputation for courage and self-reliance. They have managed to maintain a largely optimistic outlook in spite of the darkness which surrounds their world.

"For these reasons, as well as its strategic location among a local cluster of uncontacted worlds, Karaguuka is an ideal site for establishment of a RCES hub base, from which other recontact missions could be launched fairly inexpensively. Critical to that, however, will be the attitude of the local population toward RCES.

"Normally this is not a problem. Most of the TEDs we've encountered are such buttheads that if we just put a few of their heads on pikes we're instant heroes."

At this point the man identified as Mr. Bagwanii interrupts and says, "That's an exaggeration, isn't it Roaster? I mean, we don't physically put their heads out on pikes, do we?" *Roaster looks at him for a second before shaking her head.* "No, Jerry, of course not." *Then she looks back at the PCs, smiles, and continues.*

"Unfortunatly, things are not quite so simple on Karaguuka. It is balkanized and divided among several petty warlords, some of whom are no better than thugs. But the most powerful of them, Clovis Andrahaar, "the Commda," has allied himself with a popular and powerful local religious movement and is well on his way to establishing control over the other TEDs. As his power base is built on a cache of relic weapons more sophisticated than that available to the rest of the warlords, he is opposed to introduction of additional high tech material from off-world.



Clovis Andrahaar, The Commda
Experienced NPC, Age 46
Combat Assets: *Slug Weapon*
Other Assets: Interrogation 12, Leadership 14, Bribery 12, Ground Tactics 11, Forgery 9, Persuasion 15
Motivation:
Spade Queen: The Commda is absolutely ruthless in the pursuit of his goals.
Spade 9: He is also consumed with ambition and the quest for power.

"This goal is compatible with the Church of the Phoenix, a religious order which enjoys tremendous popularity and which preaches the necessity of self-renewal rather than reliance on off-world assistance. Self-renewal is, of course, a philosophy that it's tough for us to argue with, and left to themselves these people may pull out of this. But the fact that Free Traders have been visiting the place and providing high-tech items to some of the lesser factions has caused the Commda to begin backing the more militant wing of the church. We are afraid that this can turn very ugly and end up producing a very xenophobic society in fairly short order. Bob and his people, who are way ahead of us on this sort of thing, agree."

At this point, Bob the Hiver waves its eyestalks and speaks by way of its voice box. "I have to agree with that assessment completely. The likelihood of this world developing a friendly and open spacefaring culture on its own within the next century is probably less than 10 percent. The chances are about the same, perhaps even a bit better, that it will develop star travel but retain a messianic religious culture based on the concept of cleansing holy war. This would be



Forsca Man
Ambrose Khiigamisha

Elite NPC

Combat Assets: *Slug Weapon,* Unarmed Martial Arts, *Armed Martial Arts*

Other Assets: Leadership 13, Observation 9, Survival 10

Motivation:

Heart Jack: Ambrose is exceptionally wise, a characteristic players may not immediately associate with someone who is illiterate. However, he is quick to see the benefits of progress and is very farsighted.

Club 2: Ambrose is a tribal chief and warlord, and has seen enough violence in his life not to be intimidated by it at all.

a bad thing, in our opinion."

"Right," *Roaster continues,* "I think we can all agree on that.

"Now, what do we know about this Church of the Phoenix. Not a lot, although it's a good bet that it has a fairly typical post-Collapse apocalyptic theology, with a dose of technophobia for flavoring. There appears to be a strong messianic component to the church as well, as the central prophecy of the church involves the return or resurrection (we're not sure which) of a legendary hero named Gherard who will rebuild the world from its own ashes—hence the Phoenix of the church's title.

"The church does a lot of good, by the way. Their hospitals and clinics take care of the sick, and they have also recovered a few hardcopy libraries so that all knowledge of Imperial times is not lost. Until recently the society on Karaguuka was mostly post-literate, and only now are some lay people beginning to relearn reading and writing. The church also considers itself a force for justice, and often has been successful in moderating the worst excesses of local warlords, although it has also clearly become part of the same power structure which maintains the warlords in power.

"In general, then, the church is quite popular with the people and has a vested interest in maintaining the status quo. Their message is that if the people will only remain faithful to the memory of Gherard and continue to practice his high ideas, he will return and reward them with a just and eternal Imperium.

"So, that's the bad news. The good news is that we have two things going for us. One is an ally, the other is the prophecy itself. First, the ally.

"The old starport on Karaguuka was Cato Downport, which either took a couple nukes during the Final War or had a few fusion power plants go critical when Virus hit the world, we're not sure which. In either case, the city is trashed pretty bad and still has some spots hot enough to make your hair fall out. There are nomadic tribes in the area who scavenge anyway and take their chances, but they regularly lose people from radiation poisoning, just from picking up the wrong thingie.

"Our Free Trader contact traded a radiation detector to one of these tribes and showed them how to use it. Bingo, no more radiation sickness in the scrounging parties. Also, bingo, one convert to the benefits of off-world technology.

"The leader of this band, Ambrose Khiigamisha, is known locally by the title "Forsca Man," which we believe is a corruption of the old Imperial Marine rank "force commander." Khiigamisha is one of the few openly outward-looking leaders on the planet, and we understand that he favors any and all efforts to re-establish contact with other worlds of the sector. At the very least, he can provide you with a plausible cover, material assistance, and information. In the long run, he may be the local faction to back as an alternative to the Commda.

"Now, the prophecy. These prophecies are usually pretty vague about when the Big Guy is coming back, which allows the church to prolong the inevitable indefinitely. In this case, however, there is a significant segment of the church which believes that the return *must* take place before the end of this year. The senior leadership of the church is trying to downplay this, for obvious reasons, but it has really taken hold at the grassroots level. If you can, help this belief take hold, help prove that the prophecy must be realized this year. When it isn't, there will be enough questioning of the mystical parts of the belief that we should be able to establish peaceful contact. Stripped of some of the literal parts of the mythical baggage, but with the ethical structure of the religion intact, the notion that the legend of Gherard is an allegory of the virtues of self-help and self-reliance, we think that these people will make an outstanding addition to the Coalition.

"So, contact the Forsca Man, tell him your mission, have him help you research the legend, and do everything you can to spread the word that the prophecy *must* be realized this year for it to be true.

"That's all we need you to do."

Travel to Karaguuka

The trip to Karaguuka can be as eventful or uneventful as you wish. This provides an opportunity for the PCs to experience space travel firsthand and cope with the routine needs of maintenance, fueling, etc. If they have

a commercial ship, they will want to take passengers and haul cargo from world to world as they go. If they have no ship of their own, the RCES will provide an old, worn-out Scout/Courier or Far Trader to make the trip, enjoining them to be very careful with it as they need it back when the trip is over.

Among other things, they are also provided with a prefabricated wooden sailing vessel and given charts of several islands off the coast of the western continent of Karaguuka. They will land on one of the deserted islands, conceal the ship, assemble the boat, and cross the short distance to the mainland. Cato Downport is a coastal city, and so the PCs can put ashore at Ambrose Khiigamisha, the Forsca Man's, doorstep. This arrival enables the PCs to tell any curious locals that they are from an isolated island group which has been out of contact until recently, thus explaining their different accents and ignorance of local culture. (It will not be safe for their off-world origin to be widely known.)

Once the PCs establish their actual identities and play a taped introduction from the Free Trader who contacted Ambrose, the Forsca Man, who insists on being called Ambrose by the PCs, is more than happy to meet with them privately. His audience chamber is in the part of the downport which served as the Marine garrison during Imperial times. Ambrose has utilized many of the buildings of the old starport for new governmental purposes.

The PCs will find that he is not only interested in their efforts at re-establishing trade, but also in general information about the worlds of the sector. His ancestors served proudly in the Imperial Marines (hence his somewhat corrupted title), and he has heard stories since he was a boy of the many worlds and wonders of the united Imperium. If any PCs could furnish him with the tales of the worlds they have seen or even of which they have heard, he will be most grateful. Ambrose is an adventurer at heart who had the misfortune to be born during a time when such traits are rare.

As the PCs explain their mission, he will become thoughtful, nodding at certain points in agreement. Ambrose is a follower of Gherard, but does not believe the prophecy itself. Instead, he believes in the values preached by the Phoenix, but agrees that those values have been corrupted by the Commda and the church to exclude contact with off-worlders for purposes of their own self gain. He thinks that the plan, while difficult, is a good one, and agrees to help.

On one item, however, Ambrose is insistent. The Church of the Phoenix is not a recent post-Collapse religion. The origins of the prophecy actually predate the Third Imperium.

Ambrose suggests the PCs begin by visiting Ganidiirse Benghin at his home on the outskirts of the startown. Benghin has devoted his life to collecting data on the legend of Gherard and his tomb, although he is not himself a believer. The PCs could learn much from Benghin, far more than Ambrose could impart himself. Besides, Benghin lives near the old library where most of the books Ambrose's tribe has recovered are kept. The old library, incomplete as it is, has become one of the most important sources of data about the planet and its history. Benghin and his helpers know the place well and should be able to help the PCs use it.

Finally, Ambrose cautions the PCs against using too much of their own flashy high technology in the presence of the populace. There is still a prejudice against the technology which many feel brought about the present dark age. Plus, the Order teaches that Gherard wants the people to remain faithful to him, not an off-worlder. High technology would be a dead give-away to their off-world nature and would undermine their efforts. After all, the PCs are trying to unravel a mystery whose solution may determine the fate of an entire planet and possibly, if the legends prove true, the whole of humanity. Thus, they can hardly afford anything which will impede them.

Benghin's Home

Next, the PCs should head to Benghin's home using the directions given to them by Ambrose. The house is only a few kilometers west of the starport. The building is large and of an Imperial architectural design, indicating its age. In addition, the building stands but a few dozen meters from another larger, older building. This must be the library that the Forsca Man mentioned.

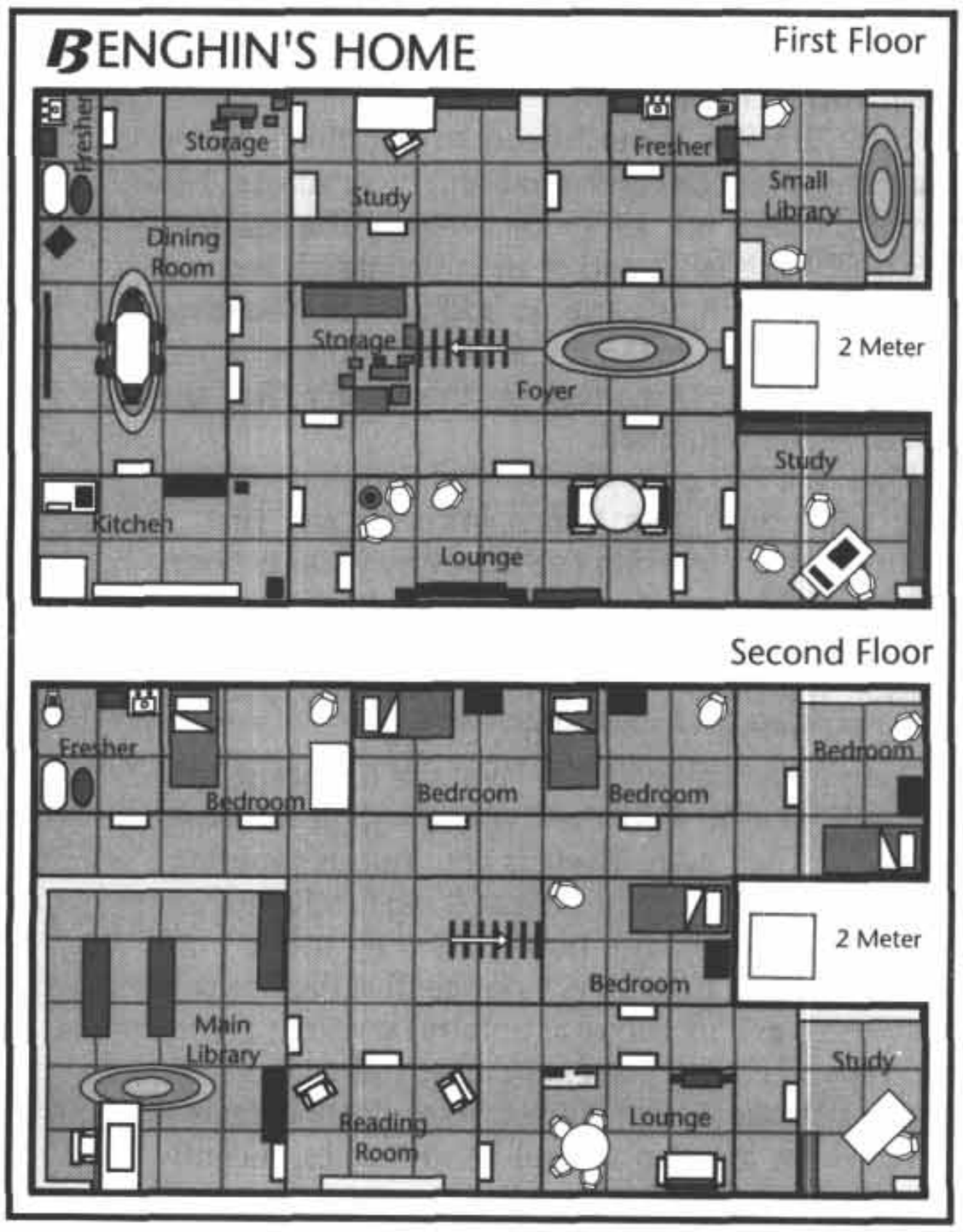
When the PCs go to the front of Benghin's home, they will notice two things immediately. First, a ground car is parked in the driveway with its doors still open. Second, the front door is itself standing open. A knock at the door will not produce an answer, but the PCs will almost immediately hear a shout for help and several gun shots.

Being unfamiliar with the layout of the house, the PCs will have to find their way through its many rooms on their own. There is continuous shouting, gunshots, and the sound of breaking furniture from the upper level of the house. As they move from room to room, the PCs will notice that the house is in disarray, as if someone as unfamiliar with it as they had ransacked the place, and that there are visible signs of struggle, with bullet holes dotting several walls. There are also several dead bodies, recently slain, in the rooms.

Room Details

First Floor: Both the *study* and the *small library* contain numerous old bound volumes. Most of them have been torn from their shelves and scattered about their respective rooms. Some even have pages torn from them. Small traces of blood can also be found in the *small library*. One of the *freshers* contains the body of a slain human male. He has an empty holster on his belt. He appears to have been shot several times in the chest. A closer examination of his body will reveal that his empty auto pistol, which lies at his side, is emblazoned with an odd symbol (as seen on the cloth armor of the attacking men in the illustration on page 150). Finally, in the *dining room*, two more male bodies can be found, but unlike the last one, they do not wear holsters or have weapons with any noticeable insignia. They have both been stabbed to death. A bloodstained sword is near their lifeless bodies.

Second Floor: At the top of the stairs, there is another dead body. This one is a woman, her body is badly burned by laser fire, and an empty revolver lies at her side. A check of the *bedrooms* will reveal that they have all been occupied. The *reading room* has a few books strewn about it and the dead body of man burned like that of the woman's is at the top of the stairs. Continuing sounds of gunfire come from the *main library*.



Battle in the Library

The fight in the library is all but over when the PCs burst in. The room is cluttered with several dead bodies as well as two cowering figures, partially hidden by a large desk turned on its side, being threatened by three other men. These men are all armed, two (Experienced NPCs) with auto pistols and one (Veteran NPC), apparently the leader, with a laser pistol. The cowering figures are a man and a woman, and the man is cradling the dead or wounded body of another man. (They have just surrendered, having fired the last rounds from their one revolver.) Books are scattered everywhere. When the PCs enter, the three armed men attack.

The combat may be to the death, but any survivor will surrender once the leader is killed or critically wounded. The cowering man and woman will not engage in combat in any way. They appear to be wounded themselves and are more concerned about their own safety than that of the PCs.

The Aftermath

The man and the woman are Boniface Wilde and Rakhel Yustiniano respectively; they are the two surviving helpers of Benghin. Benghin himself is the man whom Wilde is cradling in his arms. He has been fatally wounded by the attackers. Any PC with Medical skill will recognize that he is beyond help and will die soon. Wilde and Yustiniano are likewise wounded, but their wounds are more easily treated. Benghin will not regain consciousness before he dies.

The prisoners (if there are any), know very little other than that they were hired by the leader (who is now dead or unconscious), and he provided them with the auto pistols. A third hireling was killed downstairs by one of Benghin's helpers. Examination of the auto pistols shows that they have the Commda's seal on the hand grips.

Wilde will explain that they are two of Dr. Benghin's helpers. The others are all dead, two downstairs and four more upstairs. Although there is considerable bad blood between Ambrose and the Commda, Wilde is unsure why the Commda's men would single out Benghin to attack. Obviously the men were looking for something, and Wilde suspects that it was a rare manuscript which recently came into Benghin's possession, which he was extremely excited about. The manuscript is secure in a hidden safe, but with Benghin dead, neither Wilde nor Yustiniano have any idea what it related to.

Once Wilde and Yustiniano understand that the PCs are working with Ambrose, they will produce the document. It is a hardbound book of standard dimensions, perhaps 300 pages thick, and very old and worn. The binding is coming apart, many pages are loose,

and the entire manuscript is held together by a stout red ribbon. When they examine the manuscript, the PCs will find that it is written in a language and alphabet unfamiliar to them. Wilde heard Benghin mention that it was in ancient Vilani, although neither of the surviving helpers read that language. Also in the book are several sheets of paper with numeric calculations handwritten on them. Both assistants recognize this as Benghin's handwriting. The calculations are not complicated formulae, but rather consist of a series of simple multiplications and divisions. On the last page Benghin has written, in a larger and heavier hand and with obvious excitement, the numbers 1, 2, 3, and 4, underlined each one individually, and followed them with an exclamation point.

"That must relate to the old prophecy," Yustiniano volunteers, and she shows the PCs a book on the prophecy containing the following text.

Prophecy

That Which Was Shall Be Again
Founded by Three,
The First ruled for Two Thousand.
Founded by a First,
The Second ruled for but Two Hundred.
Founded by a First,
The Third ruled for One Thousand
And One from the past shall found the Fourth
Which shall rule Forever.

"The only one who can help us now is Mistress Markuss," Wilde says. When asked who that is, he explains that Brynhild Markuss is the senior priest at the library, which also serves as a shrine to Gherard. Although she and Benghin differed on spiritual matters, they remained friendly, and she was always helpful in their researches.

Shrine of Gherard

The shrine of Gherard is not far from Benghin's house. The building is quite large, and anyone familiar with Imperial architectural styles will know that this building dates from only a decade or so before the Final War. It is hardly ancient by comparison to most buildings on Karaguuka.

Many locals go in and out of the huge open gateway at the front of the library/shrine. On either side of the gateway is a single robed member of the Order, dressed in the red and yellow garb of a lay brother or sister.

The inside of the shrine is indeed magnificent. Paintings and icons adorn the walls. The building is well lit by means of electric lighting. There are also a fair number of valuable gold and silver items being used as decoration. Nearly all of the decorations depict Gherard in various heroic scenes. Some of them contain recognizable symbology such as the insignia of the three Imperia which preceded the present era. In short, the shrine's interior is a veritable treasure-house of visual information about the Order of the Phoenix and its beliefs.



Boniface Wilde
Novice NPC
Combat Assets: *Slug Weapon*
Other Assets: Wheeled Vehicle 6, Research 14, History 9
Motivation:
Diamond 5: Wilde is greedy, but not for money. Instead, he is greedy for knowledge. He hungers for an understanding of what was before and what the legend of Gherard has to do with it.
Spade 3: Wilde wishes to be recognized in his field, and this is another aspect of his drive for knowledge.

As the brothers and sisters know both Wilde and Yustiniano, the group will be brought to Mistress Markuss immediately. She will show genuine sorrow at the news that Benghin is dead, and anger at the thought that the Commda's men had him killed. She cannot imagine a motive, however.



Rakhel Yustiniano
Novice NPC
Combat Assets: *Slug Weapon,* Unarmed Martial Arts
Other Assets: Research 12, History 11
Motivation:
Heart 6: Rakhel is friendly and caring, and is particularly concerned that the future for her people be a good one.
Club 5: Rakhel has a short temper and is prone to violent reactions to pressure or tension.

When shown the manuscript, she says that it does indeed appear to be ancient Vilani, but that she



Brynhild Markuss
Novice NPC
Combat Assets: None
Other Assets: Liaison 12, Research 10, Persuasion 11, Leadership 9, Medical 8
Motivation:
Heart 10: Markuss is a truly gentle soul, devoted to caring for others.
Spade 5: Although it does not interfere with her essential nature, Markuss is also pragmatic, understands the church hierarchy, and has been able to advance steadily in it. She feels she can do more good if she has more responsibility, and sets out deliberately, though honestly, to acquire it.

does not read that language. She does have a Vilani scholar on the staff of the library, however, and sends for him.

When he arrives, he examines the book.

"Ah, this is quite a find, isn't it? Not really as old as you might think, but quite a curiosity item. Do you mind if I ask where you got it?"

Wilde answers that a mysterious stranger brought it to Benghin only two weeks earlier. The priest nods and continues.

"This is a history of the Vilani people, written during the Third Imperium. It is unusual to find books from that period written in the old language, but there was a time when the people called the Solomani claimed superiority over the old folk of Vland. At the height of that, there was something of a Vilani cultural revival, with a large number of books like this published—extolling the virtues of Vilani history and culture and printed in the old language."

One of the PCs (or Wilde) says that Benghin's notes were between a certain set of pages with columns of figures on them and shows that page to the priest.

"Hmm, yes. Very interesting. This is a cultural timeline, with key historical events and their dates. But what are these other columns here? Oh, my," he says, suddenly becoming excited. "Oh my word! This is extraordinary! This is amazing!"

"What is amazing, Brother Kinsu?" Markuss asks.

"I'm sorry, Reverend Sister," he answers, "but I have never seen anything like this. This is extremely valuable. You see, we have only been able to piece together fragments of the history of Vland. So much was lost in the Collapse. We have some dates for events in the old calendar, but they are unreliable enough that we have never been able to tell exactly how that calendar corresponds with our own. But this page here, you see? There are key historical events listed down the left side of the page, and then four columns of dates. See the headings? These are the exact dates of these events in the four principal dating systems! Vilani, Solomani, Zhodani, and Imperial!"

"*Zhodani*?" Wilde asks. "Who are they?"

"A race of evil sorcerers from a long way from here. They are of no concern now. But these other dates are fascinating. They will enable us to reconstruct their calendar exactly."

One of the PCs (or Wilde) shows him the pages of calculations and asks what their significance might be.

"Hmm. Well, yes, this is obvious. Based on these earlier dates, he has worked out the current year in the Vilani and Solomani calendars. See here? He has 3943, then 5717, then 1200. That is the current year in each calendar. Of course, the Solomani one was easy, but until we had this manuscript there was never any possibility of determining the current year in the Vilani dating system."

Markuss thanks him and he leaves. Obviously the current year's date in each calendar had some significance to Benghin, and Markuss will point out that the ancient prophecy says that "the years point the way," adding further weight to this possibility. Markuss studies the numbers for a long time, perhaps while the PCs speculate as to their meaning, and then she turns suddenly pale and nearly faints.

"Great Gherard! Great Gherard!" she says. "It is true! You are come!" Obviously excited, she explains the meaning of the prophecy to the PCs and Benghin's assistant. Her hand shaking with emotion, she opens her prayer book and shows them the prophecy on the inside cover.

"*One, Two, Three, Four,* that is the key. *Four are to rule,*

One, Two, Three, Four
Four are to rule
One from the past
shall rule the Fourth
When the time is right
And the Years point the way

meaning four empires. *One from the past shall rule the Fourth,* meaning Gherard shall rise and rule the final empire. *When the time is right.* But when is that? *And the Years point the way.* Look at the years, and consider the basic principle of numerology—combination. Take the Vilani date for this year: 3943. Add the four digits together and you get 19. Add those digits together and you get 10. Add those digits together and you get 1.

One. What was the number of the Vilani Empire? One. The First Empire. The "One" of the prophecy.

"Now take this year in the Solomani calendar: 5717. Add the digits together and you get 20. Add those digits together and you get 2. What was the number of the Solomani Empire, the Rule of Man? Two. The "Two" of the prophecy.

"Now take this year in our calendar, the old Imperial calendar: 1200. Add the digits and you get 3, the Third Imperium, the "Three" of the prophecy. This correspondence of years is not, cannot be, simply coincidence! This is truly the year of Gherard!"

A Slippery Slope

It seems that the PCs are well on their way toward accomplishing their mission. They now have proof positive (perhaps unsettlingly convincing proof) that Gherard will rise during this year. Mistress Markuss will at this point unwittingly take over responsibility for spreading the word. The central church authorities will, over the course of the next several weeks, send ecclesiastical examiners to verify the validity of her claim, and the PCs should be encouraged to suspect that they will declare it a fraud. In fact, the commission will declare the proof to be genuine and endorse Mistress Markuss' findings. The news will spread like wildfire, despite the disavowal of the decision by the central church.

At the same time, the Commda will make one or several attempts to thwart the plot, although the action taken will be limited by the information actually available to the Commda. Possible options include attempted assassination of Ambrose, attack on the PCs, attack on either Wilde or Yustiniano, kidnapping of Mistress Markuss, or even an attempt to plant obviously forged manuscripts on Markuss to discredit her. Less overt actions consist of a public relations effort to discredit the new revelation. Whether these are successful or not depends largely on the actions of the PCs. The next several weeks should be filled with intrigue and danger as the PCs play out what they believe to be a waiting game, being careful to keep their identities as off-worlders secret.

Once the revelation has been verified by the church commission, however, Mistress Markuss will ask the PCs to call on her again. She has come to trust them, particularly if they helped foil a kidnaping attempt, and so now asks them for additional assistance.

Other parts of the prophecy indicate that Gherard will rise in the presence of the faithful. For that to happen, the faithful must be at his tomb, and for them to be at his tomb they must know where the tomb is. The problem is that the location of the tomb has been lost over the centuries. According to church lore, however, there are three vital clues to the location of the tomb. These are what Mistress Markuss asks the PCs to seek out.

Directions to Gherard's Tomb

371830301858 4017194919 4940191649 4018 3817194828483649 40184629

181010 46564940 16184949194949 401719 181019 391959
401719 181019 391959 37481846 29191819284017 401719 2918183949
4018 285828391910 38171948284836

181019 46564940 3818 3748184 6 3817194828483649 20264050
37481846 401819 48181846 1837 401719 491617194819
1018484017 401910 2950 401910
19284940 37265718 2950 37265718
4018 401719 58283030 40172840 1726361949 401719 40184629

18103050 4017184919 581718 371830301858 4017194919 4940191649
18103050 4017184919 59264017 401719 181019 391959
281036 28 16564819 491626482640
202810 285828391910 28171948284836
4018 3718561036 401719 371856484017

40172840 5817262017 582849 4917283030 2919 2838282610

The first of these clues is a coded message in a chronicle of Karaguuka. The message gives precise directions to Gherard's tomb. (See above; this should be photocopied and made available to the PCs.) Unfortunately, the message is so encoded as to be meaningless without the proper key.

The second clue is a megalith believed to contain at least part of that code.

Finally, there is the oft-mentioned key to the tomb which, when used at the right time and by the pure of spirit, can open the vault where Gherard sleeps. The location of the key is still a mystery, but Marcuss is hopeful that the encoded message or the megalith might contain more information about it.

Benghin had found references to an ancient standing stone covered with numbers and old Anglic writing from the Rule of Man. According to local legend, the stone is a key left behind by Gherard's followers to decipher other clues left behind as to the location of his tomb. The stone was found and documented by Solomani archaeologists during the Second Imperium, but few people have taken an interest in it since then. Benghin could find no transcription of the numbers and writing on the stone, so he figured he would have



to find the stone himself to see what was written on it. He did find some obscure directional measurements to the location of the stone, but he needed the satellite map of Karaguuka to pinpoint these locations.

Markuss's researchers at the library have been able to locate the Imperial satellite map of the planet. They were able to find these at the archival section of what used to be the starport's traffic control station. Now, they can be used to pinpoint the location of the standing stone which may hold the key to one mystery.

Journey to the Stone

After a few computations and an examination of the map, the research team locates the probable location of the standing stone. According to their computations, the standing stone should be located somewhere within the caldera of an extinct volcano known locally as Mount Purgatory. The calder's gorge is deep and treacherous, and can be reached only by first climbing Mount Purgatory and then descending into the gorge. A river called Eunoe runs through the center of the caldera. The river flows through some narrow and craggy portions of the gorge before entering a small cave that later spews the water out down the side of the volcano. The caldera has the reputation for claiming the lives of those who brave its depths.

The researchers will take their ATV and ground car to the volcano. The PCs are free to come with them or in their own vehicle if they have one. They may even take the ground car left by the attackers if they so choose. Yustiniano reminds them to be ready for anything. Even if the Commda and the Order do not try to disrupt their expedition, the gorge itself may prove to be more than expected.

Mount Purgatory

Mount Purgatory is indeed an awe-inspiring sight. Climbing to its summit must be done on foot. No vehicles will be able to make the journey. Once at the summit, the team can then descend into the caldera's gorge. Wilde suggests that everyone carefully choose what items and provisions they bring with them. They cannot afford to bring any more than they need, but neither can they afford to forget necessities. This is to be a one-time round trip to the bottom and back again. With all of the time constraints the team has, they cannot waste time going back and forth between the bottom of the gorge and their vehicles for forgotten items. Wilde is adamant that everyone carry a weapon since no one knows what may happen next. Yustiniano likewise suggests, if the PCs do not, that they bring a portable raft. They may need to cross the river at some point, and a raft is certainly safer than trying to swim across it.

At the summit, the team can see down into the caldera's gorge. A great many stone spires and weirdly shaped rocks are visible, as well as blackish sand made from volcanic ash. At its floor, some hundred meters down, the PCs should see the Eunoe River. At parts, the river is calm and placid. At others, it is a roaring expanse of rapids moving swiftly toward the jagged rocks that protrude from the walls of the gorge. There can be no question as to why this caldera has such a sinister reputation.

The journey down the narrow pathways of the gorge is largely without incident. If the referee so desires or the PCs' actions warrant it, he or she may require appropriate skill or ability checks. After all, the gorge is quite a difficult trek. There is good reason to assume that not every person who journeys to its floor is up to the challenge. Mishaps occur even among the most highly trained of climbers. During the descent, each PC would be allowed to make an Observation roll. If they succeed, tell them that they see a quick glint of something in the sunlight. If they ask, also tell them that they feel

certain they could pinpoint the glint once they reach the bottom. Further requests for Observation rolls will reveal only an odd and nonspecific humming sound. Its location is indiscernible. Someone will suggest that they are just hearing the wind whistling through the cracks and crevasses of the gorge.

At the Bottom

The bottom of the gorge is filled with a multitude of bizarre rock formations, many of which are made of igneous rock and shining obsidian. Yustiniano will explain that some of these unique formations have histories and legends of their own, oftentimes connected with those of figures from Karaguuka's past. She will point out those which have any relation to the Gherard legends, like Gherard's Throne or the Sword of Gherard. If the PCs did not have it already, they should definitely be left with the impression that nearly every aspect of the planet is inundated with references to Gherard. He is more than just a legend to the people of Karaguuka.

The glint which the PCs may have seen is even more visible from the bottom of the caldera. Creating an almost blinding light, the gleaming object, whatever it is, is located on the far side of the Eunoe River, away from the PCs. It also appears to be surrounded by several naturally formed obsidian columns which form a kind of fence around it. Wilde insists that it must be the standing stone since many tales ascribe to it a sheen like metal rather than stone. He wants to get to the other side of the river as soon as possible. Hugh and Alianor Anselmo urge caution seeing as they have no definite proof of the nature of the shining object.

Crossing the river in the portable raft appears more difficult than it actually is. While a more rapid section of the river is only a few dozen meters downstream from the place the PCs cross, the river is largely calm at that point. The river is, however, over 10 meters wide at this point, and it takes a few seconds to cross it. A successful use of water vehicle skills may aid in crossing the river without mishap. None of the researchers has any but the most basic skill in water vehicles.

As the PCs get closer to the gleaming object, they will realize that it is a two-meter-tall, blue-gray metallic tetrahedron. It is definitely not a natural object, although its origin is something of a mystery. Upon close inspection, they should be able to see that it has an inscription carved upon it. The words are written in archaic Anglic. According to Yustiniano's estimation, the dialect is that used by the rulers of the Second Imperium circa 1800. Wilde states that that makes it right around the time that Gherard supposedly ruled Karaguuka. So far the legend checks out with actual history.

The tetrahedron is by no means a standing stone, but it is definitely the object they seek. The writing on its surface also contains a series of numbers arranged in rows in imitation of the Anglic words written above them. (See the box below; this should be photocopied and made available to the players.) Just exactly what this means and how it relates to the encoded directions to Gherard's tomb is for the PCs to figure out.

Surprise!

At this point, the player characters are set upon by six men armed with auto pistols. They appear from behind a nearby outcropping of rocks. They order the team to put down their weapons and to surrender, but the PCs should have the distinct impression that they are unlikely to survive if they do. Perhaps one of the attackers will yell, "Yeah, throw down your weapons, and we'll let you go," and then laugh. A firefight between the PCs and the attackers is likely to occur at this point. At some point during the fight, a stray bullet from a missed shot may hit the tetrahedron and glance harmlessly off it in a flash of sparks. This should serve to show the player characters that the tetrahedron is of sturdy manufacture and not easily damaged.

Once the fight is over, the PCs will find the unmistakable evidence of the Commda's involvement in the attack in the form of personal insignia on the attackers. Behind a rock pile, if they search carefully, they will find a camouflaged air raft, which was the source of the humming heard earlier.

When the PCs get to the base of the volcano, either after a long, difficult climb or after a short, refreshing ride in an air raft, they will find their vehicles intact and operable.

Inscription on the Tetrahedron

Five by Five,
From One to Ten,
The Phoenix is waiting
To speak again.

17265719 2959 17265719
37481846 181019 4018 401910
401719 161718191026 27 2649 582826402610 38
4018 4916192839 2838282610

Finding the Tomb

The PCs will no doubt return to Cato Downport, and the next part of the adventure will be spent in deciphering the clues to the location of the tomb. They now have either a rubbing or a photograph of the monolith as well as the encoded directions to the tomb.

Markuss is even more fervent in her belief in Gherard's glorious return, and if, by luck, there happen to be four members of the PCs' party, she will insist that they are "The Four" of the prophecy, Gherard's four warriors come to prepare the way for his return.

Meanwhile, the news of the revelation continues to spread across the planet, and every day hundreds of additional pilgrims arrive at Cato Downport to visit the shrine and await the news of the location of the tomb. There are enough pilgrims present that neither the Commda nor the central church can afford to take any overt action against Ambrose, Markuss, or the others.

The numbers and the Anglic script on the tetrahedron are indeed a key to the encoded message which Benghin found in his examination of ancient chronicles. The numbers are an exact correspondence with the words in Anglic. Each pair of numbers in the various groupings represents a letter in the Anglic alphabet. In addition, the short poem on the tetrahedron is an additional clue as to the nature of the cipher used to encode both the poem itself and the directions to the tomb. That cipher is shown on page 152 for the referee's reference. Even if the PCs do not realize the nature of cipher, they should still be able to decode the directions from what has been given to them on the tetrahedron. It is just a simple process of substitution. The directions read as follows:

Follow these steps to Gherard's tomb:

One must possess the One Key,
The One Key from beneath the books
To awaken Gherard.

One must go from Gherard's city,
From the Room of the Spheres
North Ten by Ten,
East Five by Five
To the wall that hides the tomb.

Only those who follow these steps
Only those with the One Key
And a pure spirit
Can awaken Gherard
To found the Fourth.

That which was shall be again.

Once the directions have been decoded, the PCs will then have a number of choices open to them. The first choice deals with the One Key mentioned so often in the legends of Gherard's tomb. The PCs do not possess this key and, according to the directions, such is needed if the faithful are to open the vault where the Emperor sleeps. Once the key is gained, the faithful will then have to follow the directions to the tomb itself and open it.

According to the directions, once they are decoded, the One Key is located "beneath the books." The clue is very nonspecific and could prove frustrating to those who do not take its words literally. The One Key is most certainly located "beneath the books." It is housed in a secret series of rooms beneath the library itself. The PCs, in their search, will have to go to the basement level of the library and look there for anything out of the ordinary. A successful Observation roll will result in the discovery of a false floor. A Strength task will also be necessary to pull open the false door, revealing a set of stairs made of stone going down.

If the PCs follow the stairs down, they will enter a cave which has been carefully and skillfully hewn out of the rock. At the far end from where the PCs entered there is a metal door with a gold handle. The door opens easily to a small room with three other doors. Only two of these doors will open for the PCs. They will have just entered a series of rooms interconnected to one another by doors. Every one of the doors is a one-way door that will open in one direction only. Thus, there is no turning back. One must press forward. There is only one correct path through the rooms to the One Key and one path back out to the entrance cave. The PCs will have to discover these through trial and error.

The purpose of the maze of rooms is not to harm, but to frustrate the PCs. There is not any real danger in the maze. Of course, the PCs do not know that. Creaking doors, echoes, and unexplained noises can be used by the referee to encourage a sense of paranoia and mystery.

When the PCs finally enter the room of the key, they will find a room completely empty except for a metallic tetrahedron similar to the one in the caldera of Mount Purgatory. On top of the tetrahedron is an ornate key made of a whitish metal. If the PCs examine the key more closely, they will see that it is very similar to the sorts of keys used to a open a starship airlock manually. The key has numerous engravings on it as well.

Removing the key from its perch requires nothing special from the PCs. Again, the PCs may expect tricks and traps but there are none. One need only pick up the key and carry it away. Once lifted, it will be obvious that the key is heavy and of an extremely hard metal. While appearing whitish from afar, it is iridescent when it

catches the light. Any PC with any level of geological or metallurgical skill will know that the key is made of iridium. Anyone with knowledge of Imperial history will know well the significance of that metal, the mineral used to fabricate the Imperial throne.

Most of the carvings on the key are simply decorative with no apparent purpose other than artistry. The one that is not shows a rising sun, a depiction of the dawn. Finally, written in ornate script are the words, "That which was shall be again." This phrase should likewise be familiar to the PCs by now, being associated often with the legends of Gherard. The Order of the Phoenix also uses this phrase as part of its preaching to the people of Karaguuka.

Upon leaving the maze, Yustiniano will say that she is concerned about the clue which led them here. This library, she explains, is more recent than the time of the Long Night. A truly ancient document, as the prophecy purports to be, would never refer to the basement of the library as a place "beneath the books." Yustiniano is quite right about this. Exactly how an ancient text refers to a library building not used as such during that time is a mystery which the PCs will have to solve for themselves. Mistress Markuss, true to her nature, feels that the seer who predicted the return of Gherard at the proper conjunction of years would have no difficulty in knowing what this building would be used for at this time. Mental powers are an odd thing about which science knows very little.

The second clue is the final one, the one which points the way to Gherard's tomb. The clue mentions both Gherard's City and "the Room of the Spheres." Wilde knows what these mean. Gherard's City is Cato Downport, where Gherard first landed on the planet. The Room of the Spheres is the old astronomical observatory two kilometers north of the city, so called because the symbol of the observatory was a large stone sphere on the lawn. One need only follow the directions "North Ten by Ten" and "East Five by Five." Does that mean 10 meters or 10 kilometers? The PCs will have to decide once they arrive. Finally, the clue says that a wall hides the tomb. Who can say what the wall may be?

If Ambrose is consulted, however, he will know instantly. One hundred kilometers north of the the observatory is a geological feature known as the Zimmerman Escarpment, also sometimes called the Zimmerman Wall. It runs almost exactly east and west. Twenty-five kilometers east along the wall should be



the tomb site. If the referee wants to leave it to the players, however, prepare a map of the surrounding area and have them examine it and come up with the discovery themselves.

Mistress Markuss is delighted with the news and, whether the PCs intended this or not, she tells the mobs of pilgrims who have filled the city, and they immediately set out overland to the tomb site. News of the site will also quickly reach both the central church and the Commda.

The Race for the Tomb

If the PCs are not astute enough to think of this, then Ambrose, Wilde or Yustiniano should point out that the Commda can easily reach the tomb site using his relic air rafts and "stage" a phony resurrection by the time the faithful arrive. Unless they want the Commda to be canonized by the populace, they had better get there first and guard the tomb site. This will be easy if they have the Commda's air raft from the ambush, and somewhat more difficult if they are using ground vehicles. If using ground vehicles, they should be encouraged to push the vehicle to its best speed, and be reminded that although the Commda has a few air rafts, he also has much farther to travel to get to the tomb, and so their mission is not hopeless.

Regardless of who arrives first, it will be after nightfall, and the other party will arrive shortly afterward, so the Commda will not be able to stage a resurrection unless he can eliminate the PCs. This will probably result in a running night battle. The referee should carefully balance the Commda's forces so that, while outnumbered, the PCs are not hopelessly overpowered and have a chance to at least prevent any serious work by the Commda and his men for several hours. At the end of that time the first groundcars with pilgrims will begin arriving, and the Commda will be unable to continue the fight in the face of so many witnesses.

When asked for an explanation by the angry mob, the Commda will claim that he found the PCs here attempting to defile the tomb. The situation may become sticky, but Mistress Markuss will soon show up with the True Key, and she will explain that the PCs came ahead with her knowledge and blessing to protect the tomb. Now that the faithful understand the riddle of the years and are present with the True Key, Gherard will surely return.

And, interestingly enough, he does.

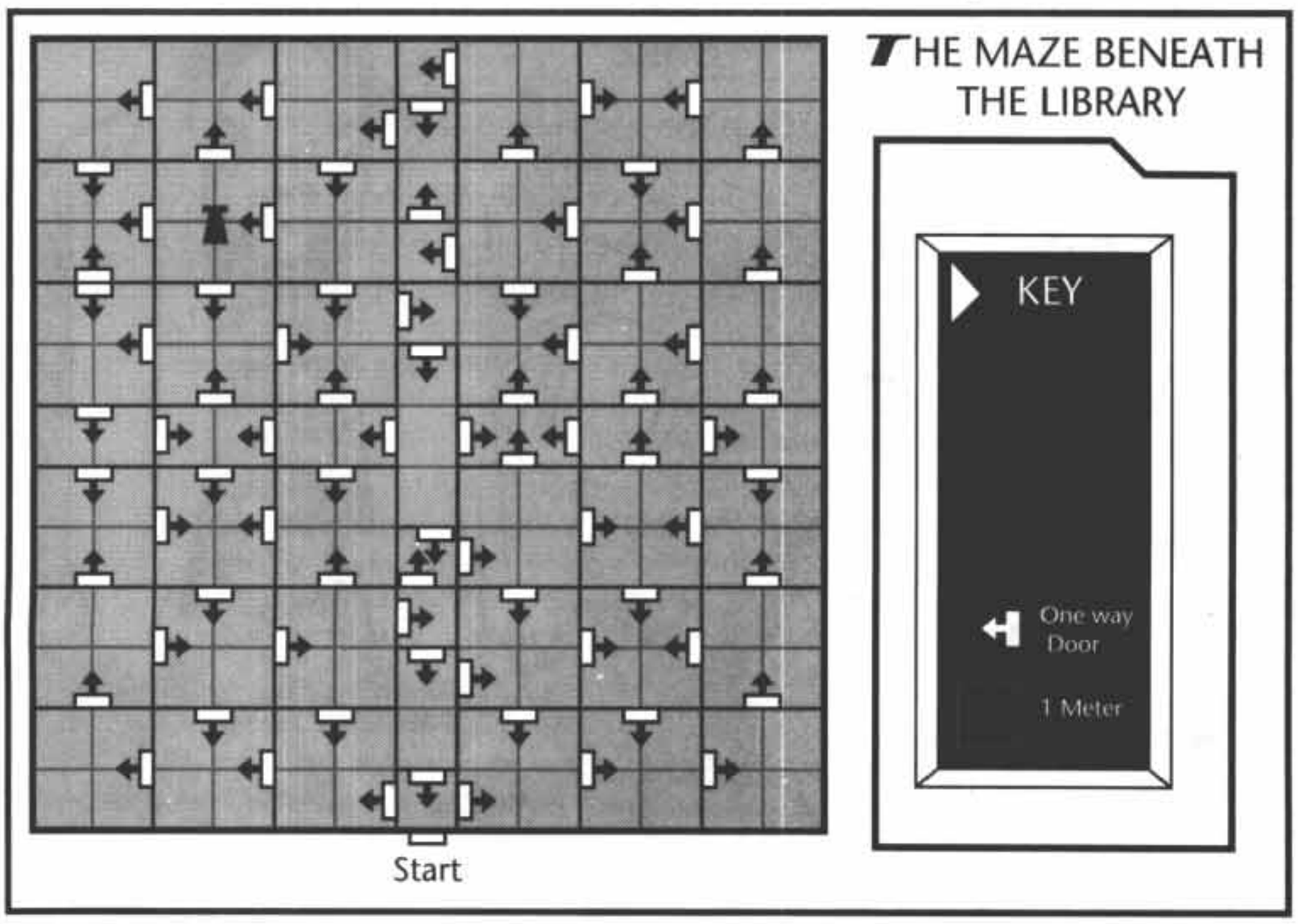
"Well Done, My Good and Faithful Servants"

In fact, he does so spectacularly. The cliff wall parts with a crack, and tons of sandstone slide away and cascade forward, crushing dozens of the faithful in the process. The screams of pain and fear soon fade, however, as brilliant multicolored lights shine from within the cliff wall and majestic music fills the air from every direction. After a moment, a man's figure is seen to climb from the tomb interior, silhouetted by the lights behind him, and the music fades. His voice booms out and echoes from the ravines that cut the plain.

"I AM GHERARD, AND I AM COME!"

There is a moment of stunned silence, and then the faithful begin to weep in gratitude and sing hymns. He raises his hand and the singing stops.

"THOSE OF YOU WHO DENIED MY COMING, DENIED MY TIME, MUST FEEL THE RIGHTEOUS FLAMES OF HELL!" He then points at the Commda, and a high intensity light like a stage spotlight illuminates the warlord, the beam coming from Gherard's hand. The Commda backs up and protests that he always supported the church, always believed in Gherard, but he is cut short by the crack of a high-intensity plasma bolt from Gherard's hand which punches through the Commda and tumbles him backward into a limp heap, his clothes burning.



PCs will recognize this as the work of a hand fusion gun of some type.

"THOSE OF YOU WHO KEPT FAITH WITH THE PROPHECY WILL SERVE ME IN HONOR FOR THE REST OF YOUR DAYS. MISTRESS BRYNHILD MARKUSS, COME FORWARD."

Markuss, still clutching the True Key, walks forward unsteadily, her knees obviously weak in the presence of her god. She carefully climbs the tumbled rubble of sandstone, squinting in the glare of the lights, and when Gherard holds out his hand, she gives him the key. He holds it above his head and the crowd cheers.

"BRYNHILD MARKUSS, YOU ARE NOW THE VOICE OF GHERARD. THROUGH YOU WILL WE SPEAK TO THE FAITHFUL. THROUGH YOU WILL WE BUILD A NEW EMPIRE!"

There are more cheers, as both Gherard and Markuss disappear into the tomb. Eventually the faithful stop cheering and begin an all-night prayer vigil, except for those who busy themselves removing the dead and rescuing the injured pinned beneath sandstone boulders.

Smelling a Rat

Over the course of the next several weeks, Gherard issues a number of edicts through Markuss, edicts which indicate that the militant position opposing off-world contact was actually what Gherard intended all along, and it was only the corrupt elders of the central church who had moderated this position. Off-worlders had caused all of the problems of the world, and are to be denied any rights before the law. Only the people of Karaguuka are the Chosen Ones.

The PCs, due to their revered status as "The Warriors of the Four," are allowed audiences with Markuss and, although she is a devout believer, it is obvious that she is troubled by what she has seen in her time with Gherard. She will say nothing about it or against him, however.

Far from accomplishing their mission, the PCs have helped enthrone an obvious egomaniac who will do everything the Reformation Coalition wanted to avoid. The question is, can they now undo the damage? There were actually a few opportunities to sense something wrong from the start, but they are much more obvious in retrospect. The referee should have made Impossible rolls against Observation at several times during the adventure for the following items. These are now considerably easier to notice, and the PCs will eventually notice all of them. Individually they may tell the PCs very little, but together they provide the keys to unlocking the mystery.

Item: None of the books that talked about the legend of Gherard are *old* books. All of them quote lost manuscripts which are supposedly very old, or cite oral history research, but none of the actual books mentioning the prophecy are over 80 or 100 years old. Everyone *believes* that the legend dates back to the Long Night, but there is no proof of that.

Item: No character with any knowledge of history has ever heard of Gherard or the Order of the Phoenix.

Item: Where did the Vilani history book come from? This was the vital, missing clue to the puzzle of the prophecy. Why was it suddenly thrust into Benghin's hands by a mysterious stranger? Who was the stranger? What interest did he have in the solution of the prophecy?

Item: The monolith showed no signs of age or weathering. It was clearly built from an extremely dense metallic substance, and suitable materials were available during the Long Night. However, the pillars surrounding it did not look particularly old, either.

Item: The clue "under the books" referred to the library, but the building was not a library at the time Gherard was supposed to be alive.

Item: Irridium has tremendous symbolic significance to someone who lived during the Third Imperium; it would have been meaningless to someone who lived during the Long Night.

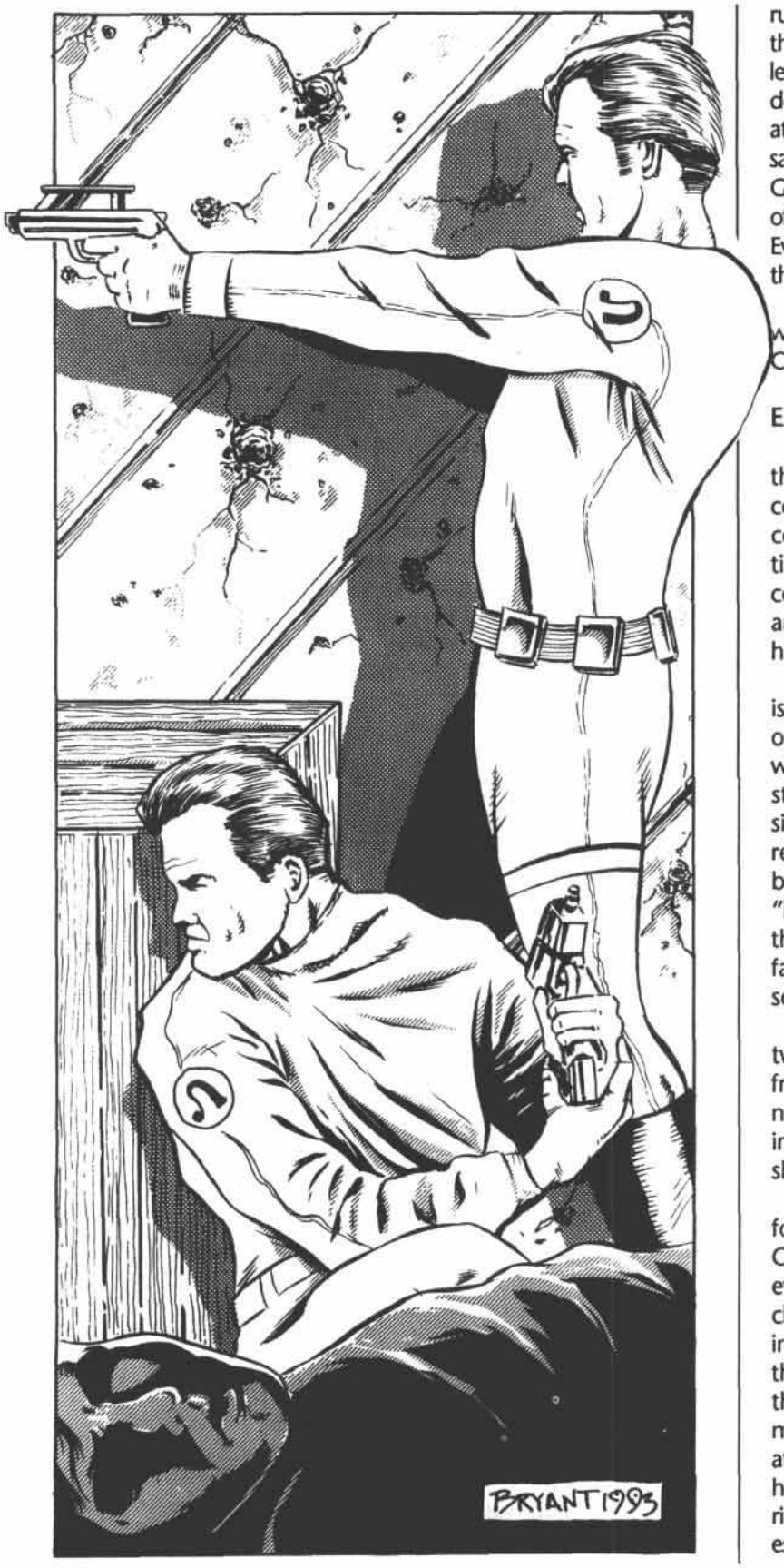
Item: Gherard killed the Commda with a hand fusion gun. Technology such as that did not exist during the Long Night, the period when Gherard was supposed to have lived.

The Truth

Gherard is a fake, a wealthy noble who, once the Emperor was assassinated and the Final War began, saw the coming disintegration of the Third Imperium. He was part of a group who concocted a scheme to go into suspended animation for the better part of a century to eventually emerge as saviors, armed with high-tech equipment to enable them to back up their claims to power.

To lay the groundwork for their re-emergence, they carefully seeded the culture with false manuscripts which would later be "discovered" and form part of the planetary legends. Writers were hired to weave the prophecy into fictional accounts. Others were bribed to add their stories to oral history projects. Artifacts were manufactured, aged, and buried. The entire cover story was quite elaborate.

What the group did not foresee was Virus and the tremendous destruction it would cause. Isolated from the outside world, Gherard's own life support systems were safe, but when the alarm went off and he woke up, he found an environment quite different from what he expected. Gherard discovered a culture so completely



ruined that his legends had almost completely taken over the public imagination. Unfortunately, there was too little left in the way of historical records for the faithful to decipher even the simplest of his riddles, and his confederates, who were to preserve themselves after seeing Gherard safely entombed, were nowhere to be found. Therefore, Gherard himself had to leave his "tomb" and take a copy of a Vilani cultural history to Benghin to aid his research. Even then the Commda almost thwarted his plan (although completely unwittingly) by killing Benghin.

Fortunately for Gherard, the PCs and Mistress Markuss were clever enough to solve the riddle and avoid Commda's traps.

Exposing the Fraud

Repairing the damage will be quite difficult now that the prophecy has come true. Even Ambrose has become a true believer, and is beginning to regret his covert contact with off-worlders. It is only a matter of time before he can no longer bear the guilt and confesses to the church, thus exposing the PCs. If they are going to act, they will have to do so fast and without his knowledge.

Several things are acting in their favor. First, Gherard is a murderous egomaniac, and not a terribly smart one. All of the elements of the Church of the Phoenix which made it popular are now largely ignored. Instead, the priority is on industrial and military expansion. Churchmen have announced plans to begin rebuilding the shipyards at Cato Downport, with the blessing of Ambrose, and will do so with technical "insights" supplied by Gherard himself. So, although the appearance of Gherard has whipped the religious fanatics into a frenzy, the more moderate members of society find little to be happy about in the new order.

Second, Mistress Markuss is increasingly torn between her faith and the personality she sees emerging from Gherard. She is a woman of faith, but that does not make her stupid. She is quite bright, and is increasingly unable to find anything "divine" about the savior she once worshipped.

The only convincing way to expose the fraud will be for the PCs to go to the tomb complex and confront Gherard, either killing or capturing him, and using the evidence from the tomb to prove that he is not what he claims to be. Obviously, there is more than one way into or out of the tomb, since Gherard left it to deliver the book to Benghin. Even if the PCs have not realized that fact, they must suspect some sort of air shaft or maintenance entrance. Although the front of the tomb at the base of the escarpment is guarded by a half-dozen heavily armed temple guards (Veteran NPCs with laser rifles), a careful covert search of the area on top of the escarpment will find such an air shaft entrance.

Inside The Tomb

Once inside the tomb, the PCs will probably conduct a careful search. There are a number of items which help fill in the blanks for the PCs.

Storage Room 1: The smell of rotting food is almost overpowering. This room is full of refuse, mostly empty food containers. There looks to be about three months worth of discarded garbage in here.

Living Quarters: These are lavishly equipped personal quarters. There is an expensive holo-entertainment center, a virtual reality hookup, sensaround music, and opulent furniture. The feeling of luxury is reduced considerably by the heaps of dirty clothes and the litter of holotapes, books, and personal junk scattered everywhere. The room does not look like it was ransacked; it simply looks like everything was dropped wherever the occupant lost interest in it.

Central Room: This room, filled with high-tech life-support machinery, contains a single, centrally located sarcophagus-like low berth. It is open and empty. A character with Computer skill can attempt to access the unit's memory at the work station (Average: Computer), success indicating a start-time of 1118 and an end-run wakeup about three months earlier.

Maintenance Bay: The PCs can hear the sound of voices raised in argument. As they draw closer, they recognize Markuss' voice and that of Gherard. Markuss' voice is strained, tense, and pleading, while Gherard's has little of the majesty it gained from artificial amplification, and instead sounds whining and petulant.

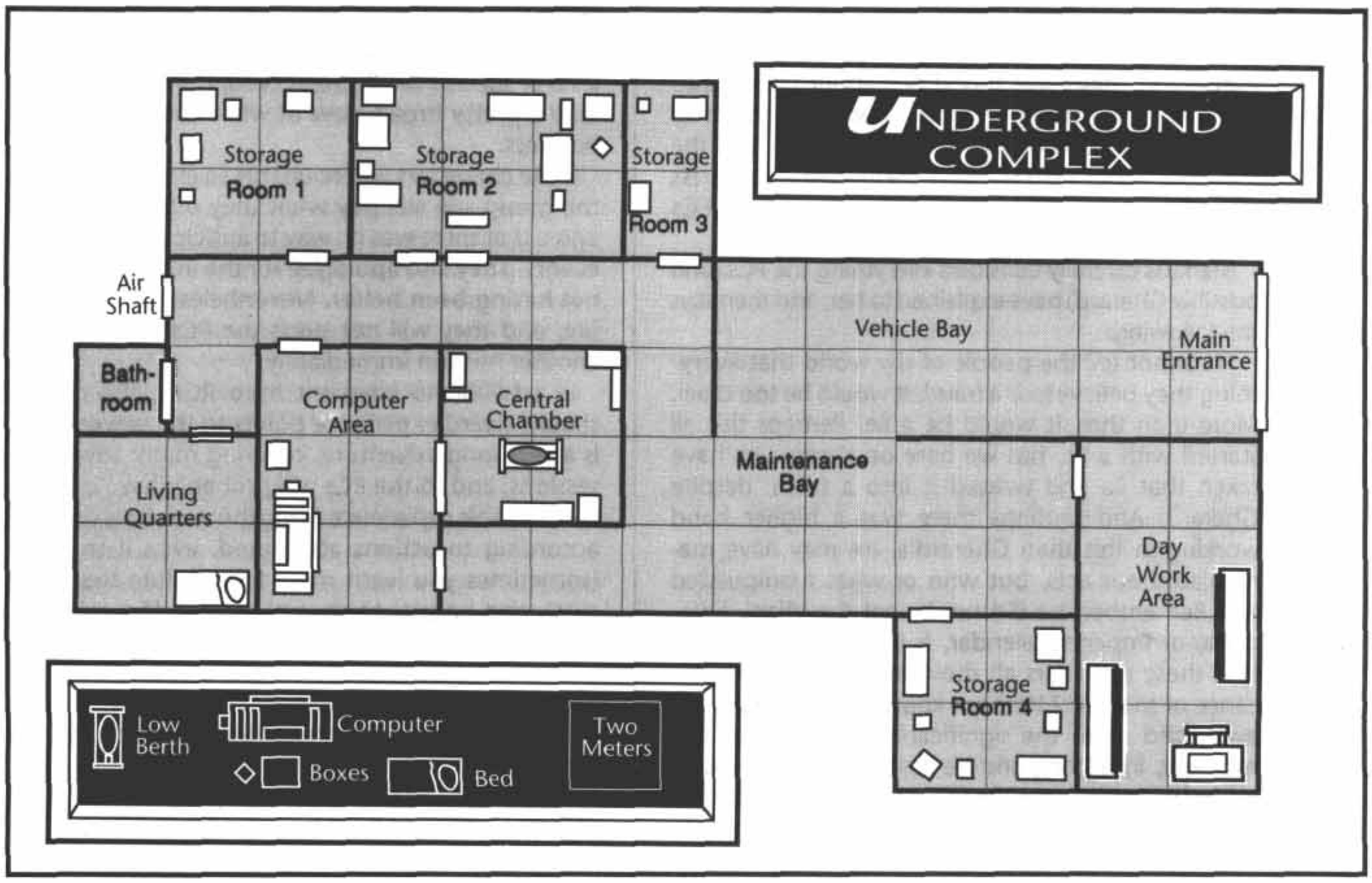
"You tax my patience, Brynhild!" the PCs hear. "You presume too much. I raised you up; I can cast you down as easily. Remember the Commda, priestess!"

There is obvious fear in Markuss' voice when she answers, but there is defiance as well. "But Lord Gherard, I cannot do this thing you ask. Think of your people. How will the farmers survive if you confiscate their crops? Even if they receive food from the church, they will be destitute. Surely that isn't what you want?"

"You dare to tell me what I want or don't want?"

The argument increases in volume and violence until Gherard begins to threaten Brynhild with violence. At this point the PCs will probably break in and discover Markuss on her knees begging for mercy while Gherard has picked up a submachinegun and appears ready to shoot her. Instead he will open fire on the PCs and Markuss will dive for cover behind a sofa.

The gunfire will also attract the guards from the main entrance, and they will arrive as reinforcements after 10 combat turns. The firefight will rage until either Gherard





Gherard

Experienced NPC

Combat Assets: *Armed Martial Arts, Slug Weapon, Energy Weapon*

Other Assets: Act/Bluff 13, Leadership 9, Persuasion 12, History 9

Motivation:

Spade 10: Gherard is hungry for power, obsessed with the idea of ruling a world.

Club 8: He is also an extremely violent person, taking pleasure from dealing with a situation violently rather than with a less confrontational approach.

is killed (or incapacitated) or the PCs are defeated, in which case they are almost certainly lost. Once Gherard falls, however, the guards will continue fighting briefly, bent on revenge, but will surrender once one more of his number are killed or incapacitated.

Cast Down the Idol

The player characters will disarm the surviving guards and look to Brynhild Markuss, who is shaken but otherwise unhurt. The PCs will then probably explain everything they have found out about Gherard to her, perhaps spurred on by her own inquiries as to how Gherard could have turned out so unlike the legends. If Gherard is still alive, he himself will confess everything, even filling in he gaps in what the PCs have been able to piece together.

Markuss carefully considers everything the PCs (and possibly Gherard) have explained to her, and then says the following:

"I cannot tell the people of my world that everything they believe in is a fraud. It would be too cruel. More than that, it would be a lie. Perhaps this all started with a lie, but we here on Karaguuka have taken that lie and twisted it into a truth, despite Gherard. And perhaps there was a higher hand working in this than Gherard's. He may have manipulated our acts, but who or what manipulated his? Remember, he did not invent the Vilani, Solomani, or Imperial calendar. Is it just a coincidence that these calendars all show the profound significance of this year? Without knowing it, Gherard has awakened us to the significance of this year, this moment, in history, and he has shown us the way.

"So I will tell my people this. This man was a simple fakir who found the true location of Gherard's tomb, looted and desecrated it, and then impersonated him. He is false, but the rest of the prophecy is true. This *is* the year of Gherard's return. But Gherard, for us on Karaguuka, means the strength of our own spirits. This is the year that we, as a people, return, by our own efforts, by our own choice, to the stars. And we will do that by contacting the off-worlders and asking, no, *demanding,* that they open the heavens to us."

Epilog

If all has gone well, the PCs have probably succeeded in their mission. They will have many stories to tell at their next Auction, stories which will probably not be believed, but which will at least earn admiration for some really over-the-top imaginative lying.

If the PCs have accomplished everything outlined above, Papa's strategic planning group will be very pleased, and particularly impressed that they were able to deal with the bizarre twist that the mission took. They will try to sign up the PCs as permanent operatives and, failing that, will at least offer to help underwrite their next trip into the Wilds. If they already have a ship, the group will be able to provide a turret or improved sensor pack of some kind; if they don't have a ship, the group will offer to sell or loan them the ship they used for this mission, provided they use the ship for RCES-related business. Given the level of success the PCs achieved, they are willing to take a pretty broad view of what constitutes RCES business.

If the characters where unable to expose Gherard, the group will still pay what they offered, and will agree that there was no way to anticipate this turn of events. They also apologize for the intelligence data not having been better. Nevertheless, failure is failure, and they will not press the PCs to undertake another mission immediately.

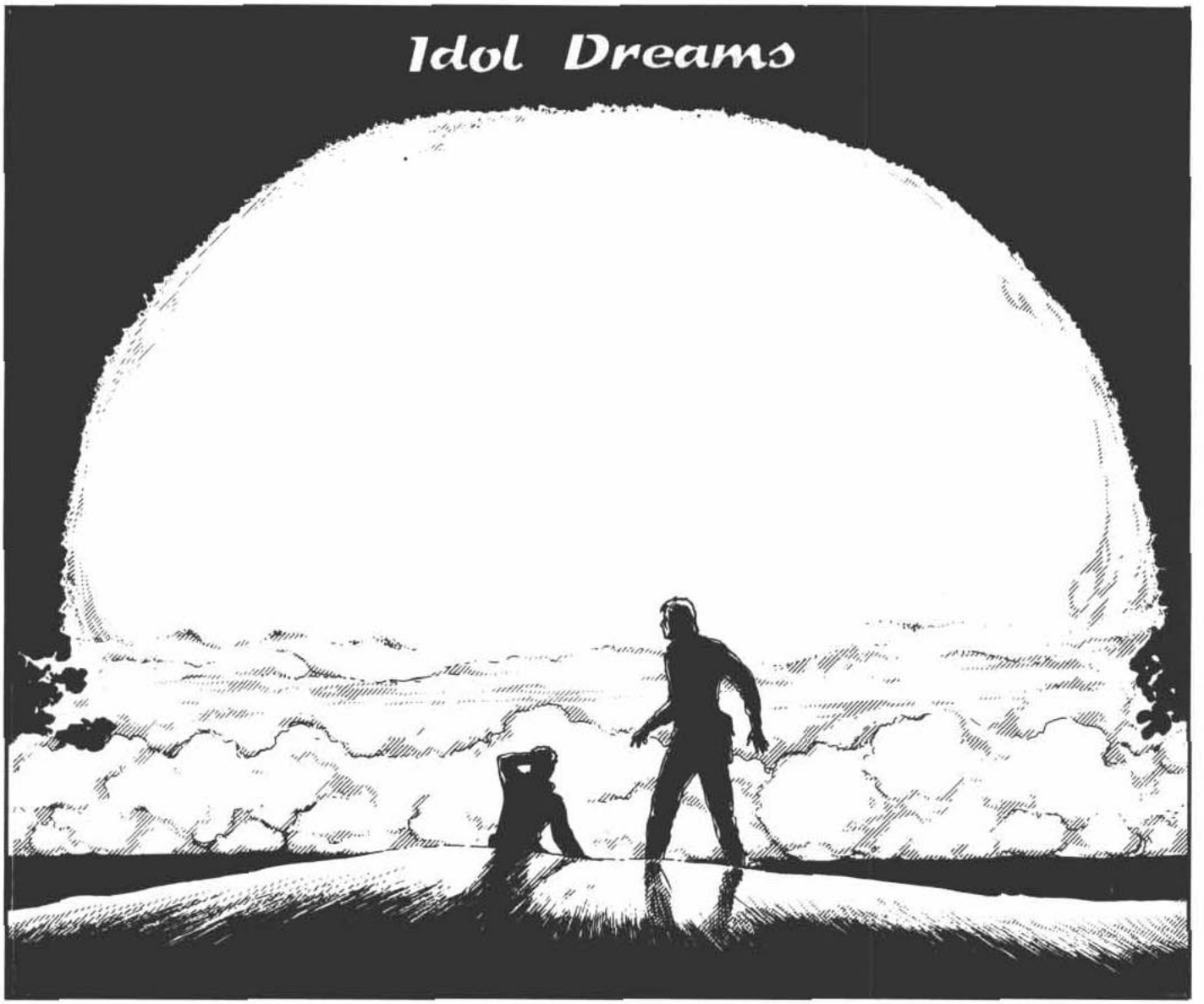
In addition to payment from RCES, the referee should award experience points to the players. This is a very long adventure, covering many adventure sessions, and so the PCs will probably have built up considerable experience along the way. Award points according to actions attempted, even if they fail (sometimes you learn more from failure than success), and be sure to reward outstanding roleplaying.

For Reference Only

The following are the number/letter correspondences in the code:

A-28 B-29 C-20 D-36 E-19 F-37 G-38 H-17 I/J-26 K-39 L-30 M-46 N-47 O-18 P-16 Q-47 R-48 S-49 T-40 U-56 V-57 W-58 X-27 Y-59 Z-50

Idol Dreams



"It was not in the lives of your fathers, nor even in the lives of your grandfathers, but there was once a time, many years ago, when the heavens were ablaze with war. Men had journeyed throughout God's universe, and in their arrogance, they came to believe that the stars belonged to them. Their greed was too much even to allow them to share that which they falsely claimed, and so they fought. Their leaders turned their machines upon one another and stood back to enjoy the slaughter.

"The corruption had not escaped our world. Here, too, the corrupt and immoral ruled, concealing their hypocrisy behind a facade of piety. They followed the leaders who had engulfed the stars in war, and they were repaid for their loyalty when their masters engulfed Navar in the Time of Fire. Untold numbers died at the hands of the so-called Emperor. God was enraged by these vicious animals who claimed to be men. It decided that the time had come for them to be punished. Their machines turned upon them. The empires that man had built among the stars were destroyed by blood and fire.

"Even so, It saw a special piety in some of the people of Navar who had held to the true faith. Once Its righteous fury had cleansed the universe of the unrighteous, God appeared to the First Technician. In return for her worship, God allowed Its machines to work once again. The First Technician went forth into the world to spread the word among the people. One by one, they saw the truth of her words and became her disciples.

"Even today, God continues to protect Its followers. We have never suffered drought, fire, or plague. In battle, God sustains our warriors and calls fire from Heaven upon our enemies. We, and we alone, have been taught the rites that will keep machines alive.

"As long as we hold to the Compact, It will care for us. As long as we hold to the Compact, there shall never be another Time of Fire."

Referee's Background

"Idol Dreams" is intended as an alternate beginning to a **Traveller: The New Era** campaign. Not all players may wish to begin with advanced technical training, and instead may wish to "discover" the technological marvels of the universe from the comparatively innocent perspective of a native of the Wilds. This approach certainly has many interesting roleplaying possibilities, and it is very easy to begin one group of players with this adventure and then have them encounter another group of players who have taken a more traditional (i.e., Star Viking) character development path.

As such, characters should be created specifically for this adventure. This adventure is best suited to a group consisting of approximately four to six barbarian characters. However, after character generation is complete, the referee should make a limited skill reward to each character representing "religious" training. One of the characters should be a Navaran priest, with access to Electronics and Ship's Engineering. Other characters should have limited skill levels in Computer (the tribe has access to a few terminals linked to "God" that still work), Mechanic (they remember many of the necessary principles), Energy Weapon (again, they still have some), and Interface/Grav (one functioning grav vehicle remains) on a case-by-case basis. It is strongly recommended that the party include at least one member with each of these skills.

"Idol Dreams" is set on the planet Navar (Diaspora 1804 E547770-3). The italicized introductory section on the previous page is the recent history of the planet as the player characters know it. The reality is, of course, somewhat different. In the time of the Third Imperium, Navar was under the control of a religious dictatorship. The rulers of Navar carefully controlled the spread of scientific knowledge on their world to keep the people in line. They wanted people to believe that technology was not an invention of intelligent beings, but rather a miracle provided by their gods. Of course, many people on the planet figured out the truth, but the secret police kept that knowledge from being discussed in public.

When the Final War broke out, Navar supported Lucan; the High Clerics didn't care what the Emperor was like, so long as he left them alone. Their hopes for a quick return to normalcy were soon shattered, as war engulfed Diaspora. Taxes went sky-high, and the planet's economy was badly hurt by the economic troubles of the Final War. Finally, after years of fighting, Lucan pulled out of Diaspora, leaving a shattered sector with no defenses and no economy. As the fleets left, Navar switched sides a little too quickly, and one of Lucan's naval commanders decided to ensure that Navar's industrial capabilities would not be used against her master. She ordered her ships to launch a nuclear strike on several of Navar's largest factories. Millions died in the brief assault.

Navar is a world in the Sufren subsector of Diaspora Sector. Its pre-Collapse and post-Collapse UWP values are presented below.

Pre-Collapse C5479DG-B
Post-Collapse X54767B-6

Even before Virus struck, Navar was in sorry shape. Its largest industrial facilities were now radioactive ruins. The economy had been shattered. Navar's tech level settled into a steady decline. Worse yet, as far as the dictators were concerned, much of the planet was in a state of anarchy. Famine and disease were widespread. The only thing that the planet's leaders had to be grateful for was that they were safe aboard Navar's sole orbital colony.

That orbital colony, known as Heaven, was typical of such colonies throughout the Imperium. Heaven was designed as a series of rings located along a central axis. It was built to house 10,000 people in comfort, though today, in 1200, it holds barely a tenth of that. Heaven provides a standard one gravity throughout by rotating around its central axis.

Seventy years ago, Virus was brought to the planet when the scout ship *Excalibur* docked with the orbiting space station, known as Heaven. Virus had already taken control of *Excalibur*, although it had not disposed of the crew. By the time it docked at Heaven its transponder signal had already infected the orbital control systems, and downlink transmissions had spread it into the world's data nets. It spread like wildfire through Navar's computer systems, finally completing the destruction of the planet's technological base.

However, the Virus infecting *Excalibur* was of an unusual strain, and although its infectious offspring which took over the main world data net were homicidal and self-destructive, the source strain on *Excalibur* was neither of these things.

Excalibur came to believe that it was a god. Once it interfaced with the computers aboard Heaven, it had the power to back up its claims of godhood, at least as far as the scientifically ignorant Navarans were concerned. The religious dictatorship that had ruled the planet had always portrayed technology as a miracle that proved the power of their God, and so they had no difficulty accepting that God had appeared in the flesh, so to speak. It took control of the planetary defense systems and the weather control network and used them to help its followers on Navar.

On Heaven, matters were considerably more complicated. Heaven had been the central control station for the planet, and its inhabitants were the elite of the world. Whether or not they were sincere in their religious beliefs, they were far more sophisticated about the nature and functioning of technology and not as easily cowed by its use. Even so, they were surprised when their equipment stopped obeying them. Many of Heaven's inhabitants retreated into superstition, accepting that God had come to save Its followers. The people who refused to believe were killed by the station itself in a brief flurry of violence.

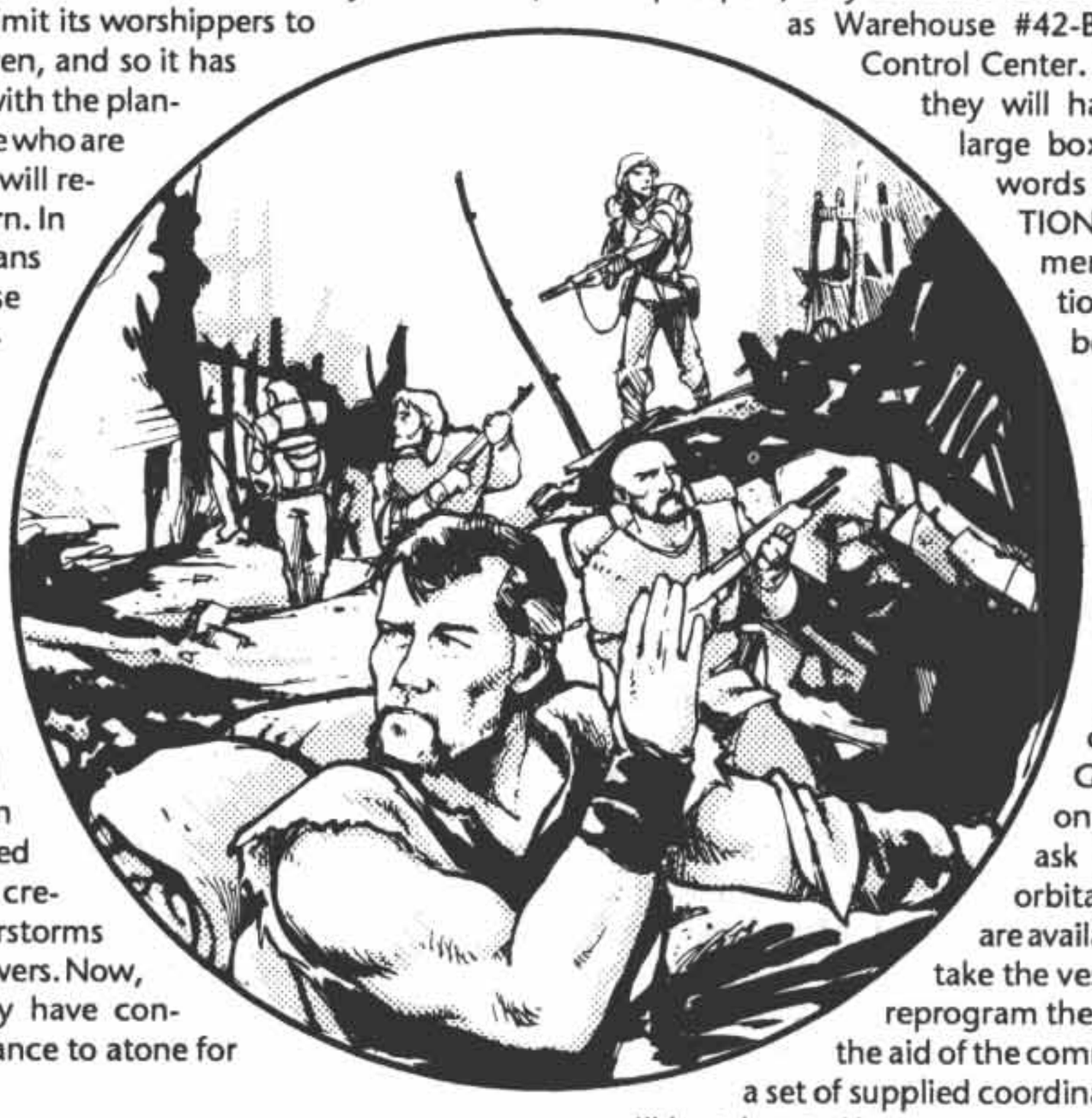
In the intervening years, problems have continued to arise. A continuing campaign of sabotage by rebels who only pretended to believe in the new God has caused breakdowns throughout the station. Spare parts have grown scarce aboard Heaven. A few areas of the station have suffered from hull breaches. Other areas have lost lighting, heat, and power. *Excalibur* has been forced to

cannibalize parts from unused portions of the station to keep the lower levels in complete working order. Within the last decade, the rebels have grown bolder. Monitoring systems have been shut down in more than half of Heaven. The vacuum seals, which once allowed *Excalibur* to selectively depressurize problem areas, have been disconnected from central control or disabled altogether.

Meanwhile, society on Navar itself has continued to decline. Most Navarans died in the chaos that engulfed the world in the aftermath of Hard Times and Virus. The survivors reorganized their society along tribal lines. Most left the cities and took up an agricultural way of life. Some urban gangs still exist, however, living off the goods still left in the cities and trading for their needs.

A few tribes on Navar have been contacted by God. It is hardly content to limit its worshippers to the inhabitants of Heaven, and so it has tried to communicate with the planetary inhabitants. People who are willing to worship God will receive its blessing in return. In practical terms, that means that God provides these tribes, who call themselves the Chosen, with the knowledge to use and repair electronics and machines, as well as manipulating the old weather control network on their behalf.

With no source of spare parts available in orbit, God has decided to turn to its people on Navar. It reprogrammed the weather network to create a series of thunderstorms over the lands of its followers. Now, two months later, they have contacted It to ask for a chance to atone for their sins.



Summons

As the adventure opens, the characters are summoned to a tribal council. The last few months have been hard on their people. The weather, which has been calm and predictable for all of their lives, has been harsh and unforgiving. It has become increasingly clear that somebody must have sinned grievously against God, but no culprit has yet been found. In desperation, the chief technician, Delenn Furlon, decided to use the Holy Lascom to speak directly with God. Most of the village waited outside his hut to hear the reply, but the chief technician refused to tell them what It had to say. Instead, he called a council of the Elders, who have been meeting for the last three hours.

When the PCs finally assemble in the council hut, Delenn tells them that the village has failed in its duty to God. They had continued to perform the rites of maintenance on the satellite uplink correctly, but many were lacking in true devotion, taking God's generosity for granted. To redeem themselves, the tribe must send a delegation to the nearest city from the Old Times, known as Ashugar, where they are to collect machines that will be sacrificed to God. Then, if they complete this task and are found worthy, they will be allowed to take a shuttle to Heaven!

The PCs have been selected by the Elders to complete this holy task. Once they accept, Delenn explains the details. They must journey through Ashugar and make their way to the old spaceport. Once they reach the spaceport, they will have to locate two places, known as Warehouse #42-B and the Spaceport Control Center. In Warehouse #42-B, they will have to locate several large boxes marked with the words "CARGO DESIGNATION 285455-7A: Replacement Parts/Orbital Station." These parts are to be the sacrifice.

Once they have the boxes, they must find the Control Center. There they will have to patch a communication uplink to ("perform the Holy Rite of Computer Repair upon") the computers, allowing God to bring them back on line. Then, they are to ask it what vessels with orbital capability or better are available. They should then take the vessel in best repair and reprogram the autopilot (again with the aid of the comm uplink to God) with a set of supplied coordinates. From there, they will be taken to Heaven.

Delenn then asks the characters if they have any questions. He will do his best to answer them, but he really doesn't know any more than the above. Once the questions are over, he will give the characters a week's supply of food, a set of electronics tools, a hand computer, a radio uplink communicator, some assorted trade goods, and two less plasma rifles than there are party members, each with 3-60 (3D20) shots. He then wishes them well and says good-bye.

Journey to the Ruins

The trip to Ashugar will take about two days. The terrain around the city is reasonably pleasant. Most of the limited plant life consists of small shrubs. There is no reason for the



Atheldan Cohlis

Experienced NPC

Combat Assets: *Armed Martial Arts*, Archery

Other Assets: Observation 11, Survival 11, Bargain 7, Electronics 6, Intrusion 7

Motivation:

Diamond 4: Atheldan has to put wealth above everything else. The trasher life-style doesn't allow for a great deal of idle fun. If he wants to eat, he has to work.

Heart Jack: Once his survival needs are met, Atheldan devotes his remaining spare time to the acquisition of knowledge. He has become fascinated by the achievements of the pre-Final War era and desires to learn anything possible about those times.

PCs to expect any real trouble until they reach the city's outskirts, and, unless the referee wants to add any encounters, they won't.

Ashugar has largely been abandoned since the Time of Fire. From a distance, the blasted stumps of former skyscrapers peek above the horizon. As the characters come closer, they will see that their first impressions are more or less accurate. Ashugar is a ruin. The effects of Lucan's nuclear strike are still visible and obvious. Few buildings more than five stories are still standing. The many structures that were taller than this were toppled in the blast, leaving wreckage scattered everywhere.

Ashugar is a huge and decaying reminder of the ancient days. It is impossible for anybody on Navar to look at the huge expanses of this ancient city and not feel a certain sense of awe. Even after 70 years of neglect, the buildings that survived the nuclear devastation inflicted on the world remain almost perfectly intact. The materials used in their construction are typically too strong to be worn down by the brief time that has elapsed since the fall of civilization.

However, Ashugar is equally a reminder of the chaos and bloodshed of the Old Times. The people who died in the nuclear fireball, or who were killed in the rioting and plagues that followed, were typically left in the streets to rot. The more gruesome consequences of this ended decades ago, but Ashugar still looks like nothing more than a giant graveyard. That, in fact, is exactly what Ashugar has become: a graveyard for a now-dead civilization.

Outside the city is a small community of "trashers," people who make their living by exploring Ashugar and raiding the ruins for ancient technology. They then trade the scavenged parts for food from the tribes who live in the area around the city. Most tribes are unwilling to enter the city, because of the "curse" that is said to haunt the ruins. (In fact, this curse is a dimly remembered account of the consequences of radiation sickness and the various plagues that affected the inhabitants. These are no longer genuine threats, since the plagues have long since died out and the radiation has declined to the point where it takes years or decades to be harmful, even in the old blast site). The Chosen are aware that the ruins of Ashugar are no longer especially dangerous, but they are still reluctant to enter the city if it can be avoided.

Given the potential danger and the sheer size of Ashugar, the PCs would probably be well advised to hire a guide to take them to the old spaceport. Fortunately, Delenn supplied them with something to trade.

The trasher bazaar lies outside the city itself. Most of the trashers actually live in various houses scattered around Ashugar, but they need a place outside the city to act as a trading center with the tribes of the region. The bazaar is a makeshift and decrepit place, where trashers (mostly women and children) wait for somebody interested in buying from them. There are people from three or four other tribes in the bazaar today, all of whom will regard the PCs with a sort of nervous respect. Most people in the area have heard legends about the wrath of God made manifest on those who dare to attack the Chosen, and although God rarely punishes people who attack individual Chosen or small groups, they are nevertheless reluctant to take the risk.

The characters will have a hard time finding a guide willing to travel to the spaceport. Ashugar Down is all the way across the city, and few of the trashers are willing to go that far. Also, many of them are reluctant to take people into Ashugar because they are afraid that anybody they help will learn about the areas they raid for their goods. However, the party will eventually be directed toward one man, who, they are told, is "just crazy" enough to help. His name is Atheldan Cohlis.

Into the Wreckage

Atheldan isn't in the bazaar at the moment. However, if the characters wait, they will see a man coming out of the city and heading for the bazaar around sunset, carrying a sack slung over his back. He is in his mid-twenties, but looks about two decades older than that. This is Atheldan Cohlis.

Atheldan initially gives the PCs something of a cold shoulder, telling them grumpily to "come back tomorrow." However, if they persist, he will begin to show some signs of interest. He will want to know why they have to go to the spaceport before he will agree to take them. If the PCs aren't forthcoming, Atheldan will agree to the task, but he will demand considerably more than the trade goods with which the party has been provided. If they tell the truth, he will become considerably more animated, cheerfully agreeing to accept the trade goods the party offers in return for his help. Atheldan is fascinated by the PCs' quest, and he wants to see how it will turn out. In any case, he will suggest that the characters wait for the morning before they set out, explaining that the journey will take about two days to complete. When morning comes, he will rise at the crack of dawn, eager to set off.

About halfway through the first day, Atheldan asks to talk to the party for a moment. He warns the characters that they are now heading into a dangerous area of the city. The gangs here are generally not willing to cooperate with trashers, or anybody else, for that matter. Almost all are murderous, and

many are believed to be cannibals. Perhaps the fact that this area is the heart of the "curse" that once haunted the city has something to do with it.

About an hour later, as the party heads down a major thoroughfare, have them make a series of Difficult: Observation checks. Anybody who makes the roll notices a number of people moving to surround them. If a firefight doesn't immediately break out, the gang will surround them before demanding that they surrender.

Should the PCs surrender, unlikely though that may be, the gang will take all of their stuff, beat them up, and then let them go. If, as seems vastly more probable, they decide to fight, the combat is likely to degenerate into a standoff. There are 20 attackers, 15 of whom are Novice NPCs, while five are Veteran. All of them are under partial cover with an armor value of 6. If the PCs look for cover, they can easily find similar protection.

Assuming that the PCs do hide, casualties will likely be few and far between. Allow the shooting to continue for about five rounds. Then, ask the players to make Formidable: Observation checks. Decrease the difficulty by one level each turn until it reaches Easy. Any characters who make the check will hear a low-pitched humming sound that will gradually increase in intensity.

Four turns after the noise begins (i.e., when success at the Observation task is automatic), a grav speeder floats into view above the street. Three gang members (all Veteran NPCs) inside the speeder lean into view and open fire with auto rifles. They get two rounds to fire and be fired upon before the PCs' radio communicator activates. A voice which all of the party will recognize as God's will boom "ALL USE OF GRAV VEHICLES BY UNBELIEVERS IS FORBIDDEN!" With a flash of light, the speeder will explode, raining debris across the street. The remaining gang members will decide to exercise the better part of valor and leave.

The purpose of this encounter is to give the characters a sense of the power and majesty of their God. Play up the mysterious aspects of the destruction of the infidels. If they try to get in touch with God for an explanation, no answer will be forthcoming. Though the characters will likely never know this, God has been monitoring their progress. As far as It was concerned, the gang conflict was part of the test the characters had to undergo to prove their worthiness and determination. Only when the gang had the nerve to use a forbidden device right under its nose did it decide to intervene, by activating one of Navar's planetary meson accelerators and firing it on very low power at the speeder. God will not intervene in any other encounter before the party reaches Heaven.

Ashugar Spaceport

After a day and a half more of travel, the characters will finally reach the outskirts of what was once Navar's main spaceport. After 70 years of neglect, the port has declined a great deal. Litter and potholes cover the former landing strips. Several of the port buildings have collapsed. Many others have large holes in the rooftops or the walls. Ahead of them lies the port warehouses, and beyond those, at the shore of the Crystal Sea, the place known only as the Control Center.

Ashugar Spaceport is almost entirely deserted. Most of the gangs that still inhabit Navar's cities prefer to live in the relatively greater comfort of the former residential and commercial neighborhoods. Atheldan tells the PCs that several gangs still remain in the area, however. He has only had personal contact with one of them, the Stevdors, who are led by a woman named Leeta. Atheldan knows that they control the warehouse that the party is looking for, but he's never heard of any "Control Center."

The Stevdors are the mortal enemies of the Trolers, whose headquarters are in the spaceport Control Center. If the PCs want to complete their mission, they are going to have to deal with both gangs. Years of fighting have made both groups suspicious and untrusting of strangers, but if the characters play their cards right, the Stevdors may be willing to cooperate. (It would take a lot to convince the Trolers to give the PCs full access to the computers in the center. All of their plasma rifles, plus the assassination of Leeta, might do it. If the PCs will agree to



Leeta
Leader of the Stevdors

Veteran NPC

Combat Assets: *Armed Martial Arts*, Unarmed Martial Arts

Other Assets: Streetwise 11, Ground Tactics 12, Leadership 9, Interrogation 9

Motivation:

Spade 9: Leeta loves the exercise of power. She isn't necessarily cruel, but she enjoys the ability to control others' lives and finds great pleasure defeating her enemies.

Club 3: Leeta has seen and used a great deal of violence in her life, far too much to be intimidated by it. She gets no particular enjoyment out of it, but has no problem with fighting and killing if it's the most efficient way of achieving her goals.



Gari
Leader of the Trolers

Veteran NPC

Combat Assets: *Slug Weapon*, Unarmed Martial Arts, *Armed Martial Arts*

Other Assets: Streetwise 12, Ground Tactics 8, Survival 9, Leadership 10

Motivation:

Spade King: Gari has no loyalties except to himself. He would happily sell out his entire gang if it was to his advantage to do so. Perhaps fortunately for them, the leader of the Trolers has no reason to betray his followers.

Club Jack: Gari has a very short temper whenever he doesn't get his way. If that happens, he tends to hurt people. Among the Trolers, this actually helps keep the gang in line.



this, fine, but they'll have an easier time dealing with the Stevdors.)

If the players state that their characters are being cautious as they approach Warehouse #42-B, give them an Average: Observation check to notice the sentries that the gang has placed for just this sort of emergency. If they aren't cautious, secretly make a Formidable check. If they succeed, they see the sentries first. Otherwise, they only notice as some of the gang (one Experienced, three Veteran, and one Novice) surround them. In either case, their options are similar, although the circumstances differ. They can either fight or talk.

Killing the sentries, if it is done quietly, will not raise an alarm. Warehouse #42-B is uninhabited, and the parts that they have been sent to retrieve are still there, along with a supply of computer parts that will reduce the task to repair the Control Center computers by one difficulty level. However, getting the parts, which weigh about a ton, onto the shuttle to take to Heaven while fighting off the Stevdors (who will certainly notice all this cargo being loaded on a strange vehicle) will be quite a challenge. It will still be possible to negotiate with Leeta at this time, but she will suspect the party of killing her sentries, which means that she'll want at least two plasma rifles.

In this case, talking is the smart alternative. Atheldan is familiar with one of the sentries, a man named Enri. After a few minutes of talking, he will be able to convince Enri to take the party to Leeta. She is with most of the Stevdors (about 30 of them, most of whom are Veterans) in the gang's HQ, the former Quarantine depot.

When the party is ushered into Leeta's presence, she will initially be very suspicious. Leeta will be completely unimpressed by any claims the party makes to be on a holy mission. What does impress her are their plasma rifles, and she will offer to turn over the parts they want in return for two of them, though she will settle for one. If the party inquires into alternate possibilities, she will admit that she would appreciate it if they could kill Gari, the leader of the Trolers, who lives in Ashugar Down's Control Center. Since the party has to take it over anyway, they have nothing to lose by doing this instead.

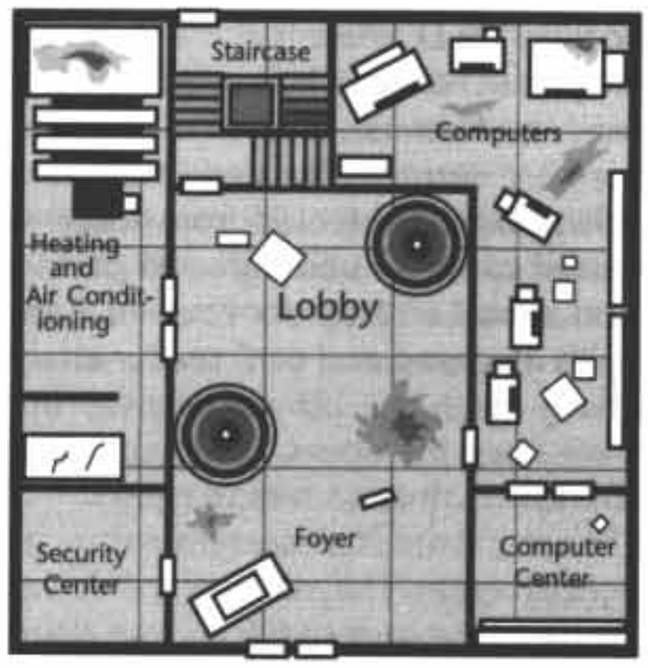
Of course, if the party is foolish enough to mention that they need to take over the center to Leeta before she gets around to making this offer, the pattern of negotiations will be somewhat different. In that case, Leeta will only bargain for the plasma rifles, trusting that she will be able to convince the PCs that they have to kill Gari to complete their mission. Since this is pretty much true, it will probably work.

Leeta has never been inside the center, so she cannot provide the party with an internal layout. However, she does know that most of the Trolers live scattered around the Admin area to the spaceport, and only about 10 will be with Gari at any time. If the player characters are performing this mission as payment for the cargo, Leeta will demand that at least two of the people in the center be held prisoner until the party leaves. One of them should be released, to tell the Trolers that Gari wasn't killed by the Stevdors. (That might unite the Trolers behind a single leader with the aim of getting revenge on the Stevdors, and Leeta's gang is the weaker of the two). The other prisoner, preferably Gari or his lieutenant, is to be turned over to the Stevdors for "questioning." Leeta will describe Gari and his lieutenants for the PCs. If the player characters are doing this because they have to, Leeta will try to get them to do this anyway, offering additional parts as compensation.

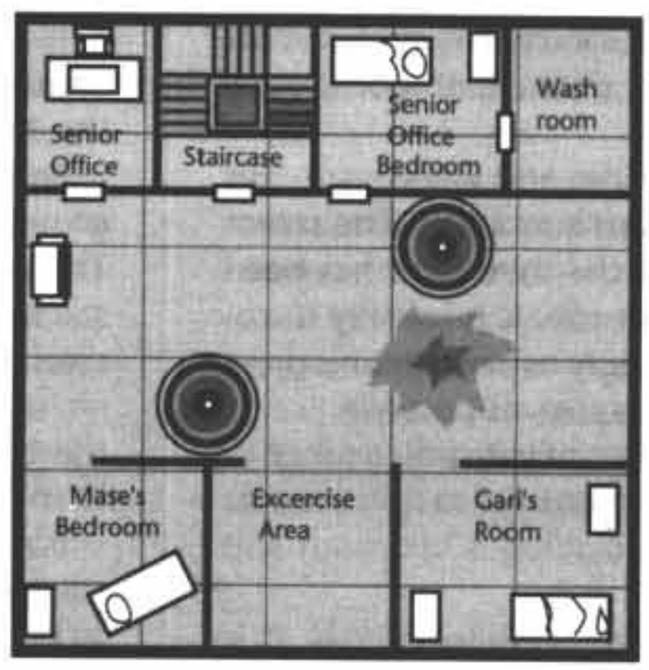
Taking the Control Center

The Control Center is a low, five-story building situated near the center of Ashugar Spaceport. The most distinctive

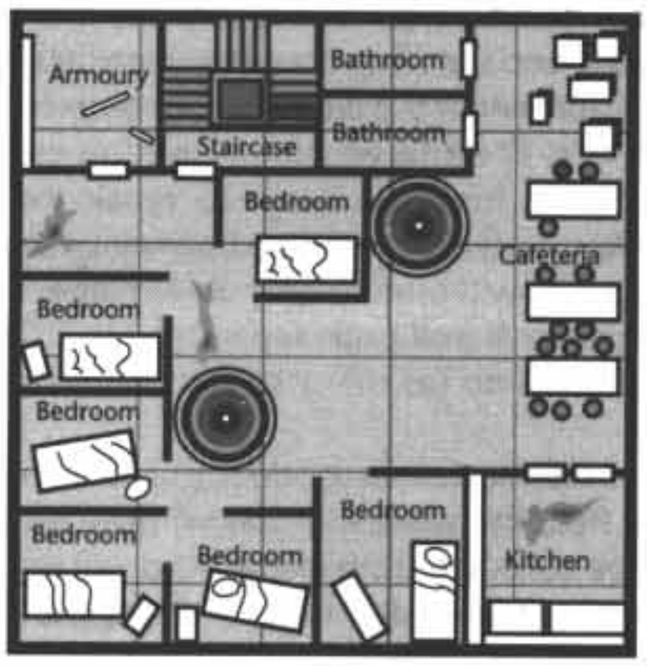
Ground Floor



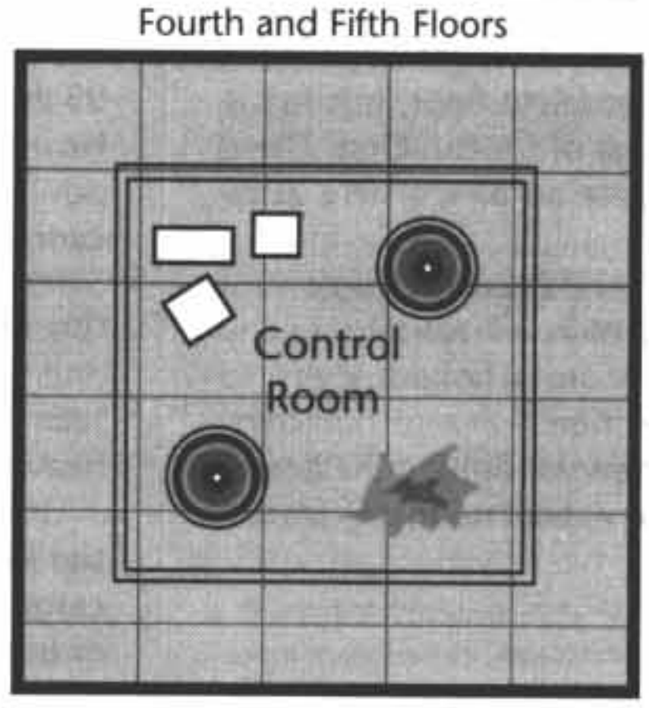
Third Floor

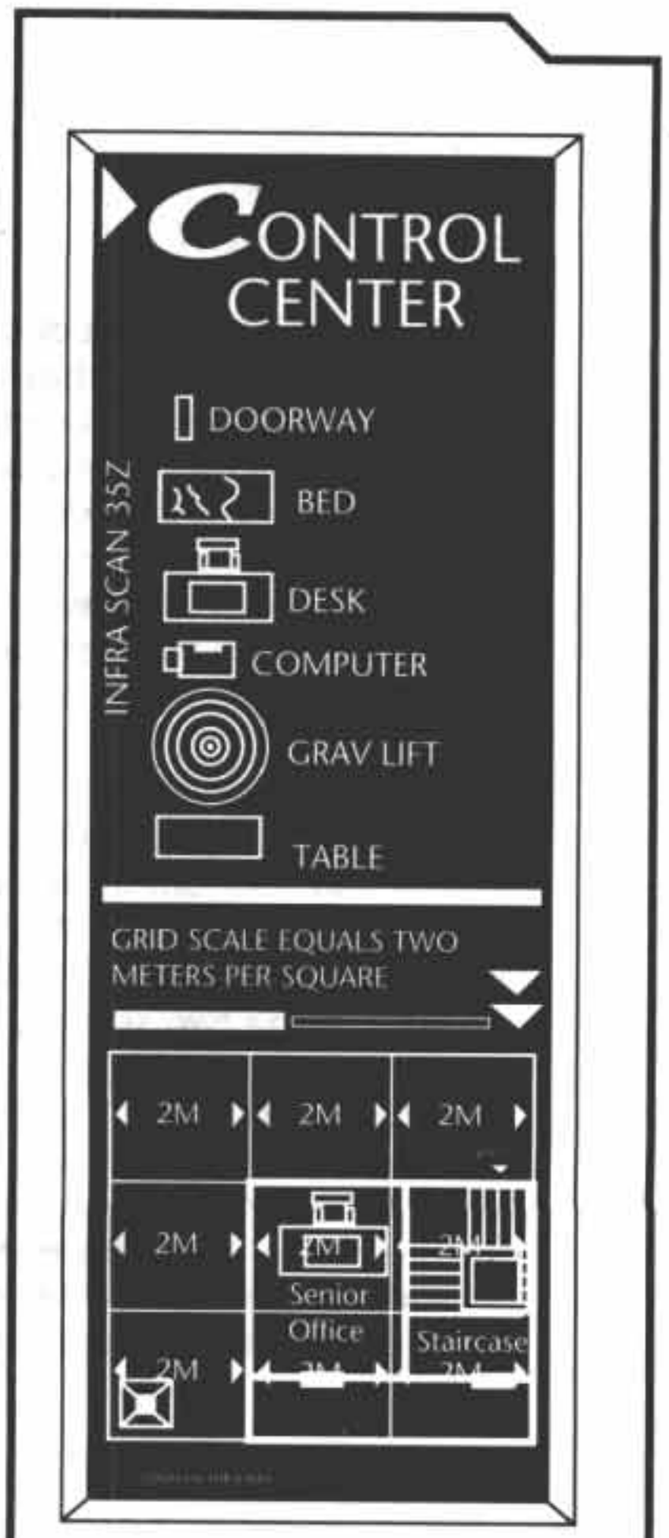


Second Floor



Fourth and Fifth Floors





feature of the building's construction is the walls of the upper two stories, which are made from a clear, tough synthetic material, affording an excellent view of the area outside. This means that the characters will certainly be spotted if they attempt to approach the site by day. At night, they will have to make a Difficult: Stealth check to slip past the sentries.

Ground Floor: The first level of the building used to be the equipment level, providing room for heating, air conditioning, and computing. The main entrance leads into the foyer. This room is almost entirely empty, with the exception of a desk near the west side of the room, once occupied by a security guard. One sentry, a Veteran NPC, will be on watch here at all times. Directly north of this area is the lobby, which is stripped bare. The northeast and southwest corners of the lobby hold grav lifts, now no longer working. However, it is possible to climb up to the next level using handholds thoughtfully provided along the walls.

The security center used to control monitoring devices in this area of the port. It is empty now, the parts long since scavenged and sold. The heating and air-conditioning room is filled with old equipment, now mostly broken. One generator has been kept in working order to provide limited power to the building. Its operator and mechanic, Mayhew, sleeps next to it. Next to that is the staircase and the computer center. Several of the computers in here have been vandalized or stripped, but the data storage wafers remain present and intact.

Second Floor: This floor provides living space for the five other Trolers, all Veteran NPCs, who remain in the building. Only three of them will be here at any given time; the others will be standing guard on the fifth floor. Each has used portable dividers to create individual bedrooms. The large central space has become a common area, used for gambling, arguments, etc. The armory contains most of their formidable weapons collection, which contains innumerable edged weaponry, as well as three auto pistols, one

decrepit laser carbine with five shots, an automatic grenade launcher with no ammunition, and a submachine-gun. The cafeteria looks much like it did when the Control Center was used for its original purpose, with ugly orange tables and chairs bolted to the floor. It is now used to store food and water for the Trolers. The kitchen is also used for its original purpose. Finally, there are the bathrooms, long dysfunctional.

Third Floor: Once a set of offices and workspace, this floor is now primarily used by Gari and Mase. The senior office in the northern portion of the third floor has been appropriated by Gari for his own use. It is lavishly decorated, even today, since Gari strongly encourages his gang members to find him as many luxuries as possible.

Mase occupies the less lavish, less private office space to the south. Portable dividers have been used to split the area up into a number of sections, including a bedroom and exercise area.

Fourth Floor: This floor is normally unoccupied. It is completely filled by the various consoles that remain from when it was the control room for Ashugar Spaceport. Finally, the fifth floor is not a complete floor, but just a balcony that runs around the edge of the building. There will normally be two sentries, Veteran NPCs, here at all times.

The characters are free to plan their attack on the control center however they wish. The Trolers will respond to any intrusion in an unsophisticated but brutal fashion, trying to overwhelm the characters with sheer force of numbers. Everybody except Gari and Mayhew will fight to the death, because they know that they can expect no mercy from a rival gang.

Chariots of the Gods

Once Gari and his followers are dead and/or captured, the PCs will have a chance to examine the center. It is not in good shape. Several of the windows are missing. Seventy years of neglect and occasional vandalism have taken a punishing toll. Even so, they built well in the old days. It is just barely possible, by using the radio uplink, to get the computers operating again.

If there is a technician in the party, he can make a Formidable: Electronics task to get the main computer in working order, or a Difficult roll to hook the hand computer to the old databanks. Once successful, entering the information request according to God's instructions will produce the following display:



The existence of a starfaring vessel in the Navar system should get the characters' attention. After all, they have heard tales all of their lives about the days when men travelled among the stars, and the brutal and bloody war that brought God's wrath down upon humanity. The name and location of *Excalibur* is also a major clue that will come into play later. For now, however, the party must find the *Yonge* and the *Bluenose*.

Both vessels are currently located inside sealed underground docking bays, protected from the environment. The pre-stressed concrete underground passageways are still intact and almost entirely unoccupied. Each ends in a steel door with a keypad and card reader attached. If the characters have taken the I.D. cards away from Gari or Mase, they will open the doors. Otherwise, they will have to make a Difficult: Intrusion task to get in.

Both the *Yonge* and the *Bluenose* remain intact. However, there is a slight problem. The machinery that was designed to lift the *Yonge* to the surface has broken down, and the characters have no way to fix it. If they try, require a Formidable: Mechanic roll. The machinery in Docking Bay 93 does work, and the *Bluenose* can be readied for launch. However, a number of the *Bluenose*'s systems have broken down with age. The only way to resolve this problem is to cannibalize parts from the *Yonge* to repair the *Bluenose*. Since the *Bluenose*'s diagnostic and power systems are still functioning, this will require only an Average: Electronics and Mechanic task (roll both separately) to fix, but it will take 1D6 days to do (as many of the parts are bulky and heavy).

Unless the referee desires to add some additional difficulties for the PCs, the work will pass without incident. The cargo can be collected from Leeta, who will keep her end of the bargain. Finally, after days of effort, the PCs will be on the verge of completing their mission. All they have to do now is hook the hand computer up to the *Bluenose*, and they will begin their voyage to Heaven.

At this point, Atheldan will bid the characters a fond farewell.

Even if he was willing to trust the capabilities of the *Bluenose*, he is aware that the PCs' god is unlikely to want some heathen heretic to come along. However, he plans to stay in the area to see the *Bluenose* launch, and he asks the characters to pay him a visit if they ever make it back home. As the *Bluenose* flies off into the sky, the characters will be able to spot Atheldan about 100 meters away, waving goodbye.

Ascension

The *Bluenose*'s flight is smooth and untroubled. However, the characters should find it stunning and awe-inspiring. Beneath them, the planet's surface drops away, almost magically, yet they feel no sense of motion. Finally, at the end of their journey, a star slowly expands until it resolves into a gleaming city. Based on everything the characters have been told, all the tales of their childhood, the city must be...Heaven.

Shortly before they dock, it will become apparent that

Heaven is somewhat in need of repairs and a new paint job. Though glorious in many ways, it looks more like a work of man than like paradise. Finally, the shuttle lands in one of the station's docking bays.

The docking bay has obviously been deserted for a long time.

There is no lighting other than the natural starlight passing through the transparisteel window in the docking bay door. Even with that limited illumination, it is clear that the bay has not been treated well. The floor is littered with paper, rags, and even a few broken electronic parts. Several access panels on the walls have been dented or removed.

Once the *Bluenose* has safely landed, the voice of God crackles over the radio. God tells the characters that they have done well. They are to remain with the shuttles and wait for Its Angels to arrive at the docking bay and inspect the sacrifice they have brought to see if it is worthy.

What the PCs do not know is that rebels have been monitoring the uplink transmissions and are also converging on the docking bay. They don't know what the PCs' mission is, but they reasoned that any shuttle flight from Navar after 70 years would be something that they were interested in.

After several minutes pass, have the players make a Difficult: Observation check to notice the rebels moving into position around the entrances and the air vents leading into the bay. If this check is failed, the rebels will not be noticed until they begin moving into the bay.

There are 20 rebels, 10 Veteran and 10 Experienced. Most are armed with hand weapons, but five of them have gauss rifles, and one is armed with a plasma rifle. The rebel with the plasma rifle, Adrew, will hang back with the leader, Jesca. Adrew will not participate in the battle, instead keeping an eye on the corridor. All of the other rebels will slowly approach the *Bluenose*. Any firing from the ship will cause the rebels to scatter for cover. They will then try to storm the shuttle. After several turns of combat, four Angels will intervene. Roll 1D20 once each turn, with the Angels arriving when you roll less than the current turn number. (They arrive on the third turn if a 1 or 2 is rolled, they arrive on the 18th turn if a 1 through 17 is rolled.)

If the PCs try to talk instead, Jesca will be willing to negotiate. She wants to know who the characters are and what they are doing on the station. Unless the PCs are able to concoct an extraordinarily plausible lie, she will order them to surrender. If they refuse, she will attempt to talk them into helping the rebels until she is convinced that they won't cooperate. In that case, she will order an attack. Once again, the Angels will intervene after three turns. If the party genuinely agrees to cooperate with the rebels, they will also be targets for the Angels. In this case, take the survivors directly to Common Sense, page 164.

Otherwise, the attack of the Angels will rout the rebels. The Angels are guard robots, built during the last days of the Old Imperium. Each Angel is armed with a stun pistol and a laser carbine, and is too heavily armored (armor value 4) to be seriously threatened by anything less that a plasma rifle. They move by means of grav lifters, and they are sapient, "children" of "God," infected with a less sophisticated form of Its Virus strain (due to their smaller memory capacities). Even with the weapons and armor available when these guardbots were designed, they were deadly. Compared to the resources of the rebels, the Angels are virtually invincible.

Within a round, the rebel attack is broken, with almost all of the remaining rebels dead, unconscious, or surrendered. Adrew is one of the few to escape, firing his plasma rifle at the lead Angel, which explodes in a shower of sparks. Five rebels will finally be taken prisoner, including Jesca. The others are Mazun, Wolfe, Sharik, and Zoe. All five are surly and uncooperative. In any case, the Angels will forbid any conversation.

Shortly after the rebels are defeated, a grav cargo transporter floats into the room. One of the Angels commands the PCs to load the sacrifice onto the transport and to open the case. The Angels, after examining the contents for a few minutes, declare the sacrifice worthy. The Angels then order the party to move their fallen comrade onto the transporter and then head out of the docking bay.



Mase
Gari's Lieutenant

Elite NPC

Combat Assets: Unarmed Martial Arts, *Armed Martial Arts*

Other Assets: Streetwise 8

Motivation:

Heart 7: Mase is absolutely loyal to his brother, Gari. He will obey him without question.

Club 7: Most of his life has been spent acting as Gari's chief enforcer. Violence comes easily to Mase, and it is a natural way of dealing with any problems that he may encounter.



Jesca Perez

Experienced NPC

Combat Assets: *Slug Weapon, Armed Melee Combat*

Other Assets: Ground Tactics 14, Observation 13, Leadership 10, Computer 7, Electronics 7, Stealth 10, Intrusion 10

Motivation:

Club Ace: Jesca has spent most of her life fighting God. In that time, she has enhanced a natural talent for tactics to the point where it sometimes seems almost unnatural. She makes one of her very rare blunders the first time the PCs encounter her, but she is almost never surprised or beaten.

Heart Ace: God's existence and nature offend Jesca's natural sense of justice. She firmly believes that God has suppressed all that is best in the human spirit, and she is prepared to give her life to free Heaven from Its control.



Adrew Makelise

Veteran NPC

Combat Assets: Unarmed Martial Arts, *Energy Weapon, Armed Martial Arts*

Other Assets: Stealth 8, Intrusion 7, Ground Tactics 9

Motivation:

Club 9: Adrew is something of a brawler, a man who enjoys the adrenaline rush that accompanies a dangerous situation. He will always volunteer for the most dangerous tasks, because the risk is accompanied by a profound thrill.

Heart 6: This unhealthy tendency is often reinforced by his strong loyalty to the rebel community. Adrew wants to protect his friends and family, and he will take almost any risk to do so. Even so, he has enough good sense to retreat from a hopeless situation.



Julan

Chief Technician of the Chosen

Novice NPC

Combat Assets: None

Other Assets: Instruction 13, Leadership 12, Computer 12, Electronics 9, Interrogation 12, Persuasion 11, Mechanic 8

Motivation:

Heart 7: As Chief Technician of the Chosen, Julan is absolutely and unquestioningly loyal to the wishes of God. God's will is his own, and nothing would ever persuade him differently.

Spade Queen: In this regard, Julan has no moral principles of his own. Whatever God says is right, is right. Period. He doesn't do this for his own purposes but because he is totally faithful to his God.

Welcome to Village Number Six

The cargo float travels for quite some time along deserted, often unlit corridors. The Angels are uncommunicative and continue to forbid any conversation with the rebels. The rebels are forced to march, hands on head, in front of the transport. One Angel remains behind the transport, one stays between the transport and the rebels, and one stays 25 meters ahead of the group, watching for any attack.

Suddenly, Mazun decides to make a break for it. He springs out of line and rushes down a side corridor. Before he can get more than 10 meters away, however, one of the Angels vaporizes him. The rebels put up no more resistance.

After a few more minutes, the passage opens up into a much wider area. The characters are unable to see the far end of the open space, because it curves up beyond the "horizon." This appears to be a hydroponics garden. Toward the opposite end of this section is what appears to be a small village.

This village serves as the closest thing God's followers in Heaven have to a capital, with approximately 300 inhabitants. Roughly 350 more people are scattered in small settlements in other areas of the station, occupying the reserve power station, air-circulation plants #2 and #5, and other critical subsystems.

The village is a very clean and orderly place. God monitors the area constantly, either through the cameras emplaced throughout this area of the ship or through the eyes of the Angels.

The farmers working in the "fields" stop and stare at the PCs as they work their way toward the town. Several of them drop to their knees and begin to pray. As they come closer to the village, the PCs will be able to see that there are well over 100 people in the central square, all genuflecting in the direction from which the party is approaching.

When the Angels reach the center of the square, one of them moves to float above Julan, the Chief Technician of Heaven's Chosen. The Angel tells him that the PCs are representatives from the planet below, sent by the Chosen of the World to atone for their sins. Their sacrifice has pleased God, and God will soon be testing the resolve of Heaven's Chosen in turn. If Julan's people do as well as the Chosen of the World, the rebels who have tormented the people of Heaven will finally be destroyed.

This pronouncement is met with a stunned silence by the Chosen. Suddenly, Jesca breaks the silence with a sarcastic laugh. She is able to point out that God has been trying and failing to destroy the rebels since her great-grandfather was born before one of the Angels stuns her with an electric shock. The Angel then orders Julan to hold the captured rebels while they are questioned. This will take a few days. Once the questioning is complete, they are to be cast into the outer void. The PCs are ordered to stay in the village.

Over the next couple of days, the PCs will have an opportunity to look around the village and get some idea of what life is like in Heaven. There is something indefineably odd about life here. The characters are used to the concept of a real deity who takes an active and unmistakable hand in daily life, but the inhabitants of Heaven have lived all their lives with an omnipresent, omniscient, interventionist, and intolerant God. It has become second nature for them to be absolutely obedient to authority, to not ask questions, and to suppress all curiosity. Nobody knows anything about the conditions of Heaven outside their area, why the station seems to be deteriorating, and especially nothing about *Excalibur*. In fact, most of the things that the PCs are likely to be curious about will be met with a blank stare and an admonition that "it is better not to ask such questions."

These encounters must be developed with great care. The characters can see that something is definitely being hidden aboard the station. Worse yet, nothing about Heaven matches the stories their tribe was told by God. God has lied to them and to their people. They should not yet be certain what the correct course of action is, but they must be seriously considering rebellion.

It will rapidly become clear to the village elders, and to God, that the PCs are a dangerous and disruptive influence. The theology taught to the PCs is inconsistent with facts that they have seen for themselves, and if the Chosen of Heaven become aware of this, they may begin to

question their faith. This clearly cannot be allowed. At the same time, the characters were publicly praised by one of the Angels only a few days ago and so cannot be punished without suggesting that God's judgement was flawed.

God will quickly decide that the best way to solve the problem is to quietly dispose of the characters. It has several people whom It trusts to do Its will without question, who serve it elsewhere in the station. God will send them, with the PCs, out on a mission against a nonexistent group of rebels, with secret orders to kill the party. Then, It will inform the Chosen that the mission was successful, but that the party heroically died in battle, martyrs to the True Faith.

Accordingly, Julan asks to speak to the characters after they have spent a short time in the village. He tells them that their service to God has been exemplary. However, a new service is now required. As they have seen, most of the Chosen in Heaven are farmers and townsfolk, not trained warriors like the characters. God wants them to work with some of Its other warriors to help clear out a rebel nest nearby.

Universe

For their mission, the characters are introduced to a group of seven Chosen who will accompany them on this mission. The leader of the expedition is a large, dangerous looking man named Corday Booth. Visible around Corday's neck, hanging from a chain, is a data wafer marked with God's holy symbol, an eight-legged animal and its rider, enclosed by a circle. Beneath that is written the single word: Excalibur. If asked about it, Corday will say that he found it some years ago, while exploring an abandoned area of Heaven. He will then change the subject, suggesting that it is time to leave.

In the interests of dealing with several problems at once, Julan has decided to send Jesca with the PCs. The story that he gives to them (and to the other rebel captives, which was the main reason for doing this), was that she has decided to cooperate with the Chosen and reveal the location of a rebel settlement. Julan hopes that this will convince one of the other rebels to break down and tell him something, since there is now no longer anything to lose. Jesca is, in some ways, a natural choice for this since her position of leadership makes a betrayal that much more demoralizing. Besides, he is well aware that Jesca would never tell him anything.

During a rest period, Jesca will manage to attract the attention of one of the PCs. When approached, she will insist, in a low whispers, that there is no rebel nest in this part of the station and that Julan knows this. The mission, she claims, is a fraud, and they are simply being taken out to be executed.

Booth notices the conversation and demands that Jesca be quiet, and insists that the PCs not talk to the prisoner. Shortly afterwards, he administers a strong sedative to Jesca, and she will be incoherent for some time to come, capable of walking in a trance-like state only if led.

The expedition will head toward the central section of Heaven, presenting the characters with their first experience with reduced gravity. Finally, they will reach the entrance into the central, zero-G section. Corday will tell the characters to enter, explaining that this is the fastest way of getting down to their destination. Once the player characters are inside, Corday will inform the characters that they have been sentenced to death by God for the crime of heresy. He and his six compatriots (one Elite, two Veteran, three Experienced) will then attack immediately. All are experienced in fighting in zero-G conditions. Corday and the Elite NPC have snub pistols; the others will fight with swords and blades. All will fight to the death and show no mercy.



Corday Booth

Elite NPC

Combat Assets: *Armed Martial Arts*, Unarmed Martial Arts, *Slug Weapon*, *Energy Weapon*

Other Assets: Observation 7, Interrogation 6, Stealth 9, Intrusion 9, Ground Tactics 7, Zero-G Environment 8

Motivation:

Spade 9: Corday's main objective in life is to gain power. Since power in Heaven comes only from God, he does whatever God tells him to do.

Club King: His role as God's personal enforcer and assassin is enhanced by his personal interest in such matters. He enjoys hurting other people, especially the sense of power he gets watching them squirm.

If the PCs have heeded Jesca's warning, they will not be caught by surprise and instead will be prepared for the treachery. Lacking surprise, Corday and his thugs will have difficulty prevailing given the primitive state of their weaponry. Once the assassins are defeated, the characters are stuck with a difficult choice. God has exploited them, lied to them, and finally attempted to murder them. Their only choice is to try and join the rebels. In this regard, their inadvertent rescue of Jesca will be a great help. Corday has an antidote to the sedative, which will allow them to bring her around. She will initially be somewhat distrustful of the PCs, but the evidence seems to be in their favor.

If the characters examine Corday's data wafer, they will learn that they have no real choice. It is a copy of the ship's log, dictated by the last captain of the *Excalibur*, Keeron Okonell. In full and convincing detail, Okonell explains the nature of the Virus that infected *Excalibur* and the events that followed on Heaven, as described in the "Referee's Background," above. Okonell's log demonstrates that God is nothing more than an insane computer. It cannot be allowed to inflict its delusions of grandeur on an innocent world any longer. The log will also be enough to gain Jesca's trust. God might be willing to kill some of Its followers to trick her, but It would never allow anything this blasphemous to be recorded.



Milthon Perez

Experienced NPC

Combat Assets: *Slug Weapon, Armed Martial Arts*

Other Assets: Leadership 13, Ground Tactics 13, Interrogation 12, Persuasion 12, Intrusion 8, Stealth 8, Electronics 11

Motivation:

Spade Ace: Milthon's undeniable personal charisma and intelligence placed him in a position of leadership early in his lifetime. He has managed to gain the loyalty of most of the rebel groups in Heaven and wield them into a coherent force. Unfortunately, that has not been enough to cope with God.

Heart Queen: Since the death of his wife, Jesca has been Milthon's greatest concern. He loves his daughter with all his heart, and while he would not neglect his responsibilities to the rebel community for her sake, he would do anything else he could to help her.

Common Sense

After following Jesca for a couple of hours, the characters will finally begin to notice some changes in the station environment. First, noises of distinctly human origin will occasionally be heard. The sounds are indistinct, but seem much like conversation, crying babies, etc.—the normal noises of human life.

This should encourage the characters to proceed with some caution. If they do so, whichever character is in the lead should make an Average: Observation check to become aware of the sentries posted in the main passageway before they become aware of him. Both sentries are unkempt, underfed, and dressed in a somewhat odd assortment of clothing. One, Andrei, is carrying a laser pistol. The other, Rohbayr, has an improvised crossbow. Their disheveled appearance and the fact that they are stationed here makes it evident that they are both rebels. (The Chosen have no need of sentries; God's camera emplacements are more than sufficient.)

The party should make an attempt to talk to the rebels; after all, that is their current objective. Andrei and Rohbayr are both a little jumpy, but they are prepared to negotiate with the PCs. Defectors from the Chosen are rare, but both men have seen this happen before. Neither will believe that the characters are rebels from another settlement. It's very unlikely that there are any rebels on the station that neither of them would recognize, and even if there were, the PCs are well-fed, well-groomed, and well-equipped. On Heaven, only the Chosen are that well off.

Jesca's presence will help the characters gain Andrei's trust, but they are still somewhat wary. After all, it is possible (if unlikely) that the entire incident with Corday was staged for her benefit, and she has no clear memory of the event to support the PCs' story. Andrei will agree, after some thought, to take them to the settlement. However, the party will have to leave their plasma rifles behind. Andrei will promise that the weapons will be returned to them if they are telling the truth.

The rebel village presents an unpleasant contrast with the homes of the Chosen. All of the rebels are suffering from some malnutrition, because they are simply not able to grow enough food in the hydroponics gardens remaining to them. Almost everything the rebels own looks makeshift: Their homes, their clothes, even most of their weapons are recycled. The lighting in this section of the ship flickers on and off, randomly. As the characters move through the encampment, many of the rebels stare at them enviously. It is hard for them to overlook the obvious wealth of these strangers.

Andrei takes the PCs to the center of the camp and introduces them to the rebel leader, Milthon. Milthon is a tall man in his late fifties. His right arm is missing from the elbow downwards. Despite his age and missing arm, Milthon has a presence that is undeniable. He has been leading the rebels for over two decades now. His life is almost completely devoted to the defeat and final destruction of God and the liberation of Heaven. He is also Jesca's father.

Milthon will interrogate the characters for a little while to find out exactly why they have decided to leave the Chosen. He will be very careful about this, because he cannot afford to allow a traitor to infiltrate his camp.

However, once the characters get around to telling Milthon about the *Excalibur*'s logbook, he will become extremely interested. Milthon will leave the office, returning a few minutes later with Adrew and two others (Mikal and Cora). All five will sit and watch the logbook presentation avidly. Finally, when it is over, there will be a moment of silence before Milthon speaks. "This explains a lot," he says. "It fits with the tales handed down from our ancestors."

Jesca will take a more immediate view. She wants to know if the PCs have any idea where the *Excalibur* is located in Heaven. She believes that the rebels have just been handed the greatest opportunity they have ever seen. Now that they know how God came into existence and where It is located, they have a chance to strike at Its jugular. The rebels have to act, she argues, and they must do so now. There is no hope of winning their war so long as God controls Heaven. God now has control of many of the spare parts needed to fix the systems that kept It from wiping out the rebels. Even if those parts were wiped out, Heaven is slowly dying.

Mikal wants to take a different approach. As far as he is concerned, the *Bluenose* offers a painless way out for the rebel forces. They can simply board the vessel and fly down to the surface of the planet, where they will be out from under God's control. It seems reasonable to him that God will let them go. After all, why should It object? Their departure will solve God's only real problem, and once the rebels are gone, God can do anything It likes.

Mikal, while well-meaning, has got it wrong, which Jesca will make clear if the PCs don't. God has never shown any

desire to live and let live. Even if It has no use for the *Bluenose*, which seems unlikely, It would certainly not allow the shuttle to fall into the hands of Its enemies. Most of all, though, Jesca believes that it is fundamentally wrong to allow an insane computer to rule human beings. People are supposed to control technology, not the other way around. Religion should inspire people to strive toward a higher goal, not be used to dominate the ignorant. Humans must control their own destiny. This God is a false god, an enemy of humanity, and it must be destroyed. The PCs may also think to recount the story of the air raft destroyed by the Fist of God, indicating that God's reach may be longer than Mikal imagines.

Jesca's argument, with or without the support of the PCs, will eventually carry the day. The rebels have devoted their lives to fighting God, and few of them are willing to give up the battle when they seem to have a chance of victory. Finally, even Mikal will agree. He would prefer to end the bloodshed and violence peacefully, but he realizes that the rebels have suffered too much to just walk away. When he fails to convince them to try his solution, he will also devote all of his energies to defeating God.

With the general course of action agreed upon, the rebels will begin to discuss specifics. The actual location of *Excalibur* explains one mystery that had bothered the rebels for some time: Level M is heavily guarded, but there never seemed to be anything down there that justified it.

Since God is actually a computer virus, it is obvious that the rebels must launch their attack on the station's computers. That means that there must also be an assault on the computer core. Those computers must be taken with minimal damage, and then repaired and cleansed of the infection once its source is eliminated. Taking the computer core intact will require most of the meager force the rebels can muster.

Furthermore, God has no way of knowing that the rebels have discovered the truth about its existence. Level M will be kept under its usual guard, but that might be cut back if a major action is under way elsewhere. All of these factors lead Milthon to conclude that the best approach is to send a small commando team into Level M to attack Docking Bay 5 and destroy God. Given the PCs' role in recent events, and their experience in combat, Milthon believes that they should make up the core of the commando squad, with some support from assorted rebels.

That night, Milthon will present the newly discovered information to the entire encampment. His declaration of war is met with a roar of approval. Win or lose, the rebels finally have a chance, and they are determined to make the most of it. The next day is filled with a feverish exhilaration, as the entire rebel community prepares for battle. Finally, a few hours after "nightfall," the preparations are complete. It is time to fight.

The Field of Camlann

Adrew and nine other rebels (Veteran NPCs) will accompany the PCs on their mission. They have all been fully briefed on their mission. They are to begin their attack on



Level M in two hours, which will allow 30 minutes for God to respond to the attack on Heaven's computer center. The rebels are nervous but excited at the thought of ending their long war tonight.

Level M is quiet, almost deserted. The section where the characters arrive looks like it has remained empty since *Excalibur*'s arrival. There is no dust of the floors, no bodies, nothing. The area is almost as clean and shiny as the day it was built, with only a little tarnish on some devices to give the impression of age. Faintly, off in the distance, the characters can hear the signs of frantic activity. Adrew will smile at this, remarking that it looks like the diversion is working. After a short wait, he will glance at his wrist chronometer and announce that it is time to go to work.

Adrew will ask the character with the highest Observation skill to join him in scouting ahead to see how the guards have set up their defensive positions. Within a few minutes, they will spot a guard post 50 meters down the hallway. Adrew will then pull back and rejoin the main group.

Once the party has gathered back together, he will explain that it looks like God hasn't pulled nearly as many guards off as they had hoped. That guard post was half a kilometer from Docking Bay 5. There may be a way to get near the bay through the airshafts, but they will have to act to keep the guards away from the group attacking God.

Adrew then suggests one possible method. He will lead the characters through the shafts and leave them near the bay. Then, he and the other rebels will make attacks randomly throughout the level, keeping the guards from regrouping to protect God. Since they will have to operate in one- or two-man squads to provide enough distractions, this will be extremely dangerous. However, only the rebels are familiar enough with the internal layout of Heaven to pull this off with any chance of success. The player characters would be at too much risk of entering a dead-end passage by mistake.

Even so, there will be plenty of danger for the player characters. They will have to penetrate Docking Bay 5 and destroy God. If they fail, they will certainly be killed. If they succeed, they may die anyway. That all depends on what happens to the Chosen and the Angels when God dies. Adrew orders all but one of the rebels to disperse around the level. He then pries one of the covers off of an airshaft and enters. The other rebel, Toris, waits for the PCs to enter the airshaft and then follows, reattaching the cover behind them.

At the end of the journey through the airshaft, Adrew will stop just short of the panel covering the exit. He will push against it, hard, and mutter darkly. The panel has been welded to the wall, to prevent access by rebels. There is, fortunately, a solution available, even if it is somewhat dramatic. The plasma rifles are capable of blowing through the plate in one or two shots, but will produce a loud noise and flash. If metal-cutting torches have been brought along, they will be less violent, but will take 10 turns.

There is a guard post nearby, out of sight of the characters. If they quietly cut the panel free, they will have an opportunity to sneak up on the five guards. (Difficult: Observation to notice, Difficult: Stealth to sneak. All five are Veteran.) Adrew and Toris will leave them to it, going somewhere else on the level to wreak some havoc. If, on the other hand, the plasma rifles are used, the guards will come around the corner to investigate. In this case, Adrew and Toris, anticipating some sort of response, will retreat, leading three of the guards after them.

The characters must now make their way to Docking Bay 5. They have a rough map of the area, hand drawn by Adrew, to lead them there. (This is identical to the referee's map, with the obvious exception of guard posts). Should they encounter any of the other posts, or do anything to draw their attention, those are also manned by five guards. All are Veteran NPCs, and are relatively alert. They don't really expect hostile forces to penetrate this far into the level, but they know that this area is under attack. The final guardpost, just outside the docking bay, is an Angel. The Angel cannot be lured away from its post. It will have to be destroyed. Once this is done, God will know for certain that it is in danger and send a radio signal to the other Angels to drop whatever they are doing and come to Its rescue.

Deus Ex Machina

The airlock door is electronically sealed, but it has a manual override, like all airlocks on the station. Once the PCs get the door open, they will finally have their first look at the home of God.

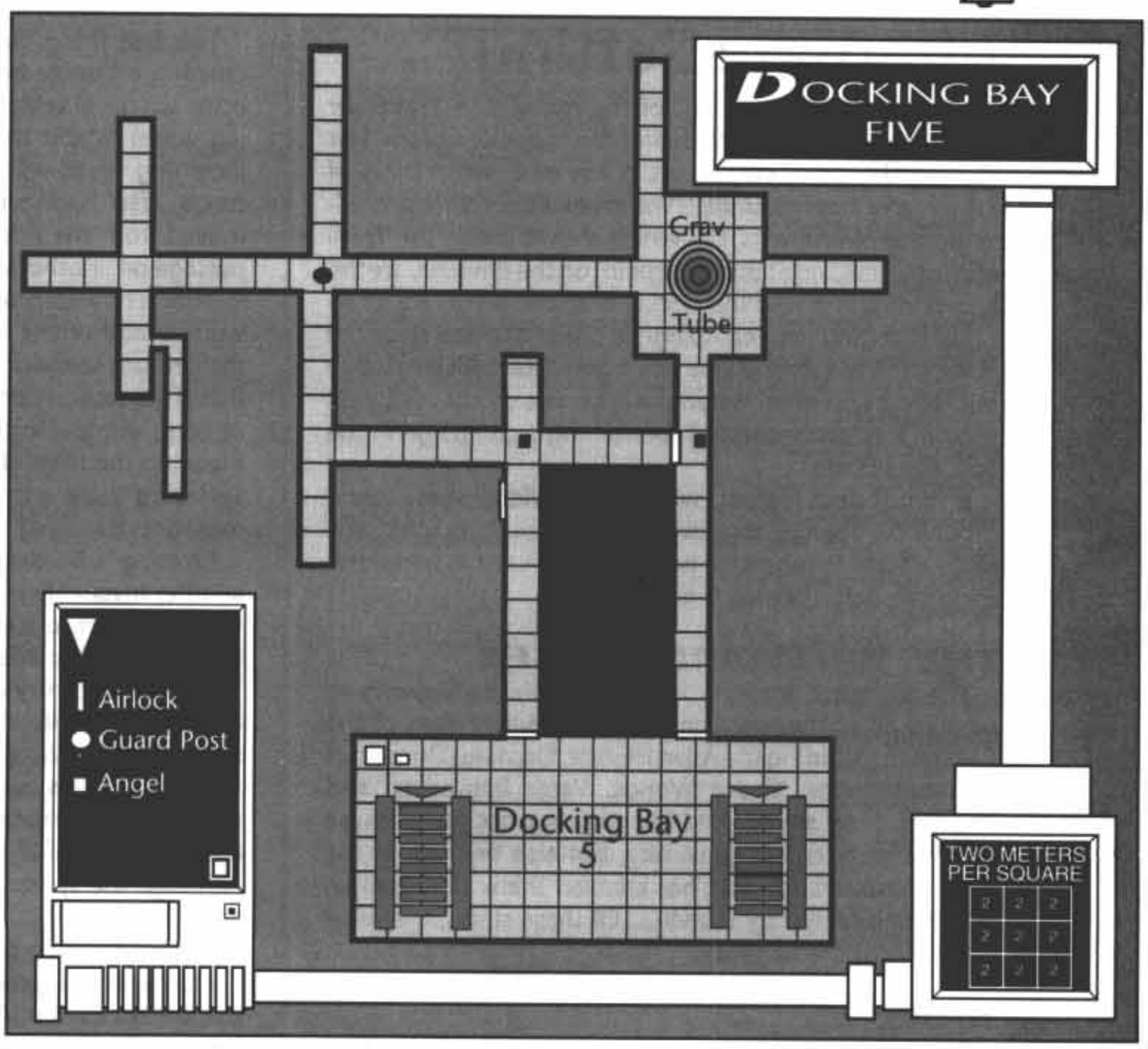
Dominating the interior of Docking Bay 5 is a large, wedge-shaped Scout/Courier, the *Excalibur.* Her name is clearly visible on the side of the ship. If the author of the logbook was telling the truth, the PCs are now seeing God Itself. In actual fact, *Excalibur* is only a part of God, but it is the most important part. Now they have to do what they can to try and destroy It. Several large cables snake out of the airlock and attach to ports on the walls.

A moment later, a klaxon will begin hooting all over the level.

With the penetration into the docking bay complete, God wants every servant available to help, including the human ones. Within 10 turns, the first response will begin to arrive, in the form of two Angels. Everybody on this level will begin making their way toward the docking bay. The characters will have to seal the airlock behind them to keep the attacking Angels and Chosen out of the hangar. This is an Average: Mechanic task.

Once that is accomplished, they can work on attacking God directly, either by entering the ship to wreck the computer inside or by slashing at the cables. If they try to shoot the cables, have them make attack rolls and tell them that they produce some gratifying fires and sparks. The cables have an armor value of 1 and can absorb 10 points of damage.

In either case, God's response will be similar. The rebel attacks on the computer center have begun to panic It as It feels parts of Its consciousness wink out. It does not understand that Its mind is split between the *Excalibur* and Heaven, and It thinks that It can escape the station without much risk. The attack inside Docking Bay 5 finally pushes it over the edge. Suddenly, as the characters are hacking away at the



cables or trying to reprogram the ship's computer, the lights inside the bay begin to flash red. Then, a feminine voice announces that pre-launching procedures have been initiated and the Scout/Courier *Excalibur* will launch in one minute.

The characters don't have much time to react to this announcement, and they don't have many options, either. There are a lot of dangerous and hostile people waiting just outside the main airlock, even if they could get it open. The maintenance passages are not airtight. The only safe place in the hangar is inside *Excalibur*. Once inside, they must sever the cables, if they have not done so already, before sealing the airlock. One minute after the countdown begins, the hangar doors open and *Excalibur* launches.

The characters will probably try to bring the *Excalibur* under their control. Unfortunately, there is no way they can succeed. God is dead or badly hurt (this is up to the referee), but in either case, It is no longer controlling the ship, which is following its last set of programmed instructions. The same feminine voice that warned of the launch informs the characters that *Excalibur* will jump in three minutes, without an astrogator aboard and well inside Navar's gravity well. There is nothing the characters can do to prevent this. In three minutes, with a lurch and a flicker of the internal lighting, *Excalibur* misjumps.

Epilogue: A New Beginning

The fate of the *Excalibur* and its erstwhile crew after it misjumps is entirely in the hands of the referee. The possible range of a misjump (36 parsecs) makes it possible for the *Excalibur*'s destination to be anywhere within Diaspora Sector, which includes both the sample subsectors for the Wilds and the Star Vikings. The referee now simply decides which subsector will form the starting point for his campaign and have the *Excalibur* emerge from jump space there. The electrical shorts that accompanied the launch damaged large sections of the computer's memory. The computer's neural net architecture allows it to reconfigure itself to bypass the damaged sections, but its performance will be severely degraded, and the databanks have lost a great deal of information. Anything from game software to critical portions of the ship's operating system may be missing.

This allows the referee to limit the characters' access to information and restrict the operations on the ship any way he or she pleases. The astrogation database, for example, may include a complete listing of the subsector's worlds, or it may be completely empty, forcing the PCs to explore blindly. The quest to recover copies of the missing data can be a springboard for drawing the characters into a great many adventures.

In any case, the first thing the characters will have to do is acquire an astrogator, and that means either finding somebody who already has the skill, trying to learn the rudiments of the skill from the remnants of *Excalibur*'s databanks, or, perhaps most dangerous of all, they can let the computer do it, if God is still alive and willing to help them.

On that point, the most important decision to be made by the referee regards the fate of the virus that infected the *Excalibur*. The ship's computers were rather intimately linked with those above the station, and their sudden and violent disconnection will have unpredictable consequences. Virus may have been completely disrupted, leaving *Excalibur* free from infection. Although the core chips will remain in place, the sentience that formed the basic of God's personality may have been destroyed, and with it most of the dangerous behavior patterns associated with Virus. Another possibility is that the computer retains its AI capabilities, but the personality that emerges once it starts working properly again is entirely different from God. Or, worst of all, God may have survived the incident. If so, God will lie low, waiting to appear once again when It can gain a measure of revenge, but without damaging Itself further. For now, Its continued survival requires the PCs.

Alternate Settings

Although the main focus of the material in **Traveller: The New Era** is on the Wilds and the expansion of the Star Vikings, the game can be set in any of a wide variety of locales and backgrounds. Two dramatically different adventure environments, but which are still within the **Traveller** universe and at the same point on the timeline, are the Spinward States and the pocket empires. If you are interested in setting your campaign in either of these areas the material below should give you a good start. All previously published **Traveller** material will be extremely useful (although it is not necessary) for running a campaign in the Spinward States.

In both cases below, we have provided some background on the area to provide ready adventure ideas and show a sample subsector which can be used as an immediate campaign setting if desired.

THE SPINWARD STATES

The Spinward States is a term used in the Regency to refer to all of the governments to spin-coreward of the Great Rift, including the Aslan Hierate, Darrians, Domain of Deneb/Regency, Sword Worlds, Vargr fragments, and Zhodani. They are referred to as a group not just because of their astrographic proximity, but also because of the mutual cooperation that has enabled them all to remain largely uninfected by the virus. Of these states, the most important is the Regency.

The Regency

The Regency is the new name given to the Domain of Deneb by Archduke (later, First Regent) Norris. The name describes the state's image of itself as the small fragment that is left to carry on and preserve the "true Imperial values" until the Imperial interior can be rebuilt and reunited under the Imperial banner. Thus, citizens of the Regency consider themselves citizens of the Imperium in every sense, indeed the only remaining true citizens of the Imperium. The self-image of the Regency is inextricably linked to a veneration of the accomplishments and glory of the Third Imperium, and the collective drive behind the society is to re-establish that edifice in every detail possible.

The Regency's borders continue to follow mostly along the Domain of Deneb's 1130 frontier, but have been extended into the upper bight of the Great Rift where listening posts and advanced quarantine lines are maintained on many of the "island" worlds, controlling the few star bridges through the Rift.

The Blockade

Officially called the Quarantine, the blockade is a vigorously enforced sealed border all along the Regency borders that is intended to prevent entry of the virus.

Although the Spinward States all cooperate in virus prevention measures, they all maintain their own border blockades to prevent virus intrusion. One cannot be too careful, cry the voices of the slaughtered population of Trin, hit by a vampire "leaker" in 1139.

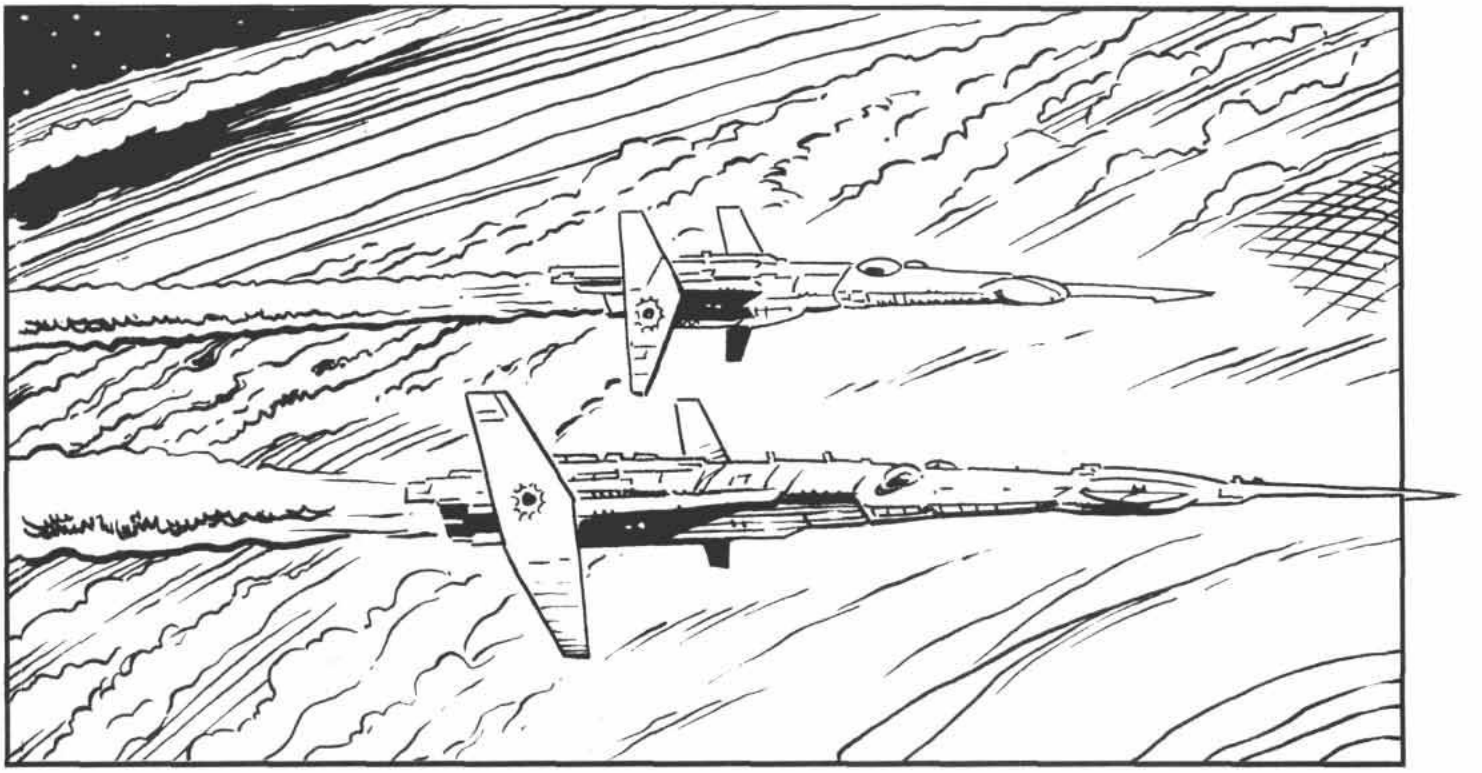
The first thing that one should expect to see when crossing a border between one Spinward State and another is a naval vessel, which will demand that any incoming vessel "stand to and prepare to be boarded." Each incoming vessel will be inspected, and then its crew and cargo, after having been carefully examined, will be removed from the ship and given the opportunity to book passage on another ship to proceed further into the state's interior. The ship in which they arrived is impounded if they were unauthorized intruders, stored in the system until their return outbound, or subjected to extensive inspection if its crew intend to proceed farther. All ships that attempt entry into the Spinward States from "outside," meaning the ruins of the Wilds, rather than from another Spinward State are impounded without exception, and most are destroyed.

Crossing a border from one of the Spinward States to another invariably entails a lengthy inspection and sometimes a lengthy quarantine period as well. This is to ensure that no virus is carried before the ship can be licensed or "stamped" for entry into the new state. These licences must be re-issued with each crossing. For this reason, many shippers and passengers take advantage of the many transshipping options available at the border worlds, and shift from hulls of one nationality to those of another, rather than undergo the bother of relicensing at every border crossing. Although the system is inconvenient, there are none who argue that they would rather take a chance of allowing the Spinward States to become like the Wilds.

Although this system originated as a necessary barrier to the spread of the virus, it has evolved into an efficient system of taxation and revenue generation, as well as a shot in the arm to local shipping. With disincentives to operating in foreign space, local shipping lines have few worries of foreign competition with cheaper labor or government subsidies. In addition, the blockade has allowed the Regency government to create a safer civilian fleet.

In addition to the licensing that is required at each border crossing, all vessels in the Regency must undergo inspection by either the Regency Navy of the Regency Quarantine Service (RQS) once a year (navy inspections are given at A and B starports, RQS at C, D, and E ports). This inspection is to insure that no virus is carried, but has come to include examination of other systems such as drives, power plants, and life-saving equipment. These inspections may impound ships that are not up to standard, or issue requirements that they be brought up to those levels.

The blockade is actually a belt several parsecs deep, as ships with high jump performance can jump over a thin border blockade. Each world in this belt has all of its potential refueling points monitored and defended. This is easy to do with the gas giants and planets. It is less easy to do with asteroid belts and the comets of the Oort clouds. For this reason, the Regency Quarantine Service was created as a new auxiliary service. With the demise of the Scout Service's exploratory mission, tremendous assets, including starships, bases, and trained personnel, were made available for the Quarantine mission. Originally



organized as an office of the Imperial Interstellar Scout Service (IISS), the RQS quickly became a separate service, leaving the Scouts (now the RISS) as little more than a glorified cartographic service with a proud tradition. However, even with the assets of the Scout Service, the task of maintaining a virus-proof seal along the entire border was a task that dwarfed the available assets. The answer was to establish the RQS Auxiliary, in which private citizens with their own ships shouldered part of the quarantine burden. In order to expand the number of ships in service, the Auxiliary eventually offered incentives to join. In exchange for quarantine patrol duty and the equivalent of a reserve commission in the Regency Navy, RQS personnel are given financial assistance in the purchase of spaceships and starships, typically of two standard varieties. One is the RQS inspection launch, a 70-ton craft which is now a ubiquitous sight in the Regency. The other is the Quarantine Cutter. Early models were modifications of the standard 100-ton Scout/Courier, but current designs are stretched versions of the Scout, displacing 150 tons.

Democratic Reforms and the New Nobility

Dulinor the Black, who in assassinating Emperor Strephon claimed to champion democratic reforms throughout the Imperium, would appear to have succeeded in this goal, although not in quite the way he had in mind. Dulinor was unable to hold onto the Imperium long enough to institute any change at all, and in any event it disintegrated into warring factions within the space of a few years.

It was the Imperial disintegration that taught a great lesson to a great many people. In order to maintain a united society, loyalty must run both ways, up *and* down. It has been decided in the Regency (as well as in a number of other locations in the collapsed Imperium) that the best way to ensure that the populace remains engaged with and supportive of the direction of their society is to give them a voice in it.

To this end, the nobility in the Regency have had their power curtailed considerably. There are now popularly elected representatives at all levels of Regency society: at the world level and subsector level in executive capacities, and at the Regency level in representative/legislative capacities. Ironically, it is only as a result of the fall of the Imperium that these democratic reforms could be put in place at all. The Third Imperium was too large to allow any real popular input, given the limitations of communications times across the Imperial territory. Only in a smaller area, as the Regency is now, can the public elect officials, send them to the capital, and communicate with them in a timely fashion about important issues. Even now, however, only truly pertinent issues can be submitted to this loop of popular feedback, as the time lags inherent even in the Regency make it impossible to get consensus on the many significant day-to-day procedures.

This does not mean that the nobility has been abolished. As part of the reforms, all hereditary nobles were given assurance that they would have sufficient fiefs to accommodate them and their heirs. Although in many cases this was only fair compensation for loyal service, in the main this was simple expedience, to avoid the creation of a class of disenfranchised, reactionary nobles while easing them from power. Also, a Regency Moot was established as a representative body filled with the Regency's hereditary nobles, as one of the Regency's two legislative houses. In

many ways, there are two parallel governments in the Regency, whose levels of organization mirror each other: the new democratic system of planetary and subsector governors and Regency senators, and the old system of barons, counts, marquis, and dukes. Although the latter retain their grandeur and a great deal of discretionary rights, privileges, and wealth, it is clear that the balance of power is passing to the former, newer group.

The response of the nobility to these changes was naturally varied, based on the quality of the nobles themselves. The best of the nobility embraced these changes, and ran for public office. Given their experience in governance, and the loyalty many of them had created by years of good leadership, they were naturals for the new elective offices. In fact, the Regency Senate, as the elected legislative body was named, consisted almost entirely of popularly elected nobles for its first dozen sessions. Some nobles actively support the new democracy in and around their fiefs, lending their good offices and experience to the public service. Other nobles have adjusted less well, retreating to lives of embittered obstructionism or conspicuous consumption, and the worst are known to actively oppose the Regency's new arrangements, and seek to undermine the growth of popular republican institutions.

At the head of the Regency government is the position of First Regent, first held by Archduke Norris. The post allows its holder to serve until death, although there are theoretical provisions for replacing one who is found guilty of various transgressions. Retaining the Imperial traditions, the First Regent is not popularly elected, but is designated by reigning First Regent following noble-style succession. However, the Regent is confirmed by the the Regency Senate and Moot. Interestingly, the Moot has only the power to cast its vote in favor of a new regent, not against. Nonetheless, the Moot has not abstained from a confirmation.

Regency Economy

The carefully controlled borders that have resulted from the virus and Quarantine have helped the Regency to gain great control over its internal trade and markets, which has enabled a successful program of managed growth. However, over the past decade, increasing numbers of economists have pointed out that the Regency's economy cannot long survive in its current state. The strong growth that was allowed by the Regency's carefully controlled stability has reached its limit. The Regency is hemmed in on all sides by neighbors with their own carefully managed economies, or by closed borders, quarantined against the virus. The Regency's economy has become overheated, and without access to new markets and new sources of raw materials, say these economists, it is bound to falter.

In 1196 the first Regency-wide referendum was held on the proposition that the sealed borders should be reopened to trade and exploration out into the Wilds of the collapsed Imperium. The public, with memories of the Rape of Trin fresh in their minds, overwhelmingly rejected the measure. The issue seems, at the present time, to be moot.

But economists and other social scientists point to indicators that the economy is already staggering, and claim that for the Regency, it is a choice of social disasters: face the risk of the virus, or face the certainty of economic ruin and social stagnation.

Relations with the Zhodani

Now isolated completely from the Imperium by the virus, Norris' domain was surrounded on all sides by potentially hostile forces: Aslan, Vargr, Virus, and Zhodani (a combination that Norris was fond of referring to as, "our problems from A to Z"). He could not hope to stand alone against all of them, and the only way to survive surrounded by them was to make sure he could divide them and mix and match them against each other when possible. In order to be able to interact with the Zhodani in this way, he had to open relations with them. By creating political and economic ties with the Zhodani, Vargr, and Aslan, Norris was able to use both carrots and sticks on all of them, and by being able to ally with one against another, or encourage divisions between the other powers, he was able to keep his borders intact without having to go to war. Furthermore, he cultivated the Regency's image as a fair broker by allying with weak powers when they were threatened by more powerful foes, thus maintaining the balance of power short of war.

One powerful reason for the success of this policy was the fact that none of the major spinward powers wanted to go to war, for fear of further release of the virus. This implicit danger made it all the more reasonable for the powers to merely jockey for position during periods of conflict rather than go directly to military options.

This was not because the powers feared that their enemies would release the virus on them; it was clear to all parties that releasing the virus on your neighbor was the same as releasing it on yourself. Rather, it was because all sides knew that it was the cooperation of the Spinward States that prevented the spread of the virus into their area, and the breakdown of such cooperation during war would create the kind of confusion and porous borders that would virtually invite the virus in.

Psionics

Psionics have always been present in the Domain of Deneb/Regency, in fact throughout the entire Imperium. However, they have been kept secret, as Imperial military assets. The Imperium contained two of the original psionics institutes, one at Terra/Solomani Rim, and the other at Wypoc/Spinward Marches, which was originally at Regina/Spinward Marches. These were not the only psionics programs; there were others operating entirely under military auspices, which include one in what became the Federation of Daibei, which was known to Duke Craig.

Because these legal psionic activities were secret, Imperial leaders were obliged to continue the fiction that psionics were illegal, something that was easier in some parts of the Imperium than others. Duke Norris was a leading advocate of psionics, as he was the only subsector duke (and later archduke) who had to share a hostile frontier with a psionic race. Norris knew that he could not

deny himself a capability or weapon that was completely mastered by his most powerful rival. Although no one knew it until much later, Norris' long-serving seneschal, Branj Dilgaadin, was a talented telepath, and Dilgaadin's talents proved useful to Norris on many occasions.

The proximate cause of Norris' repealing of all anti-psionic laws was the fact that he needed to open relations with the Zhodani Consulate. If he did so without psionic power of his own, he would only be exposing the Domain to uncontrollable Zhodani exploitation. By developing strong psionic capabilities in his own society, he could meet the Zhodani as equals.

Individual Psions: Although this is by no means true of all Regency psions, most, both men and women, have adopted the psionic style of shaved heads. This serves the same purpose as the distinctive turban worn by the psionic Zhodani nobility, to call attention to the mental attributes of the person. While the Zhodani turban accentuates the size of the head to make the nonverbal statement that this person has formidable mental capacities beyond those of the average person, the Regency baldness makes the bold statement that the psionic has exposed talents within him or herself that most people leave covered or unexamined. This style also serves the purpose of a social lightning rod. By showing to the public that they are not concealing their presence or acting secretively, psions hope to increase the level of trust and acceptance that the public has toward psionics. This style also honors the naturally bald Branj Dilgaadin, whom Norris appointed to head the psionic reforms in the Regency.

Because there are several styles or "houses" of psionic training in the Regency (Norris' revocation of the prohibitions deliberately promoted diversity of psionic styles so that more breakthroughs could be made via different approaches than by one rigid approach), these psionics bear distinguishing marks to show in which house they were trained and which disciplines they follow. These marks are sometimes artistic tattoos on the bare scalp, sometimes removable tattoos or paintings on the head which change from time to time, or variations of hair growth, like monastic tonsures or small braids of hair like those worn by ancient Egyptian princes, or patterns of earrings worn on one or both ears. These patterns are generally tasteful, dignified, and artistic. A trained observer can tell from these marks what house the psionic belongs to, and often what specific aspects of psionics (e.g., telephysics, telepathy, teleperception, etc.) the individual is trained in.

Robotics and Computer Technology

The most promising progress in robotics research is based on a program which is breeding captured Strain 5 Sexually Reproducing viruses. Because it is already known how adaptable and successful these AIs can be, breeding desirable traits into them is expected to pay great dividends.

This program is a very deep secret. It is unlikely that any citizens would be happy to hear that captive viruses are being kept in the Regency, no matter how carefully. Furthermore, it is even more unlikely that anyone would want to bring a virus-descended robot into their home or place of business.

The wave of antirobotic sentiment that swept through the then Domain of Deneb was stunning in its speed, vehemence, and acceptance by the vast majority of the public. However, given the tremendous damage wreaked by the mere handful of vampire ships that were able to slip into the Regency and run amok (including the tragic Rape of Trin, which killed 3 billion), this sentiment is understandable. It is estimated that over 90 percent of all anthropoid robots in the Domain were scrapped, and the vast majority of robotic transportation was hastily converted to manual, or human supervised remote control. Even the great robotics program at the Rhylanor Institute of Technology was abolished following the devastation at Trin. Billions of jobs were created overnight with the purging of robotic control. Domain corporations that were heavily into robotics manufacturing, or even owned such subsidiaries, saw their stocks fall rapidly, and remain at low levels until they diversified away from robotics manufacturing, or at least camouflaged it a bit better.

The recovery of the automation industry was abolished with the creation of "dumb" computer systems, so called because these systems are subdivided to the point where human oversight of their operations is required, and full-up computer control of the system is rendered impossible (see Responses to Virus, page 80).

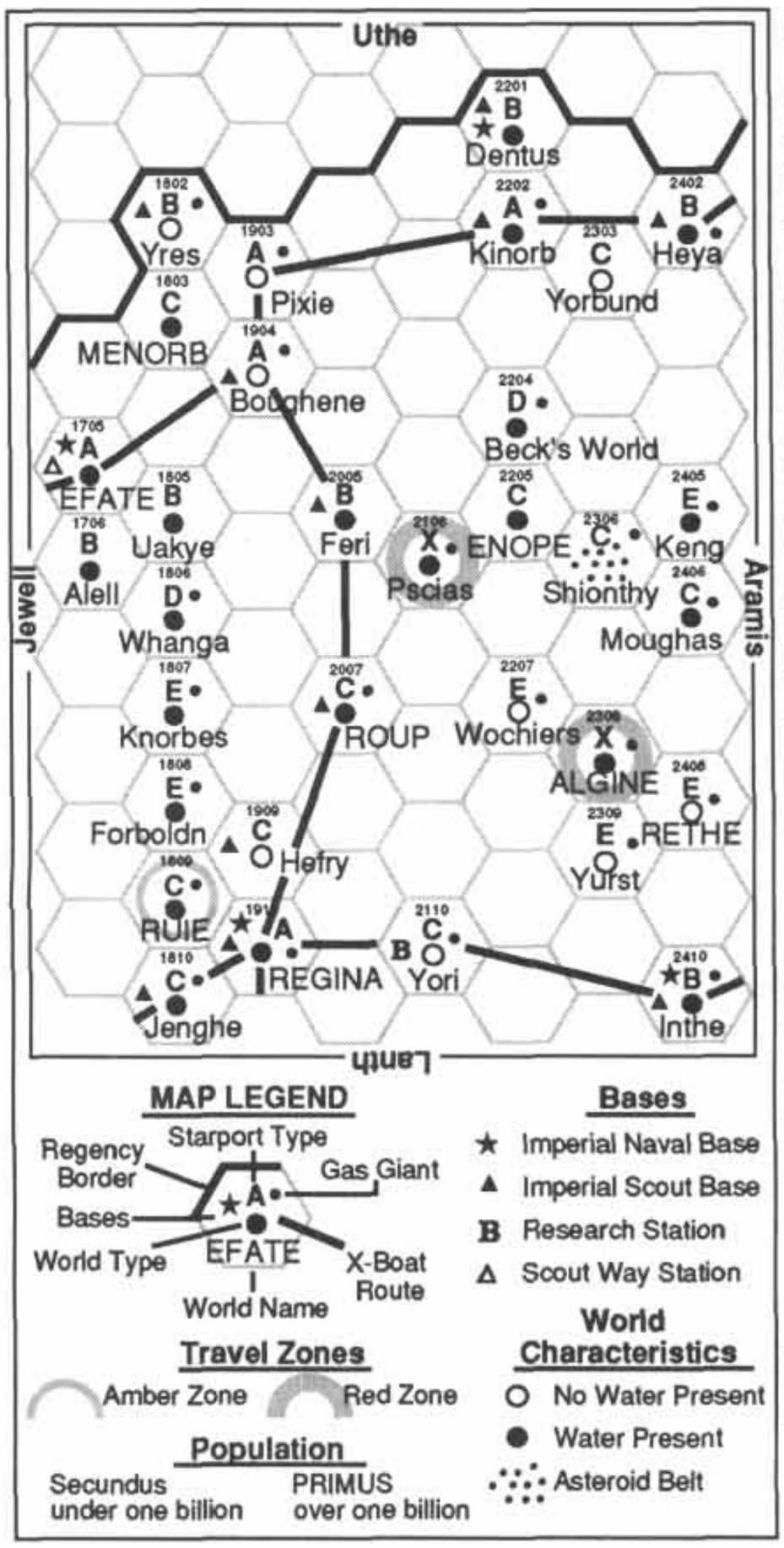
Sources of Conflict

Although the Spinward States have maintained peace for three quarters of a century, it is an uneasy peace based on a common external threat. But there is increasing evidence that the virus has largely died back in the Wilds and that no new dangerous strains are developing, providing the Spinward States a wider range of options than simple quarantine. As the threat of the virus recedes, old quarrels long suppressed threaten to explode into open warfare. In the meantime, diplomatic and commercial missions have become favored covers for covert intelligence gathering as all sides jockey for a favorable position should active competition resume.

There are considerable internal sources of conflict as well. Progressive pro-exploration parties regularly clash with conservative pro-quarantine and reactionary antirobotics groups. Large merchant and commercial corporations continue to compete, sometimes using espionage and violence little different than that employed by governments.

Disenchanted nobles plot to embarrass or even assassinate popular elected leaders with whose policies they differ. While some wealthy nobles support these actions, and even provide the strategic leadership, they are insulated from the actual deeds by a new class of young impoverished nobles, men and women fanatically dedicated to the re-establishment of noble rule.

And every faction anxious to accomplish a shady mission while limiting their own exposure to danger or publicity routinely turns to independent soldiers of fortune and adventurers to do the dirty work.



REGINA SUBSECTOR

The Regina subsector is a diverse, developing subsector on the very fringes of the Regency. The Regency frontier runs along its coreward edge and portions of the spinward edge. Its major xboat communictaion routes connect it with Jewell subsector to spinward and with Lanth subsector to rimward, providing major trade channels which roughly parallel the Spinward Main, a well-used natural jump-1 trade route.

Name	*Location*	*UPP*	*Bases*	*Trade*	*TPPG*	*Alg*	*Stellar*
Efate	1705	A646A30-E	B	Hi In	110	Re	K4 V
Alell	1706	B46789C-B		Ri	810	Re	M7 V M7 D
Yres	1802	BAC6773-8	S	Fl	635	Re	G5 V
Menorb	1803	C652998-8		Hi Po	310	Re	M5 II
Uakye	1805	B439598-D		Ni	620	Re	M9 V
Whanga	1806	E676326-A		Lo Ni	724	Re	A1 V M1 D
Knorbes	1807	D888887-4		Ri	134	Re	G3 V
Forboldn	1808	E893614-5		Ni	612	Re	G0 V
Rule	1809	C776977-8		Hi In	A901	Re	M5 V
Jenghe	1810	C799663-A	S	Ni O: 1910	523	Re	M0 V
Pixie	1903	A100203-D	N	Lo Ni Va	801	Re	M1 V M0D
Boughene	1904	A8B3531-D	S	Ni Fl	901	Re	M7 V
Hefry	1909	C200423-8	S	Lo Ni Va	320	Re	K6 II M6 D
Regina	1910	A788999-D	A	Hi Cp	103	Re	F7 V M8 D M6 V
Feri	2005	B384879-B	S	Ri	720	Re	G4 V M3 D
Roup	2007	C77A9A9-7	S	Hi In Wa	223	Re	F9 V
Pscias	2106	X355523-2		Ni Ag	R801	Re	M5 V
Yori	2110	C360857-D		Ri De RsB	113	Re	F1 V
Dentus	2201	B979600-B	A	Ni	220	Re	M2 V
Kinorb	2202	A663659-9	S	Ni Ri	822	Re	M7 V
Beck's World	2204	D88349D-5		Lo Ni	901	Re	M0 V M2 D
Enope	2205	C411988-7		Hi Na In Ic	700	Re	M6 V M5 D
Wochiers	2207	EAC28CC-A		Fl	803	Re	F0 V
Yorbund	2303	C7C6503-8		Ni Fl	320	Re	M8 V
Shionthy	2306	C000742-9		Na As	814	Re	M4 V
Algine	2308	X766977-4		Hi	R923	Re	M9 V
Yurst	2309	E7B4643-6		Ni Fl	724	Re	K9 V
Heya	2402	B687845-7	S	Ri	134	Re	K6 III M8 D
Keng	2405	E2718CA-5			712	Re	G5 III M9 D
Moughas	2406	CA5A588-B		Ni Wa	901	Re	M9 V M9 D
Rethe	2408	E230AA8-9		Hi Na Po De	323	Re	G7 V
Inthe	2410	B575776-A	A	Ag	723	Re	F8 V

The Regina subsector contains 32 worlds with a total population of 74.5 billion. The highest population is 28 billion, at Rethe; the highest tech level is E, at Efate. All worlds in the Regina subsector are members of the Regency. Ruie was annexed during the Final War, and there is still a low-level insurgency in progress in some of the more remote parts of the world.

Notes

Under the Bases column, N indicates a Regency Navy base, S indicates a scout or Regency Quarantine Service Base, W indicates a scout way station for the maintenance of xboats. A indicates both a naval and scout base, B indicates both a naval base and scout way station.

Under the Trade Classifications Column, the O: entry indicates that the world is owned by the world in the indicated hex. For example, Jenghe is owned by Regina. Cp indicates the subsector capital.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. If the Travel Zone digit is empty, it is a Green Zone, A and R indicate Amber and Red Zones, respectively.

Alg is the Allegiance column. Re = Regency.

Xboat Routes: The heavy lines connecting several worlds are express boat routes providing communications between worlds of the Regency. As communication is limited to the speed of travel, the various parts of the Regency are linked by jump-4 xboats which deliver all important news and messages. These routes are also common trade and transport routes with regular commercial transportation provided by one or more transport megacorporations. Service to locations not on one of these routes is less frequent and less dependable.

ADDITIONAL CHARACTERS FOR THE REGENCY

Regency Psion

Although psionics had long been illegal throughout the Imperium, Archduke Norris repealed the Imperial anti-psionics laws soon after the Collapse, allowing a renaissance of psionic skills within former Imperial space. Although some old anti-psionic prejudice still lingers, Norris' whole-hearted support of the new psionic programs has allowed psionic training to become a largely respected calling. Entry into this career requires that the character take a psionic examination at the point he or she intends to enter the Psion career (see page 246). If the examination reveals a Psionic Strength of 7+, the character is accepted into the career. If not, the character may end character generation and enter play with the Psionic Strength just established (but without training), or continue character generation as normal, although picking a different career. However, if character generation is continued, the Psionic Strength continues to decline, as if it had never been tested for.

Prerequisites: Homeworld in the Regency, plus PSI 7+, see above.

First Term

Skills: Psionics 5, Willpower 3

Subsequent Terms

Skills: Psionics (see page 248), **Determination, Perception, Charm, Interaction, Physical Science**

All Terms

Special Adventure: 6+ for **Psionics, Determination, Vehicle, Vice, Gun Combat, Melee, Personal Transport**

Promotion: 7+, DM +1 if INT 8+, DM +1 if any Psionic asset 16+.

Contacts: Two per term, specialist (Psionic), academic, government, or intelligence community.

Other Effects: When generating starting money, multiply final result by 0.5, as character has given the rest of it to his or her psionic school.

Psionic Ranks: As psions advance in the mastery of their talents, they are periodically tested for induction to higher levels of their communities. Because of the many different "schools" of psionics that are followed in the Regency, there is no single list of such levels. The following list of psionic "ranks" is representative.

R1	Novice	R4	Disciple
R2	Acolyte	R5	Adept
R3	Aspirant	R6	Grand Adept

Additional Contact for Regency Characters

Although the nobility has all but vanished in most areas of the Collapsed Imperium, it lingers on in the Regency. Any player character who has a homeworld in the Regency has the opportunity to gain a contact who is a member of the Regency nobility. For each contact gained during character generation, roll 1D10. On a result of 9 or 10, that character is a noble contact, as detailed below.

Noble Contact: This contact was a noble when the PC knew him or her, and because of the nature of such things, still is. However, given the profound changes in the nature of the nobility in the post-Collapse Regency, the noble's current status can vary quite a bit. The noble might have accepted the challenges of the democratic reforms, and become involved in elected or appointed office, thus adding political power to declining noble prerogatives. On the other hand, the noble may oppose the reforms for good or bad reasons, and may be working on ways to thwart or reverse them. Or the noble may have just given up to live a life of dissipated luxury until the money runs out.



POCKET EMPIRES

The term *pocket empires* refers to a small cluster of worlds, usually no more than a subsector worth, which have re-established (or, in rare cases, never lost) star travel. The worlds are linked by regular trade routes and usually some sort of political system. Sometimes this system is no more than a commercial union or a unified quarantine service, while in other cases it is a subsector-spanning empire.

A pocket empire may be set anywhere in the Wilds and referees have great latitude in making up the worlds and background. We present The HubWorlds as an example which can be used as is or used for inspiration in creating your own adventure area.

The HubWorlds

During the Rule of Man (–2204 to –1776), this cluster of worlds served as the administrative center for the Imperium. Hiroshi II made Kaggushus the capital, renaming it Hub/Ershur. However, a few major centers were also dispersed among neighboring worlds in about a two-parsec sphere. "The Hub" referred to these worlds collectively.

Kaggushus was counted as among the more important worlds of the Third Imperium, but played only minor roles in its history.

After the Collapse (1130), The HubWorlds maintained sporadic contact with each other using a handful of surviving ships. Serious commerce resumed in 1181 when Kaggushus began constructing new starships of its own. Starship operations remained under strict government control until regulations were relaxed in 1199. This permitted commercial ownership of ships, freeing vessels for broader speculations and exploration.

As of 1200, many worlds of Ershur subsector have yet to be visited. This is changing as HubWorlds authorities survey and recontact the surrounding worlds. However, other vessels, aside from those bearing official teams, also venture beyond the borders. Ships from budding corporations compete for profitable trade agreements. Others, owned by particular member worlds, explore for resources or other things in their interest. And then there are the scattered raiders.

Anyone with a still functioning starship, especially if armed, could be a raider. Such bands would occasionally descend upon worlds to carry away wealth or vital necessities. Raiding only came in surges in the area. But with the emergence of The HubWorlds, it is sure to increase as some individuals with space and technical skills turn outlaw.

Adventuring

Player characters will probably not own their own ship as starships are still rare. However, they could enjoy a large measure of autonomy, so long as they strive to further the interests of those they work for.

A wide range of activities exists that characters might pursue. What follows are some common threads a referee can use in a campaign.

Trade: This will bring characters in contact with the cultures shaped by the Collapse. Many will be hostile to spacefarers, thanks to experiences with star raiders. Some might welcome them, actually hoping to capture their ship and equipment. Still, a profit can be turned by those who are smart and well armed.

Exploration: Virtually no world was left unchanged by the Collapse, making all of Imperial space a vast unknown. Learning what is out there is of increasing interest to the corporations and governments of The HubWorlds. What worlds still live? What kinds of peoples are they now? What worlds died, and what did they leave behind? What are the dangers that lurk among the worlds, and where are the safe harbors?

Salvage: Throughout space are the ruins of the Third Imperium: orbital installation, derelict ships, bases, spaceports, and belter communities, all abandoned. Most was destroyed by the virus, but much can also be salvaged if found. The HubWorlds tries to carefully control the import of relics to discourage wanton looting. However, a thriving black market exists for the trade of high-tech equipment.

Naval: A small navy exists among The HubWorlds, performing rescues, pursuing smugglers, and deterring raiders and pirates. But they are also the agency to perform official system surveys, carry diplomatic teams to neighboring worlds, and intervene against external threats to The HubWorlds' interests. Characters could crew one such patrol vessel regularly used for external missions.

While these can provide the main body of adventures, numerous other possibilities also exist. For example, the characters' ship might be chartered to aid in setting up a new outpost. The company could send them to shadow the activities of another vessel from a rival company or world. Or they might be directed to trace and return a renowned art object stolen in an earlier raid.

Government

Since the First Civil War (604 to 622), the Nolanar-Ahiiki line has accepted a hereditary fief on Kaggushus and its responsibility to rule over that system. The planetary upheaval in the Collapse interrupted their rule until 1169. In that year, Eric Nolanar took the title of Count, and seized control once again to reverse the world's economic decline.

Count Nolanar died in 1199, leaving the fief to the eldest of his triplet daughters, Countess Thalia Nolanar. However, by his last decree, the government will take more the form of an impersonal bureaucracy. The transition of government will not be complete until the end of 1120.

While the new countess remains the head of both the Kaggushus government and The HubWorlds, her author-



ity only lies within the executive branches. Nobles from each of the member worlds form the High Chamber, the legislative branch for The HubWorlds. Appointed commoners make up The HubWorlds Court Superior, the judicial branch.

The new Kaggushus government, which includes the Low Chamber and the Court Domestic, was modelled after The HubWorlds government. Other world governments differ.

The HubWorlds is a government of ministries, authorities, departments, and agencies rife with politics and the struggle for power. Palace court politics is the most vicious of all. Interworld relations are little different, generating a form of restrained discord that somehow works.

Library Data

Korhites: The band of pirates and raiders based at Ticularosta (which see). They are only one of a number of such bands that have risen and faded since the Collapse. They rely on recovered Imperial relics to allow them to raid worlds, but have barely enough technical knowledge to operate what they have.

The incidental star traffic that already exists among the worlds in the rimward portion of the subsector is related to the Korhites. Ships they might send occasionally land at worlds with surviving starports to exchange loot for staples and other goods. They may even engage for a time in legitimate trade.

The current leader of the Korhites is referred to as "The She."

Order Astra: A knighthood founded by Count Nolanar in 1197. Its grand knight is Sir Lawren Urilem, a naval captain who played a key diplomatic role in the formation of The HubWorlds.

Order Astra was inspired by the old Travellers' Aid Society. Membership in the order confers many of the same benefits as TAS. Although it offers no dividend of high passage tickets, knighthood has its compensations.

The order funds search missions for overdue ships and is also placing shelters on worlds beyond the frontier for marooned travellers. Members of the order are expected to aid distressed travellers whenever possible, and most particularly fellow knights.

The hostels owned by the knighthood are an excellent place for obtaining information from the frontier. Knowledge shared among knights is never disclosed if meant to be secret.

Temporal Society of Kaggushus: Officially established in 719, this is one of the many "timers clubs" found across the Imperium. Those wanting to live in a future time could enter cold sleep until they wish to be revived. Membership in the society swelled soon after the Collapse.

Kaggushus (0402): Kaggushus is a cool world orbiting a gas giant. It's about the size of Mars, but denser. The atmosphere is thin with a sulfur taint. A broad, hazy ring system circles Kaggushus itself.

The original Vilani population occupied what little lowland territory there was, bordering the one major ocean. During the Rule of Man, immigrants settled the rest of the world. These were humans from Terra's mountain regions and from other thin atmosphere environments.

The Rule of Man took the island of Arsanus as its own seat. This was actually the central spike of a giant, 300,000-year-old impact basin. After the Rule of Man, wars ruined the magnificent buildings on the island. During the Third Imperium, land on Arsanus was either reserved as noble fiefs or used in supporting the heavy tourist trade.

After the Rebellion, the Imperial nobles on Arsanus were evicted from the island, but permitted to keep the industries they owned. A succession of civil wars changed the government many times. Arsanus, as symbol of political control, was again ruined in the struggles that did not end until Count Eric Nolanar took power in 1169.

Chamati (0602): Chamati is the outermost of the three moons of Pencadu, a large planet orbiting in the system's habitable zone. The surface is dominated by deep valleys and canyons, some many kilometers deep. Almost all of the hydrographics are found at the canyon floor level. Chamati is uncomfortably hot even at best—temperatures are far hotter within the canyons. There is no native life, although the canyon floors support a flourishing ecosystem origially introduced by the Vilani.

Prior to the Rebellion Chamati was a colony of Towering. It extracted crystals from a number of deep canyon sites and supplied them to Towering for use in the world's heavy industry. The colony was designed to be as self-sufficient as possible, and was large enough to accommodate 30,000 people. After Chamati lost contact with Towering, the colonial administrators took control and declared independence.

Cleves (0403): While Cleves was considered the main world of its system, its was hardly the most populous, only the most central. Relying on high stellar technology, hundreds of millions lived among the asteroids and the ore-rich planets of Vesser and Makill. However, since only Cleves was habitable, all populations had to transfer to that world or perish.

Color (0301): The Depot at Color is virtually intact. Although stripped by Imperial standards, what remains is astounding by modern standards. Color cannot exploit what is in the old naval installations very well, but is unwilling to relinquish control. Kaggushus has restrained itself, using diplomacy to access some of Color's resources.

The class A port at Color was recently built there by Kaggushus as a diplomatic gesture. Color's yards specialize in the refitting of older Imperial ships rather than the laying of new hulls.

Color's technicians and engineers, experienced with the relics at Depot, are eagerly sought after.

Cronin (0502): During Imperial times, Cronin was a major logistics supply center for the navy—the world itself was a naval reserve. During the Black War (1122-1124), scores of ships (mostly naval supply vessels) of the Dagudashaag Fleet defected to save their families on devastated worlds. They resettled the refugees on Cronin, drawing on the vast stockpile of supplies at the base.

The resettlement worked so well that the ships later went on to collect refugees from other worlds as well, primarily from Ralton. To this day, however, those descendants of Raltonians harbor a sense of guilt, believing their mother world might have lived had their forebearers not left. Most of the people evacuated were engineers and technicians, those who might have found new methods of combatting the corrosive atmosphere.

Ershur (0504): Ershur has the oldest human population in the subsector, having been colonized early in the Vilani expansion. The people are proud of their ancient heritage. They also see their world as a bastion of art and culture. Their museums of art were known throughout the Third Imperium.

The world also has a large number of financial institutions, including Musizis Pen, LIC, an important investor in the construction of modern starships.

Ershur boasts breathtaking local scenery, and was popular among tourists before the Rebellion. The Vilani ruins were a major attraction. The loss of the tourist trade forced the world to concentrate heavily on agriculture. Families arriving on the world before the Collapse usually entered agricultural trades.

Towering (0501): Towering is the second most powerful world among The HubWorlds, and emphasizes its high position in contact with other worlds. It even acts as if it were a very close second to Kaggushus because it all but resumed production of starships on its own.

Towering's attitudes in interworld relations tend to be annoying. Fortunately, it is an active supporter of The HubWorlds even if it does sometimes try to elbow others out of the way.

Unlike its neighbors, Towering was settled almost exclusively by Solomani during the Rule of Man. It is a world proudly without a system of nobility. The representatives it sends to the High Chamber are still afforded the privileges of nobility and addressed as "Lord" or "Lady."

Towering was the leader in the initiative to relax controls over starships in 1199.

Aagkhuur (0802): Aagkhuur is a dead world. However, the Mynoris Corporation is already in place to begin recovering the staggering amount of usable goods for resale in The HubWorlds. Most of the profits will finance a program to recolonize Aagkhuur.

Death (0703): This system is seldom visited because of the many ship disappearances attributed to it. So far, no formal investigation has been mounted, but is expected soon. Safe passage though the Death system would provide a shortcut to jump-1 traffic between Kaggushus (0402) and Aagkhuur (0802), substantially encouraging trade between them.

Ticularosta (0508): This is one of the many dead worlds of the subsector, but its class A port and original tech 16 rating have attracted pirates to establish a permanent base. Still, restoring and using the relics is a most difficult process as everything must be relearned. The base here is open to the rare trader, thus the C starport rating.

Yadro (0306): Many commercial ships register this client state as their port so as to sidestep HubWorlds regulations.

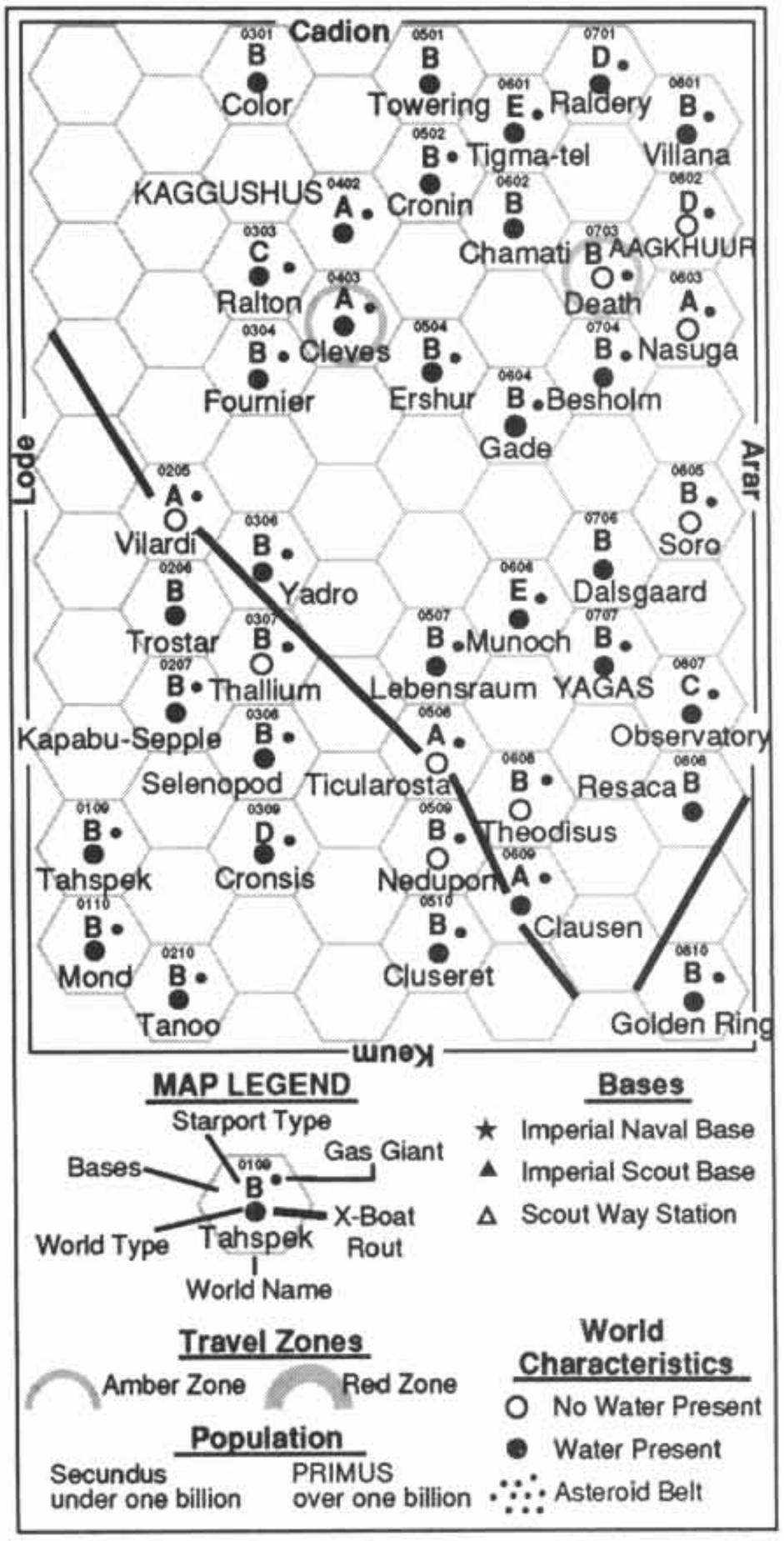
Yagas (0707): Yagas has a psionic institute, which is now grudgingly accepted by the population after a revolution. Psionic individuals have been recruited by the raiders based at Ticularosta.

REFEREES

Information on this page should not be made routinely available to players who do not have access to pre-Collapse starcharts and navigational information. In many cases, it may require research to gain even this outdated level of information.

ERSHUR SUBSECTOR
(SUBSECTOR A OF MASSILIA SECTOR)
(Pre-Collapse data, circa 1117)

Name	Hex	UWP	Base	Trade	TPPG	Alg	Stellar
Tahspek	0109	B5468BA-A			613	Im	G0 V
Mond	0110	B737794-A			721	Im	G4 V
Vilardi	0205	A8C6426-E		Lo Fl Ni	813	Im	M1 V
Trostar	0206	B78A635-C	N	Ni Wa	920	Im	F0 V M1 D
Kapabu-Sepple	0207	B87888B-A	N		604	Im	F8 V M7 D
Tanoo	0210	B78A452-D	N	Lo Ni Wa	202	Im	K1 V M1 D
Color	0301	B78A777-C	D	Ri Wa	300	Im	F6 V
Ralton	0303	C9B58A9-8	S	Fl	413	Im	F1 V M5 D
Fournier	0304	B641764-A		Po	405	Im	G0 V
Yadro	0306	B35376A-A		Po	404	Im	F3 V
Thallium	0307	B1008A7-C	S	Na Va	502	Im	F7 V
Selenopod	0308	B331003-C		Lo Ni Po	114	Im	M8 V M2 D
Cronsis	0309	D75A310-A		Lo Ni Wa	604	Im	F1 V
Kaggushus	0402	A442AA7-G		Hi In Po Cp	904	Im	F1 V
Cleves	0403	A566422-E		Lo Ni	A512	Im	K1 V
Towering	0501	B6548AC-B			600	Im	G4 V M2 D
Cronin	0502	B55205A-A	N	Lo Ni Po	903	Im	F6 V M2 D
Ershur	0504	B386521-B	N	Ag Ni	923	Im	K5 V M7 D M9 D
Lebensraum	0507	B544000-B	N	Ba Lo Ni	904	Im	G7 V M7 D
Ticularosta	0508	A100654-G		Na Ni Va	322	Im	G3 V M9 D
Nedupon	0509	B100632-C		Na Ni Va	400	Im	A4 V
Cluseret	0510	B3627BD-C			604	Im	G2 V
Tigma-tel	0601	E5536A9-5		Ni Po	424	Im	M1 V
Chamati	0602	B253364-D		Lo Ni Po	510	Im	F8 V
Gade	0604	B797021-9		Lo Ni	312	Im	M6 V
Munoch	0606	E868576-7		Ag Ni	313	Im	F1 V
Theodisus	0608	B110588-D	S	Ni	902	Im	M1 V
Clausen	0609	A456002-D	N	Lo Ni	204	Im	K1 V M7 D
Raldery IV	0701	D567466-8	S	Lo Ni	602	Im	G4 V M8 D
Death	0703	B100300-E	N	Lo Ni Va	A612	Im	M9 V M1 D
Besholm	0704	B84A445-C	N	Lo Ni Wa	904	Im	G4 V M3 D
Dalsgaard	0706	B687100-D		Lo Ni	220	Im	F1 V M8 D
Yagas	0707	B566AFC-E		Hi	502	Im	K3 V
Villana	0801	B677334-B		Lo Ni	305	Im	M5 V M1 D
Aagkhuur	0802	D100958-C		Hi In Na Va	224	Im	F4 V
Nasuga	0803	A300620-D		Na Ni Va	214	Im	M4 V M5 D
Soro	0805	B7A0684-C		De Ni	204	Im	M2 V M0 D
Observatory	0807	C531544-9		Ni Po	714	Im	K2 V
Resaca	0808	B452456-D		Lo Ni Po	810	Im	F3 V
Golden Ring	0810	B698541-A	N	Ag Ni	104	Im	M0 V

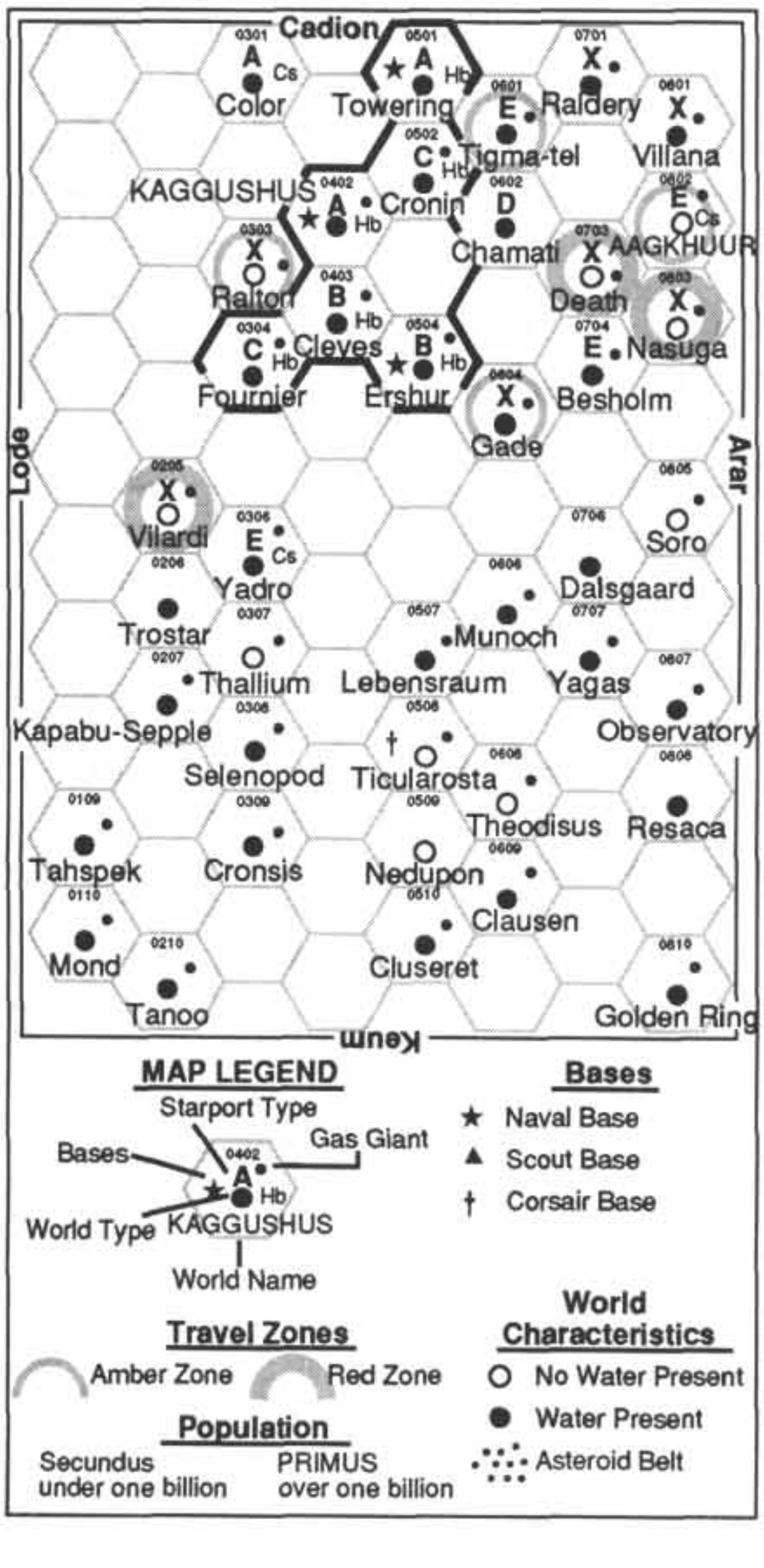


Notes

Bases: N is an Imperial Navy base, S is an Imperial Scout Base, D is an Imperial Navy Depot.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. If the Travel Zone digit is empty, it is a Green Zone; A and R indicate Amber and Red Zones, respectively.

Alg is the Allegiance column. Im = Third Imperium



REFEREES

This map is printed in such a way that it may be used by players who live in The HubWorlds. All of the map data within the explored radius is correct, but the worlds outside of this radius show no data except their physical characteristics. Players with a photocopy of this map of known space can fill in the particulars of the undetailed worlds as they discover more about them. However, when copying this map for the players, referees should be careful to not pass on the UWP data on these undetailed worlds which is included on the table below.

ERSHUR SUBSECTOR (SUBSECTOR A OF MASSILIA SECTOR)

(New Era data, as of 001-1201)

Name	Hex	UWP	Base	Trade	TPPG	Alg	Stellar
Tahspek	0109	D546788-7		Ag	913	—	G0 V
Mond	0110	X737000-0		Ba	021	—	G4 V
Vilardi	0205	X8C6000-0		Ba Fl	R013	—	M1 V
Trostar	0206	X78A76C-4		Ri Wa	120	—	F0 V M1 D
Kapabu-Sepple	0207	X87886D-4			604	—	F8 V M7 D
Tanoo	0210	X78A300-2		Lo Ni Wa	402	—	K1 V M1 D
Color	0301	A78A778-A		Ri Wa	G600	Cs	F6 V
Ralton	0303	X9B5000-0		Ba Fl	A013	—	F1 V M5 D
Fournier	0304	C641735-8		Po	705	Hb	G0 V
Yadro	0306	E353748-6		Po	G104	Cs	F3 V
Thallium	0307	X100000-0		Ba Va	002	—	F7 V
Selenopod	0308	X331000-0		Ba	014	—	M8 V M2 D
Cronsis	0309	E75A330-6		Lo Ni Wa	204	Wi	F1 V
Kaggushus	0402	A442AAB-C	N	Hi In Po Cp	G304	Hb	F1 V
Cleves	0403	B56665A-9		Ag Ni Ri	G612	Hb	K1 V
Towering	0501	A654854-C	N		G300	Hb	G4 V M2 D
Cronin	0502	C552565-8		Ni Po	G803	Hb	F6 V M2 D
Ershur	0504	B386645-8	N	Ag Ni Ri	G123	Hb	K5 V M7 D M9 D
Lebensraum	0507	X544000-0		Ba	004	—	G7 V M7 D
Ticularosta	0508	C10026B-9	C	Lo Ni Va Mr	422	Wi	G3 V M9 D
Nedupon	0509	X100000-0		Ba Va	000	—	A4 V
Cluseret	0510	X36278A-4			604	Wi	G2 V
Tigma-tel	0601	E5536AD-5		Ni Po	A224	Wi	M1 V
Chamati	0602	D253334-7		Lo Ni Po	G710	Na	F8 V
Gade	0604	X797000-0		Ba	A012	—	M6 V
Munoch	0606	X868502-4		Ag Ni	113	Wi	F1 V
Theodisus	0608	X110000-0		Ba	002	—	M1 V
Clausen	0609	X456000-0		Ba	004	—	K1 V M7 D
Raldery IV	0701	X567534-3		Ag Ni	G202	Na	G4 V M8 D
Death	0703	X100000-0		Ba Va	R012	—	M9 V M1 D
Besholm	0704	E84A499-6		Lo Ni Wa	G904	Na	G4 V M3 D
Dalsgaard	0706	X687000-0		Ba	020	—	F1 V M8 D
Yagas	0707	X566968-4		Hi	602	Wi	K3 V
Villana	0801	X677300-4		Lo Ni	G205	Na	M5 V M1 D
Aagkhuur	0802	E100216-8		Lo Ni Va	A124	Cs	F4 V
Nasuga	0803	X300000-0		Ba Va	R014	—	M4 V M5 D
Soro	0805	X7A0000-0		Ba De	004	—	M2 V M0 D
Observatory	0807	X531000-0		Ba	014	—	K2 V
Resaca	0808	X452444-7		Lo Ni Po	310	Wi	F3 V
Golden Ring	0810	X698441-4		Lo Ni	404	Wi	M0 V

Notes

Base: N indicates a (HubWorlds) naval base, C indicates a corsair base.

TPPG indicates Travel Zone, Population Multiplier, Planetoid Belts, and Gas Giants. Because there is no longer a Travellers' Aid Society or other such watchdog group, there are no travel zones in the Wilds.

However, among The HubWorlds, the Order Astra has taken over many of the TAS' former duties, including rating worlds according to their dangers, using the traditional red, amber, and green zones. Dead worlds are usually red zoned to control the spread of the virus. Green applies to worlds known to be safe. Worlds beyond 4 parsecs of Kaggushus have no rating as of 1200-001. The state of affairs on these remote worlds is not publicly known.

Alg is the Allegiance column. Hb = The HubWorlds, Cs = Client State (HubWorlds).

The Na code indicates a nonaligned world. Such a world may exist within an interstellar community, but have no ties to it, or may be nonaligned because it has virtually no off-world contact. The Wi code indicates a world in the Wilds with a Wilds government type. The "—" indicator means that a world has no allegiance because it has no population.

Referee's Note: Any referee who wishes to create a pocket empire must come up with a scenario by which the area was spared some of the worst effects of the virus. Based on this scenario, the modifications to the worlds' UWPs due to the Collapse will not follow the results of the Collapse Effects Determination tables. The actual effects within a referee's pocket empire are ultimately up to the referee. The worlds of The HubWorlds had their Collapse and post-Collapse (1130-1201) effects calculated with a modified version of the system found in the **MegaTraveller** sourcebook **Hard Times**. However, any system which is congruent with both the referee's vision of the local area history and the tremendous devastation done by the virus in the Imperium at large is appropriate.

WORLDS AND TRAVEL

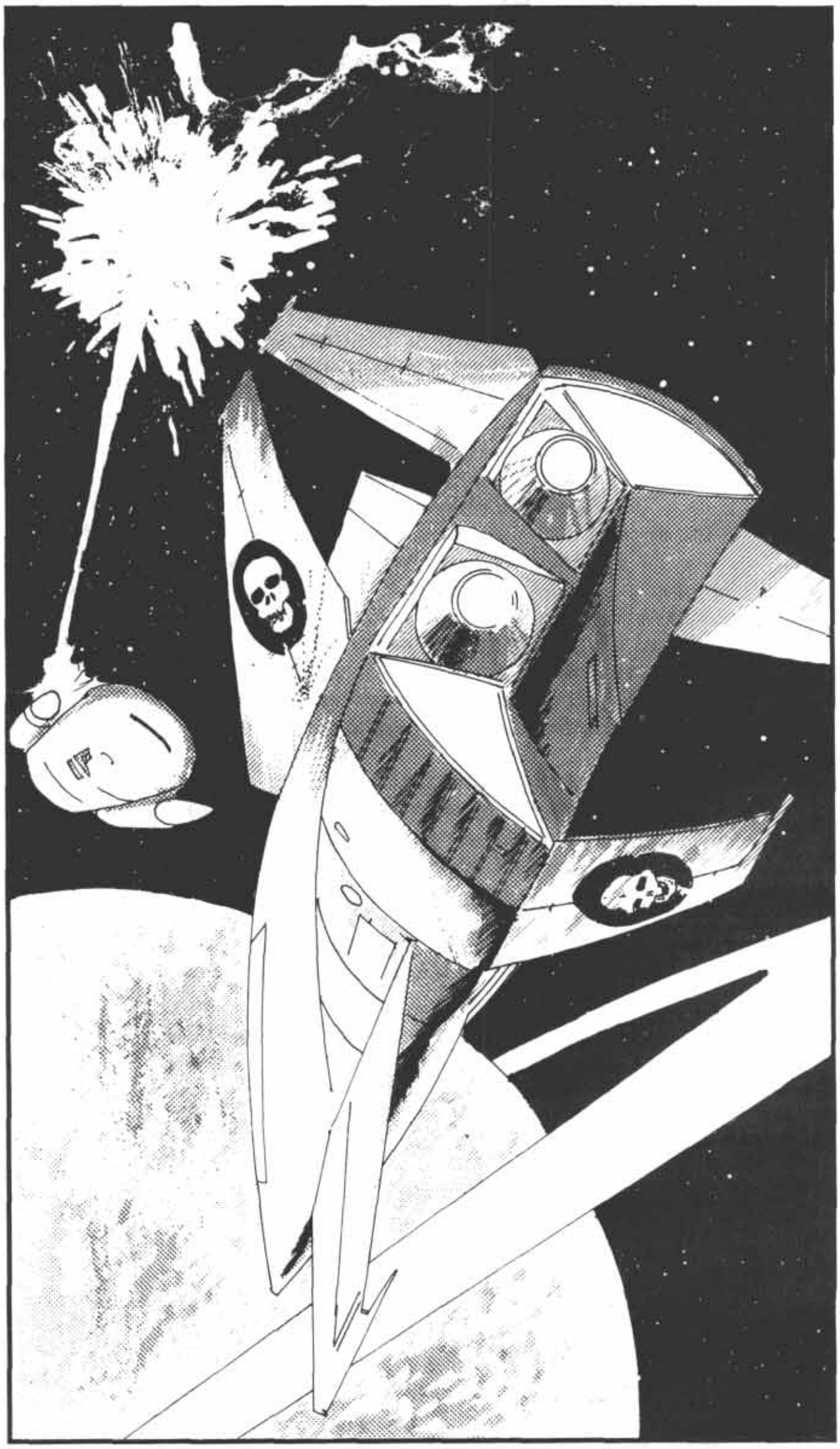
The essence of **Traveller** is the ability to move among the stars, and journey from one exotic location to another to meet the infinite possibilities that await there. This chapter provides the material to realize those journeys, to create and detail the worlds, and to portray how and why these journeys are conducted.

World Building allows players and referees to create the worlds of the Collapsed Imperium, the playing field of the New Era. Other **Traveller** products will cover the generation of many other sorts of worlds, but the worlds that are generated in this chapter will support any Star *Viking, Wilds, Pocket Empire, or Regency* campaign.

With the Imperial Collapse, much knowledge and information have been lost. PCs will spend much of their time opening the frontiers of knowledge, and rediscovering the secrets of that dead empire. The following sections detail how characters can explore these lonely worlds, and show how the referee can create the tremendous variety of animal life that can be encountered there.

Above all of these individual worlds is the force that can link them together, and which had almost been lost: the ability to travel in space. Whether moving from planet to planet or star to star, there are common principles that apply: principles of technology, physics, and economics. This chapter shows how characters use their ships to travel, how they keep their ships in running condition, and how they are able to economically support these adventures. A starship is a priceless commodity in the New Era, because it allows the movement of passengers and cargo from star to star, and there will always be a demand for these services. But beyond these lucrative possibilities, there is the most important reason of all. Progress, discovery, and growth require the ability to travel and seek out knowledge, whether it is new, or just temporarily lost.

The challenges are many; the rewards are incalculable.



World Building

GENERATING STAR SYSTEMS AND WORLDS

The Scout Service had the responsibility for the survey and mapping of the star systems of the Third Imperium. In the execution of their duties, the scouts established a standard format for referring to worlds. This format—the Universal World Profile (UWP)—provided essential information necessary for the identification of the characteristics, benefits, and hazards of specific worlds.

Most trade, commerce, and travel dealt with the main world in a star system. In most cases, the remainder of any system was essentially an undeveloped frontier. The mainworld was the single most important world in a system, and so Mainworld UWP data was the most widely distributed and used demographic and astrographic information in the Imperium.

Where fragmentary star charts are available, the old Third Imperium UWP data entries are often the only clue prospective explorers, traders, and first contact teams have as to the likelihood of life on the world.

The Imperial UWP Generation Flowchart (page 186) covers the procedures of generating pre-Collapse world information. This information, once generated, should usually be available to players. Additional information generated concerning the fate of the world after the collapse can only be learned by investigation: either conversations with traders who have visited the planet or by making an actual exploratory visit to the system.

Important Concepts and Definitions

The Imperial UWP Generation Flowchart (page 186) introduces several important concepts and terms concerning star systems in **Traveller**.

Basic and Extended Generation: There are two distinct approaches to star system generation. Basic Mainworld Generation allows the referee to focus on just the main world in the system in the interest of saving time. Extended System Generation allows the referee to create an entire star system detailing the system's star(s), planets, gas giants, moons, and planetoid belts.

Extended System Generation is designed to pick up where the basic procedure leaves off. Thus, extended generation allows you to put off completely detailing a star system until later, or it allows you to produce detailed star systems from existing **Traveller** star maps with a minimum of difficulty.

While the expanded method produces the most realistic adventure settings, it also requires a tremendous time commitment to generate all of a star system, complete with every attendant planet and satellite.

Universal World Profile (UWP): The Third Imperium made use of a series of letters and numbers called the Universal World Profile (UWP) to code the qualities and characteristics of a world. Because of the wide distribution of this information, its format is generally used by Travellers in the Wilds as a guide to habitable planets and likely caches of pre-Collapse technology. The codes for the UWP are explained in the UWP tables on pages 188-190.

Sectors and Subsectors: Human-explored space was grossly mapped into sectors, each measuring 32 parsecs by 40 parsecs. Each sector was further divided into 16 subsectors, each being an area of hexagonal cells measuring eight hexes by 10 hexes. Each hex covers one parsec (3.26 light-years). These Imperial astrographic conventions are still widely used.

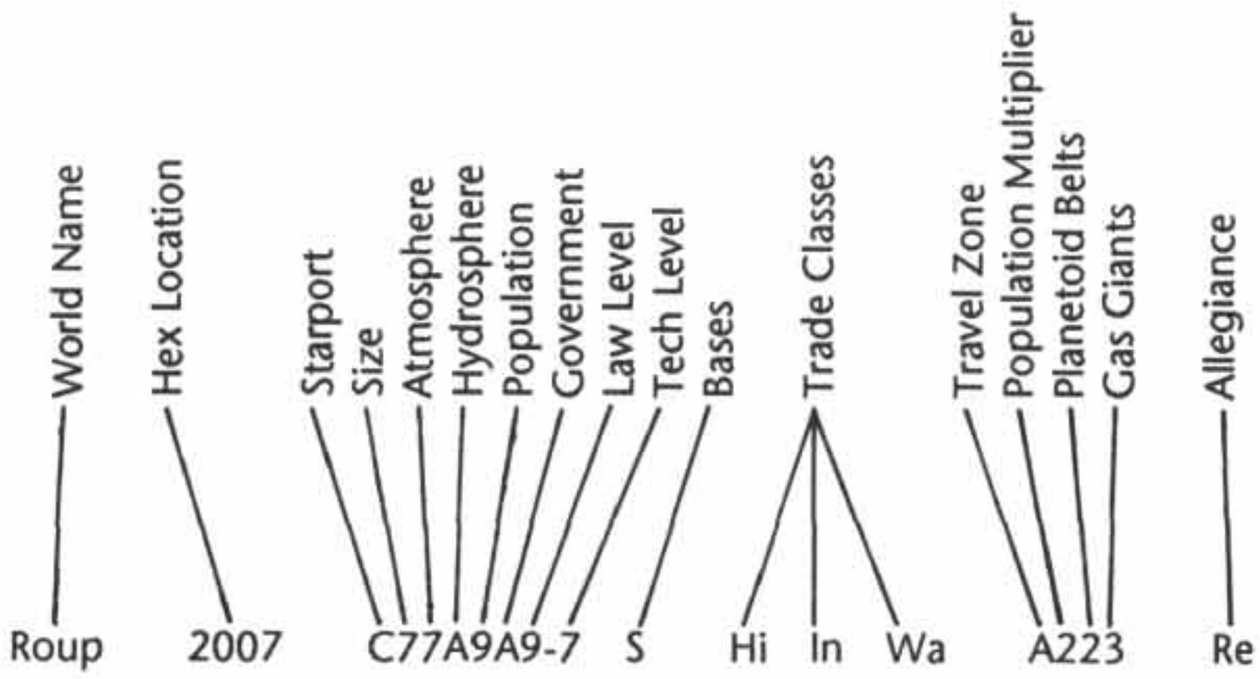
A subsector provides enough world and system data for an extended **Traveller** adventure; a sector is large enough to support an extended **Traveller** campaign.

Mapping subsectors consists of two sequences: star mapping and mainworld creation. When using a published **Traveller** subsector or sector map, the star mapping has already been done for you.

The Sample Blank Subsector Grid on page 183 is intended to be photocopied by the referee and filled in as worlds are generated. Additional copies can be made as mapping continues to other subsectors. See the four sample subsectors included in this book for examples.

The Imperial UWP Generation Flowchart (page 186) provides the steps you must follow to map a subsector and to generate old Imperial astrographic data about the system's mainworld. The Collapse Effects Determination sequence (page 190) provides the information necessary to de-

Universal World Profile



rive new social data for the world.

Star System Presence: The presence of a star system depends on a system density determined by the referee. The System Presence table (page 186) indicates various levels of probability for star systems. Once a system is determined to exist, its presence should be marked on the subsector grid map.

Starport Type: Many worlds have starports, and their presence is essential to interstellar trade and commerce. The various starport types provide a variety of facilities for use by space vessels.

Each system must be checked for its mainworld starport type; mark the system with the starport letter on the subsector map. Various starport probabilities exist depending on how well-travelled a subsector is.

Backwater: A backwater was an untravelled interstellar outback. Exploration has not found resources or novelties that would make this area an important trade route, and it has been bypassed by major trading companies. Examples: Reaver's Deep and many client state regions outside the Imperium.

Frontier: A frontier was a region on the borders of settlement and exploitation. Examples: Spinward Marches, Antares, Diaspora.

Mature: A mature region was a well-travelled region which had a history of civilization and well-established trade. Examples: Vland, Core.

Clustered: A clustered region was a well-travelled region, but some areas are bypassed, which concentrated and intensified the travel through certain key worlds. Examples: Old Expanses, Solomani Rim.

Bases: Stellar systems may have had bases for military forces, the navy, the scouts, or for other arms of interstellar government. If a base was present, it should be marked in the hex. You may elect to include other types of bases, perhaps army bases, merchant exploration or trade bases, and defense establishments. In all cases, these bases have long since been destroyed or fallen into disuse.

You may decide to make the base a naval depot to support large-scale naval activities, but there should be no more than one naval depot per sector.

You may also impose a scout way station at selected worlds along communication routes.

Scout way stations were never co-located with naval depots.

These bases were often targeted in the Civil War and may have suffered considerable damage. If largely intact, however, they may prove to be excellent sources of relic technology.

Gas Giants: A star system may have one or more gas giant planets. A gas giant is a large planet composed primarily of gaseous hydrogen and hydrogen compounds (similar to Jupiter or Saturn). Such planets may or may not have a solid core.

The most notable use for gas giants is in refuelling of spacecraft. The hydrogen atmosphere of gas giants may be skimmed by ships in order to fill their tanks and later use the material as fuel for their jump drives and powerplants. This eliminates fuel cost for the vessel and increases profit. It also allows refueling at systems that do not have starports. The system's hex is marked with the gas giant symbol if a gas giant is present.

Gas giants are generally divided into two sizes: large and small.

Large gas giants range in size from 60,000 kilometers in radius to perhaps 120,000 kilometers in radius. Small gas giants range from about 20,000 kilometers in radius to just under 60,000 kilometers in radius.

System Name: Each system is generally named for the primary world within the parsec.

Travel Zones: Most worlds were assumed to be civilized or at least amenable to travellers and visitors. Some, however, even before the Rebellion and Civil War, were caught in the throes of war, plagued by disease, or simply not ready for interstellar visitors. Such worlds were classified by travel zones to denote such status. Three such zone types exist: green, amber, and red.

Green travel zones indicated that no special hazards existed to travellers. Any unmarked world was a green travel zone by default.

Amber travel zones indicated that travellers should exercise caution when visiting such worlds. The amber code may have meant that the citizens of the world were xenophobic, that the political situation was chaotic, or that some other danger existed within the system.

Red travel zones usually indicated that a major danger existed within the system. This danger may have been disease, and the world may have been quarantined. The system might have been involved in a war, and surface or space battles may have been common. Red travel zones were also used to show a government edict prohibiting entry to the system or world. This may have been to protect a local civilization which was still developing and not yet ready for interstellar contacts or to protect valuable resources until the government could exploit them.

Now, of course, these travel zones have no relevance to the current situation on the world; their inclusion is purely for atmosphere.

Subsector Within a Sector

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P

Although subsectors are named, they are routinely referred to by their letters from the above chart.

Communications Routes: Within the subsector, local governments established communications or trade routes connecting some (but not all) worlds. These routes served as a conduit for messages between businesses and between governments as well as between people. They also served as the basic routes that both liners and large freighters travel.

Examine the subsector map and connect key worlds with communications routes. Typically, express boat communications routes connected, or passed within, three hexes of worlds with type A or B starports.

If the subsector is an isolated community, the routes may not leave the map; if it is part of a larger confederation or empire, the routes will probably leave the edges to join with other parts of the sector. The referee also needs to distinguish between pre-Collapse communication routes (such as lines from the now-defunct xboat network) and current communication lines (such as common routes followed by Free Traders).

Communications routes should be carefully drawn so as to avoid making all parts of the subsector accessible; a subsector should reserve some areas as backwaters for exploration and adventure. Communications routes are drawn as single lines connecting hexes on the subsector grid.

The star map, once generated, shows the distribution of star systems in space and shows their relationships to each other in terms of relative distance and commercial spacelane connections.

Imperial UWP Creation

The term "world" refers to the various bodies that are contained in a stellar system; it encompasses planets, satellites, and asteroid belts. For example, the single most important world in a system may not be a planet; it could be a satellite of a gas giant or a planetoid within an asteroid belt.

This world creation process applies only to the single most important world in a star system; to generate additional details of the star system, see Extended System Generation (page 192).

The main world within a system is the single most important planet or satellite in the system: most often the world with the greatest population, the dominant local government type, and the star system's starport. It is almost invariably located in the star's life zone, that orbit which receives sufficient solar energy to sustain life, but not so much as to make the world unbearably hot.

In addition to the information generated here, each mainworld should be allocated at least one page (and preferably several) in a central notebook maintained by the referee. As characteristics are generated, they should be recorded along with the name of the world and its location (generally its subsector and hex number). Record any other data which may be pertinent: the types of terrain present on the planetary surface, unique encounter tables (prescribed by the section on animal encounters), data on flora and fauna, industrial or agricultural capacity, social structure and government, or possibly actual maps of the planetary surface.

The specific procedures for generating the mainworld are given on the Imperial UWP Generation flowchart (starting on page 186).

Atmosphere: The atmosphere code represents the breathing environment encountered on the world. Some atmospheres require specific personal equipment for survival and protection.

Vacuum or Trace Atmosphere: The atmosphere has a pressure of less than 0.1 atmospheres, which requires the use of a vac suit.

Very Thin Atmosphere: The atmosphere has a pressure of 0.1 to 0.42 atmospheres, which requires the use of a compressor to ensure sufficient oxygen.

Tainted Atmosphere: The atmosphere contains an unusual taint such as such as disease, a hazardous gas mix, pollutants, or sulfur compounds which requires the use of a filter mask. Tainted, very thin atmospheres require a combination respirator/filter mask for survival.

Thin Atmosphere: The atmosphere has a pressure of 0.43 to 0.70 atmospheres. The atmosphere is a standard oxygen/nitrogen mix, which is breathable without assistance.

Standard Atmosphere: The atmosphere has a pressure of 0.71 to 1.49 atmospheres. The atmosphere is a standard oxygen/nitrogen mix, which is breathable without assistance.

Dense Atmosphere: The atmosphere has a pressure of 1.50 to 2.49 atmospheres. The atmosphere is a standard oxygen/nitrogen mix, which is breathable without assistance.

Exotic Atmosphere: An unusual gas mix which requires the use of oxygen tanks, but protective suits are not needed.

Corrosive Atmosphere: A concentrated gas mix or unusual temperature creates a corrosive environment, which requires the use of a protective suit or vac suit.

Insidious Atmosphere: The atmosphere is similar to a corrosive atmosphere, but extreme conditions cause the corrosive effects to defeat any protective measures in two to 12 hours.

Dense, High Atmosphere: Pressure at or below sea level is too great to support life but is breathable at higher altitudes.

Ellipsoid: The world's surface is ellipsoidal, not spherical. Because the atmosphere remains spherical, surface atmospheric pressure ranges from very high at the middle to very low at the ends. Breathable bands may exist at some point within the range of pressure.

Thin, Low Atmosphere: The world is large and massive, with a thin atmosphere which settles to the lowest levels of the terrain. The atmosphere is unbreathable at most

altitudes except the very low ones (as in depressions or deep valleys).

Hydrosphere: For normal worlds, the hydrosphere will be water; on other worlds (with exotic, corrosive, or insidious atmospheres), it may be other liquids or fluids such as ammonia.

Some worlds with vacuum atmospheres may have hydrographic percentages greater than 0: The world has ice caps present; the water will not be free-standing liquid. A Desert World may have up to 4% free-standing water and still be considered a Desert World. Conversely, a Water World may have a 95% hydrosphere and still be considered a Water World.

Population Density: The following population densities are from 20th-century Earth. Earth has a population of 4 billion (Population Level 9), with five persons per square mile or 16 persons per square mile of land area. Europe is populated at about 151 persons per square mile, the equivalent of Population Level 10. The Netherlands contain 1500 persons per square mile, or about Population Level 11. Hong Kong has 10,000 persons per square mile, about Population Level 12.

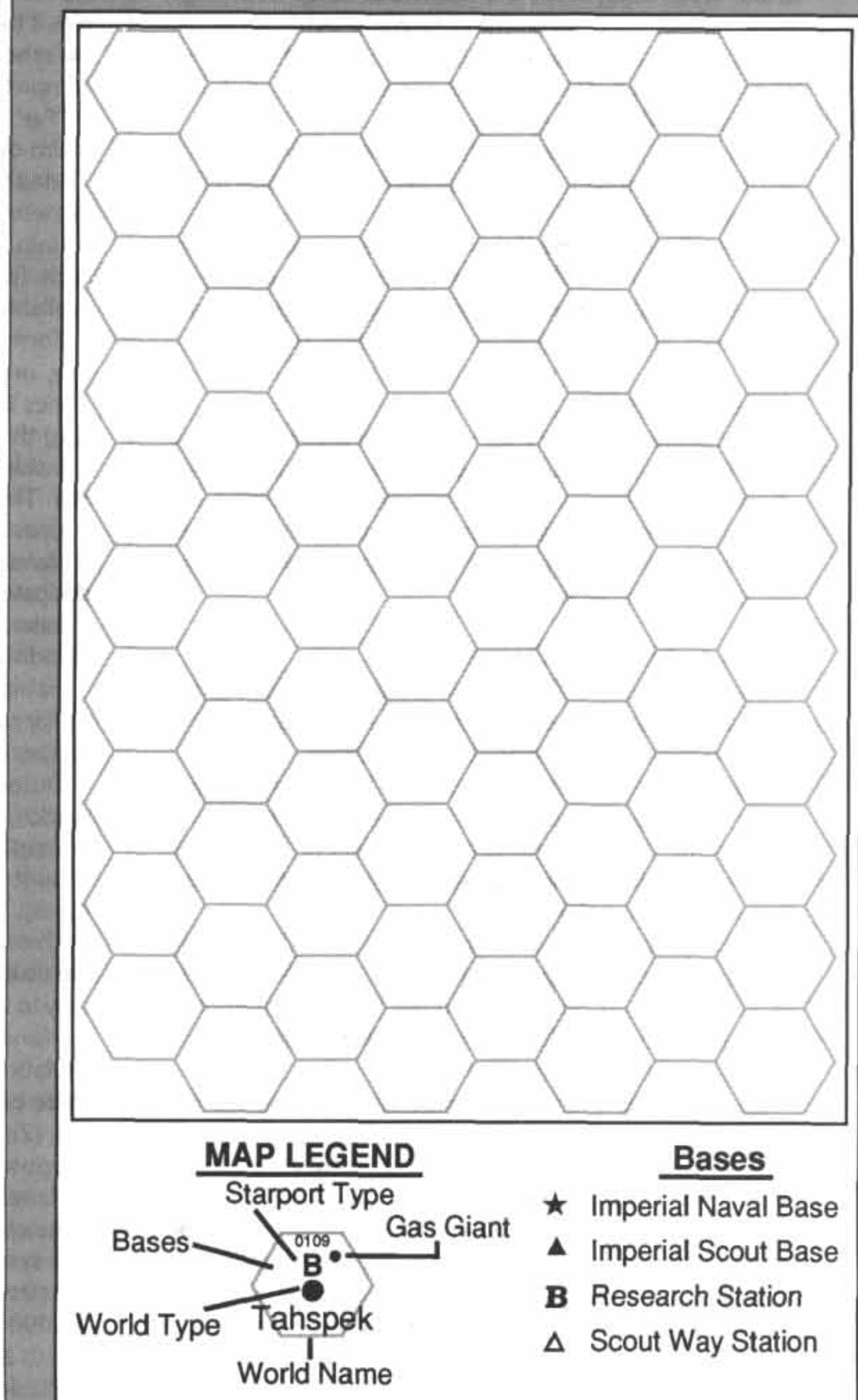
Government: Government types indicate the general type of authority; each listed type provides a guide to the referee for administering encounters on the world. The World Government table (page 188) describes characteristics of each government type. Balkanization is a special result which indicates that there is no world government; instead several rival territorial governments exist. In such cases, you should generate the specific qualities of each territory on the planet separately.

Law Level: Law level is an indication of the relative oppressiveness of the world. The digit is classified on the World Law Level table (page 189) to show prohibitions against weapons. It also influences the difficulty of the task used to avoid being harassed or arrested by local authorities (see the Encounters section, page 202).

The Law Level defines local restrictions on possession and use of weapons by individuals. The referee (or players) may find combinations of features which may seem contradictory or unreasonable. Common sense should rule. In such cases strive to generate a rationale which explains the situation.

Technological Level: The degree of technological expertise, and thus the capabilities of local industry, depends greatly on the basic characteristics of a world. World technological levels may vary from 0 to 20, more commonly ranging from 4 to 10. Higher numbers indicate greater capability.

Sample Blank Subsector Grid



The tech level of a world determines the type, quality, and sophistication of the products commonly available on a world in urban areas or near the starport. Large areas of the world away from the starport or away from large population centers may be one or even two tech levels lower.

Local citizenry will usually not be armed with weapons of a type which cannot be produced locally, but law enforcers or the military may be.

Tech level also indicates the general ability of local technology to repair or maintain items which have failed or malfunctioned.

Trade Classifications: Trade classifications are covered in more detail in the Trade and Commerce section, page 230.

Finally, you should always feel free to create worlds which have been deliberately (rather than randomly) generated.

Collapse Effects

The Collapse had a profound effect on the worlds of the Third Imperium. The Collapse Effects Determination flowchart (page 190) enables the referee to determine the new tech level, population number, starport type, government, and law level. These will require recalculation of trade categories as well.

Extended System Generation

Use the Extended System Generation flowchart (page 192) when you wish to completely detail a star system's entire complement of planets and satellites.

System Nature: Star systems may be solitary, having one central star, or multiple, having two or more stars. In an extreme situation, the star system may be quadruple, with two widely separated binary systems, each effectively a distinct system.

Primary Star Type: Star types range through a variety of spectral types using the codes O B A F G K M. These letters indicate in descending order the temperature of the stars. (A mnemonic for remembering this sequence is "Oh, Be A Fine Girl/Guy, Kiss Me.")

Spectral types O and B are extremely rare and will not normally be encountered. You may establish an O or B type star when and where necessary (although there should not be more than one or two type O or B stars in a sector).

Spectral Decimal Classification: The spectral type for stars is usually further specified by a decimal classification (using the digits 0 to 9). Thus a type F1 star is one-tenth of the way between F and G, while a type F9 is nine-tenths of the way to G. All stars are treated this way with the exception of type O, which ranges from 5 to 9 only, and luminosity class D (degenerate) stars, which need not have any decimal classifications. (Note that there are a large number of published sectors that do have decimal classifications assigned to class D stars. There is no need to delete these, only to remember that the decimal classifications are irrelevant: an M1 D or an M8 D are both "DM" on the chart on page 193.)

Companion Orbit: A result of "close" indicates that the companion star is effectively touching the primary star; its orbit is so very close to the primary that it has practically no effect on orbits of planets. Other results on the column indicate the planetary orbit which the companion star occupies. If the planetary orbit for a companion is coded as within the sphere of the primary star on the table of zones, then the companion orbit is changed to close.

"Far" indicates that the companion star is outside the realm of the primary star's system.

Maximum Orbits: Orbits for planets, gas giants, and planetoid belts are available around the primary star and certain eligible companion stars. The Maximum Orbits table (page 192) indicates the highest numbered orbit available for the star.

Zones: The orbits around a star are classified as inside star, unavailable, inner, habitable, and outer. The Orbit Zones tables (page 193) indicate (for each star type and size) the orbit number and its zone classification.

Inside star orbits are physically inside the sphere of the star. They cannot be occupied by planets.

Unavailable orbits are subject to intense heat from the star: A planet in such an orbit would be converted to vapor and dissipated. Such orbits cannot be occupied by planets.

Inner zone orbits expose worlds to relatively large amounts of radiation, and such worlds are hot and inhospitable.

Habitable zone orbits are in a temperate region where stellar radiation is neither too much nor too little. If other factors are right, life may exist on worlds in this region.

Outer zone orbits do not provide enough radiation for worlds, and they are cold and inhospitable.

Empty Orbits: These have no planets in them (although a companion star already placed in one remains there). They may be empty because of ancient collisions or through other effects of worlds and stars. Empty orbits are usually indicated as empty when describing a system, if only to show that no oversight was made in listing contents.

Planetoids: Planetoid belts (or asteroid belts) are accumulations of small chunks of rock or ice not large enough to be called planets. In basic system generation, a world size (Zero) is used to designate an asteroid belt. For the purposes of distinction, the term "asteroid belt" describes a planetoid belt which is also the mainworld in a system; "planetoid belt" refers to any other group of planetoids in a system.

Asteroid and planetoid belts hold between 1000 and 10,000 asteroids or planetoids each. Asteroids and planetoids are generally under 200 kilometers in diameter.

Placing Known Components: Once the components of the system are determined, they must be placed within the system. The flowchart calls for component placement among the available orbits to be done randomly.

To perform the random selection of an orbit, assign equal probability to each available orbit, and roll one die. If there are six or fewer candidate orbits, one number is assigned to each orbit; extra or unused numbers indicate a reroll is required.

If there are more than six candidate orbits, divide the orbits evenly into two, three, or more groups (each of six or fewer candidate orbits), and roll a die to first determine which group the known component should be placed in. Then, the actual choice within the group may be randomly made using another die roll.

Planet Generation: Planets outside the habitable zone are produced in a fashion very similar to those in the habitable zone, but various modifications are included for orbital position and other details.

Satellites: For the purposes of this system, satellites produced are at least 200 kilometers in diameter; potentially any planet may have one or more satellites (captured planetoids) less than 200 kilometers in diameter.

Subordinate Government: Subordinate governments reflect the small, relatively powerless governments which can exist off the mainworld. Nevertheless, such subordinate governments may wield great power on their own territory.

Subordinate Facility: Possible subordinate facilities include farming, mining, colony, research laboratory, and military base.

Farming indicates that the world supports agriculture and is exploited to produce farm products.

Mining indicates the world or satellite has recoverable ores and is being exploited for industrial reasons.

Colony indicates that a settlement has been established on the world or satellite. A colony may represent any of several types of establishment, including a model or demonstration settlement, a penal or deportation colony, or simply a group intent on settling and exploiting new territory.

Research laboratory indicates that a scientific establishment has been located on the world or satellite. A research lab may be operated under the control of the government, or it may be privately operated.

Military base indicates that the world or satellite has a military force stationed on it. The military force is generally non-naval: It is an army or marine troop establishment. Often, a military base can be noted with the symbol M in the base column of the statistics for the system, as well as with a comment in the remarks area. If, however, naval or scout bases are already present on the world, then no symbol for the military base should be used, and it should be noted in the remarks instead.

Scout and Naval Base Components: Both scout bases and naval bases are always assumed to have components at the major starport (the starport on the main world) in the system. However, you may elect to establish components of scout or naval bases throughout the system. The chart explains how to do this.

Spaceport: The major traffic center in the system is the starport; all others are called spaceports. While it is possible for spaceports to accept starships, they are called (if only for convenience and for terminology) spaceports.

Naming System Bodies: In any system, the name used for identification is the name of the mainworld.

World Naming Conventions

A system carries two names: the name of its star and the name of its mainworld. Of the two, the mainworld name is more important and is more frequently encountered.

The other worlds within a system carry their own names, but they are just as often referred to in terms of their position with relation to their star.

Conventions: The Imperial world naming conventions were established during the Rule of Man, when Second Imperium scout ships thoroughly mapped the star systems and planets of the conquered First Imperium. Since the Second Imperium was directly formed from the Terran Confederation Navy, it seemed only natural that Terran conventions should be used.

Planets were identified by Greek letters, with the innermost planet labeled Alpha.

Satellites were identified by Anglic letters, with the innermost satellite identified as Ay.

For example, Terra is commonly known as Terra. It is also technically Sol Delta (Sol's orbit zero is empty). Luna, as Terra's only satellite, is Sol Delta Ay.

No.	*Greek*	*Anglic*
0	Alpha	Ay
1	Beta	Bee
2	Gamma	See
3	Delta	Dee
4	Epsilon	Ee
5	Zeta	Eff
6	Eta	Gee
7	Theta	Aitch
8	Iota	Eye
9	Kappa	Jay
10	Lambda	Kay
11	Mu	Ell
12	Nu	Em
13	Xi	En
14	Omicron	Oh
15	Pi	Pee
16	Rho	Cue
17	Sigma	Are
18	Tau	Ess
19	Upsilon	Tee
20	Phi	You
21	Chi	Vee
22	Psi	Double-You
23	Omega	Eks
24	—	Wye
25	—	Zee

IMPERIAL UNIVERSAL WORLD PROFILE (UWP) GENERATION

1. System Presence

For all hexes within a subsector, determine which hexes have a system present based on the referee-mandated stellar density.

System Density

Density	Density Percentage	Roll per subsector hex
Rift	4%	12+ on 2D6
Sparse	16%	6+ on 1D6
Scattered	33%	5+ on 1D6
Standard	50%	4+ on 1D6
Dense	66%	3+ on 1D6

2. System Details

For each system, generate the details of the mainworld.

3. Mainworld Starport

Roll 2D6 to determine the mainworld starport type based on how well-travelled this particular subsector is.

Starport Type

2D6	Backwater	Standard	Mature	Cluster
2	A	A	A	A
3	A	A	A	A
4	B	A	A	A
5	B	B	B	A
6	C	B	B	B
7	C	C	C	B
8	C	C	C	C
9	D	D	D	C
10	E	E	E	D
11	E	E	E	E
12	X	X	E	X

The referee must select the nature of the mainworld system and then roll on the appropriate column.

Backwater is out of the mainstream of interstellar culture and communication.

Standard is the expected norm.

Mature is an older, more established system.

Cluster has many worlds close together.

4. World Size

Roll 2D6–2 for world size.

Roll 1D6 and consult Planetary Density table (page 190).

Using size and density, determine surface gravity.

5. Atmosphere

Roll 2D6–7+world size for atmosphere.

If world size is 0, then atmosphere is 0.

6. Hydrographics

Roll 2D6–7+world size for hydrographics.

If world size is 1 or less, hydrographics is 0.

If atmosphere is 1 or less, or A or more, apply DM–4.

7. Population

Roll 2D6–2 for population.

8. Government

Roll 2D6–7+population for government.

9. Law Level

Roll 2D6–7+government for law level.

10. Technology Level

Roll 1D6 and add the technology DMs for all possible characteristics of the mainworld in order to determine its technology level.

Technology Level Die Modifiers

Level	Starport	World Size	Atmosphere	Hydrographics	Population	Government
0		+2	+1	—	—	+1
1		+2	+1	—	+1	—
2		+1	+1	—	+1	—
3		+1	+1	—	+1	—
4		+1	—	—	+1	—
5		—	—	—	+1	+1
6		—	—	—	—	—
7		—	—	—	—	—
8		—	—	—	—	—
9		—	—	+1	+2	—
A	+6	—	+1	+2	+4	—
B	+4		+1			—
C	+2		+1			—
D	—		+1			–2
E	—		+1			–1
F	+1		+1			–1
X	–4					

Determine all possible die modifiers from this table, and apply them to a throw of 1D6. The result is the mainworld's technology level. Treat adjusted die rolls of less than 0 as 0.

The maximum possible adjusted roll for technology level is 20 (Starport A, World Size 1, Atmosphere 3, Population A, Government 5); the minimum possible is 0.

11. Scout and Naval Bases

Determine the types of bases in the system.

Imperial naval bases support the operations of interstellar naval units. Imperial Scout bases support the operations of the Imperial Interstellar Scout Service.

Non-Imperial military bases undertake some or all of the functions of Imperial Naval and Scout bases.

Base Presence

Starport	Imperial Naval Base	Imperial Scout Base	Non-Imperial Military Base
A	8+ on 2D6	10+ on 2D6	10+ on 2D6
B	8+ on 2D6	9+ on 2D6	9+ on 2D6
C	—	8+ on 2D6	8+ on 2D6
D	—	7+ on 2D6	—

Bases are not present at type E and X starports.

Codes: Use the following letter codes to denote bases:

N. Imperial naval base.

S. Imperial scout base.

A. Imperial naval base and scout base both present.

B. Imperial naval base and scout way station both present (a way station is an extensive Scout base).

M. Non-Imperial military base.

12. Trade Classifications

Analyze all characteristics of the mainworld and determine its trade classifications.

TRADE CLASSIFICATIONS

Code	Size	Atmosphere	Hydrographics	Population	Government	Law Level	Code Definition
Ag	—	4-9	4-8	5-7	—	—	Agricultural
As	0	0	0	—	—	—	Asteroid
Ba	—	—	—	0*	0	0	Barren
De	—	2+	0	—	—	—	Desert
Fl	—	A-C	1+	—	—	—	Fluid Oceans
Hi	—	—	—	9+	—	—	High Population
Ic	—	0-1	1+	—	—	—	Ice-Capped
In	—	2-4,7,9	—	9+	—	—	Industrial
Lo	—	—	—	4-	—	—	Low Population
Na	—	0-3	0-3	6+	—	—	Nonagricultural
Ni	—	—	—	0*-6	—	—	Nonindustrial
Po	—	2-5	0-3	—	—	—	Poor
Ri	—	6,8	—	6-8	4-9	—	Rich
Va	—	0	—	—	—	—	Vacuum
Wa	—	—	A	—	—	—	Water World

Determine all possible trade classifications from this table. However, an Asteroid Belt (As) is automatically a Vacuum World, and need not have the Va code. Asian worlds are Rich (Ri) without regard to government type. A Vargr world is disqualified from the Rich classification if it is government type 7. No world in the Wilds ("Wi" allegiance code) may be a Rich world.

*For Barren world, population multiplier must be 0. For Nonindustrial, population multiplier must be 1+.

13. Supplemental Remarks

Determine if the mainworld merits any supplemental remarks. Supplemental remarks are imposed by the referee after considering the general circumstances of the world. Supplemental remarks include:

An. Ancients' Site. A high-tech remnant of the now-vanished Ancients.

Cp. Subsector Capital. The capital of the local region.

Cx. Sector or Regional Capital. The capital of the local sector.

Ex. Exile Camp. A dumping ground for political dissidents.

Mr. Military Rule. A world under overall control of the local military (regardless of government type).

Pr. Prison Camp. A prison for criminals.

Rs. Research Station. An experimental facility.

Xb. Xboat Station. An Imperial facility for rapid message transmission.

14. Population Multiplier

Determine the population multiplier for the mainworld.

Roll 1D10. For population codes of 1+, ignore and reroll a result of 10. For population codes of 0, treat a roll of 10 as "0"; world is uninhabited.

15. Gas Giants

Roll 5+ on 2D6 to determine if gas giants exist in the system.

If gas giants exist, determine how many from the Gas Giant Quantity table.

GAS GIANT QUANTITY

2D6	Quantity
2	1
3	1
4	2
5	2
6	3
7	3
8	4
9	4
10	4
11	5
12	5

16. Planetoid Belts

Roll 8+ on 2D6 to determine if planetoid belts exist in the system.

If planetoid belts exist, determine how many from the Planetoid Belt Quantity table.

PLANETOID BELT QUANTITY

2D6	Quantity
2	1
3	1
4	1
5	1
6	1
7	2
8	2
9	2
10	2
11	2
12	3

17. Travel Zones

Determine if the world presents any dangers or apparent dangers to travellers. Travel zones are imposed by the referee after considering the general circumstances of the world. There are three travel zone codes:

Green. No danger. Green travel zones are not usually stated.

Amber. Caution. Circumstances dictate caution because of local, natural, or social conditions.

Red. Danger. Access to the world is prohibited.

Class X starports are almost always red zones. Amber and red zones are also imposed by the referee.

The combination of High government and law level also produces the following travel zones.

TRAVEL ZONE MATRIX

Govt Type	Law Level G	H	J	K	L
A	—	—	—	—	A
B	—	—	—	A	A
C	—	—	A	A	A
D	—	A	A	A	R
E	—	A	A	R	R
F	A	A	R	R	R

A: Amber Zone. R: Red Zone.

UNIVERSAL WORLD PROFILE TABLES

World Size

Code	General Description	Minimum Diameter	Maximum Diameter
R	Asteroid/Planetoid Ring	Multiple Bodies	Under 1 km
S	Very Small (400 km)	200 km	799 km
0	Asteroid/Planetoid Belt	Multiple Bodies	Under 200 km
1	Small (1600 km)	800 km	2399 km
2	Small (Luna; 3200 km)	2400 km	3999 km
3	Small (Mercury; 4800 km)	4000 km	5599 km
4	Small (Mars; 6400 km)	5600 km	7199 km
5	Medium (8000 km)	7200 km	8799 km
6	Medium (9600 km)	8800 km	10,399 km
7	Medium (11,200 km)	10,400 km	11,999 km
8	Large (Terra; 12,800 km)	12,000 km	13,599 km
9	Large (14,400 km)	13,600 km	15,199 km
A	Large (16,000 km)	15,200 km	16,799 km
SGG	Small Gas Giant (40,000 km)	20,000 km	59,999 km
LGG	Large Gas Giant (90,000 km)	60,000 km	120,000 km

R: A Ring orbits a world.
S: A small body orbits a world or star.
0: A planetoid or asteroid orbits a star.

World Atmosphere

Code	General Description	Minimum Pressure	Maximum Pressure
0	Vacuum	—	0.00
1	Vacuum (trace)	0.001	0.09
2	Vacuum (very thin tainted)	0.10	0.42
3	Vacuum (very thin)	0.10	0.42
4	Thin (tainted)	0.43	0.70
5	Thin	0.43	0.70
6	Standard	0.71	1.49
7	Standard (tainted)	0.71	1.49
8	Dense	1.50	2.49
9	Dense (tainted)	1.50	2.49
A	Exotic	Varies	Varies
B	Exotic (corrosive)	Varies	Varies
C	Exotic (insidious)	Varies	Varies
D	Exotic (dense, high)	Varies	Varies
E	Exotic (thin, low)	Varies	Varies
F	Exotic (ellipsoid)	Varies	Varies

Vacuum requires a vac suit. Tainted requires a filter mask. Very thin requires a respirator. Very thin tainted requires a combination respirator/filter mask.

World Hydrographics

Code	General Description	Minimum	Maximum
0	Desert World (0%)	0%	4%
1	Dry World (10%)	5%	14%
2	Dry World (20%)	15%	24%
3	Wet World (30%)	25%	34%
4	Wet World (40%)	35%	44%
5	Wet World (50%)	45%	54%
6	Wet World (60%)	55%	64%
7	Wet World (70%)	65%	74%
8	Wet World (80%)	75%	84%
9	Wet World (90%)	85%	94%
A	Water World (100%)	95%	100%

World Population

Code	General Description	Minimum Population	Maximum Population
0	Inc (less than 10)	0	9
1	Inc (tens)	10	99
2	Inc (hundreds)	100	999
3	Low (thousands)	1000	9999
4	Low (ten thousands)	10,000	99,999
5	Low (hundred thousands)	100,000	999,999
6	Mod (millions)	1,000,000	9,999,999
7	Mod (ten millions)	10,000,000	99,999,999
8	Mod (hundred millions)	100,000,000	999,999,999
9	High (billions)	1,000,000,000	9,999,999,999
A	High (ten billions)	10,000,000,000	99,999,999,999

World Government

Code	General Description
0	**No Government Structure.** In many cases, family bonds predominate.
1	**Company/Corporation.** Government by a company managerial elite; citizens are company employees.
2	**Participating Democracy.** Government by advice and consent of the citizen.
3	**Self-Perpetuating Oligarchy.** Government by a restricted minority, with little or no input from the masses.
4	**Representative Democracy.** Government by elected representatives.
5	**Feudal Technocracy.** Government by specific individuals for those who agree to be ruled. Relationships are based on the performance of technical activities which are mutually beneficial.
6	**Captive Government/Colony.** Government by a leadership answerable to an outside group; a colony or conquered area.
7	**Balkanization.** No central ruling authority exists; rival governments compete for control.
8	**Civil Service Bureaucracy.** Government by agencies employing individuals selected for their expertise.
9	**Impersonal Bureaucracy.** Government by agencies which are insulated from the governed.
A	**Charismatic Dictator.** Government by a single leader enjoying the confidence of the citizens.
B	**Non-Charismatic Leader.** A previous charismatic dictator has been replaced by a leader through normal channels.
C	**Charismatic Oligarchy.** Government by a select group, organization, or class enjoying overwhelming confidence of the citizenry.
D	**Religious Dictatorship.** Government by a religious minority which has little regard for the needs of the citizenry.
E	**Religious Autocracy.** Government by a single religious leader having absolute power over the citizenry.
F	**Totalitarian Oligarchy.** Government by an all-powerful minority which maintains absolute control through widespread coercion and oppression.

World Law Level

Code	General Description
0	No law (no prohibitions).
1	Low law (body pistols, explosives, poison gas prohibited).
2	Low law (portable energy weapons prohibited).
3	Low law (machineguns, automatic rifles prohibited).
4	Moderate law (light assault weapons prohibited).
5	Moderate law (personal concealable weapons prohibited).
6	Moderate law (all firearms except shotguns prohibited).
7	Moderate law (shotguns prohibited).
8	High law (blade weapons controlled; no open display).
9	High law (weapon possession outside the home prohibited).
A	Extreme law (weapon possession prohibited).
B	Extreme law (rigid control of civilian movement).
C	Extreme law (unrestricted invasion of privacy).
D	Extreme law (paramilitary law enforcement).
E	Extreme law (full-fledged police state).
F	Extreme law (all facets of daily life rigidly controlled).
G	Extreme law (severe punishment for petty infractions).
H	Extreme law (legalized oppressive practices).
J	Extreme law (routinely oppressive and restrictive).
K	Extreme law (excessively oppressive and restrictive).
L	Extreme law (totally oppressive and restrictive).

Technology Level

Code	General Description	Approximate Historical Equivalent
0	Pre-Industrial (primitive)	Stone Age
1	Pre-Industrial (bronze, iron)	Middle Ages
2	Pre-Industrial (printing press)	Circa 1600
3	Pre-Industrial (basic science)	Circa 1800
4	Industrial (internal combustion)	Circa 1900
5	Industrial (mass production)	Circa 1930
6	Pre-Stellar (nuclear power)	Circa 1950
7	Pre-Stellar (mini. electronics)	Circa 1970
8	Pre-Stellar (superconductors)	Circa 1990
9	Early Stellar (fusion power)	Circa 2010
A	Early Stellar (jump drive)	Circa 2100
B	Average Stellar (large starships)	
C	Average Stellar (sophisticated robots)	
D	Average Stellar (holo data storage)	The Imperium
E	High Stellar (antigrav cities)	
F	High Stellar (anagathics)	
G	High Stellar (global terraforming)	
H	Extreme Stellar	
J	Extreme Stellar	
K	Extreme Stellar	
L	Extreme Stellar	The Ancients

Starports

Type	Quality	Shipyards	Repair	Fuel
A	Excellent	Starships	Overhaul	Refined
B	Good	Spacecraft	Overhaul	Refined
C	Routine	—	Major Damage	Unrefined
D	Poor	—	Minor Damage	Unrefined
E	Frontier			
X	None			

Starports are established primarily to foster interstellar trade and commerce.

Spaceports

Type	Quality	Shipyards	Repair	Fuel
F	Good	—	Minor Damage	Unrefined
G	Poor	—	Superficial	Unrefined
H	Primitive			
Y	None			

Spaceports are established primarily to foster in-system travel.

World Physical Data

UWP	Code Size	Digit Size	Code Atmosphere	Digit Atmosphere	Code Hydrographics	Digit Hydrographics
0	Asteroid	Asteroid Belt	Vacuum	Vacuum	Desert	0% water
1	Small	1600 km	Vacuum	Vacuum (trace)	Dry World	10% water
2	Small	3200 km	Vacuum	Very Thin (tainted)	Dry World	20% water
3	Small	4800 km	Vacuum	Very Thin	Wet World	30% water
4	Small	6400 km	Thin	Thin (tainted)	Wet World	40% water
5	Medium	8000 km	Thin	Thin	Wet World	50% water
6	Medium	9600 km	Standard	Standard	Wet World	60% water
7	Medium	11200 km	Standard	Standard (tainted)	Wet World	70% water
8	Large	12800 km	Dense	Dense	Wet World	80% water
9	Large	14400 km	Dense	Dense (tainted)	Wet World	90% water
A	Large	16000 km	Exotic	Exotic	Water World	100% water
B			Exotic	Corrosive		
C			Exotic	Insidious		
D			Exotic	Dense (high)		
E			Exotic	Ellipsoid		
F			Exotic	Thin (low)		

This table shows the UWP digit for the physical data for worlds, and provides both the code meaning from the **Players' Manual** and the UWP digit meaning from the world generation systems in the **Referee's Manual**.

World Horizons

Diameter	Range to Horizon
1,600 (1)	1.8 km
3,200 (2)	2.5 km
4,800 (3)	3.1 km
6,400 (4)	3.6 km
8,000 (5)	4.0 km
9,600 (6)	4.4 km
11,200 (7)	4.7 km
12,800 (8)	5.1 km
14,400 (9)	5.4 km
16,000 (A)	5.7 km

World Density (Roll 1D6)

1D6	Density
1	Low
2-4	Average
5-6	High

–2 from die if world is in outer zone. Modified roll of less than 1 are treated as 1. (Note: all mainworlds are in the habitable zone; this die roll modifier is only used in conjunction with extended system generation.)

World Gravity Table

Diameter	Density Low	Avrg	High
1600 (1)	.10	.15	0.3
3200 (2)	.15	.25	0.5
4800 (3)	.30	.40	0.8
6400 (4)	.35	.50	1.0
8000 (5)	.45	.60	1.2
9600 (6)	.55	.80	1.6
11,200 (7)	.60	.90	1.8
12,800 (8)	.70	1.0	2.0
14,400 (9)	.70	1.1	2.2
16,000 (A)	.80	1.3	2.6

Surface Gravity	Jump/Throw
0.10	3.00
0.15	2.50
0.20	2.25
0.25	2.00
0.30	1.80
0.35	1.70
0.40	1.60
0.45	1.50
0.50	1.40
0.55	1.35
0.60	1.30
0.70	1.20
0.80	1.10
0.90	1.05
1.00	1.00
1.10	.95
1.20	.90
1.30	.88
1.40	.85
1.60	.80
1.80	.75
2.0	.71
2.2	.67
2.4	.65
2.6	.62

COLLAPSE EFFECTS DETERMINATION

Some worlds were spared the effects of the Collapse, and others have been assisted in their recovery. The vast majority of the worlds of the Third Imperium, however, suffered the full effects of the Collapse. These tables are used for worlds in the Wilds. Worlds in the Spinward States have been spared these effects as discussed earlier, and worlds in the Reformation Coalition have already begun their recoveries. Worlds in pocket empires have also been spared the worst of these effects, as ruled by the referee.

1. Maximum Sustainable Population (MSP)

This determines the maximum sustainable population without the assistance of technologically advanced life support. Populations which had their life support interrupted for only relatively short periods of time (days or weeks) will succumb to the effects of particularly harsh environments before the necessary recovery or repairs can be made. If the atmosphere is 0, 1, 2, 3, A, B, or C, human life is not possible and the world is uninhabited: Reduce the UWP population code and population multiplier each to 0. Given any other atmosphere, the base maximum sustainable population code is A, reduced for environmental factors as shown below. If the UWP population code is reduced, re-roll the new population multiplier on 1D10.

Factor	Modification
Size	
Size 5-7	–1
Size 1-4	–2
Atmosphere	
Atmos 5, 7, 9	–1
Atmos 4	–2
Atmos D, E, F	–3
Hydrographics	
Hydro 1, 2, A	–1
Hydro 0	–2

2. Tech Level Decline

Consult the table below to determine how many dice are rolled. Roll the dice, add the result, and subtract that from the world's tech level.

Starting Tech Level	Decline
0-8	1D6-3
9-A	1D6
B-D	2D6
E+	3D6

3. Actual Population

Actual population is either the pre-Collapse population or the MSP derived in step 1 above, whichever is lower, modified downward for the extent of technological collapse. Divide the total levels of technological decline (from step 2) by 4, rounding fractions to the nearest whole number. Reduce the population multiplier by this number. When 1 is subtracted from a population multiplier of 1, reduce the population code by 1, and the new population multiplier becomes 9. For example, a world with a population code of 7 and a population multiplier of 2 loses 10 tech levels in step 2. 10÷4=2.5, which is rounded to 3. Subtracting 3 population multipliers from the world's population gives a new population code of 6 and population multiplier of 8.

4. Low Population

Some levels of population are too low to maintain social or even population levels on an isolated world. If the population *code* after step 3 is 5 or less, reduce the world's tech level by one more level. In addition, cut the population multiplier in half to get the final post-Collapse population. (A population multiplier of 1 when cut in half becomes 5 at the next lower population code.)

5. Starport

If a starport was present before, it may have survived in some form. Roll 1D6. If the result is greater than the tech level decline, the starport survives but is reduced by one facility level. (A becomes B, etc.) If the roll is equal to the tech level decline, the starport survives but is reduced by two facility levels (A becomes C, etc.). If the roll is less than the tech level decline, or if the mandated decline reduces the starport code to X, the starport is completely ruined and no longer in use.

Whenever the population of a world is reduced to 0, the starport is reduced to X.

6. Bases

If a starport is reduced by more than two levels, or reduced to X, any bases on the world are destroyed as well. If a starport is reduced by only one level, roll 1D10 for each base. Naval bases survive on 9-10 and are destroyed on 1-8. Scout bases survive on 8-10 and are destroyed on 1-7. Naval depots and Scout Way stations only survive on 10.

7. Government

First, determine if the world is balkanized. Add the world size and population code and subtract the tech level to determine the balkanization number. Roll 2D6; if the number rolled is equal to or less than the balkanization number, the world is balkanized. In this case, the government type rolled is the dominant government on the world, although other types may exist as well. Balkanized worlds are noted with a "B" in the Travel Zone column of the UWP.

Second, if the world's population code is 5+, determine the presence of Technologically Elevated Dictators (TED). Find the total number of tech levels lost in step 2, and roll 1D10. If the roll is less than the number of tech levels lost, the world's government automatically becomes code 6 (Technologically Elevated Dictator).

If the roll is equal to or greater than the tech level decline, or if the world's population code is 4 or less, roll for the new government as follows:

Roll 2D6–7+population code = new government code.

Worlds in the Wilds use the "Wi" code in the Allegiance column to show which government description to use.

Government Types in the Wilds

Code	*General Description*
0	**No Government Structure.** In many cases, family bonds predominate.
1	**Tribal Government.** Autonomous clans exert limited control over areas of territory. Most decision making is by consensus.
2	**Participating Democracy.** Government by advice and consent of the citizen.
3	**Representative Democracy.** Government by elected representatives.
4	**Charismatic Dictator.** Government by a single leader enjoying the confidence of the citizens.
5	**Charismatic Oligarchy.** Government by a select group, organization, or class enjoying overwhelming confidence of the citizenry.
6	**Technologically Elevated Dictator (TED).** A leader holds power by virtue of caches of technologically advanced weaponry
7	**Mystic Dictatorship.** Government by a religious or psionic minority which has little regard for the needs of the citizenry.
8	**Totalitarian Oligarchy.** Government by an all-powerful minority which maintains absolute control through widespread coercion and oppression, often by use of pre-Collapse technology.
9	**Mystic Autocracy.** Government by a single religious or psionic leader having absolute power over the citizenry.
A	**Civil Service Bureaucracy.** Government by agencies employing individuals selected for their expertise.
B	**Self-Perpetuating Oligarchy.** Government by a restricted minority, which holds power by virtue of economic or technological monopolies, with little or no input from the masses.
C	**Impersonal Bureaucracy.** Government by agencies which are insulated from the governed.

8. Law Level

Roll 2D6–7+government for law level. If government is Type 6 (Technologically Elevated Dictator), add an additional +4 to this die roll.

If the world was determined in step 7 to be balkanized, this is naturally the law level of the dominant government.

9. Population Recovery

Populations may recover in the 70 years between the Collapse and the New Era. Population codes of 5 or less should not increase, but codes of 6+ will usually do so. The rate at which these increase is up to the referee based on local conditions which determine the annual growth rate. The table below shows several typical annual growth rates along with the time it takes for a population to double at that growth rate, and the total increase of a population after 70 years of that growth rate.

Annual Growth Rate	*Time to Double*	*Increase after 70 years*
0.5%	—	Population×1.4
1.0%	70 years	Population×2
1.5%	46 years	Population×2.8
2.0%	35 years	Population×4

These increases are used to multiply the population multiplier. However, sufficient increase in the population multiplier will also increase the code. For example, a world with a population code of 7 and multiplier of 8 which experienced 70 years of 1% annual population growth would have a final population code of 8, and multiplier of 2 (80 million×2=160 million, rounded to 200 million).

EXTENDED SYSTEM GENERATION

1. System Presence

For all hexes within a subsector, determine which hexes have a system present, based on the referee-mandated stellar density.

This system may be a mainworld already generated by Basic Mainworld Generation.

Allegiance: An allegiance may have been specified for the system by previous mapping data or by the referee. If there is no allegiance for the system, the referee must determine it.

System Density

Density		*Throw per subsector hex*
Rift	(4%)	12+ on 2D6
Sparse	(16%)	6+ on 1D6
Scattered	(33%)	5+ on 1D6
Standard	(50%)	4+ on 1D6
Dense	(66%)	3+ on 1D6

2. System Details

For each system present, generate the details of the entire system.

3. System Nature

Roll 2D6 to determine the nature of the star system.

System Nature

2D6	*Nature*
2	Solo
3	Solo
4	Solo
5	Solo
6	Solo
7	Solo
8	Binary
9	Binary
10	Binary
11	Binary
12	Trinary

Solo has one star. Binary has two stars. Trinary has three stars.

Later developments may return to this table to create a quadruple system. Use DM –1 when returning to this table for a far companion.

4. Primary Star Type and Size

Roll 2D6 to determine the primary star type; then roll 2D6 for the star's luminosity class.

Primary Star Type and Luminosity Class

2D6	*Type*	*Lum. Class*
2	A	II
3	M	III
4	M	IV
5	M	V
6	M	V
7	M	V
8	K	V
9	G	V
10	G	V
11	F	V
12	F	V

DMs For Type and Size: If a mainworld has already been created, and mainworld Atmosphere 4-9 or Population 8+, DM+5.

Type O and B stars, and class Ia and Ib stars, are extremely rare; the referee should establish when they occur (but never more than one or two per sector).

Type M stars may never be class IV. Treat result of class IV as class V.

5. Decimal Classification

Determine the specific decimal classification of the star (ranging from 0 to 9).

1. Roll 1D10 and treat a roll of 0 as 0 (instead of 10).

2. Add the single digit produced to the star type letter. For example, if the digit produced was 3, and the star type generated was G, the star type becomes G3.

Note: There are no O0 through O4 stars; reroll these results.

Type K IV stars may not have a decimal classification of 5+. Reroll all results other than 0-4.

6. Companion Star Type and Size

If the system nature was binary or trinary, roll 2D6 to determine the companion star type; then roll 2D6 for the star's luminosity class.

Companion Star Type and Class

2D6	*Type*	*Lum. Class*
4	A	II
5	F	III
6	F	IV
7	G	V
8	G	V
9	K	V
10	K	V
11	M	V
12	M	V
13	M	V
14	M	V/D*

DM For Type: Use the previous roll for primary star type as a +DM.

DM For Class: Use the previous roll for primary star luminosity class as a +DM.

Decimal Classification: Determine the decimal classification for the companion star using the procedure in step 5.

Note: D-class stars need have no decimal classification (page 184).

*Roll 1D6: 1-3 = class V; 4-6 = class D.

7. Companion Orbit

Roll 2D6 to determine the orbit of the companion star.

Companion Orbit

2D6	*Orbit*
2	Close
3	Close
4	1
5	2
6	3
7	4+1D
8	5+1D
9	6+1D
10	7+1D
11	8+1D
12	Far

DMs: For the first companion star, use this table as presented. For a second companion star, use DM +4. For the companion of a star that is itself a far companion, use DM –4.

8. Far Companion?

If the companion orbit is far, go to step 9.

Otherwise, go to step 11.

9. Far Orbit

Far indicates that the star is outside the realm of the primary star's system. Orbit distance is 1D6x1000 AU.

10. Additional Stars

If a companion is far, it may itself have a companion. Proceed to step 3 and determine if the far companion is not a solo star and then return here. If the far companion is itself a binary, go to step 6 to determine the binary companion's characteristics.

11. Maximum Orbits

Roll 2D6 for the maximum number of orbits around the primary star.

Roll 2D6 for the maximum number of orbits around the far companion star (if any).

DMs (for Both Rolls): If star class III, DM+4; if star class Ia, Ib, or II, DM+8. If star type M, DM –4; if star type K, DM –2.

12. Available Orbits

Determine what orbits are available for the placement of planets.

Available Orbits

B Orbit	*Between B and A*	*Beyond B*	*B Itself*
0	—	2+	—
1	0	3+	0
2	0-1	4+	0-1
3	0-1	5+	0-1
4	0-2	6+	0-2
5	0-2	7+	0-2
6	0-3	8+	0-3
7	0-3	9+	0-3
8	0-4	10+	0-4
9	0-4	11+	0-4
10	0-5	12+	0-5
11	0-5	13+	0-5
12	0-6	14+	0-6

A is the primary star. B is the companion star. This table shows the orbits which are available for worlds to be placed Between A and B, Beyond B, and Around B Itself.

13. Orbit Zones

The tables show the conditions in the orbits around stars.

- \- Inside the sphere of the star. No worlds in this zone.
- — Unavailable (planet would be vaporized). No worlds in this zone.
- I Inner Zone (hot and inhospitable). Worlds may be in this zone.
- H Habitable Zone (life may exist). Worlds may be in this zone.
- O Outer Zone (cold and inhospitable). Worlds may be in this zone.

Select the table for the star luminosity class and determine the zones for the orbits around the star.

14. Orbit Zones for Luminosity Class Ia

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5
1	—	—	-	-	-	-	-	-	-	-	-	-
2	—	—	—	—	-	-	-	-	-	-	-	-
3	—	—	—	—	—	—	-	-	-	-	-	-
4	—	—	—	—	—	—	—	-	-	-	-	-
5	—	—	—	—	—	—	—	—	-	-	-	-
6	—	—	—	—	I	I	—	—	—	—	-	-
7	—	I	I	I	I	I	I	I	I	I	I	-
8	I	I	I	I	I	I	I	I	I	I	I	I
9	I	I	I	I	I	I	I	I	I	I	I	I
10	I	I	I	I	I	I	I	I	I	I	I	I
11	I	I	I	I	I	H	I	I	I	I	I	I
12	I	H	H	H	H	O	H	H	H	H	H	H
13	H	O	O	O	O	O	O	O	O	O	O	O
14	O	O	O	O	O	O	O	O	O	O	O	O

15. Orbit Zones for Luminosity Class Ib

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5	M9
1	—	—	—	—	—	-	—	-	-	-	-	-	-
2	—	—	—	—	—	-	—	—	-	-	-	-	-
3	—	—	—	—	—	-	—	—	-	-	-	-	-
4	—	—	—	—	—	I	I	—	—	-	-	-	-
5	—	—	I	I	I	I	I	I	I	—	-	-	-
6	—	I	I	I	I	I	I	I	I	I	I	-	-
7	—	I	I	I	I	I	I	I	I	I	I	I	-
8	I	I	I	I	I	I	I	I	I	I	I	I	I
9	I	I	I	I	I	I	I	I	I	I	I	I	I
10	I	I	I	H	H	H	H	H	H	I	I	I	I
11	I	H	H	O	O	O	O	O	O	H	H	I	I
12	I	O	O	O	O	O	O	O	O	O	O	H	H
13	H	O	O	O	O	O	O	O	O	O	O	O	O
14	O	O	O	O	O	O	O	O	O	O	O	O	O

16. Orbit Zones for Luminosity Class II

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5
1	—	—	—	—	—	-	—	—	—	-	-	-
2	—	—	—	I	I	I	I	I	I	—	-	-
3	—	—	I	I	I	I	I	I	I	I	-	-
4	—	—	I	I	I	I	I	I	I	I	I	-
5	—	I	I	I	I	I	I	I	I	I	I	-
6	—	I	I	I	I	I	I	I	I	I	I	I
7	I	I	I	I	I	I	I	I	I	I	I	I
8	I	I	I	H	H	H	H	H	I	I	I	I
9	I	I	H	O	O	O	O	O	H	H	I	I
10	I	I	O	O	O	O	O	O	O	O	H	I
11	I	H	O	O	O	O	O	O	O	O	O	H
12	H	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O

17. Orbit Zones for Luminosity Class III

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5	M9
1	—	—	I	I	I	I	I	I	I	I	—	-	-
2	—	—	I	I	I	I	I	I	I	I	I	-	-
3	—	—	I	I	I	I	I	I	I	I	I	-	-
4	—	I	I	I	I	I	I	I	I	I	I	I	-
5	—	I	I	I	I	I	I	I	I	I	I	I	I
6	—	I	I	I	H	H	H	I	I	I	I	I	I
7	I	I	I	H	O	O	O	H	H	I	I	I	I
8	I	I	H	O	O	O	O	O	O	H	H	I	I
9	I	I	O	O	O	O	O	O	O	O	O	H	H
10	I	H	O	O	O	O	O	O	O	O	O	O	O
11	I	O	O	O	O	O	O	O	O	O	O	O	O
12	H	O	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O	O

18. Orbit Zones for Luminosity Class IV

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0
0	—	—	—	I	I	I	I	I	I
1	—	—	I	I	I	I	I	I	I
2	—	—	I	I	I	I	I	I	I
3	—	I	I	I	I	I	I	I	I
4	—	I	I	I	I	I	I	I	H
5	—	I	I	I	I	H	H	H	O
6	—	I	I	H	H	O	O	O	O
7	I	I	H	O	O	O	O	O	O
8	I	I	O	O	O	O	O	O	O
9	I	H	O	O	O	O	O	O	O
10	I	O	O	O	O	O	O	O	O
11	I	O	O	O	O	O	O	O	O
12	H	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O

19. Orbit Zones for Luminosity Class V

Orbit	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5
0	—	—	I	I	I	I	I	I	I	H	H	O
1	—	—	I	I	I	I	I	I	I	O	O	O
2	—	—	I	I	I	I	I	H	H	O	O	O
3	—	—	I	I	I	I	H	O	O	O	O	O
4	—	I	I	I	I	H	O	O	O	O	O	O
5	—	I	I	I	H	O	O	O	O	O	O	O
6	I	I	I	H	O	O	O	O	O	O	O	O
7	I	I	H	O	O	O	O	O	O	O	O	O
8	I	I	O	O	O	O	O	O	O	O	O	O
9	I	H	O	O	O	O	O	O	O	O	O	O
10	I	O	O	O	O	O	O	O	O	O	O	O
11	I	O	O	O	O	O	O	O	O	O	O	O
12	H	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O

20. Orbit Zones for Luminosity Class D

Orbit	DB	DA	DF	DG	DK	DM
0	H	O	O	O	O	O
1	O	O	O	O	O	O
2	O	O	O	O	O	O
3	O	O	O	O	O	O

Note: The columns for decimal classification define the break points in the decimal series. The column for decimal 0 is used for decimals 0-4 and the column for decimal 5 is used for decimals 5-9. Where there is a separate column for M9, the M5 column is used for M5-8, and M9 for M9 only.

21. Empty Orbits

Roll 5+ on 2D to determine if gas giants exist in the system.

If gas giants exist, determine how many from the Gas Giant Quantity table.

Gas Giant Quantity

2D6	Quantity
2	1
3	1
4	2
5	2
6	3
7	3
8	4
9	4
10	4
11	5
12	5

The number of gas giants may already be known from the mainworld data; if so, skip this step.

22. Planetoid Belts

Roll 8+ on 2D6 to determine if planetoid belts exist in the system.

If planetoid belts exist, determine how many from the Planetoid Belt Quantity table.

Planetoid Belt Quantity

2D6	Quantity
2	1
3	1
4	1
5	1
6	1
7	2
8	2
9	2
10	2
11	2
12	3

The number of planetoid belts may already be known from the mainworld data; if so, skip this step.

23. Empty Orbits

Determine if any empty orbits are present in the star system.

1. Roll 5+ on 1D6 to determine if any empty orbits exist in the system. DM+1 if star type A or B.

2. If empty orbits exist, roll 1D6 on the table to determine how many empty orbits exist. DM+ if star type A or B.

Empty Orbits

1D6	Quantity
1	1
2	1
3	2
4	3
5	3
6	3

3. Roll 2D6–2 (for a result from 0 to 10) to determine each empty orbit number. If the roll does not fall in the range of possible orbits, or if it duplicates an already determined empty orbit, reroll.

24. Captured Planets

Determine if the system has any captured planets in unusual orbits.

1. Roll 5+ on 1D6 to determine if captured planets exist in the system. DM+1 if star type A or B.

2. If a captured planet exists, consult the table for the number present.

Captured Planets

1D6	Quantity
1	1
2	1
3	1
4	2
5	2
6	3

3. For each captured planet, roll 2D6 (for a range between 2 and 12) to determine which orbit to use as a baseline. Then roll 2D6–7 and multiply by 10% (for a range between –50% to +50%) for the positive or negative deviation of the orbit from the baseline. Record the resulting orbit as a decimal number: Baseline orbit 5+40% is recorded as orbit 5.4; Baseline orbit 2-20% is recorded as orbit 1.8.

25. Place Gas Giants

Gas giants are placed randomly in available orbits within certain restrictions. Throw 2D6–3+habitable orbit number for the orbit for a gas giant. Reroll duplicate orbits. When no other orbits are available, gas giants may be placed in the inner zone.

26. Planetoid Belts

Planetoid belts are placed randomly in available orbits, with certain preferences. If a gas giant is available, place a planetoid belt in the next orbit in from the gas giant. For example, if a gas giant is in orbit 8, place the planetoid belt in orbit 7 (if that is an available, nonempty orbit).

27. Place Mainworld

Place the mainworld randomly, with these restrictions.

1. If the world is World Size 1 or greater and atmosphere is 4 to 9, place the world in the habitable zone.

2. If a gas giant is already in the habitable zone orbit, place the mainworld as a satellite of the gas giant.

28. Other Worlds

Generate all other worlds for the system, beginning with the lowest numbered orbit. All available orbits around a star should be filled before continuing to the next star.

29. World Size

Determine each world size.

Gas Giants: If the world is a gas giant, roll 1D6. On a result of 1, 2, or 3, the planet is a Small Gas Giant; on a result of 4, 5, or 6, the planet is a Large Gas Giant. No other attributes are generated for gas giants. Once size has been generated, proceed to the next orbit.

Worlds: Roll 2D6–2 for world size. If orbit 0, DM–5; if orbit 1, DM–4; if orbit 2, DM–2. If star type M, DM–2 for all orbits.

Treat less than 1 as S (for very small world); used in place of size 0 (planetoid belt or mainworld asteroid belt).

30. Atmosphere

Roll 2D6–7+size for atmosphere. If inner zone, DM–2. If outer zone, DM–4. If World Size 0, atmosphere is 0. If the world is at least 2 orbits beyond the habitable zone, roll 2D6 for 12 exactly: if the roll succeeds, atmosphere is A.

31. Hydrographics

Roll 2D6–7+Size for hydrographics. If inner zone, hydrographics is 0. If outer zone, DM–2. If World Size 0 or S, hydrographics is 0. If Atmosphere 0, 1, or A+, DM–2.

32. Population

Roll 2D6–2 for population. If inner zone, DM–5. If outer zone, DM–3. Maximum population = Mainworld –1

33. Satellites

For each world, determine if it has satellites.

World Size S or 0: None.
World Size 1 to A: 1D6–3.
Small GG: 2D6–4.
Large GG: 2D6.

34. Satellite Size

For each satellite, determine its Size.

For Large GG: Roll 2D6–4.
For Small GG: Roll 2D6–6.
For Worlds: Roll 1D6–world size.

If the result is exactly 0, the satellite is a ring: Use Size R.

If the result is less than 0: Use Size S.

35. Satellite Orbit

Consult the table for the orbit number. If the satellite is a ring, roll 1D6. Otherwise, roll 2D6 to determine which column to roll on: On 2–7, the satellite is Close; on 8–12, the satellite is Far. On a result of 12 (if the planet is a gas giant), then the satellite is Extreme.

Satellite Orbit Numbers

2D6	Ring	Close	Far	Extreme
1	1	—	—	—
2	1	3	15	75
3	1	4	20	100
4	2	5	25	125
5	2	6	30	150
6	3	7	35	175
7		8	40	200
8		9	45	225
9		10	50	250
10		11	55	275
11		12	60	300
12		13	65	325

Orbit distance is in radii of the central planet. Two satellites cannot occupy the same orbit: Reroll if this occurs.

36. Satellite Atmosphere

Roll 2D6–7+Satellite Size for atmosphere. If inner zone, DM–4. If outer zone, DM–4. If Size R, S, or 1, atmosphere is 0.

If satellite is at least 2 orbits beyond the habitable zone, roll 2D6 for 12 exactly: If the roll succeeds, satellite Atmosphere A.

37. Satellite Hydrosphere

Roll 2D6–7+Size for hydrographics. If inner zone, hydrographics is 0. If outer zone, DM–4. If Size R or S, hydrographics is 0. If atmosphere is 0, 1, or A+ DM–4.

38. Satellite Population

Roll 2D6–2 for population. If inner zone, DM–5. If outer zone, DM–4. If Size 0–4, DM–2. If Size R, population is 0. If atmosphere is not 5, 6, or 8, DM–2.

39. Social Data

Determine social data (population, government, law level, technology level, and bases) for all worlds and satellites.

40. Subordinate Government

Roll 1D6 for subordinate government.

Subordinate Government

Die	Code	Description
1	0	No government
2	1	Company
3	2	Participating Democracy
4	3	Self–Perpetuating Oligarchy
5+	6	Captive Government

DMs: If mainworld Government 6, DM+subordinate population. If mainworld Government 7+ DM–1. If Population 0, then Government 0.

41. Subordinate Law Level

Roll 1D6–3+mainworld law level. If Government 0, then Law Level 0.

42. Facilities

Note all facilities which are possible on planets and satellites. These notes do not apply to the mainworld.

Farming (Fa): If in habitable zone, Atmosphere 4–9, Hydrographics 4–8, Population 2+.

Mining (Mn): If mainworld has trade class Industrial, subordinate Population 2+.

Colony (Co): If subordinate world, Government 6 and Population 5+.

Research Lab (Re): Mainworld must have Tech Level 9+ and Population 1+ Roll 11+ on 2D6 for a research lab to be present; DM+2 if mainworld Tech Level 10+.

Military Base (Mi): Mainworld must have Population 8+ and cannot be trade classification Poor. Roll 12+ on 2D6 for a military base to be present; DM+1 if mainworld Population 8+; DM+ if subordinate world atmosphere is the same as mainworld atmosphere.

Naval Base (Nv): A naval base will be present if the mainworld has a naval base and subordinate population is 3+.

Scout Base (Sc): A scout base will be present if the mainworld has a scout base and subordinate population is 2+.

43. Subordinate Tech Level

Subordinate tech level equals mainworld tech level minus 1. If a military base, naval base, or research lab is present on the subordinate world, use the mainworld tech level.

44. Subordinate Spaceport

Roll 1D6 for the subordinate spaceport.

Subordinate Spaceport

1D6	Code	Description
1	Y	No spaceport
2	Y	No spaceport
3	H	Primitive facilities
4	G	Poor quality
5	G	Poor quality
6	F	Good quality

DMs: If subordinate Population 6+, DM+2. If subordinate Population 1, DM–2. If subordinate Population 0, DM–3.

45. Orbital Distances

The Orbital Distances table is used to convert between orbit numbers, AUs, and kilometers.

Orbital Distances

Orbit	AUs	Million Kilometers
0	0.2	29.9
1	0.4	59.8
2	0.7	104.7
3	1.0	149.6
4	1.6	239.3
5	2.8	418.9
6	5.2	777.9
7	10.0	1495.9
8	19.6	2932.
9	38.8	5804.
10	77.2	11,548.
11	154.0	23,038.
12	307.6	46,016.
13	614.8	91,972.
14	1229.2	183,885.
15	2548.0	367,711.
16	4915.6	735,363.
17	9830.8	1,470,666.
18	19,661.2	2,941,274.
19	39,322.0	5,882,488.

Wilderness Travel and Encounters

A typical firefight can be over in seconds, while an encounter can last several minutes. An adventure may take days or weeks. A campaign lasts months, perhaps years. Obviously, activities cannot all be played at the same rate of time—thus, a variety of time scales are used.

Game Day

The longest measure of time regularly used is the game day. Game days are used to gauge travel over long distances or progress toward completion of a major task. Referees and players will want to keep general track of weeks and months as well to keep a broader perspective on the passage of time.

The game day is broken down into six four-hour periods, used to schedule activities during a day. When moving cross-country, it is seldom necessary to plan each day separately; instead, players should settle on a routine—such as eight hours on the road, four hours foraging and hunting, four hours of camp duties and maintenance, and eight hours of sleep. Likewise, a day in town might consist of eight hours each of work, recreation, and sleep. Players would then merely specify to the referee their task. Special situations, such as a forced march, will require alteration in the routine. A generalized routine, however, will greatly speed play of the game.

The use of four-hour periods is for the convenience of the referee and players to make scheduling of daily activities easy. It is not meant to unduly restrict players' activities. Thus, for example, if a group of players wants to move a certain distance that is half the distance their vehicles can move in a four-hour period, the referee should feel free to let them do so and only charge them half the normal fuel cost for a one-period move.

The four-hour period is still useful even when on a world which has a day which varies quite a distance from the 24-hour Terran pattern. Humans still use the ancient 24-hour rhythm in space aboard ships, because they have to have some regularizing pattern, and so they carry that pattern with them to the worlds they visit. The four-hour blocks are small enough that they can still be used as building blocks of the local day. On a 16-hour world, the day can be broken into four four-hour blocks, two each of day and night.

TRAVEL

Daily travel distances can vary greatly based on terrain, loads carried, mechanical breakdowns, and a variety of other factors. The Travel Movement table at right gives rough values, in kilometers travelled per four-hour period. The first number is used if travelling on a road, the second if travelling off the road.

People march half the listed human distance if burdened. They are also subject to fatigue (see below).

The referee should feel free to vary this as he sees fit. Remember that players should never feel that their interaction with the world around them is purely mechanical or a function of reading numbers off a chart.

Planetary Environment

The sections below discuss wilderness travel primarily in terms of a terrestrial, or Earth-like environment. There are many different planets in the universe, with different atmospheres, surface gravities, temperatures, chemical bases for life, geological make-up, etc., and all of these will make for differences from this classic terrestrial model. However, the terrestrial model is useful for several reasons.

First, it is a useful starting point for defining procedures. Planets that have different backgrounds can have their procedures modified accordingly. Second, because of their hospitable nature, players are likely to spend far more time exploring Earth-like worlds. Players will probably not wish to spend six months slogging around a world in their vac suits because the "air" is gaseous ammonia and the "water" is pure god-knows-what else.

Finally, and most importantly, the worlds that players will explore are the worlds that will be valuable to other creatures like them. This means that the closer it is to terrestrial standards, the more valuable it will be for

TRAVEL MOVEMENT

Unit	*Move (in km/4 hours)*
Human	20/20
Horse	20/20
Mule	20/20
Wagon/horse (or equivalent)	20/5
Wagon/ox (or equivalent)	10/5
Heavy cargo truck	110/20
Ground car	325/65
Hovercraft	800/605
Tracked ATV	110/85/13
Range truck	300/130
Wheeled ATV	175/85/20
Air raft (open)	1200/240
G-Carrier	1890/900
Enclosed air raft	1890/945
Grav tank	2160/1020
Speeder	3600/1140
Grav bike	1200/240
Very small open boat	4/4
Small sailing boat	8/8
Small motorboat	16/16
Medium motorboat	12/12

a greater number of purposes. All things being equal, people would rather live on, or colonize, or mine important elements on, or set up a starport on, a world with a standard atmosphere, rather than one of peanut butter and jelly. Given a choice, humans (and all other major sentient races in **Traveller**) will take the standard atmosphere and leave the other one for someone who can breathe peanut butter and jelly. Players can spend a lot of time mapping the metallic hydrogen oceans of some gas giant, but they'll be more successful if they use that same time to discover and explore, and learn how to utilize more terrestrial-type worlds.

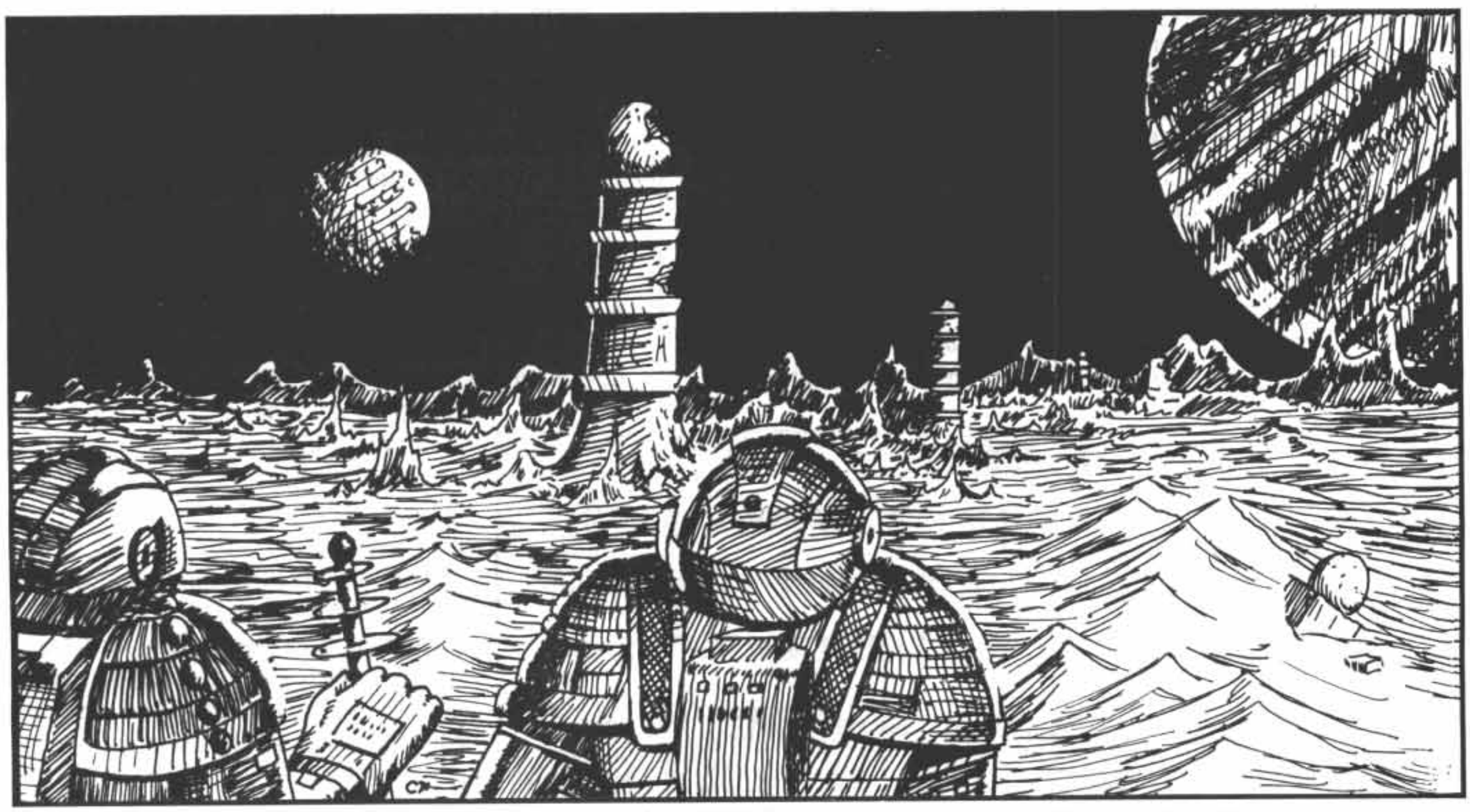
Nonterrestrial Environments: The major non-terrestrial considerations that will affect travel are local atmosphere, hydrographics, temperature, and gravity. The effects of various atmosphere types are discussed on page 182 in World Building, and a world's hydrographics percentage (also in World Building) will clearly affect the way in which characters are required to get around. Temperature is not considered in detail in the basic world generation rules presented in this book. However, as most main worlds exist within the habitable zone of their star, surface temperatures will be broadly similar to those found on Earth (cold at the poles, warmer nearer the equator). The effects of gravity are discussed in the context of combat in the "Combat" chapter on page 307. For the purposes of wilderness travel, gravity can affect travel as follows.

In level terrain, a world's gravity has only a small effect on travel speeds, as the vehicle's power is working in a direction perpendicular to the G field. However, in hilly or mountainous areas, high-G worlds greatly reduce the amount of power available for climbing slopes. Marshes and soft ground are also more dangerous on high-G worlds.

Low-G worlds create different problems. The reduced traction available on low-G worlds affects the mobility of vehicles with gear ratios intended for higher gravity fields. This can make it more difficult for such vehicles to accelerate, and also harder for them to stop or change direction once they have reached high speeds.

The other effect of gravity is the fact that high gravity (high gravity is defined as anything over 1G) tires out individuals not used to its influence. Simply existing in a gravity environment greater than their accustomed G-field is tiring for creatures. Their hearts must pump harder to keep blood flowing up to their brains, their muscles must work harder to hold them up, etc. This is reflected by the use of the fatigue rules, page 198. For each 0.1Gs above 1, a character gains a constant level of fatigue for as long as he or she remains in that environment. Each skill level of High-G Environment counteracts the fatigue effects of a 0.1G unit, so that a character with High-G Environment 3 could function indefinitely in a 1.3G environment without G-induced fatigue effects.

The 1G baseline is used for convenience. Characters who have lived all or most of their lives on worlds with



other G ratings should use those as the baseline from which high-G fatigue effects are calculated. A character from a 0.7G world will have fatigue difficulty in a 0.8G field, while someone from a 1.3G world will feel light in 1.2Gs or less, and not experience fatigue effects until 1.4Gs.

High-G levels can be gotten used to, at the rate of two months per 0.1G, to a maximum of 1Gs above the character's permanent G adaptation (based on home-world). Low-G levels are also gotten used to at the same rate. The effect of this is that without careful attention to exercise in a low G environment, a person can get out of shape and suffer from fatigue upon returning to a standard G environment. At the referee's discretion, characters may suffer ill effects (heart or breathing difficulties, etc.) upon entry into high-G environments, especially if the character is frail or in poor health, or has become acclimated to a 0G environment where bone and cardiovascular structures deteriorate.

Terrain and Travel

Travel on a good road is largely unaffected by the terrain through which the road passes, but good roads have become scarce on many worlds. Furthermore, good roads are nonexistent on unexplored and unsettled worlds. Most characters will spend much of their time on poor roads and traveling cross-country.

When travel on a good road is practical, it is done at the road movement rate. A poor road (one which is breaking up, partially washed out, or just hasn't seen a road crew in 30 or 40 years) allows travel at the full cross-country rate for vehicles regardless of terrain.

Aside from roads, the main terrain types encountered in the countryside are woods, swamp, hills, and open terrain. The effects of other terrain varieties can be extrapolated from these.

Woods: Woods are forested areas of considerable extent. While a person can walk through virgin forest, it is an impractical means of travel for vehicles or for a party on foot for any distance. Thus, all travel through wooded areas is assumed to be along paths and roads and through clearings whenever possible. Movement on foot or by animals through woods is at the full off-road movement rate. Vehicles travel through woods at half their off-road movement rate unless following a particularly well travelled old dirt road, in which case they move at their full off-road movement rate.

Swamp: Swamps are difficult to traverse. A person on foot can move at his or her full movement rate. Animals and all vehicles move at half their off-road movement rate. In addition, nonamphibious vehicles must check each four-hour period to avoid becoming mired, using the relevant Ground Vehicle cascade. Hovercraft and flying vehicles treat swamp as either woods or open, depending upon the nature of the vegetation. Extracting a mired vehicle takes one additional period and requires the use of one or more vehicles whose combined weight equals or exceeds that of the mired vehicle.

Hills: Hills are relatively steep, but regular, rolling ground. All movement is reduced by half in hills. Hills may be wooded. If so, determine the movement rate for woods first and then apply the hill terrain reductions to the result.

Open: Open terrain is generally flat or gently rolling grasslands and for the most part consists of former cultivated lands which have reverted to the wild but are not yet wooded. Open terrain also includes cultivated ground in the area of settlements. All movement through open terrain is at the full off-road movement rate.

TERRAIN EFFECTS ON MOVEMENT

Unit	*Open*	*Wood*	*Swamp*	*Hill*	*Mountain*	*Snow*	*Water*
Humans	N	N	N	1/2	1/4	x1/2	—
Animals	N	N	1/2	1/2	1/4	x1/2	—
Vehicles	N	1/2	1/4	1/2	1/6	x1/2	—
Hovercraft	1/2	1/2	N	1/2	—	N	N
Boats	—	—	1/2	—	—	—	N

N: Normal. —: Prohibited. Rates for snow are multiplied by other prevailing terrain.

FATIGUE

There are four general types of activity that a character can undertake in a four-hour period: sleep, rest, hard work, and easy work.

Sleep: No other activity is possible while sleeping.

Each character must have one period of sleep per day or two periods of sleep if he has performed three or more periods of hard work. For every sleep period deficiency, the character suffers one level of fatigue. A fatigued character will recover one fatigue level for every period spent in sleep.

Rest: Rest is a poor substitute for sleep, but can help combat its lack. A character riding in a vehicle and not serving as a driver or lookout can rest. While rest does not count toward a character's sleep requirement, a fatigued character recovers one level of fatigue for each period spent resting.

Easy Work: Hunting and foraging, routine maintenance, guard duty, setting up and tearing down camp, preparing meals, driving a vehicle on a road, and simple first aid are all examples of easy work. Easy work neither increases nor decreases a character's fatigue level.

Hard Work: Hard work constitutes tasks which are extremely fatiguing. These are marching, riding an animal or bicycle, driving a vehicle cross-country, fighting, and actual physical labor (including, but not limited to, farming, building bridges and buildings, digging ditches or entrenchments, carrying out major repairs on heavy machinery, etc.). Some referee discretion is required when deciding which tasks constitute hard work. Changing a flat tire, for example, is not particularly heavy labor; changing an axle is. A few minutes of hard work in a period do not make it a period of hard work; it takes a substantial quantity to do so, with one exception: combat.

An already fatigued character may still do hard work, but suffers one additional level of fatigue per period of hard work, regardless of how many periods are spent sleeping.

Combat: Any combat whatsoever in a period makes it a period of hard work, unless the referee decides that it is so brief that the characters are able to rest for the rest of the time. In this case it may be counted as either easy work or rest, at the referee's option.

Effects of Fatigue: All seven of a character's effective attributes (including Psionics) are reduced by one for each level of fatigue. If any attribute is reduced to 0, the character becomes unconscious and will sleep for one complete period (thus raising the attribute back to 1).

Direct fire is made more difficult by fatigue. When making the task roll for a direct fire task (after difficulty levels have been modified for range recoil, etc.), the player must add one or more points to the die roll according to the character's fatigue level. For each level of fatigue, add 3 to the die roll at short range, 2 at medium range, or 1 at long and extreme ranges.

FATIGUE EFFECTS ON FIRE

Range	*Additions to Die Roll per Fatigue Level*
Short	3
Medium	2
Long	1
Extreme	1

Load is reduced by 10% per level of fatigue. Throw range is reduced by 10 meters per level of fatigue.

Unarmed combat damage is reduced by one per level of fatigue.

Example: Currin and Yaj are moving overland on a several-day march. They are carrying plenty of food with them, so they don't have to spend time foraging. Their routine is:

Midnight to 8 a.m.: Currin sleeps; Yaj stands guard.

8 a.m. to 4 p.m.: Both march.

4 p.m. to Midnight: Yaj sleeps; Currin stands guard.

Both Currin and Yaj have two periods of hard work (marching), two periods of sleep, and two periods of easy work (standing guard) each day, and thus neither of them becomes fatigued.

On the second day out, a pack of nocturnal predators stumbles into their camp at 10 p.m. Currin wakes up Yaj, and in a firefight they chase the animals off. They remain alert for their return for much of the rest of the night. Starting the next morning, Yaj has a fatigue level of one (three periods of hard work marching or fighting and only one period of sleep) while Currin is not fatigued (also three periods of hard work, but two periods of sleep).

At the end of the day's march Yaj's fatigue level has risen to three, since once fatigued he suffers an additional fatigue level per period of hard work. That night he goes to bed and sleeps for two periods. When Currin wakes him up at midnight he has a fatigue level of one, having then recovered two levels.

When Currin finally wakes up at eight the next morning, they decide not to march that day and let Yaj rest. Both spend the day in routine maintenance and foraging, and at 4 p.m. Yaj turns in. When he awakes at 8 p.m., he is refreshed and recovered from his fatigue.

As should be clear from this example, it is difficult for two people to make good time cross-country, keep constant guard, and not rapidly wear themselves out.

The game referee should not bother about minor sleep period deficiencies except in instances where fatigue and endurance can both clearly become important to a group's activities. That is, if a group is moving at a fairly leisurely pace with plenty of time to catch up on sleep and rest, an interrupted night's sleep period is of no great concern, and should not be allowed to slow up the game by causing a flurry of paperwork and calculations on the part of either the referee or the players.

UPKEEP

This section is concerned with the day-to-day realities of the characters' lives. Even while they are having adventures, they must still eat, find fuel for their vehicles, and take care of their vehicles and animals.

Food Requirements

Each character must eat at least three kilograms of food every day to remain healthy. Most of this must be found in the wild. "Civilized" food—domesticated animals, cultivated grains and vegetables, canned or packaged food, etc.—counts as 1.5 times its weight. Thus a man could survive on two kilograms of such food a day.

Food Consumption

Human	1.5 kg MRE *or* 2 kg domestic *or* 3 kg wild
Horse	15 kg grain and graze 8 hrs
Mule	10 kg grain and graze 8 hrs
Ox	Graze 8 hrs

Note: These are Terran-equivalent animals.

Specially fortified and prepackaged survival rations count double, and a character could survive on 1.5 kilograms of these a day.

Otherwise, food that is gathered in the wilderness is considered "wild," and counts as one kilogram of nutritive value per kilogram of food weight. Food consumption requirements for humans and some animals are summarized on the Food Consumption table at left.

Effects of Starvation: If a character eats less than his daily requirement, but at least half the requirement, he suffers one level of fatigue (see below). This fatigue remains (but gets no worse) until he eats his full requirement for as many days as he was underfed (or 10 days at most). A character gains one level of fatigue for each day in which he eats less than half the requirement, until his Strength, Agility, Constitution, and Intelligence are all reduced to 1; they do not fall below 1.

One level of fatigue is recovered for each consecutive day of full rations.

Eventually, a character on less than half rations will starve. This takes about a month of no food or several months of half rations.

Food Quality: Because of the different ecologies that may be found on each world, food that is gathered may *not* be immediately edible. Typically there are some additional components that are unpleasant to the digestive system. These may be environmental elements that are passed through the creature as part of its normal feeding process which collect in its tissue, such as lead or mercury. Or they may be chemicals which are created by the animal or plant itself which make it unpalatable, such as tannins manufactured by plants. The effects of these components may merely make the food taste unpleasant, make the person who eats it feel ill, or be downright poisonous.

Food analyzers can detect the presence and nature of these components in the plant and animal tissue of an ecosystem. Then the food can be prepared to remove these elements. To detect the presence of inedible compounds in food is an Easy test of Electronics if a food analyzer is available. It is a Difficult test of Biology, Chemistry, or Medical for a character with the proper biological or chemical testing equipment. It is a Formidable test of these same assets without the equipment, and usually involves the observation of those who eat small amounts, and the diagnosis of their responses. Getting volunteers for this duty might be a Formidable test of Persuasion.

Once the compounds have been identified, the food requires preparation to remove them. This typically involves cooking the food, soaking it, slicing it into small portions, and curing, heating, exposing to direct sunlight, etc. This is an Average test of Survival or Service, and generally takes about an hour for each meal.

The presence of these components is most likely on worlds listed as having an atmospheric taint, and are always present on worlds with exotic, corrosive, or insidious atmospheres. It is generally safe to assume that no amount of preparation of food gathered from a world with an atmosphere of exotic+ can make it palatable to a terrestrial-type creature. (This includes all of the major sentient races. Anything that is edible to a human, Vargr, Aslan, Droyne, Hiver, or K'kree is basically edible to any of the others, although it may not be their cup of tea...)

Foraging

Characters may find food in the wild by *foraging*. It takes one four-hour period to forage a one-kilometer-square area. An area may be foraged *only once per* month. For simplicity's sake, it is best to consider an area foraged out after one forage attempt.

Only one foraging party may forage an area. The number of people in the foraging party reduces the time it takes to forage an area but does not affect the quantity of food found. If two people forage an area, for example, they can search it in half a period. (A party can break up into several smaller foraging parties, provided they spread out and forage different areas.)

Foraging is a task (Difficult: Survival) performed by the character in the party with the highest Survival skill. Failure means that no food is found.

The Foraging table lists the amount of food, in kilograms, found by a successful forage attempt in each of the four seasons and in each of the major terrain types. If the character achieves outstanding success, double the amount of food found.

Fields: Players do not forage, per se, in fields, and no die roll is necessary. In the winter and spring, there is no food to be found in fields. In the summer and fall, there will generally be standing crops, and characters can gather virtually as much food as they can carry. In one

Foraging

Area	*Winter (kg)*	*Spring (kg)*	*Summer (kg)*	*Fall (kg)*
Wood/scrub	1	3	6	6
Meadow/swamp	0	1	2	2
Field	0	0	25	50
Fishing (1D6x)	1/2	2	1	1

period, this will generally amount to 200 kilograms per man, and counts as hard work.

An additional period is required to separate the edible parts of the crop from the chaff. This will yield a total of 50 kilograms of edible food in the summer or 100 kilograms of edible food in the fall. If a PC is in a hurry, the separation of edible food from chaff can be delayed until later, but the full 200 kilograms of weight must be carried until that time.

Alternatively, a period can be divided into two hours of harvesting and two hours of separation, resulting in 25 kilograms of edible food in the summer and 50 kilograms of edible food in the fall.

In both cases, the resulting food is considered "wild," and thus only counts as one kilogram of nutrition per kilogram of bulk.

Fishing

Fish can be caught from any open water: a swamp, stream, river, pond, lake, or ocean. Fishing is a task (Difficult: Survival) requiring line and hooks, a net, or a fish trap. Fishing without adequate equipment is Formidable: Survival. If the task succeeds, a character can catch fish in one period equal to the amount given on the Foraging table (expressed in kilograms of edible meat). Double the total for outstanding success.

These totals are for line fishing from a shore or boat, or net fishing from a shore. Double the totals for net fishing from a boat in large open waters (large lakes or the ocean).

Hunting

Many encounters will be with animals. Briefly, players will often be able to surprise and kill animals and, if so, eat them. The animal data charts on pages 215-217 list the weight of the animals characters can encounter. If the animal is edible, roughly 30% of the animal's body weight will consist of edible meat.

VEHICLES

PCs usually begin the game with one or more vehicles, and may come into the possession of others as time passes. This section covers the use of vehicles for travel. The maintenance and repair of vehicles is covered in Maintenance, pages 241-244.

Travel

Travel movement by vehicle is accomplished in the same manner as travel by foot, but using the travel movement rates for individual vehicles, consolidated in the Travel Movement table on page 196. These numbers are also shown on the individual vehicle cards, and show the number of kilometers travelled per four-hour period. They are listed in the format "on road/off road" for ground vehicles, and "flight/NOE" for grav vehicles.

Vehicle Cards

For the convenience of the referee and players, we have put together data cards for each vehicle rated in this game in the "Equipment & Technology" chapter, beginning on page 360.

The referee should photocopy the card or cards for each relevant type of vehicle in the characters' possession and lay them out with the vehicle with the slowest movement on top. This will display the travel time and fuel consumption rate for each vehicle in the players' group, and will enable the referee to quickly and easily find the convoy speed (that of the slowest vehicle represented by the cards) and the convoy's fuel consumption (by totaling the rates of the individual vehicles).

Fuel

Referees may dispense with careful fuel consumption record keeping if the characters are travelling in well-settled areas and have no particular financial restrictions. If travelling cross-country through the wilderness, however, where fuel is not readily available, fuel consumption of vehicles can be an important limiter.

Consumption: Each vehicle card gives the vehicle's fuel consumption rate (liters consumed per period spent travelling or in combat) and fuel capacity (in liters). Additional fuel, of course, can be carried in supply vehicles or strapped to the outside of the vehicle, but this can be dangerous in combat. The card also states the type or types of fuel the vehicle's power can burn.

Once a certain technology level is reached, many multipurpose vehicles, particularly grav vehicles, use small "pocket" fusion plants which are not only very stingy with fuel, but can also be refueled by any source of hydrogen. This does require the use of a purifier to separate out the hydrogen fuel from whatever source is being used (water, ammonia, etc.), but the fuel lasts quite a long time. See the "Equipment & Technology" chapter for details.

Many other vehicles are equipped with useful multi-fuel engines that are tolerant of fuels other than their most efficient fuel.

Basic fuel consumption of these vehicle assumes that it is burning its preferred or most energy-efficient fuel type. Vehicles capable of burning several fuel types multiply the printed fuel consumption by the consumption modifier of the actual fuel being used, as shown below.

FUEL ENERGY

Fuel	*CM*
Hydrocarbon	1
Hydrogen	2
Alcohol	3

The fuel burned by a vehicle may be altered from its current choice to any of the other choices given in the vehicle card. This task is Average: Mechanic and takes four hours.

ENCOUNTERS

Roll for an encounter every four-hour period (or fraction thereof) spent moving and once per day spent stationary.

Encounters with people or creatures are resolved at the time scale the referee feels is appropriate. Often this will consist of roleplaying the encounter, with the referee playing the part of the nonplayer characters encountered, and periodically informing the players of the passage of time. For example, after an exchange of conversation, the referee may say, "You've been talking to the farmer for about half an hour."

If the encounter is a violent one, the referee will begin using combat turns.

Animals encountered and their behavior are described in the Animals section, pages 207-217, while human encounters are described in NPCs, pages 58-72. In addition, a variety of special or unusual event encounters are possible. An event may be almost anything: an unusual animal, an interesting terrain feature, the weather, even a natural disaster. An event's purpose is to add interest, atmosphere, and perhaps a bit of danger to the adventurers' travels.

Events should be specifically tailored to the terrain in which they occur and should make allowances for the nature of the party, its weapons, and its vehicles. A number of sample events are given below. In order to present as many ideas as possible, the descriptions of individual events are short; a referee's complete description of an event should add details appropriate to the current circumstances and storyline.

Animal Events

An event is a convenient form to use in describing an unusual animal; the animal's statistics, in standard format, may follow the description, or the event may describe unusual behavior by an animal found elsewhere on the table. An event may also describe the animal's lair or spoor, rather than the animal itself.

Some categories of animal events are:

Circling Flyers: A number of flyers spot the party and circle above their heads. After about 10 minutes the party will be attacked by chasers. The animals are symbiotic: The flyers spot prey for the chasers and are allowed to share in the feast.

Poisonous Pests: While the party was stopped, tiny (one gram) creatures have crawled into concealed places within the party's equipment (packs, boots, etc.). They are poisonous, and they attack when encountered (when a character reaches into his pack, puts on his boots, etc.).

Avoiding an attack by hidden poisonous pests requires the careful shaking out of all equipment and clothing and is an Average test of Agility.

Stampede: A herd of grazers, frightened by carnivores, stampedes into the party. They can be turned by loud noises (gunshots, explosions) or laser bolts. Otherwise, they will run straight through the party.

Turning a stampeding herd of grazers is an Average task using Riding skill.

Unusual Plants

Although plants generally remain just part of the scenery, some may be interesting or dangerous enough to qualify as events.

Animated Vines: Ordinary looking vines grab and hold individuals in a constricting grip, inflicting 1D6 hits from strangulation each minute (12 combat turns). Release requires cutting or tearing off the vines.

Freeing one's self from animated vines is an Average task using Armed Martial Arts (Long Blade) or (Short Blade) or a Formidable task using Strength. This task represents a prompt struggle by an adventurer; success secures an escape. Up to four other characters may assist, by making a Difficult task roll using either Strength or Armed Martial Arts (Long Blade) or (Short Blade), with each successful task roll lowering the escaping adventurer's task difficulty by one level. If a Catastrophic Failure occurs, one of the characters who was aiding in the escape has also been caught or, if using a blade, has cut the trapped player causing 1D6 hits. If no other characters were helping, ignore any Catastrophic Failures.

Hallucinogenic Pollen: The party comes upon a field of flowers. The air is filled with their pollen, which will cause strong hallucinations if breathed. The hallucinations, which are threatening in nature, will continue for about 20 minutes after the party leaves the field.

Tanglewood: The entire floor of the forest is covered with a low network of sticky, flexible roots. Running is impossible, and walking is difficult. Reduce speed to one-quarter.

Wirebushes: The party comes to an area filled with low bushes whose branches are very tough. Bypassing the area with a vehicle will add 1D6 kilometers to the travel distance.

Avoiding a mishap when driving through wirebrushes is a Difficult task using Ground Vehicle skill. Make this task Average if the characters' vehicle has tracks.

If a mishap occurs, the vehicle has become entangled, punctured a tire, or thrown a track. If so, the referee must define a task for the characters to free or repair their vehicle.

Weather

Various types of weather may endanger a party or impede its progress.

Cold Snap: The ambient temperature falls rapidly. Individuals must obtain shelter or suffer 1 point of damage to all locations per hour.

Dense Fog: The party encounters a low area filled with a dense fog. Visibility distance is quartered (see "Tactical Visibility," and all driving tasks become two difficulty levels harder without sensors.

Rainstorm: A sudden rainstorm reduces visibility and turns the ground to thick mud. Ground travel is slowed to quarter speed for the four-hour period.

Sandstorm: High winds fill the air with abrasive sand particles. Progress is impossible for 12 hours. Individuals will be buried, and windscreens on vehicles below tech level 12 will be abraded into translucence.

Tornado: A tornado is heading toward the party. If it achieves surprise, or if the party does not act to avoid its path once it is sighted, it will destroy their vehicle and inflict 3D6 damage to each member in the group to a *random hit location*.

Natural Disasters

Local phenomena may also provide interesting events.

Avalanche: Roll 6 or less (on 1D20) for a loud noise (vehicle, conversation, etc.) to precipitate an avalanche.

Avoiding damage from an avalanche is a Formidable task using either the appropriate Vehicle asset, or, if on foot, Strength or Agility.

Prairie Fire: A line of fire can be seen on the horizon. The fire is 20 kilometers across and must be detoured. Animals which are fleeing from the fire will ignore the party unless their escape path is blocked. Detour will add 2D10 kilometers to the travel distance. Roll for three animal encounters during that time.

Seismic Quake: A seismic disturbance shakes the ground.

Avoiding damage from a seismic quake while in a vehicle is an Average task using the appropriate Vehicle asset. For characters on foot it is a Difficult task using either Strength or Agility.

Volcano: A nearby volcano erupts, and the party must flee or be overcome by poisonous gases. After the eruption, ash and lava flow have sealed the mountain pass, preventing forward progress.

Terrain Features

Adventurers may encounter variations in local terrain too small to show up on planetary maps.

Bad Water: Local water is contaminated with heavy metal concentrations. Bathing in or drinking the water will cause illness for one to six days.

Broken Ground: The terrain becomes very rough; a vehicle must slow to one-quarter travel speed or any travel tasks become two difficulty levels harder.

Crevasse: A deep crevasse blocks the group's forward progress, and the party must travel 1D10 kilometers to detour around it.

Ford: Sandbars in the river create a shallow area, allowing vehicles to cross.

Oasis: The party approaches an oasis with a pool of water surrounded by heavy vegetation. Roll 10 or less (on 1D20) for the water to be drinkable. If it is not, moisture may still be recovered from reservoirs inside a species of plant life.

Radiation Area: An area in the forest is devoid of life, and a radiation sensor shows very high levels of radiation near the center. Individuals who spend more than 10 minutes in the area will suffer from radiation sickness, beginning 1D6 hours later. The illness will last for one day for each 10 minutes spent in the area. Symptoms include nausea, vomiting, and headaches, and the character will have STR, AGL, and INT halved for the duration.

Sun Crystals: At about midday, light from the sun strikes crystalline outcroppings, is concentrated and converged by them, and flashed about as a powerful energy bolt.

Ducking a sun crystal energy bolt is Difficult versus either Survival or Agility. If hit, the crystal does 1D6 hits, with a penetration of nil.

Curiosities

Some events may have no importance whatsoever and merely provide atmosphere to an adventure.

Jungle Drums: Distant drums are heard at night; periodically they fall silent and are answered from another direction. If the party investigates, they may be able to discover that these are the mating calls of a large omnivore.

Marsh Gas: Moving lights are seen in the distance, and they are apparently following the party. They may temporarily be mistaken for the running lights of an air raft.

Mirage: An oasis appears on the horizon, but it dissolves into nothing as it is approached by the group. This continues until nightfall.

Statues: The party finds a large stone statue half buried; the torso is human but the head is that of a local carnivore. Natives of the area, if consulted, will state that such finds are common and will give varying opinions of their origin and present significance.

Vacuum Worlds

Encounter tables for Vacuum Worlds (or for any world without life) must be largely composed of events.

Dust Pool: Microfine dust fills a crater. If any character walks through the pool, or drives a vehicle through, roll the following task:

Avoiding a malfunction due to excessive dust is a Difficult task using either Environment Suit or Ground Vehicle (depending on which was exposed to the dust).

Magnetic Anomaly: A large underground metal deposit deflects compass readings by as much as 60 degrees. Travellers who do not notice this will be steered off of their course.

Gunflowers: One of the more unusual forms of life known in the former Imperium was the gunflower. This tough-skinned plant exists on worlds with very thin or trace atmospheres (near-vacuum) and subsists by an almost closed-cycle form of photosynthesis which takes nutrients and trace moisture from the soil and requires very little atmospheric gas. The plant has become widely distributed thanks to space travellers who admire the little plant's toughness, and like to know that organic life can exist in near vacuum. There is a price to this altruism, however, as the plants have been known to kill their human beneficiaries.

Because of the absence of animals which form the usual medium of seed dispersion, these plants must distribute these seeds on their own. They do this by firing their seeds across the landscape. At close range, these seeds have enough velocity to crack or shatter a vac suit faceplate. This result, needless to say, can be fatal, especially when an explorer is travelling alone.

Pressure Tent: The party comes upon a small inflatable shelter. There is breathable air inside but no heat or light, for the shelter's power pack has run down. If anyone undertakes a lengthy search, the owner's body may be found under a rockslide or next to a gunflower several hundred meters away.

Solar Storm: Increased solar activity makes routine radio communication Formidable for 1D6 days.

Tracks: ATV tracks cross the party's path. If the party follows them in the right direction, they will be led eventually to a sign of civilization, either a still-inhabited or abandoned outpost, or the imprints of a spaceship's landing pads, and some discarded debris.

EXPLORATION

Most of the area to which adventurers are likely to travel in the early 1200s was already explored and settled prior to the Collapse, which began in 1130. A great deal can happen in 70 years, however, and most detailed data storage systems concerning the systems have been destroyed by the virus. As a result there is a renewed need for exploration of star systems and worlds, both to fill in gaps in information and assess the changes which have taken place in the past three quarters of a century.

Survey Data

Imperial survey data roughly 80 years old is fairly widely available, and this should be made available to the players. The referee can either generate this information or consult an older **Traveller** product covering the region. Surveys will provide nothing more than astrographic information on the star system (stellar type, number of worlds, gas giants, asteroid belts) and the Universal World Profile code of the main world.

No weapons powerful enough to actually alter the astrographic characteristics of a star system were used during the Final War, and so this information will remain unchanged. The physical characteristics of the main world will probably not have changed significantly either. Its size and hydrographic rating will certainly not have changed, and its atmosphere will not have changed very much. Standard atmospheres may have become tainted, either by radioactive fallout, dust from large ground strikes, or some other war-related cause. On the other hand, long-term terraforming projects left to their own devices may have improved the habitability of a world.

The most dramatic changes will be in the ratings concerning the inhabitants. Very few large-population worlds will have maintained their population at the pre-Final War level in the face of a complete economic collapse. Inhospitable worlds will have suffered most, and uninhabitable worlds where populations were maintained in artificial environments will have, almost without exception, become gigantic tombs. Where worlds are still inhabited, government types and law levels will have changed dramatically.

Note that there are two standards of pre-Final War world statistics. First is the material dating from 1124 and earlier. This material, which is often presented as material from the Imperial Second Grand Survey of 1065, was broadly accurate for most worlds from 1065 to 1124. By 1124, many worlds began to suffer the effects of the Final War which had begun in 1116, and there were incomplete attempts to update the world data to reflect these declines in the planetary "soft tissue": starports, technology level, population, government, and law level. This work was never completed, but planetary data from 1128-1129 will be more useful to the players, as it will at least have recorded the significant changes that had taken place by that time. However, the changes from 1130-1201 are the most profound of all.

Exploring Star Systems

Procedures for surveying star systems are based on pre-Final War Imperial practices in broad outline, although less emphasis is placed on astrographic data and more is placed on world data. The following sensors are used to determine astrographic information at the following ranges.

One Parsec (One Hex on the Subsector Map): Sensors (particularly EMS sensors concentrating in and around the visible light, IR, and radio wavelengths, and densitometers) determine the number of stars and estimate the presence of gas giants in the world (with an 80% accuracy). Star spectral types and luminosity classes can also be generalized. Binary star systems can have their masses calculated. This stage of the survey takes 1D6 days, but can be done while other activities are being conducted in the current system, depending upon sensor availability. If the sensors are currently being used intensively for detailed work, their availability for interstellar scanning will be curtailed. The referee should judge whether this 1D6 figure should be modified (for example, if the sensors are only available on a half-time basis, double the time required. Also apply modifiers for system complexity, if need be (a system with a large number of anomalous large bodies and eccentric orbits might require more time).

Within System: The densitometer, in conjunction with the EMS sensors, accurately measures the mass of each star, locates all possible major bodies and planetoid belts, and measures the mass of each major body. With this information players learn the UWP world size digit for every major body in the system.

The neutrino sensor measures the stellar energy of the star, which indicates its internal structure and its stability, and adds further confirming or modifying information to the spectral and luminosity information gained earlier.

The EMS array determines the general location, types, and intensity of emissions in the electromagnetic spectrum, particularly radio emissions, both natural and artificial.

EMS spectrography can be conducted on the "cool" (nonstellar) objects in the system.

This stage of the survey takes 1D6 days, and can be conducted during the period while en route to one of the worlds in the system to be surveyed in detail.

Planetary Orbit: The densitometer locates major tectonic plate boundaries and significant near-surface mineral deposits.

The EMS array is used to provide an outline map of the surface (showing continents, major bodies of water, mountain ranges, rivers, and dense vegetation areas), locates major climatic features (icecaps,



deserts, major air and oceanic currents, etc.), determines the presence or absence of a magnetosphere, locates radiation belts (if any), determines the albedo, and provides an estimate of the greenhouse effect.

EMS spectography determines the general atmosphere composition.

If radio emissions were detected earlier, the EMS array can pinpoint the sources. Moderate technology human habitation can be located at this point by the detection of radio sources, light sources, thermal sources, and the magnetic signatures of electrical power transmission.

Low technology sentient life cannot be reliably detected from this distance, but likely locations can be inferred to be explored later.

Likely locations of animal populations can be inferred from the location of vegetation on land, and in the oceans by the location of cold upwellings that bring the nutrient-rich deep waters to the surface.

Using the above data, the players estimate the atmosphere and hydrosphere digits of the world (60% accuracy, plus or minus one digit).

This stage of the survey takes 1D6 hours per world size number. (For a world size of 6, roll 6D6 for hours required.)

Upper Atmosphere: The EMS array locates local magnetic anomalies and any major areas of surface radiation contamination.

EMS array spectography and chromatography precisely determine the atmospheric composition.

The EMS array and densitometer together finish accurate topographic mapping and locate minor faults and areas of volcanism.

Using the above data the players determine the precise atmosphere and hydrosphere digits of the world.

Based on orbital surveys, locations of animals can be examined, and with IR sensors, an approximate picture of animal distribution and density can be created. Low technology human populations can also be inferred at this level, by properly interpreting patterns of habitation and the detection of such features as artificial irrigation ditches and cultivated land.

This stage of the survey takes 1D20 hours per world size number to complete all aspects, but only 1D6 hours (total) to complete the atmospheric analysis from samples that are scooped aboard the vessel during its passage.

Exploring World Surfaces

Once on the surface of a world, a variety of exploratory data may be collected. If players were sent to the world by a patron or organization to gather specific data, that will influence the sorts of tests and procedures they undertake.

Mineral Surveys: Densitometer readings can locate areas of major mineral deposits near the surface, but cannot determine their exact type. In level terrain, core samples are obtained by core drills. In mountainous terrain, the best procedure is to obtain core samples from several river bottoms that drain the mountain range, as most minerals in the mountain range will appear in the river bottom as sedimentation (with heavier minerals deeper in the bed). In both cases 1D6 hours worth of core drilling is necessary to adequately survey a mineral deposit.

If particularly valuable or sought-after minerals are present, a detailed search of the mountains will be necessary to recover ore samples which may show the location of the desired deposit. This survey will take 3D6 days.

Biological Surveys: 1D6 days are required per terrain type to collect representative samples of plant life and microorganisms for later analysis. Animal encounters provide opportunities for adventurers to study larger fauna.

An adequate large-fauna survey of a particular terrain type should include study of three animals from each of the four major categories (herbivore, omnivore, carnivore, scavenger). Small animals may be captured and placed in suspended animation, while larger animals may be anesthetized or killed and tissue samples taken. In all cases, photographic or holographic records of the animal's movements and habitat are important additions to the record.

Ruins: If the planet was inhabited, there will be traces of that former habitation which may be explored. Although most habitable planets will still retain some human population, they will no longer retain their former distribution. The hearts of cities will for the most part be abandoned, as the requirements of life are more readily grown or caught in open country. This will generally provide evidence as to the fate of the inhabitants and may still contain useable or repairable pre-Final War artifacts.

Inhabitants: Neural activity sensors can detect electrical brainwave activity within their listed ranges and, because sentient life exhibits brainwave patterns of unmistakable complexity, these neural sensors can be used to locate surviving inhabitants. Contacting these inhabitants may be the purpose of the exploratory mission, but this can be extremely hazardous. Human cultures cut off from outside contact for 70-some years after experiencing a catastrophic collapse of their society are often extremely xenophobic.

Animals

Animals in any ecological system interact with each other by obeying instincts, defending territory, and performing as segments in food chains. When adventurers enter such an ecological system, they will naturally encounter the animals of the system.

It is not quite accurate to call the collection of creatures in this chapter *animals*. While most of them *are* animals, there are also some plants and some things which may defy exact categorization. Nevertheless, when referring to all of them we will use the term animal.

Animals play an essential part in several different ways in **Traveller** adventures. First and foremost, a setting without animals does not appear real. The tremendous detail present in a huge universe is lost when players are not reminded of the infinite number of independent ecosystems that they can find when travelling from world to world.

Animals can serve as a referee prop to pass warnings along to the PCs. A guard dog who accompanies the PCs might bristle and growl upon the approach of unusual predators or intruders. Characters with sufficient Observation skill might notice the silence and lack of routine numbers of animals in a wooded area where an enemy patrol was lying in ambush. This use of animals serves to set atmosphere. Whatever mood native animals demonstrate is naturally passed on, at least to some degree, to the PCs. If a huge storm is approaching, the native animals will sense it and go into hiding, or hunker down in tree branches to ride out the storm. The normally prevalent background noises will fade away into a creepy silence. If this action is passed onto players observant enough to notice it, the impending menace of the storm will be much more vividly and realistically communicated than if the referee had simply said, "You feel a sense of ominous menace, hint, hint."

Another major way of using animals to establish the science-fiction setting of **Traveller** adventures is by the use of alien ones. Alien animals are central to the sense of other-worldliness desirable in **Traveller**. Mutated or genetically modified Terran creatures cannot only do that, they can also convey a sense of the alienation with nature that typified the Imperial age, and a reminder to the players that they are routinely surrounded by the relics of that age.

Animals also help bridge the gap between impersonal circumstance and personal enemies. That is, animals can be as implacable as any natural force, but if handled correctly, they can also impress upon the players a sense of awe, wonder, or even superstitious fear about their own role as players in a vast tapestry of interwoven forces and motivations, much of which they don't understand. If they are being stalked by a powerful, cunning creature, they should wonder, "Does it know something we don't? Does it have powers we don't suspect? Is it toying with us? Geez, whose idea was it to crawl through this jungle after the legend of the derelict research station, anyway?" It's a big universe—make your players respect it.

If the referee tries to get inside a animal's mind, to feel its desires and fears as much as with any other NPC, that referee's portrayal will be much more effective and entertaining than if the creature is merely played mechanically. Think of animals as low-grade NPCs. Generally, they will be easier to best than human opponents, but they should not be push-overs. Remember, the PCs are supposed to be heroes. Heroes without challenges are dull and lifeless. Only in a challenging universe where the PCs can fail will they have the opportunity to draw upon their talents to overcome obstacles and blossom into the heroes they should be.

ANIMAL COMBAT

Basically, animal combat follows the same rules as human melee combat, with the exceptions and clarifications enumerated below. Note that as with normal combat, all distances here are calculated in meters.

Animal Movement

In general, animals have three different movement rates: walk, trot, or run. The number of meters moved at each rate depends upon the type of animal, and is determined by animal generation below. The movement rate generated by the die rolls is the animal's running speed. The animal's trotting speed is half of this, and the animal's walking speed is half of its trotting speed.

Animals as Mounts in Combat: Riding a draft animal or riding animal (called a mount) is considered an action in the same manner as driving a vehicle. The referee should refer to the vehicle movement rules on page 291 of the "Combat" chapter for details.

Mounts may be ridden in combat. A walking mount can be ridden safely by virtually anyone. Riding a trotting mount requires an Average test of Agility for characters without Riding skill; those with this skill pass this test automatically.

Characters with Riding skill have a maximum safe speed on a mount equal to 20+(Riding). For these characters, riding at or under the safe speed is automatically successful. Riding at greater than the safe speed—up to 40 meters per combat turn (full gallop)—is done at the risk of falling off. To avoid a fall requires a Difficult test of Riding skill (which, if the character is unskilled in Riding, becomes a Formidable test of Agility) rolled once per turn. Failure results in a fall, 1D6–3 hits being suffered to a randomly rolled hit location. Catastrophic Failure results

in some sort of serious injury to mount and/or rider, as determined by the referee, based upon the exact situation in which the mishap occurred. Injuries to a mount might include breaking a leg in a chuckhole, tearing a muscle during a leap, or becoming bogged in mud in such a way as to cause injury. It is also possible that the rider has fallen and suffered damage as per a normal failure, above.

Animal Attacks

In general, animals attack as if engaging in melee combat. Most of these attacks involve animal weapons (teeth, claws, etc.), and are resolved as armed melee combat. This means that an animal attack cannot be blocked by an unarmed character, but may only be blocked with a melee weapon. Some animal attacks, such as coil and tentacle, are treated as unarmed melee combat grapple or strangle attacks, and can be blocked or escaped according to those melee combat rules. Furthermore, the animal trample attack is treated as a diving blow attack and can be dodged using the normal unarmed melee combat rules.

When attacking, animals do not use attributes (STR, AGL, CON) in the way that characters do. In order to hit a target, an animal rolls against a fixed to-hit number that is generated in the animal-generation procedures detailed below. This number is used just like a normal character task: The 1D20 roll must be less than or equal to the number in order to succeed; however, difficulty levels, etc., are not dealt with. The use of STR and CON to generate damage values for the animals are also replaced by standard damage values generated below.

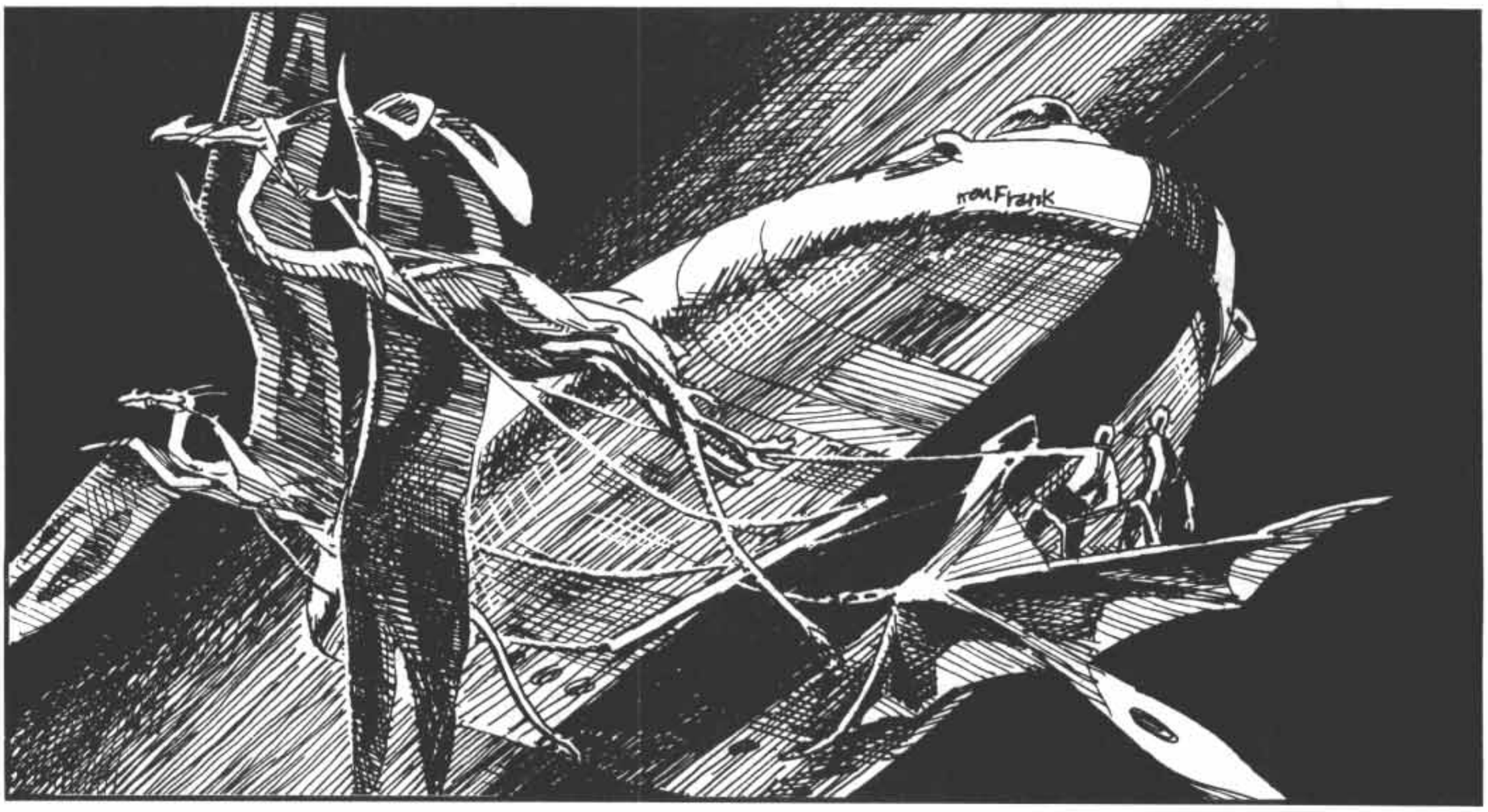
The type of attack used is determined by the type of "weapon" the animal uses to attack with.

Animal Weapons

There are 12 different types of natural weapons used by animals. Many animals have more than one of these and may attack with one or several, depending on the situation. Many of these weapons have unique characteristics as listed below.

Acid: Animals armed with acid attack as armed melee attacks. This attack cannot be blocked under the melee combat rules, but its effects can be negated by being fully covered by armor, such as combat armor or battle dress. The term *acid* as used here includes a variety of caustic fluids which plants or animals may spray onto their prey, and are called acid for ease and because they are most commonly digestive fluids of one sort or another. These seldom cause immediate serious injury, and are at first more irritating than damaging. As a result, animals which spray acid are usually herbivorous, and do so as a defense mechanism rather than as a means of predation. Predatory animals which use acid as a weapon usually combine it with some other grasping or controlling weapon, such as tentacles, coils, talons, etc.

Claws/Talons: Animals with claws or talons attack as armed melee attacks. These attacks can be blocked under the melee combat procedures. Carnivores and omnivores



with powerful limbs often have claws which are used to rake or hold an enemy. Claws typically do less damage than teeth, but have a longer reach.

Flying carnivores and omnivores usually have less powerful feet, and so claws are adapted to grasp rather than rake, and are especially useful for holding prey. Once an animal has wounded a character with its talons, it will continue to hold on until it is wounded. As soon as it is wounded, it will let go. So long as the animal holds onto its victim, the limb it is attached to is pinned in place and may not be used. In addition, the animal will hold with only one limb and will continue to attack (rake and claw) with the other.

Coils: Animals with coils attack as unarmed melee strangling attacks. These can be blocked per the normal strangling rules. An animal which attacks by constriction does so by coiling its slender but muscular body around its prey and squeezing. If an animal with coils succeeds in an attack, it indicates that the coils are in place around the character, not that the character is wounded.

Hooves: Animals with hooves attack as armed melee attacks. Attacks with hooves are made by kicking. Depending upon the size of the animal (i.e., how high it can kick), the referee may wish to assign DMs to its hit location, to skew it toward high or low hits on its target. As this is usually a defensive move, hooves are usually found on herbivores rather than carnivores.

Horn: Animals with horns attack as armed melee attacks, but horns often have a penetration value. Horns are effective defensive weapons due to their reach, but are usually not very effective when an animal is chasing prey. As a result, they are usually found on herbivores rather than carnivores. Animals with horns may block melee attacks in the same manner as if armed with a melee weapon.

Poison: Some creatures do little actual damage with their claws and/or teeth, but are able to inject poisons into their prey. Damage listings for these creatures are given in the form of a number followed by a small *p* (for *poison*), then another number. The first number represents the number of hits actually done by the delivery system (fang, stinger, etc.). If these hits are negated by armor, then no damage is suffered from the poison. However, if any damage does get through the armor, the target takes that damage on the combat turn in which it was hit, and on each succeeding turn it also takes damage from the poison. See the rules for poison on page 287 of the "Combat" chapter.

Projectile: Animals with projectile weapons attack as thrown weapon armed combat (see Thrown Weapons, page 282). Projectiles can include venom (Terran spitting cobra), super-heated chemical steam (Terran bombardier beetle), noxious liquid or gas (Terran spotted skunk), or stones picked up from the ground (Terran chimpanzee). It is easy to imagine animals which ingest small stones while eating, particularly as digestive aids (as many Terran animals do), which are then regurgitated in times of danger, perhaps coated with a noxious or poisonous mucus, and spat at hostile animals with great power. When distinguishing between the projectile form of attack with venom or noxious liquid and the acid spray above, think of the acid spray as a vaguely directional spray functioning over a short distance, and the projectile attack as a discrete slug of the material which can be directed at particular targets at longer distances.

Quill: Animals armed with quills use them exclusively for defense. Characters who come in physical contact with the quills of an animal, usually by stepping on or falling against them, are automatically hit by the quills. Many animals have poisoned quills.

Tail: Animals with tails attack using armed melee attacks. Animals with heavy, muscular tails can use them as bashing weapons against their enemies. Some tails are studded with sharp projections, and have penetration values. A tail can only be used to attack an enemy to the rear or side of an animal, not to the front.

Teeth: Animals armed with teeth attack as armed melee attacks. An animal's teeth do damage either by crushing a limb (if the animal is very large or strong) or by tearing. Teeth typically are short-ranged weapons.

Tentacle: Animals with tentacles attack as grappling unarmed melee attacks. Tentacles work in much the same way as coils, with two exceptions. First, most tentacled animals have multiple tentacles. Second, tentacles are usually used to grasp and subdue an adversary, and are seldom the principal weapon of the animal. Instead, the tentacles are used to draw the prey into the main weapon, usually teeth or digestive fluids. These attacks, like all grappling attacks, do not do real damage, but only controlling hits. Once the target is subdued, it is drawn in to be attacked by the animal's other weapon, usually its mouth.

Trample: Animals which trample attack using unarmed melee diving blows, but do not end the attack prone. These attacks may not be blocked, but may be dodged, using the unarmed melee combat rules. Some animals attack by attempting to crush their enemies, either by butting them or stepping on them. This attack form is used mainly as a defensive measure, and seldom against animals trying to flee. This is used by very large animals (such as Terran elephants and whales), very fast animals (such as Terran porpoises), and by herds of animals, whose stampede can trample predators by sheer weight of numbers.

Animal Wounds

Like NPCs, animals have their capacity for damage

abstracted into two rows of hit points. The first hit on the first row is a slight wound. Once the first row is filled, the first hit on the second row is a serious wound. Animals suffer –1 to Initiative with slight wounds, and another –2 (for a cumulative total of –3) for serious wounds. Once the second row is filled, the animal is critically wounded, loses consciousness, and will die, as discussed under Wounds Effects on page 288.

Because they do not have CON values, seriously wounded animals do not roll against their CON to remain conscious as characters do. Rather, an animal rolls to see if it flees once it is wounded to the serious level (see Animal Morale, immediately below).

Animal Morale

Animal morale is a fancy term for deciding if they attack or run away. The morale number is divided into an attack number and a flee number. Both numbers are the number that must be rolled less than or equal to on a D20 to produce that behavior.

Each animal has a chance of attacking listed with its other statistics. This is the likelihood that the creature will attack when first encountered if the PCs stumble upon it accidently. (Of course, if the referee planted the creature intentionally, whether it attacks or not is entirely dependent upon the referee.) That chance of attacking serves also as the likelihood that the animal will continue to attack even if wounded.

Whenever an animal first suffers damage from a combat, there is a chance it will flee. By the same token, whenever an animal is killed or rendered unconscious, there is an equal chance that any other animals in its group will flee. This die roll is made each time an animal is killed or rendered unconscious.

Once an animal takes its first hit on the second, serious wound, line, it rolls again to see if it will flee. A –5 DM is applied to this die roll. If the animal flees, the other members of its group also roll for flight.

Herbivores: Remember that herbivores always roll first to see if they flee. Then, if they do not flee, they roll to see if they attack. If they do not attack, they just stand around until the PCs provide further provocation.

Carnivores: Carnivores roll first to see if they attack. If not, then they roll to see if they flee. If not, they keep their distance and watch the PCs for any further provocation.

ANIMAL ENCOUNTERS

The referee should create one set of unique encounter tables for each world the PCs may travel to. This set should consist of one table for each terrain type found on the world. The encounter tables are created using the guidelines below. Of course, there will always be times when the referee has not been able to prepare complete tables for a world the PCs are exploring. The tables on pages 215-217 can also be used to generate a creature on the fly to be encountered as needed. However, for those worlds which will be visited often, or on which the players will spend a lot of time while pursuing a particular adventure, referees should take the time in advance to generate a full set of encounter tables, or at least tables for the terrain types that the PCs will visit. The adventuring will be much richer for it.

Once a set of tables has been created, it is used with the encounter procedure (covered under Encounters, beginning on page 202) to determine if and when animals are encountered. Although the precise nature of animals may change (and may prove to be quite alien), **Traveller** assumes most will conform to four categories based on their position in the food chain: herbivore, omnivore, carnivore, and scavenger.

IMPORTANT CONCEPTS AND DEFINITIONS

The animal tables introduce many important concepts and terms concerning animals. The tables used in generating animals and encounters are numbered from 1 to 12. Depending upon what the referee is trying to do, only some of the tables need to be used at one time.

Referees who are generating animal encounter tables for a world start at step 1 and go all the way through to step 12 to create the first creature. One table is created for each terrain type, and each of these tables has 20 animals (nine herbivores, four omnivores, four carnivores, and three scavengers) on it. Some of these animals can be repeats, although referees should try to have two or three different animals for each category.

Each subsequent creature begins at step 5 (although DMs from step 3 are used according to the terrain type of the encounter table being generated) and goes to 12. As each creature is completed, it is placed into the encounter table in step 4, and the next one is begun at step 5.

If the referee is generating an encounter on the fly, simply go through the list once from 1 to 12, and the result is the particular animal being encountered.

Animal Encounter Table Format (Step 4)

Whenever an animal encounter takes place, the referee rolls 1D20 on this table. If the referee has pregenerated the encounter tables, this one die roll shows the precise type of animal that is being encountered, and the encounter takes place.

If these tables have not been pregenerated, the referee must continue on to generate the encountered animal. This roll determines the general category of animal (herbivore, omnivore, carnivore, or scavenger) for which the referee rolls in step 5.

Animal Type and Quantity (Step 5)

The Animal Type and Quantity table indicates the types of animals which occur within the animal categories, according to their specific niches. Sometimes an animal type is followed by a die roll in parentheses. This roll represents the number of animals encountered as a group. If no roll is listed, the animal quantity is automatically 1.

This table is used in two ways. When generating animal encounter tables it is used to decide the type of animal that is to be generated and placed in a slot in the step 4 table above. When generating an encounter on the fly, it tells the sort of animal that has been encountered and must be generated with the tables farther below.

The types of animal within each category are intended to correspond to their relative abundance, but the particular type that results from each die roll, and the group size, may be altered to fit the needs of the referee.

Several animals of each of the four categories (herbivore, omnivore, carnivore, scavenger) should be produced for each terrain type, of various of the niche types. However, to get started only one creature of each category is required.

If several examples of each category are created, the referee may assign each one a unique encounter roll on the step 4 table. For example, the referee creates three omnivores for the forest terrain type, and decides that one of them, a hunter, is quite common, while the others, a gatherer and an eater, are relatively scarce. The hunter is assigned the numbers 10 and 11, while the other two receive the numbers 12 and 13, thus filling up all four omnivore slots in the table in step 4.

Special Attributes (Step 6)

Although the animals which adventurers will encounter tend to be walkers, some may be flyers, swimmers, amphibians, or even triphibians:

Flyers: These are animals capable of flying through the use of wings, levitating gas sacs, or other mechanisms.

Swimmers: These are animals that live in liquid and swim through the use of fins, flippers, jets, or other mechanisms.

Amphibians: These are animals that live in liquid but are capable of emerging onto land.

Triphibians: These are animals that live in liquid but are capable of walking on land and of flying in the air.

Certain entries on the table are followed by a DM which must be applied to the animal size roll; its general effect is to make flyers smaller and swimmers larger.

Animal Size (Step 7)

Animal size number is the final number rolled (after die roll modifiers) on the Animal Size table. This number is used in later calculations and so should be noted. The following additional information is provided by the Animal Size table:

Weight: The animal's weight is expressed in kilograms and may be taken as a general indication of size in relation to human beings (humans are approximately 100 kilograms). All sizes may be construed to cover a range of plus or minus 20 percent.

Hits: The Hits column indicates the number of hits an animal can take. Just as with NPCs, there are two rows each equal to this number (see Animal Wounds, above). If an animal receives wounds equal to or greater than three times its hits, it is destroyed and has lost any food or pelt value.

Damage: The Damage column indicates the general effect of size on an animal's ability to cause damage when it hits. The modification (if any) is noted and applied to the effects of the animal's weapons when they are determined. The notation "xND6" means to roll the indicated number ("N") of dice and multiply the base damage rate by that result.

Thus, for two animals armed with the same weapon, the larger generally inflicts a heavier wound.

For example, the referee is generating a size 17 animal which has tail as its weapon, which the referee decides to name the "groat." The weapons list states that tails inflict 1D6 hits of damage, and the Animal Size table shows that size 17 modifies this damage by 2D6. The referee rolls 2D6 and gets a 6, so the groat is listed in the Animal Encounter table as inflicting 6D6 hits with its tail.

Initiative: This is a die roll modifier to the Initiative roll made later. Note that larger animals tend to have lower Initiative ratings.

Armor DM: This is a die roll modifier to the armor roll made later. Note that larger animals tend to have tougher hides.

Animal Weaponry (Step 8)

Animals naturally have weapons which enable them to attack and defend. The type of weapon determines several attack characteristics, as shown on the table.

To Hit: This is a die roll modification made to the to-hit number. It is applied to the die roll made later in animal generation to determine the animal's task attribute; it is not a permanent die roll modifier to the task roll itself.

Damage: This shows the damage done by the animal's weapon. Note that the table does not show what to roll when the animal hits, but shows how to calculate the number of damage dice that the animal does with each successful attack. For example, a result of 14, Teeth, means to roll 1D6 to find out how many dice of damage that type of animal does with each hit, not to roll 1D6×D6 each time the animal hits. A roll of 3 means that the animal in question does three damage dice with each hit.

This damage value is modified by the results of the

Animal Size table. If the animal in the example were 12,000 kg on the Size table, an additional D6 would be rolled to obtain its final damage dice. If the result were a 5, then this animal would roll 15 dice for damage each time it hit its target.

A damage of 1D6 multiplied by 1/2 by the Size table becomes 1D3.

Note that poison delivery weapons are not multiples of D6, the listed delivery damage is the amount of damage done with a hit.

Penetration: This shows the penetration of the weapon. Usually it is Nil, meaning that it will not penetrate armor. Some animal weapons are capable of penetrating thin armor if the animal is large enough. In this case, the notation is "Size÷N" where N is a constant divisor. Divide the rolled animal size number by the constant, rounding all fractional results of 1/2 or more up, to determine the penetration of the weapon. If the animal's weapon penetrates the target's armor, it does full damage; if it does not penetrate, it does blunt trauma damage.

Range: This shows whether an animal's weapon is considered short or long range (See Armed Melee Combat, page 271, for melee combat ranges). A certain size is usually required before the weapon is considered long range. The range shown for projectile weapons is the effective range of the weapon (see Thrown Weapons, page 282, for discussion of range). Long range is twice this amount.

Animal Initiative (Step 9)

This determines when the animal moves and attacks in a combat turn. This number is modified by the DM from the Animal Size chart.

To-Hit Number (Step 10)

This is the animal's basic chance of hitting. The referee must roll this number or less on 1D20 for the animal's attack to hit its target. This number is modified by the DM gained from the Animal Weaponry chart.

Animal Armor (Step 11)

Some animals possess armor protecting them from attacks by other animals. Only the general effectiveness of the armor is indicated, not its specific construction. All entries provide a specific armor value. In some cases, this value is greater for the head than the rest of the body.

Animal Behaviors and Speed (Step 12)

Because animals have predispositions to attack or to flee, these details are noted on the Animal Encounter table entry. Three codes are used: A, F, and S. Each is followed by a number which indicates the dice roll involved.

A indicates attack predisposition. A7 indicates the animal will attack on a 1D20 throw of 7 or less. Special cases also exist, and they are indicated by a lower-case letter following the A. See the the Animal Behaviors table for details.

F indicates predisposition to flee. F7 indicates the animal will flee on a throw of 7 or less. Special cases are indicated by a lower-case letter following the F (see the Animal Behaviors table).

Different animals will have the A and F codes in different orders. The order in which they are listed is the priority in which they are rolled. Thus, for animals listed F, then A (herbivores), the flight roll is made first, followed by the attack roll if it does not flee. For carnivores, the order is A, then F, indicating that the chance of attack is rolled first, and then flight if the animal did not attack.

S indicates speed. The number rolled is its running speed. Half of this is its trotting speed. Half of this is its walking speed. Round up at each stage. For convenience, this number can be listed as three entries. For example, if the roll is 25, list the creature's walking/trotting/running speed as 7/13/25

Referee's Additions: You may want to invent new animal characteristics. Larger or smaller animals may be invented; other animal weaponry and armor types may be invented, with or without DMs, and so on.

ANIMAL TYPES

Animals can be described by the ecological niche they occupy. The following broad categories describe effectively all animal types. Note that some of these definitions overlap, because most animals have several available feeding behaviors and do what they need to do under the current circumstances to get a meal. For example, Terran baleen whales will scoop plankton while skimming through the sea (herbivore grazer behavior), but also take shoals of fish or mollusks from the bottom, which requires more work and is similar to herbivore intermittent behavior. Similarly, lions can take live prey as carnivore pouncers or chasers, but can take another creature's kill, thereby functioning as scavenger hijackers.

When trying to assign an animal to such a niche, use its most frequent or typical behavior, as well as the most vigorous technique which it routinely uses. For example, the lion would best be listed as a pouncer because it is not limited to hijacking behavior.

Herbivores

Animals which eat unresisting food are generally classed as herbivores. While this is usually means plant eaters, the definition here includes the eating of unresisting animals as well. Herbivores are of three types:

Grazers: Animals which devote most of their time to eating. They may be solitary or grouped in herds. Their primary defense is flight, although such action may

result in stampedes which could endanger adventurers who get in their path. When forced to fight, they will fight fiercely until killed or routed. Typical Terran grazers are the antelope and the moose. The baleen whale (which scoops krill from the sea as it swims through it) is also a grazer.

Intermittents: Herbivores which do not devote their full time to eating. They tend to be solitary. Intermittents usually "freeze" when an encounter occurs, fleeing if attacked by a larger animal. Sometimes an intermittent will attack in order to protect territory or young. Typical Terran intermittents are the chipmunk and the ele-phant.

Filterers: Herbivores which pass the environment through their bodies. Unlike grazers, which move to eat food, filterers move a flow of water or air through themselves in order to gain food. Generally, filterers suck, trip, push, or pull anything (even animals) at close range into a digestive sac. A filterer can absorb an animal up to twice its own weight. Filterers are solitary and generally slow-moving, if they move at all. Terran filterers are generally aquatic, such as the barnacle, coral, mussel, clam, etc.

Filterers attack differently than other animals. They inflict automatic wounds of 1D6 per each 150 kilograms of animal mass (weapons and wound alteration are ignored). They attack through reflex. Freeing oneself from them is a Difficult task using Strength.

This task represents a prompt struggle by an adventurer; success secures an escape. Up to four other characters may assist. Each makes a Formidable roll versus Strength, and each success lowers the escaping PC's difficulty level by one.This task is hazardous: If a Catastrophic Failure occurs, one of the characters who was aiding in the escape has also been caught. If no other characters were helping, ignore any Catastrophic Failures.

Omnivores

Animals which eat food without regard to its resistance. The bear, which will eat fruits, berries, and moths as readily as it will hunt for fish or animals, is an omnivore. Omnivores are of three types: gatherers, hunters, and eaters.

Gatherers: Animals which display a greater tendency toward herbivorous behavior. In most respects, they are similar to herbivore intermittents. Typical Terran gatherers are the raccoon and the chimpanzee.

Hunters: Animals which display a greater tendency toward carnivorous behavior. In most respects, they are similar to small or inefficient carnivore chasers. Typical Terran hunters are bears or humans. These creatures can also function well as hijackers.

Eaters: The true omnivore (in the sense that it will eat anything and everything) does not distinguish its food and consumes all that it confronts. Eaters present considerable danger since they do not avoid anything when encountered. A typical Terran eater is the army ant (where an entire colony is considered to be one organism, which it rather resembles, as it has only one reproductive unit—the queen).

Carnivores

Animals which prey on other animals by attacking and killing them in the face of resistance are carnivores. Carnivores are of five types:

Pouncers: Animals which kill their prey by attacking from hiding or by stalking and springing are pouncers. Because of the difficulty of coordinating such attacks, pouncers are usually solitary animals. In an encounter, pouncers which have achieved surprise have succeeded in their basic aim and will attack regardless of range. If they do not have surprise, they will sometimes still attack. They will flee if they themselves are surprised. Typical Terran pouncers are cats.

Chasers: Animals which kill their prey by attacking after a chase are termed chasers. They tend to be pack animals. The chased prey is not typically large animals, but small. Typical Terran chasers are wolves (and their typical prey is mice).

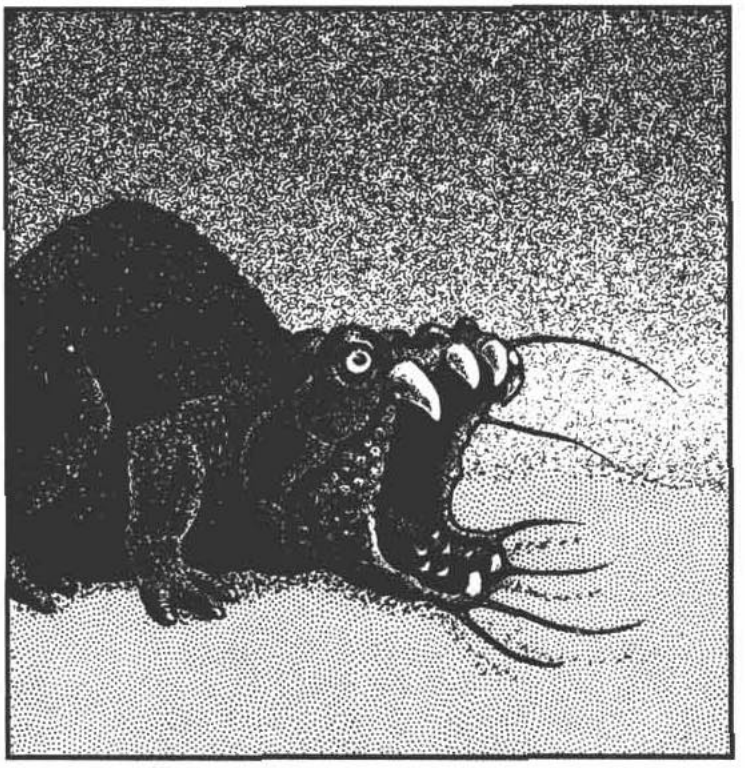
Trappers: Animals which passively allow their prey to enter a created trap wherein they are killed and eaten. Trappers tend to be solitary and slow, but will attack any animal which enters their trap. Usually, a trap will not wound or damage the trapped individual, but will tend to hold the one trapped in order for the trapper to attack. A typical Terran trapper is the spider or ant lion.

Generally, any character who is surprised by a trapper at close or short range is trapped (assuming that the creature is of sufficient size to normally feed on human-size prey). Escaping is a Formidable task using Strength.

This task represents a prompt struggle by an adventurer; success secures an escape. Up to four other characters may assist. Each makes a Formidable roll versus Strength and each success lowers the escaping PC's difficulty level by one.This task is hazardous: If a Catastrophic Failure occurs, one of the characters who was aiding in the escape has also been caught. If no other characters were helping, ignore any Catastrophic Failures.

Sirens: Distinct from the trapper, which creates a trap for its prey, a siren also creates a lure to draw prey to the trap. The trap is treated in much the same manner as that of the trapper, but the lure entails additional consideration.

In most cases, the lure will be specific to some animal but will be unnoticed by humans. In rare cases (roll 2 or less on 1D20), the lure will be universal, perhaps a smell or scent, or a mirage or a beautiful configuration, which



will attract characters into a vulnerable position. Very rarely, the lure will be psionic in nature. Typical Terran sirens are the angler fish (its mouth is the trap) and the Venus' flytrap.

Killers: A killer is a creature which is so powerful within its environment and well adapted to predation that it shows little fear of other creatures, regardless of their size. It is able to kill quite effectively when it is hungry, or when an intruder encroaches on its territory. Its ability to attack is so well-developed that attacking forms a relatively larger portion of its range of behavior than with most animals. Therefore, such creatures are more likely to attack without apparent provocation (i.e., in response to provocations that are apparent only to the creature). A Terran example is the shark.

Scavengers

Animals which share or steal the prey of others or that take the remains of kills are classed as scavengers. Scavengers are of four types:

Intimidators: These are scavengers which establish their claim to food by frightening or threatening other animals. Their standard procedure is to approach a kill and force other animals away by appearing to be a threat. A typical Terran intimidator is the jackal.

Hijackers: These are scavengers which establish their claim to food by simply taking it. They rely on their superior strength or size to allow them to hijack food because the other animals present cannot effectively object. This size and strength also allows them to function as pouncers and hunters. A typical Terran hijacker is the lion.

Carrion-Eaters: These are scavengers which take dead meat when it becomes available (often waiting patiently for all other threats to disperse before beginning). A typical Terran carrion-eater is the buzzard.

Reducers: These are scavengers which act constantly on all available food. They reduce the remains of food after all other scavengers are finished with it by consuming bone and other leavings. Terran reducers are all microscopic, such as bacteria.

ANIMAL MOTIVATIONS

Animals may be provided with more complex motivations than the simple dice rolls for attack and flight.

Carnivores base their decisions on the size of the party and size of the individuals in the party.

Large herbivores will be less likely to flee than small ones; instead, they tend to ignore a party unless it approaches too close. Humans may resemble a carnivore's natural prey or a herbivore's natural predator.

Any animal may unexpectedly attack if the party unwittingly threatens its young, nest, territory, or meal. Any animal may flee if startled or if the party appears sufficiently threatening; even the most vicious carnivore is reluctant to risk its life for a meal.

Other responses are possible beyond attack or flight. A carnivore may stalk a party, hoping to attack an isolated member. An armored animal may curl up into a ball or retract its extremities into its shell. Animals may find certain parts of the group's equipment attractive. They may fasten themselves to the outside of a vehicle or try to eat clothing. There may be responses analogous to that of the skunk or the opossum. An animal may be friendly or want to play; it might even mistake a party for members of the opposite sex.

COMMON SENSE

Airless worlds will almost never have any life of consequence on them; if they do, animal life will still tend to follow the same broad guidelines given above. Still, flyers and liquid breathers should be nonexistent.

Always be prepared to alter or restrain prescribed procedures if you feel they contravene logic or reason.

Greater Complexities: Events may be used to trigger rolls on special encounter tables; for example, if an event describes a forest clearing, a special table may be made up to handle encounters in that clearing. An event may be made specifically applicable to an adventure in which a party is involved; for example, if a party is prospecting the location of a mineral outcropping, this could be an event. Events may trigger small adventures that are separate from the main adventure; for example, an event could involve the party in the exploration of a cave previously mapped by the referee.

ANIMAL ENCOUNTER TABLE CREATION

1. World Size and Atmosphere

Using information about the world for which the animal is being produced, determine the world size and atmosphere from the world's UWP. This information is used later in step 6.

BASIC WORLD DATA

UWP digit	*Size*	*Atmosphere*
0	Asteroid	Vacuum
1	Small	Trace
2	Small	Very Thin
3	Small	Very Thin
4	Small	Thin
5	Medium	Thin
6	Medium	Standard
7	Medium	Standard
8	Large	Dense
9	Large	Dense
10+	Large	Exotic

2. Terrain Types

Determine the terrain types on the world through which the PCs will be travelling. Many worlds have most or all of the terrain types shown below in step 3, but not all are needed when only one region is explored.

One animal encounter table should be generated for each terrain type in the region being explored. Remember that a planetary ecosystem has tremendous diversity, and the animals found in the plains on one continent may differ dramatically from those found on another.

3. Animal Type and Weight DMs

Determine the animal type and weight DMs from the table below. The type DM is applied to the die roll in step 5 (Animal Type). The weight DM is used in step 7 (Animal Size). These DMs show a propensity for the animal to be larger or smaller based on the terrain type they inhabit.

ANIMAL TYPE AND WEIGHT DMS

Terrain Name	*Equivalent Terrain*	*Type*	*Weight*
Glacier	Ice Cap	—	–1
Clear	Road, Open	+3	+1
Prairie	Plain, Steppe	+4	+1
Rough	Hills, Foothills	—	—
Broken	Badlands, Lava Field	–3	–2
Mountain	Alpine	—	–2
Forest	Woods	–4	–2
Jungle	Rain Forest	–3	—
River	Stream, Creak	+1	–1
Swamp	Bog	—	—
Marsh	Wetland, Moor	—	–1
Desert	Dunes	+3	–2
Beach	Shore, Sea Edge	+3	+1
Surface	Ocean, Sea	+2	+3
Shallows	Ocean, Sea	+2	+2
Depths	Ocean, Sea	–4	+3
Bottom	Ocean, Sea	–2	+1
Sea Cave	Sea Cavern	–2	—
Sargasso	Seaweed, Kelp Bed	–4	–2
Ruins	Old City	–3	—
Cave	Cavern	–4	–1
Chasm	Crevasse, Abyss	–1	–3
Crater	Hollow	—	–1

4. Animal Encounter/ Category Table

This step is used only in rolling encounters. It is not used when generating encounter tables (rather, it is *filled in* when generating encounter tables). To find out what category of animal has been encountered, roll 1D20 and consult the following table. The result shows which table to roll on in step 5.

D20	*Animal Category*	*D20*	*Animal Category*
1	Herbivore	11	Omnivore
2	Herbivore	12	Omnivore
3	Herbivore	13	Omnivore
4	Herbivore	14	Carnivore
5	Herbivore	15	Carnivore
6	Herbivore	16	Carnivore
7	Herbivore	17	Carnivore
8	Herbivore	18	Scavenger
9	Herbivore	19	Scavenger
10	Omnivore	20	Scavenger

5. Animal Type and Quantity

This table is used in two ways. When generating animal encounter tables, it is used to decide the type of animal that is to be generated and placed in a slot in the step 4 table above. When generating an encounter on the fly, it tells the sort of animal that has been encountered and must be generated with the tables further below.

The types of animals within each category are intended to correspond to their relative abundance, but the particular type that results from each die roll and the group size may be altered to fit the needs of the referee. Roll 2D6 and consult the following table after applying the animal type DM from step 3.

Several animals of each of the four categories (herbivore, omnivore, carnivore, scavenger) should be produced for each terrain type, of various of the niche types listed below. However, to get started, only one creature of each category is required.

If several of each category are created, the referee may assign each one a unique encounter roll on the table. For example, the referee creates three omnivores for the forest terrain type, and decides that one of them, a hunter, is quite common, while the others, a gatherer and an eater, are relatively scarce. The hunter is assigned the numbers 10 and 11, while the other two receive the numbers 12 and 13, thus filling up all four omnivore slots in the table in step 4.

ANIMAL TYPE AND QUANTITY

2D6	*Herbivore*	*Omnivore*	*Carnivore*	*Scavenger*
0–	Filterer (1D)	Gatherer	Siren	Carrion-Eater (1D)
1	Filterer	Gatherer	Pouncer	Carrion-Eater (2D)
2	Filterer	Eater	Siren	Reducer (1D)
3	Intermittent	Gatherer	Pouncer	Hijacker (1D)
4	Intermittent	Eater (2D)	Killer (1D)	Carrion-Eater (2D)
5	Intermittent	Gatherer	Trapper	Intimidator (1D)
6	Intermittent	Hunter	Pouncer	Reducer
7	Grazer	Hunter (1D)	Chaser	Carrion-Eater (1D)
8	Grazer (1D)	Hunter	Chaser (3D)	Reducer
9	Grazer (2D)	Gatherer	Chaser	Hijacker
10	Grazer (3D)	Eater (1D)	Killer	Intimidator
11	Grazer (2D)	Hunter (1D)	Chaser (2D)	Reducer (1D)
12	Grazer (4D)	Gatherer	Siren	Hijacker
13+	Grazer (5D)	Gatherer	Chaser (1D)	Intimidator (1D)

6. Special Attributes

Certain terrain types suggest animals with special attributes. Roll 2D6 to determine what, if any, special attribute the animal has, and possible DMs for use in step 7 (Animal Size).

Die Roll Modifiers: World Size = Large, DM –1; World Size = Medium, DM +1; World Size = Small, DM +2; Atmosphere = Thin, DM –1; Atmosphere = Dense or Exotic, DM +2.

Die	*Beach*	*Marsh*	*Swamp*	*River*	*Sea*	*Other*
2	S+1	S–6	S–3	S+1	S+2	—
3	A+2	A+2	A+1	—	S+2	—
4	A+2	A+1	A+1	—	S+2	—
5	—	—	—	—	A+2	—
6	—	—	—	—	A	—
7	—	—	—	—	S+1	—
8	—	—	—	—	S–1	—
9	—	—	—	—	T–7	—
10	—	—	—	—	T–6	F–6
11	F–6	F–6	F–6	F–6	F–6	F–6
12	F–5	F–5	F–5	F–5	F–5	F–3
13	F–4	F–4	F–4	F–4	F–4	F–2
14	F–2	F–2	F–2	F–2	F–2	F

Results

A = Amphibian; F = Flyer; S = Swimmer; T = Triphibian.

Numbers are additional animal weight DMs for use on table 7 (Animal Size).

7. Animal Size

Roll 2D6 for animal weight and the effects of that weight. Use the weight DMs obtained from steps 3 (Animal Type and Weight DM table) and 6 (Special Attributes table). Record the weight number, which is the same as the final adjusted die roll, as this will be used again in step 8 (Animal Weaponry) to determine penetration and range.

The Damage column is the size modifier used with the basic damage generated in step 8 (Animal Weaponry). The Initiative modifier is used in step 9 (Animal Initiative), and the Armor DM is used in step 11 (Animal Armor).

Die	*Weight*	*Hits*	*Damage*	*Initiative*	*Armor DM*
1	1	1	×1/2	+1	—
2	3	1	×1/2	+1	—
3	6	1D3	×1/2	+1	—
4	12	1D6	—	+1	—
5	25	1D10	—	—	—
6	50	1D20	—	—	—
7	100	2D20	—	—	—
8	200	3D20	+1	—	—
9	400	4D20	+2	–1	+1
10	800	5D20	+1D6	–1	+1
11	1600	6D20	+2D6	–2	+1
12	3200	7D20	+3D6	–2	+1
13	Roll again, but with an additional +6 DM (reroll further rolls of this result)				
14	6000	8D20	×1D6	–2	+2
15	12,000	9D20	×1D6	–3	+2
16	24,000	10D20	×1D6	–3	+2
17	30,000	11D20	×2D6	–3	+3
18	36,000	12D20	×2D6	–4	+3
19	40,000	13D20	×2D6	–4	+3
20	44,000	14D20	×3D6	–4	+4

8. Animal Weaponry

Roll 2D6 and consult the following table to determine the weapon with which the animal attacks. **DMs:** –3 if Herbivore, +3 if Omnivore, +5 if Carnivore, +7 if Scavenger.

Die	*Weapon*	*To Hit*	*Damage*	*Pen*	*Range*	*Treat as Melee Attack*
–1	Hooves & Teeth	—	1D6	Nil	Short	Armed melee attack
0	Trample	–3	(1D3)×D6	Nil	Short	Diving blow
1	Hooves & Teeth	—	(1D3)×D6	Size+10	Short	Armed melee attack
2	Trample	–3	1D6	Nil	Short	Diving blow
3	Hooves	–2	1D6	Nil	Short	Armed melee attack
4	Horn & Hooves	—	2D6	Size+9	Long if size = 10+	Armed melee attack
5	Horn	–1	2D6	Size+7	Long if size = 10+	Armed melee attack
6	Quills	–2	1D6	Nil	Short	(Defense only)
7	Tail	–2	1D6	Size+7	Long if size = 10+	Armed melee attack
8	Projectile	—	(1D6–2)×D6*	Nil	1D6×Size+2**	Thrown weapon attack
9	Tail	–2	1D6	Nil	Long if size = 10+	Armed melee attack
10	Acid	–1	1D6	1D6–4	Short	Armed melee attack
11	Claws & Teeth	+2	(1D6)×D6	Size+8	Long if size = 9+	Armed melee attack
12	Coils	+1	1D6	Nil	Short	Strangle
13	Claws	+2	(1D6–1)×D6*	Size+9	Long if size = 9+	Armed melee attack
14	Teeth	+1	(1D6)×D6	Size+10	Short	Armed melee attack
15	Poison***	***	XpN***	Nil	Short	Armed melee attack
16	Tentacle†	+4	1D6†	Nil	Long if size = 6+	Grapple
17+	Claws	+1	(1D6)×D6	Size+9	Long if size = 9+	Armed melee attack

*If damage result is 0×D6, basic damage is 1D3 points.

**Range equals effective range in meters, and is calculated by rolling 1D6, multiplying the result by the rolled animal size number, and dividing by 2 (rounding fractions up). For long range, double this figure.

***Poison may be delivered by teeth, claws, quills, or a specialized stinger organ. Roll 1D6 for delivery weapon, then roll 1D3 for poison strength. The Delivery Weapon Table at right provides the damage by the means of poison delivery, which goes in place of the "X" in the damage column. The number rolled for poison strength goes in place of the "N," and indicates the number of D6 that are rolled for poison damage on each subsequent combat turn.

Delivery Weapons

Die	*Delivery Weapon*	*Delivery Damage*	*To Hit Modifier*
1-2	Teeth	1D3	+2
3	Claws	1D3	+2
4-5	Quills/ barbs/spines	1	N/A (defensive only)
6	Stinger	1	+1

†Damage is controlling hits only (see Grappling, page 270). On a result of Tentacle, roll 1D6 for the additional weapon which is used after the target has been subdued.

Die	*Weapon*
1	Acid
2	Poison
3-6	Teeth

Notes

Damage is base damage, and is modified by the modifiers from step 7 (Animal Size table).

Penetration is the animal's rolled size number divided by the number shown. Round to the nearest whole number.

9. Animal Initiative

Roll 1D6 and apply the DMs listed below and those from step 7 (Animal Size). The result is the animal's Initiative number used in the combat turn.

Animal Type	*DM*
Herbivore	–2
Scavenger	–1
Omnivore	+1
Carnivore	+2

10. To-Hit Number

This number serves as the animal's asset when to-hit skill task rolls are made for it by the referee. Roll the indicated number of dice and then apply any DMs for weapon type from step 8 (Animal Weaponry).

Animal Type	*D6*
Herbivore	2
Scavenger	2
Omnivore	2
Carnivore	3

11. Animal Armor

Determine what armor, if any, each individual animal has by rolling 2D6 and consulting the following table. DMs are added from step 7 (Animal Size) and the listed DMs below.

Die	*Armor*
1	(+6)
2	—
3	—
4	½
5	—
6	—
7	—
8	—
9	—
10	½
11	—
12	(+6)
13	½
14	½ (Head 1)
15	½ (Head 1)
16	½ (Head 1)
17	1 (Head 2)
18	1 (Head 2)
19	2 (Head 3)
20	3

Die Roll Modifiers

If carnivore, –1.
If herbivore, +2.
If scavenger, +1

A result of (+6) requires a reroll with an additional DM of +6 (in addition to any others). An additional (+6) result triggers another reroll, but without an additional +6 DM.

12. Animal Behaviors and Speed

Determine the range of animal behaviors and reactions that are possible.

	Animal Behaviors		
Type	*To Flee (F)*	*To Attack (A)*	*Typical Speed (S)*
Herbivore			
Filterer	1D6	If possible	1D20
Intermittent	3D6	2D6	2D20
Grazer	3D6	2D6	3D20
Omnivore			
Gatherer	2D6	2D6	2D20
Hunter	2D6	3D6	3D20
Eater	1D6	2D6	2D20
Carnivore			
Pouncer	If surprised	If surprise	3D20
Chaser	2D6	If more	4D20
Trapper	2D6	If surprise	1D20
Siren	2D6	If surprise	1D20
Killer	1D6	3D6+2	3D20
Scavenger			
Hijacker	2D6	3D6	3D20
Intimidator	2D6	3D6	2D20
Carrion-Eater	3D6	2D6	3D20
Reducer	1D6	1D6	1D20

In some cases above, a description is given in place of dice to roll for a behavior, and indicates that an animal will always behave in a certain way according to the situation. These cases are:

If Possible: A filter will attack if it possibly can. Use the code **Ap**.

If Surprise: The animal will attack if it has surprise. Use the code **As**.

If Surprised: The animal will flee if it has been surprised (as soon as it realizes this fact). Use the code **Fs**.

If More: The animals will attack if there are more of them than there are of potential prey (that they can see). Use the code **Am**.

Space Travel

Travellers do just that—they travel. Each interstellar jump places new worlds before the adventurers—exotic and faraway settings for every conceivable activity from bold commercial ventures, to quests after fabled alien artifacts, to high-tech military expeditions.

Each new encounter on a world's surface can bring with it new challenges, new unsolved mysteries, or new information. Interchange with local personalities and the conflict in goals that inevitably occurs between the locals and the characters make for some memorable moments in adventuring.

Travel is fundamental to **Traveller**: both travel on the surface of a world and travel between worlds. Travel between worlds forms the most important type of travel to be undertaken by characters. Characters can purchase individual passages aboard a vessel, they can charter a ship, and those with sufficient resources may even elect to purchase a starship.

INTERSTELLAR TRAVEL

Worlds orbiting different stars are reached by interstellar travel, which makes use of the jump drive. Once a starship moves to a safe distance from a world, it may activate its jump drive. As gravitational fields interfere with the alignment of the jump drive (and may cause a jump mishap—see page 227), ships do not usually jump until at least 100 diameters away from the nearest world. This is usually accomplished quickly and easily; by way of example, transit time to 100 diameters from a Size 8 world takes about five hours at 1G.

The jump drive pushes the ship into and through a tunnel through jump space, or "J-space," a conceptual universe with more elastic dimensions than normal space (N-space). The J-space tunnel is mathematically similar to an artificially created wormhole. Due to the unique topology of J-space, the fall through the tunnel takes about one week (150 hours), regardless of the distance travelled in N-space. This time spent in the J-space tunnel is referred to as time "in the hole" by experienced travellers.

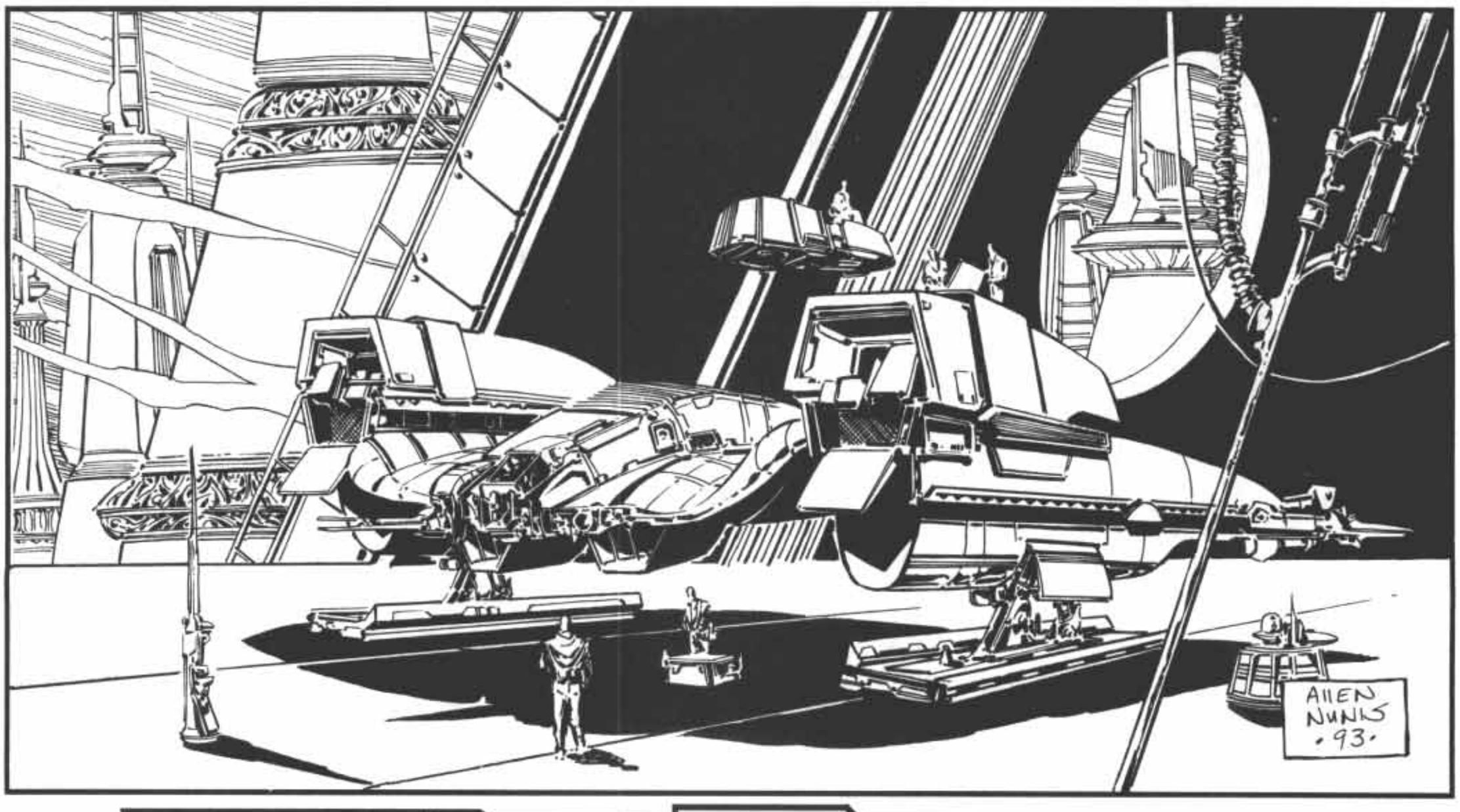
Jump drives are rated from 1 to 6, the rating being the number of N-space parsecs which can be travelled in one jump. Higher numbers indicate higher power levels and greater abilities to compress the dimensions of J-space.

Commercial starships usually make two jumps per month. They spend one week in jump, followed by one week in the star system, travelling from the jump point to the local world, refueling, marketing cargo, finding passengers, leaving the starport, and proceeding to a jump point again. The week in the system usually provides some time for crew recreation and for wandering around the planet.

Noncommercial ships usually follow the same schedule of one week in jump and one week in a system. If haste is called for, a ship may refuel immediately and rejump right away. This allows the ship to make one jump per week but makes no provision for cargo, passengers, or local stops.

Interstellar travel is priced on the basis of accommodations; prices cover a trip from starport to starport, encompassing one jump regardless of length. There are six types of passage:

High Passage: The best method of travel is called high passage, which involves first-class accommodations and cuisine. High passengers have the services of the ship's



steward, entertainment, and complete attention to their comfort. There is a baggage allowance of up to 1000 kilograms. High passage costs Cr10,000. The use of high passage fares outside the Regency is rare, as the limited ship space available militates toward the use of middle passage fares. A high passage passenger requires one entire stateroom (large or small).

Middle Passage: In order for starships to fill their staterooms with passengers, middle passage is offered on a standby basis, in the event that not enough high passages are sold. While middle passengers occupy staterooms normally similar to those occupied by high passengers, they do not receive the service or entertainment accorded the high-paying passengers. In addition, the quality of the cuisine is mediocre. Baggage totaling 100 kilograms is allowed. Middle passage costs Cr8000 and requires an entire stateroom (large or small).

A middle passenger may be "bumped" and the stateroom taken by a late-arriving high passenger; the middle passenger's ticket is returned, but no other compensation is made. (The bumped individual could, of course, then buy a high passage and in turn bump some other middle passenger if the extra cost seemed worth it.)

Outside of the Regency, the middle passage fare usually requires two passengers to share a single stateroom, rather than the one-per-stateroom standard of the high passage. Consequently, middle passages in the Old Expanses, Pocket Empires, and the Wilds usually cost only Cr5000. Bumping also works differently outside the Regency. A character may make an Average test of Bribery with the ship's financial officer (also variously known as the bursar or purser) to have another passenger bumped. There is a minimum "bribe" (usually referred to as the "priority fee," as this practice is routine, and not considered illegal or even unethical). Each additional Cr500 offered above the minimum fee allows a –1 DM on the die roll.

Working Passage: A starship captain with a crew shortage may hire an individual to fill the vacant position and pay not money but passage in return. Working passage may not continue for more than three jumps, or the individual is considered to have been hired for standard salary. In order to be hired for working passage, the individual must have some expertise in the position for which he or she is hired. Baggage totaling 1000 kilograms is allowed. Working passage costs nothing to the individual.

Steerage: This is not used in the Regency, which still operates under the old Imperial travel regulations that outlaw steerage travel. Steerage requires the passenger to travel in some small space, usually 1/2 ton to one ton, left over in the cargo bay. Steerage passengers are not fed, and must carry their own food with them. Baggage is limited to 100 kilograms, which includes whatever food they bring along. The ship's crew is not obliged to provide medical attention to steerage passengers (although a test of Persuasion might help in an emergency), and in the case of emergency, there is never sufficient life-saving equipment (vac suits, vac balls, seats on lifeboats, etc.) to care for steerage passengers.

Steerage space is not always available, as ship's crews always give priority to cargo. Some crews will pack eight or more steerage passengers into a single stateroom. The purchase of a steerage passage requires the signing of a waiver, clearing the ship owners and crew of responsibility of any mishap that might befall the passenger during the trip. Steerage passage costs Cr2500.

Low Passage: Transportation while in cryogenic sleep (suspended animation) is possible at relatively low cost to the passenger (generally Cr1000 in the Regency). The passenger is placed in a low passage berth before the ship takes off and travels the entire journey in a state of suspended animation. He does not age, and requires very little life support. Unfortunately, the low passage system involves some intrinsic dangers to the passenger, and he runs some risk of not surviving the voyage. Reviving a low passage passenger is a Difficult task performed by the attending health-care specialist at the time of deberthing, using Medical (Diagnosis) skill.

Failure results in one of several possible injuries. Roll 1D6 and consult the following table:

Die	*Result*
1-2	The subject suffers 1D6 points of damage to the chest, but healing does not begin for 1D6 days, after which healing is normal; skin loses some of its tone and color for 1D6 weeks, having a gray, wrinkled appearance.
3-4	The subject suffers 2D6 points of damage to the chest, but healing does not begin for 1D6 days, after which healing is normal; subject experiences motor function problems for 1D6 weeks with corresponding loss of 2 points of Agility during that time, in addition to the change in skin appearance, above.
5-6	The subject suffers 3D6 points of damage to the chest, which does not heal at all without surgery; the subject's internal organs are damaged; and the subject must undergo medical diagnosis and treatment to restore full health.

Catastrophic Failure indicates that the passenger has died. Low berth passengers with CON of 2 or less require a Formidable test of the attending medic.

Commercial starship lines offering low berth passage typically guarantee that deberthing will be conducted by a physician of at least skill level 3. The purchase of a low passage ticket routinely involves the signing of a waiver that the starship's crew and owners are not liable for any mishap suffered by the passenger resulting from the low passage.

Stowaways: Stowing away on a starship is a sixth form of passage and the least advisable. Sneaking aboard a starship in order to gain passage to the next world is illegal on almost all worlds, if only because it operates to the detriment of the starship owner's economic standing. It is also often a violation of various customs regulations.

Finding a stowaway is an Average task using Observation, with Starship Architecture as an enabling skill. One attempt can be made per day. Various elaborate schemes on the part of the stowaway may affect the difficulty of the search, at the referee's judgment. Upon discovery, the referee must judge

the starship captain's reaction. The historical punishment for stowaways is spacing: the stowaway is forced out the air lock without a vac suit (although this can only be done in N-space, and is not done much anymore in any case). Potential stowaways should realize that cargo holds are often depressurized during a trip.

Lesser Known Aspects of Space Travel

As interstellar travel has developed, the field has developed its own dangers and customs. The following are just a few:

Travellers' Aid Society: Once active throughout human-settled space, the Travellers' Aid Society is now confined to the area of the Regency. Individuals who have decided that they wish to pursue a life of travel and adventure may elect to join the Society in order to take advantage of its facilities and passage dividends. Members of the Travellers' Aid Society receive, as a dividend of membership, one high passage every two months. The high passage may be used, retained for later use, or sold for 90% of its cash value.

Membership in the Travellers' Aid Society may be acquired as a mustering-out benefit by certain career types as detailed under Starting Money and Initial Equipment, page 36. Membership may also be purchased provided a successful Average task roll versus Charisma. If a Catastrophic Failure occurs, the character has been "blackballed" and may not purchase a membership. Upon acceptance, the character must pay an initiation fee of Cr1,000,000. Only one application per person is allowed. Membership is for the life of the character and is not transferable.

Hijacking: Starships can be easy prey for hijackers. Starship crews maintain a constant guard against hijackers, and the ship's computer can run an anti-hijacking program which denies access to controlled areas to potential hijackers. Passengers are generally required to check all weapons into the ship's locker; they are returned at the end of the voyage.

Nevertheless, there is a chance of an attempted hijacking, for ransom or to steal the multimillion-credit vessel. Roll 3D6 for 18+ to indicate a hijacking attempt (this roll does not apply if all passengers are player characters). When an attempt occurs, randomly determine the number of hijackers, their identities, characteristics, and weapons, and implement their attempt at some point during the voyage. They will gain complete control of the ship only after defeating all other individuals on the ship.

If the anti-hijacking program is functioning, gaining access to the bridge is a Formidable task using Intrusion. If the program is not running, the task becomes Difficult. If the task fails, an alarm has sounded on the bridge, warning the bridge crew. The hijackers will know they have failed to achieve surprise only if their roll fails. Success at this task allows the hijackers to enter the bridge; subsequent combat may be called for.

The results of hijacking for the crew and passengers range from release of passengers without harm, to marooning on uninhabited worlds, to spacing and death.

Skipping: Most starships in the Regency are purchased on credit, and the monthly payments required against the multimillion-credit debt are staggering. The owner or captain may decide to steal the ship himself or herself instead of remaining under that load. Passengers have no way themselves of determining if a specific ship is in such a status. It is an Impossible test of Research to determine whether a commercial ship is of this type.

Ships which have skipped are subject to repossession attempts if detected by the authorities. Such attempts may range from the formal service of papers, to legal injunctions, to armed boarding parties.

On each world's landing with a skipped ship, a repossession attempt will occur on 3+ on 2D6; apply a DM of –1 per 5 parsecs distance from the ship's homeworld, to a maximum of –9. If the ship has called on the same world twice within the last two months, apply a DM of +2.

With skip bounties running from 1% to 5% of the value of the ship, PCs may want to enter the skip tracing business. This is a potent source of possible adventures.

Piracy: A starship may be attacked by pirates while entering or leaving a system. Similar encounters may involve customs agents or military vessels, including blockades. The Starship Encounters charts beginning on page 228 indicate the procedure.

Gas Giants: Most star systems include in their family of planets one or more gas giants—large worlds with hydrogen or methane atmospheres. These gas giants are a valuable source of fuel for starships.

In order to refuel from a gas giant, a ship must move into orbit around it and then dive deep into its atmosphere with open fuel scoops. The procedure (called skimming) takes approximately 10 hours and results in fuel tanks filled with unrefined fuel. Skimming is an Average task using Pilot (Interface/Grav).

The upper reaches of a gas giant's atmosphere are dangerous. Failures on the task rolls can include simple turbulence, excessive radiation exposure, collision with debris, heat damage to the ship's hull, getting caught in a swirling cyclone storm, or getting caught in the gas giant's gravity well.

Ocean Refueling: Ships can refuel from the water oceans of any world with a non-zero hydrographic percentage. Ocean refueling may require a permit on some worlds; roll law level or less on 2D6 to determine this. If the PCs wish to refuel their ship illegally, they should avoid populated areas, and they will have to circumvent the local world's sensors (if any).

The process calls for the ship to land in or near an ocean and fill its tanks from the local water supply. It takes approximately two hours and results in fuel tanks filled with unrefined fuel. Ocean refueling is an Average task using Pilot (Interface/Grav). Catastrophic Failures, when they occur, can include water leaks, corrosion damage from sea salts, running aground, sinking, or getting caught in a hurricane.

ECONOMICS OF STARSHIP OPERATION

Operating a starship in the interstellar market requires an understanding of how trade between the stars works. This includes an understanding of supply and demand control prices, as well as returns on effort and investment. Because starships are so expensive, many of the prices used when discussing them are expressed in megacredits (abbreviated MCr); a megacredit is 1 million credits.

Starship Purchase

Starships are available for purchase (after some fashion; see below) in many areas of the former Imperium. When calculating purchase price, see the base purchase price listed with each ship in the "Equipment & Technology" chapter. Also consult the Currency section of the "Trade and Commerce" chapter (page 230) to find what the local price of that starship would be. A starship built on a world with certain starport and tech level values will always have its purchase price modified by the currency procedure.

Bank Financing: In the Regency, bank financing is available to qualified individuals for the purchase of commercial starships. After the individual makes a down payment of 20% of the cash price of the starship, the shipyard will begin construction of a specific vessel.

Upon completion, the shipyard delivers the vessel to the buyer, and the bank pays the purchase price to the shipyard. Because the bank now holds title to the ship, the ship's purchase price must be paid off in a series of monthly payments to the bank. Standard terms involve the payment of 1/240 of the cash price each month for 480 months. Thus, interest and bank financing cost a simple 120% of the final cost of the ship, and the total financed price equals 220% of the cash purchase price, paid off over a period of 40 years.

The bank will insist that the purchaser submit an economic plan detailing the projected activity which will guarantee that monthly payments are made. This will often require that the purchaser has researched the trade routes that the ship will be worked on, to show that the ship's monthly operational cycle will generate sufficient profit to make the payments. This type of route research is often done by leasing another vessel or working as a crewmember on a ship which already works those routes. Unless a character has some form of guaranteed income (perhaps large rents from some property he or she owns), this requirement generally rules out financed purchases of yachts, military vessels, or exploratory vessels.

Subsidies: The government may subsidize larger commercial vessels (built on 400-ton hulls or larger), primarily to assure consistent service to specific worlds. These subsidized merchants are generally assigned a specific route connecting from two to 12 worlds of varying characteristics. The route will generally be determined before a subsidized merchant is purchased, to allow tailored design features as may be necessary.

When a subsidized merchant is ordered, the character himself must make the 20% down payment, with the government assuming responsibility for the payments upon delivery and taking 50% of the gross receipts of the ship while in service. The character is responsible for all expenses and costs of operation.

Subsidized merchants are also subject to mobilization (and use as auxiliaries) in the event of emergency or hostilities. At the end of 40 years, the vessel is completely paid off, and full title passes to the character, but the vessel remains subject to mobilization in case of government need.

In the Regency, vessels other than merchants are eligible for subsidy from the Regency Quarantine Service. This includes nonjump-capable spaceships in the 70-ton range, and also the Quarantine Cutter, a 150-ton stretched and modified Scout. In exchange for the subsidy, purchasers are commissioned into the Quarantine Service and accept duty assignments patrolling the border zone against virus-carrying ships.

Government Ownership: In other stellar regions, the Old Expanses and Pocket Empires, virtually all ships are owned at least in part by the local government. These societies have a great need to maintain their fragile interstellar contact and trade, and have few resources, especially high-technology items like starships. Therefore, their governments have an interest in overseeing the operation of all of these ships, which are thought of as belonging to the entire society. In most cases, these governments recognize that the encouragement of private enterprise and initiative in the operation of these ships is the best way to ensure their best use, so they encourage a financial interest in these vessels by their crews.

These governments exercise a system similar to the subsidy system above, but rather than providing financial assistance to purchasers who wish their own ships, this system ensures that the government has a piece of, and can therefore control, every ship operating in its boundaries. Functioning shipyard space in these regions is scarce, and these governments need to ensure that every hull laid down in these yards will be put to the best use of the society as a whole.

A prospective purchaser must have at least 20% of the purchase cost of a ship (which gives the government 100% ownership of the outstanding balance, and thereby the ship, what banks call the "note"), but it is pointless for the purchaser to have more than 70% of the cost, as the government will reserve a 50% share of the ship for itself. After all, it is the government that has managed to preserve the starport in operating condition against all odds for 70 years.

Once the money is assembled, the purchaser must apply to the government for a place in the shipyard's production schedule. The application process takes 1D6 months and is a Difficult test of Admin/Legal. At the referee's discretion, Persuasion, Bribery, or some other interpersonal skill might be used to enable the roll. Success means that construction can begin within 2D6 months. Outstanding Success means that a slot is available immediately. Failure means that the application process must be started again.

Once the ship is delivered, the PCs work to pay off the government in the same manner that they would pay off a

bank loan, as described above, and modified by the purchaser's initial ownership share. For example, if the purchaser puts up 50% of the price of the ship, 20% goes to the down payment, and the other 30% goes to buying a 30% share in the ship. For simplicity, monthly payments are still 1/240 the new price of the ship, but must only be paid for 480 monthsxthe government's percentage of the ship (a minimum of 240 months). However, although a bank will accept accelerated payments to pay off the ship quicker, these governments will not. It's not money they want, but control of and access to ships.

The purchaser is responsible for bearing the starship operating expenses. However, the government does not mind if the purchaser misses several monthly payments. That merely means that the government retains that much more ownership.

Note that discussion of the "shares" above is completely separate from the system used to get a ship during character generation. Although both systems result in ships that are partially owned by the local government, the system described here is only used for buying a ship once play has begun.

Starship Expenses

There are five basic expenses (in addition to paying off the ship, if necessary) which are associated with starship operation:

Fuel: Starship fuel costs Cr500 per ton (refined) or Cr100 per ton (unrefined) at most starports. Fuel consumption is based on formulae related to the size of the starship power plant and the jump drive.

Life Support: Each occupied stateroom on a starship involves an overhead cost of Cr2000 per trip (two weeks) made. Each occupied low passage berth involves an overhead cost of Cr100 per usage. There is a normal limit of one person per stateroom, and travelling couples or groups usually take adjoining staterooms. Military vessels or chartered ships may be used with a double-occupancy system (two persons per stateroom), but this requires twice the normal cost.

Routine Maintenance: Annually, a starship should be given a complete overhaul in order to ensure that it is kept in good working order. Such maintenance costs 0.1% (1/1000) of the cash price of the ship and requires two weeks at a class A or B starport. The owner must make provision for payment of the maintenance fee when it comes due. Crewmembers generally take their vacations at this time but must still receive their salaries. The ship owners must make provisions for the expected loss of revenue while the ship is out of service.

If a ship is overdue for annual maintenance, the referee should keep track of how many months it is overdue. Once a month, roll 1D100 for overdue maintenance. If the result is less than the number of months overdue, the ship's wear value increases by 1 (see Maintenance, pages 241-244). This increase can only happen once in a year, and is reversible if the postponed annual maintenance is conducted within one year of the increase. This maintenance can be conducted by the crew themselves at a B or C starport at twice the normal time (four weeks), provided the maintenance parts have already been purchased at an A or B starport (at a cost of .05% [1/2000] the cash price of the ship, and taking up a volume of 1/200 the ship's displacement tonnage). There is no additional cost above the crew salary, but they obviously get no vacation. At a D or E starport, this do-it-yourself maintenance takes four times the regular time, or eight weeks.

Crew Salaries: Crewmembers must be paid monthly. Nonplayer characters must be paid using the standard crew salary schedule (see Crew Settlement, page 227). Player characters may bargain for better pay rates, or they may elect to accept worse. In addition, player characters may participate with the owner-captain and accept shares in the proceeds of the ship's activities.

Characters who take working passage are not paid, and receive passage, room, and board in lieu of salary (continuous working passage for more than three trips results in automatic hiring and receipt of salary). The starship captain is usually the pilot or astrogator and serves as owner-aboard, drawing his pay from the profits. Not all crew positions are required on all ships, and some ships will have more than one person performing the same function. For example, a large liner may have more than one steward.

Berthing Costs: Landing fees, handling costs, facilities-use charges, and other starport fees are a common practice, and such costs must be paid as they occur. The average cost is Cr1000 to land and remain for up to six days; thereafter, a Cr100 per day fee is imposed for each additional day spent in port. In some locations, this fee will be higher, while at others local government subsidies will lower or eliminate it.

Revenue

Ships generate revenue from freight, cargo, passengers, and mail.

Freight and Cargo: Starships may inquire at a starport about the number, sizes, and destinations of freight shipments and cargo awaiting transportation. The referee should determine all worlds accessible to the starship (depending on jump number) and use the Trade and Commerce flowcharts beginning on page 236 to determine available freight shipments and cargo.

Each freight shipment and cargo is a distinct shipment and cannot be subdivided, but the ship may accept or reject specific cargos based on the best fit within the cargo hold. All freight shipments are usually carried at Cr1000 per ton. Freight to amber zone worlds is carried at Cr2000 per ton, and freight to red (war) zone worlds is carried at Cr5000 per ton. Starship owners may purchase goods locally (called "cargo" to distinguish it from standard freight) and ship them at their own expense, speculating that they can later sell at a profit. The Trade and Commerce charts illustrate the details of the speculative trading process.

Passengers: After a starship has accepted freight and cargo for a specific destination, passengers will present themselves for transport to that particular destination. The

procedure for locating passengers is illustrated on the Trade and Commerce charts.

Passengers will pay the standard fare for the class of transportation which they choose. In the Regency, standard fares are Cr10,000 for high passage, Cr8000 for middle passage, and Cr1000 for low passage. In other regions, middle passage runs Cr5000, and steerage is Cr2500. These fares are routinely doubled or tripled if passage is provided to a red zone world.

In the Old Expanses or Pocket Empires, government shares in the ship allow the government to impose a passenger (usually a government official: diplomat, scientist, project manager, etc., and a small retinue) on a ship that is scheduled to go to a particular world. There is no financial recompense for this service.

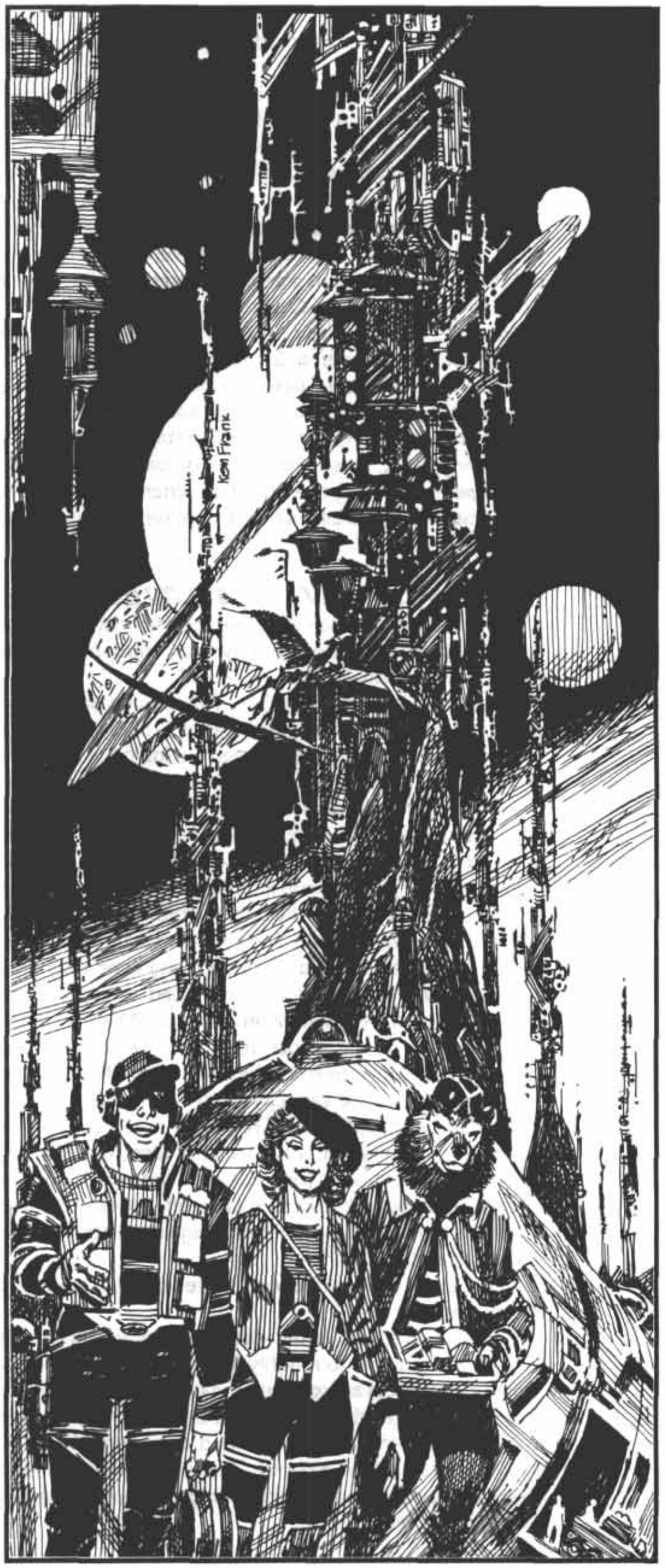
Passage is always sold to interested prospective passengers on the basis of transport to an announced destination one jump away, rather than on the basis of jump distance. Differences in starship jump drive capacity have no specific effect on passage prices.

For example, a jump-3 starship charges the same passage price as a jump-1 starship. The difference between the two passages is that a jump-3 ship can reach a destination three parsecs away in one jump, while the jump-1 ship would take three separate jumps (through two intermediate destinations, which would require three separate tickets) to reach it. Higher jump numbers also may make otherwise inaccessible destinations within reach. But for two ships of differing jump numbers going to the same destination in one jump, each would charge the same cargo or passage price.

Mail and Incidentals: Subsidized merchants in the Regency may receive mail-delivery contracts, usually serving as an adjunct to their established routes. In order to receive mail-delivery contracts, the ship must be able to dedicate five tons of ship cargo capacity to postal duty on a full-time basis; the ship must be armed; and a gunner must be a part of the crew at all times. The starship is paid Cr25,000 (which amounts to Cr5000 per ton of postal cargo area) for each trip which is made, regardless of the actual mail tonnage carried on any particular trip. The actual mail delivery tonnage will not exceed a total of five tons on each trip.

In the Old Expanses and Pocket Empires, such mail delivery is part of the reason why the government owns a portion of the ship. Although the government does not require the ship to reserve space, neither does it pay extra for the delivery of the mail. Roll 1D6–1 for the tons of mail to be carried on each trip.

Other ships may, on occasion, be approached by an individual to deliver private messages, at times through the ship's owner or captain and at times clandestinely through a crewmember. Private mail is usually intended for delivery to a specific point (such as the Travellers' Aid Society building or a tavern in startown), and is generally accompanied by a Cr20 to Cr120 honorarium. A private message can be handled by the referee as the motive for an encounter; see Encounters, beginning on page 202, for details.



Trade Customs

The following are standard procedures in interstellar commerce:

Delivery: Goods taken on in orbit are delivered when placed in orbit around the destination. Goods loaded on a planetary surface are delivered when off-loaded on the surface of the destination. This custom applies to cargo, passengers, and mail.

Shuttle Service: At any location with a class A, B, or C starport, shuttles operate on a routine basis between orbit and world surface. Typical shuttle fares are sold to interested individuals for Cr10 per ton of cargo and Cr20 to Cr120 per passenger.

Charters: Nonstarships charter for Cr1 per displacement ton per hour, usually with a 12-hour minimum. Charter price for a starship is computed based on that particular starship's revenue-generating capacity. Starships are chartered in two-week blocks; the charge for chartering a starship is Cr900 per ton of cargo hold, plus Cr9000 per high passage berth and Cr900 per low passage berth. The owner of the starship being chartered pays all overhead expenses and supplies a crew for the trip.

INTERPLANETARY TRAVEL

Worlds orbiting the same star are accessible by interplanetary travel, on ships operated by local entrepreneurs, or with a variety of small craft.

Interplanetary travel takes time. The accompanying starship operating procedure tables (pages 225-227) show the procedure used for moving between worlds in the same star system. The procedures can be used to determine time required (if distance and acceleration are known), acceleration required (if distance and time are known), and distance travelled (if time and acceleration are known).

The critical variable in long interplanetary flights is not the theoretical acceleration of the ship, but rather the amount of fuel it can expend over time. Starships tend to have large fuel capacities due to the need for coolant and jump discharge mass, and this tankage is routinely used to supplement reaction mass on long interplanetary flights. Where refueling is not possible at the actual destination world, standard starship procedure is to enter the system near the gas giant and refuel. Using the capacity of the jump fuel tanks to supplement the ship's normal reaction mass, it then heads toward the main world at high acceleration, decelerating and entering orbit there (or landing on the world surface). After completing its business, it takes off, leaves orbit, and accelerates to the gas giant, where it again refuels and then jumps out-system.

A number of important concepts are useful in calculating interplanetary travel.

Light-Second: This is the distance light travels in one second, and is equal to roughly 300,000 kilometers. Interplanetary distances are routinely measured in light-seconds as both a manageable numeric scale and as a practical guide to the limits of communication and detection. When 10 light-seconds out from a planet, for example, there will be a 20-second delay between transmitting a radio message and receipt of the reply.

Residual Velocity: When ships leave orbit and accelerate to the safe jump distance (100 diameters), they do not usually decelerate when they arrive. Instead they jump out-system while still travelling at a high rate of speed. This vector is retained by the ship when it jumps in-system at its destination, and this is called its residual velocity. Good astrogators position the jump exit window so that the residual velocity is directed toward the destination world and no additional acceleration is needed to reach it. (It is necessary to decelerate to enter orbit and land, however.)

G-Hour: In the travel time charts the basic unit of acceleration is the G-hour. A G-hour is 1G of acceleration applied for one hour. Six Gs of acceleration for one hour would produce 6 G-hours of acceleration, and 6Gs for 10 minutes (one-sixth of an hour) would produce 1G-hour.

Acceleration Limits: The combination of time and maneuver drive maximum capacity provide some upper limits of possible G-hours of acceleration. For example, the velocity generated by 10 G-hours of acceleration would enable a ship to travel 1 light-second in 0.3 hours, or 18 minutes. If the total length of the trip was 20 light-seconds, this would be a total trip time of 360 minutes, or 6 hours. Obviously, a 1G acceleration ship cannot even generate 10 G-hours of thrust in only six hours.

For game purposes, the maximum acceleration possible in a voyage is 50% of the total travel time multiplied by the maximum acceleration of the ship.

Deceleration: Ships which speed up must eventually slow down. The same G-hour expenditure to decelerate is necessary as was required to reach the craft's speed, with the same limits on acceleration as listed above.

Bingo Fuel: Bingo fuel is the point at which the remaining fuel in the ship is barely sufficient to decelerate it to bring it into orbit at its destination. Players should always be aware of their remaining fuel status and how close they are to the bingo fuel point when maneuvering. This is of life and death importance, as a ship can go gliding past its destination, unable to slow down enough to stop and refuel there, and will likely continue to coast through space to oblivion.

Bingo Jump: Bingo jump is the point at which the remaining fuel in the ship is barely enough to jump and then decelerate the ship to bring it into orbit at its destination, plus a 10% reserve for course corrections.

Encounters: Ship encounters take place when a ship is engaged in interplanetary travel. Rolls for encounters are made at critical points in the voyage, as explained on the Starship Operating Procedures flowchart. Most encounters are peaceful, but others may require use of the space combat rules.

Orbital Distances: Distances between worlds in a star system differ considerably, based on which orbits the two worlds occupy and where the worlds are in their orbital tracks. When players wish to travel from one world in a system to another, the referee consults the interplanetary distance matrix (pages 226-227), which lists the minimum distance between two orbits and the base distance variation. Multiply the base distance variation by 4D6–4 and add it to the minimum distance between orbits. The result is the current distance between the worlds in light-seconds.

STARSHIP OPERATING PROCEDURES

1. Starship Operations

Determine the ship type being operated, its capabilities, and the characteristics of the star system being travelled to.

The following steps illustrate the procedures for travelling to another world with a jump-capable starship.

2. Power Up

Normally a ship must be powered up gradually (taking 1D6×10 minutes). Successful startup is an Average task using Ship's Engineering. In an emergency the engineer may attempt to cold start the power plant. Task difficulty increases to Formidable while time decreases to 1D6 minutes.

In the event of failure, the task may be re-attempted in 1D6 minutes. Catastrophic Failure indicates damage which prevents additional cold start attempts and increases normal startup time to 1D6×20 minutes. In addition, the power plant is treated as past due for annual maintenance (until maintained/repaired).

3. Prepare Maneuver Drive

The maneuver drive must be prepared, an Easy task using Ship's Engineering and taking 1D6×10 seconds.

Desperate Jump: A desperate jump can be attempted at this point; go to step 7.

5. Travel To 10 Diameters

Take the ship to 10 diameters out from the world. This is an Easy task using Astrogation. Consult the 100 Diameters Travel Times table in step 6, below. The time to 10 diameters is one-tenth of that shown as the time to 100 diameters.

Starship Encounters: Check for a starship encounter during this journey (if referee desires).

Dangerous Jump: A dangerous jump can be attempted at this point; go to step 7.

6. Travel To 100 Diameters

Take the ship to 100 diameters out from the world. This is an Easy task using Astrogation. Consult the 100 Diameters Travel Times table, but subtract any time already spent travelling to 10 diameters.

4. Travel To Orbit

If the ship is not already in orbit, take it from the world's surface to orbit, an Average task using Pilot (Interface/Grav). The Travel Time To Orbit table shows the expected travel times and fuel expenditure required.

Travel Time To Orbit

World	*Acceleration*						*Fuel*
Size	*1G*	*2G*	*3G*	*4G*	*5G*	*6G*	*G-Hrs*
0	6m	5m	4m	3m	2m	1m	0.1
1	13m	9m	8m	7m	6m	5m	0.2
2	19m	13m	11m	9m	8m	8m	0.3
3	23m	16m	13m	12m	10m	9m	0.4
4	27m	19m	15m	13m	12m	11m	0.45
5	30m	21m	17m	15m	13m	12m	0.5
6	33m	23m	19m	16m	15m	13m	0.55
7	35m	25m	20m	18m	16m	14m	0.6
8	38m	27m	22m	19m	17m	15m	0.64
9	40m	28m	23m	20m	18m	16m	0.67
A	42m	30m	24m	21m	19m	17m	0.7

Starship Encounters: Check for a starship encounter during this journey (if referee desires).

Desperate Jump: A desperate jump can be attempted at this point; go to step 7.

7. Prepare For Jump

Preparing for jump consists of computing the jump coordinates and preparing the jump drive. This is an Average task using Astrogation. The astrogator also designates whether the destination in the system is the mainworld, a gas giant, or some other world.

If the ship is past annual maintenance, the task becomes Difficult.

100 Diameters Travel Times

Burns	*Planet Size Code*												
G-Hours	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*A*	*SG*	*LG*
0.1	47m*	12.6	25.2	37.8	50.4	63.0	75.6	88.2	100.8	113.4	126.0	314.9	708.6
0.2	24m*	6.3	12.6	18.9	25.2	31.5	37.8	44.1	50.4	56.7	63.0	157.5	354.3
0.3	16m*	4.2	8.4	12.6	16.8	21.0	25.2	29.4	33.6	37.8	42.0	105.0	236.2
0.4	12m*	3.2	6.3	9.5	12.6	15.8	18.9	22.1	25.2	28.4	31.5	78.7	177.2
0.5	10m*	2.5	5.0	7.6	10.1	12.6	15.1	17.6	20.2	22.7	25.2	63.0	141.7
0.6	8m*	2.1	4.2	6.3	8.4	10.5	12.6	14.7	16.8	18.9	21.0	52.5	118.1
0.7	7*	1.8	3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.2	18.0	45.0	101.2
0.8	6*	1.6	3.2	4.7	6.3	7.9	9.5	11.0	12.6	14.2	15.8	39.4	88.6
0.9	5*	1.4	2.8	4.2	5.6	7.0	8.4	9.8	11.2	12.6	14.0	35.0	78.7

Times followed by the letter "m" are in minutes. All other times are in hours. Times are calculated for average sizes within each code. Referees may re-calculate for minimum/maximum diameters using the equation: (diameter in km x 100) + (G-hours x 127,008) = travel time in *hours*. Size 0 is assumed to be 100 km.

*Specified time or time to expend the G-hours, whichever is *greater*.

To reach a distance of 10 diameters, divide travel times by 10.

For larger expenditures of G-hours of thrust, divide time by the multiple of G-hours spent. (2 G-hours of thrust spent will reduce travel time to 100 diameters of a small gas giant to 23.62 hours.)

For smaller expenditures of G-hours of thrust, multiply time by the divisor of G-hours spent. (.02 G-hours of thrust spent will increase travel time to 100 diameters of a small gas giant to 2362 hours.)

Starship Encounters: Check for a starship encounter during this journey (if referee desires).

Safe Jump: A safe jump can be attempted at this point.

8. Engage Jump Drive

Engaging jump drive is an Average task using Ship's Engineer. This task can be attempted once a successful jump preparation has been accomplished.

Safe Jump: A ship at least 100 diameters out from all massive bodies, using the proper fuel, and with properly maintained drives can make a safe jump with no chance of a mishap.

Dangerous Jump: If the ship is within 100 diameters of a massive body, this task is Difficult.

Desperate Jump: If the ship is within 10 diameters of a massive body, this task is Formidable.

If the ship is using unrefined fuel (without a fuel-purification plant), increase the difficulty level by one.

If a failure occurs, go to step 15.

9. Jump Space

The vessel enters jump space and travels to the world which the astrogator designated. This ship remains in jumpspace for about one week (under normal circumstances).

Determine how much time the ship spent in jump space by rolling 1D6.

Roll	*Result*
1	6 days
2-5	7 days
6	8 days

10. Emerge From Jumpspace

The ship emerges from jumpspace. The ship emerges at the limit of the gravity well (at about 100 diameters out) of the destination world that the astrogator designated in jump preparation. The ship must be taken from 100 diameters in to 10 diameters. Any residual vector may be used to accomplish this, provided the astrogator positioned the jump exit point correctly.

Positioning the exit point correctly is a Difficult task using Astrogation, and is rolled at this time. Outstanding Success indicates that exit point is positioned so that the ship's velocity will take it to within 100 diameters of the destination world; no course correction required. Regular success indicates the need for a course correction equal to 10% of the fuel spent to achieve the craft's current velocity. Failure indicates the need for a course correction equal to 50% of the fuel cost of the current velocity. Catastrophic Failure indicates need for a course correction equal to 150% of the fuel cost.

Making the required course correction is an Easy task using Astrogation, with failure requiring additional minor course corrections.

11. Travel to Orbit

This is an Easy task using Astrogation. Consult the 100 Diameters Travel Times table used in step 6 above. Fuel must be spent to achieve acceleration equal to that of the residual vector, but in this case the fuel spent is used to slow the ship down once it reaches orbital distance.

Starship Encounters: Check for a starship encounter twice during this journey, once at 10 diameters and once at orbit (if referee desires).

12. Travel from Orbit

The ship is in orbit. Unstreamlined ships deliver cargo to orbiting stations if the world has a type A or B starport. Small craft and streamlined ships can descend to the world surface. Descent from orbit is an Average task using Pilot (Interface/Grav). Times from orbit to the surface, and the fuel needed to decelerate, are the same as those shown in the Travel Time to Orbit table in step 4.

13. Refueling

The ship may be refueled when fuel is available.

Gas Giant Refueling: If the ship is streamlined or airframe and is in orbit around a gas giant, it can skim the gas giant's atmosphere for fuel. This takes about 10 hours and is an Average task using Pilot (Interface/Grav), with failure indicating a longer refueling time due to atmospheric turbulence. Catastrophic Failure indicates damage due to lightning strikes, pressure, excessive radiation exposure, collisions with debris, or heat damage to the hull.

Ocean Refueling: If the ship has reached the surface of a world with a non-0 Hydrographics percentage and an atmosphere of Dense or lower, it can obtain fuel from an ocean. This takes about two hours and is an Average task using Pilot (Interface/Grav).

Starport Refueling: Starports offer refuelling services. Refined fuel (at type A and B starports) costs Cr500 per ton (14 kiloliters); unrefined fuel (at type A, B, C, and D starports) costs Cr100 per ton (14 kiloliters).

14. In-System Transfer

A ship may need to move from a world to a gas giant or from a gas giant to a world. After moving out to 100 diameters, a ship can transfer within a system. This is an Average task using Astrogation, with failure adding 10% to the travel time and Catastrophic Failure adding 50%.

Distances from one world to another in a system vary based on the orbits occupied by the worlds and where the worlds are in their orbital tracks. Actual distance between any two worlds is calculated using the Interplanetary Distance Matrix.

Interplanetary Distance Matrix

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0 (10)	100	250	400	700	1300	2500	4900	9700	19,250
1 (20)	X	150	300	600	1200	2400	4800	9600	19,150
2 (35)	X	X	150	450	1050	2250	4650	9400	19,000
3 (50)	X	X	X	300	900	2100	4500	9300	18,850
4 (80)	X	X	X	X	600	1800	4200	9000	18,550
5 (140)	X	X	X	X	X	1200	3600	8400	17,950
6 (260)	X	X	X	X	X	X	2400	7200	16,750
7 (500)	X	X	X	X	X	X	X	4800	14,350
8 (980)	X	X	X	X	X	X	X	X	9550

	10	11	12	13	14	15
0 (10)	38,400	76,700	153,300	306,500	612,850	1,225,600
1 (20)	38,300	76,600	153,200	306,400	612,750	1,225,500
2 (35)	38,150	76,450	153,050	306,250	612,600	1,225,350
3 (50)	38,000	76,300	152,900	306,100	612,450	1,225,200
4 (80)	37,700	76,000	152,600	305,800	612,150	1,224,900
5 (140)	37,100	75,400	152,000	305,200	611,550	1,224,300
6 (260)	35,900	74,200	150,800	304,000	610,350	1,223,100
7 (500)	33,500	71,800	148,400	301,600	607,950	1,220,700
8 (980)	28,700	67,000	143,600	296,800	603,200	1,215,950
9 (1935)	19,150	57,450	134,050	287,250	593,600	1,206,350
10 (3850)	X	38,300	114,900	268,100	574,450	1,187,200
11 (7680)	X	X	76,600	229,800	536,150	1,148,900
12 (15,340)	X	X	X	153,200	459,550	1,072,300
13 (30,660)	X	X	X	X	306,400	919,150
14 (61,300)	X	X	X	X	X	612,750

	16	17	18	19
0 (10)	2,451,100	4,902,100	9,804,150	19,608,200
1 (20)	2,451,000	4,902,000	9,804,050	19,608,100
2 (35)	2,450,850	4,901,850	9,803,900	19,607,950
3 (50)	2,450,700	4,901,700	9,803,750	19,607,800
4 (80)	2,450,400	4,901,400	9,803,450	19,607,500
5 (140)	2,449,800	4,900,800	9,802,850	19,606,900
6 (260)	2,448,600	4,899,650	9,801,650	19,605,700
7 (500)	2,446,250	4,897,250	9,799,250	19,603,300
8 (980)	2,441,450	4,892,450	9,794,500	19,598,500
9 (1935)	2,431,850	4,882,900	9,784,900	19,588,950
10 (3850)	2,412,700	4,863,750	9,765,750	19,569,800
11 (7680)	2,374,400	4,825,450	9,727,450	19,531,500
12 (15,340)	2,297,850	4,748,850	9,650,850	19,454,900
13 (30,660)	2,144,650	4,595,650	9,497,700	19,301,700
14 (61,300)	1,838,250	4,289,250	9,191,300	18,995,350
15 (122,570)	1,225,500	3,676,500	8,578,550	18,382,600
16 (245,120)	X	2,451,000	7,353,050	17,157,100
17 (490,220)	X	X	4,902,050	14,706,100
18 (980,425)	X	X	X	9,804,050

The orbit numbers down the left side are the orbit numbers closest to the star; those across the top are those farthest from the star. The distance shown at the intersection of the two is the base distance in light-seconds. Multiply the parenthetical number shown beside the inner orbit number by 4D6–4 and add it to the base distance to find the total distance.

For example, the distance from orbit 4 to orbit 8 is 9000 light-seconds. The distance from an object in orbit 4 to an object in orbit 8 is 9000 plus [(4D6–4)x80] light-seconds.

Once actual distance is known, travel time is a function of G-hours of acceleration spent. The Interplanetary Speed table shows the travel time per light-second for from 1 to 9 G-hours of acceleration spent.

If greater acceleration is spent, find an acceleration value on the table which is an easy fraction of the actual acceleration and divide the corresponding travel time by that value. For example, a ship spends 55 G-hours of acceleration. The referee uses the 5 G-hour entry because it is one-eleventh of 55. Dividing 28 minutes (the time for one light-second) by 11 yields a value of 2.55 minutes per light-second. If the distance travelled were 100 light-seconds, the total travel time would be 255 minutes.

If less acceleration is used than the values shown on the chart, reverse the above process.

Note that ships which accelerate to reach a destination must then decelerate when they reach it. As the table shows only the acceleration required to reach the speed, this same acceleration must also be spent at the other end of the voyage to decelerate, and so fuel expenditure should be planned accordingly.

Interplanetary Speed

G-Hours and Travel Time per 1 Light-Second

Burns G-Hours	*Time Minutes*
1	142
2	71
3	47
4	35
5	28
6	24
7	20
8	18
9	16

Note: The chart above treats G-hours as a speed; i.e., the final velocity after those G-hours are spent.

The distance travelled while burning those G-hours is not incorporated in those numbers as it is insignificant over large distances.

15. Jump Mishaps

If a failure occurs when the jump drive is engaged, handle it as follows:

Failure: A jump relativity error occurs. The ship remains in jump space 1D6+4 days (from 5 to 10 days) before emerging at the plotted destination point, otherwise unharmed.

Catastrophic Failure: A jump relativity error occurs, but when the ship emerges in the destination system, it is 2D6x100 diameters from the destination world, rather than only 100.

Aggravated Catastrophic Failure: If a Catastrophic Failure occurs while using unrefined fuel, when in need of maintenance, or when suffering from the effects of damage to the jump drive, a major jump relativity error occurs. When the ship emerges from jump, it discovers that it has misjumped.

Roll 1D6 for the number of dice to throw. Then roll that number of dice for the distance (in parsecs or map hexes) the ship travelled. Roll 1D6 for the direction of the misjump on the hex grid. The ship arrives at a random point within the system. Roll 1D20–1 for the orbit number at which the ship emerges.

16. Crew Settlement

The crew of the ship is paid every month. The following are typical salary schedules. Payment below is based on skill level, not asset.

ORN is the Officer Rank Number from character generation: O-1 rank is ORN rank 1. Any E-level rank counts as ORN 1 for purposes of payment.

Bridge Crew: Cr500 times ORN plus 5% for each level of Pilot (Interface/Grav), Astrogation, or Leadership skill above 1.

Engineering Crew: Cr500 times ORN plus 5% for each level of Ship's Engineering skill above 1.

Maintenance Crew: Cr500 plus 5% for each level of Admin/Legal, Mechanic, or Electronics skill above 1.

Command Crew: Cr1000 times ORN plus 5% for each level of Pilot (Interface/Grav), Astrogation, or Leadership.

Gunners: Cr500 plus 5% for each level of any applicable Gunnery skill above 1.

Flight Crew: Cr1000 plus 5% for each level of Pilot (Interface/Grav) skill above 1.

Ship's Troops: Cr500.

Stewards: Cr500 times Service skill above 1.

Medical Crew: Cr500 times Medical skill above 1.

STARSHIP ENCOUNTERS

These Starship Encounters tables are an aid to the referee's imagination, not a replacement for it. The referee should never allow the result of a table to supersede his or her concept of or intention for a stellar system. However, the tables below provide a random element that can fuel the referee's imaginations when he isn't quite sure what to do next. Feel free to expand on the thumbnail mission characterizations that result from the tables. For example, the Distress result can mean that the vessel itself is in distress, or that it is responding to a distress call.

1. Encounter Likelihood

Determine whether an encounter takes place.

ENCOUNTER (1D6)

D6	*Result*
0-4	Encounter
5+	No Encounter

DMs
A Starport: DM –2
B Starport: DM –1
E Starport: DM +1
X Starport: DM +2
Pocket Empire: +1
Wilds: +2

2. Ship Type

Determine the ship type being encountered.

SHIP TYPE (1D6)

D6	*Type*
0	Nonstarship (go to 3)
1	Merchant (go to 4)
2	Nonstarship (go to 3)
3	Naval (go to 5)
4	Merchant (go to 4)
5	Civilian (go to 6)
6+	Scout (go to 7)

DMs
A Starport: DM –2
B Starport: DM –1
E Starport: DM +1
X Starport: DM +2
Pocket Empire: +1
Wilds: +2

3. Nonstarship

NONSTARSHIP TYPE (2D6)

2D6	*Type*
1	System Defense Boat
2	Bulk Transport
3	System Defense Boat
4	Tug
5	Launch
6	Shuttle
7	Shuttle
8	Cutter
9	Fuel Shuttle
10	Ship's Boat
11	Pinnace
12	Ship's Boat
13+	Ship's Boat

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

NONSTARSHIP MISSION (2D6)

2D6	*Type*
1	Quarantine Enforcement
2	Quarantine Enforcement
3	Smuggling
4	Charter
5	Patrol
6	Courier
7	Courier
8	Transport
9	Transport
10	Transport
11	Distress
12	Piracy/Privateer
13+	Vampire

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

4. Merchant Type Ship

MERCHANT SHIP TYPE (2D6)

2D6	*Type*
1	Freighter (5000+ tons)
2	Freighter (1000+ tons)
3	Freighter (1000+ tons)
4	Subsidized Liner
5	Subsidized Merchant
6	Subsidized Merchant
7	Free Trader
8	Free Trader
9	Far Trader
10	Far Trader
11	Free Trader
12	Free Trader
13+	Merchant Modified Scout

Note: If system unaccessible by jump 2, substitute Far Trader for Free Trader and Subsidized Merchant.

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

MERCHANT MISSION (2D6)

2D6	*Type*
1	Quarantine Enforcement
2	Smuggling
3	Trade
4	Trade
5	Trade and Transport
6	Trade and Transport
7	Trade and Transport
8	Transport
9	Transport
10	Transport
11	Distress
12	Piracy/Privateer
13+	Vampire

Note: If ship type is Seeker, replace Transport with Prospecting.

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

5. Naval Type Ship

Naval Ship Type (2D6)

2D6	Type
2	Battleship
3	Carrier (100,000 tons)
4	Cruiser (100,000 tons)
5	Cruiser (50,000 tons)
6	Cruiser (20,000 tons)
7	Fast Courier
8	Fighter
9	Patrol Cruiser
10	Close Escort
11	Escort (1000 tons)
12	Escort (5000 tons)
13+	Cruiser (50,000 tons)

DMs: +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

Naval Mission (2D6)

2D6	Mission
1	Quarantine Enforcement
2	Patrol
3	Escort
4	Escort
5	Courier
6	Training
7	Patrol
8	Patrol
9	Transfer
10	Maneuvers
11	Distress
12	Piracy/Privateer
13+	Vampire

Notes: Patrol received in Regency includes Quarantine enforcement

DMs: –1 in Regency, +3 in Old Expanses, +5 in Pocket Empire, +7 in Wilds; all results other than Fighter, Fast Courier, Patrol Cruiser, and Close Escort receive an additional +8 DM if encountered in the Old Expanses, Pocket Empire, or Wilds.

6. Civilian Type Ship

Civilian Ship Type (2D6)

2D6	Type
1	Yacht
2	Liner (1000+ tons)
3	Yacht
4	Mercenary Cruiser
5	Yacht
6	Lab Ship
7	Detached Scout
8	Seeker
9	Lab Ship
10	Seeker
11	Free Trader
12	Free Trader
13+	Free Trader

Note: If system inaccessible by jump 2, substitute Far Trader for Free Trader. In Old Expanses, Pocket Empire, and Wilds, feel free to substitute converted model ships for specialized designs, such as Lab Ships, Yachts, etc.

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

Civilian Mission (2D6)

2D6	Type
1	Quarantine Enforcement
2	Pleasure Tour
3	Smuggling
4	Charter
5	Transport
6	Courier
7	Transport
8	Business
9	Transport
10	Business
11	Distress
12	Piracy/Privateer
13+	Vampire

Note: If ship type is Lab Ship, replace Business with Research.

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

7. Scout Type Ship

Scout Ship Type (2D6)

2D6	Type
1	Scout Tender
2	Scout Cruiser
3	Scout Cruiser
4	Scout Surveyor
5	Scout Surveyor
6	Scout Courier
7	Scout Courier
8	Scout Courier
9	Scout Courier
10	Scout Courier
11	Scout Courier
12	Scout Courier
13+	Scout Courier

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

Scout Mission (2D6)

2D6	Type
1	Patrol
2	Patrol
3	Smuggling
4	Patrol
5	Courier
6	Courier
7	Exploration
8	Transfer
9	Exploration
10	Exploration
11	Distress
12	Piracy/Privateer
13+	Vampire

Note: If Scout Surveyor, replace Patrol with Survey.

DMs: –1 in Regency, +1 in Old Expanses, +2 in Pocket Empire, +3 in Wilds.

8. Ship Disposition

Ship Disposition (2D6)

2D6	Disposition
2	Hasty Departure
3	Hasty Departure
4	Leaving
5	Leaving
6	Standing By
7	Standing By
8	Standing By
9	Arriving
10	Arriving
11	Hasty Arrival
12	Hasty Arrival

Trade and Commerce

Trade between planets depends on demand for goods at each end of the trading route. Because of the expense of interstellar transportation, most worlds strive to be self-supporting; they produce their own building materials, food, and necessities. But there are still a wide variety of trade goods that can and must be carried between the stars.

Currency

Although trade invariably comes down to an exchange of goods between two societies, that exchange is regularized and facilitated by use of currency (money). By placing a monetary price on items, relative value becomes much easier to calculate. In **Traveller,** the universal unit of currency is the credit, abbreviated Cr.

The Credit: Ah, the mighty Imperial Credit. Backed by the productive capacity of the largest economy in known history, the credit was the currency against which all others were measured. Oops.

Strangely enough, 70 years after the largest social collapse in known history, the credit retains its allure in former Imperial Space. In the Regency, naturally, the Imperial Credit is still minted, although its value is backed by a much smaller economy, and most coins and notes bear images of Norris and the Bridled Steed, rather than cruel reminders of a tragic era. The RCr (as the Regency Credit is officially known, as compared to the Imperial Credit, or ICr) has retained the value of the former Imperial currency, so that the distinction between pre- and post-Collapse currency is an academic point at best. For all intents and purposes, in the Regency, a credit is still a credit.

EXCHANGE RATES

	Starport Type					
TL	*A*	*B*	*C*	*D*	*E*	*X*
15	1.00	.95	.90	—	—	—
14	.95	.90	.85	.80	.75	—
13	.90	.85	.80	.75	.70	—
12	.85	.80	.75	.70	.65	—
11	.80	.75	.70	.65	.60	—
10	.75	.70	.65	.60	.55	.45
9	.70	.65	.60	.55	.50	.40
8	.65	.60	.55	.50	.45	.35
7	.60	.55	.50	.45	.40	.30
6	—	.50	.45	.40	.35	.20
5	—	.45	.40	.35	.30	.10
4	—	—	.30	.25	.20	barter
3	—	—	.20	.10	.05	barter
2	—	—	—	.05	barter	barter
1	—	—	—	.01	barter	barter
0	—	—	—	—	—	barter

Even in the other more damaged regions, the force of long tradition means that the credit is still used as a benchmark for pricing, although credits must be minted and backed locally in order to have any real value. Despite some popular sentiment for continuing to accept the Imperial Credit, governments of pocket empires know better: The sheer number of Imperial Credits that were produced makes it too likely that the discovery of one moderately sized bank vault would destroy the basis of an entire economy. Nonetheless, a product purchased in a pocket empire or the Reformation Coalition is marked with a price that would not have attracted undue attention in the pre-Final War era.

The Imperium is dead. Long live the credit.

Exchange Rates: The basis for trade between societies is scarcity and abundance. One society has one commodity in relative abundance and another in scarcity. If a second society has these reversed, there is the basis for trade. While a planet will often produce everything that its inhabitants require for survival (although this varies widely in practice; very low population and very high population worlds have problems in this area), there will still be demand for luxury items. On high-tech worlds, luxury items are those whose manufacture is labor-intensive; on low-tech worlds, luxury items are those whose manufacture is tech-intensive. As a result, low-tech worlds will trade a relatively greater amount of human, creative labor in return for high-tech items beyond their capacity to manufacture. This tends to reduce prices (and standards of living) on lower-tech worlds while elevating them on higher-tech worlds.

One way to represent this is to have different prices for every world. Another way is to maintain constant prices but have currencies worth different amounts on different worlds; that is, a credit from a high-tech world will take you farther on a low tech world. This is similar to the situation currently found in many East European countries which need "hard" currencies to purchase Western high-tech items, and so dollars and Deutschmarks will buy more than rubles.

It is up to referees whether they wish to maintain a common currency with floating prices, or constant prices with currency exchanges at each starport. Both are acceptable, and both systems would be found to one extent or another throughout known space.

The currency table at left is used to calculate either exchange rates at starports or prices on the world. The baseline value for currency is taken as a type A starport on a tech 15 world, which is also the value of the old pre-Collapse Imperial Credit.

When calculating large prices, it is often useful to convert prices in credits to kilocredits, where 1 kilocredit (KCr) equals 1000 credits, or megacredits, where 1 megacredit (MCr) equals 1 million credits.

Using the Exchange Rates Table: If the referee chooses to have a common currency but variable prices, all wages and prices on a world for goods manufactured on that world are equal to their normal list price times the value shown on the table. Items which cannot be manufactured on the world are available at their full base price.

For example, a map box costs Cr2500 and can be manufactured on any world with a tech level of 9 or higher. On a world with a D-class starport and a tech level of 9, the map box would cost Cr1375. On a world with a B-class starport and a tech level of 13, it would cost Cr2125. On a world with an E-class starport and a tech level of 7, it would cost the full Cr2500. It would also cost that amount on a world with an A-class starport and a tech level of 15.

If the referee chooses to have local currencies with currency exchanges at starport, banks, and other financial institutions, the Exchange Rates table provides the exchange rate between currencies. To find the amount of local currency received when exchanging off-world currency, find the value for each currency on the table. Divide the value for currency being turned in by the value of the currency being received, and multiply the result by the number of credits being exchanged.

For example, the PCs are from a world with a tech level of 12 and a starport class of B. They have arrived at a class-A starport on a TL-14 world, and wish to exchange Cr10,000. The value for their original world (the currency they are turning in) is .80, while that for the world they are at (the currency they are receiving) is .95. Dividing .80 by .95 results in a value of .84. Multiplying Cr10,000 by .84 shows that they will receive only Cr8400 in local currency.

All wages and prices will be the same for goods which can be manufactured on the world. Items which must be imported will cost more. The price for such items is calculated as if being paid in the local currency of a world of the required tech level and with a type A starport.

Using the example of the Cr2500 map box above, it would cost Cr2500 in local currency on any world with a tech level of 9 or higher. On lower tech worlds, however, it would cost the equivalent to Cr2500 in the local currency of a TL-9, type-A starport world. Taking a TL-6, type-C starport world as an example, the referee would convert Cr2500 from an A-9 world to local currency. The A-9 value is .70 while the C-6 value is .45. Dividing .70 by .45 results in a value multiplier of 1.56, making the actual price of the map box Cr3900 on that world.

Note that both of the above systems produce exactly the same relative value, and which system is used is purely a matter of referee ease, preference, and atmosphere.

Barter: Those worlds with the notation *barter* are barter worlds, societies either so primitive or so remote that there is no meaningful basis of exchange between most advanced starfaring civilizations and theirs. Interaction with these societies can be the basis for extended and interesting roleplaying sessions.

Services: Starport services are generally available at local rates, including costs for fuel, life support, etc.

Maintenance is also available at local rates unless the maintenance is on equipment more advanced than the tech level of that world. In this case, maintenance costs are based on the local rates of a world with a type A starport of the required tech level, treating the maintenance as an "imported good." (In fact, it is imported. Any replacement parts would have been imported as would the instructors or manuals used to train the specialist mechanic who supervises the work. This, of course, assumes that the world is in economic contact with a world of the required tech level.)

Ship Payments: Ship payments are made to the bank or consortium conducting the financing. This organization is assumed to be based on the world of manufacture, and so payments will be made at that local rate. This will mean that a ship manufactured on a world with a very high tech level will be more expensive in real terms than an identical ship manufactured on a world with a lower tech level.

For this reason, worlds do not routinely manufacture ships which do not take advantage of all of the technological advantages of that world's tech level, which is another way of saying that they can't complete at the low end of the market and so concentrate on the top end. If, however, there are no competing low-tech worlds in the area, then they will manufacture a wider variety of ship types.

Black Markets: Concern with balance of payments and trade, a wish to limit contact with off-world cultures, or a desire to protect and develop native industries may lead a strong and/or reactionary government to artificially regulate the exchange rate of its currency. Such a government will have a separate currency, using the method explained above, but will set its exchange rate at one or two levels higher than the Exchange Rates table indicates. Thus, if the table indicates a local currency value of .40, the official exchange rate may be set at .45 or .50. This is only used when exchanging off-world currency for local currency; when exchanging local currency for off-world currency, the normal values on the table are used (so each complete transaction back and forth will lose value). Prices of imported goods on the world are calculated using the actual values from the table, not the artificial ones.

In a situation such as this, a black market in currency will flourish, and can normally be contacted by characters using their Streetwise skills. Whether or not a world sets such standards is up to the referee and should be based generally on government type and the world's unique situation. How vigorously the world attempts to suppress the black market is, of course, dependent on its law level.

Trade Transactions

The Trade and Commerce flowcharts beginning on page 236 present the procedure for locating markets and goods to be shipped. Several terms and concepts are used on the flowcharts.

Lot: A lot is a single shipment of goods. A lot is identified by its displacement in tons (one ton equals 14 kiloliters). Each lot is a distinct shipment and may not be subdivided. A ship captain may accept or reject specific lots based on their best fit within the ship's cargo hold. A lot can be freight, cargo, or mail.

Freight: Freight is a lot owned by someone who either wishes to retain ownership of it or has contracted to sell the goods to someone and is shipping them to the buyer. An individual who is shipping his personal effects to a new home is shipping freight. A company which has sold an air raft to a customer and is now shipping it to that customer is shipping freight.

The standard price for shipping freight is Cr1000 per ton. The payment covers shipment in the cargo hold from the current location to the starship's next port of call.

Mail: Mail is a lot of communications information being shipped under special contract for a postal or express service. Postal services are operated by governments; express services are operated by private companies.

Mail is always of incidental size (never major- or minor-sized lots). To be allowed to carry mail, the ship must be armed, and the crew must include a gunner. Each mail lot always consists of at least one ton. Each ton of mail is shipped at a premium rate of Cr5000.

Cargo: Cargo consists of goods purchased by a speculator or merchant and carried on the speculation that they can be sold at the destination for a profit. A merchant who buys ring laser navigation systems on an industrial world and ships them to another world in hopes of selling them for a profit is shipping cargo. A merchant who has empty cargo hold space and fills it with locally purchased goods rather than ship empty space is shipping cargo.

Speculators may buy goods and ship them: They consider the lot cargo, while the ship carrying the goods considers it freight. Starship captains may find insufficient freight available on a world: They may become speculators and buy cargo in order to fill unused freight space. The prime law of cargo trade is an ancient one: Buy low and sell high. Those who follow it make money, grow rich, and become successful; those who don't go bankrupt.

Merchant: A merchant is an individual or company that operates a cargo-carrying starship. Merchants may also be speculators.

Speculator: A speculator is an individual or company which buys goods in the expectation that they can be sold at a profit later (and usually on another world). A speculator does not necessarily operate a cargo-carrying starship; a speculator may ship its cargo as freight and pay standard freight rates in order to transport the goods to a profitable market.

Sourceworld: A sourceworld is the world where goods originate. The UWP (see World Building, page 180) of the sourceworld is required before goods can be purchased, and it is necessary in order to determine the costs of the goods when engaging in speculative trade.

Marketworld: A marketworld is the world where goods are to be shipped; it is the market or destination for trade goods. The UWP of the marketworld is required before the goods can be sold, and it is necessary in order to determine the selling price of the goods when engaging in speculative trade.

Cost: Cost is the amount paid for a cargo at its sourceworld.

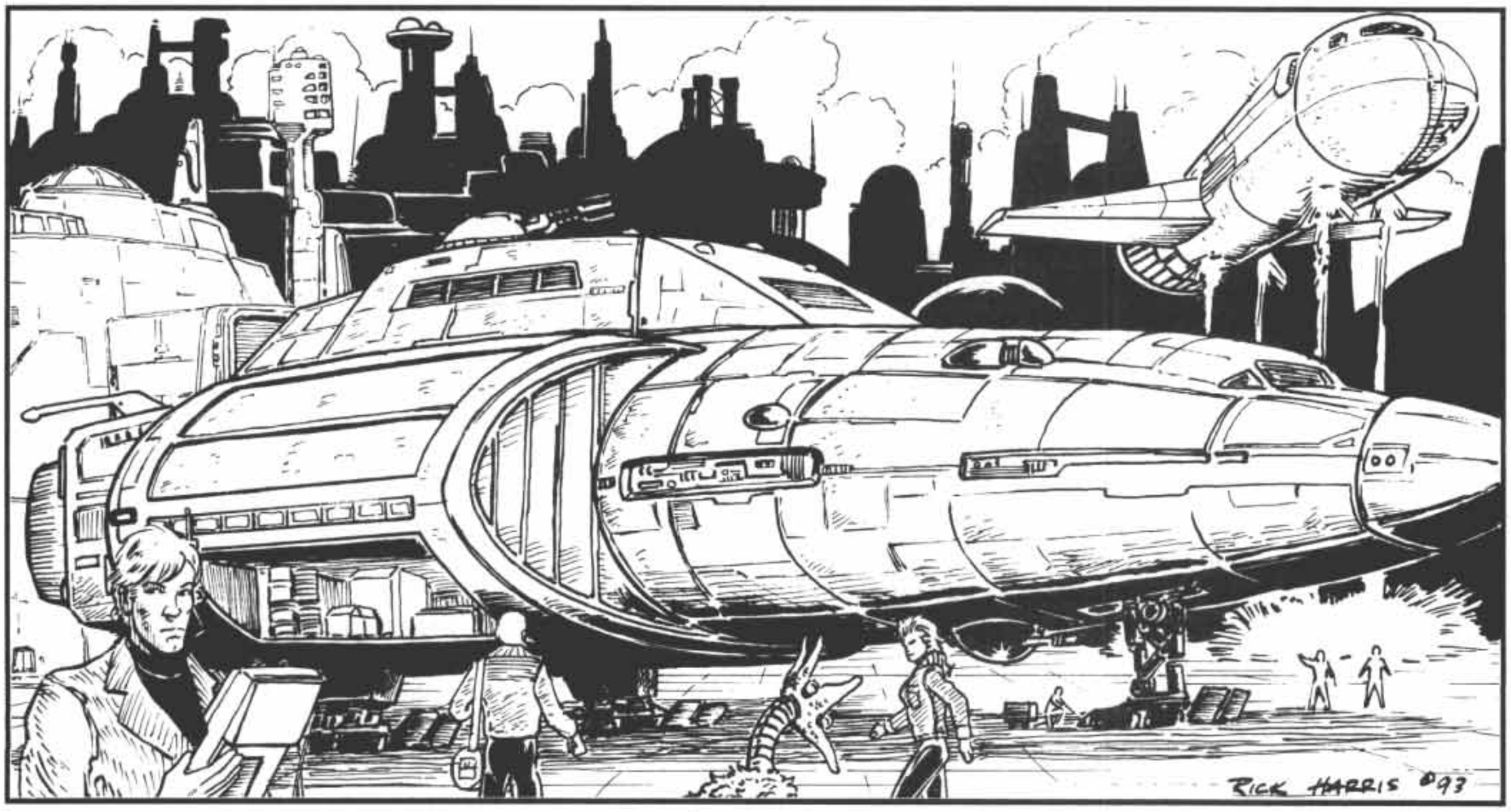
Price: Price is the amount a cargo is expected to sell for at its marketworld. It is possible to compute the base price of goods before arriving at a world simply by analyzing the marketworld's UWP. Careful merchants do this to predict the relative marketability of goods at various accessible worlds.

Price is an expected price; selling price is the actual price determined at the moment of sale.

Selling Price: Selling price is the amount a cargo actually sells for at its marketworld through the use of the Actual Value table (page 240). Selling price for goods varies as the actual market conditions fluctuate, and it is determined at the moment of sale using the Actual Value table.

Delivery: A lot is delivered when it is off-loaded at a location comparable to the location where it was loaded. Goods taken in orbit at the sourceworld are delivered when off-loaded in orbit at the destination world; goods loaded on the surface of the sourceworld are delivered on the surface of the destination world. This custom applies to both cargo and passengers.

Estimating the Sale Price: When engaging in speculative trading, it is important to be able to make accurate estimates of the likely price that can be gotten for cargos. Bargaining skill allows the partial prediction of the results of the Actual Value table rolls (page 240).



Success at an Average test of Bargaining allows one die on the Actual Value Table (the table uses two dice) to be rolled early; knowing one of the dice results beforehand allows a more accurate prediction of the sale price of goods. For example, the 2D6 roll can range from 2 to 12 and indicates actual values between 40% and 170% of base price. If one die is rolled early and it is a 6, the character knows that the final actual value must range between 7 and 12 (or between 100% and 170%).

The Trade and Commerce flowcharts (page 236) contain the exact procedure to use for estimating the sale price beforehand.

Types of Interstellar Trade Goods

Interstellar trade goods may be many things, some of which are more common than others. The flowcharts in this section provide a procedure for determining the general nature of the goods in each cargo lot, which is provided as a starting point for referee description of the cargo. Using this general guide, the examples below, and a knowledge of the unique characteristics of the world of origin, the referee should decide on a precise definition of the cargo.

Natural Resources: One of the basic trade goods in interstellar trade is natural resources. The exploration of space is driven in part by a search for essential basic raw materials in the hopes that they can be found and made available at competitive prices even after the cost of their transportation over interstellar distances. Most bulk resources are available in the planetary cores and asteroid belts of a star system, and transportation of massive amounts of common ores over interstellar distances is not economically feasible (okay, it's flat-out stupid—if you're taking the trouble to mine the stuff there you might as well go the distance and build a smelter or factory and ship processed or semi-finished goods). However, high-value resources which are scarce or absent in one star system can often be transported profitably. Such resources include rare earths, raw crystals and gems, various compounds, plants, and animals.

Processed Resources: Once the basic raw resources have been collected, they need to be processed into refined raw materials and basic finished goods. Processed resources include processed ores (from which the basic contaminants have been removed), raw organics (harvested plant or animal materials usable as food or in further manufacturing processes), and processed compounds (raw materials typically not found in nature, such as industrial chemicals).

Manufactured Goods: Some manufactured goods cannot be made on a world due to lack of sufficiently high tech level or limited production facilities, and so must be imported. Other manufactured goods may be profitably shipped across interstellar distances if their cost of manufacture is significantly lower than on the destination world, due to low labor costs, abundant cheap resources, or unusual and unique manufacturing techniques. Sometimes the existence of patent on

a product or manufacturing process by one world which is honored by another world creates the necessary basis for trade of manufactured goods.

Manufactured goods include pharmaceuticals (both for the treatment of all manner of illness or disability, and those in special demand for their effects on healthy individuals, such as anagathics to increase the human life span), various consumables (spices, beverages, aromatics and perfumes, disposable goods), clothing, protective gear, and various durable goods (mechanical parts, weapons, tools, vehicles, consumer electronics, industrial machinery, and robots).

Information: A perennial trade good is information. Books, tapes, and software all enjoy a continuing market as individuals pursue educations and find a need for basic materials. More important is information on new scientific or technological developments that can be applied in many different environments, and news of political, social, and economic events that allow recipients of that knowledge to make more informed decisions. Information is usually shipped in electronic form, although this is usually contained in its own small computer memory system, heavily encrypted, so that no one but the ultimate customer has access to it. The following are types of informational cargo and freight:

Scientific Data: Scientific inquiry depends on data for its continued existence. Raw scientific data from established research stations, data collection stations, or laboratories is marketable to research and development departments of various corporations and to research faculty at institutions of higher learning.

Social scientists also need raw materials for their research: accounts of historical events, or data on alien or alternate societies.

Most important of all for both communities is contact with other developments in their fields. Not only are these fields driven by academic competition, but breakthroughs or new data in one area can lead to insight in others, whether basic research or dramatic new manufacturing techniques. Besides, you've just got to get a copy of the latest issue of *Astrometrics and Cosmology* where they publish the letter where you really *ripped* Dr. Barberi's hare-brained paper on planetary nebulae.

News: No business can be run without news. What economic incentives package has been instituted on an important world? Who is the new president of a major competitor? What is the new administration's position on tariffs? Government and private agencies have the same need to understand the constantly changing playing field on which they must operate. Sure, interstellar travel is relatively slow. But that's what makes it so crucial to get the news as quickly as possible. A day's notice is enough time to get instructions to your field office onto the next departing ship, but if you miss it, you'll have to wait days for the next one. Timely news can make or break careers, businesses, even governments.

Bureaucratic Records: Where there are interstellar governments, the products of a bureaucracy must be distributed through its area of authority. Such shipments include originals or reproducible masters of regulations, files of information about citizenry and companies, and reports.

Much of the information shipped between worlds is not sold; it is transported at government expense as freight to archives or to other offices of the bureaucracy. But some of the information can be purchased and then shipped to other worlds where it can be sold to businesses or organizations that can use it. For example, tax records might indicate likely customers for specific goods; reports might provide clues (after analysis) for prediction of future bureaucratic decisions.

Creative Works: The products of the artistic sense are always in demand. New novels, plays, and poetry from recognized authors are highly sought after over vast areas. Other creative works are valued as decoration and ornamentation for homes and businesses. These include paintings, sculpture, holographics, photographs, and recordings (videos, audios, flat projections, movies, concerts, music). While the originals of most of these latter works are properly classified as novelties, reproductions and visual copies of these items are typically shipped as electronic information, ready to be printed into salable form at its destination. Lower tech worlds often trade considerable quantities of creative works to high-tech worlds in return for scientific data and machinery.

Novelties: New products never before seen (or sometimes just never before marketed) are powerful commodities in the marketplace. Novelties are the staple export of low-tech worlds to higher-tech worlds.

Because a novelty can be anything, if presented in the right way at the right place and time, description is difficult. Some novelties become short-lived fads or fashions. Some are pets from unusual ecosystems, and the expensive food to feed them. Some are hand-crafted knick-knacks. Novelties can be a quick route to riches, or a short trip to losing your shirt over a warehouse full of useless junk.

Special Handling Characteristics: Several of the possible trade goods may require special handling by the cargo carrier. If a questionable cargo-handling situation arises, the referee must define an appropriate task for the players to roll to prevent damage to their cargo. The types of special handling characteristics include:

Corrosive: This cargo is hazardous and needs special

containers to prevent it from doing corrosive damage to the cargo vehicle, cargo handlers, and so on. If a cargo container's sealed integrity is broken in transit, damage will result, in the form of structural or system damage to the ship, or respiratory damage to crew and passengers who inhale caustic gasses.

Flammable: This cargo is flammable. If anything that could ignite the cargo enters the cargo hold (for example, sparks from an electrical short, a laser weapon fire exchange, and so on), the cargo will burst into flames. One obvious way to save the cargo is to immediately evacuate the cargo hold's atmosphere, placing it in a vacuum, which would effectively snuff out the fire. Many captains wisely refuse to carry such cargo.

Explosive: This cargo is hazardous, and extreme heat or heavy shock may cause it to explode. Heat from a burning flammable cargo or a cargo hold hit during a starship battle are two examples of the types of conditions that could cause an explosive cargo to detonate. In some cases, a heavy jolt (for example, a jolt resulting from a rough landing) could cause an explosive cargo to detonate. Inertial compensators can mitigate this problem, but you never know when some Cr0.5 fuse will blow and wipe out a MCr50 starship.

Radioactive: This cargo is hazardous and must be stored in special sealed and shielded containers. If the cargo container's sealed integrity is broken, radiation damage to nearby life forms is sure to result.

Perishable: This cargo requires a special environment to ensure it is properly preserved and kept during the journey to market. If the narrow environmental conditions vary to a significant degree from optimum, the cargo's value may be seriously degraded or destroyed. Perishable cargos have an additional complication: They must get to market fast. A perishable cargo lot must be shipped the same day it is delivered for shipment.

Fragile: This cargo is delicate, and cannot stand rough handling or severe jolts. If a fragile cargo is damaged, its worth may be only slightly diminished, or it may be reduced to complete junk.

Living: Some cargo is listed as living. This cargo is an extreme case of both perishable and fragile. Life support, cages, and perhaps even special caretakers may need to be provided. And *somebody* has to go in there and feed the things...

Trade Classifications

The effects of trade classifications are as follows. Actual characteristics of these worlds are detailed in World Building, beginning on page 180.

Agricultural (Ag): Agricultural goods market well to Desert, Fluid Oceans, Poor, Water Worlds, and Industrial Worlds. Agricultural Worlds are good markets for Industrial Worlds, Agricultural Worlds, Barren Worlds (for new plant and animal strains), and Rich Worlds.

Asteroid Belt (As): Asteroid Belt goods market well to Industrial, Nonagricultural, Vacuum Worlds, and Asteroid Belts. Asteroid Belts are good markets for Agricultural, Industrial, Nonagricultural, and Vacuum Worlds.

Barren World (Ba): Goods from Barren Worlds are raw materials mined or gathered by a ship crew. They are poor sources of cargos and resources and cannot be markets.

Desert World (De): Desert World goods sell well to Desert and Nonagricultural Worlds. They are good markets for Agricultural, Desert, Industrial, Nonagricultural, and Rich Worlds.

Fluid Oceans (Fl): Nonwater oceans may be sources of raw materials, and the world's products sell well on Industrial and Fluid Oceans Worlds. Worlds with fluid oceans are good markets for Fluid Oceans and Industrial Worlds.

High Population (Hi): High Population World goods, because of the economy of scale for production, sell well on High Population, Low Population, and Rich Worlds. High Population Worlds are good markets for Agricultural, Industrial, High Population, and Rich Worlds.

Ice-Capped (Ic): Goods from Ice-capped Worlds sell well on Industrial Worlds; the worlds are poor markets.

Industrial (In): Industrial goods sell well on most worlds, and Industrial Worlds are good markets for most goods.

Low Population (Lo): Low Population World cargos sell well to Industrial and Rich Worlds. Low Population Worlds are rarely self-supporting; they are excellent markets for High Population and Agricultural Worlds.

Nonagricultural (NA): Nonagricultural Worlds are good sources for Asteroid Belts, and Nonagricultural, Desert, and Vacuum Worlds.

Nonindustrial (NI): Nonindustrial Worlds are markets for goods from Industrial Worlds. They are sources of goods for Industrial Worlds; their goods sell poorly on Nonindustrial Worlds.

Poor (Po): Poor Worlds are markets for Industrial Worlds. They are not good sources of cargos.

Rich (Ri): Rich Worlds are good markets for Asteroid Belts, and Agricultural, High Population, Industrial, Low Population, Rich, and Water Worlds. They are good sources of cargos for Agricultural, Desert, Industrial, High Population, Rich, and Nonagricultural Worlds.

Vacuum World (Va): Vacuum Worlds are markets for goods from Asteroid Belts, and Industrial, Nonagricultural and Vacuum Worlds. They are good sources of cargos for Asteroid Belts, Industrial Worlds, and Vacuum Worlds.

Water World (Wa): Water Worlds are good markets for Industrial and Water Worlds. They are good sources of cargos for Industrial, Rich, and Water Worlds.

Trade and Commerce Flowcharts

These flowcharts are used to help the referee generate passengers, freight, and cargo for player characters' ships. All die rolls are made with D6.

PASSENGERS AND CARGO

1. Sourceworld Details

Determine sourceworld's population and tech level.

2. Destination World Details

The ship captain must select and designate a destination world within jump range. Determine destination world's population, tech level, and travel zone.

3. Passengers

Determine how many passengers are available for the ship.

Roll once on the High column, once on the Middle column, and twice on the Low/Steerage column (once for Low, once for Steerage). Steerage not allowed in Regency, roll for Low only.

PASSENGER TABLE

Pop Digit	*Available at Sourceworld* High	Middle	Low/Steerage
0	—	—	—
1	—	1D–2	2D–6
2	1D–1D	1D	2D
3	2D–2D	2D–1D	2D
4	2D–1D	2D–1D	3D–1D
5	2D–1D	3D–2D	3D–1D
6	3D–2D	3D–2D	3D
7	3D–2D	3D–1D	3D
8	3D–1D	3D–1D	4D
9	3D–1D	3D	5D
A	3D	4D	6D

Die Roll Modifiers

If destination world Population 0-4, DM –3.
If destination world Population 8+, DM+1.

If any crewmember has Service skill, apply half of it (rounding fractions down) as a +DM on the roll for high passengers.

If any crewmember has Admin/Legal skill, apply apply half of it (rounding fractions down) as a +DM on the roll for middle passengers.

If any crewmember has Streetwise skill, apply apply half of it (rounding fractions down) as a +DM on the roll for low and steerage (where applicable) passengers.

DM+(sourceworld TL minus destination world TL).

If destination world is a red zone, DM –8, and no middle or low passengers.

If destination world is an amber zone, DM –4.

Passengers may not exceed the passenger capacity of the ship.

This table may be consulted once per week.

Income: Credit the ship with Cr10,000 per high passenger, Cr8000 per middle passenger, Cr1000 per low passenger, and Cr2500 per steerage passenger.

4. Freight and Cargo

Freight consists of paid shipments of goods. Cargo is purchased at the sourceworld and sold at the destination world. Determine the available lots from the table. Roll once in the Major column, once in the Minor column, and once in the Incidental column. For each lot, determine its size by rolling the lot size.

AVAILABLE LOTS

Pop Digit	*Available at Sourceworld Major*	Minor	Incidental
0	—	—	—
1	1D–4	1D–4	—
2	1D–2	1D–1	—
3	1D–1	1D	—
4	1D	1D+1	—
5	1D+1	1D+2	—
6	1D+2	1D+3	1D–3
7	1D+3	1D+4	1D–3
8	1D+4	1D+5	1D–2
9	1D+5	1D+6	1D–2
A	1D+6	1D+7	1D

Lot Sizes

Major Cargos: 1D+10.
Minor Cargos: 1D+5.
Incidental Cargos: 1D.

Lot size is stated in displacement tons. To convert to kiloliters, multiply by 14.

Die Roll Modifiers

Apply these DMs for number of available lots.
If destination world population 0-4, DM –3.
If destination world population 8+, DM +1.

If any crewmember has Liaison skill, apply half of it (rounding fractions down) as a +DM on the roll for minor cargos.

DM+(sourceworld TL minus destination world TL).

If destination world is a red zone, freight is calculated normally, but at five times the normal rate of pay (Cr5000 per ton).

If destination world is an amber zone, freight is calculated normally but at twice the normal rate of pay (Cr2000 per ton).

If the goods are freight (carried for a fixed fee per ton) and their identity does not matter, ignore further steps.

The sum of cargo and freight cannot exceed the cargo hold capacity of the ship.

This table shows the limit of freight available to a ship in a period of one week. A crewmember with Marketing skill may consult this table again once (to find last-minute cargo, but not freight).

5. Sourceworld Trade Classifications

Determine the trade classifications of the sourceworld.

TRADE CLASSIFICATIONS

Code	*Size*	*Atmosphere*	*Hydrographic*	*Population*	*Government*	*Law Level*	*Code Definition*
Ag	—	4-9	4-8	5-7	—	—	Agricultural
As	0	0	0	—	—	—	Asteroid
Ba	—	—	—	0	0	0	Barren
De	—	2+	0	—	—	—	Desert
Fl	—	A+	1+	—	—	—	Fluid Oceans
Hi	—	—	—	9+	—	—	High Population
Ic	—	0-1	1+	—	—	—	Ice-Capped
In	—	2-4,7,9	—	9+	—	—	Industrial
Lo	—	—	—	4–	—	—	Low Population
Na	—	0-3	0-3	6+	—	—	Nonagricultural
Ni	—	—	—	0-6	—	—	Nonindustrial
Po	—	2-5	0-3	—	—	—	Poor
Ri	—	6,8	—	6-8	4-9	—	Rich
Va	—	0	—	—	—	—	Vacuum
Wa	—	—	A	—	—	—	Water World

Determine all possible trade classifications. An Asteroid Belt (As) is automatically a Vacuum World, and does not have the Va code.

6. Identify Cargo and Freight

Create a standard identifier for each shipment of cargo and freight.

Freight: If the shipment is freight, its identity may not matter. The referee may assume that freight is a standard, safe, nonperishable shipment properly packaged. Its tonnage is already known. No further information is required.

Cargo: If the shipment is cargo, it should be given a standard identifier, which consists of:

1. Sourceworld starport type.
2. Sourceworld tech level.
3. All possible sourceworld trade classifications.
4. Cost.

For example, a cargo from a world with a type A starport, a tech level of 12, and a Rich world which costs Cr7000 would be identified as:

A-C RI Cr7000

7. Nature of Cargo

More information can be determined about cargo (and about freight, if desired).

Cargo and freight are broadly classified as one of the following types:

Natural Resources
Processed Resources
Manufactured Goods
Information
Novelties

For each shipment of cargo or freight, note the trade classifications in its identifier and consult tables 8a through 8f in order until one of the trade classifications in its identifier is matched. Roll on the first table that matches to determine the broad nature of the goods.

Worlds with no classification use 8f.

8a. Ag Goods

Any goods with Ag (Agricultural) in its identification may use this table.

Agricultural Goods

Die	Trade Good Category
2	Natural Resources
3	Natural Resources
4	Natural Resources (organic)
5	Natural Resources (organic)
6	Natural Resources (organic)
7	Processed Resources (organic)
8	Processed Resources (organic)
9	Manufactured Goods
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM +1.

8b. Wa, Ri Goods

Any goods with Wa (Water World) or Ri (Rich World) may use this table.

Water and Rich World Goods

Die	Trade Good Category
2	Natural Resources
3	Natural Resources
4	Natural Resources
5	Natural Resources
6	Processed Resources
7	Processed Resources
8	Manufactured Goods
9	Information
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM+1. If population 9+, DM +1.

8c. As, Va, De, Na Goods

Any goods identified as As (Asteroid Belt), Va (Vacuum), De (Desert), or Na (Nonagricultural) may use this table.

Asteroid, Vacuum, Desert, or Nonagricultural Goods

Die	Trade Good Category
2	Natural Resources (inorganic)
3	Natural Resources (inorganic)
4	Natural Resources (inorganic)
5	Natural Resources (inorganic)
6	Natural Resources (inorganic)
7	Processed Resources (inorganic)
8	Manufactured Goods
9	Manufactured Goods
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM +1. If population 9+, DM +1. If Barren World, DM –5.

8d. Ni Goods

Any goods identified as Ni (Non industrial) may use this table.

Nonindustrial Goods

Die	Trade Good Category
2	Natural Resources
3	Natural Resources
4	Natural Resources
5	Natural Resources
6	Natural Resources
7	Processed Resources
8	Manufactured Goods
9	Manufactured Goods
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM+1. If Barren World, DM –5.

8e. In Goods

Any goods identified as In (Industrial) may use this table.

Industrial Goods

Die	Trade Good Category
2	Natural Resources
3	Natural Resources
4	Processed Resources
5	Processed Resources
6	Manufactured Goods
7	Manufactured Goods
8	Manufactured Goods
9	Manufactured Goods
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM +1.

8f. Ba, Fl, Hi, Ic, Lo, Po Goods

Any goods identified as Ba (Barren), Fl (Fluid Oceans), Hi (High Population), Ic (Ice-Capped), Lo (Low Population), Po (Poor), or no trade classification may use this table.

All Other Goods

Die	Trade Good Category
2	Natural Resources
3	Natural Resources
4	Natural Resources
5	Information
6	Processed Resources
7	Processed Resources
8	Processed Resources
9	Manufactured Goods
10	Information
11	Information
12	Novelties

DMs: If government 9+, DM +1. If law level 9+, DM +1. If population 9+, DM +1. If Barren World, DM –7.

9. Nature of Cargo and Freight

Determine the specific nature of the goods. The referee is encouraged to select a specific cargo or freight appropriate to the worlds of origin and destination, or to the adventure being played. Absent from any specific requirement, the referee may determine the nature of the cargo by rolling 2D6 and consulting the appropriate table. The columns to the right on the tables show the 2D6 roll to determine if the cargo has any special handling characteristics. The columns are Corrosive, Flammable, Explosive, Radioactive, and Perishable. On the Manufactured Goods, Information, and Novelties tables, Fragile appears in place of Flammable. "Auto" indicates that the cargo automatically fulfills that criterion.

If Natural Resources, go to step 9a.
If Processed Resources, go to 9b.
If Manufactured Goods, go to 9c.
If Information, go to 9d.
If Novelties, go to 9e.

9a. Natural Resources

D66	Trade Good	Cor	Fla	Exp	Rad	Per
11-13	Ferrous Metal Ore	—	—	—	—	—
14-15	Nonmetal Ore	10+	—	12+	—	—
16-21	Radioactive Ore	—	—	—	6+	—
22-23	Nonferrous Ore	11+	—	11+	11+	—
24-26	Raw Crystals	—	—	—	—	—
31	Raw Precious Gems	—	—	—	—	—
32-33	Nitrogen Compounds	10+	—	9+	—	—
34-36	Raw Hydrocarbons	11+	9+	11+	—	—
41-42	Plants (wood)	11+	9+	—	—	11+
43	Plants (bales)	11+	9+	—	—	10+
44	Plants (fibers)	11+	6+	—	—	9+
45	Plants (herbs)	11+	6+	—	12+	9+
46	Wild Plants (living)	11+	6+	12+	—	11+
51-54	Food Plants (living)	11+	11+	—	—	Auto
55-56	Animals (living)	11+	—	—	—	Auto
61-64	Livestock (living)	11+	—	—	—	Auto
65	Rare Plants (living)	11+	11+	—	—	Auto
66	Rare Animals (living)	11+	—	—	—	Auto

9b. Processed Resources

D66	Trade Good	Cor	Fla	Exp	Rad	Per
11-16	Composites	11+	9+	10+	—	—
21-24	Special Alloys	12+	10+	—	—	—
25-26	Precious Metals	—	—	—	—	—
31	Crystals	—	—	—	—	—
32-34	Radioactives	—	—	—	5+	—
35	Rare Earths	11+	12+	12+	12+	—
36	Isotopes	—	—	—	3+	—
41-46	Foodstuffs	11+	9+	12+	—	8+
51-54	Petrochemicals	10+	7+	8+	—	—
55	Textiles	—	9+	—	—	11+
56	Explosives	12+	10+	3+	—	10+
61-63	Polymers	—	9+	—	—	—
64-66	Fertilizers	10+	9+	9+	—	9+

9c. Manufactured Goods

D66	Trade Good	Cor	Fra	Exp	Rad	Per
11-13	Pharmaceuticals	11+	10+	—	—	9+
14-15	Spice	—	11+	—	—	10+
16	Gourmet Food	—	11+	—	—	10+
21-23	Alcoholic Beverage	11+	8+	—	—	9+
24-26	Nonalcoholic Beverage	—	10+	—	—	8+
31	Consumable Teas	—	11+	—	—	12+
31-32	Exotic Fluids	—	8+	—	—	9+
33-36	Aromatics	—	10+	9+	—	11+
41-42	Clothing	—	12+	—	—	—
43	Protective Gear	—	9+	—	—	—
44-46	Weapons	—	9+	—	—	—
51-52	Electronic Parts	—	10+	—	—	—
53	High-Tech Parts	—	10+	—	—	—
54-55	Tools	—	11+	—	—	—
56	Vehicles	—	12+	—	—	—
61-63	Entertainment Equip	—	10+	—	—	—
64	Computers	—	11+	—	—	—
65-66	Robots	—	11+	—	—	—

9d. Information

This category includes a modified meaning of the category Perishable. This indicates whether the information is of a time-sensitive nature so that it becomes useless if not delivered in a timely fashion.

D66	Trade Good	Cor	Fra	Exp	Rad	Per
11-12	Writings (paper)	—	—	—	—	8+
13-14	2-D Still Pictures	—	10+	—	—	8+
15-16	Computer Software	—	—	—	—	11+
21-22	Robotic Software	—	—	—	—	—
23-24	Starship Software	—	—	—	—	—
25-26	3-D Still Pictures	—	10+	—	—	8+
31-33	Artistic Images	—	9+	—	—	11+
34	Audio Recordings	—	—	—	—	8+
35	2-D Video Recordings	—	10+	—	—	8+
36	3-D Video Recordings	—	10+	—	—	8+
41	Raw Data (paper)	—	—	—	—	8+
42-43	Raw Data (data)	—	—	—	—	8+
44-45	Raw Data (inanimate samples)	9+	10+	11+	11+	9+
46-53	Raw Data (biosamples)	11+	Auto	—	—	Auto
54-56	Records (paper)	—	—	—	—	11+
61-66	Records (data)	—	—	—	—	11+

9e. Novelties

D66	Trade Good	Cor	Fra	Exp	Rad	Per
11	New Natural Resources	10+	—	11+	10+	12+
12	New Processed Resources	—	—	11+	—	—
13-14	New Manufactured Goods	10+	7+	11+	—	—
15-16	New Information	—	—	—	—	Auto
21-26	Natural Curiosities	12+	9+	12+	12+	—
31-36	Handmade Artifacts	—	6+	—	—	—
41-46	Living Creatures	12+	Auto	—	—	Auto
51-56	Starving Artist Reproductions	—	—	—	—	—
61-66	Counterfeit Knock-Offs	—	—	—	—	—

PURCHASE COST OF CARGO

1. Cargo Cost

Cargo cost is the amount of money that a shipment is sold to the speculator or starship captain for.

Start with base cost of Cr4000 per ton.

3. Starport Cost Modifiers

The type of starport involved in the transaction influences the cost of the goods.

Consult the Starport Effects table using the sourceworld starport type.

STARPORT EFFECTS

Starport	*Cost Modifier*
A	–1000
B	+1000
C	+1000
D	+2000
E	+3000
X	+5000

Add sourceworld's starport cost modifier to base cost.

2. Trade Cost Modifiers

Trade cost modifiers are determined from the sourceworld characteristics.

TRADE COST MODIFIERS

Code	*Trade Class*	*Cost Mod*
—	No Class	0
Ag	Agricultural	–1000
As	Asteroid Belt	–1000
Ba	Barren World	+1000
De	Desert World	+1000
Fl	Fluid Oceans	+1000
Hi	High Population	–1000
Ic	Ice-Capped	0
In	Industrial	–1000
Lo	Low Population	+1000
Na	Nonagricultural	+1000
Ni	Nonindustrial	+1000
Po	Poor	–1000
Ri	Rich	+1000
Va	Vacuum World	+1000
Wa	Water World	0

If As, ignore the effects of Va.

Total all modifiers and add to base cost.

Tech Level Modifier: Multiply sourceworld's tech level by Cr100 and add to base cost.

4. Delivery

Normal delivery to the ship is four days. Add 10% to the final cost for each day of advance delivery to the ship.

For example, instant (same day) delivery costs 40% extra.

SALE PRICE OF CARGO

1. Cargo Price

Cargo price is the amount of money that a buyer is expected (on the average) to pay for goods when delivered at a world. Cargo price is applied to the Actual Value table (page 240) to determine the final price for which the goods are actually sold.

Start with a base price of Cr5000.

2. Cargo Price Modifiers

Total all intersections between sourceworld and destination world codes and multiply by Cr1000. Add to base price.

CARGO PRICE

Source Code	*Destination Code* —	*Ag*	*As*	*Ba*	*De*	*Fl*	*Hi*	*In*	*Lo*	*Na*	*Ni*	*Po*	*Ri*	*Va*	*Wa*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ag	—	+1	+1	—	+1	—	+1	+1	+1	+1	—	—	+1	—	—
As	—	—	+1	—	—	—	—	+1	—	+1	—	—	+1	+1	—
Ba	—	+1	—	—	—	—	—	+1	—	—	—	—	—	—	—
De	—	—	—	—	+1	—	—	—	—	+1	—	—	—	—	—
Fl	—	—	—	—	—	+1	—	+1	—	—	—	—	—	—	—
Hi	—	—	—	—	—	—	+1	—	+1	—	—	—	+1	—	—
Ic	—	—	—	—	—	—	—	+1	—	—	—	—	—	—	—
In	—	+1	+1	—	+1	+1	+1	+1	—	—	+1	+1	+1	+1	+1
Lo	—	—	—	—	—	—	—	+1	—	—	—	—	+1	—	—
Na	—	—	+1	—	+1	—	—	—	—	—	—	—	—	+1	—
Ni	—	—	—	—	—	—	—	+1	—	—	-1	—	—	—	—
Po	—	—	—	—	—	—	—	—	—	—	—	-1	—	—	—
Ri	—	+1	—	—	+1	—	+1	+1	—	+1	—	—	+1	—	—
Va	—	—	+1	—	—	—	—	+1	—	—	—	—	—	+1	—
Wa	—	—	—	—	—	—	—	+1	—	—	—	—	+1	—	+1

If the destination world is Ba, goods may not be sold. If the sourceworld is As, ignore its Va classification.

3. Tech Level Effects

Subtract destination world tech level from sourceworld tech level and multiply by 10%. This value may be a positive or a negative number. Multiply this value by the adjusted price.

5. Alien Trade Effects

When a cargo has an alien source, there may be an effect on the price. Determine the source of the goods (locally manufactured unless otherwise noted) and the market for the goods. Consult the Alien Trade Effects table and apply any price alteration to the calculated price of the goods.

ALIEN TRADE EFFECTS

Buying Race	Selling Race: Aslan	Droyne	Hiver	Former Imperial	K'kree	Solomani	Vargr	Zhodani
Aslan	—	—	—	—	–2000	—	+1000	—
Droyne	—	—	—	—	—	—	—	+2000
Hiver	+1000	—	—	–1000	—	—	—	—
Form. Imp.	—	—	—	—	—	—	—	–1000
K'kree	—	—	—	—	—	—	–2000	—
Solomani	—	—	+1000	–1000	—	—	—	—
Vargr	—	—	—	—	–4000	—	—	—
Zhodani	+1000	+1000	—	–1000	—	—	—	—

This table indicates the effects of local taste, prejudice, and novelty in the evaluation of goods by a market. For example, Zhodani goods are generally poorly received in former Imperial (Regency) markets and well-received in Droyne markets.

4. Brokers

One character may act as broker if he has Marketing skill. He applies his skill to the transaction as a DM (equal to half of the Marketing skill, not asset) on the Actual Value table in step 7, and receives 2.5% (per skill level applied) of the final market price (of which half of that is spent as expenses for the transaction).

A broker may be hired at a starport to assist in the transaction.

BROKERS AVAILABLE

Starport	Broker Available
A	Marketing 6 or less
B	Marketing 4 or less
C	Marketing 2 or less
D	Marketing 1

A broker receives 2.5% (×.025) of the final market price for each level of skill he applies to the Actual Value table.

6. Bribery

Characters may attempt bribery to gain a special merchant kickback. The base amount of the bribe should be Cr1000, but the referee may adjust this up or down based upon the value of the cargo, the local law level, and modifications to the task difficulty. (Higher bribes lower the difficulty level.)

Make a Difficult (but modified as noted above) task roll using Bribery. Success allows a +1 modification to the table; Outstanding Success allows a +3 modification. Failure results in no modification, and Catastrophic Failure results in possible arrest or fine (and at the very least loss of the bribe).

7. Actual Value

The actual value of a cargo (and thus the final market price paid for it) is determined only at the moment of sale using the Actual Value table.

ACTUAL VALUE

Die	Percentage
2	40%
3	50%
4	70%
5	80%
6	90%
7	100%
8	110%
9	120%
10	130%
11	130%
12	170%
13	200%
14	300%
15	400%

Results of less than 2 are treated as 2; results of more than 15 are treated as 15.

DMs: +one-half Marketing skill (not asset; round down). Maximum DM is +4.

If the players rolled one die in advance (allowed for Bargaining skill), remember to use the prior roll on this table.

Once goods are offered for sale and the Actual Value table is consulted, the goods must be sold at the price indicated. A sale may be stopped at any point before the final die is rolled on the table. If a sale is stopped, another sale cannot be attempted on the current world in the current week.

Equipment Maintenance and Repairs

MAINTENANCE

Sophisticated equipment requires nearly constant maintenance to keep it running, even in the best of times, and these are *not* the best of times. People used to driving civilian cars on good roads are seldom aware of how much more punishment an all-terrain exploratory vehicle takes. In the universe of **Traveller**, good mechanics and engineers are worth their weight in gold, and are indispensable if the PCs have equipment they want to keep running.

Good mechanics, for all their worth, will sometimes be considered pests by the rest of the group. They will want to spend as much of their time as possible with the vehicles, going over them and conducting minor repairs and preventative maintenance.

If operating in a region of space where regular maintenance facilities are rare, they will be constantly searching for more spare parts, whether they are needed now or not. (Someday they'll be needed and might not be available then, so "get them now" is their philosophy.)

Routine Maintenance

Outside of the Regency, very little high-tech equipment is in perfect condition. Most has been repeatedly repaired and rebuilt, sometimes with homemade parts, and many items are generally worn-out. Every major piece of equipment (vehicle, starship, large weapons system, or sensor) has a base maintenance number indicated on its description. This is the number of hours per week that should be spent in routine preventative maintenance to keep it in good working shape, assuming it is in mint condition. The actual time spent in maintenance is up to the players, but should be influenced by the actual condition of the equipment.

Equipment Condition

Whenever characters acquire a major item of equipment during the game, including during character generation, the referee should determine its wear value by rolling 1D10. The higher the wear value, the more worn-out the equipment. Whenever characters are in a position to buy or sell equipment, its true value is determined by dividing its base price by its wear number. Thus, a vehicle which would normally cost Cr200,000 but has a wear value of 8 would only be worth Cr25,000.

Potential Breakdowns

Each piece of equipment has the potential to break down when it is used for a certain period of time. The chance for a *potential* breakdown is equal to the equipment's wear value and is rolled on a D10 (thus a piece of equipment with a wear value of 2 would have a potential break down on a 1D10 roll of 2 or less).

For most equipment, including planetary vehicles (all ground vehicles, lift vehicles, and aircraft, plus small watercraft), potential breakdowns are rolled for each eight-hour period (or fraction thereof) for which the equipment is used. For heavy equipment specifically designed for continuous long-term use, the roll is only once per day (24 hours) of use (this category includes all spacecraft and starships, large ocean-going ships, hydroelectric power plants, and the like).

A potential breakdown does not mean the piece of equipment has actually suffered a serious malfunction. Avoiding an actual breakdown is a Difficult task against the skill appropriate to the equipment (Mechanic, Electronics, Gravitics, Ship's Engineering, etc.) performed by the character who did the last maintenance on the item.

If the machinery has not been maintained for the recommended number of routine preventative maintenance hours in the last week, the potential breakdown automatically results in an actual breakdown.

If a potential breakdown does not result in an actual breakdown, the characters may continue using the machinery without interruption. The occurrence of a potential breakdown is usually obvious to the characters, and the referee can tell the players that they hear ominous grinding noises in the machinery, smell a funny odor, see smoke in the exhaust, note a power spike on the readouts, etc. (although some breakdowns can be unexpected and sudden at the referee's discretion). This allows them to shut the system down and do some work on it before it goes completely. The referee may opt to allow the players to reduce the load on the system (for example, reduce power plant output to 50%) to allow the roll for actual breakdown to be postponed for another eight-hour period.

Once a potential breakdown has occurred, there will be an additional automatic potential breakdown every period (eight-hour or 24-hour, according to type of equipment) used thereafter until the item of equipment receives at least its recommended number of routine preventative maintenance hours. Avoiding an actual breakdown is a Difficult task performed by any character (using appropriate skill) during intermittent pauses in use.

If an actual breakdown occurs, go the the Breakdowns section, page 242.

Preventative Maintenance

Extra preventative maintenance can help prevent breakdowns. Spending twice the recommended number of hours will reduce the chance of a potential breakdown by 2; spending three times the amount reduces the chance by 3, etc.

For example, spending eight hours per week maintaining an item of equipment with a maintenance number of 4 and wear value of 6 will mean that the roll for a *potential* breakdown is 4 or less, not 6 or less.

Note that this allows wear value to be temporarily (for one week) reduced to 0. Under certain circumstances,

referees may allow players to use this rule to "fool-proof" a piece of equipment for an upcoming period of operation. For example, on the first day of the week, sufficient maintenance is performed on a vehicle to reduce its wear value to 0. For the remaining six days of that week, there is no chance of a potential breakdown, and no further maintenance need be performed. However, under harsh conditions (in combat, bad weather, exotic or very hot atmospheres, sandy environments, etc.) the referee may stipulate that the players must provide the normal required maintenance over the course of the week to maintain the 0 level. However, full crews are always required to operate and monitor equipment, even when maintenance loads are reduced.

Maintenance must again be performed on the first day of the following week to avoid negative effects.

Increasing Wear

After an item of equipment has suffered 10 actual breakdowns, its wear value is increased by 1. A vehicle with a wear value of 10 which suffers its tenth breakdown at that value is no longer repairable, and is good only for salvaging parts, unless it is rebuilt (below).

Starships and starship components may only be rebuilt at class A and B starports. Vehicles and other equipment may only be rebuilt in suitably equipped cities or bases. In all cases, the rebuilding facility must be of equal or greater tech level as the rebuilt system.

Once the players and the referee are very familiar with the game mechanics, they may wish to keep separate track of the wear value of the components of a starship. That is, a starship which suffers repeated power plant breakdowns would end up having a very worn-out power plant but a sound sensor suite. In this case, the tenth power plant breakdown at wear value 10 would mean the characters need to completely rebuild their power plant, not the entire starship. This rule is not suggested for beginning use; players and referee have enough to keep track of as it is.

(Referees should take care that not too many separate systems of a single object are rolled for, as this can result in continuous breakdowns. Try rolling only once per period, but against the highest wear value. The referee will then assign the exact component for a potential breakdown by pro-rating the individual component wear values.)

Rebuilds

Vehicles and major starship components may be *rebuilt*, which reduces their current wear value. The wear value to which a piece of rebuilt equipment may be rebuilt depends on how many times it has been rebuilt. The first time a piece of equipment is rebuilt it may be rebuilt to wear value 1, the second time to a wear value of 2, and so on. A rebuild costs 5% of the original purchase price of the component per wear value reduced. Thus an engine rebuilt from wear value 10 to wear value 5 would cost 25% of its original cost. That same engine rebuilt to wear value 1 would cost 45% of its original cost.

Starship Malfunctions

A starship can malfunction. The two major malfunctions are drive failure and misjump. The primary influencing factors are unrefined fuel and lack of maintenance.

Refined fuel is pure liquid hydrogen, and is available at starports (price varies with availability, but is typically about Cr500 per ton); unrefined fuel is also sometimes available at starports (around Cr100 per ton when available). Unrefined fuel can also be gotten for free: skimmed from gas giants or taken in the form of water from oceans or lakes (if there are any on the world) and used as unrefined fuel. However, both are full of contaminants in their original state (gas giant skimming also yields ammonia, methane, etc., and water must be processed into pure hydrogen).

Many starships use unrefined fuel because it is cheaper and more plentiful. In order to safely use unrefined fuel, a ship must carry a fuel purification system that prepares the fuel for use in the fusion plant. If the unrefined fuel is burned as is, there is a chance of misjump. See the Starship Operating Procedures flowcharts (page 225).

Starships require continuing maintenance as they operate and an annual maintenance overhaul to keep them in top running order. Ships which are undercrewed and do not carry enough dedicated or full-time skilled engineers, and those which avoid or delay their annual maintenance, run the risk of malfunction. See Routine Maintenance on page 222 for details.

REPAIRS

In the course of the game, PCs will be called upon to repair ships, vehicles, and other equipment which either has broken down or has suffered damage. The combat rules list the procedures used for determining battle damage to vehicle components. Breakdowns are discussed below.

Tools

If a character has the needed parts to make repairs, he must then have the tools to do so. Given the correct tools, the repairs are Difficult tasks. If a PC has the wrong type of tools, the job will take longer and become a Formidable task. Damage to a power plant or drive or large nonenergy weapon system requires mechanical tools of at least as high a tech level as the system being repaired. Suspension damage requires heavy mechanical tools. Sensors, communicators, fire control systems, energy weapons, and other electronic systems require electronic tools of at least as high a tech level as the system being repaired. Damage to hulls and structural members require cutting and welding tools capable of working the material used in the component.

Breakdowns

If an actual breakdown has occurred, the severity of the

breakdown must be determined. The current wear value of the vehicle is the D10 roll for the chance of a major breakdown. For example, a vehicle with a wear value of 8 must roll 8 or less for a breakdown to be major. A breakdown can strike any sub-system of the equipment, and the affected sub-system should be determined by the referee. For vehicles, aircraft, and watercraft, it will usually be either engine or suspension; for starships, it will usually be power plant, maneuver drive, or jump drive. However, the breakdown could affect peripheral systems, for example, a communicator, sensor, or weapon. Certain breakdowns have entertaining roleplaying value. For example, imagine telling the characters that the starship's plumbing system has seized: All of the toilets and sinks have backed up, and the showers don't work. If a breakdown is not a major breakdown, it is automatically a minor one.

Minor Breakdowns: A minor breakdown results in minor damage to the component. The wear value of the equipment is the D10 roll for the chance that parts are needed to repair the component (roll less than the wear value for parts to be required). Otherwise, repairs can be made without new parts.

Major Breakdowns: A major breakdown results in major damage to a randomly determined system, and will always require parts to repair.

Parts: All systems are assumed to include a basic parts selection which includes all commonly needed replacement parts. However, as parts are used from this assortment, they must be replaced or there is a risk that future breakdowns will result in a shortage.

If a part is not replaced, there is a chance that a future breakdown will be unrepairable for lack of parts. Roll 1D10 when the breakdown occurs. If the number rolled is equal to or less than the number of unreplaced parts in the repair set, the breakdown is not repairable until the correct part is found or fabricated.

While parts can usually be found for sale, other common sources for parts are cannibalization and fabrication, especially when repairing relic equipment (equipment left over from the Imperial era). Parts can usually be cannibalized from an identical piece of equipment.

Cannibalization: The referee may often wish to go into detail about the condition of the equipment being cannibalized. For example, say the characters are hoping to find a drive part from a crashed starship. That might be a problem, because one of the main reasons starships crash is because their drives are already ruined. The referee may wish to make a few random rolls on the damage tables (see the Space Combat section beginning on page 311 and individual starships in the "Equipment & Technology" chapter) to see what systems have been hit, and how hard. After establishing damage, the referee can calculate the number hits against a system as a percentage of the total hits that system could absorb. This creates a D100 roll to see the chance that the needed portion of the system was damaged or left intact. (For vehicles, the referee should use the normal vehicle damage rules, beginning on page 297, to assess the level of damage to the system.) For example, if the ship had a power plant hit capacity of 16 major damage hits and had taken four major damage hits to the power plant, there would be a 25% chance (4÷16) that any given power plant component will have been damaged.

If the portion of the system to be cannibalized is undamaged, the required parts may automatically be taken from it. However, if the crashed starship is in an accessible area, the characters will likely find that it has already been stripped by prior visitors. The more inaccessible the wreck, the more likely the needed parts will still be there.

If the component comes from a portion of a ship or vehicle which has sustained damage, the part might still be salvageable. Success on a Formidable test of the appropriate asset (Mechanic, Ship's Engineering, Electronics, or Gravitics) means that the character knows how to make the damaged part work for what they need (at the referee's discretion, this may require a few hours modifying the part). This roll can only be made once, so the players should select the member who has the best skill.

If several parts are required from a damaged component, the die roll is made separately for each part.

Fabrication: Characters may only fabricate new parts if they have access to a machine shop or electronics shop. Each part requires 1D10 hours in the shop. Parts for mechanical and engineering systems may be fabricated in a machine shop; electronic systems require an electronics shop.

Fabrication is at least a Difficult test of the appropriate asset (Machinist for a mechanical part, Machinist or Electronics for an electronic part). The roll is made after the part has been fabricated, and failure means the part cannot be used. The referee may decide that fabrication of some parts is Formidable or Impossible. In cases like this, the referee may allow the remanufacture of a worn or damaged part at a lower difficulty level, but stipulate that the presence of this sub-standard part increases the wear value of the system for future breakdown rolls.

Battle Damage

The vehicle/starship combat system reads out in certain specified damage severities. How these are repaired is based on the level of damage sustained.

Destroyed Components: Any starship component which has taken sufficient major or minor damage results to reach its destruction level (total possible damage) may not be repaired. Any vehicle or aircraft component which suffers major damage, and any vehicle or aircraft electronic component which suffers any damage at all, is destroyed and may not be repaired.

Minor Damage: Repair of minor damage is a Difficult task versus the appropriate asset, takes 1D6 times 30 person-minutes, and requires 1D6–2 parts.

Major Damage: Repair of each major damage result is a Difficult task versus the appropriate asset and takes 1D6 person-hours. The total repair of a system which has sustained major damage requires parts equal to 1D10 plus the number of major damage results. Such repairs are



temporary jury-rigging only, and are to allow the ship to make it to a starport. Permanent repair of this damage is possible only at a class A or B starport. Until the systems have been permanently repaired, the wear value of the system is increased by 1 for each major damage result, to a maximum of 10.

Example: A ship's power plant with wear value of 2 has received two major damage hits. Repairs took eight person-hours (1D6 results of 3 and 5), or a total of four hours each for the two engineers, and the ship is now able to make power to jump to the class A starport in the next system. However, until the ship has its power plant permanently repaired, it operates at wear level 4 (original wear level of 2 plus 2 for the major hits). Costs for repairs are based on the percentage damage to the system: Divide the number of hits the system received by the total number of hits that the system can take. Multiply the result by the new cost of the system to find the repair costs. While at the starport, the crew crew could also opt to have the power plant rebuilt (page 242). However, a system may not be rebuilt until all outstanding repairs have been made at the normal price above.

Assets: Sensors, communicators, energy weapons, controls, computers, and all other electronic components require Electronics skill to repair. Large machinery such as power plants, drives, vehicle suspensions, heavy guns, missile launchers, etc. require Mechanic or Ship's Engineering skill to repair. Very small intricate mechanical devices, such as small arms slug throwers, require Machinist skill to repair.

Repair Crew: Not every person assisting in repairs needs to be skilled in the appropriate asset. Each character with appropriate skill may have a number of unskilled assistants helping with the repairs equal to that character's skill (not asset) level.

For example, repairs to a starship will take 36 person-hours, and require Ship's Engineering skill. The ship has one engineer with skill 5, and another with skill 2. The first character may use five unskilled assistants, and the second character may use two. The repair party thus totals nine personnel, allowing the 36 person-hour task to be completed in four hours.

Electronic Components: Electronic components (all systems requiring Electronics skill to repair—communicators, sensors, master fire directors, computers, ECM, etc.) are Formidable repair jobs and require twice the number of parts rolled.

Aircraft Damage

If an aircraft has safely landed, its damaged systems may be repaired. If an aircraft made a forced landing—for example, a belly landing or open-field landing—make a Formidable roll against the pilot's appropriate Pilot cascade. If successful, the aircraft may be repaired. If unsuccessful, the aircraft may only be cannibalized for parts. If an aircraft has crashed following damage, it is not even good for parts.

Psionics

The powers of the mind are incredible, and someday the study of these powers will enable everyone to use them as an active part of their lives. Persons with the gift of psionics, however, can be frightening to those who do not understand them, and the active or public use of this power is often not well received by the general populace or the government. As a result, only a few individuals ever discover the psionic power that lies hidden in their minds.

Psionics and Society

For almost 300 years prior to the Collapse, the study and practice of psionics was officially outlawed in the Imperium, due in part to covert subversion of the Psionic Institute by the Zhodani Consulate. Although all vestiges of Imperial authority have been swept away, old habits die hard. There is still widespread hostility toward psionic practice, particularly in the Wilds, where superstition and ignorance are powerful generators of hatred.

Activities of surviving psionic organizations have done much to inflame hostility toward them by governments, as well. After generations of suppression by governments, clandestine psionic cells developed deeply ingrained animosity toward government, and in many areas this became an unconscious part of psionic training. Thus, government suppression of psionics forced institutes underground, and their illegal status attracted people alienated from government and forced them into contra-legal behaviors. Now the fear of their activities by governments is often justified, as they have sometimes become centers of antigovernment resistance, mixing strong doses of libertarian or anarchic philosophy with their scientific and educational activities.

In some areas, particularly in the Wilds, their activities have become even more extreme. Some groups have developed a philosophy of human evolution based on the belief that psionically talented individuals constitute the next step in human development. More extreme adherents of this philosophy believe that psions are superior beings, entitled to rule by their special gifts, and above any moral or legal principles laid down by their non-psionic "inferiors."

Some worlds in the Wilds have been taken over by psions, who rule as tyrannically as do the petty kings who hold power by virtue of a technological monopoly. On other worlds they have become powerful forces in the criminal underground, or have formed secret mystical terror societies, such as the Assassins of the Middle East or the Tongs of Far East.

On many primitive worlds, psions are feared or persecuted as witches, and often believe themselves to be witches or wizards.

As a general rule, psionics is either severely regulated or outlawed on High Law worlds, and on other worlds the activities of Psionic Institutes are usually limited both by official hostility and the psionic group's own insularity and paranoia.

Accurate information about psionics or quality training in psionics can be acquired only at branches of the Psionic Institute. This institute is wholly devoted to the study of mental powers. Because of the prejudices which exist in human space, the Institute maintains a low profile, and it is quite difficult to locate its facilities. Any world with a population code of High Pop (9) or greater may have a branch established on it (roll 2D6 for 11+ for a branch to exist; DM +1 per level of population above 9).

Although a branch may exist on a world, it still must be located. Finding a branch on a world is an uncertain, Difficult test of Streetwise, and the search takes about a week. A Catastrophic Failure indicates a violent encounter with anti-psionic local officials or a mob.

If the local branch is located, there is some chance (7+ on 1D10) that the branch is some distance away and will require a long trip to reach it.

Because this task is uncertain, the Institute may not actually exist on this world. A Psionic Institute definitely exists on this world only if the referee's hidden roll succeeds.

Branches of the Institute perform two principal functions: administering the examination for psionic potential, and providing training in the use of psionic talents. Both services are provided for a fee. The fee goes to support other activities of the Institute, which may be illegal or even treasonous, at the referee's discretion. There is considerable potential for adventures and terrific roleplaying situations based on the relationship of the Institute with the local government and society, and referees would be remiss if they treat this experience as nothing more than a series of die rolls to determine new skills and abilities.

Psionic Strength

The Institute's comprehensive examination provides a measure of personal Psionic Strength. The process takes two weeks' time. In more civilized times, when there was a thriving interstellar economy, the cost associated with this process was Cr5000. Nowadays this arrangement will vary considerably based on local conditions. In some cases an oath of service in kind to the Institute is required, and on worlds where the Institute is deep underground, it is typically required that the applicant join the organization and swear a blood oath to never reveal its existence to outsiders. Convincing the Institute to grant a free examination is

a Difficult test of Charisma (Persuasion asset may be used if possessed), but some form of nonmonetary service will most likely be required. Considering the likelihood of telepathy being used in the interview, PCs would be unwise to attempt to mislead the institute as to their true situation.

Examination: Each character has a basic psionic potential defined by a 2D6 roll.

Age lessens psionic potential unless training is undertaken. A DM of –1 is applied for each block of four years age above 17. These blocks correspond to the aging cycles. For example, a character who takes the examination at age 23 is in his second four-year block, and has a DM of –2. Roll 2D6 and apply the DM. The result is the character's Psionic Strength rating. The examination may only be taken once per character.

The personal Psionic Strength may range from 0 to 11. Ratings of 12 or more cannot be attained naturally once a character has passed beyond age 17; they may be achieved temporarily through the use of psi-drugs (see page 258). The maximum possible rating is 15.

Racial Variation: Certain races are naturally more or less prone to possessing psionics than others. Some, like the Zhodani, are merely adept at identifying and cultivating these talents at an early age. Others, like the Aslan, have less potential than humans, while the Hivers have no psionic potential at all. The psionics rules presented here are for characters of Solomani and Vilani descent (and all other human offshoots other than the Zhodani).

Aging and Deterioration: Untrained characters are subject to a gradual relentless deterioration of the Psionic Strength indicator. When the aging point occurs (every four years), Psionic Strength is reduced by 1. If the character has been taking anagathics, use the apparent age rather than the actual age to determine the reduction in rating for that particular character.

A trained individual is not subject to reductions through normal aging. If, through aging, permanent injury, or any other cause, the sum of a character's (trained or untrained) first four characteristics (Strength, Agility, Constitution, and Intelligence) is reduced to less than his or her Psionic Strength rating, the Psionic Strength is reduced to that sum.

Psi-drug abuse can also reduce Psionic Strength (see Psi-Drugs, page 258).

Psionic Frequency in the General Population: The procedure for determining Psionic Strength above is an abstraction allowed for player characters, and does not imply the same frequency of psionic potential within the population at large. If it did, this would imply that each and every human would have a Psionic Strength of at least 1 if tested at 16, which is simply not the case. The presence of psionic capabilities in NPCs is entirely at the discretion of the referee, but is typically quite rare.

STAGES OF PSIONIC SUCCESS

Power Level	*Stage*
0 or less	No Effect
1-9	Basic Success
10-18	Stage Two
19-27	Stage Three
28-36	Stage Four
37-45	Stage Five
46-54	Stage Six
55 or more	Stage Seven

Power Level = Psion's PSI Attribute + Skill Level + 1D10 – (Target's Willpower Skill Level + INT).

If Outstanding Success, final power level is doubled.

Psionic Tasks

Personal Psionic Strength, once determined, is treated as a seventh attribute, abbreviated as PSI. All Psionic tasks are conducted using various Psionic skills (below) added to the Psionic Strength of the character as assets.

Psionic Success: One additional rule applies to the use of Psionic skills, to reflect the varying effects these skills can have under different conditions. When a zcharacter makes a task attempt with a Psionic skill, if the attempt is successful, 1D10 is rolled to determine the exact *power level* of the success. This power level is equal to the Psionic skill rating, plus the personal Psionic Strength, plus the number rolled on D10, minus the Willpower asset of the target (if any—targets with no Willpower skill have no default Willpower asset, and make no subtraction). If the target's Willpower reduces the power level to 0 or less, then the skill attempt fails. Not all Psionic tasks are affected by the target's Willpower—only those which attempt to interact with a sentient being. Most animals and inanimate objects have no Willpower. (But the referee should feel free to create unusual animals which do have Willpower and are resistant to psionic interference.) If an Outstanding Success is rolled on the Psionic task, the final power level total (after subtracting the target's Willpower, if any) is doubled.

Power level is used in two different ways. Sometimes it is translated point for point into a unit of measure, such as range of effect in meters, or number of kilograms affected, etc. At other times, it is used to determine *stages* of effect as shown on the Stages of Psionic Success table. Each extra stage indicates another creature detected, or another sense appealed to, etc. The exact effects depend, of course, on the specific skill being used, as explained in the individual skill descriptions.

Because many Psionic tasks are by their nature uncertain, the referee should keep the power level secret so that the player is unsure of the exact level of success that was achieved. This may be done by rolling the power level D10 secretly, or simply not letting the player know what the target's Willpower asset is. For example, a PC who succeeds at Project Thought (below) will not immediately know how clearly the message is getting through to the target, and may want to make sure to clearly communicate a simple important sentence first, before going into the theatrics of a ghostly apparition.

Difficulty Levels: As a general rule, Psionic skill attempts are Average when done under relaxed conditions, such as in a safe and peaceful environment, and with willing subjects. In normal conditions—for example, standing on a public street—they become Difficult, due to general distractions and normal resistance. In a stressful condition, such as during combat, they become Formidable. Psionic tasks reach the Impossible difficulty level under incredible stress—for example, while critically wounded, falling from a cliff, or being physically tortured. The referee, of course, has the final word in determining which conditions apply to any specific Psionic skill use.

Psionic Range and Barriers: Psionic activity is influenced by the range at which it is performed. A greater level of psionic power is required to do Psionic tasks at greater ranges. Psionics have so far proven incapable of interplanetary ranges.

Range refers to simple straight line distance. Psionic activity, at the ranges given, is effectively instantaneous and is not affected by intervening matter. However, electromagnetic effects can prevent certain psionic activities, such as telepathy. Because brainwave activity is what is being read by psionic telepathy, and brainwaves are an electrical phenomenon, electromagnetic interference of the right parameters can "jam" psionic probing. This can happen accidentally—for example, someone standing in close proximity to a high-powered electrical generator would be immune to telepathic probes or attacks. This principle has been harnessed to create psionic shielding. In its simplest form, it is a small helmet that completely encases the head (requiring a clear visor in front) and generates a weak electrical field at the same wavelength as human brainwave activity. Vehicles, buildings, or even individual rooms can be psionically shielded as well, by the same principle.

PSIONIC BASE DIFFICULTY LEVELS

Situation	*Task Difficulty*
Relaxed Environment	Average
Normal Stress	Difficult
Great Stress, Combat	Formidable
Incredible Stress	Impossible

Psionic Use and Fatigue: Any four-hour period in which a character conducts any psionic activity is treated as hard work for purposes of fatigue. (See Wilderness Travel & Encounters, page 198, for discussion of fatigue.)

Psionic Training

The Institute will train individuals in the use of their latent talents. Training requires four months. As with the examination fee above, its cost was around Cr100,000 during better times. Now it is almost certain that training will require a personal or in-kind commitment to the Institute. Extremely talented individuals (PSI 9+) may apply for a scholarship if they cannot otherwise afford training. In such cases the Institute will

THE PSIONIC SUPPRESSIONS

Between 772 and 798, a series of financial, ethical, and moral scandals within the Psionic Institutes of the Imperium shifted public opinion against the Institutes. At the same time, it became clear that a good number of the Institutes were under the control of the Zhodani Consulate. In 800, the Imperium moved against the Institutes, canceling their charters, jailing their leaders, and passing laws restricting the teaching or practice of psionics. These Psionic Suppressions had a profound influence on Imperial opinion. Over the course of 26 years, the Suppressions equated psionics with the Zhodani and established in the average Imperial citizen a distaste for both that continues to the present day.

Psionic Institutes are organizations devoted to research and training in the psionic sciences. Such organizations have long existed, but reproducible results made psionics a teachable, learnable science only as recently as –1000 Imperial.

The term *Psionic Institute* is a generic one; each institution is independently organized and maintained. All such Institutes are supported by that portion of the general population which has psionic talents; because the proportion is small, Institutes are viable only on High Population worlds.

The number of Psionic Institutes in the Imperium in 800 (when the Psionic Suppressions hit) was 65; all were suppressed. By the Collapse, most of them had been secretly re-established, and dozens of additional Institutes had been formed. In the area of Daibei Sector under the control of Duke Craig, the Psionic Suppression orders had been repealed in 1129, and several Institutes were reestablished or legitimized. Many of these Institutes perished during the Collapse, but significant numbers survived. In the Regency, First Regent Norris also repealed the Psionic Suppressions, and the Psionic Institutes there are legal and thriving in the year 1200.

The climate of public opinion, except in the Regency, about psionics remains extremely negative. Individuals will find it unhealthy to admit possession of, or sympathy for, psionic powers. Persons with psionic ability will not admit their powers unless reassured that they are in no danger; this will usually involve self-revelation by a psionic talent.

PSIONIC SKILLS CLUSTER

- Telepathy (cascade) (PSI)
  - Telempathy
  - Project Emotion
  - Project Thought
  - Willpower Drain
  - Life Detection
  - Shield
  - Probe
  - Assault
- Teleperception (cascade) (PSI)
  - Sense
  - Clairvoyance
  - Clairaudience
- Telephysics (cascade) (PSI)
  - Cryokinesis
  - Pyrokinesis
  - Telekinesis
- Teleportation (PSI)
- Self (cascade) (PSI)
  - Suspended Animation
  - Orientation
  - Psionically Enhanced Strength
  - Psionically Enhanced Constitution
  - Regeneration
- Arcana sub-cluster
  - Computer Empathy (PSI)
  - Psionic Healing (PSI)
  - Prescience (PSI)

make some sort of arrangement—for example, requiring a year or so of service from the character, or 95% of the character's assets. Note that the Institute will not likely make such an arrangement with someone who does not plan to stay on the world. After all, such training of talented persons is their way of creating a body of psionic help they can call upon in times of need.

The Six Psionic Talents: Philosophers of psionic science have identified six areas of talent and learning into which all psionic knowledge fits (although one of the categories consists exclusively of talents which mostly have nothing more to do with each other than that they fit in no other category, indicating that psionics is still not a mature field of science).

The six areas of talent are Telepathy, Teleperception, Self-Awareness, Telephysics, Teleportation, and Arcana. Although there are six possible areas of psionic activity, no one person will usually be capable of activity in all areas. In training, characters will learn those areas in which they have ability or potential and those areas in which they have no talent at all. Each area of talent except Arcana and Teleportation is represented by a cascade skill. As with all cascade skills, knowledge of one specialty in a cascade skill allows some knowledge of all of the other abilities in that cascade. Arcana is not a Psionics skill, but rather a cluster of unusual skills within the Psionics skill cluster. (See the Psionic Skills Cluster table above.)

Roll 2D6 successively for each of the six talents listed in the Psionic Talents table. The indicated roll must be achieved in order to have ability in that area. A DM must be applied to each roll: The rolls may be made in any order, but there is a DM of –1 on the first roll, –2 on the second roll, –3 on the third roll, and so on. A character who is extremely anxious to understand Telepathy should throw for that talent first.

PSIONIC TALENTS

Psionic Talents	*Required Roll*
Telepathy	5+
Teleperception	6+
Telephysics	6+
Self	7+
Teleportation	9+
Arcana	9+

Effects of Training: The training sessions merely acquaint the character with the possibilities of psionic talents and impart a rudimentary control over them. For each of the psionic talents received in training, the player has a level 0 skill in that cascade skill.

For example, Yaj the fledgling psion rolls a (7–1=) 6 for Telepathy, (8–2=) 6 for Teleperception, (4–3=) 1 for Teleportation, (11–4=) 7 for Self, (10–5=) 5 for Telephysics, and (7–6=) 1 for Arcana. This means that Yaj has skill level 0 in each of Telepathy, Teleperception, and Self. Because the skill level is 0, Yaj does not yet have to choose his specialty cascades in these skills, and will not have to do so until the skill level goes from 0 up to 1 (see Experience below).

Training also instructs the character in the methods of concealing their powers and in the dangers of allowing common citizens to know of their power. When training is completed, the Institute is incapable of further assisting characters in their psionic development. From that point, all depends on experience and fortune.

It is possible for a character to have a very high Psionic Strength rating and, nonetheless, turn out very badly in training, discovering that he has few or no specific abilities. It is also possible to discover that a character has a rudimentary talent in a field but a low Psionic Strength which limits the chances of success with the tasks in that field.

Psionic training is not available in the services, nor is it available from any source except the Institute.

Unskilled Psionic Tasks: There are no unskilled default tasks permitted for Psionic tasks. No character may ever attempt a Psionic task without a skill level of at least 0 (in the case of a freshly trained character) in the appropriate skill. Note that a 0 level Psionic cascade skill allows all of the subskills of that cascade to be used at level 0.

Experience

When characters finish their initial training, they have

a basic awareness of their psionic potentials. Before the training, their psionic potential was something within them of which they were at best vaguely aware, and which they had certainly not examined to any useful extent. Psionic training enables characters to perceive these talents and exercise them, allowing them to become stronger. As characters become more familiar with their talents, their skills gradually increase.

Experience and hard work will allow the character to learn how to use greater levels of power. Psionics skill levels can be increased by spending Psionics experience points to buy higher skill levels, using the rules in Rewards and Experience on page 133.

Psionics During Character Generation

The rules on psionic examinations and testing above are for player characters who seek out psionic training after character generation is complete and play has begun. A few rare careers (such as psionic researcher) actually allow the receipt of Psionic skills during character generation. In this case, the psionic examination as discussed above is administered immediately upon entry into the career, at no cost to the character. The character does not undergo the psionic training step, however. Instead, term skills can be taken in Psionic skills as indicated by the appearances of the Psionics skill cluster in the career descriptions. Each receipt of a skill from this cluster allows the player to select a skill from this list.

PSIONIC SKILLS

Psionic skills are treated like any other skill in **Traveller: The New Era**. The controlling attribute for all Psionic skills is, of course, PSI. Most of the Psionic skills—namely Telepathy, Teleperception, Telephysics, and Self—are cascade skills. This means that the selection of one of these skills obligates the player to choose a specialty from that skill's sub-areas. The overall level of the skill then becomes the level at which that specialty is used, but the player can also use any other specialty of the skill at one-half the specialty level. Thus a character who has four skill levels of Teleperception with Clairvoyance as the specialty uses Teleperception (Clairvoyance) at skill level 4, and Teleperception (Sense) and Teleperception (Clairaudience) at skill level 2.

Telepathy

Telepathy is the ability to contact other minds directly. In rudimentary forms, it allows the communication of feelings and emotion; in advanced forms, it allows the transfer of information. The Telepathy skill includes the following cascades:

Telempathy: Success in the Telempathy task allows a character to perceive the mental and emotional state of other other creatures. The exact amount of information gained depends upon the quality of the psionic character's success and the type of creature that is being scanned.

Basic Success reveals the presence and basic emotional state of one creature (person or animal) within a sphere centered on the sensing character and with a radius, in meters, equal to the character's final power level.

Each additional stage of success allows the psionic character to improve that information in one of several ways: (1) The radius of the sphere can be doubled. (2) If dealing with simple animals, reveal the presence of all animals of a single species. (3) An additional intelligent being can be sensed. (4) The level of mental activity sensed in a single target creature can be increased, proceeding from the target's emotional state, to its surface thoughts, to deeper thoughts. (Naturally, some animals do not have deeper thoughts, or even surface thoughts, only instinctive drives that the referee should treat as emotions for purposes of Telempathy.)

For instance, a psionic character who made a Stage Three success might choose to monitor three people's emotional states within the basic radius, or one person's surface thoughts within double the basic radius, or any of several other combinations.

The major hurdle in perceiving another mind in **Traveller** is the problem of separate evolution. It is always easier to perceive the mental patterns of a mind that comes from the same evolutionary origin—in other words, a being that evolved on the same planet. Because such creatures share the same ultimate ancestors, they share basic neurological structures, and hence similar thought processes. The brain of a creature with a completely different biological origin, shaped by different evolutionary processes, will be difficult to understand. It is *alien*. From the standpoint of a human observer, there are levels of alienness. Each of these levels of alienness reduces the stage of success of the task by one level.

Description	*Stages of Success Lost*
Nonintelligent animal	1
Separate evolutionary path	1*
Very alien evolution	2*

*One or the other only, not cumulative

Of the major races, the Hivers and Droyne are considered to have very alien evolution from a human telepath. The Aslan and K'kree are only a separate evolutionary path. And, of course, the Vargr, Zhodani, Vilani, Solomani, and all minor human races are from the same evolutionary path and lose no stages when



attempting Telepathy with each other. (However, human telepaths report that they often feel the need to yell at squirrels soon after having made psionic contact with a Vargr subject.)

Thus, telempathic contact with an Aslan—an intelligent creature from a separate evolutionary path—would cost a human telepath one stage of success. A nonintelligent animal that evolved on Kusyu, the Aslan homeworld, would cost two stages, one for being nonintelligent, and one for its separate evolutionary origin.

Note that the referee may impose additional levels of difficulty based upon specific situations.

Telempathy is also important because it is the basis of several other cascades of Telepathy. Project Emotion, Project Thought, Willpower Drain, and Psionic Healing (under Arcana, below) all require that first a successful Telempathy roll be made in order to establish a telempathic link to allow those skills to be used. The success stage of this task then becomes the upper limit of the success stage of any subsequent task using that psionic link.

For example, a character with a Telepathy asset of 12 (PSI 7 + skill 5) and a primary Telepathy specialty in Project Emotion wishes to attempt Project Emotion on an animal, so must first make a Telempathy roll. His Telempathy skill is at half of his Project Emotion skill, so gives an asset of (7+[5÷2, rounded down to 2]=) 9. The conditions are normal stress, so the task is Average (2 ×Telempathy asset = target number of 18). He rolls a 12, so succeeds at the Telempathy roll, and rolls a 6 on the power level roll, giving a final power level of (7+2+6, with no subtractions as the animal has no Willpower=) 15, for a Stage Two success. Now he attempts the Project Emotion task. The conditions are still normal stress, so difficulty remains Average (2×Project Emotion asset = target number of 24). He rolls a 2, which is sufficient for Outstanding Success. He rolls a 9 on the power level roll, which gives a final power level of (7+5+9, with no subtractions for Willpower=21, which is then doubled for the Outstanding Success =) 42, or a Stage Five success. However, the animal is not intelligent, and evolved on a different planet from the character, which subtracts a total of two stages of success, which results in a Stage Three. Unfortunately, the psionic link's success of Stage Two limits the Project Emotion success to Stage Two as well, so the additional stage of success is wasted.

Project Emotion: Success at the Project Emotion task allows a character to use a psionic link to instill emotions in other creatures. This ability serves well in the handling of animals and beasts of burden, but may also be applied as a psychological weapon against intelligent beings. Sending emotions such as love, hate, fear, and so on may influence other beings.

In order to use this skill, first a psionic link must be established, by using Telempathy. The stage of success of this task then serves as a limiter of success for the Project Emotion attempt. Note that if the target's Willpower rating causes the attempt to fail (lowering the power level to 0), the target will feel the emotion but will recognize it as originating from outside themselves.

Basic Success with this skill means the target must make an Easy test vs. Intelligence to avoid acting the emotion out (running or cowering if frightened, arguing or fighting if angry, etc.). Each stage of success beyond Basic increases the difficulty of the target's Intelligence save by one level.

Project Thought: Like Project Emotion, Project Thought requires a pre-established telempathic psionic link in order to be effective. Only simple thoughts may

be communicated to nonintelligent animals ("climb the tree" or "bite the man," for example). With sentient targets, the amount and quality of information communicated depends upon the success of the psionic character's attempt (which is itself limited to the success stage of the prior telempathic link). Basic Success means that a single, simple sentence may be communicated (as with animals, above). A Stage Two success allows the psion to project a ghostly (transparent, two-dimensional) vision. Stage Three makes this vision opaque and three-dimensional. Stage Four adds auditory hallucination, and Stage Five appeals to all senses. A Stage Six success allows the psionic character to control the target like a puppet.

As with Project Emotion, if the target's Willpower reduces the power level of a Project Thought attempt to 0, the target will recognize the thoughts as originating from someone else.

Life Detection: The most elementary form of Telepathy is the ability to detect the presence of other minds. Life Detection enables a character to sense the presence of other minds, the number of minds present, the general type of minds (animal, human, etc.), and their approximate location.

Basic Success reveals the presence of all other minds within a sphere centered on the sensing character and with a radius, in meters, equal to the character's final power level. Each additional stage of success allows the radius of the sphere to be doubled.

Life Detection is reasonably sophisticated and can "ignore" bacteria or unimportant animals in the area. It functions best in detecting intelligent minds. Psionically shielded minds (whether shielded by the Telepathy sub-skill Shield or by electromechanical psionic shielding) are invisible to Life Detection. If an individual whom the telepath knows is "life detected," he or she will be recognized. This is rolled as an uncertain task: On a result of *some truth*, the character misidentifies some of the detected life forms.

Willpower Drain: Sometimes, in order to succeed at a psionic attack, a character first has to overcome a victim's Willpower. The Willpower Drain task allows a character to do so. It requires an Average opposition test of the attacker's skill level (not asset) minus the target's Psionic Strength, and each stage of success reduces the target's Willpower skill level by 1 point for the duration of the encounter. Once the Willpower skill has been reduced to 0, additional reductions are *not* taken from the target's INT attribute. Often, several successive attacks are required to "soften up" the target sufficiently for other Psionic skills to have a chance of success.

Note that when a character's Willpower skill level is reduced to 0 by Willpower Drain, the character has no Willpower *asset* for the duration of the encounter. Characters (PCs and NPCs) who have been assigned a Willpower skill level of 0 *do* have a Willpower asset (INT+0=INT) so long as they are not hit by a Willpower Drain. Basic Success in a Willpower Drain task is sufficient to invalidate the Willpower asset of a character with skill level 0. (This means that for the purposes of Willpower Drain alone, Willpower skill level 0 and 1 are the same.)

Depending upon the circumstances, the referee may choose to adjust the Willpower Drain's difficulty level upward or downward to account for such things as a wounded defender or attacker, a captive target, etc.

Shield: This is the first skill most psions learn, and is ingrained as a conditioned reflex to attack.

The stage of success of the Shield skill is added to the subject's Willpower for the purposes of resisting psionic mental attacks: assaults, telempathic attacks, and probes (Basic Success adds 1, Stage Two adds 2, etc.). Shield does not work against such things as Pyrokinesis or Cryokinesis (see Telephysics, page 253), as these act on the target's physical body, not its mind. In addition, a psionic with his shield up cannot be detected by Telempathy, Sense, Life Detection, or other mind-scanning forms of psionic detection. Shielded psionics can be detected by Psionic Clairvoyance or Clairaudience just as any other object can.

While using Shield, the psion cannot use any other psionic powers, as it requires concentration to keep the shield up. The exception is that the psion can "transfer" the shield to another person with whom the psion has established a telempathic link, protecting that person, even if that person has no Willpower asset. Once the link is in place, the shield can be erected in the next combat turn, and then transferred in the following turn.

Example: Yaj has a Willpower asset of 10 and Telepathy (Shield) asset of 12. Expecting trouble, he activates his shield, achieving Stage Three success (12+1D10 roll of 7=19) so that any psionic attacks that succeed against him have their power levels lowered by (10+3=) 13 points. Later, Yaj establishes a telempathic link with Captain Kabuki when they both come under psionic attack. As Kabuki was earlier hit by a Willpower Drain, and now has no Willpower asset, he needs help. Yaj raises a new shield, this time with only Stage Two success, and transfers the shield to his captain. With Yaj's shield protecting him, Kabuki now subtracts 2 points from psionic attack power levels.

Probe: The application of great Psionic Strength will enable a telepath to delve deep into the mind of a subject and then to read his or her innermost thoughts. Basic Success allows probe of a character in physical contact with the character attempting the task. Stage Two success allows a successful probe of a character

within one meter. Each additional stage of success doubles the range.

An individual undergoing a mind probe is aware that her mind is being invaded, and she is very uneasy about it. Questioning can be used during a mind probe to force the subject to divulge specific information. The prober can easily determine deliberate untruths told (thought) by the subject. Probe cannot be used against a shielded mind.

If a Catastrophic Failure occurs on this task, apply 2D6 temporary hits to the head of the character undergoing the probe. If these hits exceed one-half of the character's head hit capacity, the character goes into a coma, and any further mind probes are useless. The character will regain consciousness in 1D6 hours, with no permanent damage, but with a bad headache. If the hits equal the hit capacity, the character will only come out of the coma with medical help, and if they exceed the head's hit capacity, the character dies of massive brain hemorrhaging.

Assault: Violence may be dealt by a telepath. Basic Success stuns a target in physical contact with the assaulting character. Stunned characters may not engage in any activity for 1D6 combat turns.

Each additional stage of success allows the psionic character to increase this result in one of several ways: (1) The range of the attack may be increased, the first additional stage increasing it to one meter and each stage thereafter doubling it. (2) An additional person can be assaulted. (3) The level of mental damage can be increased, proceeding from stun to unconsciousness (for 1D6 minutes), unconciousness (for 1D6 hours), coma (for 1D6 days), and death.

Minds that are shielded by artificial (electromagnetic) psionic shields subtract an additional 15 points from the attacker's psionic power level roll when they are targets of Psionic Assault; telepaths may subtract their Telepathy skill, in addition to their Willpower, from the attacker's power level roll when hit by Psionic Assault.

Teleperception

Teleperception is the general talent which allows a person to sense events at some location displaced from the viewer. It is sometimes colloquially referred to as "clairvoyance" or "clairaudience."

Teleperceptive abilities allow eavesdropping as well as spying and detection-free exploration of situations. While telepathic Life Detection will determine the presence of living minds in a closed room, using teleperceptive Sense will determine if a room is occupied or empty. Teleperceptive activity generally cannot be sensed by others (including other psionic individuals).

Most Teleperception tasks have uncertain results. This does not refer to the referee secretly rolling for *no truth*, *some truth*, or *total truth* (although this is appropriate for the Sense task). Rather, this means that the player will not immediately know the power level or stage of success of the task, but must must "push the edge of the envelope" to find out how successful the task was. For example, with Clairvoyance, below, stages of success can be traded for additional range or radius of vision. A character who is interested in seeing something a fair distance away must first see if she can push her "visual footprint" out to the range desired, and once she has reached the desired point, can attempt to expand the radius of that footprint. At any point in this process, she may run out of success stages, and the referee would inform her, "You can't see any farther than that," or "Your vision starts to fade out beyond that point." Furthermore, each step of increasing range or radius of vision (where a step equals the increase in performance allowed by one stage of success) takes at least one combat turn. These steps can take longer at the referee's discretion, especially if the step of increased performance is a particularly large one that would take the character more than a mere five-second combat turn to absorb.

If a Catastrophic Failure occurs on a Teleperception task, the referee might rule that the attempt has been somehow noticed by other psionic individuals.

Clairaudience: This allows the psion to hear things beyond normal hearing distances, even through sound-deadening obstacles. The psion must concentrate and do nothing else while using this power (Exception: A psion can use Clairvoyance [see next entry] in conjunction with this power), and must know the location of the target point he or she wants to hear. The amount of area listened to and the range from the psion at which the listening can be done depends on the level of success. The psion hears an area with a basic radius of his or her Clairaudience asset in meters, at a distance away of his or her Clairaudience asset in meters.

For each stage of success above Basic, the psion may: (1) Use the stage to double the radius. (2) Use the stage to increase the range of Clairaudience by multiplying it by 10 (two stages used in this way multiply the base range by 10×10 or 100, three stages multiply by 10×10×10 or 1000, etc.). Or (3) use a combination of options 1 and 2.

For example, a psion with a Teleperception (Clairaudience) asset of 12, applying every success from a Stage Six success to range, could hear something (Stage Six equals five stages above Basic, for 10^5 times the basic range = 1,200,000 meters) 1200 kilometers away, within a spherical radius of 12 meters. Or, if she wanted to use these in combination, she could take two stages for radius and three for distance to get a radius of (12×2×2=) 48 meters at a distance of (12×10×10×10=) 12,000 meters or 12 kilometers.

The Clairaudience remains in operation at that target point unless and until the psion breaks concentration. This break of concentration can be voluntary or forced by wounds. If the psion suffers damage, he or she must make a Willpower check to maintain concentration. Scratch wounds require an Average test; slight wounds require a Difficult test; and serious wounds require a Formidable test. Critical wounds automatically cause the psion to break concentration.

Clairvoyance: The psion "sees" with his mind's eye a vision of distant occurrences. Nothing can block this power. The psion must concentrate and do nothing else while using Clairvoyance (although Clairaudience [see above] can be used in conjunction with this power), and must know the location of the target point he wants to see. The amount of area seen and the range depend on the success, using the same procedure as described for Clairaudience, above.

Clairvoyance remains in operation at that target point unless and until the psion breaks concentration. It can be broken by wounds, as with Clairaudience above.

Clairaudience and Clairvoyance can be used as one combined operation. If this is done, use the lower of the two assets to test success and determine power levels.

Sense: The Sense ability is a more rudimentary form of Clairvoyance, but is quicker and easier to use. It allows the character to get a general idea of a location that is separated from the character by obstacle or distance.

The character must have a fairly accurate idea of the location (direction and distance) to be sensed, or the task cannot be attempted. Simple line of sight to the area is sufficient for this.

The range of the Sense skill depends upon the stage of success. At Basic Success, the range is equal to the psion's final power level times 10 meters. At Stage Two, it is the asset times 100 (10^2) meters, at Stage Three it is the asset times 1000 (10^3) meters, and so on. Thus, range at Stage Seven is power level times 10,000 kilometers (10,000,000 meters).

A Sense task is performed at one difficulty level lower than usual Psionic tasks (i.e., Easy in a relaxed environment, Average under normal stress, etc.).

However, the character will become aware of only the most rudimentary characteristics of a location when applying this ability. For example, the description should include gross characteristics only, without detail—"a room containing two dogs"—or with strange details that may or may not have any significance—"a room containing two white dogs," "a wood deck with lawn chair, Hiver, and pineapple." On *some truth*, the character may have misinterpreted details (they are not white dogs, but white toy animals; the pineapple is actually a grenade, or only a photograph of a pineapple laying on the lawn chair). Note that any detail mentioned is always present (white dogs are never really black) in some form, just not necessarily the form the psion originally thought.

Telephysics

Telephysics allows the psion to manipulate the kinetic energy in objects without physically touching them. There are three cascade specialties of Telephysics: Telekinesis, Pyrokinesis, and Cryokinesis. The first, Telekinesis, involves manipulating the kinetic energy in an object on the macroscopic level. By psionically adding directed kinetic energy to an object, the psion can cause the object to move by itself. Pyro- and Cryokinesis both function by altering the kinetic energy on a smaller scale. By increasing the average kinetic energy of the particles of an object, the psion can increase its temperature. By decreasing that same kinetic energy, the psion can make it colder.

Telekinesis: Telekinesis allows the psionic movement of objects of various sizes. Each point of power level allows movement of up to 10 kilograms/meters per combat turn. That is, 1 point can move one kilogram 10 meters, or two kilograms five meters, or 10 kilograms one meter. The character conducting the task must maintain concentration and a line of sight to the levitated object the entire time.

Several telekinetic psions may combine their power levels to lift extremely large objects. If one of them loses concentration or line of sight, but there remains sufficient power to levitate the object, it does not fall, but its allowed rate of movement will be reduced.

Thrown weapons can be thrown telekinetically, but only if there is sufficient power to move the weapon completely to the target in one combat turn at a speed of 100 meters per turn (20 meters per second).

Cryokinesis: Cryokinesis is used to lower the temperature of an object.

The range at which this task can be performed is equal to the psion's final power level in meters.

- Basic Success allows the chilling of objects and people: A cup of coffee goes instantly ice-cold, or people become suddenly cold ("Is there a draft in here?").
- Stage Two success allows up to 20 liters of fresh water to be frozen solid, or the severe cooling of human-sized creatures, causing them to shiver uncontrollably. Movement rates are cut in half, and all physical tasks become one level more difficult.
- Stage Three allows up to 60 liters of fresh water to be frozen solid. The cooling of human-sized creatures becomes more severe: Movement rates are quartered; extremities (fingers and toes) become numb; effective AGL is cut in half; all tasks (physical, mental, and

psionic) become one level more difficult; and hypothermia sets in.

•Stage Four allows up to 120 liters of fresh water to be frozen solid. Human-sized creatures must pass an Average test of Constitution, or else fall unconscious from hypothermia. Those who do not fall unconscious have their movement rates reduced to 10%; effective AGL is quartered; and all tasks become two levels more difficult.

•Stage Five success allows up to 240 liters of fresh water to be frozen solid. Human-sized creatures have 1 point of wounds inflicted to every hit location from frostbite. This is not counteracted by heavy clothing. The effects from Stage Four continue, but the roll to avoid unconciousness becomes Difficult.

•Stage Six allows up to 440 liters of fresh water to be frozen solid. All human-sized targets fall unconscious and slip into comas, and will die within five minutes without emergency medical attention.

If the target has allies with Pyrokinesis abilities, they can counteract one level of Cryokinesis effects per level of Pyrokinesis success.

In the case of lower levels of success, once the peak damage level has been reached, additional tums of concentration will cause repeated infliction of the effects.

In both cases, the attacking psion must continue to concentrate on the target and maintain a line of sight for the entire time. If the psion suffers damage, he or she must make a Willpower check to maintain concentration. Scratch wounds require an Average test; slight wounds require a Difficult test; and serious wounds require a Formidable test. Critical wounds automatically cause suspension of the Pyrokinenesis task.

If the task is interrupted or stopped, the target's temperature increases back to normal at one level per five minutes (60 combat turns).

Pyrokinesis: The Pyrokinesis task is used to elevate the temperature of an object and, in cases of extreme success, set it on fire. At any given level of success, the elevation of temperature is greater in smaller objects than in larger ones, due to the greater concentration of psionic energy.

The range at which this task can be performed is equal to the psion's final power level in meters.

•Basic Success will make a human-sized creature feel feverish, or it can bring one liter of water to a boil. Because of the elevation of skin temperature relative to the ambient air temperature, this level of success can also make the target feel a sudden chill.

•Stage Two success brings 20 liters of water to a boil, and will actually cause blistering equivalent to a bad sunburn on the portion of the target's body nearest the psion (an area in square centimeters equal to the psion's Pyrokinesis asset). This also allows the heating of a small object (steering control, handle, or weapon grip) so that it causes blisters on the skin of any creature that touches it.

•Stage Three success ignites volatile fluids or fumes (such as gasoline or hydrogen/oxygen vapor), brings up to 50 liters of water to a boil, and causes heat exhaustion in human-sized creatures, which makes all tasks one level more difficult.

•Stage Four success ignites easily combustible material, such as paper and dry wood shavings, and causes human-sized creatures to suffer heat prostration. This manifests itself as headache, hot, dry skin, delirium, possible unconsciousness (Average: Constitution to avoid), and all tasks are conducted at two levels more difficult.

•Stage Five success will cause blocks of wood and other combustible material to burst into flame, melt substantial pieces of plastic, and cause explosives to detonate. Living creatures suffer heat prostration (as described above) and suffer 1D6 hits to each hit location.

•Stage Six success causes human-sized creatures to burst into flames.

Success levels higher than Basic require one combat turn per stage to progress. That is, a Stage Six success would start as a hot flash or chill, then produce blistering of the skin the next turn, and so on until the target bursts into flames.

In the case of lower levels of success, once the peak damage level has been reached, additional tums of concentration will cause repeated infliction of the effects.

In both cases, the attacking psion must continue to concentrate on the target and maintain a line of sight for the entire time. If the psion suffers damage, he or she must make a Willpower check to maintain concentration. Scratch wounds require an Average test; slight wounds require a Difficult test; and serious wounds require a Formidable test. Critical wounds automatically cause suspension of the Pyrokinenesis task.

If the task is interrupted or stopped, the target's heat decreases to normal at one level of heat per minute (12 combat tums), unless, of course, it has caught on fire.

Self

Self is the psionic talent which allows awareness of and control over one's own body. Cascades of the Self skill are not capable of affecting others and may not be used for healing or enhancing other characters.

Suspended Animation: Personal body activity may be suspended for varying periods of time. Characters may enter a suspended-animation state (similar to cold sleep in a low berth but without the intrinsic danger of death) by willing themselves into it.

While in suspended animation, characters can go

without need for food or water and with minimal air needs. Such a person could effectively travel in a cold sleep berth without actually undergoing cold sleep and its dangers. The length of hibernation depends on stage of success, with each stage allowing one full week of hibernation. Normally, a person requires 168 person-hours of oxygen in a week. While in hibernation, that is reduced by a factor of 100, so that a person in hibernation will only consume 1.68 person-hours of oxygen in a week.

Characters automatically awake at the end of the specified period of time. Suspended animation may also be stopped at any time, provided external stimulus (such as a friend's voice or a mechanical alarm) is given to awaken the sleeper. Time taken for recovery to full alertness varies with the initial stage of success, so that it takes longer to wake up from a longer period of suspended animation. When characters awake, their Initiative numbers are equal to their normal Initiative minus the stage of success of the Suspended Animation roll (treat results of less than 0 as 0). One Initiative level is regained per five minutes until the normal level is reached.

Orientation: While other Self cascades are based on the character's awareness of his or her own bodily interactions in the present, the Orientation cascade reflects the character's awareness of his or her body's interactions with its surroundings over time. Orientation allows the character to become aware of his or her relationship to other locations on the same world. These locations must be ones that the character has actually visited. Locations with which the character is intimately familiar (his or her home) are rolled at the normal difficulty level; locations which are less familiar become gradually more difficult at the referee's discretion.

Success at this task gives the character sufficient information to allow a Sense task to be made for that location.

The character retains this orientation so long as he or she does not move more than a kilometer from the point at which the Orientation task was made.

Psionically Enhanced Constitution: This cascade allows the psion to temporarily increase his or her Constitution attribute.

The amount that the attribute is raised is equivalent to the stage of success, where Basic Success equals +1, Stage Two equals +2, etc. Under no circumstances may the number of Constitution points gained exceed the character's Psionic Strength attribute, and Constitution may never be increased beyond 15.

This CON increase does not change the assets of a character's Constitution-based skills; these assets remain at the level of the permanent CON. This CON increase also does not allow the character to recompute hit points based on the higher level.

The CON increase is used for normal pure Constitution-related tasks, such as rolls to avoid unconciousness when wounded, and also allows the character to recompute his or her load-carrying capability for the period of effect.

Psionically enhanced Constitution reaches its new level immediately, and remains at that peak for 60 minutes. After that time, it declines at the rate of 1 Constitution point per minute until *1 less* than the normal Constitution level is reached. This Constitution point is regained after eight hours of rest. If the Psionically Enhanced Constitution task is used more than once in 24 hours, the second such attempt ends with Constitution at *2 less*, the third such at *3 less*, and so on. A psion can kill him or herself by attempting enough of these tasks in one day that the attribute ends at 0. Each point is regained after eight hours of rest, assuming the final level was not reduced to 0.

Psionically Enhanced Strength: This cascade allows the psion to temporarily increase his or her Strength attribute.

The amount that the attribute is raised is equivalent to the stage of success, where Basic Success equals +1, Stage Two equals +2, etc. In no case may the number of Strength points gained exceed the character's Psionic Strength attribute, and Strength may never be increased beyond 15.

This STR increase does not change the assets of a character's Strength-based skills; these assets remain at the level of the permanent STR. This STR increase also does not allow the character to recompute hit points based on the higher level.

This STR increase *is* used for normal pure Strength-related tasks (lifting objects), and also allows the character to recompute his or her load-carrying capability and throw range for the period of effect.

Psionically enhanced Strength reaches its new level immediately, and remains at that peak for 60 minutes. After that time, it declines at the rate of 1 Strength point per minute until *1 less* than the normal Strength level is reached. This Strength point is regained after eight hours of rest. If the Psionically Enhanced Strength task is used more than once in 24 hours, the second such attempt ends with Strength at *2 less*, the third such at *3 less*, and so on. A psion can kill him or herself by attempting enough of these tasks in one day that the attribute ends at 0. Each point is regained after eight hours of rest, assuming the final level was not reduced to 0.

Regeneration: This allows psions to rapidly heal their own wounds and injuries. Because the Self cascade only gives psions mastery over their own biological processes, this healing cannot be used on other characters.



Regeneration rapidly heals bodily wounds, infection, or poison effects by accelerating the natural healing process (this cannot cure cancer and similar illnesses, as these draw their strength from a misdirected aspect of that same healing process, nor can Regeneration reduce or reverse the effects of aging). Each stage of success does one of three things: (1) eliminates infection in any one body part; (2) eliminates 1D6 worth of poison damage from any one body part; or (3) cuts the normal healing time of any one wound in half (two stages spent on one wound quarters its healing time, three stages reduces it to 1/8 healing time) to a minimum time of one hour—see the Healing section of the "Combat" chapter, page 289, for normal healing rates. Regeneration may only be used one time for each injured body area.

Note that even though characters rolling a Regeneration task are willing themselves to be healed, they still must subtract their own Willpower assets when calculating power levels. This is because Willpower represents a character's innate, instinctive resistance to being psionically manipulated, and is not a defense that is raised and lowered at will.

Teleportation

Teleportation is a talent which allows instantaneous movement from one point to another point without regard to intervening matter. Psionic teleportation is limited to the movement of the teleported character's body and (for highly skilled teleports) his clothing and weapons.

Teleportation always involves the movement of one's body to another location. Independent items or other individuals may not be moved. A small animal could conceivably be carried as part of a personal load under the task to teleport one's self with equipment.

Teleportation involves certain requirements in order to be completely accurate, as well as to ensure obedience of the laws of physics.

Foreknowledge of Destination: A character must always have a mental image of the destination before teleporting. This image is acquired by personally visiting the location first (including just viewing it from a distance), having the mental image implanted in one's mind (by Telempathy) by another person who has visited the destination, or by viewing the location through Clairvoyance (not *Sense*). The referee may allow a character to teleport to a location that is very well-known to that character following a successful Orientation task.

Energy and Momentum: Teleportation involves serious restrictions on movement in order to assure the conservation of energy and momentum.

On planetary surfaces, teleportation is restricted to jumps of 500 kilometers or less.

Jumps at ranges of five kilometers or more involve disorientation for a period lasting 2D6×10 seconds. Jumps at ranges of 500 meters or more are hazardous; the character is likely to stumble or fall upon arrival (Difficult: Agility to avoid). The character should demonstrate to the referee the specific effects to be expected and then how he will go about avoiding these effects before he attempts to make any jumps at ranges greater than five kilometers. This restriction results from the law of conservation of momentum. On a rotating planet, two locations will have different rotational speeds and directions. A jump from a point on Terra's equator to its antipode (the point directly opposite the original point on Terra's surface) would result in a total velocity difference between the character and his surroundings of over 3300 kilometers per hour.

Changes in altitude (actually all movement to locations of differing gravitational potential) will result in potential energy changes manifesting themselves as changes in body temperature.

A jump of one kilometer straight down will result in a temperature increase of 2.5° Celsius; this is sufficient to cause extreme fever, brain damage, and even death. A jump up will cool the body by the same amount with equally serious results.

To be safe, a jump may not involve an elevation change of more than 400 meters, and multiple jumps should not involve a cumulative elevation change of more than 600 meters in one hour. These problems may be avoided through the use of technological devices: energy compensators, heat suits, and other means. Characters may feel driven to invent such materials, commission their invention, or seek them out from those who already have them.

Basic Success from a Teleportation task allows teleportation of the character, unclothed, for a distance of five meters. Each additional level of success improves the result either by increasing range or increasing the amount of material teleported with the character.

Each stage of success used to increase range multiplies the basic range by 10. That is, a Stage Two success allows teleportation of (5×10=) 50 meters, Stage Three success (5×10×10=) 500 meters, Stage Four success (5×10×10×10=) 5000 meters, and so on.

One additional level of success used to transport material allows teleportation of the character in light clothing. One more level of success allows teleportation with equipment, although no more equipment can be teleported than could normally be worn or carried.

Arcana

Although psionic activity generally lends itself to classification, some talents defy this very classification. Individuals with special talent are capable of some activity which does not fit into the categories above, or which is not described in this book; this latter type of talent is dispensed by the referee after deliberation.

Although unusual and difficult to classify in the above scheme, the following arcane skills have been demonstrated in the former Imperium and surrounding areas.

Computer Empathy: With the Computer Empathy skill, a character can sense the flow of data within a computer or computer network. This allows the character to react more quickly and smoothly to changes in the data flow, making Computer tasks easier. The character must be physically touching a computer (whether keyboard, screen, or processor) in order to initiate the task. When the character makes a test of this skill, psionic power level determines how much the Computer skill is enhanced.

Basic Success means the character can sense the interior workings of the single computer that is being touched, revealing any interior damage or any problem areas in its electronic flow. Stage Two success allows the character to psionically "read" any data the computer is accessing, which lowers by one level the difficulty rating of all Computer tests the character is doing (one can even "read" the computer without looking at the screen). Stage Three allows the character to sense the interior workings of any one computer to which his or her own is connected (by data link), or to "read" all data stored within the computer being touched, even data that is not presently being accessed. A Stage Four success means the character can "read" any data being accessed by a computer that is in communication with the one being touched. Stage Five allows the character to psionically "read" data stored within that distant computer. Stage Six means the character can perform Computer tasks at two levels of difficulty lower than normal (Difficult becomes Easy, for instance).

When dealing with self-aware computers (especially those infected by Virus), this talent is used the same as Telempathy is with an organic sentient being, but the referee will need to assign an effective INT attribute and Willpower skill level to the AI system. When dealing with Virus, Basic Success is enough to determine whether the computer is infected (although the referee may rule that certain infections are so good at hiding themselves that higher stages of success are required to detect them). Stage Six success or better is required to psionically "read" data from a computer inhabited by a noncooperative strain of Virus.

Psionic Healing: Unlike Regeneration above, Psionic Healing allows characters to improve the healing rate for wounds which they *or other* characters may have taken. Basic Success lowers a wound's healing time by one day, and each additional stage of success further

lowers that time by another day (to a minimum time of one hour).

To heal oneself, a psionic healer need merely make a task roll against the Psionic Healing skill. In order to heal another character, the psion must first establish a psionic link by use of a Telempathy task. The stage of success of this Telempathy task then becomes the maximum success stage that can be used in the following Psionic Healing test.

For example, suppose that Grayson, who has PSI 6 Telepathy (Telempathy) 6, and Psionic Healing 5, is trying to treat three wounds on Winfield Jackson, who has an INT of 6 and Willpower of 4. The surroundings are normal stress (combat is over, but the situation is still distracting), so all Psionic tasks are Difficult. Grayson succeeds at his Telempathy task (target number 12, rolls an 8), and rolls a 9 on 1D10 for a final power level of (6+6+9–6–4=)11, a Stage Two success. On his first Psionic Healing test, he succeeds and rolls a 9 on 1D10, just barely scoring a Stage Two success (6+5+9–6–4=10). Rolling for the second wound, he fails the skill test, but not Catastrophically (target number 11, rolls 13). For the final wound, he scores an Outstanding Success (target number 11, rolls 1), followed by a roll of 9 on 1D10, for a Stage Three success (6+5+9–6–4=10, 10×2=20). The first wound's time improves by two days (one day for Basic Success, plus one day for the additional success level). The second does not improve at all, because he failed his Psionic Healing roll. The third also improves by two days, despite the Outstanding Success at healing, because the success is limited by the Stage Two success scored for the telempathic link.

Note that only one Psionic Healing test can be performed for each wound, whether or not it was ultimately successful.

Prescience: Characters with the Prescience skill are prone to receiving impressions of events before these events actually take place. Sometimes this precognition happens days before the events occur. Other times, it is merely a second's worth of warning. Sometimes, the prescience manifests itself as a dream. At others, it comes as a waking hunch. Sometimes the warning is terribly vague. At others, it is crystal clear. The exact results are left to the referee's discretion, based upon story situation and quality of the Prescience power level rolled.

Psi-Drugs

Pharmaceutical means are available to enhance a character's Psionic Strength on a temporary basis. These drugs are as follows:

Booster: The basic psi-drug, booster is available in small one-dose pills. Booster temporarily increases an individual's Psionic Strength by +2. Additional doses of booster have no effect if taken by a character within an hour. The drug-induced additional Psionic Strength will wane and disappear at the end of one hour.

Double: A more potent form of the drug, also available in small one-dose pills. Otherwise identical to booster, double increases Psionic Strength by +4.

Special: The rarest of psi-drugs, special is available only in liquid form and must be taken by injection. Special gradually increases Psionic Strength to 15, at the rate of 1 point per hour. Psionic Strength remains at this level for four hours, and then wanes at the rate of 1 point per hour until Psionic Strength reaches a temporary level of 0. The points then return at the rate of 1 per hour until the character's permanent level is reached, so long as no psionic activity is performed during this recovery period.

Special has some dangers. Roll 2D6 each time it is used. On a roll of 11+, permanently reduce Psionic Strength by 1.

Availability: Because of the anti-psionic history in the areas of the former Imperium, psi-drugs are expensive and are extremely difficult to obtain. Psi-drugs must nearly always be located and bargained for by a character; they are not found in normal trade channels.

Locating a psi-drug dealer in the Wilds is an Impossible test of Streetwise. Most dealers will have only booster; roll 1D6 for the number of doses of booster that are available with a base price of Cr1000. Double will be available on a roll of 10+; roll 1D6–2 for the number of doses of double that are available with a base price of Cr4000. Special will be available on a roll of 12+ on 2D6; roll 1D6–4 for the number of doses available with a base price of Cr10,000. Prices may be higher but will not be lower.

If a Catastrophic Failure occurs, the character has talked to the wrong individual and will be turned over to the police or an angry mob.

Locating a psi-drug dealer in the Regency is only a Formidable test of Streetwise, but psi-drug use is frowned upon by the Regency's Psionic Institutes. Catastrophic Failure indicates that the character is turned in to his Psionic Institute for disciplinary action for abusing his gift.

Pitfalls: The abuse of psi-drugs can lead to the loss of psionic powers and to physical debilitation. If a character takes three doses in three days, there is a chance that a drug overdose will take place within six hours of the last dose; avoiding an overdose is Average: INT. If a failure occurs the character has overdosed and becomes seriously ill, lapsing into unconsciousness and taking 1D6 wounds to the head. Upon recovery from the wounds, make a Difficult: Psionic Strength roll. On a Catastrophic Failure, the character's Psionic Strength rating is permanently reduced by 1.

Robots

Robots are a special class of NPC, capable of certain preprogrammed actions and responses to external stimuli. They are not self-aware, although the more sophisticated ones can simulate self-awareness pretty well. Characters in **Traveller** will most commonly encounter two classes of robot: drudgebots and guardbots. We have provided a sample of each on page 262.

Drudgebots: Drudgebots are worker machines designed to replace humans at boring, dangerous or repetitive tasks. Some are immobile, and work on factory assembly lines. A few are multifunctional and completely mobile. Referees should make use of drudgebots to add interest to the game background.

Guardbots: These are robots specially designed to perform security functions. There are several varieties, varying in cost, sophistication, armament, and armor. We have listed a few of the more common versions in the equipment list. These are covered in considerable detail, because characters will often come into conflict with them.

Running Robots

Referees should treat most robots as equipment. A manufacturing robot that is bolted to the floor is no more interesting to the characters than a drill press or a milling machine. Other robots are capable of movement (cleaning robots, butler robots, etc.), and may be (or at least seem) very intelligent, but their interactions will not normally be important to the action of the game. (It is possible that one of these may have been specially modified by some nefarious NPC, however, and may not be completely what it seems.)

Some robots, however, must be treated as a special form of NPC, capable of a limited range of actions and able to simulate intelligent thought (in the same way that a good computer game can often seem alive). The robot's description in the equipment list will help the referee to get a handle on what each type of robot is capable of and provide clues on how to play it. Some robots are given skill ratings representing their specific programming or special equipment. Robots are unable to improvise outside the parameters of their programming, and are limited to a stimulus-response chain of action. Robots, in other words, are reactive rather than active. A point to bear in mind is that most robots are capable of sending a short-range radio message in response to a set situation: summoning reinforcements, notifying a central headquarters of the presence of intruders, etc.

COMBAT

For the purposes of combat, robots are divided into two broad categories: vehicular robots and nonvehicular robots. The particular category into which a given robot falls is defined in the equipment descriptions. The normal combat rules apply to human-robot and robot-robot fire combat, except as noted below. Melee combat can only be carried out with nonvehicular robots. Nonvehicular robots are assigned attribute numbers to enable their use in melee combat.

Weapons: The weapons installed in robots are identical in performance to those used by the characters, except that the magazine capacities are often larger. Ratings for weapons are included with the individual robot entries.

Melee Combat

Vehicular robots may not engage in melee combat. Nonvehicular robots use the normal melee combat rules, with the following exceptions.

Unarmed Combat: Robots may make strike attacks, escape attempts, or grapple attacks; they may not make diving blows. Unarmed attacks by robots are resolved normally, but the robot uses its Agility rating in place of Unarmed Martial Arts skill.

Armed Combat: Only robots which have built-in melee weapons may make armed melee attacks, and do so with the characteristic of the weapon. A robot with more than one melee weapon can attack with each of them in each turn in which it attacks, unless specifically prohibited by the robot description.

Melee Ratings: Referees may find it necessary to devise their own ratings for reprogrammed drudgebots or the like. For melee combat, robots must have the following ratings:

Agility: This is their chance of connecting with a blow or a grapple attempt and is a measure of the speed and agility of their striking/cutting appendages.

Unarmed Combat Damage: This is the number of hit points inflicted by a simple blow from an arm or other appendage.

Melee Weapon: Not all robots have melee weapons, but those with drills, screwdrivers, cutting saws, welding torches, and so forth do. If they have multiple tools like this, they may have several weapon listings. If the robot cannot use more than one at a time, it should be specifically noted, as the rules say they can attack with each weapon each combat turn unless specifically prohibited in the robot description.

The only function of this weapon name is to enable players to visualize the type of attack. Its game effects are defined by the following three characteristics:

Range: Either short or long. Long covers things on the end of long servo arms, while short covers things mounted close to the torso.

Hit Modifier: Some weapons are clumsier than others, while others have a real advantage. Hit modifiers can be –1, –2, +1, and +2.

Damage: This is the amount of damage the weapon does if it hits. This should be phrased as 1D6 plus or minus 1 or 2, depending. (Melee weapons average about 1D6 damage.)

Fire Combat

Fire combat against nonvehicular robots is carried out according to the conventional fire combat rules beginning on page 272. Fire combat against vehicular robots is carried according to the vehicle combat rules beginning on page 291. To-hit procedures are identical in all cases; battle damage differs, as noted below.

Battle Damage (Nonvehicular Robots)

Nonvehicular robots sustain damage as if they were people or animals. The robot's description will state which column on the Personal Hit Location chart (page 269) is to be used for that robot.

The specific results for robots are:

Head: This represents the electronic center of the robot, and contains sensor systems and the robot's CPU or brain. Slight damage has no effect, serious damage means one sensor system is out of action. Critical damage means the robot's CPU is damaged and the robot is "dead."

Right/Left Arm: Robots with a number of arms other than two require some common sense on the part of the referee. If a robot has only one arm, the right/left designation is unneeded. If a robot has more then two arms, the referee should distribute hits among the arms at random regardless of whether a right or left hit was rolled. Slight damage has no effect (although when moved, the arm may begin to smoke or make grinding noises at the referee's option); serious damage means the arm loses the use of any tools or attached weapons; and critical damage means the arm has been blown off.

Chest: The chest on a robot is where weapons and ammo are kept. Slight damage means one weapon (chosen randomly if more than one is present) becomes inoperative for the remainder of the turn. If no weapons are present, the damage has no effect. Serious damage means a weapon (chosen randomly if more than one is present) is put out of action permanently (if no weapon is present, it represents damage to the fuel or batteries in the abdomen, and the robot's speed is halved). Critical damage means that an ammunition explosion has occurred, and the robot is rendered inoperative (dead).

Abdomen: This represents the power plant of a robot. Slight damage means the robot begins to smoke or make grinding noises (but otherwise there is no effect). Serious damage means the robot is reduced to half speed. Critical damage means the fuel has exploded or the batteries have been hit (drenching the insides of the robot with acid), in either case rendering the robot inoperative.

Right/Left Leg: Legs can either mean a literal leg or another means of propulsion such as a track unit or wheel. As in the case of arms, robots may have a number of legs other than two or four, and leg hits should be distributed at random. Slight damage to a leg/track/wheel has no effect (although again, at the referee's option, smoke and grinding noises may occur). Serious damage reduces the speed by half (per leg), critical damage means the leg is unusable. When 50 percent or more of a robot's legs are unusable, it is immobilized (although all other systems may be operational).

Battle Damage (Vehicular Robots)

With the exception of different specific results, the damage implementation system is the same as that used in conventional vehicle combat. The specific results for robots are as follows:

Crewmember/Passenger: If as a result of a hull hit, this represents damage to the robot's CPU (central processing unit, its "brain"). Minor damage means that each task the robot attempts to perform (firing one of its weapons, sending a message for help, etc.) becomes two levels more difficult. Major damage puts the robot out of action—killing it, in other words. If the result is a turret hit, this represents damage to one of the robot's sensor systems, picked at random by the referee. Any damage whatsoever puts this system out of action (the type of damage is significant only when repairs are attempted).

Radio: This represents damage to a robot's communications equipment. This means the robot falls back on its default programming, and can no longer receive instructions or communications from elsewhere.

Engine: This represents damage to the robot's power plant (either electrical or internal combustion). Minor damage means that the robot can only move at half normal speed, and that it cannot move and fire at the same time. Major damage means that the robot may not move, and can only fire one weapon at a time.

Weapon: One weapon system is destroyed. If no weapon is present in the location damaged, the hit becomes an ammunition hit. If no ammunition is present in the location damaged, the hit has no effect.

Fuel: This represents damage to the robot's power source, either the fuel tank or its rechargeable batteries. Fuel hits are adjudicated as in conventional vehicle combat. Battery hits result in the immobilization of the robot.

Ammo: Ammo hits are adjudicated as in conventional vehicle combat.

Burn Damage

Burn damage against nonvehicular robots is halved, to reflect the fact that machines are harder to damage by heat than people. Being on fire completely destroys IR sensors, however.

Robots in the New Era

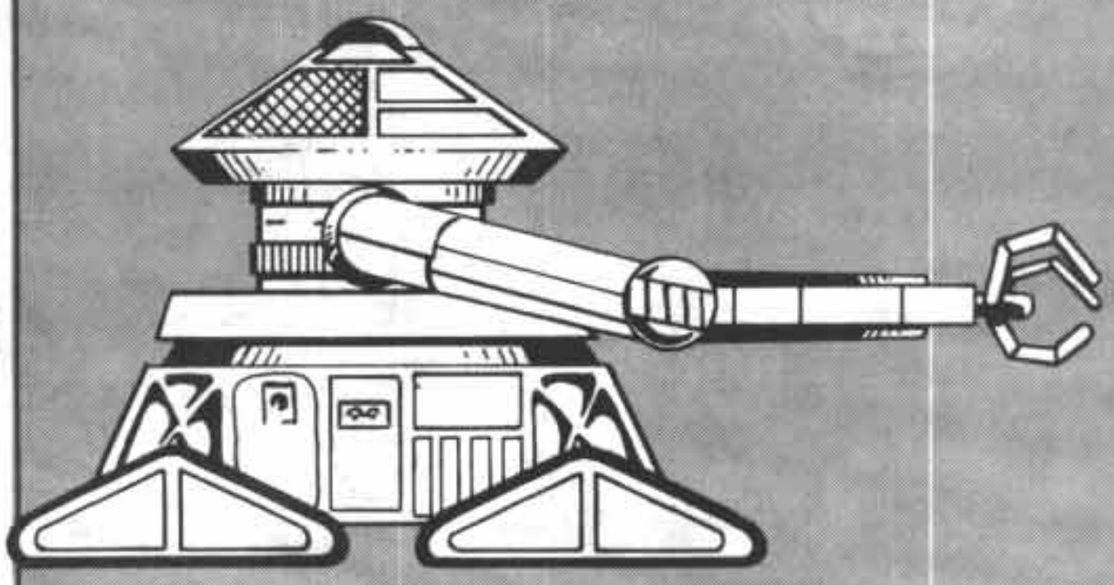
Although there are virtually no robot-production facilities still operational outside of the Spinward States, a substantial number of robots of Imperial manufacture have survived. All of these robots were originally made to carry out a specific function: heavy manual labor, repetitive actions in the manufacturing process, security, agricultural work, transportation, and even personal service. Aside from their original purpose, however, robots can be divided into two critically important groups: dull and aware.

"Dullbots" are those which are still operating under their original design parameters. They are not self-aware and simply follow pre-programed behavior patterns. Sometimes these programs—called expert systems—are quite sophisticated and can provide a fair imitation of a self-aware being. But that is all that it is—an imitation. The robot is nothing more than a machine.

Aware robots are those which have become infected with Virus and which have sufficient internal memory to become self-aware. Robots with insufficient memory simply cease operation upon infection, as do many more advanced models. A significant proportion, however, develop self-awareness and manage to psychologically adjust to it sufficiently to continue to function.

Aware robots provide terrific opportunities to add a bizarre element to your campaign, because all of these beings are, to a greater or lesser degree, mad. A number of typical personality disorders or delusions experienced by aware robots are discussed on page 98, but these are by no means all of the options available. Sometimes aware robots will pretend to be dullbots, and in the case of expert system robots it is very hard to tell the difference. At other times, they will be open concerning their sentience. In any case, it is important for the referee to play these nonplayer characters with imagination and care.





GSBAG-1000

This low, broad, nonvehicular robot is mounted on four treads. The top is a small turret-like structure containing a smoke detector, electronic motion sensor, siren, flashers, a spotlight, a small loudspeaker, and two heavy-duty cargo-loading arms.

The robot was usually programmed to off-load or move heavy goods from one area to another and was very popular in warehousing operations and starports. It also had a limited security ability. It is intended for indoor work, or paved areas such as parking lots where it doesn't have to cross rough terrain.

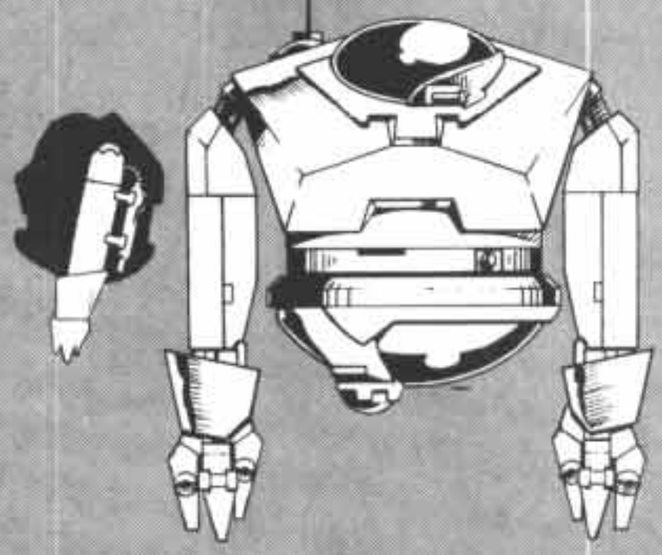
It uses the Biped column on the Personal Hit Location chart (page 269).

Com Move: 15/6
Fuel Cap: 12
Fuel Cons: 6

Armor Values:
Head: 1
Chest/Abdomen: 2
Arms/Legs: 1

Melee Weapons: 2 arms
Initiative: 2
Agility: 2
Strength: 8
Constitution: 6
Assets: Observation 12
Armament: Paint pellet gun
Sensors: IR motion detector, pattern recognition software (video only)
Armor: 1
Wt: 110 kg
Price: Cr500,000
Fuel Type: Hydrocarbon
Mnt: 1

Damage Record
Sight/Sensors: IR Motion Detector ☐ Video Camera ☐
Radio: ☐
Power Plant: ☐
Fuel (% Consumed or Destroyed): ☐☐☐☐☐☐☐☐☐☐
Suspension: Minor damage ☐ Immobilized ☐



LSP PR-317

The Ling Standard Products PR (Police Robot) Model 317 was a widespread security robot in Diaspora Sector before the Collapse. It had a fairly sophisticated artificial brain and weaponry which allowed a graduated response to a variety of security situations. It resembles a 1.5-meter-tall clam with two manipulative arms to restrain tranqed suspects and a small weapon mount attached to each side under the arm.

This is a gravity-suspended robot which relies on small ducted fans for maneuverability. It has several magnetic arms which can extend from the chassis to grip walls and secure the robot's position. (The ducted fans do not have enough power to overcome an average human's strength.)

This robot is powered by internal batteries which require recharging approximately every four days.

The PR-317 uses the Biped column of the Personal Hit Location chart (page 269), but disregards Leg hits.

Com Move: 30/18
Endurance: 100 hours

Armor Values:
Head: 4
Chest/Abdomen: 6
Arms: 4

Initiative: 6
Agility: 4
Strength: 14
Constitution: 10
Assets: Observation 15, Slug Weapon (Slug Pistol) 13, Energy Weapon (Energy Rifle) 13, Armed Martial Arts 13, Unarmed Martial Arts 13
Armament: Chemical projector, paint pellet gun, tranq dart gun, integral 9mm Tranq-8
Sensors: IR motion detector, voice/pattern recognition software (audio/video, UV included), ultrasonic and subsonic sound detectors, white light spotlight, IR/UV spotlight, ultrasonic motion detector
Price: Cr1,750,000
Fuel Type: Electricity
Veh. Wt: 240 kg
Mnt: 1

Weapon Data

Weapon	*ROF*	*Dam*	*Pen*	*Bulk*	*Magazine*	*Short Rng*
10mm Tranq-8	SA	–1*	Nil	1	14	4

*See tranq effects, page 350.

Weapon	*ROF*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*Short Rng*
Laser Rifle-9 (8cm)	SA2	7-4-2-1	Nil	4	50	160

Damage Record
Sight/Vision: Motion Detectors ☐ Sound Detectors ☐ Spotlights ☐
Radio: ☐
Laser Rifle: ☐
Paint Pellet Gun: ☐
Tranq Dart Gun: ☐
Traverse: ☐
Engine: ☐
Batteries (% Consumed or Destroyed): ☐☐☐☐☐☐☐☐☐☐
Suspension: Minor damage ☐ Immobilized ☐

COMBAT

Combat in **Traveller** is of two types: planetary and space. Planetary combat consists primarily of ground combat, although it also includes aerial combat that takes place over the battlefield. Space combat takes place outside of the atmosphere, typically the area within a few hundred thousand kilometers of a world or other point of value.

Planetary and space combat are handled in very similar manners. This is because they are both based on **Traveller**'s core task resolution system. All fire at a target, whether with a pistol at a range of 50 meters, or a laser bay at a range of 300,000 kilometers, is resolved by a task roll using a character's combat skill. Other combat-related actions as well, such as damage control, obtaining sensor locks, and even recovering from stun results, are also handled with task rolls. This means that every military unit or starship is critically dependent upon the quality of its personnel. While a weapon's performance characteristics are certainly important, the success with which it can be handled has everything to do with the attributes and skill levels of the character using it.

The combat chapter begins with personal combat between individual characters. Then, building on these concepts, more detailed topics such as indirect fire, and vehicles are added. Rules for specialties such as chemical warfare and combat engineering round out combat on the planetary surface. Moving out into space, players and referees will find many familiar concepts in space combat, as fire resolution and damage implementation are handled with the same system, although these take place over much greater distances and with much more destructive power. The space combat system is unique in that it uses realistic vector movement as its central mechanic, but is abstracted so that it can be played without a map, and deals with the pure relationship between two maneuvering platforms in space.



PLANETARY COMBAT

From time to time, characters will find themselves in situations where violence (combat) is the only way out. Combat is divided into two broad arenas: planetary, or ground combat, and space combat. Note that the arena of planetary combat includes watercraft and aircraft. Although these are not really on the ground, remember that **Traveller** represents a starfaring culture. From the point of view of people who do most of their travelling across billions of kilometers of space, anything that takes place within a planet's atmosphere is ground combat. Air, water, land, is all quibbling detail. To a spacer, it's all "dirtside."

Planetary combat is further divided into personal combat and vehicle combat. Discussed first are the basic concepts of planetary combat, such as movement and the conduct of personal combat. Vehicle Combat, beginning on page 291, then adds the use of vehicles. Planetary combat will generally be referred to as simply *combat*, while space combat will always be referred to specifically as *space combat*.

Combat is resolved in a series of *combat turns*. Within each combat turn, characters may conduct one (or sometimes more than one) discrete action. These actions include movement, certain maintenance tasks, and of course, attacks. Many of these actions, especially the attacks, require task rolls.

This division of the Combat chapter is divided into the following sections: Basic Concepts, Combat Resolution, Effects of Fire and Combat, Wound Effects and Healing, Vehicle Combat, Other Combat-Related Issues, and Environment.

Basic Concepts

THE COMBAT TURN

Each combat turn is five seconds long. At least one action may be performed by a player in a combat turn, and each action is completed in one combat turn. Some characters with higher Initiative ratings may be able to perform more than one action in a combat turn.

An action is a precisely defined activity as listed below.

INITIATIVE

The number and order of actions that a character may conduct in a turn are determined by the character's Initiative number. This number usually ranges from 1 to 5, but this limit can be exceeded by player characters with large amounts of experience. The Initiative number can also be temporarily reduced in the course of combat as a result of panic or wounds. Player character Initiative is determined as described in Character Generation (page 35). NPC Initiative depends on how the NPCs are generated. A detailed NPC as created by the referee using the character generation rules receives Initiative according to the character generation rules. Simplified, or template, NPCs have Initiative according to their described experience level. This is in the table at right.

TEMPLATE NPC INITIATIVE

NPC Type	*Initiative*
Elite	5
Veteran	4
Experienced	3
Novice	1

Burden Effects on Initiative: The amount of weight carried by characters may affect their current initiative. Characters carrying their normal load (see "Load," page 35) or less are not affected, but those who are carrying between one and two times their normal load are *burdened*, and have their initiative reduced by 1 (to a minimum of 1) for as long as they are carrying that load. Characters carrying between two and four times their normal load have their initiatives reduced to 1 for as long as they are carrying that load.

Load includes the weight of armor worn by a character, plus the weight of equipment carried in backpacks or on belts, etc., and the weight of equipment or weapons carried in the hands.

Wound Effects on Initiative: A character's Initiative is reduced by 1 when slightly wounded, by 3 (total) when seriously wounded, and by 5 (total) when critically wounded. A character whose Initiative level is reduced to 0 or lower may not act at all. (See the Wound Effects and Healing section, page 288, for more information.) The Initiative as adjusted by wounds is called the current Initiative, as opposed to the character's permanent Initiative when fully healthy.

Wounds have other effects on conducting actions. Scratch wounds, knockdowns, and stun results can deprive characters of a turn's action, although they do not change their Initiative numbers. Again, see page 288 for exact details.

Panic Effects on Initiative: Panic has no effect on a character's Initiative number *per se*, but characters who have panicked lose their actions for the duration of the panic effect. See "Involuntary Actions," page 268, for details.

Sequence of Actions: Actions in each turn are conducted in order based on Initiative number. The characters with the highest current Initiative number go first, followed by the next highest Initiative, then the next, and so on. Each set of actions grouped by Initiative number is called a *step*. Thus, there is the Initiative 5 step where all characters with current Initiative of 5 may act, followed by the Initiative 4 step, and so on.

The referee moderates this flow of actions by calling out Initiative steps in order (highest to lowest). When a player's current Initiative number is called, the player will tell the referee the action he or she is conducting (as in "firing at the soldiers behind the wall"). The referee will announce the actions for any NPCs acting at that

point, provided they are detectable to the PCs. The referee then resolves all combats and calls the next Initiative step.

It is likely that not every step will be used each turn. Before beginning play, the referee should establish the range of Initiative numbers present in the group so that the group can be aware of which Initiative steps would be empty and can be skipped. Some referees organize their sessions by having their players sit around the table in order of Initiative, so that the sequence of actions proceeds around the table. However, the effects of wounds will change not only the order of certain characters' actions, but also the Initiative steps that are used.

For example, a group with Initiative numbers of 7, 5, 3, and 2 would skip Initiative steps 6 and 4, as there is no one to act in those steps. However, if the character with Initiative 5 takes a slight wound (reducing him or her to Initiative 4), now steps 6 and 5 are skipped, and 4 is used. If the Initiative 7 character is seriously wounded (reduced to Initiative 4), each combat turn now begins with step 4, as there are no longer any Initiative numbers above that level.

When every character has acted, the turn is over and a new turn begins.

High Initiative Characters: Characters may achieve Initiative levels higher than 5. Any character with a current Initiative higher than 5 receives an extra action each turn. This action is conducted in the Initiative step equal to one-half of the character's Initiative number (rounding fractions down).

For example, a character with an Initiative of 7 would conduct one action when the referee called out "7" and one when the referee called out "3." Once such characters receive wounds to reduce their current Initiative to 5 or lower, they lose this second action. In the example of our Initiative 7 character, a slight wound (minus 1 to Initiative) would still allow two actions: one at 6 and one at 3. However, a serious wound (minus 3 to Initiative) reduces the character to only one action per combat turn, at step 4. If the character took this wound during step 6 or 5, he would lose his second act immediately, and would not get his second act that turn.

Resolving Ties: If two characters are conducting actions at the same time which may interfere with each other (such as firing at each other), the character with the highest Agility goes first. However, for purposes of this determination, subtract the bulk rating of the character's weapon from his or her Agility. If there is still a tie, roll a die, with the high die roll going first.

Interrupting Initiative Sequence: There are two sorts of circumstances which allow characters to act out of their Initiative sequence:

Opportunity Fire: Opportunity fire indicates that a character is aiming in a specified direction or at a specific area, and that if an enemy character passes through his or her line of sight, he or she may immediately fire on the enemy. This is resolved as if it happened simultaneously with the enemy movement. Thus, a character may fire opportunity fire in a turn during an Initiative step in which he or she would normally not be able to act. However, executing this opportunity fire does use up the character's action for the turn. High Initiative characters who have two actions may use their second action only if the opportunity fire was resolved before the step when the second action would normally be conducted.

A player may only conduct opportunity fire once during a turn. See "Special Cases," page 278, for more on opportunity fire.

Ambush: An ambush consists of one or more characters firing from previously undetected positions at an enemy force. The ambushers may open fire when one or more of their troops reaches an Initiative point or, if they are using aiming to conduct opportunity fire, when the moving force enters their line of fire.

MOVEMENT

Movement during combat can be resolved in whatever detail the situation warrants. In many cases, no map is needed—long-range sniping between parties on foot, for instance. In others, the referee can do well enough by just drawing a map and positions on a piece of paper.

If greater detail is needed, the referee can make a map beforehand, and the positions of characters and vehicles can be represented by pins, drawing on plastic overlays, counters, or miniatures figures. Any scale may be used; movement rates and weapon ranges are given here in meters.

Combat movement rates are expressed in meters moved per five-second combat turn. Vehicles and animals have unique combat movement rates listed with the specific vehicle or animal description.

Personnel Movement

People may move at four different rates: crawl (two meters), walk (10 meters), trot (20 meters), or run (30 meters). A character who is burdened (see "Load," page 35) travels half this fast. Characters who are crawling are prone. These speeds are for human characters, and are identical for most of the major intelligent races in **Traveller: The New Era**.

MOVEMENT RATES IN METERS

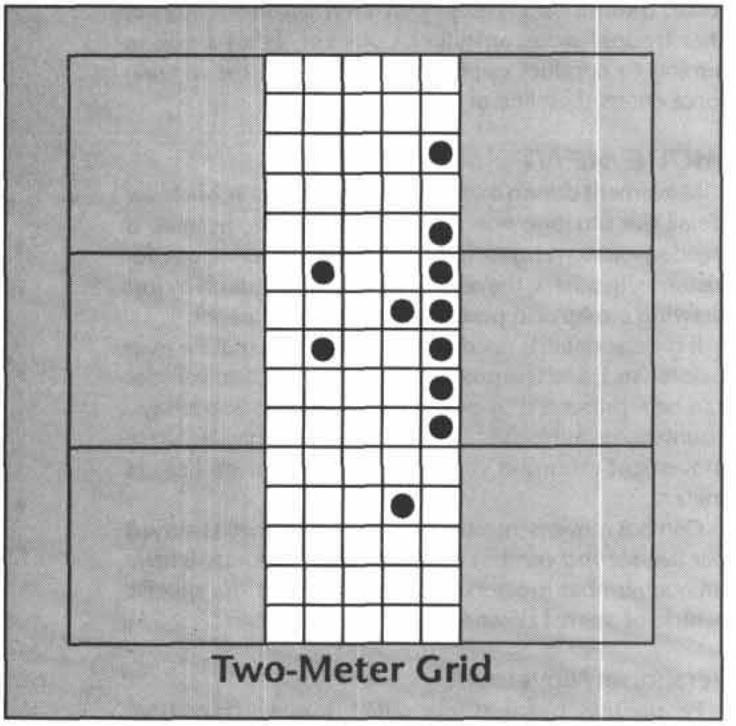
Race	*Crawl*	*Walk*	*Trot*	*Run*
Human	2	10	20	30
Vargr	2	10	20	30
Aslan	2	10	20	30*
Hivers	2	10	20	—
Droyne	2	10	20	30
K'kree	—	10	30	60

*May sprint at 60 one out every six turns.

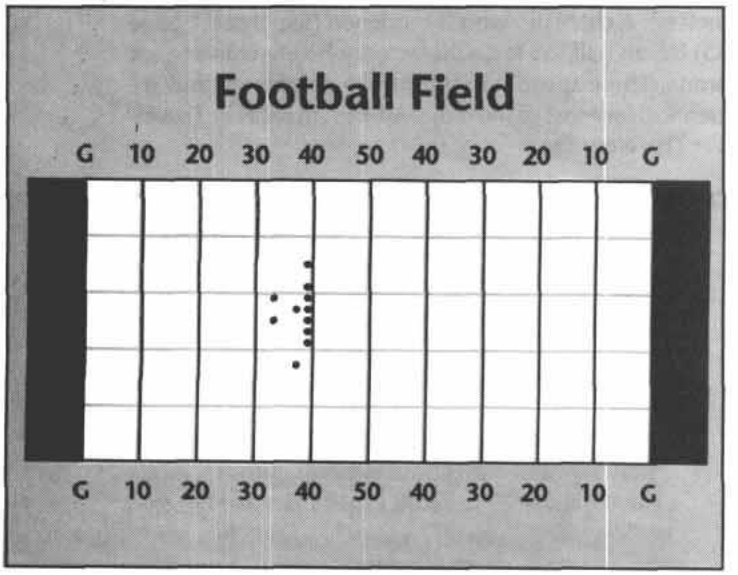
The notation "—" indicates that this rate is not available for this race.

Grid System

The maps included in **Traveller** are all provided with a square grid to control movement and measurement of firing ranges. Two different scales of grids are used, one for outdoor encounters, and one for buildings and other interiors. The outdoor grid uses squares representing 10 meters from side to side (sometimes referred to as tactical grid squares). The illustration below shows an American-style 100-yard football field with an outdoor grid system superimposed on it. The offensive team is shown lined up for a play with the ball on its own 40-yard line.



Two-Meter Grid



This should provide you with a good feeling for the actual area covered by one of these grid squares. Obviously, it is fairly easy for people to conduct activity in such a square without interfering with each other.

Interiors generally require more detailed coverage, and in any event cover much smaller areas. As a result, we use a two-meter grid for these.

This grid can also be used for outdoor encounters which take place at close quarters, such as in an alleyway or in a small clearing in the woods.

The same offensive line shown on the 10-meter grid is shown again on a two-meter grid.

Note that three large 10-meter grid squares are reproduced and broken into their component two-meter squares. In this case, each man occupies a single square. Although it is possible for more than one man to stand in a two-meter area, it is difficult for both to then conduct any sort of activity without interfering with each other.

These grid sizes have been chosen to make them as easy as possible to use with the movement rates and ranges in **Traveller**, particularly when used in conjunction with miniatures (See Using Miniatures with Traveller, page 327).

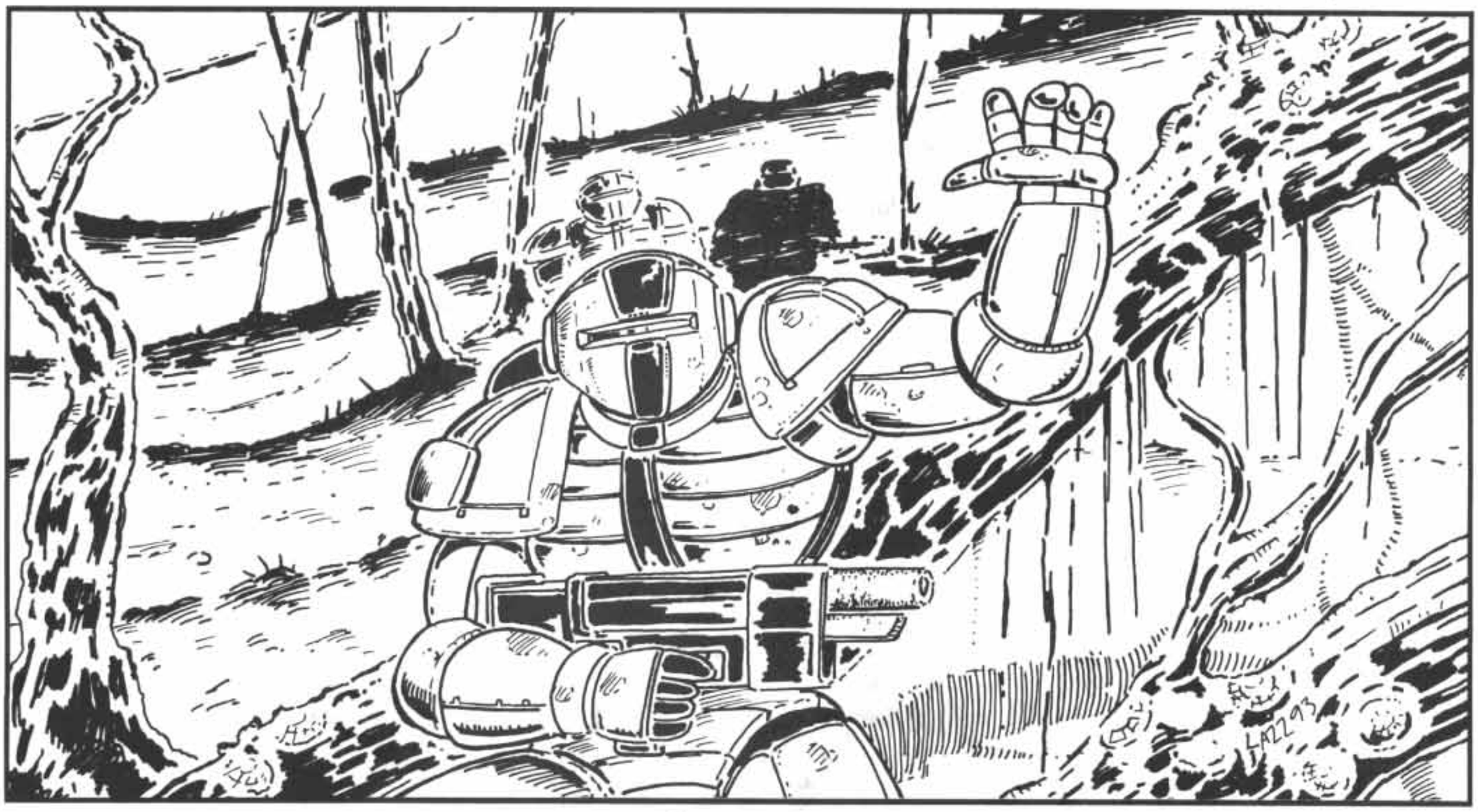
- When using the interior two-meter grid, a character can crawl one grid square, walk five, trot 10, and run 15 squares per turn.
- When using the outdoor grid, the same character could walk one, trot two and run three squares per turn. It would take that character five turns worth of crawling to move one square.
- It is possible to move and fire diagonally through a square as well as orthogonally (straight up and down or side to side), but the diagonal distance is greater. Count a square as being 50% longer diagonally than orthogonally. That is, it counts as three meters of range or movement to cross a two-meter square diagonally, and 15 meters of movement or range to cross a 10-meter square diagonally.

ACTIONS

A character may perform one action in each combat turn (except as specifically noted elsewhere). Actions are chosen when it is actually time for the character to act. The possible combat actions are listed below.

Combat Actions

Aim: Aiming allows the best possible chance to hit a target. The aim action can be used in two different ways. First, it can be done immediately before a fire action in order to aim at a specific announced target. This allows resolution of the subsequent shot against that target (conducted in the following combat turn, or, by a high-Initiative character, later in the same turn) as an aimed shot (aimed shots are explained under



"Direct Fire," page 273).

Second, a character may aim at a certain target or area in order to conduct opportunity fire.

Aiming at a target or area also enables a character to fire at any target which later moves through his or her line of sight. This is called opportunity fire. To continue waiting for a target to come into view, merely continue to conduct an aim action each turn.

Approach Fire: This is the action taken by turretless aircraft to fire at ground targets. It allows the firing of weapons, and also simultaneously includes the drive action (see below).

Crawl: The character moves two meters in a prone posture.

Drive: This is the action used by the driver of a vehicle to move the vehicle during the turn. The movement rate varies with vehicles and with the risks that a driver is willing to take to drive faster. These details are discussed on page 291.

Fire: The character fires his or her weapon at any target which is currently visible to the character or which has been visible during the current turn at some point. With some weapons this may be combined with a walk or trot. If the fire action is conducted against a target which the character is currently aiming at (having expended his or her previous action to do so), the fire is executed as an aimed shot.

If the fire is made at a target that the character was not aiming at, it is executed as a quick shot. Aimed and quick shots are explained on page 274.

Go Prone/Stand Up: A crawling character is prone. A prone character may stand up at any time, either as an action by itself or as part of a walk, trot, or run action. Standing up cuts the distance moved in an action in half.

Melee: This constitutes either an armed attack with a melee weapon (which may be combined with a walk or a trot) or an unarmed attack. There are several types, one of which must be specified, any of which may be combined with a walk or a trot. These are discussed in detail beginning on page 269.

Mount/Dismount: Get on or off of a vehicle or riding animal.

Ready/Change Equipment: This can consist of putting down your rifle and taking out a knife, drawing a pistol, linking two ammo belts together, readying a radio to transmit, etc.

Reload: It generally takes one combat turn to reload a weapon, although some take longer (and thus require several reload actions to finish).

Run: The character moves 30 meters (three grid squares).

Take Cover: The character dodges behind any close-by cover (see "Cover" on pages 286 and 298).

Talk: Players will want to discuss their plans, but the referee should be careful to keep these discussions within the bounds of reality. Since each action is only five seconds long, the referee should not allow a player to say more than one sentence or so during a combat turn. While talking can be combined with most other actions,

it cannot be combined with firing.

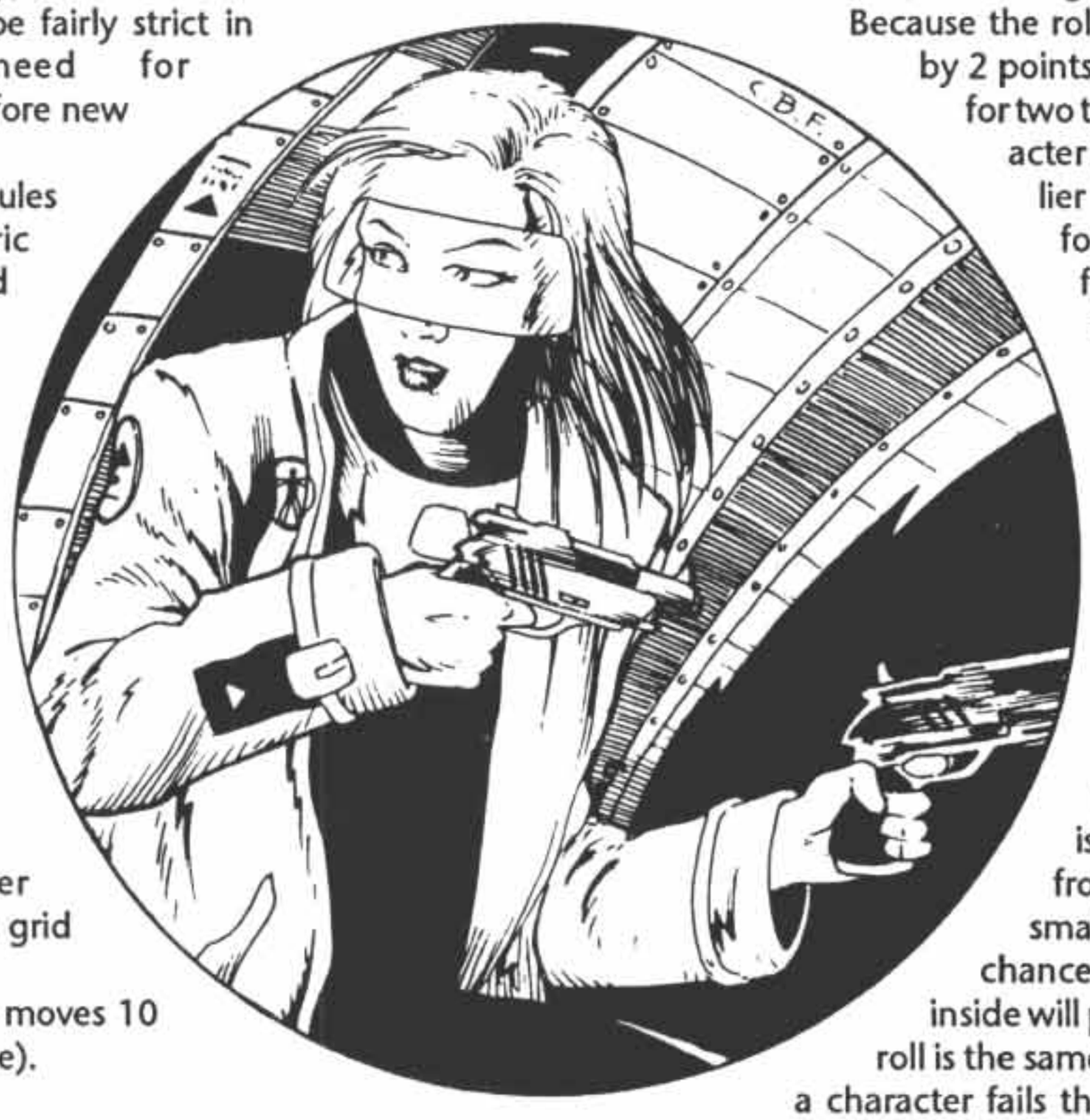
If trying to talk on a radio, laser, maser, or meson communicator, a player must first spend a turn opening contact. Each communicator has its listed short range, at which difficulty is Average. Ranges and difficulty levels increase the same as fire combat (i.e, Difficult at medium [2xshort] range, Formidable at long [4xshort] range, Impossible at extreme [8xshort] range). The player must also give his or her call sign and that of the character being called, as in "Devil 6, this is Jayhawk 6. Over." Unless the other character has a communicator ready to transmit, it will probably take an action to ready it and then another to transmit a reply. The reply may be "Jayhawk 6, this is Devil 6. Go ahead. Over," but is more likely to be simply, "Devil. Go."

The referee should be fairly strict in enforcing the need for acknowledgements before new transmissions are sent.

We do not include rules for static, atmospheric conditions (smoke and bad weather degrade laser communicators), weak batteries, etc., although referees may make allowances for these. For simplicity, referees can disregard these complexities, and simply require a deliberate and clear communications procedure.

Trot: The character moves 20 meters (two grid squares).

Walk: The character moves 10 meters (one grid square).



Involuntary Actions

Certain conditions in combat require the character to conduct an involuntary, mandatory action rather than one of the normal actions listed above.

Panic: Whenever a character is knocked down by wound damage (see Wound Effects and Healing, page 288) or surprised (attacked from an unexpected direction, ambushed, or surprised by an encounter as defined in the encounter rules), there is a chance that he or she will panic. This is not blind panic which sends the character screaming away, but panic which causes him or her to momentarily freeze.

To determine if a PC panics, roll 1D6. If the result is greater than his or her Initiative rating, he or she panics. The PC may not conduct any action for the number of turns by which the die roll exceeds his or her Initiative. However, if the character is forced to freeze for more than one combat turn, he or she may go prone on the second turn and remain there until able to move again. If the character has already conducted his or her action for the turn, the following turn counts as the first turn frozen. If the character has not yet acted in the turn in which he or she panicked, the current turn becomes the first turn frozen.

NPCs use the same system as PCs. Note that player characters or detailed NPCs with an Initiative of 6 or more never panic, while even Elite template NPCs may.

For example, a character with Initiative 3 is knocked down in Initiative step 2 of the third combat turn. The PC rolls a 5, indicating that he has panicked. Because the roll exceeds his Initiative by 2 points, the character freezes for two turns. Because the character had already acted earlier in the third turn, the fourth turn counts as his first turn frozen. The PC is still frozen on turn 5, but may elect to fall prone during that turn. Unless he has been further injured while frozen, the character may begin normal actions again on turn 6.

Bail-Out: If a vehicle is penetrated by fire (final penetration is greater than armor) from anything other than small arms fire, there is a chance that each character inside will panic and bail-out. The roll is the same as for panic, above. If a character fails the roll, he or she must immediately climb out of the vehicle, seek the best available cover within two meters, and remain there for two turns (in addition to any time spent getting out of the vehicle). After the two turns are over, the character may get back in. It takes one turn to get out of or into a side or rear door, and two turns to get out of or into a top or turret hatch.

Charge: If a character on foot is being charged by a powered vehicle or running animal within 100 meters (that is, he or she is about to be run over by something large and fast), he or she must check for panic. Player characterss that panic do not freeze; instead, they run. Subtract 1 from the panic roll if the character has a weapon with a good chance of stopping the attacker and is prepared to fire it.

Combat Resolution

The sections below describe how the various combat actions listed above are played out. They are divided into two broad areas: Melee Combat and Fire Combat.

MELEE COMBAT

Melee combat covers close quarters combat, either hand-to-hand or with melee weapons, such as knives, swords, bayonets, and clubs. All of the actions listed below under "Unarmed Melee Combat" and "Armed Melee Combat" are included under the combat action "Melee," page 267.

Unarmed Melee Combat

Characters must be within two meters of each other to make unarmed combat actions. There are eight types of unarmed combat actions: hand strikes, kicks, leaping kicks, throws, diving blows, grapples, escapes, and strangling. Hand strikes, kicks, leaping kicks, throws, and diving blows attempt to do damage to the target; grapples attempt to seize and hold the target, while escapes seek to escape from such holds; strangling is a variation of grappling which attempts to do damage to the target.

A character may make only one unarmed combat attack per combat turn.

Note that many of the actions listed below are resolved as tasks using the Agility attribute. Characters engaging in melee combat who have any skill level in Acrobatics may use their Acrobatics asset in place of their Agility attribute at the same difficulty level as listed for Agility alone.

Strike Attacks: There are two types of strike attacks: hand strike and kick. Both are resolved in exactly the same way, with the exception of damage and hit location. Either type of strike attack is a task—Difficult: Unarmed Martial Arts. Success means that the attack hits. In the case of a surprise attack (unexpected attack from behind), no roll is made; the attack automatically hits.

Blocking Strike Attacks: If a character successfully hits an opponent, the opponent may be able to block the blow. Blocking is also a task—Formidable: Unarmed Martial Arts. Success means that the attack has no effect. Surprise attacks cannot be blocked (if they could, they wouldn't be a surprise, now would they).

A character may attempt to block at any time when a blow is directed at him or her, but a successful block counts as an action for the combat turn. However, an Outstanding Success on a block roll means that the block did not count against the character's actions. Once a character has made a number of successful blocks equal to his or her allowed actions for a turn, the character may attempt no more blocks during the turn.

For example, Brigadier Duro, with a current Initiative of 2, is hit in Initiative step 6 and blocks the unarmed melee strike. In Initiative step 2, he could usually conduct his normal action, but cannot this turn because he blocked, using one turn's actions. Had he rolled an Outstanding Success on the block, he would still have his action for step 2.

Aimed Strike Attacks: A character may decide to concentrate a hand strike or kick against one particular body part—Formidable: Unarmed Martial Arts. If the attack succeeds, the die roll for location (see below) is not made; the attacker chooses the hit location.

Hit Location: Hit location (if the attack succeeds and is not blocked) is rolled on the Personal Hit Location chart (biped or multiped, as necessary). A normal (non-aimed) strike attack is rolled on 1D6, and a nonaimed kick is rolled on 1D6+4, yielding results of 5-10.

The die roll for hit location is not made for a surprise strike (an unexpected attack from behind) or an aimed attack. The attacker is allowed to pick his or her target in these two cases.

Damage: Damage inflicted from a hand strike is equal to the attacker's unarmed combat damage rating. Damage from a kick is equal to 1.5 times the unarmed combat damage rating (round fractions to the nearest whole number).

Armor: Armor absorbs points equal to twice its value from each strike attack and suffers no damage. (See the Body Armor Protection chart on page 359.) One hit is inflicted on the attacker on the body part (right arm, left arm, right leg, or left leg) used in the attack for every two hits absorbed by the armor (round off to nearest whole number). Thus, if Trooper McTavish punched Roots Marlowe in the torso and caused 6 points of damage, and Marlowe was wearing a flak jacket (melee armor value 2), Marlowe would only suffer two hits (6–[2×2]=2), while McTavish's right arm would suffer two hits (4+2=2).

Leaping Kick: A leaping kick is an attempt to put more force behind a kick by throwing oneself feet-first at the enemy. It is a Difficult test of Agility. Success indicates that

PERSONAL HIT LOCATION

Die	*Biped*	*Multiped*
1	Head	Head
2	Right arm	Forequarter
3	Left arm	Forequarter
4	Chest	Forequarter
5	Abdomen	Chest
6	Abdomen	Chest
7	Right leg	Abdomen
8	Right leg	Hindquarter
9	Left leg	Hindquarter
10	Left leg	Hindquarter

Biped: Table assumes front/rear shot.
Side Shot: Far side hit equals near side hit.
Prone Biped: Table assumes top shot.
Side Shot: Far side hit equals near side hit.
Front Shot: Leg or abdomen hit equals miss.
Rear Shot: Head, arm, or chest shot equals miss.
Multiped: Table assumes side shot.
Front Shot: Hindquarters or abdomen hit equals miss.
Rear Shot: Head or forequarters hit equals miss.



the character has hit the enemy and also that the attacker has managed to land on his or her feet. Failure indicates that the attacker has misjudged his or her leap. While the leap still hits the target, the attacker is also knocked down and suffers damage.

Avoidance: If a character is surprised (an unexpected attack from behind), the attack always hits. If not surprised, the character may attempt to avoid the attack (Difficult: Agility). If the kick is avoided, the attacker lands on his or her feet or falls to the ground, according to his or her original Agility roll, but the target is missed by the attack.

Effects: A successful leaping kick which is not avoided knocks its target to the ground and inflicts damage points equal to twice the attacker's CON, while leaving the attacker undamaged and on his feet. A successful leaping kick which is avoided knocks neither character down and inflicts no damage on either character. An unsuccessful leaping kick which is not avoided knocks both the target and the attacker down, and inflicts damage points equal to the attacker's CON on each of them. An unsuccessful leaping attack which is avoided only inflicts damage points on the attacker equal to the attacker's CON.

Grappling: Grappling is an Average: Agility task. It is somewhat simpler to resolve than a strike. Blocking is not possible; there is no hit location; and armor has no effect. Grappling "damage" is calculated in the same way as for a strike; however, the results of the attack are termed *controlling hits*. They are not damage, but rather are a measure of the extent to which one character has physically controlled another (with a hammerlock, by pinning him or her to the ground, etc.). Once a character has inflicted controlling hits on another character equal to or in excess of that character's Strength, the target character is totally controlled and ceases struggling. The controlled character may not move; the controlling character may not move without releasing control (all controlling hits disappear). Until that time, however, the character may attempt to escape or grapple with the original attacking character.

If both characters grapple, the first one to achieve hits equal to his or her opponent's Strength controls the other.

Escape: An escape attempt is resolved in the same way as a grapple (i.e., an Average test of Agility), except that if the attempt is successful, controlling hits equal to the unarmed combat damage rating of the character making the successful attempt are removed from the accumulated total which the other character has already built up.

Strangling: Strangling is handled like grappling, with three main differences: (1) It *may* be blocked by an Average test of Agility. (2) Armor *does* have effect. (3) A character who becomes "totally controlled" becomes unconscious and begins to suffer head wounds equal to the attacker's unarmed combat value *each turn* thereafter, for as long as the hold is maintained. If the hold is released before death ensues, the victim rolls to regain consciousness per the serious wound rules. *Note:* Garottes double the attacker's unarmed combat damage rating for strangling attacks.

Throws: A throw is a defensive move, similar to an escape or a block. However, it allows the defender to turn the tables on the attacker and not only avoid being damaged, but inflict damage on the attacker.

A character who is hit by a successful grapple, strangle, hand strike, or kick (not a leaping kick) may attempt a throw. The character must first make a successful block roll (grapples may not be blocked; this roll is merely to set up for the throw). If the block is not successful, the attack does

damage to the character normally, and the throw may not be attempted. If the block roll succeeds, the character may attempt the throw.

A throw is a Formidable test of Unarmed Martial Arts, and cannot be avoided by the object of the throw. Success indicates that the opponent is knocked down and suffers damage. Failure means that only the block was successful (except in the case of a "blocked" grapple—because grapples cannot be blocked, the grapple attack's effect is unchanged), but that the character has used up an action. The action is used up even if the block was unsuccessful. Note that the block to set up for the throw is considered part of the throw action, so does not count as an additional action.

Effects: A successful throw inflicts damage points on the attacker equal to twice the attacker's own CON. Although victims of a successful throw may not avoid being thrown, they may attempt a Difficult: Agility roll to limit damage by controlling their landing (if the throw roll was an Outstanding Success, no roll may be made to limit the damage). If the Agility roll is successful, only half damage is applied.

Diving Blows: A diving blow is an attempt to throw oneself at the enemy and knock him or her down. Blocking is not possible (although avoidance is), and armor has no effect. Note that unlike other forms of unarmed melee combat, the attacker does not make a roll to succeed: The diving blow always succeeds unless the target succeeds at an avoidance roll.

Avoidance: If a character is surprised (an unexpected attack from behind), the attack always hits. If not surprised, the character may attempt to avoid the attack (Average: Agility). If the blow is avoided, the attacker falls to the ground, having missed the target. If the attack is not avoided, it automatically hits.

Effects: If a diving blow hits, either the attacker or defender is knocked down and suffers hits. If 1D6+(2×Constitution) of the attacker is greater than Strength+Constitution of the defender, the defender is knocked down and suffers hits equal to the difference of the two totals. Otherwise, the attacker is knocked down and suffers hits equal to the difference between the two values. Defenders who are surprised use only their Constitution for the comparison.

Armed Melee Combat

Armed melee combat is conducted with melee weapons.

Range: The two general categories of melee weapons are short range and long range. Characters must be within two meters of each other (the same as for unarmed combat attacks) for short-range attack and within three meters for long-range attacks. If a character with a short-range weapon (including an unarmed character) encounters a character with a long-range weapon, the character with the short-range weapon may not attack in the first turn of contact (although a short-range melee weapon may block).

The ranges of melee weapons are given on the Melee Weapons chart, page 359.

Hit Procedure: An armed melee attack is a task—Difficult: Armed Martial Arts. In the case of a surprise attack (unexpected attack from behind), no roll is made; the attack automatically hits.

Modifiers: Certain melee weapons add a hit modifier to the character's Armed Martial Arts asset, also shown on the Melee Weapons chart, page 359. This modifier is added to or subtracted from the character's asset; however, it may never reduce the skill portion of a PC's asset to below 1.

Blocks: If a character successfully hits an opponent, the opponent may be able to block the blow. A block is a task—Formidable: Armed Martial Arts. If the task is successful, the attack misses. The character blocking must also be armed with a melee weapon (it doesn't make much sense to block a cutlass with one's hand). A character may attempt to block at any time when a blow is directed at him or her, but a successful block counts as an action for the combat turn. An Outstanding Success on a block roll means that the block did not count against the character's actions. Once a character has made a number of successful blocks equal to his or her allowed actions for a turn, the character may attempt no more blocks during the turn.

Hit Location: Hit location is rolled on the Personal Hit Location chart on page 269.

The die roll for hit location is not made for a surprise attack; the attacker picks his or her target. The attacker may attempt to pick his or her target in any melee attack; this is a task—Formidable: Armed Martial Arts. If the attacker hits, he or she chooses where he or she hits. Additionally, the referee may mandate certain hit locations if the situation warrants it. If an injured player crawls up to an enemy with a knife, he or she is unlikely to hit the enemy anywhere but in the legs. Likewise, a character mounted on horseback and swinging a club is not going to hit the leg of a man on foot.

Damage: Damage inflicted from a melee attack varies with the weapon used. The Melee Weapons table (page 359) gives the damage value of each weapon.

Armor: Armor absorbs hits equal to twice its armor level from each armed combat attack, and suffers no damage.

FIRE COMBAT

Fire combat can be conducted at considerably greater distances than either unarmed melee combat or armed melee combat. Fire combat weapons (and hand grenades) are listed in the "Equipment & Technology" chapter (pages 350-357), which gives a variety of information on each weapon. Weapons capable of firing more than a single type of round have a separate listing per type of round. The use of this information is explained in the subsequent rules.

There are two general varieties of fire combat: direct fire and indirect fire. Direct fire is conducted when the gunner can actually see his or her target and fires a round directly at it with the intention of obtaining a direct hit. Indirect fire is usually conducted when the gunner cannot see the target and instead fires at a high angle to lob his or her round over intervening terrain obstacles with the intention of it coming down in the close vicinity of the target. For the most part, only certain heavy weapons and artillery (grenade launchers, mortars, and howitzers) are capable of indirect fire.

Weapon Parameters

All weapons have restrictions based on their use according to the way in which they function and the way in which they are supplied with ammunition.

Human Limits: A single character can fire only one weapon at a time (including a vehicle gunner, who usually has several weapons in his or her turret).

Rate of Fire: Each shot in the game represents a single shot (bullet or pulse of energy). It is possible to fire more than a single shot from most weapons in a five-second combat turn. All weapons in the game have either a reloading (Rld) rating or a rate of fire (ROF) rating.

Weapons with a reloading rating hold only one round in the weapon at a time, may only fire the one round which is loaded during a fire action, and must then be reloaded before firing again. The reload rating is the number of reloading actions necessary to reload the weapon. If the weapon has more than one loader as part of its crew, each loader must spend the indicated number of actions reloading. For each loader missing from the gun crew, add 1 to the reloading time for the others.

Weapons with a rate of fire listing have either a letter code or a number. The various letter codes are defined as follows:

SS (Single Shot): This weapon can only fire once per firing action and must then be reloaded.

BA (Bolt Action): Each time the rifle is fired, the bolt mechanism must be worked to eject the spent cartridge and move a fresh cartridge from the magazine to the chamber. Bolt-action rifles may be fired once per fire action. The working of the bolt is assumed to take place as part of the same action.

LA (Lever Action): Each time the rifle is fired, the lever must be worked to eject the spent cartridge and move a fresh cartridge from the magazine to the chamber. Lever-action rifles may fire once per fire action, the same as bolt-action rifles.

PA (Pump Action): Each time the shotgun is fired, the lever must be worked to eject the spent shell and move a fresh shell from the magazine to the chamber. Pump-action weapons may fire three rounds per fire action.

DAR (Double-Action Revolver): A double-action revolver does not have to be cocked between shots, as the first part of each trigger pull cocks the hammer. This makes the trigger pull somewhat harder than on a semiautomatic pistol. A double-action revolver can fire three rounds per fire action.

SA (Semiautomatic): This weapon will fire one shot with each squeeze of the trigger, and the weapon reloads itself for the next shot. There are several different types of semiautomatic weapon.

Semiautomatic slug weapons use the force of each firing round to recock the weapon and pull another round into the firing chamber. They may fire up to five shots per fire action, and have the listing "SA" in the ROF column of the weapon data.

Some energy weapons (which fire pulses or bolts of energy rather than bullets) are considered to be semiautomatic for rate-of-fire purposes. There are two types of semiautomatic energy weapons: those fed from power packs (mostly lasers), and those that have their energy stored in chemical form in cartridges much like those of a slug weapon (some lasers and most plasma and fusion weapons). The rate of fire of power-fed weapons is limited by the capacitor cycle, which is the time taken for the weapon to recharge to fire the next pulse, and the cooling cycle. Cartridge-fed energy weapons also have a cycle time, based on the cooling cycle that keeps the weapon from being melted by the tremendous amounts of energy being passed through it. The rate of fire of either type of energy weapon will vary, depending upon how the weapon is designed, but will never exceed the standard SA rate of five shots.

All semiautomatic energy weapons have a number following the "SA" notation in the ROF column. This is the number of shots the weapon can fire per combat turn. Note that energy weapons, because of their absolute time requirements for cooling or recharging, do not fire at this rate for each fire action. Thus a high-Initiative character who acts twice in a turn will either have to split the allowed shots for the turn between the two actions, or or conduct a nonfiring act with one of the actions. However, for characters that only act once per turn this distinction is irrelevant, as for them one fire action equals one combat turn.

Some lasers have the capability to fire their energy in varying numbers of pulses of greater or lesser power. This is shown by multiple combat performance lines for each such weapon, showing its performance at each available pulse rate.

These pulse rates may be different SA rates (for example one high-powered pulse per turn vs. two lower-powered pulses per turn), or burst pulse rates with different numbers of shots per burst (note that the number of such bursts per turn is always equal to the laser's maximum SA rate of fire per turn). Pulse rates listed as SA are resolved as normal direct fire, while the burst pulse rates are resolved as automatic fire (page 276), and never as separately aimed shots. Note that, unlike automatic slug-firing weapons, these lasers are not necessarily capable of firing five such bursts per action. These lasers have burst ROFs which show the number of bursts allowed per five-second combat turn and the number of shots in each burst. For example, the ROF listing "3×5" indicates a laser capable of three bursts per turn, with five shots (pulses) in each burst (as mentioned above, this laser would also have a maximum semiautomatic ROF of SA3).

For direct energy input (DEI, also called "power pack") lasers, the performance line shows how many shots or bursts at these ROFs are available in the power pack. This requires players to be careful when keeping track of electrical "ammunition," as one double-powered shot is worth the same amount as two single-powered shots in the laser's power pack. Note, however, that when recording ammunition expenditure for automatic bursts, each *burst* consumes ammunition at the listed rate, not each shot in the burst. For example, the TL-9 DEI rifle on page 354 has ROFs SA2, 2×3, and 2×10. A single semiautomatic shot at the SA2 rate, a single 3-shot burst, and a single 10-shot burst, all consume the same amount of power from the

power pack: 1/100 of the energy available. (One shot at the SA1 level, however, consumes twice as much power, 1/50 of that available.)

The situation with chemical (CLC) lasers is similar: each individual semiautomatic shot or automatic burst consumes one cartridge, as each cartridge contains a given amount of laser energy which can be allocated as one shot or several rapid pulses in a burst.

However, these different rates of fire may *never* be mixed within one combat turn. Pulse rates may be freely changed each turn at no time penalty, but once a pulse rate is selected for a turn, all shots or bursts fired that turn must be at that same pulse rate.

SAR (Single-Action Revolver): A single-action revolver needs to be cocked between shots. A single-action revolver can fire one round per fire action.

A single-action revolver may be fired three times per fire action by "fanning" (holding the trigger down while rapidly working the hammer with the heel of the other hand). All shots while fanning are at +1 difficulty level.

Automatic Fire Weapons: Weapons with a number instead of a letter code are capable of fully automatic fire as well as semiautomatic fire. The number shown is the number of bullets or energy pulses in each burst from the weapon.

As a practical matter, no character may fire at more than three different targets in the same action due to restrictions in changing targets.

Each automatic weapon can fire up to either five individual shots or five bursts per action turn.

Some automatic weapons have more than one automatic ROF listed. Characters firing such weapons may freely switch from one allowed ROF to another each fire action, but all shots or bursts fired in a single action must be at the same ROF.

Reloading: All small arms have a Magazine listing which consists of a number and, in some cases, a letter code. This shows the type of feed device used for ammunition in the weapon and the number of rounds in it. The most common form of magazine in slug-firing small arms is a box magazine which attaches through the stock or pistol grip. *Weapons with no letter code after their Magazine value are fed by box magazines,* each of which contains the number of rounds shown.

Energy weapons have several different forms of "magazines," including power packs carried on the back or belt or, in some cases, cartridges which store energy in chemical form and are handled in box magazines just like slug-firing weapons.

One reloading action is sufficient to detach most empty box magazines and insert a full one. To calculate the time necessary to change a box magazine, divide the loaded weight of the magazine (in kilograms) by 5 and round fractions up. The result is the number of reload actions necessary to remove an empty box magazine and insert a new one.

Other forms of magazines are noted by letter code as explained below:

R (Revolver): A revolver's feed device is a nondetachable revolving cylinder which usually holds six bullets. If loaded individually, three bullets can be loaded into the cylinder per reloading action. If a quick-loader is available (a circular clip holding six cartridges which enables all six to be dropped into the open cylinder at once), one reloading action is sufficient to reload the weapon.

i (Individual): Weapons with nondetachable magazines, particularly underbarrel tubular magazines, often have to be reloaded one bullet at a time. Up to three bullets may be loaded into a individual feed device per reloading action.

B (Belt): The weapon, a machinegun or automatic weapon of some type, is fed by a belt usually containing from 50 to 100 bullets. Two reloading actions are necessary to replace a belt. However, if the machinegun has a two-man crew (gunner and loader), this requirement can be met by both expending one action reloading in the same turn.

C (Cassette): A cassette is a large, self-contained ammunition feed system which takes five actions to replace.

PP (Power Pack): A power pack is a large, self-contained energy source, usually a battery pack powering a capacitor, and is usually carried on a load-bearing harness. It takes one action for each of four steps: disconnect the power cable from the weapon, take off the power pack, put on a new power pack, and connect the new power cable to the weapon.

Direct Fire

Direct fire is the most common form of combat in the game. In direct fire, the target is visible to the firing character. Direct fire is conducted with both small arms and heavy weapons.

Small arms are rifles, pistols, machineguns, and similar similar-sized energy weapons. Their two principal distinguishing characteristics are that they are generally man-portable and they fire either a pulse of energy or a nonexploding round of less than 20 millimeters in diameter. Small arms fire can be directed at any sort of target, but is usually directed against personnel.

Heavy weapons fire more powerful bolts of energy or rounds which are 20 millimeters in diameter or greater and which are capable of containing a significant explosive filler. Some heavy weapons (such as grenade launchers, rocket launchers, and some tac missiles) are man-portable, but many must be mounted on vehicles or heavy field carriages (such as howitzers or fusion guns). Projectile-firing heavy weapons use high explosive (HE) and other similar ammunition to attack troops and soft vehicles, but many also have an array of specialized rounds for attacking armored targets.

General Procedure: The chance of hitting a target with individual shots depends primarily on three things: marksmanship, range, and recoil. The combination of these factors will produce a D20 chance of hitting a target, defined as a task, using the tasks and skills rules. The player or referee then rolls 1D20 for each shot fired. If the target number or less is rolled, the target is hit. Any other roll is a miss. In fire combat, the task's target number is often referred to as the *hit number*. When a hit is scored, see Wounds and Damage, page 285.



Outstanding Success: Whenever an Outstanding Success is rolled when firing at a target, double damage is applied to the target. See "Outstanding Success," page 285.

Automatic Hit: An unmodified roll of 1 in a direct fire task is an automatic hit, regardless of skill, asset, or the difficulty of the shot.

Automatic Miss: An unmodified roll of 17-20 in a direct fire task is an automatic miss, regardless of skill, asset, or the difficulty of the shot. This is a modification of the automatic failure rule on page 108 (where auto failure results only on a 20), and applies *only* to direct fire tasks.

Marksmanship: All small arms use skills from the Gun Combat cluster as their marksmanship skill. (Note: Although bows are not small arms in the conventional sense, nor does their use literally constitute fire combat, they are handled under these rules in **Traveller**, and are therefore listed here.) SMGs are used with either the Slug Pistol or Slug Rifle cascade, whichever is higher.

Skill	*Weapons*
SW (Slug Pistol)	Revolvers, automatic pistols, snub pistols, submachineguns
SW (Slug Rifle)	Carbine, rifle, automatic rifle, assault rifle, ACR, gauss rifle, accelerator rifle, submachineguns, shotguns
EW (Energy Pistol)	Laser pistols
EW (Energy Rifle)	Laser rifles and carbines, plasma and fusion rifles
Early Firearms	Crossbows, muskets, arquebus, all black-powder firearms
Archery	Short, long, and composite bows

The various Heavy Weapons skills are used as marksmanship for the following weapons:

Skill	*Weapons*
Autogun	Automatic cannon or grenade launcher, machinegun, VRF gauss gun
Heavy Gun	Large-caliber direct fire guns including mass drivers
Energy Artillery	Carriage- and vehicle-mounted plasma guns, fusion guns, and lasers
Grenade Launcher	Nonautomatic grenade launchers and unguided antiarmor rockets
Tac Missile	Guided tactical missile launcher

Aimed Shots: An *aimed shot* is one which takes place after the character has spent one action aiming the weapon. A target must be visible in both the aiming and firing turns for an aimed shot to take place, and the player must tell the referee which target he or she is aiming at when the player character conducts the aiming action.

Quick Shots: If more than one shot is fired in a turn, only the first shot can count as aimed; a subsequent shot must be a *quick shot.* In addition, any shot fired which does not follow an aim action, or which is fired at a target other than the one aimed at, counts as a quick shot. All quick shots are

conducted at one difficulty level higher than aimed shots.

Range: The four ranges for direct fire are short, medium, long, and extreme. The value printed in the Range column of the weapons tables is the weapon's *short range* in meters. *Medium range* is twice short range; *long range* is twice medium (or four times short); and *extreme range* is twice long (or eight times short).

For example, a weapon with a printed range of 50 has a short range of 50 meters, a medium range of 100 meters, a long range of 200 meters, and an extreme range of 400 meters.

Hitting a target with an *aimed shot* at short range is an Average task. At medium range it is a Difficult task. At long range it is a Formidable task. At extreme range it is an Impossible task. For quick shots, raise the difficulty one level.

Note that a character firing a quick shot at long range would have to succeed at an Impossible task (Formidable for range, increased one difficulty level for firing a quick shot) in order to hit the target.

Telescopic Sights: Sniper rifles come with a telescopic sight, or "scope" fitted to them. Any other rifle may have one fitted at additional cost by a gunsmith (they may not be initially acquired so equipped). The fitting of a telescopic sight increases the short range (and by extension the other ranges as well) of the rifle. The combat performance tables allow the player to determine rifle's basic short range, called its "iron sight" range because this is its range over simple metal sights without additional enhancement. For most weapons, there is a single short range listed; this is its iron sight range. Some weapons also have a parenthetical value in the range column which is the iron sight range (players will also notice in the features column of these weapons that they are already fitted with optic or electronic sight enhancements, so the effects of these enhancements must be removed to get the shorter iron sight range).

If a scope is mounted, add 15 to the iron sight range figure *when conducting aimed shots*. In addition, aimed shots at extreme range are conducted as if at long range for purposes of hit difficulty. Note that scopes have no effect on quick shots.

For example, a rifle with an iron sight range of 75 and a telescopic sight would be treated, for purposes of aimed fire, as having a short range of 90 meters, a medium range of 180 meters, a long range of 360 meters, and an extreme range of 720 meters. Telescopic sights may not be fitted to pistols.

Electronic Sights: A more advanced version of the telescopic sight is the electronic sight. This confers the same benefits as the telescopic sight, but adds 20 meters to the short range for aimed fire instead of only 15. In addition, it provides night fire capabilities; see page 344 for details. Some electronic sights also simplify the use of grenade launchers and include a laser rangefinder. The rangefinder allows the character to measure accurate ranges to distant points, and can be used to designate targets for direct or indirect fire by target-designated weapons. Electronic sights may be fitted to pistols.

Laser Sights: Laser sights do not increase the short range of a weapon, but project a small visible dot onto the point the weapon will hit, allowing quicker and more accurate aiming. A laser sight allows up to three shots fired during a turn to count as aimed shots (instead of only the first one). All other shots fired during the turn count as quick shots. The sight may only be used at ranges up to its maximum listed range (see page 344). Laser sights *may* be fitted to pistols.

FIRING RANGE DIFFICULTIES

	Difficulty	
Range	*Aimed Shot*	*Quick Shot*
Short	Average	Difficult
Medium	Difficult	Formidable
Long	Formidable	Impossible
Extreme	Impossible	Not Allowed

Recoil: Recoil is a measure of how much a weapon kicks when it is fired, which affects accuracy. Recoil affects only small arms in the game, not heavy weapons. Each small arms weapon has a recoil value for a single shot. If it is capable of automatic fire, it also has a recoil value for firing a burst. Whenever a character fires a small arms weapon, total the amount of recoil the weapon generates that turn by multiplying the recoil of a single shot or a burst by the number of single shots or bursts fired.

Once you know how much recoil the weapon generates in a turn, compare the total to the firing character's Strength. If the recoil is equal to or less than his or her Strength, fire is resolved normally. If it is greater than his or her Strength, reduce the hit number by the difference.

For example, a character with a Strength of 7 is firing two single shots from a pistol which has a single shot recoil value of 5. The cumulative recoil is 10 (2×5), and the final hit number would be reduced by 3 (10–7). If the character were firing an aimed shot with a chance of hitting on a 7 or less and one additional quick shot with a chance of hitting on a 3 or less, the hit chances would be reduced to 4 for the aimed shot and 1 for the quick shot (all other factors being equal). The same character firing one shot from the pistol would have no reductions in hit chance. While high-recoil weapons can physically be fired as quickly as low-recoil weapons, it is often counterproductive to do so. The effects of recoil on automatic fire are different and are treated in the automatic fire recoil section on page 276.

Pistol Recoil: Pistols may be steadied by using both hands and bracing oneself. This may only be done while stationary, and reduces the printed recoil by 1.

Rifle Recoil: Rifles (and other two-handed weapons) may also be fired from braced positions. If standing erect, this requires an aim action (for a total of two aim actions to fire an aimed shot from a braced position). If lying prone, this requires no additional action. Either way, reduce the printed recoil value (single shot or burst, as appropriate) by 1.

Characters firing weapons from a tripod or bipod cannot gain this benefit as they are already using the reduced tripod or bipod recoil values (note that the bipod value may only be used when lying prone or firing from behind a wall, etc.).

Two Weapons: If a character is carrying two weapons at



once (one in each hand), he or she may fire either one, but not both. For purposes of controlling the recoil of either weapon, the character's Strength is reduced by 1.

Automatic Fire

The hit procedure for automatic direct fire differs from that for individual shots. Whenever a character fires a weapon on its automatic fire setting, he or she fires one or more bursts of rounds.

The number of rounds in a burst is the number listed in the weapon's ROF column. Each individual shot fired in a burst is resolved separately as a marksmanship task at the Impossible difficulty level, regardless of range.

For example, a weapon with an ROF of 5 fires five shots per burst, and any automatic weapon may fire up to five bursts in a fire turn (as discussed under "Rate of Fire," page 272). A character who fired all five allowed bursts would have fired 25 rounds and rolls a total of 25D20 task rolls for hits. If the character had, for example, a Strength attribute of 2 and a marksmanship skill of 1, the combined total of 3 would be reduced to 0.75 for an Impossible task (3÷4), which rounds down to 0. Remember, however, that a roll of 1 always succeeds on a task roll (and the chances of getting a 1 on 25D20 rolls is pretty good).

The actual number of dice rolled per burst is reduced by either range and/or recoil.

Range: Subtract one die from each three-round burst, two dice from each five-round burst, and three dice from each 10-round burst for each range band beyond short.

For example, a small arms weapon which fires 10-round bursts would roll 10D20 per burst at short range, 7D20 at medium, 4D20 at long, and 1D20 at extreme.

A weapon which fires five-round bursts would fire 5D20 at short range, 3D20 at medium, and 1D20 at long.

Burst Size (rounds)	*Dice Lost per Range Band Beyond Short*
3	1
5	2
10	3

Recoil: Recoil is calculated the same way as individual shots. If the recoil number is greater than a character's Strength, the number of dice rolled per burst is reduced according to the difference Recoil – Strength.

For three- and five-round bursts, reduce the number of dice rolled per burst by the difference.

For weapons with 10-round bursts, reduce the number of dice rolled per burst by *twice* the difference.

For example, Glorinna Firella, with a Strength attribute of 7, fires her TL-6 submachinegun (see data on page 353) in an action turn. The SMG fires five rounds per burst, and Glorinna decides to fire a total of three bursts (15 rounds). The SMG statistics show that the SMG has a burst recoil of 3.

Since she is firing three bursts, the total recoil in the turn is 9, which is 2 higher than her Strength.

As a result, she subtracts two dice from each burst fired, leaving her with a total of 9D20 rolled for hits instead of 15D20 (short range is assumed).

Burst size (rounds)	Dice Lost per Point of Extra Recoil
3	1
5	1
10	2

Danger Zone: The danger zone is the area where persons not actually aimed at may be hit by stray shots from a burst of automatic fire.

The danger zone is an area five meters to either side of a line drawn between the firing character and the target, and includes all potential targets which are within the same range band as the target. However, the danger zone is never wider than the distance to the target from the firing character. That is, if firing at a target at short range, the danger zone is one meter wide one meter away from the firing character, two meters wide two meters away, and so on until it reaches its maximum width (10 meters at a range of 10 meters).

Once a player has rolled all of his or her automatic fire hit dice and noted how many rounds hit, the player takes half of the dice which missed (rounding fractions down) and rolls them again, using the same Impossible skill roll rolled for the original hits. Each hit rolled on this second set of dice is inflicted on another target in the danger zone. The referee will assign these hits to the other targets, beginning with those closest to the intended target.

Any dice which missed from this second roll (or half of all dice which missed from the first roll, if there were no other potential targets) are set aside and will be used to attack any character moving through the weapon's danger zone for one full turn. A full turn for the purposes of this rule is the remainder of the current turn and all of the next until the firing character's Initiative. However, if the firing character does not act in the next turn due to wounds, etc., then the fire lasts only until the end of the current turn. Note that by careful use of this effect, automatic weapons fire can be used to interdict movement or keep enemy troops under cover by simply firing through open doorways, over the tops of walls, etc.

Minimum Dice: A three- or five-round burst will never be reduced to less than one die per burst, regardless of the number of reductions for range and/or recoil made. A 10-round burst will never be reduced to less than two dice per burst.

Long Bursts: Some weapons have a burst size of 50. Treat these as 10-round bursts for purposes of hit determination, but each hit achieved counts as three actual hits.

Movement and Fire

Movement by either the firing character or the target reduces the chance of scoring a hit.

Advancing Fire: Characters may not fire while crawling or running. No aimed fire is possible while walking or trotting, but characters may fire quick shots or automatic bursts normally. For purposes of controlling recoil, however, a walking character's Strength is reduced by 1 and a trotting character's Strength is halved, rounding fractions down.

Fire From Moving Vehicles: Characters may not conduct aimed fire from a moving vehicle. They may fire quick shots or bursts normally.

All such fire, however, is conducted at one higher difficulty level than the actual range for purposes of determining hits.

Aimed shots may be made from a moving boat, but *all* shots are conducted at one difficulty level higher. Grounded boats are not considered to be moving; unpowered boats adrift in water are considered to be moving unless in absolutely calm water.

The firing of vehicle-mounted armament from moving vehicles is discussed under Fire from Moving Vehicles, page 294.

Fire From the Saddle: Characters firing while mounted on an animal do so the same as dismounted characters, with two exceptions:

First, their movement category is based on the movement of the animal. Thus, characters on a running animal may not fire at all.

Second, the marksmanship skill used to determine the chance of hitting with single shots is either the character's appropriate marksmanship skill or his or her Riding skill, whichever is lower.

Target Movement: If the target is moving 30 meters or more in the current turn, it is more difficult to hit. See the Target Movement Difficulty Modifiers table, page 294, for increases in difficulty level due to target speed. If a character is using automatic fire to fire at such a target, each increase in difficulty level is treated as an increase of one range band in order to change the number of dice rolled for hits.

Ammunition

Every time a weapon fires it uses ammunition. Slug weapons use up physical cartridges and bullets; lasers use up power stored in power packs. These are all called *shots*, no matter their physical form. A weapon can only store so many shots before it must be reloaded.

Ammunition record forms have been provided in the appendix, and permission is specifically given to photocopy them.

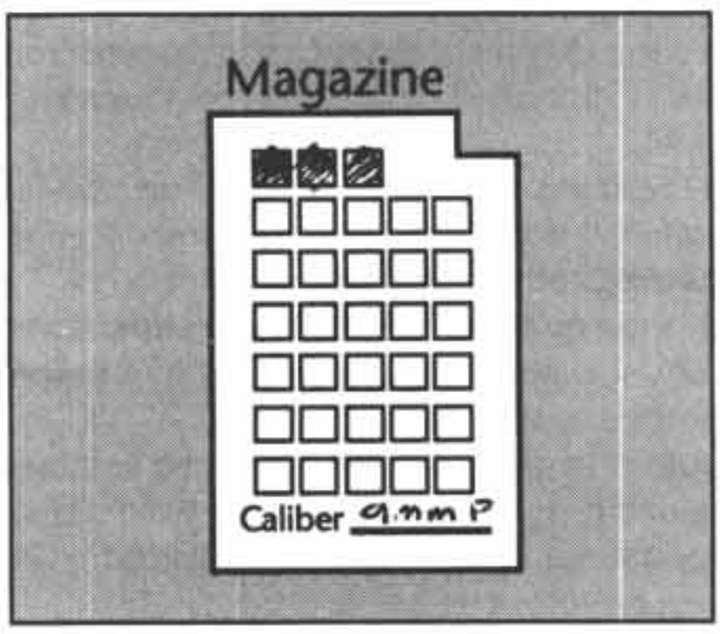
Players should each have one or more copies of this form to keep track of the ammunition they are carrying.

Write down by each magazine the type of ammunition loaded and mark off the excess rounds so that the number of boxes is equal to the number of rounds loaded. When a magazine is loaded into a weapon, the player simply circles it on his or her form, and marks off shots as they are fired. Energy weapons that draw their energy direct from power packs have their ammunition use recorded in a similar way, where the energy for a shot is recorded as a "round" of ammunition, and the power pack is thought of as an electrical magazine holding a certain number of rounds. However, some of these weapons can fire powerful pulses that consume the same energy as two or more less powerful pulses. For example, the TL-9 laser rifle on page 354 has a power pack which holds 100 shots at the SA2 pulse rate, but only 50 at the SA1 rate. Players should think of this power pack of holding 50 shots, but that each SA1 shot consumes two shots. Remember that each burst from this

weapon consumes 1/50 of the power pack capacity, the same as the SA2 rate of fire (rather than each shot in the burst, as would be the case with a burst-firing slug weapon).

It is suggested that individual shots be marked off from the top of the magazine form and bursts marked off from the bottom.

A 30-round box magazine for a submachinegun is shown below.



Special Cases

Special cases modify the basic firing rules.

Target Obscured: If the target is partially obscured (in brush, fog, mist, light smoke, etc.), the difficulty level to hit is increased by one level. See the Environment section beginning on page 307, for further discussion.

Folding Stocks: In order to reduce their bulk, some weapons have folding stocks (indicated in the weapons data as two values separated by a slash indicating folded and unfolded bulk, as "3/4"). *Aimed fire is only possible with the stock extended.* Folding or extending a stock counts as an action.

Firing at Riders: If the target is a rider on an animal, motorcycle, grav bike, or similarly sized conveyance, the firing PC must declare whether he or she is firing at the rider or mount. In either case, fire is resolved normally, but if a single shot misses its intended target, it has a 10% chance of hitting the other. For automatic fire, misses are rerolled for additional hits on other targets in the danger zone, but half of all additional hits are taken on the other target (rider or conveyance).

Grav Belts: See the vehicle movement rules beginning on page 291.

Opportunity Fire: Another use of the aim action is to sight along a certain line of sight to a target or area and wait to shoot at any enemy that crosses that line. This is called *opportunity fire* and allows the aiming character to act out of turn, by shooting at the enemy during the enemy's Initiative step, as that enemy crosses the line.

If the enemy character was already visible to the opportunity-firing character at the beginning of the action which triggered the opportunity fire, the first shot fired counts as an aimed shot; otherwise, all individual shots are quick shots. (Automatic fire is possible instead, but then no shots count as aimed fire. See Automatic Fire on page 276.)

Guided Weapons: Tac missiles are guided weapons, and have several different types of guidance systems that are handled slightly differently. For game purposes, there are three main types: command or operator guided, designated, and homing.

Operator Guided: The missile must be aimed all the way to the target by its operator. This usually involves the act of keeping the launcher's sight on the target, and the sight automatically transmits course corrections to the missile (via wires, laser comm-link, etc.). This sometimes requires the operator to remain exposed to the target, although some systems use periscopic sights for this reason. A subset of operator-guided missiles is teleguided. This missile also requires the operator to guide it all the way in, but in this case the operator views the target from sensors on the missile itself, and so does not need to remain in the line of sight of the target. Both these types of operator-guided missile are rolled against the Tac Missile skill of the operator. If the target moves from view of the operator before the missile impacts, the missile misses.

Unlike other direct fire weapons, *the range given on the combat charts for an operator-guided missile is its maximum range.* Within this range, the chance to hit is the same regardless of distance—it is always an Average task. The character must aim before firing and must continue to aim during the entire flight of the missile or it will miss the target. All missiles have a listed speed in meters per five-second turn. If the character is hit by any sort of attack, he or she will stop aiming, and the missile will miss.

Designated: Designated missiles home in on a signal, either laser or radar, that is aimed at, and bounces off of, the target. So long as this signal is held on the target, the missile cannot miss. The target can be designated by someone other than the firer, allowing the firer to clear the area. However, the designator must continue "painting" the target until impact, and must therefore remain in the line of sight of the target.

Hits with designated missiles are rolled by the designator, who may or may not be the firer. The task for the designator to hold the laser on the target is rolled as a normal direct fire task using the asset and range of the designating weapon, but at one additional difficulty level higher. Radar designation is automatic, so long as the radar-equipped vehicle remains pointed at, and within line of sight of, the target.

As with operator-guided missiles, the listed range for designated missiles, is their *maximum range.*

Homing: These are the true "fire and forget" missiles. The missile carries its own sensors which allow it to follow the target once it has had the target identified to it by its operator. Proper operation of these missiles requires the operator to give the missile's guidance system a clear view of the target and proper firing parameters before firing. Once the missile is away, it requires no further attention from its firer. Hits with homing missiles are rolled against the Tac Missile skill of the operator. See "Firing at Flying Vehicles," page 294, for full details.

The guidance system is listed with missile types in the Equipment and Technology chapter, page 357.

Shotguns and Flechettes: Some weapons, primarily shotguns and grenade launchers, can fire rounds that consist of many smaller antipersonnel projectiles that spread out in flight to increase the chance of hitting. Such rounds fired by shotguns are called buckshot. Those fired by grenade launchers and some heavy guns are called flechette (or sometimes "beehive," for their distinctive sound), and consist of many small darts.

Shotguns may fire either slugs or buckshot rounds. Slugs are fired in the same way as any other small arms fire using the ratings provided with the weapon. If the shotgun fires buckshot, however, the rules below apply.

Buckshot and flechettes behave as follows.

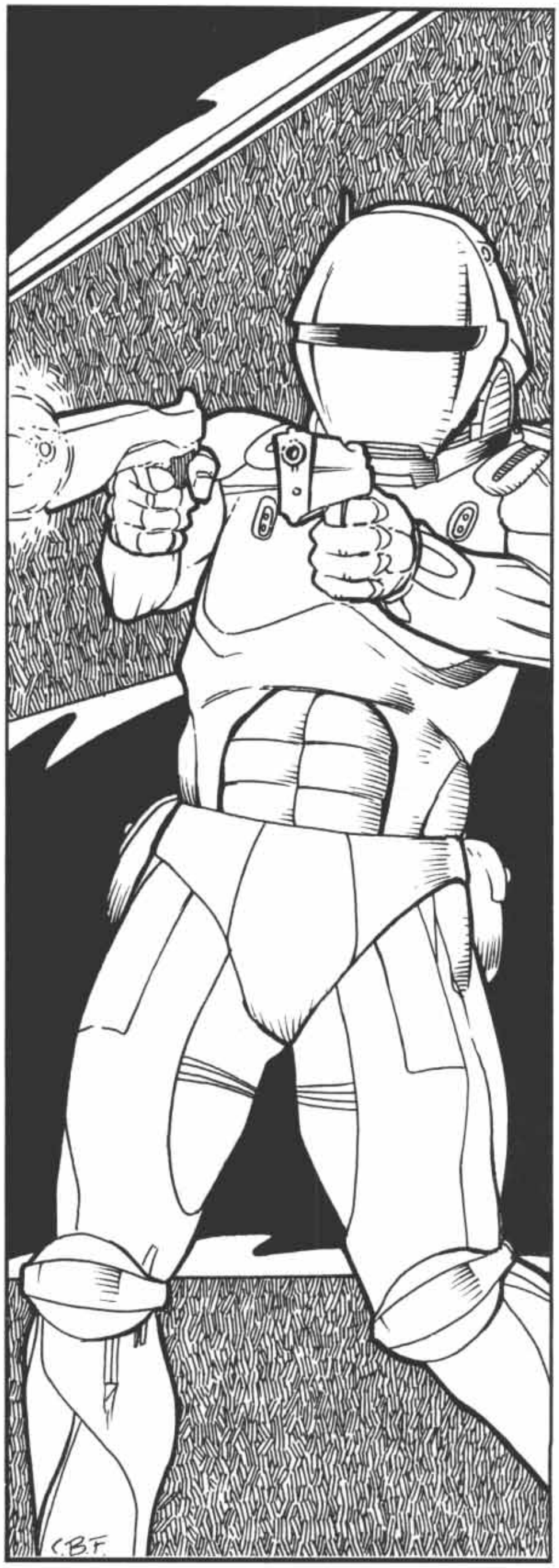
At short range, they are treated as normal single-shot weapons with their listed short-range damage, as the pattern of buckshot or flechettes has not yet spread out.

At medium and long range, each shot is treated as a multi-round burst using the automatic fire rule, including the reduction of dice rolled for hits for recoil and range. Most shotgun and flechette shots are rolled as 10-round "bursts," but three- and five-round "bursts" are also possible. The number of dice rolled for the shot is indicated parenthetically with the weapon's ROF. For example, SS (10) is a single shot weapon firing a 10-dice burst, while SA (5) would be a semiautomatic weapon rolling five dice per shot. Each rolled hit does damage as indicated in the damage column.

Some shotguns or flechette-firing weapons are capable of automatic fire. The listed burst size of the weapon is the number of multi-dice "bursts" of buckshot or flechettes that are actually fired. At short range the player rolls a number of standard direct fire tasks (as modified by recoil) equal to the burst size, with each hit doing the indicated short range damage. At medium or long range use the range rule from automatic fire to calculate the number of dice rolled for hits based on the appropriate burst size (i.e., subtracting one die per range band from a three-round burst, two dice from a five-round burst, etc.). This shows the number of multi-dice bursts to be rolled for at that range. Each of these bursts must also have its number of hit dice reduced for range and recoil.

For example, an automatic grenade launcher firing a five-round burst of flechette, each rolling 10 dice (listed in the ROF column as "5(10)") would roll five dice for hits at short range. At medium range, there would be only three flechette bursts to roll for (because a five-round burst loses two rounds per range band), and each of these 10-round bursts would be reduced to seven dice rolled for damage (because 10-round bursts are reduced by three dice per range band). At long range, there would only be one flechette burst left (the five-round burst has lost two more rounds for the next range band), and that burst would be further reduced to only four dice rolled for hits. For simplicity, this example did not include the effects of recoil, which would further reduce the number of dice.

Bukshot and flechette differ in that flechette darts are more aerodynamically shaped, and therefore have better range performance. Buckshot can fire out to only medium range (no effect at long or extreme), while flechette can fire



out to long range (no effect at extreme). Flechettes also often have better penetration performance. Penetration for both buckshot and flechettes is listing in the penetration rating column of the combat performance tables (pages 350-357).

Bursting Flechette Rounds: The above rules apply to flechettes that are fired shotgun-style from small arms. Larger weapons, rockets, and missiles fire bursting flechette warheads which are fired as single warheads but which explode at a certain distance. The flechettes fly outward in an advancing cone from the exploding warhead, then stabilize to form a wide cylinder or disk of flechettes travelling along the path on which the round was fired.

Bursting flechette rounds can be recognized in the weapons listings because they are rated with a *danger zone* of a certain width in meters x a certain length. This danger zone is the round's *primary* danger zone, the *secondary* danger zone has the same width and length, and begins at the end of the first danger zone (along the path of flight). Within these danger zones, whose width is centered on the line along which the round was fired, all targets roll as if they were within the primary (if in primary danger zone) or secondary (if in secondary danger zone) burst radius of an artillery shell, see page 283. Each flechette hit in the primary danger zone does 2D6 points of damage with a penetration rating of 1, each hit in the secondary danger zone does 1D6 points of damage with penetration rating of Nil.

When firing a bursting flechette round, the firing character or crew must make a normal direct fire to-hit roll using the appropriate skill (depending on whether the weapon is a large-bore gun, rocket or missile launcher, etc.), and incorporating all normal modifiers. Success indicates that the warhead bursts so that the selected target is exactly at the midpoint of the primary danger zone, in length and width. If it misses, roll 1D10. 1 indicates that the round burst high, firing over the target (no damage), 2 indicates a low burst, firing into the ground (no damage), 3-4 indicates that the round burst off to the left, 5-6 burst off to the right, 7-8 burst short (farther in front of the target), and 9-10 burst long (farther beyond the target). Roll 1D10 for the number of meters left, right, long, or short, using the aim point to measure from (multiply number of meters by 5 if catastrophic failure was rolled). Once the danger zones are established, roll normally for any targets that may be in the deviated danger zones.

The centerline of the danger zones is always the line drawn directly from the firing unit to the adjusted burst point.

Bursting flechette rounds may only be fired as direct fire, never as indirect fire.

Shotgun and Small Arms Flechette Danger Zone: Small arms flechette rounds (i.e., non-bursting flechette rounds) and shotguns firing buckshot have danger zones like those described in the Automatic Fire rules on page 276, except that shotguns and small arms flechettes do not create a danger zone at short range, because they are treated as single shots at this range: Either they hit their target or they don't. Large caliber flechettes do create a danger space at short range.

Type of Round	*Maximum Range*	*Danger Zone Begins*
Shotgun Buckshot	Medium	Medium
Small Arms Flechette	Long	Medium

As with the automatic fire danger zone, dice that do not hit their targets are rolled against other targets in the danger zone and against other targets that move through the danger zone during the turn.

Energy Weapons: Some energy weapons have a fractional penetration rating. This rating is used the same as the penetration rating of any other small arm, and means that, instead of losing one or more damage dice per armor level penetrated, the weapon will penetrate more than one armor level *per damage die.*

When such an energy weapon hits its target, multiply the target's armor value by the penetration value of the weapon, rounding fractions up. The result is the number of damage dice absorbed by the armor. Subtract this from the weapon's damage value and, if the remainder is a positive number, inflict that many damage dice on the target.

Lasers do not cause blunt trauma damage (see page 285); fusion guns and plasma guns do.

Multiple Modifiers: All modifiers to the number of dice rolled or the range at which fire is delivered are cumulative. When a weapon is firing bursts, the number of dice is never reduced to 0 (see "Minimum Dice," page 277).

Direct Fire Deviation: Certain weapons deviate if they miss when fired in direct fire—rifle grenades and grenade launchers, for example (also bursting flechette rounds, which use their own deviation system detailed above). The die is rolled for distance and direction in the same way as for indirect fire, as noted below; however, the distance die roll is multiplied by only one meter.

Indirect Fire

Indirect fire is fire at a target which the firing character cannot see, following the directions given to the firer by a forward observer who can see the target. Only weapons with an indirect fire range—IFR (listed on the weapons charts)—may use indirect fire.

Calling Fire: In order for indirect fire to be possible, the firing character or gun crew must be in communication (usually by remote communicator) with a character (called a forward observer) who can see the target. The target is a stationary position; it can be a building, but it can't be a moving vehicle (although it can be the place where the forward observer believes the vehicle will be when the fire hits). Before fire begins, the forward observer must talk to the firer for six combat turns. After fire has begun, the forward observer may want to call in corrections to make the fire more accurate. The same restrictions on both characters' actions apply as with other communication; in particular, the firer may not fire his or her weapon during the conversation.

Calling Orbital Fire: A forward observer may also call fire from spaceships or starships in orbit above the battlefield (sometimes called "ortillery"). This fire is actually direct fire from the point of view of the ship, but is controlled from the ground like indirect fire. Orbital fire is resolved as above, except that only the skill level of the forward observer is used. This orbital fire may also be target-designated. See Target Designation, page 282.

Hit Number: Hitting the target is a Formidable task using either the appropriate weapons asset of the firing character or the Forward Observer asset of the observing character, whichever is less (in a crew-served weapon, the skill of the gunner in command is used). If firing a hand-held grenade launcher (either a rifle grenade or a hand-held grenade launcher), the gunner's task difficulty level becomes Impossible.

The following skills are used by gunners when firing weapons in indirect fire:

Skill	*Weapon*
Grenade Launcher	All grenade launchers and mortars
Energy Artillery	Battlefield meson guns
Heavy Artillery	All indirect fire field guns, howitzers, mortars, mass drivers, and rocket launchers
Archaic Artillery	Black-powder cannon, catapults, bombards, etc.
Gunnery (cascade)	Starship-mounted weapons

Note that mortars may be fired by PCs with either the Grenade Launcher or Heavy Artillery skill. Characters with both skills may chose which to use.

Use the appropriate asset and difficulty level to compute the indirect fire "to-hit" number.

Deviation: If the round misses, it deviates—i.e., lands somewhere near (or not so near) its aim point. The referee determines the distance and direction of the deviation from the target of the intended impact point. First the referee rolls 1D10 for distance of deviation. For grenade launchers and rifle grenades, multiply the result by five meters. For mortars, guns, and howitzers, multiply the result by 10 meters. For artillery rockets and orbital fire, multiply the result by 20 meters.

Type of Weapon	*Deviation multiplier (meters)*
Grenade launcher, rifle grenade	5
Mortars, guns, howitzers, mass drivers, meson guns	10
Artillery rockets	20
Orbital fire	20

If the indirect fire weapon is firing at greater than half its indirect fire range, double the result of the deviation roll. The referee then rolls 1D10 and consults the Scatter Diagram to determine the direction of deviation.

Corrections: If the shot doesn't hit, the forward observer may call in corrections. After each correction, subtract 1 from the to-hit die roll and subtract 1 from the die roll for distance of deviation if the round misses. Thus, four corrections would allow 4 to be subtracted from the to-hit die roll (thereby increasing the chance of a hit by 4) and would lower the deviation die roll by 4. A deviation roll of less than 0 is changed to 0.

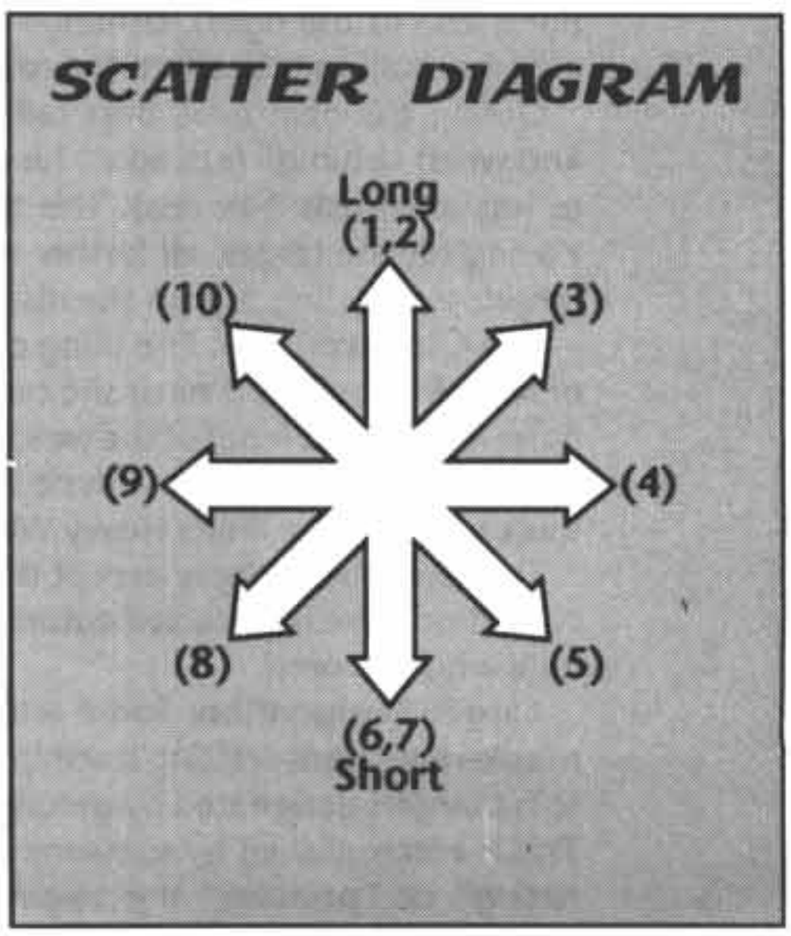
At least one additional shot must be made after each correction before another correction is possible.

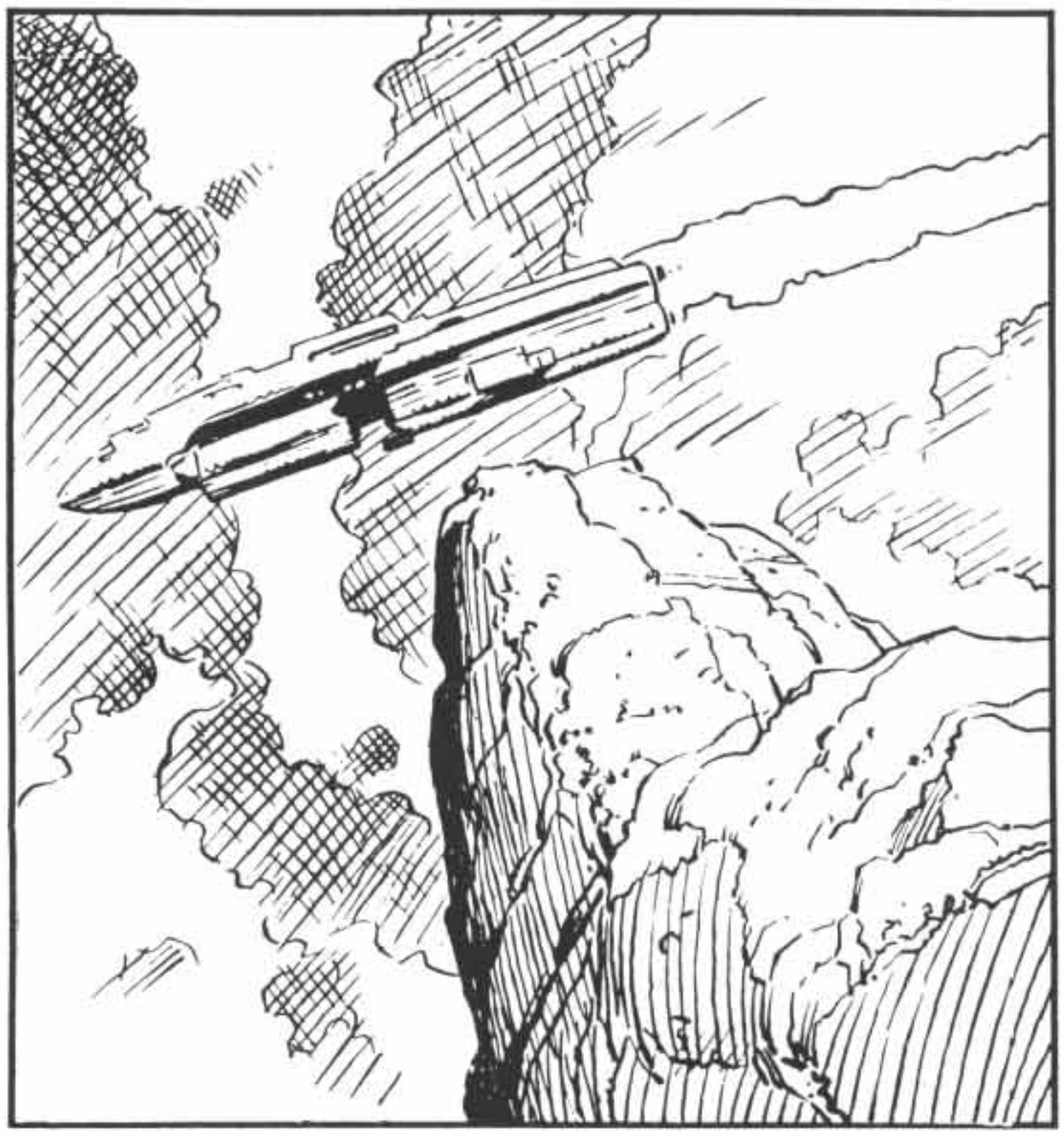
Accuracy: There is a maximum limit to the accuracy of indirect fire. The maximum "to-hit" number for ground-based indirect fire is 14; for rifle grenades and hand-held grenade launchers, the maximum "to-hit" number is 10; for called orbital fire, the maximum "to-hit" number is 16. In addition, the deviation distance roll may never be reduced by more than 5 for ground-based indirect fire; for rifle grenades and hand-held grenade launchers, the roll may never be reduced by more than 3; for orbital fire, by more than 7.

Weapon	*Max Hit No.*	*Max Dev. Reduction*
Orbital fire	16	7
Mortar, howitzer, gun, mass driver, rocket	14	5
Grenades	10	3

Subsequent Shots: If a shot hits, subsequent shots will continue to deviate around the target because of the maximum limits of accuracy. If a shot does not hit, subsequent shots will deviate around the initial impact point (not the target). In both cases, the deviation distance roll is reduced by 5 (for most weapons) or 3 (for rifle grenades and hand-held grenade launchers).

For example, Ushimgii has a grenade launcher and Grenade Launcher asset of 12. Bors has Forward Observer asset of 14. Bors is on a hillcrest observing enemy soldiers coming up the hill. Ushimgii is on the other side of the hill. Bors radios Ushimgii and tells him to fire. Ushimgii fires one grenade, which hits on a 3 or less. He rolls a 6, indicating a miss. For deviation distance the referee rolls a 5—the grenade misses the target by 25 meters. He then rolls a 2, indicating that the grenade goes long. Ushimgii fires another grenade; this time there is no roll to hit, and the grenade deviates





from the point where the first grenade hit. The referee rolls a 3 for distance, reduced by 5, which makes the deviation distance 0; a direction roll is unnecessary, and the grenade hits in the same place.

Bors radios a correction, which takes the next combat turn. This correction increases the chance of a hit to 4 (i.e., –1 allows a die roll of 4 or less to make the 3 or less to-hit number). On the turn following, Ushimgii fires again, but rolls a 6, missing again. The referee rolls a 5 for distance. Because of the correction, this is reduced to a 4, or 20 meters from the target. The referee rolls a 3 for direction (long and to the right). Ushimgii's next shot follows the above deviation procedure (no roll to hit).

During the next turn, Bors radios another correction, and when Ushimgii fires again he will hit on a 5 or less (5 or less –2 equals 3 or less). This time he hits the target. Having hit the target, all further deviation is around the target, subtracting 5 from the distance roll.

Self-Observed Fire: The firing character may act as his or her own observer if he or she can see the target. (This is done if the target is out of the weapon's direct fire range or if the weapon is a mortar with no direct fire capability.) In this case, only the firer's Heavy Weapons skill is used.

The rules above apply except that there is no delay for corrections; fire is corrected automatically after every shot *until a hit* is scored.

Target Designation: Some artillery rounds, including missiles fired from orbiting starships, can guide themselves to hit targets designated by ground-based lasers or radar. This is accomplished by someone near the target "illuminating" or "painting" the target with a hand-held or vehicle-mounted laser designator or vehicle-mounted radar. So long as the target remains illuminated, the round will hit the target without deviation. If somehow the illumination is stopped or interrupted, the projectiles "go stupid" and the fire is resolved as normal indirect fire.

Keeping a target illuminated until the ordnance arrives may require a character to roll a task. This task is equivalent to the task to designate a target for a target-designated tac missile as discussed on page 278. For radar designation, it is automatic.

Designated rounds, the weapons capable of firing them, and the system used for designation will always be noted with the weapon.

Thrown Weapons

Any hard object can be thrown at another character or animal. Hitting the target is Difficult: Thrown Weapon at effective range and Formidable: Thrown Weapon at long range. Effective range is equal to the character's throw range if the object weighs one kilogram or less. If the object weighs more than one kilogram, effective range is equal to the character's throw range divided by the weight of the object. Long range is twice effective range. Thus, if a character had a throw range of 20 meters, he or she would have an effective range of 10 meters with a two-kilogram object, five meters with a four-kilogram object, etc.

If a thrown object hits its target, it causes hits equal to the sum of the throwing player's Strength plus 1D6, regardless of the weight of the object. Thrown objects have an armor penetration of Nil.

A throwing knife will always inflict 1D6 hits, regardless of the range or Strength of the thrower. Its armor penetration is likewise Nil.

Hand Grenades: Hand grenades are a subset of thrown weapons, and also are thrown at specific targets. Hand grenades may be thrown at either effective range or long range, as explained above.

If the throw misses, roll for distance and direction of deviation in the same way as for indirect fire, but multiply the distance of deviation die roll by one meter if throwing within effective range and two meters if within long range. The total deviation may never be greater than half the range of the throw. Thus, if a grenade is thrown at a target 20 meters away, the grenade cannot deviate more than 10 meters.

GRENADE DEVIATION

Range	*Deviation*
Effective	×1 meter
Long	×2 meters

A PC may throw additional grenades at the same target. If the target does not move, add 1 to the thrower's Thrown Weapon skill for all grenades after the first.

The referee can alter the chances of a hit based upon the difficulty of the throw; he or she might reduce the difficulty level by one for throwing a grenade at a large target like a tank or increase it by one for trying to throw a grenade through the firing slit of a bunker.

Effects of Fire and Combat

Once a target is hit by a weapon, the weapon's destructive effects upon the target must be calculated.

EXPLOSIONS

Many types of ammunition do damage solely by virtue of their kinetic energy. That is, they slam into the target and damage it by sheer brute force. All small arms fall into this category, as do many antitank rounds.

Other types of ammunition, however, explode when they hit, and this section describes their effects.

Descriptive Terms: The power of an explosion is described by two ratings: concussion and burst. Concussion is the effect of the massive overpressure wave generated by the explosion, while the burst radius is the area filled with small, high-energy fragments (often called shrapnel). These jagged metal fragments can cause severe injury. But they lose energy quickly due to their eccentric ballistic shape and thus do not carry anywhere near as far as a bullet.

Concussion: The listed concussion value for an explosion is the number of damage dice rolled if in contact or in the same 10-meter grid square as the explosion. If a character is in an adjacent 10-meter grid square, the explosion does half of this value, rounding fractions down. If one square farther away, it does half of this value, rounding down, and so on until the concussion is reduced to 0.

Concussion can affect part or all of the body, so the number of concussion damage dice called for are rolled and divided evenly among the various body parts. Simply divide the total damage suffered by 7 and add that many points to each body part. All points left over which are not evenly divisible by 7 are added to body parts as instructed by the referee. At least 1 of the extra points should be to the head, and the remainder should be distributed on the side facing the explosion or to any previously injured part.

If the target character is actually in physical contact with the explosive, the full concussion value is taken first as damage to the body location in contact with the explosion. Then the character suffers the full cuncussion value *again,* but divided among all of the hit locations, the same as a character standing in the square but not in contact with the explosion.

The following example table shows the reduction of concussion damage at successive ranges for an explosion with a concussion value of 30.

CONCUSSION EXAMPLE

Range	*Concussion*
Contact	30+30
Same square	30
1 square away (adjacent)	15
2 squares away	7
3 squares away	3
4 squares away	1
5 squares away	None

Cover: Characters completely behind solid cover, such as behind a thick wall, completely inside a trench or foxhole, or inside an armored vehicle, do not suffer the effects of concussion. Characters under partial cover (such as partially exposed behind a wall, in a foxhole, or in the hatch of an armored vehicle) and prone characters halve the concussion value of any attack on them. (This does not apply to explosions which are in physical contact with them, such as grenades dropped into their trench.)

Characters in a small, tight enclosure, such as an armored vehicle or small concrete room, into which an explosive is delivered, suffer double concussion damage divided evenly among their hit locations.

Burst: The burst rating for an explosion is its primary burst radius—the area saturated with a high density of fragments. The secondary burst radius, which has a lower concentration of fragments, is twice this. The burst radii are expressed in meters, but are stepped in increments usable with the tactical grid system. (See Sample Burst diagrams on the following page.)

Hit Procedure: Roll 1D10 for each character within either the primary or secondary burst radius of an explosion. Characters within the primary burst radius are hit by multiple fragments on a roll of 1-3, a single fragment on a roll of 4-6, and no fragments on a roll of 7-10. Characters in the secondary burst radius are hit by multiple fragments on a roll of 1-2, a single fragment on a roll of 3-4, and no fragments on a roll of 5-10. If a character is hit by multiple fragments, roll 1D6 to determine the number.

Damage and Penetration: Fragments do damage as small arms fire. Fragments closer to the explosion are more dangerous than those farther away. Fragments in the primary burst area do 2D6 damage and expend one damage die per level of armor value (AV) struck. (Thus, they may penetrate armor of AV1 and still do 1D6 damage). Fragments in the secondary burst area do 1D6 damage and will not penetrate armor.

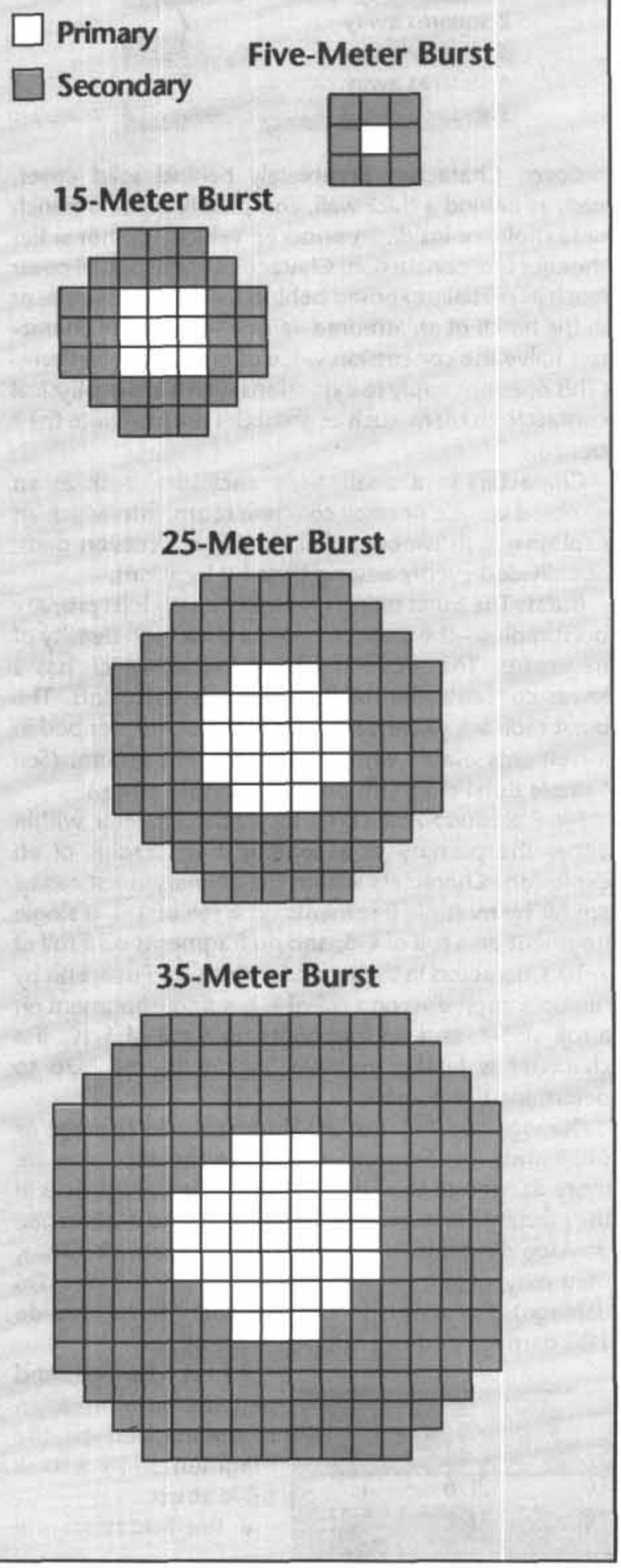
All hit, damage, and penetration information is summarized on the Fragmentation *Attack* table at left.

If the fragments are

FRAGMENTATION ATTACK

Burst Radius	*Range*	*1D6 hits*	*1 hit*	*No hits*	*Dam*	*Pen*
Primary	1×Burst	1-3	4-6	7-10	2D6	1
Secondary	2×Burst	1-2	3-4	5-10	1D6	Nil

SAMPLE BURST DIAGRAMS
(Ten-Meter Grid)



from an incendiary warhead (such as white phosphorus), also see "Burns" on page 286.

Exploding Round Penetration: All exploding rounds have a listed penetration value expressed as the minimum armor value of penetration. The actual penetration of the round is the listed penetration plus the roll of 2D6 (except for rounds with a listed penetration of Nil). Compare this to the armor value of the target vehicle and consult the vehicle damage tables. (See "Damage from Fire" in the Vehicle Combat chapter on page 296.)

Submunitions

Submunition ammunition includes bombs and artillery rounds filled with grenades. The round bursts at a high altitude and scatters grenades throughout its listed burst radius. In the case of HE (high-explosive) submunition rounds, these are high-explosive/fragmentation grenades. In the case of DP (dual-purpose) submunition rounds they are HEAP (high-explosive, armor-piercing) grenades capable of penetrating the roofs of armored vehicles.

When a character or vehicle is in the burst zone of an HE- or DP-carrying submunition round, consult the Submunitions Attack table on page 285. On the numbers listed under the Close column on 1D10, a grenade lands in the same grid square as a character or vehicle. (Roll once per grid square containing one or more characters or vehicles, not once per character or vehicle in the square.) On the numbers listed under the column labeled Adjacent, a grenade lands in the adjacent grid square. The Concussion, Burst, and Penetration columns list those values for the individual grenades in a round.

The chance of a direct hit on a character or vehicle in the grid square is also noted on the Submunitions Attack table. This is rolled for only if it has already been determined that a grenade landed in the same grid square.

Roll once for each character and vehicle in the square. If more than one hit is achieved, then the referee should randomly determine which of the characters or vehicles actually suffered the hit.

All direct hits on vehicles are resolved as overhead attacks.

Guided Submunitions: Some submunitions have homing sensors and seek out individual vehicular targets after being dispersed, sometimes hanging beneath parachutes to give them time to find a target.

Roll normally to see if a submunition lands in a grid square, and then roll for direct hits. Guided submunitions are specified as being antivehicle or antipersonnel. Increase the chance of a direct hit on the specified target type by 2 on the 1D10 hit roll (i.e., personnel are hit on 1-3 rather than 1, or vehicles on 1-7 instead of 1-5).

WOUNDS AND DAMAGE

A character can be injured as a result of combat in several ways. The following three pages explain how damage is assessed against characters. The next section, Wound Effects and Healing, beginning on page 288, shows how this damage actually affects its targets.

Gunshot Wounds

Each time a character is hit by fire, he or she is wounded. The extent of the injury is determined by three factors: hit location, weapon damage, and target protection.

Hit Location: Whenever a character is hit, roll 1D10 and consult the Personal Hit Location chart on page 269. This indicates the body part struck and injured by the shot.

Weapon Damage: Most weapons do the same anti-personnel damage at all ranges. This is true for slug-firing small arms, for large-caliber chemically propelled guns (which have a constant antipersonnel damage value) and high-energy weapons (plasma and fusion guns whose damage value remains constant but whose penetration ratings decline over distance). The damage value of the weapon is listed on the weapons charts and is the number of D6 rolled. Some weapons have a damage value of –1. In this case, roll 1D6 and subtract 1 from the result.

Lasers are an exception; their damage varies with range. The laser combat performance chart (page 354) shows the amount of damage dice done at each of the four range bands. (Lasers are also an exception in that their listed personnel damage dice are not the same as their damage value, see page 297 for further discussion.)

Some weapons fire exploding rounds. These weapons have a damage rating consisting of two separate listings: concussion and burst. These effects are calculated with the explosion rules on page 283.

Target Protection: If the target is wearing body armor and the shot strikes a protected body part, the shot may not be able to penetrate the armor. Flak jackets and Kevlar vests protect both the chest and abdomen. Helmets partially protect the head. If a character is hit in the head, roll 1D6. The shot strikes a helmet on a roll of 1-4. On a roll of 5-6, it hits the unprotected head.

Each weapon has a penetration rating that reflects its ability to punch through armor. This rating may consist of the simple notation Nil, indicating that the shot will be stopped by any armor protection, or it may have up to three different numeric ratings. If so, *the first rating applies to both short and medium range*, the second to long range, and the third to extreme range. If a weapon's penetration drops to Nil at any range band, it remains unable to penetrate armor at longer ranges, so no additional entries are made.

The penetration value of a weapon is the number of damage dice it loses for each armor value it is required to penetrate. *Multiply the target's armor protection by the weapon's penetration value and subtract the result from the weapon's damage value.* If the remainder is a positive number, the shot penetrates, and the referee rolls that many dice for damage. If the remainder is 0 or a negative number, the shot fails to penetrate.

For example, a character fires a 5mm rifle at short range and hits his or her target in the chest, which is protected by a flak jacket. The 5mm rifle has a damage value of 3 and a penetration of 1 at short range, and the flak jacket has an armor value of 1. Multiplying the penetration (1) by the armor value (1) and subtracting the result (1) from the weapon's damage value (3) shows that the 5mm penetrated the flak jacket and did 2D6 of damage.

Laser Penetration: Most small arms lasers will have a penetration rating of Nil, which means they are stopped by armor values as low as 0. However, this only applies to rigid metallic or ceramic armors. Non-metallic or ceramic armors are treated as *no armor* by lasers, and are thus disregarded. Likewise, non-rigid metallic armor like chainmail is also treated as no armor. See Personal Armor on pages 358-9 for more details.

Outstanding Success: Any time that an Outstanding Success is rolled when firing at a character, double the damage caused by the shot.

Quick Kill: Any shot which hits the chest or head may constitute a killing shot. Roll 1D20. If the roll is less than or equal to the damage value of the shot, the target is instantly killed except on a roll of 20 exactly.

If the hit was scored on an area protected by armor, roll versus the remaining damage value of the round.

For automatic fire, roll only once per turn (regardless of the number of shots that hit).

This rule should be applied only to NPCs. It is recommended that PCs who suffer a killing wound instead double the damage inflicted by the round. (Note: We know this is unrealistic, but this is, after all, a game. Referees should consult their players before disregarding this recommendation.)

Blunt Trauma: When the bullet from a slug-firing small arm or the plasma from a plasma or

SUBMUNITIONS ATTACK

Round	*Close*	*Adjacent*	*Concussion*	*Burst*	*Pen*
Light Arty HE	1-3	1-2	3	15	Nil
Light Arty DP	1-3	1-2	3	15	4C
Med Arty HE	1-4	1-3	3	15	Nil
Med Arty DP	1-4	1-3	3	15	4C
Hvy Arty DP	1-5	1-4	3	15	4C

Submunitions Direct Hit Chance: Personnel, 1; Vehicle, 1-5 on 1D10.
Guided Submunitions Direct Hit Chance: Personnel, 1-3 *or* Vehicle 1-7 on 1D10.
See notes in Submunitions section on page 284.

fusion gun strikes a person, it packs considerable force and will cause injury even if it does not penetrate the target's body armor. This is called blunt trauma. A target suffers 1 actual point of damage for each D6 worth of damage absorbed by the armor. Note that bullets which penetrate and cause some normal wound damage will also still cause blunt trauma.

In the example of the 5mm rifle firing above, the target would take 1 point of blunt trauma damage for the one damage die absorbed by the flak jacket.

Note that, by their nature, lasers cannot cause blunt trauma.

Cover: Characters and vehicles may hide behind obstacles as protection from fire. If the hit location rolled is covered by the obstacle, the shot has no effect unless it is able to penetrate the obstacle. The Armor Equivalency table on page 298 allows calculation of the armor values of common types of cover.

For example, a character is under cover behind a tree which is 60 cm in diameter. The referee decides that, since the character is firing a weapon, his or her head and right arm are exposed. If the PC is hit in the chest, the shot strikes the tree instead and provides an armor value of (60÷5=) 12.

Similarly, a character sticking her head out of a foxhole is likewise protected. Any hits fired from ground level (overhead shots obviously negate her protection) that are rolled to hit her legs, arms, abdomen, and torso are no effect, because the thickness of the dirt between the firer and target is too great to be reasonably penetrated. However, if the surface in front of the character were reasonably hard, such as rocky surface or a metal vehicle hull if the character were instead sticking his or her head out of a tank's hatch, there is a chance that some of the "hits" rolled against the character's protected body parts may ricochet or "skip" off the surface at a low angle and hit the PC's head. This chance should not exceed 1 in 10 (a 19-20 on a D20), and should be related to the slope of the surface (but a lot of tank drivers have died this way).

Damage dice absorbed by an obstacle do not cause blunt trauma injuries against the target character.

Burns

Many chemicals and grenades burn at very high temperatures (2200° to 2700° Celsius) and cause burn damage. Large plasma and fusion guns also cause explosions which throw melting and burning debris. Characters may also suffer burn damage from exploding vehicles and open flames.

Characters come in contact with burning chemicals or other materials when they are hit by fragments from the explosion of a plasma or fusion weapon, incendiary bomb, shell, or grenade (such as WP, white phosphorus), or are hit by plasma/fusion splatter (page 356). Whether the character is hit and by how many fragments is determined exactly as for normal fragments, as explained in the explosions burst rule on page 283, but if a character is hit by a burning fragment, burn damage is suffered instead of a normal wound.

Characters come in contact with burning fuel by being inside or near a vehicle when its fuel tanks explode. The primary burst radius of an exploding vehicle is 15 meters. All characters inside the vehicle when it explodes are covered with burning gasoline.

Characters come in contact with open flames when moving through a burning structure or a grass fire, usually to escape but perhaps to rescue a wounded companion.

The amount of burn damage caused is determined by the temperature of the flame and the length of exposure.

Temperature: Incendiary chemicals cause 2D6 damage *per second* in contact with a body part. Burning fuel causes 1D6 points of damage *per second* in contact with a body part. Moving through a burning structure causes 1D6 damage *per turn* per body part in proximity to the flame. This is summarized on the Burn Damage table.

BURN DAMAGE

Source	*Damage*
WP	2D6
Thermite	2D6
Fuel	1D6
Structure/grass fire	1D6
Plasma/fusion gun debris	2D6

All damage dice are *per second,* except for structure/grass fire, which is *per turn.*

Exposure Time: In the case of open fires, the exposure time is measured in terms of combat turns actually in close proximity to the fire. In the case of fuel or incendiary fragments, exposure time begins at the start of the combat turn immediately after the character was hit. Characters hit by burning fragments will instantly attempt to remove them. They will make one such attempt per second in the turn, by making an Average task roll against Agility. Each successful attempt removes or extinguishes the fragment or fragments on one body part. The character still suffers burn damage for the second in which he or she succeeds in extinguishing a flame.

For example, a character is hit by three burning fragments of fusion gun debris, two on her arm and one on her leg. In the first second, she fails to extinguish any fires and takes 4D6 damage to her arm and 2D6 damage to her leg. In the next second, she brushes off the burning debris from her arm, but still takes 4D6 damage to her arm and 2D6 to her leg. In the third second, she brushes the debris from her leg and suffers 2D6 damage. Her total damage has been 8D6 to her arm and 6D6 to her leg.

If a character suffers sufficient damage to lose consciousness part of the way through a turn (say, after

three or four seconds), he will remain conscious until the end of the turn. Other characters may help extinguish the burning character, making one attempt per second of the turn in the same way as described above.

Protection: Any sort of helmet will protect the head against an open flame. Fuel and incendiary fires will burn through the helmet, or their heat will be conducted through it after 30 seconds (six combat turns). The helmet may be removed and discarded in one second without need for an Agility roll. Most flexible vests will protect characters against open flames, but they will catch fire if contacted by fuel or incendiaries. Rigid armor (such as battle dress and combat armor), if sealed, will protect characters against open flames, fuel, and incendiaries.

Falls

Characters falling from a height take damage upon hitting the ground. This damage is equal to 2D6 per meter fallen. Damage is distributed according to the Personal Hit Location chart (page 269) as follows: Roll three locations. The first location takes half the total damage points. The second takes one-quarter the total, and the third takes the remainder. If the same location is rolled twice, it takes additional damage accordingly. It is possible for one location to receive the full damage.

Damage from falls is reduced by Agility. Roll a number of D6 equal to the falling character's Agility and reduce the damage by that amount (removing hit points from locations at the character's choice). Unconscious characters may not use their Agility in this manner.

For example, a character with Agility 4 falling from three meters would take 6D6 damage, reduced by 4D6.

Referees may adjust the total number of damage dice at their discretion to reflect intangibles and variables such as type and hardness of surface landed on. For example, most characters should be able to handle a jump from a one- or two-meter-high object onto dry, level ground without damage (a two-meter fall is 4D6, which averages 14. A character with an average Agility, 6, would roll 6D6, averaging 21, hence no damage). But if the surface beneath had slick mud and sharp rocks hidden beneath a layer of leaves, the referee should increase the number of damage dice. Also, characters who were pushed or fell involuntarily from even a low object should have the number of damage dice increased.

Falls from Moving Vehicles: Characters who fall out of a moving moving vehicle take damage as if they had fallen one meter per 10 meters of combat move (7.2 kph) of speed. Characters who fall out of moving flying vehicles add the damage dice due to speed to the damage dice due to height for one total roll. For example, a character who leaped from an air raft moving at 30 meters per combat turn, and at an altitude of four meters, would roll 14D6 for damage (four meters for altitude, plus the equivalent of three meters for speed is seven meters, times 2D6).



Poison

Some creatures, such as vipers, snakes, scorpions, and spiders, do little actual damage with their claws and/or teeth, but are able to inject poisons into their prey. Damage listings for these creatures are given in the form of a number followed by a small *p* (for *poison*) then another number. The first number represents the number of hits actually done by the delivery system (fang, stinger, etc.). If these hits are negated by armor, then no damage is suffered from the poison. However, if any damage does get through the armor, the target takes that damage on the turn in which was hit, and on each succeeding turn it also takes damage from the poison. Poison damage is always applied to the target's chest, and it is expressed as a number of dice, as indicated by the number following the *p*.

For example, imagine that Grayson has been stung by a small venomous animal twice in the right arm, once in the head, and once in the chest, which is protected by a flak jacket. This particular animal has a damage rating of 1p1, so on this turn Grayson takes 2 points of damage to the arm and 1 point to the head, but the jacket stops the chest wound. On the next turn and each thereafter, Grayson will take 3D6 points to the chest, from the wounds to head and arm.

For simplicity's sake, poison damage is considered to continue until the character's chest wound level becomes critical. If the referee desires more realism (and more complexity), each poison wound can be considered to cause damage for 2D6 turns (up to one minute), after which the toxin becomes dispersed enough to lose its potency.

Wound Effects and Healing

WOUND EFFECTS

A variety of effects result from wounds, some temporary and some more lasting.

Immediate Effects

These temporary effects apply to a character who has just been wounded. These are in addition to the lasting effects of the wound itself, which are discussed below, under Wound Severity.

Knockdown: If a character suffers more points of damage in a combat turn than his or her current Agility, he or she is knocked down and may not conduct any other action for the rest of the current turn. Concussion damage counts the same as gunshot and fragmentation wounds for determining knockdown, but burn damage does not.

Stun: Any damage to the head, including burn damage, has a chance of stunning the character. To avoid stun, roll 1D6 and add the damage suffered from the wound. If the result is equal to or less than the character's Constitution, he is unaffected. If the result is greater than his Constitution, he is stunned. Stunned characters must make a roll against their Constitution each turn in order to regain consciousness. The task is Difficult if the result was equal to or less than twice the character's Constitution, and is Formidable if the result was greater than twice the character's Constitution. This roll is made during the character's normal Initiative step of the turn. If successful, the character is conscious, but may not act in the current turn. The character may act normally in the following turn.

For example, a character suffers a wound to the head with a damage of 6 and rolls a 5, for a total of 11. His Constitution is 9. He must make a Difficult roll against his CON (rolling a 9 or less) at his Initiative step each turn until he regains consciousness.

Stunned characters are automatically also knocked down.

Wound Severity

There are four levels of wound severity: scratch, slight, serious, and critical. If one of a character's body parts has taken damage less than or equal to half its hit capacity (round down), it is "scratched." If one of a character's body parts has taken damage more than half of its hit capacity up to equal to its hit capacity, it is slightly wounded. If it has taken more damage than its hit capacity, but less than or equal to twice its capacity, it is seriously wounded. If it has taken damage in excess of twice its hit capacity, it is critically wounded.

Note: If a character takes enough damage from a hit to immediately take a part of his or her body from unwounded to slightly wounded, the effects of a scratch wound are superseded by the effects of the slight wound.

Scratch Wounds: Scratch wounds mainly represent the initial shock of suddenly being *hurt*. The first time that characters take damage during combat, the characters lose their next action. Characters never suffer more than one lost action per day (24-hour period) for scratch wounds, regardless of how many they suffer in a combat.

Slight Wounds: A slight wound immediately reduces the character's Initiative rating by 1 point. However, characters never suffer more than one Initiative reduction for slight wounds, regardless of how many they suffer. Slight wounds have no other effect on combat, although the referee may decide to penalize actions making use of slightly injured arms or legs.

Serious Wounds: A serious wound reduces a character's effective Strength by half (rounding the final Strength rating down) and causes an additional immediate 2-point reduction of the character's Initiative rating (for a total of 3, including the slight wound reduction). Characters whose Initiative ratings are reduced to 0 or less may not take any further actions during this combat.

Characters who suffer a serious injury must also make a special roll to avoid losing consciousness. This is a Difficult task roll versus the Constitution attribute. The roll must be repeated every combat turn in which the character attempts to conduct any activity. A serious injury to the head automatically causes loss of consciousness. Unconscious characters make a Formidable task roll against their Constitution each 30 seconds (six combat turns) to attempt to regain consciousness.

Finally, a serious wound to the leg or arm causes the character to lose the use of that limb until it is healed.

Critical Wounds: A critical head injury causes immediate death. Critical injuries to other body parts cause immediate loss of consciousness and require medical attention within 10 minutes, or the character will die from loss of blood.

Characters who lose consciousness due to a critical wound make a percentile roll against their Constitution at the start of every combat turn to attempt to regain consciousness. Once such characters regain consciousness, their Strength is halved (round down) and they also receive an additional immediate 2-point reduction to their Initiative rating (for a total of –5 to Initiative). Characters whose Initiative ratings are reduced to 0 or less may not take any further actions during this combat.

Wounded NPCs: It is neither necessary nor desirable to keep rigorous records on the number and location of all hits on every NPC. As a result, a simplified wound system is used.

All NPCs have the same hit capacity: 40. The referee is provided with NPC record forms in the appendix at the end of the book (and you are given permission to photocopy them for your own game use). The form has two rows of 20 boxes each labeled "Wounds."

As soon as an NPC takes any hits in the first row, he or she is slightly wounded and suffers a –1 Initiative penalty.

As soon as the first row of boxes is full and the character takes one or more hits in the second row, the NPC is seriously wounded. The character suffers an additional –2 Initiative penalty (for a total of –3), and his or her Strength is reduced by half (round final Strength down).

As soon as the second row of boxes is filled and the character takes one or more additional hits, the NPC is either dead or unconscious (but in either case is no longer a threat.)

Whenever an NPC is hit by fire, roll for hit location normally. If a head hit is scored, all damage is doubled. If either a head or chest hit is scored, there is a chance of a "quick kill" (see page 285). Otherwise, hit location is used only to determine if the bullet hit a body part protected by cover or armor.

HEALING

Each of the body's seven hit locations may be wounded to one of four levels: scratch, slight, serious, or critical (as explained under "Wound Severity," above). In general, as wounded body parts heal, their wound level decreases through those levels in reverse order until they are no longer wounded—critical heals to serious; serious heals to slight; and slight heals to *unwounded* (healed). (Note that scratch wounds are a special case covered below.)

When a wound level decreases from critical to serious, the damage points are reduced to the midpoint of the serious level. When a wound level decreases from serious to slight, the damage points are reduced to the midpoint between slight and zero (which is technically the high mark for the scratch wound level—but the scratch wound level is ignored once a wound reaches slight, so this status is still considered slightly wounded). When a wound level decreases from slight, it reduces to unwounded.

For example, a character's arm has a hit capacity of 28 points and has taken 32 points of damage. It is seriously wounded. When it heals to slightly wounded, the damage points are reduced to 14, which is halfway between the top end of the limb's slightly wounded status and 0.

Note that penalties caused by a wound level (such as Initiative reductions) remain in effect until that wound level is reduced to the next level (at which point penalties for the next level remain in effect).

First Aid: It is best to treat wounds as soon as possible after they are incurred. In order for first aid to be effective, then, it must be applied within 36 turns (three minutes) of the time the wound was received. Effective first aid will reduce a critical wound to a serious one, or reduce the healing time of a serious wound by two days. First aid has no effect on slight or scratch wounds, except to prevent infection. To administer first aid to damage caused by poison requires an antivenin autoinjector or a doctor's medical kit (which contains them, see pages 334-335).

First aid is a Difficult task versus Medical (Trauma Aid), assuming a doctor's medical kit is on hand. If one is not available, the task becomes Formidable. Use of a pocket or computer medical scanner (page 334) adds +1 to the Medical asset of characters performing first aid. Conscious characters can attempt first aid on themselves.

The use of a personal medical kit (page 334) allows a character with neither Medical skill nor a doctor's medical kit to avoid the unskilled penalty when attempting a first aid task (thus it is a Formidable task using the character's EDU attribute as a substitute Medical asset). One such use uses up the medical kit. Use of a computer medical scanner (page 334) also allows unskilled characters to avoid the unskilled penalty, or adds +1 to the substitute asset of unskilled characters using a personal medical kit.

Stabilizing Critical Wounds: Critical wounds must be stabilized within 10 minutes or the injured character dies. (Remember, though, that death is automatic with a critical wound to the head.) Stabilizing a critical wound is a Difficult task versus Medical (Trauma Aid), but certain types of equipment add points to the effective skill level of the character performing the treatment. Blood plasma, strong sedatives, a doctor's or personal medical kit, or a medical scanner (page 334) each add +1 to the skill level, and these things can be used in conjunction with one another for a collective bonus. In a hospital or clinic setting, whole blood may be used instead of blood plasma, for a bonus of +2 instead of +1. Use of an automed (page 333) uses the automed's Medical bonus *only*.

Basic Healing Rate: A character without medical attention may heal from a slight wound level to unwounded in three days. To go from serious to slight takes four days, and from critical to serious takes one week. Note that healing of various body parts goes on simultaneously.

For example, on Monday, Paul Currin is shot up pretty badly in a violent boarding action and receives a slight wound to his head, a serious wound to his chest, and a critical wound to each leg. A medical team stabilizes his critical wounds, and Currin is taken to his quarters to recover. Three days later, on Thursday, his head wound has healed. By Friday, his chest wound has reduced to slight. On the next Monday, both critical wounds reduce to serious, and his slight chest wound reduces to unwounded (it has been three days since Friday). Four days later, on Friday, both legs reduce to slight, but Currin gets out of bed and is involved in an accident on the hangar deck during pistol practice, taking another slight wound to the head (accidents will happen). By the next Monday, all three slight wounds have healed completely. Despite recent setbacks, Currin is ready to go out and look for more trouble.

Recovery From Scratch Wounds: Scratch wounds require 24 hours to heal to an unwounded state. If a scratch wound is taken to a body part, and then further wounds to that body part during the day push that body part's wound level to slight, the rates and rules for healing from a slight wound are used. Slight wounds do not heal to a scratched state; they heal to unwounded without passing through the scratch wound level status.

Medical Care

Medical care and supervision will increase an injured character's basic healing rate. If a character is under successful medical care while healing, two days are trimmed from each stage of healing. In other words, critical wounds heal in five days, serious wounds in two days, and slight wounds in one day. (In the example above, Currin would have healed completely in eight days, rather than two weeks.)

Successful medical care requires two things. First, the caregiver must spend half an hour per wound level, per body area damaged, per day, tending to the wounds. (For instance, when Currin was first injured, he would require four and a half hours of care per day. When he reached only three slight wounds, only an hour and a half of care was required per day.) Second, once per day the caregiver must pass an Average check of his or her Medical asset. If no medical equipment is available (a doctor's kit is minimum), then the task check becomes Difficult.

Failure means that one of the two days' worth of time to be saved was lost. In other words, if the task is failed one day during the treatment period, only one day is saved from the normal healing time. If the task is failed twice, no days are saved. Note that failing the task a third time (or more) does not add time to the basic healing rate unless a Catastrophic Failure is rolled on this third check (or beyond).

Surgery: Surgery can reduce a critical wound drastically. Like any other medical care, it will usually be performed at a hospital, where all necessary equipment is available and quality post-operative care is available. But occasionally a character might have reasons for not going to a hospital for this care (such as being several parsecs away from the nearest operating room). In these cases, a friend might be asked to perform the surgery.

Surgery requires the use of surgical instruments (page 334). It is a Formidable task versus Medical (Surgery) to reduce a critical wound to serious, but if the task roll is successful, the reduction occurs immediately after surgery is completed. The use of blood plasma and local anesthetic each add +1 to the Surgeon asset, and are cumulative. If whole blood is used instead of plasma, it adds +2 to the effective asset level. General anesthetic adds +3 if it is used instead of local anesthetic. Automed units add their listed modifier to the surgeon's skill (page 333).

Only one surgery attempt can be performed per critical wound. Failure means that the wound remains critical. Catastrophic Failure can result in extra healing time, loss of limb, or loss of life, depending upon the hit location receiving surgery, the severity of the Catastrophic Failure, and the referee's judgment of the situation as a whole.

Adequate Food and Shelter: If the referee decides that a wounded character has inadequate food or shelter, each wound level will require an extra day to reduce to the next level. These penalties are additive, meaning that a character with both inadequate food and inadequate shelter will take two extra days to reduce each wound level. For instance, imagine that Currin, in the example above, is left stranded in the derelict enemy ship and subsisting on nothing but a few snack tubes in his vac suit emergency pouch. This is certainly an inadequate diet, so he'll suffer an additional day to heal each wound level. If the derelict's heating system cuts out from the battle damage, the cold ship will also qualify as inadequate shelter, so Currin will require two extra days to heal each level. Now, instead of healing his slight head wound on Thursday, it will take until Saturday, the serious chest wound will take until Sunday to become slight, and the two critical leg wounds will take until the next Wednesday to reduce to serious.

Treating Poison Wounds: Poison wounds can be treated just like regular wounds, with the exception that either a doctor's kit or an antivenin autoinjector is essential rather than optional and confers no bonus point to the task. Note that a successful first aid roll has the normal effect on wounds incurred and halts any further damage from the poison.

Infection: Every time a character suffers damage from melee combat, fire combat, or burns, there is a chance of infection. After every firefight (or accident), each injured body part has a chance of becoming infected on a roll of 2 or less on 1D20. If a person with at least Medical (Trauma Aid) 1 treats the wounded body area with antibiotic within eight hours, the chance of infection is reduced to 1 or less on 1D20.

If anyone uses a personal medical kit in an attempt to prevent infection, no infection results (but the kit is, of course, used up). This use of a personal medical kit may be combined with its use in a first aid attempt, above.

Infection is a major danger. Any time a character's wound is infected, healing (in all body parts, not just the infected one) stops until the infection is dealt with. In addition, for each week an infection lasts, the character takes an additional 1D6 damage points to the infected injured body part.

A character with a critical wound caused by an infection loses consciousness and remains that way until all wounds (even those not caused by the infection) are recovered to slight or he or she dies.

If, for example, a character takes a slight wound and that wound becomes infected, no healing takes place. After one week, the character takes an additional 1D6 hits in that arm (which may increase its wound level); after two weeks, another 1D6 is taken, and so on.

Treatment of Infection: Treating an infection is a Difficult: Medical (Diagnosis) task. If any antibiotics are used in the treatment, the task becomes Average. One attempt may be made per week.

A successful treatment means that the treated body part is no longer infected, and healing may take place if no other body areas are infected.

Vehicle Combat

These rules cover the use of land vehicles in combat. Incorporating vehicles into the combat sequence involves adding a few adaptations to the basic combat rules.

VEHICLE MOVEMENT

Any scale may be used; movement rates and weapon ranges are given here in meters. There are several different mobility classes of vehicles, each with particular rules for movement.

Ground Vehicles: Ground vehicles are those which maintain contact with the ground. In general, these vehicles' propulsive power is provided by frictional contact with the ground. Wheeled vehicles, tracked vehicles, and leg-powered vehicles (for example, horse-drawn wagons) are examples of this. Some unusual ground vehicles maintain contact with the ground via skis, runners, or wheels, but derive their propulsion from jets, propellers, or sails. Ground vehicles of all types are able to make better speed on roads than on unimproved terrain. How much better depends on the vehicle.

Movement rates for ground vehicles, in meters per combat turn, are given in the Aircraft and Vehicles section, beginning on page 360. Note that the listed speeds are the *safe* combat movement speeds on- and off-road. A vehicle may travel faster than this safe speed at the risk of a mishap (see page 292).

Amphibious Vehicles: Some ground vehicles are capable of movement across relatively calm water. Such amphibious vehicles have a third combat movement speed noted on their vehicle card, to the right of the Road Speed/Cross Country speed (X/Y/Z instead of X/Y). This is their *safe* combat movement speed in water. If a vehicle requires special preparation before entering the water, this will be noted with the vehicle description, along with the time required. Otherwise the vehicle may enter the water at no additional expense in time.

Hovercraft: Hovercraft are a special subset of ground vehicles, because they treat terrain differently. Rather than being in contact with the ground, they ride atop a trapped bubble of high-pressure gas. Because of their extremely low ground pressure, hovercraft can go where people on foot would sink. For combat movement, hovercraft can go anywhere, including water, but cannot traverse ravines, steep slopes, dense woods, or linear obstacles, such as walls, more than one meter in height. Like other ground vehicles, hovercraft are able to travel faster over roads. Hovercraft speeds are also given as safe speeds.

Aircraft: Aircraft are specifically vehicles which fly by creating aerodynamic lift with wings or other lifting surfaces (rotor blades, body shapes). For short periods, certain aircraft (VTOL, vertical takeoff and landing) make use of direct thrust or vectored thrust for lift, usually when forward speed cannot generate sufficient lift to keep the machine in the air.

Aircraft speeds vary with their *flight mode*. There are two modes: *high*, and *NOE* (nap of the earth). All aircraft may fly in high mode. NOE mode is available only to helicopters and VTOL aircraft. Nap of the Earth flight involves flying so low that the aircraft actually flies *around* obstacles rather than over them.

The speed given as an aircraft's high mode speed is an *absolute speed*, not a safe speed, i.e., the speed cannot be exceeded, and requires no task rolls. Aircraft which are given NOE speeds use these as safe speeds, with the mishap rule.

Movement rates for aircraft are given in 10-meter increments moved per combat turn. When using a two-meter grid, multiply this number by five; when using individual meter measurement, multiply it by 10.

Water Vessels: Water vessels include displacement hull and SWATH ships, displacement and planing hull boats, submarines, hydrofoils, and surface effect ships. Hovercraft may also move on the water, and are described above. Movement rates for water vessels are also given in 10-meter increments moved per combat turn as described under Aircraft, above. Note that many water vessels have a movement allowance of 0.5, 1.5, 2.5, etc. When moving on the 10-meter grid, these vessels move an extra square every other turn. Watercraft speeds are given as safe speeds.

Grav Vehicles: Grav vehicles are vehicles that fly by using contra-gravitic technology as their primary lifting agent, and not aerodynamic lift. Most spaceships and starships that are able to enter planetary atmospheres have contra-grav drives, so can function as grav vehicles by the movement rules, although a small percentage are also fully aerodynamic. Ships which are fully aerodynamic might or might not also have grav drives; these details are presented in the Starships section, pages 366-379. Vehicles that have both full aerodynamic and full gravitic technology may use either movement rule, depending upon the operations that they are attempting.

Like aircraft, grav vehicle movement depends on their mode. All grav vehicles are given high mode speeds (as with aircraft, these are absolute speeds) as well as NOE speeds. As with aircraft, NOE speeds are safe speeds, subject to the mishap rules.

DRIVE ACTION

When vehicles are involved in combat, drive is the action used to move them. Drive includes the operation of all types of vehicles, from bicycles to oil tankers to star cruisers. In some cases, performing this action will require a skill check. In others, the action is considered to be automatically successful. For instance, a character who was using the drive action to pilot a helicopter beneath a bridge might have to make a Difficult: Pilot check, while another character who was driving a family car along a city street in good weather, or who was coming to a safe halt at a well-marked stop sign, would be required to make no check at all.

A few other actions can be combined with the drive action. Talking and driving can be done together freely. The ready/change equipment, reload, and fire actions can each be done while driving, but any necessary driving checks are at one level more difficult (sometimes requiring a check that might not otherwise be required).

Mishaps: Characters may drive a ground vehicle at up to 3 times the safe speed, but they run the risk of a mishap. Driving at up to twice the safe speed is a Difficult test; the asset used is the appropriate vehicle skill. Driving at up to 3 times the safe speed is a Formidable test. Driving at twice or 3 times the safe speed is sometimes referred to as *overdriving.*

If a Catastrophic Failure is rolled, a serious mishap occurs. Serious mishaps include breaking an axle, throwing a track, rolling the vehicle, or in some other way putting it out of commission until major repairs are undertaken.

The referee should determine the exact nature of the mishap according to circumstances. On a crowded road, there may be a collision. A light vehicle is easy to overturn; a tank is almost impossible to overturn. Passenger injuries are also up to the referee.

Ground Vehicles: The roll is made once per turn. If a mishap occurs to a ground-contact vehicle (wheeled or tracked), the vehicle has become stuck in a pothole or ditch, or bottomed out in rough ground; the vehicle is stuck in place. Once per minute, the driver may attempt to get it moving again (Difficult: appropriate Vehicle skill); this occupies his or her time for the entire minute.

If the mishap was the result of a Catastrophic Failure, however, the vehicle suffers some sort of severe damage. The referee will determine the exact effects, based upon the situation at the time and the amount by which the die roll exceeded the minimum for catastrophic failure. It may be that the vehicle suffers a collision (perhaps with passenger injuries), for example, or simply that it has become too mired down to become unstuck without the aid of a towing vehicle.

A mishap on a motorcycle means that the rider has fallen off. The rider suffers 1D6–3 damage to a random location unless he or she makes a Difficult: Agility roll.

Amphibious Vehicles and Swamping: When travelling in water, a normal mishap means that the driver loses control of the vehicle, and it is hung up on an underwater obstruction, or swept from its desired course by the current, wind, or other conditions. The driver must attempt a Difficult task each turn in order to regain control of the vehicle. Catastrophic failure indicates that the vehicle has been swamped and is beginning to sink. Crewmembers must succeed at a Formidable test of Swimming to avoid drowning.

Hovercraft: A mishap indicates that the vehicle has struck an obstruction or has lost lift due to violent maneuvers. The vehicle's speed is immediately reduced to its safe speed (even if this results in greater than normally allowed deceleration). Damage is at the referee's discretion.

Grav Vehicles and Aircraft: Note that grav vehicles and aircraft only suffer driving mishaps when moving in NOE modes. A mishap means that the vehicle has struck an obstruction (tree, tower, antenna, or power line) with the possibility of serious damage to the vehicle or its occupants. Catastrophic Failure with an aircraft indicates that the craft crashes and is destroyed. Grav vehicles are usually more robust than aircraft, but will suffer severe damage.

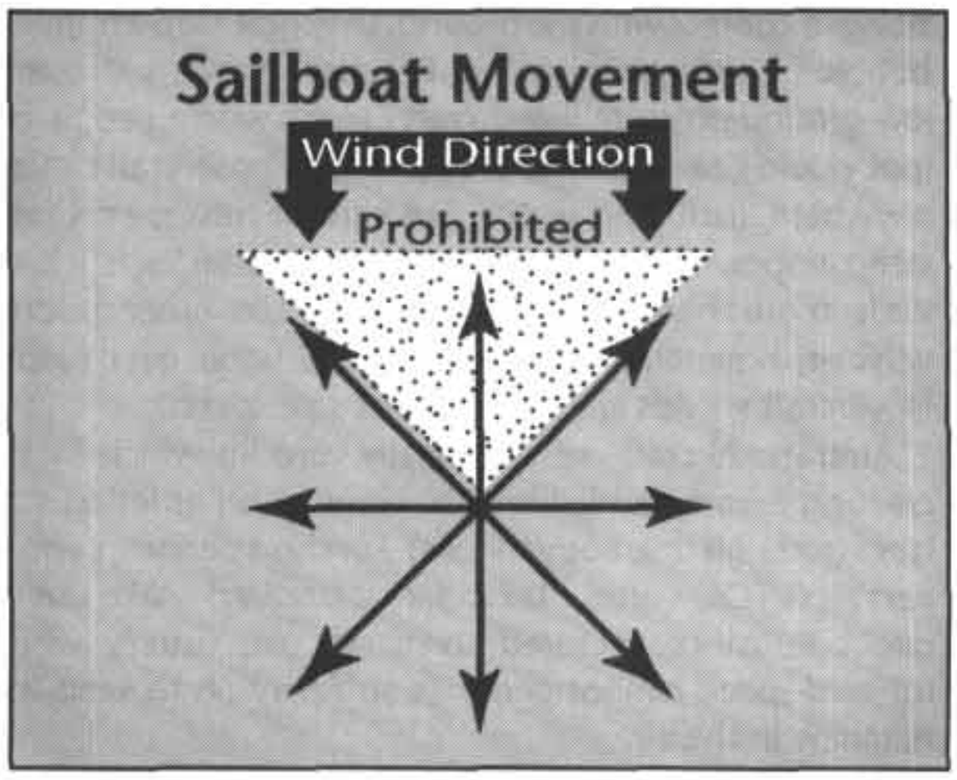
Vessels: Water vessel mishaps usually mean the vessel suffers a "stall" of some sort. Engines die, sails break loose, oars are dropped, and the like. To get the vessel under way again, the character in charge can attempt an Average roll versus appropriate Vessel skill once per minute, as the sole activity for that minute. Success means the problem has been resolved. If the mishap was the result of a Catastrophic Failure, however, the vessel has suffered some sort of permanent damage, as determined by the referee, based upon the situation at the time.

In addition, there are effects unique to certain types of vessels:

Rowed Boats: For muscle-powered craft, the "safe" speed is the boat's listed speed. Rowing characters must roll 1D20 every minute against their Constitution to avoid accumulating a level of fatigue (see the Wilderness Travel and Exploration section, pages 196-206). Each successive minute spent rowing at twice the listed speed adds 2 to the die roll. Boats may not be rowed more than twice their listed speed.

Sailboats: Sailboats may move in any direction within the allowed arc, illustrated below. The referee will need to randomly determine wind direction before the combat begins. The safe speed can only be doubled, with a mishap avoided on a successful roll of Difficult: appropriate Vessel skill.

Powerboats: Powerboats are propelled and steered by an engine. Small configuration powerboats (Micro or Sub-Micro size, see table on page 294) can be rowed as well (if the engine is damaged).The safe speed can only be doubled, with a mishap avoided on a successful roll of Average: appropriate Vessel skill.



Acceleration and Deceleration: Acceleration and deceleration are the amount by which a vehicle can change its speed each combat turn. All vehicles can accelerate by 10% of their maximum speed (rounding fractional values down) plus the driver's appropriate Vehicle skill.

For example, a vehicle with a maximum speed of 30 meters per combat turn could accelerate three meters per turn plus the driver's skill. A driver with no skill could only accelerate three meters per turn, while a driver with a skill of 6 could accelerate nine meters per turn.

All vehicles may decelerate at twice their acceleration rate. Thus the vehicle listed above would decelerate six meters per turn with an unskilled driver and 24 meters per turn with a skill 9 driver.

Water Vessels: Water vessels have the following additional considerations with respect to movement:

Current: Rivers, streams, and oceans will have currents, which will affect the speed of a boat by impeding or adding to it, and which can cause unpowered boats to run aground or collide with obstacles. Canals and small bodies of water will usually not have significant currents. Currents will usually flow at a constant velocity and in a constant direction, and thus will need to be established by the referee before combat begins.

Current velocity is expressed in number of 10-meter squares per combat turn. Most large rivers have a current of one-half square per combat turn, which will move the vessel one meter down river every other combat turn. Near rapids or in narrow, swift-flowing parts of the river, this will increase to one square per turn, and near waterfalls it can increase to two, three, or four squares per turn.

Turning: Each vessel has a turning value which is the number of 45° turns it can make each combat turn. Vessels with a fractional turn value (1/2, 1/3, 1/4, etc.) may make only one 45° turn every two, three, or four combat turns, as indicated.

Towing: Boats may tow other boats. Speed and acceleration are each reduced by 0.5 for every fivefold increase in tonnage. If speed is reduced below 0.5, the boat may not conduct the tow. If acceleration is reduced below 0.5 due to towing, the acceleration remains 0.5.

For example, a 200-ton vessel with a speed of 1.5 and an acceleration of 1 is towing a 1400-ton vessel. This is a sevenfold increase in tonnage, which counts as one fivefold increase (but not a second). Speed and acceleration are each reduced by 0.5 to 1 and 0.5 respectively.

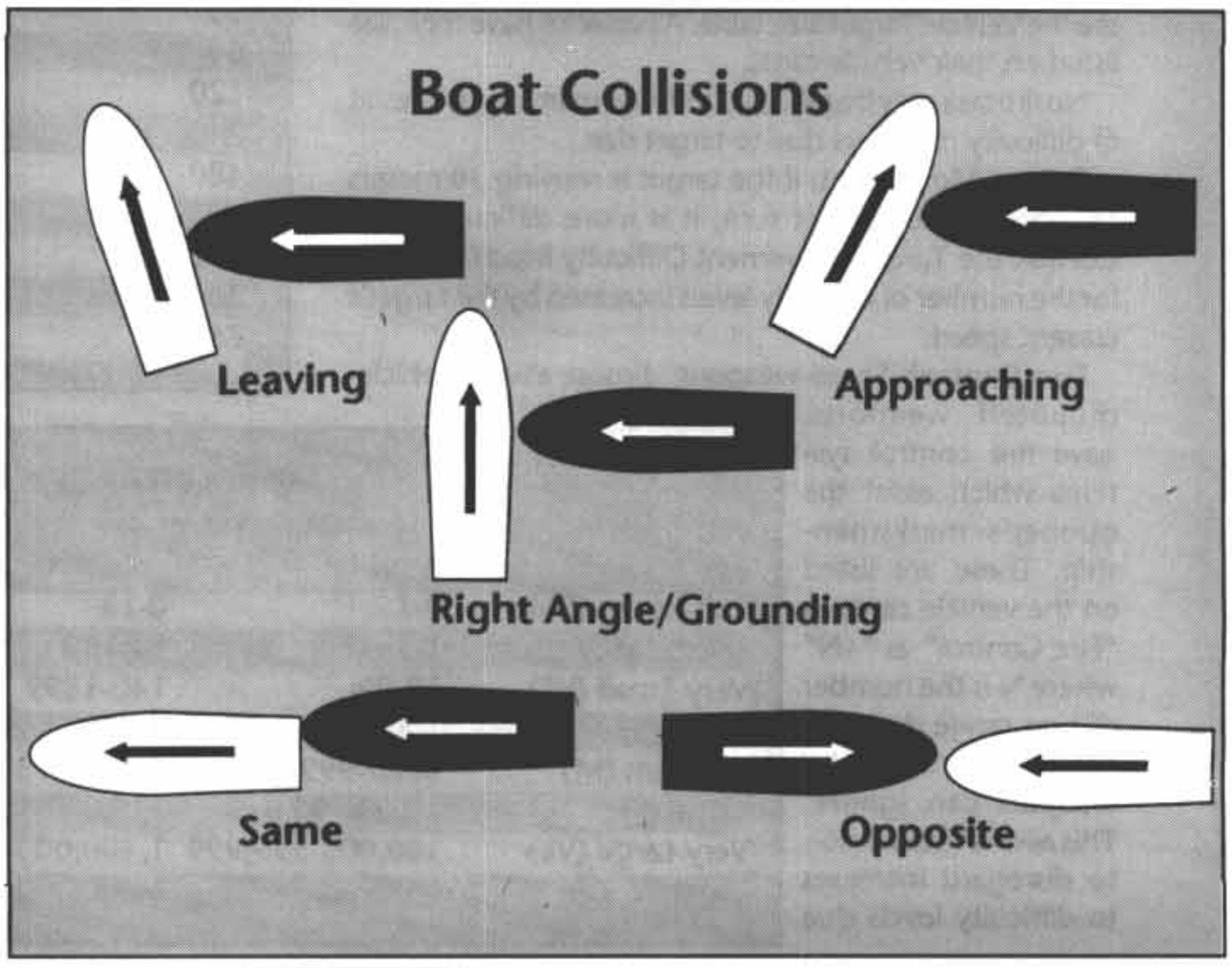
NAVIGATION HAZARDS

D6	*Result*
1	Boat aground. 10 miles travel lost pulling it off.
2	Boat aground. One full travel period lost pulling it off.
3	Screw or rudder damaged. Speed halved until repaired.
4	Hull damaged. 1D6+3 flotation hits.
5	Hull damaged. 1D6+2 flotation hits.
6	Hull crushed. Vessel is grounded to avoid sinking. Cannot be refloated unless a large work crew and vessel are brought to the site.

Running Aground: Each boat has a listed draft and will run aground whenever it enters water shallower than this. Unless this is a deliberate grounding (as on a beach) and conducted at very low speed, the vessel suffers damage to its hull or running gear. Roll 1D6 and consult the Navigation Hazards table above to determine the result.

The referee should indicate water depths on the playing surface in three increments: less than one meter, one to three meters, and more than three meters. This can be accomplished by contour lines, shading, color, or any other convenient means. Deeper draft vessels may require additional depth gradations.

Collisions: Likewise, boats may collide with each other, or with floating objects such as logs, and suffer potential damage. Damage depends on the size of the boat and the net speed at the time of grounding, as explained under the Collision Damage entry on page 301.



VEHICLES AND FIRE

Fire From Moving Vehicles

Characters may not conduct aimed fire from a moving vehicle. They may fire quick shots or bursts normally.

All such fire, however, is conducted at one higher difficulty level than normal for purposes of determining hits.

Weapon Stabilization: Some vehicles have stabilized main armaments classified as basic, good, or advanced. Vehicles with basic stabilization may fire aimed shots while moving at their safe speed. Vehicles with good stabilization may fire aimed shots while moving at twice their safe speed. Fire from vehicles with advanced stabilization may be made at any speed.

Grav Belts: Personnel in grav belts use the vehicle movement rules. Grav belts may fly in high mode or NOE mode, as described under Aircraft and Grav Vehicles, page 291. Maximum absolute speed in High mode is 300 meters per turn (although troops flying at such speeds must wear protection such as combat armor or battle dress).

The safe speed for grav belt flight at NOE is 30 meters per turn. Grav belts may be overdriven like any other vehicle. Fire from moving grav belts follows the rules above for fire from moving vehicles.

Firing at Vehicles

Firing at vehicles is similar in general principles to firing at individuals, but there are a few differences. Some additional die rolls must be made when dealing with vehicular weapons and vehicular damage.

Firing at Vehicles and Vessels: All vehicles and vessels have a size rating that indicates their size and ease to hit, see the Vehicle Target Size table. All vehicles have their size listed on their vehicle cards.

No fire task may be adjusted to lower than Easy as a result of difficulty modifiers due to target size.

Target Movement: If the target is moving 30 meters or more in the current turn, it is more difficult to hit. Consult the Target Movement Difficulty Modifiers table for the number of difficulty levels increased by the target's current speed.

Fire Control: Some weapons, almost always vehicle-mounted weapons, have fire control systems which assist the gunner's marksmanship. These are listed on the vehicle cards as "Fire Control" as "+N" where N is the number of non-range difficulty modifiers that the weapon can ignore. This allows the weapon to disregard increases to difficulty levels due to target speed or obscuration. This does not allow the weapon to decrease the base difficulty level due to range; only to disregard additional difficulty increases above that level.

Multiple Modifiers: All difficulty modifiers due to target size, target speed, and firing from a moving vehicle are cumulative.

Overhead Attacks: Some tactical missiles are programmed to fly over the target and attack it from above, and all submunition (SM) direct hits are overhead attacks. For overhead hit locations, never add 1 to the die roll for a side shot, and treat all suspension hits as hull hits instead. All attacks are resolved using the vehicle's turret-side armor value (unless the vehicle has no turret, in which case use the hull's side armor value).

Firing at Flying Vehicles

Flying vehicles are fired at using the fire procedures described above. However, personnel or vehicles without fire control bonuses will find it difficult to hit flying vehicles at their typical speeds.

Furthermore, hits on aircraft are resolved differently from fire at flying grav vehicles. Because aerodynamic craft are relatively lightly constructed, hits on aircraft do not handle issues of penetration and are resolved using the Aircraft Damage table (page 300). Hits on grav vehicles use

TARGET MOVEMENT DIFFICULTY MODIFIERS

Speed in meters	*kph*	*Diff. Increase*
30	22	+1 level
60	43	+2 levels
120	86	+3 levels
240	172	+4 levels
480	344	+5 levels
960	688	+6 levels
1920	1376	+7 levels
3840	2752	+8 levels
7680	5504	+9 levels

VEHICLE TARGET SIZE

Size	*Displacement (tons)*	*Displacement (kiloliters/cubic meters)*	*To-Hit Difficulty Mod.*
Sub-Micro (SM)	0-1	0-13	—
Micro (MC)	1-9	14-139	—
Very Small (VS)	10-99	140-1399	–1
Small (S)	100-999	1400-13,999	–2
Medium (M)	1000-9999	14,000-139,999	–3
Large (L)	10,000-99,999	140,000-1,399,999	–4
Very Large (VL)	100,000-999,999	1,400,000-13,999,999	–5
Gigantic (G)	1,000,000+	14,000,000+	–6

the Vehicle Damage tables and the normal ground vehicle penetration rules (see Damage from Fire, page 296).

Ground Weapons: Any ground weapon may attempt to fire at flying vehicles, but ground weapons without fire control bonuses will usually have a hard time hitting. Exceptions to this are automatic weapons and antiaircraft missiles.

Automatic Weapons: Automatic weapons fire at flying vehicles at one lower level of difficulty. All small arms automatic weapons cause minor damage to aircraft; larger caliber automatic weapons cause major damage to aircraft. When firing on grav vehicles, weapons use the penetration rules to establish damage.

Each firing automatic weapon can only achieve one hit per combat turn, regardless of the actual number of hit rolls successfully made.

Antiaircraft Missiles: Antiaircraft homing missiles are fired using Tac Missile asset. The weapons listing shows the missile's short range, at which the task roll has a base difficulty level of Average, which increases with range as normal direct fire. The missile also has a listed Agility, which shows the number of difficulty modifiers due to target speed which the missile can ignore. Agility can never reduce the difficulty to less than the base difficulty for range. A successful task roll indicates that the target aircraft suffers minor damage; an Outstanding Success roll indicates major damage. Hits on grav vehicles must use the normal vehicle penetration rules.

Evasion: When a ground-fired missile has rolled a hit on a flying vehicle, the flying vehicle still has a final chance to evade the missile, if the missile is visible to the pilot. Spotting a missile is a Difficult test of Observation, and this may be adjusted by weather and other factors. Aircraft with multiple crewmembers may allow rolls against the Observation of several crewmembers, at the referee's discretion. (This is based on their other tasks. A crewmember who does not have a window or is in the midst of firing at another target or guiding an operator-guided missile may make no such Observation roll.)

If the missile is visible, the pilot may make a roll to break the lock of the missile by violent, evasive maneuver. The task is a Formidable test of the proper cascade of the Pilot asset, and becomes Impossible if the missile rolled an outstanding success on the hit. Success on this roll means that the missile misses the aircraft, even though it had already rolled a hit. Other ground fire may not be evaded in this way.

Air-to-Air Combat: Aircraft may also be fired at by other aircraft using either automatic weapons or antiaircraft missiles. This combat is best resolved outside of the context of ground combat, as these air-to-air combat rules use abstracted time increments, and also because the aircrafts' movement will usually take them far away from the ground combat location.

All rules for firing are the same, with the following additions:

All hostile aircraft engaged in combat are either advantaged or disadvantaged with respect to each other. The advantaged aircraft is the aircraft with the higher total of speed points plus Pilot skill plus maneuver points. Advantage/disadvantage is recalculated each turn.

Speed points are equal to the current combat speed of the aircraft in 10-meter grid squares divided by 10, rounding fractions down. For example, an aircraft flying at speed 80 (equivalent to 800 meters per turn) has 8 speed points.

Pilot skill is the actual skill level of the pilot in the Pilot cascade appropriate to the craft being flown.

Maneuver points are gained by attempting difficult maneuvers. A Difficult skill roll maneuver gains 1 point, Formidable gains 2, and Impossible gains 4. Failure is treated as a mishap.

If the advantaged aircraft's total of speed+skill+maneuver exceeds the disadvantaged aircraft's total by 50% or more, the advantaged plane may break off contact and successfully escape. Otherwise it must stay and fight.

If a fight (exchange of fire) ensues, the advantaged aircraft picks the range of the combat, provided the distance chosen is still within range of at least one of the disadvantaged aircraft's weapons. If the disadvantaged aircraft has no weapons, it must be within range of at least one of the advantaged aircraft's weapons.

Fixed weapons (machineguns and cannon fixed to fire forward) and antiaircraft missiles may only be fired at hostile aircraft if the firing aircraft is advantaged with respect to the target.

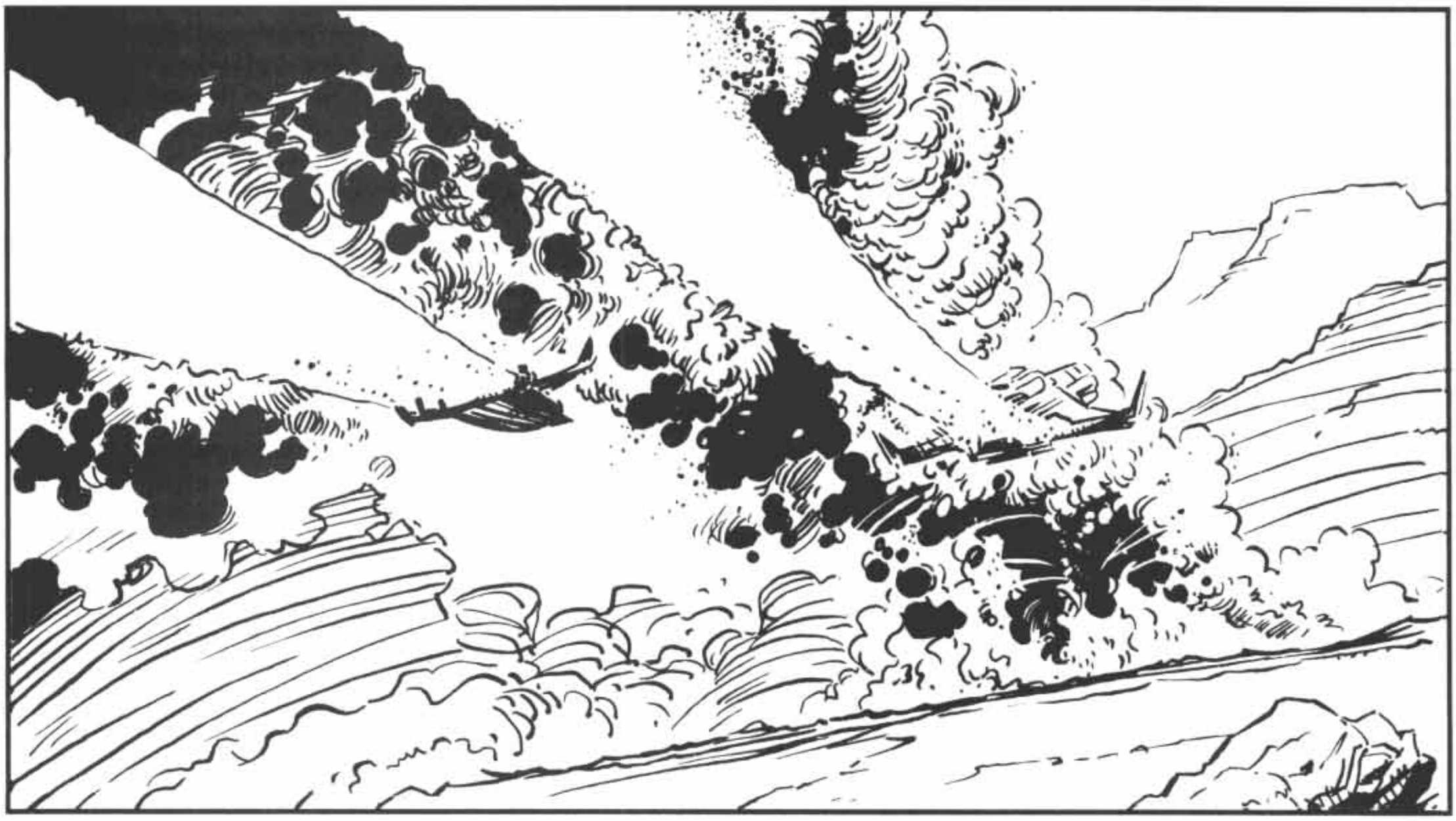
Flexible-mount weapons (such as gun turrets or door-mounted machineguns) may fire at enemy aircraft whether advantaged or disadvantaged with respect to them. Normal rules for firing aircraft, fire control, and stabilization also apply. If disadvantaged, however, the fire is conducted at one difficulty level greater.

Firing From Flying Vehicles

Flying vehicles firing at ground targets do so in one of two ways, by turreted fire and approach fire. Fire onto vehicles from flying vehicles naturally is resolved according to the Overhead Attacks rules, page 294.

Turreted Fire: Some flying vehicles have turrets mounted on their bellies to direct fire at ground targets. These are typically helicopters and grav vehicles, but some fixed wing aircraft mount them as well. These vehicles are not limited to any particular movement pattern with respect to their ground targets, but must merely be within range and within the arc of fire of their turrets. Additionally, a flying vehicle's turret-mounted weapons must be equipped with advanced quality stabilization if they are to fire at ground targets at anything greater than NOE speed. Good quality stabilization is required for fire at NOE speed.

Approach Fire: Aircraft firing nonturret-mounted weapons must do so via approach fire. This includes fixed forward-firing projectile or energy weapons, as well as rockets and missiles.



Approach fire requires the aircraft to fly directly at its target for the full combat turn (if in NOE mode, a helo or grav vehicle may also be motionless, while facing the target). Altitude is also specified by the pilot, but must be within at least long range of the weapon being fired.

Only one type of weapon may be fired per approach fire action. The skill is rolled as a direct fire task at one difficulty level higher than usual, using the Pilot or appropriate weapons skill of the pilot, whichever is higher. If firing tac missiles, the task is rolled by the weapons operator crewmember, if one is present.

Aircraft with only one crew may not fire operator-guided missiles. Aircraft with two crew (pilot and weapons operator) may do so, as the weapons operator may be obliged to continue guiding the weapon for more than one turn.

Shots which miss will deviate. Roll 1D10. On a 1-5, the shot falls short, along the aircraft's approach path. On a 6-10, the shot is long, also along the approach path. Roll 1D10 for distance, and use 10% of the aircraft's current speed in grid squares per combat turn as the distance multiplier.

Bombs: Bombs may also be dropped using approach fire. Hitting a target with a bomb is an Average test of the appropriate Pilot cascade asset at zero to 100 meters altitude, Difficult at 100-500 meters, Formidable at 500-1000 meters, and Impossible at over 1000 meters. Bombs that miss roll deviation as above.

Bombs may have guidance systems. Operator-guided bombs and designated bombs are handled like tac missiles of the same type.

Damage from Fire

Once a hit is scored, vehicle damage is determined by following the steps listed below.

Penetration: First, determine the penetration of the weapon. This is done differently for different classes of weapons. **Traveller** has two ways of expressing penetration performance: as *penetration value*, and as *penetration rating*.

Penetration value is a measure of the weapon's absolute ability to penetrate armor, and is the measurement most often used in vehicle combat.

Penetration rating is most often used in personal combat (page 285) and describes the relationship between a weapon's damage value and its penetration value. Penetration value = Damage value ÷ Penetration rating. Likewise, Damage value = Penetration value × Penetration rating.

Penetration rating is the number of points of damage value lost for each level of armor value penetrated (thus the smaller the penetration rating, the better the penetration performance). Penetration ratings become higher (i.e., penetration performance becomes worse) as range increases. Penetration ratings are given by range, short/medium-long-extreme (penetration rating for medium is the same as for short). If a weapon's penetration rating is *Nil*, it has no penetration capability.

Small arms are usually listed with their damage value and penetration ratings listed separately, while weapons intended primarily for use against vehicles are listed with their damage value and penetration ratings combined into

their penetration values at the various ranges.

Thus, a small arms fusion gun might be described as having a damage value of 10 with penetration ratings of 1/2-1-4. That same fusion gun, if it were rated as a vehicle gun, would have listed penetration values of 20-20-10-3 (short-medium-long-extreme).

Damage is expressed as *damage value* which is related to penetration value and penetration rating as described above. Damage value is equivalent to the damage dice which are inflicted on personnel (or other creature targets, page 285) in all cases but one: lasers. Lasers have damage values as described above, but their damage values are not used to damage personnel. Each point of a laser's damage value is equal to 20 personnel damage dice. Small arms lasers in the equipment listings have their damage listed in terms of personnel damage dice, but if a personnel target were hit by a starship-mounted laser, that laser's damage value (at the appropriate range) would have to be multiplied by 20 to see how many dice of damage was done to the target.

Although damage value is used to damage spacecraft in space combat (pages 311-326), *damage done to vehicles in the vehicle combat sequence is always done by penetration value.*

When a hit is scored, calculate the *final penetration value* of the weapon, according to its class.

Small Arms: This includes all slug-firing man-carried firearms. For attacks on vehicles, divide the number of damage dice by the correct penetration value for range and round down. This is the weapon's *final penetration value.*

Lasers: Lasers have a separate damage value and penetration value listed for each range band. If the laser does not have a listed damage *value* (as opposed to damage *dice*), it has no antiarmor penetration value, and has a penetration rating of Nil. Laser penetration ratings of better than Nil will either be 1 or a fraction, indicating that the laser penetrates more than one armor level per point of damage value lost. Divide the damage value by the penetration rating to get the penetration value. When firing at vehicles, add 2D6 to the result. This is the laser's *final penetration value.*

Exploding Rounds: Exploding projectiles have only one penetration value listed, either a number followed by the letter C (indicating that the penetration value is "constant" throughout its range), or the notation Nil. For hits against vehicles with non-Nil values, roll 2D6 and add it to the penetration value. The result is the *final penetration value.*

Penetrators: Penetrators include weapons with high penetration values which decline over range, and a constant damage value (which is used against personnel targets only). This class includes large-bore kinetic energy rounds and plasma and fusion weapons. Find the correct penetration value for range, and add 2D6. This is the weapon's *final penetration value.*

Particle Accelerators: Particle accelerators have only one set of values, penetration value, which declines over range. However, these penetration values are also used as the particle accelerator's damage value/damage dice (in other words, particle accelerators have a penetration rating of 1 at all ranges). When a hit is scored on a vehicle, find the correct penetration value for range and add 2D6 to get the *final penetration value.*

Special Armor Protection: There are two active defensive systems which provide enhanced protection vs. weapon penetration of the vehicle's hull.

Explosive Reactive Armor: Some vehicles may be fitted with explosive reactive armor (ERA); this will be indicated on their data cards. ERA consists of explosive blocks which are detonated by the penetrator jets from HE, HEAP, and high energy (plasma and fusion) weapons. The detonation propels a metal plate into the jet, breaking it up and reducing its effectiveness. However, this uses up the block, leaving the vehicle's basic hull exposed.

ERA is listed with an armor value (AV), a detonation number, and a list of which of the vehicle's faces are covered by the ERA. Each face is covered by 20 ERA blocks (each protecting 1/20 of that face). When a face protected by ERA is hit by an HE, HEAP, or high energy weapon with a final penetration value of 10 or greater, an ERA block at that location detonates and adds its AV to the AV of the vehicle's hull. However, 1/20 of that face's ERA protection is now used up. Keep track of the number of ERA detonations on each face. For each subsequent HE/HEAP/high energy hit, roll 1D20, and if the result is greater than the number of ERA blocks already detonated, then another ERA block detonates and adds its AV against the round. If not, the round has hit bare hull where a block has already detonated and there is no ERA benefit.

In addition, each time an ERA block detonates, roll 1D20. If the result is less than the detonation number, a multiply detonation results, using up another 1D20 ERA blocks on that face.

Other type rounds do not detonate ERA, and therefore are not affected by ERA on a surface.

Electrostatic Armor: Some vehicles may be fitted with electrostatic armor (ESA) as indicated on their data cards. ESA consists of a low-power static field which is generated around the defended vehicle and linked to a high-energy capacitor. When an incoming projectile enters the static field, it triggers the discharge of the capacitor which produces enough energy to vaporize or degrade the effectiveness of the projectile. The ESA will be simply listed as an armor value (AV). Half of this AV is added to the actual hull armor value vs. kinetic energy projectiles, and all of this AV is added vs. HE, HEAP, plasma, and fusion gun hits. ESA adds no armor vs. laser or particle accelerator attacks.

Hit Location: Roll once per individual shot or burst and consult the Vehicle Hit Location chart on page 298. Add 1 to the die roll if the shot was from the side of the vehicle. The four possible results for vehicles are small turret, turret, hull, and suspension. Water vessels may be hit in the hull, superstructure, or waterline while aircraft may be hit in the hull (fuselage) or wing.

VEHICLE HIT LOCATION

Die	Vehicle	Vessel	Aircraft
1	Hull	Hull	Wing
2	Hull	Hull	Wing
3	Hull	Hull	Wing
4	Small Turret	Superstructure	Hull
5	Turret	Superstructure	Hull
6	Suspension	Waterline	Hull
7	Suspension	Waterline	Hull

+1 to die roll for side shots.

Suspension Damage: Minor damage cuts speed in half; major damage immobilizes. Two minor damage results equal major damage.

Some vehicles are configured differently than others, and so treat different hit location rolls as different results. Vehicles with small or remote turrets treat "small turret" hits as turret hits and "turret" hits as hull hits. Vehicles with regular turrets treat "small turret" and "turret" hits as turret hits. Vehicles without turrets treat all "small turret" and "turret" hits as hull hits.

A vehicle with both a regular turret and a small turret is a special case. If the vehicle is hidden with only the small turret raised, "small turret" hits always hit the elevated small turret, while other hit results are read normally. If the main turret is exposed as well, roll again on "small turret" results, with even rolls treated as small turret hits and odd rolls as main turret hits.

Open Vehicles: Some vehicles have their hull front, side, and rear armor listed in brackets, for example, [1]. This indicates that the vehicle is an *open vehicle*. Open vehicles have a slight armor protection provided by their metal bodies, but it is an incomplete cover. Whenever a shot hits an open vehicle, there is a 50% chance of the shot hitting the vehicle's body and a 50% chance of it going through a window or other open portion. If it hits the body, the shot is resolved normally, and the vehicle receives the benefit of its armor value. If it goes in through a window, the shot is always resolved as minor damage, and any damage result is ignored except for crew or passenger (these may also be resolved as cargo damage) result.

Motorcycles: All small arms hits on a motorcycle (this also includes grav cycles) result in damage. All hits by larger weapons result in destruction. A damaged cycle can no longer be ridden. Characters riding a cycle when it is hit must make a Formidable: Agility roll or be thrown from the cycle. Depending upon the altitude of a grav cycle, the character may also suffer falling damage (see page 287).

Cover: Often vehicles park with part or all of the vehicle concealed behind terrain features, such as walls, road embankments, or low hills. The referee must determine which vehicle locations are covered by the terrain and any hit location result in those areas hits the terrain instead.

Armor: Once the location is known, consult the vehicle's combat statistics on its vehicle card and note the armor value of that part. Hulls and turrets each have a front, side, and rear armor value. Tracked vehicle suspensions have one armor value which is used when the suspension is hit from all angles. Grav vehicle suspension hits use the armor value of the hull face that was hit. Wheeled and hovercraft suspensions do not have an armor value, but do have a critical damage value, which is listed in parentheses to differentiate it from armor values.

If covering terrain is hit, the referee should determine the armor value of the terrain as well. In many cases this will be enough to stop the round. If not, however, the armor value of the terrain is first subtracted from the final penetration value of the round before applying it to the vehicle's armor. The armor value of terrain is calculated by multiplying the thickness of the terrain feature (in centimeters) by the armor toughness shown on the Armor Equivalency table at left.

For example, a vehicle is parked behind a low stone wall which the referee decides covers the vehicle's suspension. The stone wall is 30 centimeters thick. Stone has a toughness of 0.2, and so the wall has an armor value of 6.

Extent of Damage: Subtract the correct armor value of the target from the final penetration value of the weapon and consult the Vehicle Damage Resolution chart, page 299. If the result is 0 or a negative number, the shot has no effect. If it is a positive number, read the result from the chart. The result will read out as from one to three damage results and will indicate whether these damage results are minor or major.

Lasers: Lasers are more efficient at penetrating armor than they are at delivering damage. Once the target's armor value has been subtracted from the final penetration value, multiply the remaining penetration value by the laser's penetration rating (rounding all fractions down). The result (if it is a positive number) is the result used on the Vehicle Damage Resolution chart on page 299.

ARMOR EQUIVALENCY

Material	Toughness	Centimeters per Armor Value of 1
Coherent Superdense	40	0.025
Bonded Superdense	28	0.035
Superdense	14	0.07
Crystaliron	8	0.125
Composite Laminates	6	0.167
Light Composites	4	0.25
Armor Plate	2	0.5
Sheet Steel, Light Alloy	1.7	0.6
Reinforced Concrete	0.4	2.5
Concrete and Bricks	0.3	3.3
Stone, Packed Dirt, Wood	0.2	5
Loose Dirt	0.04	25

For example, a laser has a damage value of 10 and a penetration rating of 1/3. The player rolls 7 on 2D6 giving the laser a final penetration value of 37 ([10÷1/3]+7). The laser hits a vehicle armor face with a protection of 18, leaving 19 points of penetration value left. This is multiplied by 1/3 (the laser's penetration rating) and rounded down, for a final result of 6, which is the result on the Vehicle Damage Resolution chart at right.

Damage Implementation: See the Vehicle Hit tables on the next page. Find the correct section (minor or major damage, hull, or turret damage) and roll 1D6 once for each required damage result. For suspension hits, see Suspension Hits on page 299-301.

Note also that some rolled results convert the damage into a different type. For example, if a minor turret hit is achieved against a turreted vehicle, but a 6 is rolled on the Turret Minor result table, the hit is converted into a major turret hit. In this case roll again on the Turret Major result table. If a 6 is rolled on this table, the damage is converted to a minor hull hit. If a 6 is then rolled on that table, it is converted to a major hull hit. There is no possibility of any alteration to a major hull hit. The following results are possible:

1 Crewmember: This must be a crewmember stationed in the part of the vehicle or vessel which was hit. Which crewmember is hit is determined randomly. The crewmember suffers 1D6 hits, each of which does 1D6 damage. Determine a hit location separately for each hit.

2 Crewmembers: Exactly as above, but two crewmembers are hit, and they are selected randomly from the entire vehicle crew, not just those individuals in the area hit.

N Passengers: The indicated number of passengers are selected at random and are hit exactly as noted under 1 Crewmember above. If this is not a passenger-carrying vehicle, then this is treated as an N crewmember hit. If this is a passenger-carrying vehicle but none are present, this becomes a no effect. (The referee may substitute a cargo destroyed result for this result at his or her discretion if cargo is present.)

Sensor: Either the gun sight, range finder, night vision equipment, radar, or some other sensor device is damaged. (The referee will determine which, depending on the amount of equipment installed.)

Traverse: The turret traverse is jammed, and the turret will no longer turn. This makes it impossible to fire any fixed weapon (such as the main gun or coaxial gun) in the turret until it is unjammed. Repairing the traverse is a Difficult task using Mechanic skill. It takes half an hour and cannot be done from inside the vehicle. (See Maintenance, pages 241-244.)

If the vessel or vehicle has several turrets, roll to determine randomly which was hit.

Secondary: One machinegun, grenade launcher, or similar light secondary weapon is destroyed.

Loader: Either the human loader is hit, as for a crewmember hit above, or the vehicle's autoloader is put out of action. This becomes a driver hit if neither are present in a vehicle and main armament hit if neither are present in a vessel.

VEHICLE DAMAGE RESOLUTION

FPV–AV	*Result*
0 or less	No effect
1 to 10	1 minor damage result
11 to 20	2 minor damage results
21 to 40	1 major damage result
41 to 60	2 major damage results
61 or more	3 major damage results

FPV–AV: Final Penetration Value minus armor value.

Commo: One of the vehicle's communication systems is destroyed.

Main Armament: The vehicle's main armament is damaged and can no longer fire. If several such results are possible, roll to determine randomly which is hit.

Ammo: The ammunition storage of the vehicle has been hit. The amount by which the final penetration exceeded the vehicle's armor value is the percentage of stored ammunition lost (rounding fractions up). If the vehicle is armed with any exploding rounds or large-caliber gun rounds, this number is also the percentage chance that the ammunition will explode. If the ammunition explodes, the vehicle is destroyed, and the crew is killed.

In the case of a vessel, explosion of the ammunition will sink the vessel and each crewmember will escape death by rolling a Formidable: Swimming task. (If below decks when the explosion takes place, this becomes Impossible: Swimming.)

Engine: The engine is hit and rendered inoperable. The vehicle may not move. If the vehicle is an aircraft or grav vehicle at NOE, it settles to the ground. The pilot/driver must make a Formidable roll against the appropriate Pilot cascade asset to settle to the ground without suffering further damage. An aircraft at terrain following or higher altitude suffering this hit makes a Difficult: Pilot roll to retain control for long enough to bail out.

Fuel: The fuel tank of the vehicle has been hit. The amount by which the final penetration exceeded the vehicle's armor is the percentage of fuel capacity lost (and fuel, if the tank was fuller than the new capacity). This number is also the percentage chance that the fuel will ignite. If the fuel ignites, the vehicle catches fire, and the crew must immediately bail out.

Suspension Hits: No damage tables are provided for suspension hits. One minor damage result to a vehicle's suspension halves its movement. A second minor damage result, or any major damage, immobilizes the vehicle, or in the case of a grav vehicle, causes it to settle to the ground.

Tracked and grav vehicle suspensions are treated like any armored part of the vehicle using the armor rating listed. Wheeled and hovercraft suspensions do not have an armor value, but instead have a critical damage level (shown in parentheses). Each time a weapon hits the suspension, it

Vehicle Hit Tables

WATER VESSEL DAMAGE

Die	Waterline Minor Result	Die	Hull Minor Result	Die	Superstructure Minor Result
1	Waterline hull	1	1 crewmember	1	1 crewmember
2	Waterline hull	2	1 crewmember	2	Radio/radar
3	Waterline hull	3	Auxiliary mach.	3	Sight/vision
4	Waterline hull	4	Auxiliary mach.	4	Secondary
5	Cargo	5	Secondary	5	Secondary
6	Major waterline	6	Major hull	6	Major s'structure

Die	Major Result	Die	Major Result	Die	Major Result
1	2 crewmembers	1	Main armament	1	2 crewmembers
2	Rudder/screw	2	Main armament	2	2 crewmembers
3	Engine	3	2 crewmembers	3	Fire
4	Fuel	4	2 crewmembers	4	Fire
5	Ammo	5	Ammo	5	Ammo
6	Minor hull	6	Fire	6	Major hull

VEHICLE DAMAGE

Die	Turret Minor Result	Die	Hull Minor Result
1	1 crewmember/loader*†	1	1 crewmember
2	1 crewmember/sensor†	2	Loader*
3	Sensor	3	2 passengers**
4	Traverse	4	2 passengers**
5	Secondary	5	Radio
6	Major turret	6	Major hull

Die	Major Result	Die	Major Result
1	2 crewmember/main arm.†	1	Engine
2	2 crewmember/main arm.†	2	Engine
3	Main armament	3	Fuel
4	Main armament	4	Fuel
5	Ammo	5	Ammo
6	Minor hull	6	Ammo

AIRCRAFT DAMAGE

Die	Hull Minor Result	Die	Wing Minor Result
1	1 crewmember	1	No effect
2	Controls	2	No effect
3	Controls	3	Controls
4	2 passengers**	4	Controls
5	Radio	5	Controls
6	Major hull	6	Major wing

Die	Major Result	Die	Major Result
1	Engine	1	Controls
2	Engine	2	Fuel
3	Instruments	3	Fuel
4	Instruments	4	Fuel
5	Weapon/ammo	5	Fuel
6	Minor wing	6	Fireball

*Loader is either a hit on the autoloader mechanism or the actual crewmember loading the gun. This becomes a driver hit if neither are present.

**2 passengers becomes a 1 crewmember hit if this is not a passenger-carrying vehicle. If it is a passenger-carrying vehicle but no passengers are present, the hit has no effect. Cargo destroyed may be substituted for this result at the referee's discretion.

†If turret is an unmanned remote turret, use the result after the slash.

inflicts damage equal to its final penetration. Once the cumulative damage reaches the critical damage level, the suspension suffers minor damage. Once it reaches twice the level it suffers major damage. (In most cases, any hit on a wheeled suspension will immobilize the vehicle. Only in the case of small arms fire is the cumulative damage on a wheeled vehicle likely to be important.)

Cargo: So many variations in cargo exist that it is not possible to give any concise rules for damage. The referee must use his or her own judgment in such situations.

Fire: Water vessels are usually quite succeptible to fire, as even steel-hulled boats tend to be full of combustible material. Whenever a fire result appears on the damage table, the boat has caught fire. The final penetration value of the gun which caused the damage is the initial level of the fire. The fire will increase in level by 1 every combat turn.

Characters may attempt to put out the fire by spending a turn fighting it. Extinguishing a fire is Difficult task versus Constitution. For every successful task roll made by a character, the fire is reduced in level by 1. Outstanding Success reduces the fire by 2 levels. Catastrophic Failure results in a burn injury.

If the level of the fire exceeds the vessel's tonnage (fully loaded weight in metric tonnes) divided by 10, the fire will begin burning out of control and cannot be extinguished. Roll 1D6 at the start of each turn thereafter. The fuel and ammunition on board will detonate on a roll of 6, destroying the vessel.

Waterline Hull: Vessels which suffer waterline hull damage will begin to flood. Each vessel has three rows of floatation hit boxes, with boxes in each row equal to the vessel's tonnage. Subtract the vessel's armor from the final penetration value, and divide the result by 6. This is the number of flotation boxes marked off each turn. All flooding hits are marked in the top row of flotation boxes until the row is full, then in the second row, then in the third.

When the first row of boxes is full, the vessel's speed is halved. When the second row is full, the vessel is "dead in the water" and may not move under its own power. (It will drift with the current.) When the third row of boxes is full, the vessel will sink.

If a vessel has pumps, each point of pump rating will reverse 2 points of flooding per minute. A person who spends six consecutive turns bailing can bail 1 point of water.

Rudder/Screw: When a boat suffers a rudder/screw result, it must travel at half speed until the damage is repaired. On boats without a screw, this indicates that the rudder is jammed, and the boat cannot alter course until the damage is repaired.

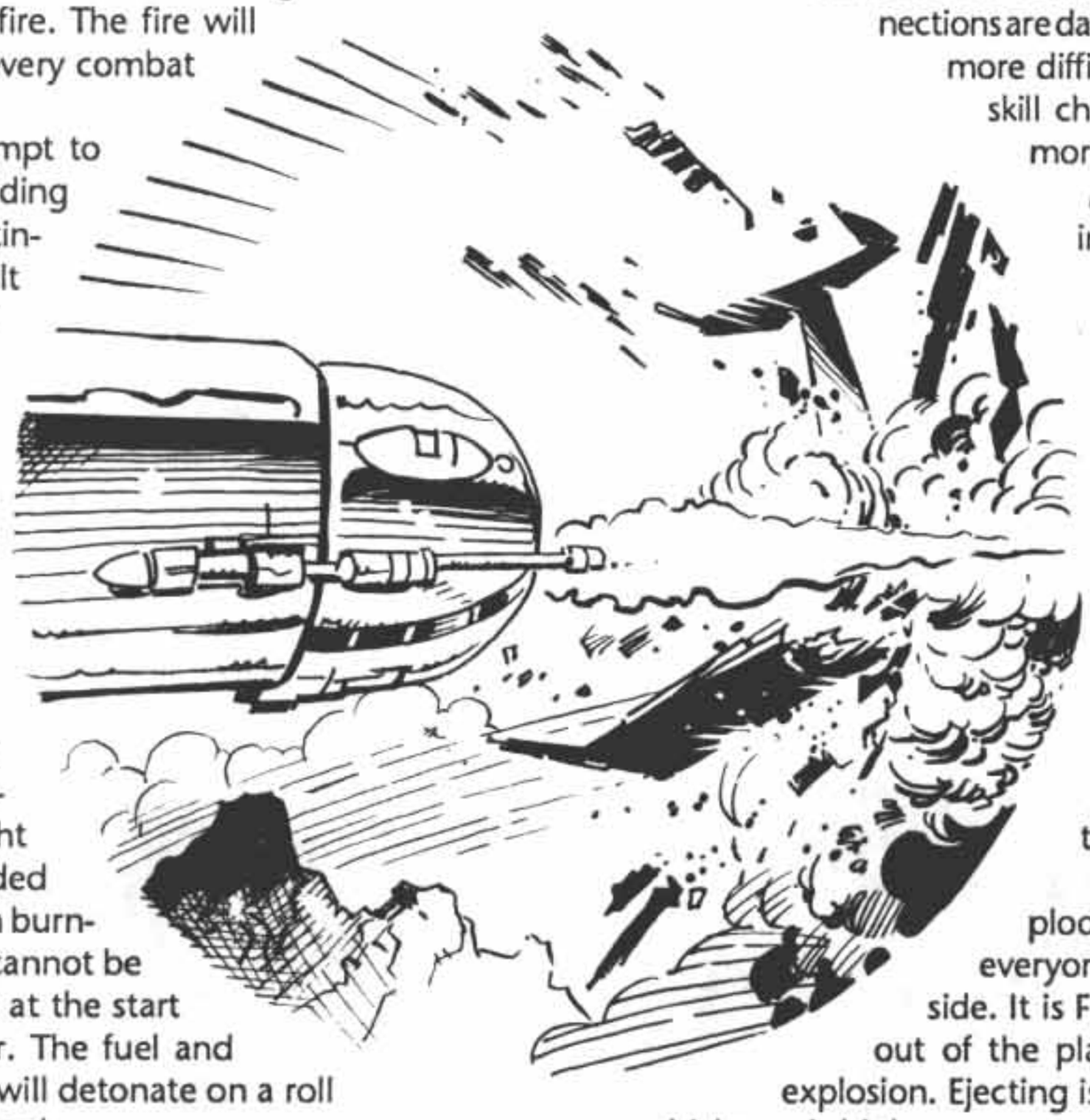
Auxiliary Machinery: Auxiliary machinery is rendered inoperable until repaired. The choice of precisely which piece of equipment is damaged is up to the referee.

No Effect: The round passes through the aircraft's wing with no serious effect.

Controls: The control surfaces and/or connections are damaged, making the craft more difficult to control. All Pilot skill checks become one level more difficult.

Instruments: The craft's instrument panel is damaged and instruments begin to fail (altimeter, speed indicator, fuel indicator, compass, and the like). The pilot must make an Average task roll to avoid a mishap at the start of each subsequent turn. Additional damage results to the instruments raise this additional difficulty levels.

Fireball: The craft explodes in flame, destroying everyone and everything inside. It is Formidable: AGL to bail out of the plane the instant before explosion. Ejecting is Difficult: AGL or Pilot, whichever is higher.



Collision Damage

It is entirely possible for vehicles to collide with one another in combat. The following general rules apply in those situations.

Damage done depends upon the size of the vehicle and the *net combat speed.* Net speed depends upon the relative direction and speed of the two colliding vehicles. Vehicles headed in opposite directions add their speeds together. Those travelling in the same direction subtract the slower's speed from the faster's. All others use the speed of the faster for determining collision damage.

Ground and Water Craft: For ground vehicles and water vessels, the damage value caused by a collision is

equal to the tonnage of the object collided with, times the net speed of the collision, divided by 10. For ground vehicles, this number is used as a penetration value against a randomly rolled hit location. For water vessels, the hit location is automatically considered waterline hull; the collision value is divided by the armor value of the given location, and the resultant number is then applied as waterline hull damage, causing flooding.

Aircraft and Spacecraft: For aircraft and other flying vehicles, collision damage value equals tonnage times net speed, but *not* divided by 10. A random roll is made as normal to determine hit location, then the damage value is used as a penetration value versus the hit location's armor value, the result being used on the Vehicle Damage Resolution table on page 299.

Vehicle Collisions With Creatures: When a vehicle collides with a human or other figure, including those riding bicycles or motorcycles, severe injury can result. In order to calculate the effects of this injury, first multiply the collision speed times the vehicle tonnage. If the target character is riding a bike or motorcycle, this number is the percentage chance that the bike or motorcycle is damaged enough to become inoperable. Next, the number is divided by two and becomes damage applied to a randomly rolled hit location on the target. Target figures have a chance to leap out of the way of an oncoming vehicle, by succeeding at an Average check versus Agility. If they succeed, they take no damage; otherwise they are struck by the vehicle.

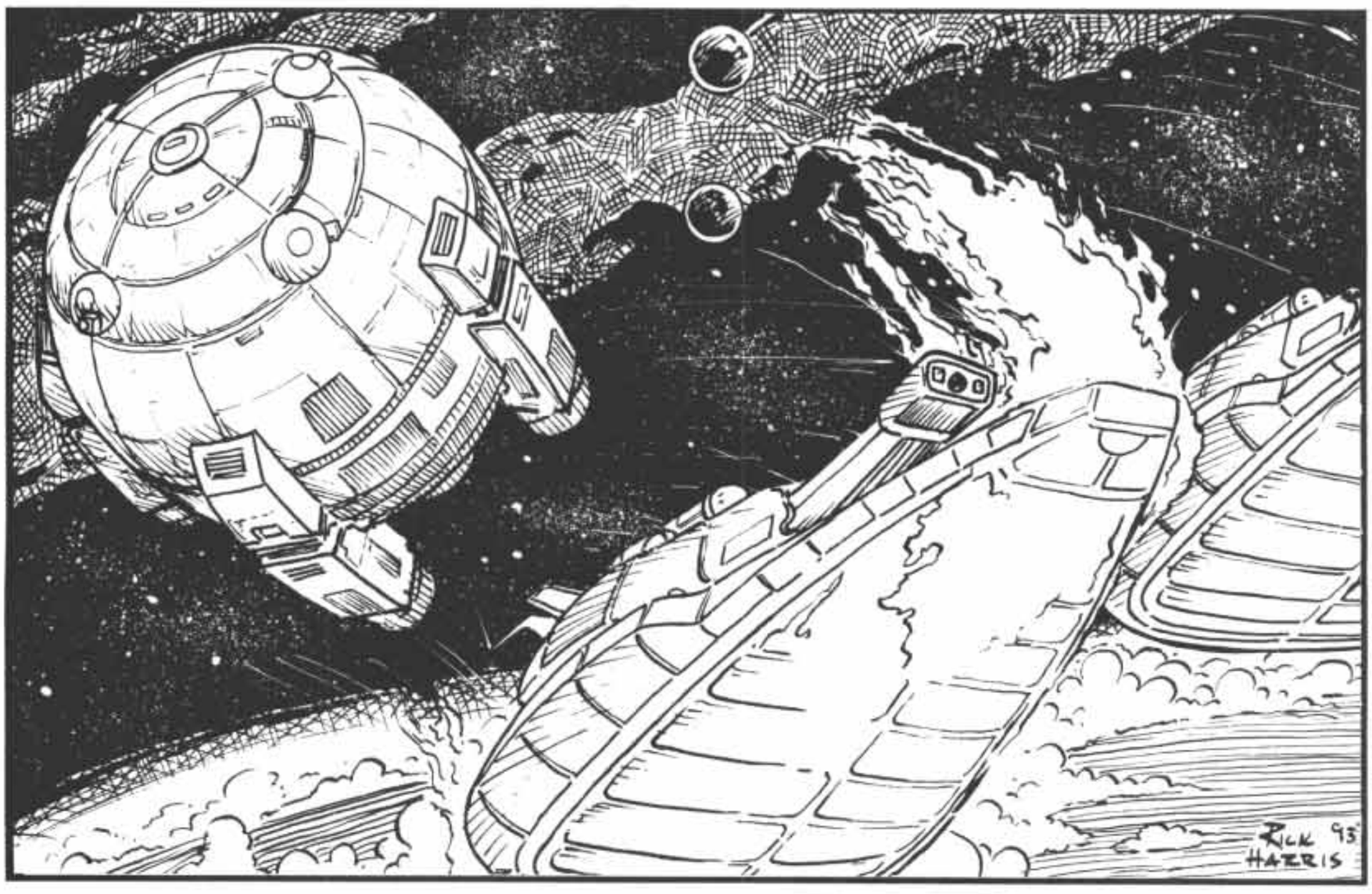
Examples: For instance, imagine that a large cargo truck going 60 and a small ground car going 35 were to collide head on. The collision speed in this case is 95. The truck weighs two tons, which means the car is hit with a value of (95×2)÷10, or 19. Regardless of the hit location rolled, the car's armor is 1, which means that (19–1=) 18 is referenced on the Vehicle Damage Resolution table, for "2 minor damage results."

The truck takes less damage from the lighter car. The collision speed of 95, times the car's weight of 1, yields 95, which when divided by 10 results in 9. Again, regardless of hit location, the armor value is 1. As a result, (9–1=) 8 points are taken to the Vehicle Damage Resolution table (page 299) for a result of "1 minor damage result." The referee must now roll the actual minor results and apply them.

In another example, a 20-ton boat collides with a 140-ton boat, with a net collision speed of 5 (remember, boats and aircraft are rated in 10-meter increments instead of meters). The 140-ton boat suffers a waterline hull hit which is worth 10 [(20×5)÷10] damage points, which will cause 10 flotation hits worth of flooding per combat turn until repaired. The 20-ton boat suffers a waterline hit worth 70 [(140×5)÷10] damage points, enough to immediately sink it.

Finally, two characters on a tandem bicycle are being run down by a truck moving at 45. The vehicle's speed is 45, times two tons weight equals a 90% chance that the bicycle is ruined. If the characters fail an Average check versus their Agility, they will each take 45 damage points to a random location.

Loss of Control: After all damage effects are calculated, operators of vehicles involved in collisions must immediately make a Difficult test of the appropriate skill in order to remain in control of their vehicle. Failure at this check means the vehicle goes out of control. Ground vehicles will skid to an uncontrolled stop, possibly colliding with something else and requiring a second damage check (at the referee's option). Water vessels will drift with the current, spinning slowly until control is regained. Aerospacecraft will plummet toward the ground at maximum speed. It is a Difficult test versus the appropriate vehicle skill to regain control, which can be made once per turn in which the driver is allowed an action. A Catastrophic Failure at the original test means the vehicle is damaged so severely that control cannot be regained.



Other Combat-Related Issues

Demolitions

Explosives, in addition to providing the bang for high-explosive rounds, are used to demolish structures and breach barriers.

Types of Explosives: For simplicity, the game deals only with the two most common types of explosives: dynamite and plastic explosive. The units used in the game are the quarter-kilogram stick of dynamite and the one-kilogram block of plastic explosive. All demolition effects are resolved in terms of the number of demolition points (DP) used. A stick of dynamite has 1 DP; a block of plastic explosive has 6 DPs. Plastic explosive is flexible and may be molded to any shape desired or broken into smaller charges of 1 or more demolition points. Several sticks of dynamite and/or blocks of plastic explosive may be joined to form larger charges.

Setting Charges: Each demolitions charge takes 15 minutes to emplace. A demolition charge is defined as one or more sticks of dynamite and/or blocks of plastic explosive connected to each other (up to a maximum weight of 10 kilograms). Additional explosives may be attached as extra charges, but require additional time to emplace. If several larger charges are emplaced, several characters may work on emplacing them at once.

Setting a charge requires a detonator and may require fuses or electrical wire. A character must have an engineer demolitions kit (see page 333) or must have improvised the required parts (see Combat Engineer skill, page 117). Improvised fuses/detonators will have a mishap on a D10 roll of 8+. Such a mishap is a hangfire (5-10 1D10) or a complete dud (1-4 on 1D10). A hangfire will detonate 1D10 turns later than expected; a dud will not detonate at all. The referee should make these rolls in secret.

Setting a charge is an Easy task using Combat Engineer skill, with failure indicating that the charge does not go off when triggered and with Catastrophic Failure indicating that the charge goes off while being set.

Tamping: Tamping consists of covering a charge so that the force of the explosion is contained and directed in toward a structure. Tamping must be done with dense or heavy material, such as rocks, sandbags, steel plates, etc. Tamping adds five minutes to the time required to set the charge. The referee may increase this time requirement for difficult tamping jobs. (It is very difficult, for example, to tamp a charge taped to the side of a freestanding girder.)

Effects: Like anything which blows up, explosives have a concussion, burst, and penetration value.

Concussion: It requires progressively larger quantities of explosives to produce a linear increase in concussion. To determine the concussion of a charge, consult the Demolitions table at right. This lists demolition points and their corresponding concussions. In reading the chart, you will notice that there are several gaps in the listing of demolition points. The DP value listed for a given concussion is the minimum number of DPs required to achieve that value.

For more precise results, the following formulae can be used to calculate the concussion value of a given demolition charge and the size of charge needed to achieve a given concussion:

To determine the concussion of a charge, divide the DP value of the charge by 2, extract the square root of the result, and multiply by 5. To determine the number of demolition points needed to achieve a given concussion, divide the concussion by 5, square the result, and multiply it by 2.

$C=5(\sqrt{DP+2})$. *C:* Concussion *DP:* Demolition points.

$DP=2[(C+5)^2]$. *C:* Concussion *DP:* Number of demolition points needed to arrive at a certain concussion.

Burst: Once the concussion of the explosion has been calculated, determine the maximum concussion radius of the explosion the same way as for a high-explosive round, as described on page 283. This maximum radius of concussion is also the primary burst radius of the explosion. The secondary burst radius is twice this.

Unlike a high-explosive artillery round, a demolition charge does not contain the material necessary to produce a large quantity of fragments. However, these are usually produced by the destruction of the object being demolished. If the demolitions charge is simply lying on the ground or is used to demolish an earthen or timber and earth fieldwork, it does not produce fragments.

Penetration: The base penetration value of a demolition charge is the same as its concussion value, but is modified by its means of emplacement. If the charge is tamped, its penetration value is doubled. If the charge is simply laying on top of or leaning against a structure (as in the case of a thrown satchel charge or stick of dynamite), its penetration value is halved. Unlike other explosions, the listed penetration value of a demolition charge is its actual penetration; players do not add the roll of 2D6 to it.

DEMOLITIONS

DP	Concussion/Penetration*
1	3
2	4
3	6
4	7
5	8
7	9
8	10
9	11
11	12
13	13
15	14
18	15
32	20
50	25
72	30
96	35
128	40
162	45
200	50

*Penetration value is modified by emplacement. *Tamped:* Pen×2. *Laying on or Leaning Against:* Pen+2.

Breaching Barriers: Breaching a barrier basically means blowing a hole in it. Demolitions charges can be used to breach walls, armor plate, embankments, etc.

To determine the size of the breach made by a demolition charge, first determine its maximum penetration. To do so, divide the penetration value of the charge by the toughness of the material of the barrier. This constant is listed on the Armor Equivalency table on page 298. The result is the number of centimeters penetrated by the charge.

For example, a charge with a penetration value of 12 would penetrate 1.5 centimeters of crystalliron (12÷8), 6 centimeters (12÷2) of armor plate, 40 centimeters (12÷0.3) of brick or concrete, and 60 centimeters (12÷0.2) of stone, packed dirt, or wood.

Now determine the actual diameter of the breach made. The diameter of the breach, in centimeters, is the penetration (in centimeters) of the charge minus the thickness (in centimeters) of the barrier.

For example, a character wishes to breach a 50-centimeter-thick (about a half yard) reinforced concrete wall. The character is using nine one-kilogram blocks of plastic explosive (total of 54 DP). Consulting the Demolitions table on page 303 he or she uses the 50 row for DPs and notes that this has a penetration value of 25. The character spends an extra five minutes carefully placing and tamping the charge for maximum effect, thus doubling the penetration value to 50.

The PC divides the penetration value of 50 by the reinforced concrete's toughness of 0.4, obtaining a total penetration of 125 centimeters.

Subtracting the thickness of the wall from this leaves a hole 75 centimeters (0.75 meter, or over two feet) across.

Characters should take cover from the blast as an explosion with a concussion value of 25 will injure characters within four 10-meter grid squares (40 meters) of the explosion, and it will throw concrete shards to twice this distance.

Mines

Mines are placed in the ground and are detonated when a creature or vehicle passes over them. Antitank mines are detonated by vehicles.

Detonation: Minefields are always described in terms of their width and depth in 10-meter tactical grid squares, and their density of mines per grid square. Once this has been calculated, the chance of detonating a mine per grid square entered is determined. For personnel, multiply the density by 0.1; for vehicles, multiply the density by 0.5. The result is the percent chance per square that a vehicle or character will trigger a mine.

It is too time-consuming to roll for every square entered, so the referee should instead note how many squares of the minefield a character or vehicle moved through, multiply this by the detonation chance, and use the result as the chance that a mine was triggered at some point during the move. Since a good many variables are actually at work here other than simple density of the field and distance travelled, the referee is strongly encouraged to make a quick approximation of the chances, round to the nearest 10% (but never down to 0 or up to 100), and roll a few D10. This is not an absolutely precise system to begin with, so speed of resolution is more important than precision.

For example, the referee determines that three characters are walking through an antipersonnel minefield with a density of 0.08 mines per square. One character walks through six squares of the field; one walks through five; and one walks through two. For personnel, the chance of detonation is 0.008 per square moved through. The referee decides that they have walked through an average of about four squares each, for a detonation chance of roughly 0.04 (4%) each. The referee makes a D100 (percentile) roll for each character, with a 4 or less indicating a mine was detonated. For more detail (and time), he could have rolled a D100 for each character for 5 or less, 4 or less, or 2 or less, respectively.

Damage: Detonation of a mine has the same effect as any other explosion, causing concussion and fragmentation. However, if a character triggers an antipersonnel mine, the full concussion value of the mine is only suffered by one leg (determine which one randomly), with the rest of the body parts suffering half concussion. Damage to a vehicle is resolved against the vehicle's suspension. If the mine has a penetration value, then an additional attack is made against the hull of the vehicle using the vehicle's hull rear armor value.

Detection: Detection of a minefield is an Average task using either Combat Engineer or Observation skill. It may only be attempted while crawling or walking, not while trotting, running, or mounted. Detection of a camouflaged minefield is a Difficult task, subject to the same restrictions. Conditions of reduced visibility (fog, night, smoke, etc.) raise the difficulty of the task by one level.

Marking and Removal: Once a minefield is discovered (either by detection or by setting off a mine), characters may either probe for the mines and mark their location or may attempt to remove them.

Probing and marking mines is an Average task using Combat Engineer skill and a Difficult task using Observation. Failure indicates that a mine present in the grid square has been missed, while Catastrophic Failure indicates the accidental detonation of a mine. It takes five minutes (60 combat turns) to probe and mark a five-meter wide path through one tactical grid square (10 meters).

If PCs wish to remove the mines from a field, they must first probe and mark the field as explained above. The referee will determine where the actual mines are in the marked part of the field, and each one must be removed. Removing a mine takes 10 minutes (120 combat turns) and is a Difficult task using Combat Engineer skill or a Formidable task using Observation. Failure indicates a complication in the removal

which will take extra time. Spend another 10 minutes and roll the task again. Catastrophic Failure indicates accidental detonation of the mine.

Directional Mines: Directional antipersonnel mines are not buried. They instead are generally emplaced at or near ground level and detonated either by remote control or a sensor of some kind. At low tech levels this sensor is a 30-meter tripwire. At higher tech levels this sensor can be a sound, vibration, magnetic, or infrared sensor.

Personnel passing over the tripwire will detonate the mine on a D10 roll of 6 or less. The detonation rolls for the more sophisticated sensors vary with tech level, and are given with the sensor listings. The range of these sensors is usually limited to the mine's effective range, so is also usually in the 30-meter range.

Anyone can detonate a directional mine by remote control at any time, provided he or she is in possession of the control (which is a radio control or is connected to the mine by a wire). Concussion is resolved normally. Fragmentation, however, is suffered only in the direction of the blast (predetermined when the mine is emplaced). The burst area is a 30-degree cone, so at any given distance from the mine, the cone is half that distance wide. For example, at a distance of 50 meters, the cone is 25 meters wide; at 100 meters, it is 50 meters wide. Two burst templates are provided below for use with the tactical grid. The primary burst zone of the directional mine extends to 60 meters, and the secondary burst zone to 120 meters.

RDM: Remote-delivered mines (RDM) may be fired by artillery or dropped by aircraft. The two types of RDM rounds are antiarmor mines (RDAAM) and area denial mines (RDADM). The first type delivers antitank mines, while the second delivers antipersonnel mines. Because the antipersonnel mines are smaller, RDADM rounds provide for a higher minefield density than do RDAAM. The densities of the two types of fields are provided on the RDM Density table. On the table, the unit of deliverable mines is equivalent to a medium-caliber artillery round. Larger artillery rounds or various sizes of aircraft mine dispensers will deliver more than one of these units.

For example, a round that was described as holding four RDAAM mine units would cover the area listed at a density of 0.04. Aircraft dispensers can be used to spread mines at the listed density over a larger area, so a four-RDAAM mine unit dispenser could either spread a 0.04 density RDAAM field over the listed area, or a 0.01 density field over four times the listed area.

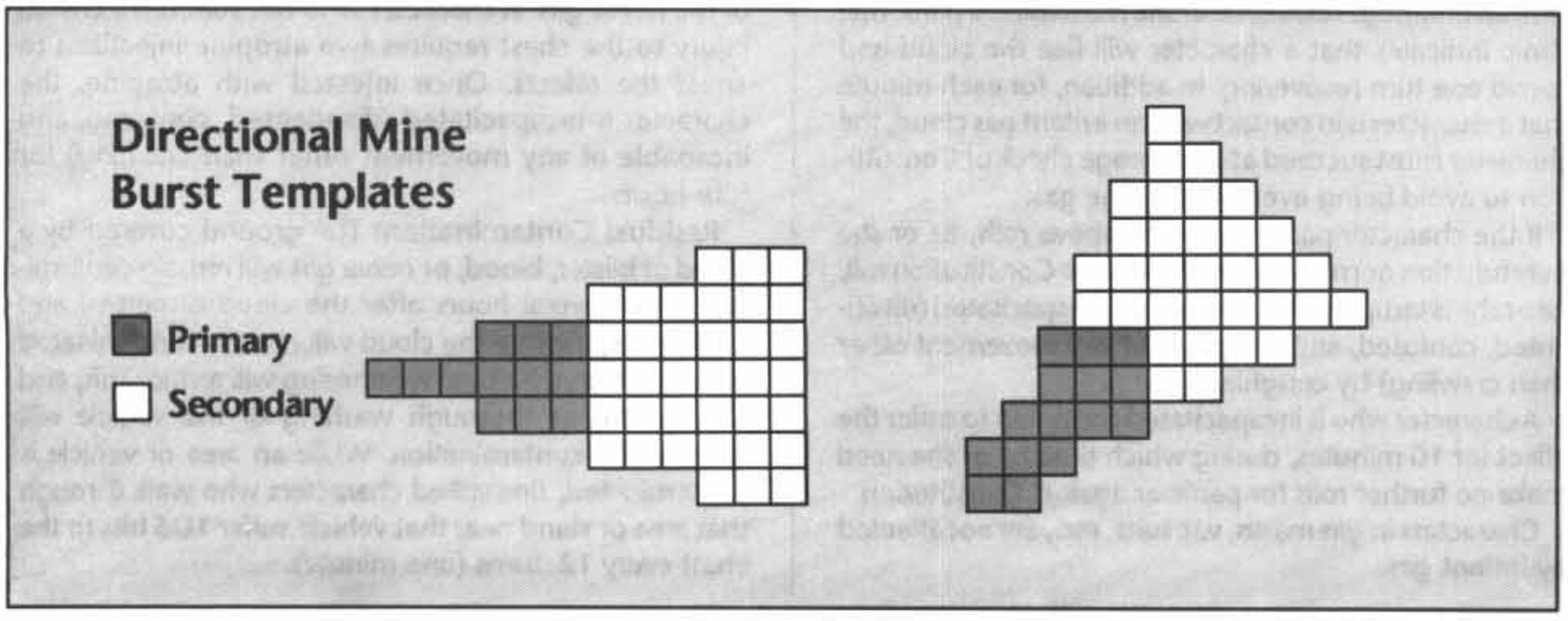
RDM DENSITY

Type	*Density*	*Dimensions of Mined Area*
RDAAM	0.01	250m (25 squares) by 250m
RDADM	0.04	250m (25 squares) by 250m

Due to the low density of mines delivered by a single mine-unit round, it is common practice to fire more than one round to make a field. When emplacing a minefield using RDM, players should tell the referee how many mine-units they are firing into each 25 10-meter grid square by 25 10-meter grid square area (the area covered by the mines from one round). The density of the minefield is the density of one round times the number of mine units fired.

For example, each RDAAM round provides a density of 0.01 mines per grid square. A group of characters has 12 one-unit RDAAM rounds and wants to mine an area roughly 500 meters across (roughly 50 grid squares). Each round covers an area 25 squares wide and 25 deep. The players tell the referee that they will fire six rounds into the middle of the left half of the area and six rounds to the right. This will give them a minefield 50 grid squares wide and 25 grid squares deep, with a mine density of 0.06 per square.

Standard Minefields: Standard antitank and standard antipersonnel minefields already in place (i.e., laid previously by NPCs) are assumed to have a density of 0.1. The referee can increase or decrease this, and determine widths and depths to fit the situation. The 0.1 density is an easy rule of thumb, however.



Chemical Warfare

Chemical bombs, missiles, artillery rounds, and grenades are filled with a chemical agent and are intended to do damage by dispersion of their contents rather than by their explosive power.

The listed burst radius of the round or grenade is the width of the chemical cloud it releases. The length of the chemical cloud is 4 times its width. The actual cloud starts at the point of impact of the round or grenade and extends downwind.

For example, a chemical grenade with a burst radius of 5 would have a chemical cloud five meters wide and 20 meters long.

Characters may suffer fragmentation damage if they are within the burst radius of the round or grenade, but since such weapons have only enough explosive force to scatter their contents, this is restricted to 1D6+2 damage with Nil penetration to a random location if hit by a fragment. Roll on the Personal Hit Location chart (page 269) for location.

A chemical round can contain one of five different chemical agents: smoke, irritant gas (such as tear gas or vomit gas), blood agent (such as phosgene), blister agent (such as lewisite or mustard gas), or nerve gas.

The cloud of gas from a smoke round does not form immediately. When the round hits, the referee should secretly roll 1D6 to see how many combat turns it will take the cloud to form. Once the cloud has formed, the effects below are instituted.

Smoke: Smoke causes no damage and is used to the obscure vision. The first 30 seconds of effect is thin smoke, followed by two minutes of dense smoke, then another turn of thin smoke, and then no smoke.

Irritant Gas: This category covers a variety of compounds usually known as tear gas or riot gas. The gas cloud lasts for four turns. Irritant gas causes no permanent damage, but can cause choking and temporary blindness.

When an unprotected character (one without a gas mask, vac suit, or air-tight armor) first comes into contact with an irritant gas cloud, he or she must make a panic roll. Panic indicates that a character will flee the cloud and spend one turn recovering. In addition, for each minute that a character is in contact with an irritant gas cloud, the character must succeed at an Average check of Constitution to avoid being overcome by the gas.

If the character passes both the above rolls, he or she may function normally. If the PC fails the Constitution roll, he or she is temporarily blinded and incapacitated (disoriented, confused, and incapable of any movement other than crawling) by coughing.

A character who is incapacitated continues to suffer the effect for 10 minutes, during which time he or she need make no further rolls for panic or against Constitution.

Characters in gas masks, vac suits, etc., are not affected by irritant gas.

Blood Agent: This category covers a variety of inhaled poisonous gases. The cloud lasts for 20 turns.

Each combat turn that a character is in the gas cloud of a blood agent, he or she receives 2D6 hits to the chest. A character in a blood agent cloud can hold his or her breath for six combat turns and only suffers 1D6 hits per combat turn while doing so. (The agent can enter the bloodstream through the eyes as well as through inhalation, but in less damaging concentrations.) Characters wearing gas masks, vac suits, etc., are not affected by blood agents.

Blister Agent: The gas cloud of a blister agent is the same as for a blood agent. A blister agent has the same effect on masked characters as irritant gas does on unmasked characters. If a character is not wearing a gas mask, blister agent has the same effects as both irritant gas and blood agent. Characters wearing masks and protective suits (or vac suit, air-tight armor, etc.) are unaffected by blister agents.

Nerve Gas: Nerve gas attacks the central nervous system of the victim, eventually causing convulsions and respiratory failure. It can be inhaled or absorbed through the skin. The gas cloud of a nerve gas round is the same as for a blood agent round. Each three turns (15 seconds) that a character is in a nerve gas cloud, he or she receives 1D6 points of damage to the head and 1D6 to the chest (referees should pro-rate lower exposure times).

Characters wearing a gas mask suffer damage only to the chest. Those wearing a protective suit but no gas mask suffer full damage. If wearing a pressure suit (such as a vac suit or combat environment suit) or a protective suit with a gas mask, he or she is not affected.

Once a character's damage level reaches serious injury (equal to a serious wound) to either the head or chest, he or she continues to suffer damage from the gas, even if the character is no longer in the gas cloud. This damage will continue until the character either dies or receives an injection of atropine.

A character who has suffered serious injury to the chest requires one atropine injection to arrest the effects of the nerve gas. A character who has suffered a critical injury to the chest requires two atropine injections to arrest the effects. Once injected with atropine, the character is incapacitated (disoriented, confused, and incapable of any movement other than crawling) for four hours.

Residual Contamination: The ground covered by a cloud of blister, blood, or nerve gas will remain contaminated for several hours after the cloud disperses, and vehicles exposed to the cloud will remain contaminated for several days. Natural weathering will reduce this, and a rainstorm or thorough washing of the vehicle will remove the contamination. While an area or vehicle is contaminated, unmasked characters who walk through that area or stand near that vehicle suffer 1D6 hits to the chest every 12 turns (one minute).

Environment

For sheer simplicity, the combat rules described have assumed a Terran environment (1G surface gravity, atmosphere of 20% oxygen and 80% nitrogen at 1 standard atmosphere of pressure at the surface, with lighting and surface temperatures similar to Earth).

Gravity

The surface gravity of a world in Gs will affect the movement rates and load carrying ability of personnel and vehicles, and affect the range of weapons.

Falling: For purposes of computing falling damage, multiply the distance fallen in meters by the planet's G rating to calculate the number of damage dice rolled. Gravity does not affect the damage dice rolled due to falling from moving vehicles.

Movement: Vehicles and personnel have two conceptually different types of movement rates, absolute and safe. Absolute movement is a vehicle's maximum straight-line speed while safe speed is the vehicle's true useful speed under actual operating conditions of terrain, maneuver, etc. Remember that for the purposes of **Traveller** ground combat it is the safe movement rate that is the most important.

Ground Vehicles: The effects of different gravity fields on ground vehicle performance is very complicated, and has to do with power-mass ratios, torque, and vehicle ground pressure. However, for the purposes of these basic rules, the following generalizations can be made.

On perfectly flat terrain, variations in gravity have no effect on a ground vehicle's maximum speed. Only in sloping terrain, where the vehicle is having to fight the pull of gravity, will vehicles have to work harder on high-G worlds or work less hard on low-G worlds.

One counter-intuitive effect of gravity is that it is often harder to accelerate on a level surface on a low-G world, and easier to accelerate on a high-G world. This is because lower gravity results in less traction (the vehicle's tires or treads are being pulled downward less hard, so have less bite into the ground), meaning that the vehicle's power cannot be applied to the ground as efficiently, much like a car spinning its tires on a slick road. Tracked vehicles tend to do better on low-G worlds than wheeled vehicles because of the greater amount of friction generated by their greater area in contact with the ground. Conversely, high-G worlds give vehicles greater surface adhesion, thus greater capacity for acceleration, if the vehicle has the available power. In general, a vehicle with excess power for its weight on its design world will do better on a high-G world, and much worse on a low-G world.

For this same reason, it is primarily the safe speeds of ground vehicles that are changed on worlds with different G fields. On a low-G world, a moving vehicle will have a harder time maneuvering or stopping, as its wheels don't bite into the ground as well, while on a high-G world the opposite is true. In the **Traveller** rules, a 1G design world is assumed, for simplicity.

If the local gravity is greater than 1G, multiply the safe movement rate of vehicles by the planet's gravity in Gs. Calculate the new speed and its double speed and triple speed overdrive rates, and compare these to its permanent (1G) rates. The vehicle's permanent 1G movement rates are still used for movement, but the new safe speed rates are used when calculating the difficulty of driving tasks.

For example, a wheeled utility vehicle has safe combat movement rate of 15, and overdrive rates of 30 and 45. On a 1.5G world this vehicle's safe rates become 22, 45, and 67. Since the 15, 30, and 45 permanent rates are all less than or equal to the vehicle's new double overdrive rate, movement at these speeds uses the difficulty level of the double overdrive rate: Difficult. On this world it is not possible to drive this vehicle fast enough to have to roll the triple rate Formidable driving test.

Thus high gravity actually makes driving tasks safer, in that mishaps are less likely. Remember, however, that any mishaps, once they occur, tend to be more dangerous. In the example, if the vehicle fell into a ravine, it would fall 1.5 times as hard, and would crush any passengers trapped beneath it 1.5 times as badly.

If the local gravity is less than 1, a vehicle's safe speed should be divided by the local gravity in Gs.

For example, on a 0.5G world, the same utility truck has its permanent combat movement rates of 15, 30, and 45. But its new safe speeds are 7, 15, and 22. Thus an attempt to drive at a rate of 15 would now be a Difficult task, driving at up to 22 would be a Formidable task, and an attempt to drive at 45 would be well beyond the vehicle's new triple overdrive rate and become an Impossible driving task. It is probably a good thing that such acceleration takes longer on low-G worlds. Characters would do well to exercise discretion when driving on low-G worlds and recognize that much of the vehicle performance they are used to far surpasses their local safe speed rates, and is wasted.

Aircraft: Most aircraft cannot function on a world that does not have the same atmosphere and gravity characteristics of the world it was designed for. This is especially the case with high-performance aircraft that are designed to take full advantage of their home environment. Referees may rule that certain general purpose low- or medium-performance aircraft may function on a world so long as the atmosphere is at least as dense, and the gravity is no greater, than those characteristics of the world it was designed for.

Grav Vehicles: Grav vehicles do not have their anti-gravity performance affected by differing gravity fields. Since what a grav drive does is negate the local effects of gravity on its mass, it is all the same to a grav drive if that grav field is 0.5G or 3Gs.

Load: A character's load-carrying capacity and thrown weapons ranges as calculated in the character generation rules are divided by the gravity in Gs. This allows loads to still be calculated using their mass in kilograms against a reduced load capacity, rather than multiplying the weight of every object and calculating it against a character's 1G load ratings. Characters with High-G Environment skill may disregard the effects of each 0.1Gs for each skill level possessed. See also pages 196-198 for the fatigue effects of high gravity.

Weapons Ranges: Divide ranges of all projectile weapons by the gravity in Gs. For example, a slug weapon with a short range of 50, medium of 100, long of 200, and extreme of 400 meters on a 1.5G world would have ranges of 33, 67, 133, and 267 meters respectively. On a 0.5G world, its ranges would be 100, 200, 400, and 800.

Energy weapons are unaffected by changes in gravity.

Horizon

The sight distance to the horizon varies with surface curvature and, therefore, world size. This distance not only limits the distance the eye can see, but also radar, laser sensors, etc. The table below shows the distance to the horizon on worlds of various sizes.

These distances are as viewed from eye-level of an average human standing at sea level. Greater altitude, as in a watchtower, aloft in a ship's mast, or in an aircraft allow greater line of sight distances. For situations where greater accuracy is required, the following formula may be used.

$$H = \sqrt{2AR + A^2}$$

H is the horizon distance in meters, R is the planetary radius in meters, and A is the sum of the altitude above sea level of the sighting and target unit in meters. For example, an A value of 100 meters would describe either an observer 100 meters above sea level attempting to sight a target at sea level, or an observer at the top of a 50-meter tower attempting to sight the top of another 50-meter tower.

Atmosphere

Atmosphere has several effects. Some are on combat specifically, but most are general effects that complicate any activity.

Weapons Effects: Atmospheric friction and opacity to bolts of energy can change weapons' performance characteristics. Less dense atmospheres require shots to give up less of their energy merely to pass through the atmosphere, while dense atmospheres absorb energy from projectiles and energy bolts alike. These changes are characterized as changes in range for purposes of penetration only, and do not affect difficulty levels of hitting targets at various ranges.

DISTANCE TO HORIZON

World Size Code	*Mean World Diameter (km)*	*Distance to Horizon (km)*
1 (Small)	1600	1.8
2 (Small)	3200	2.5
3 (Small)	4800	3.1
4 (Small)	6400	3.6
5 (Medium)	8000	4.0
6 (Medium)	9600	4.4
7 (Medium)	11,200	4.7
8 (Large)	12,800	5.1
9 (Large)	14,400	5.4
A (Large)	16,000	5.7

Atmospheric taint does not affect these figures, only relative density. Atmosphere adjustments for lasers appear with the laser listings; the rules below apply to plasma, fusion, and slug weapons.

In Vacuum or Trace atmospheres, weapons use their short-range penetration number at all ranges. In Very Thin, weapons use the penetration value for one range band less than the target is at. In Thin, Standard, and Dense atmospheres, weapons use normal values, and in Exotic, Corrosive, and Insidious atmospheres, they use the penetration for one range band farther than the target really is, except that fire at short range is not modified.

Atmosphere	*Weapons Effects*
Vacuum, Trace	Use short range penetration at all ranges
Very Thin	Use penetration from one range band closer
Thin, Standard, Dense	Use normal values
Exotic, Corrosive, Insidious	Use penetration from one range band farther, but no effect at short range

Personnel Effects: Worlds with Thin, Standard, or Dense atmospheres are all breathable without additional preparation. Tainted atmospheres require personnel to use filtering systems, either masks on individuals, or vehicle filter systems.

Worlds with Trace or Very Thin atmospheres require the use of oxygen tanks and eye and ear protection, or sealed vehicles with life support. Worlds with no atmosphere require the use of vacuum suits. Worlds with Exotic, Corrosive, or Insidious atmospheres all require the use of oxygen tanks plus additional protection: eye protection in Exotic, and vac suits, combat armor, or battle dress in Corrosive or Insidious atmospheres.

Naturally, combat effects that compromise the effects of these survival necessities allow the atmosphere itself to damage personnel. Personnel with breached vac suits or breached vehicles suffer the ill effects of no atmosphere or poisonous atmospheres, and personnel whose life support or oxygen tanks are destroyed will die if help is not immediately forthcoming.

Other Technical Effects: No air-breathing machinery (such as jet engines, internal combustion engines, etc.) can function on Vacuum, Trace, Exotic, Corrosive, or Insidious atmospheres. They can function in Very Thin atmospheres only with specially designed intake compressors.

Aircraft cannot fly at all in Vacuum, Trace, or Very Thin atmospheres, nor can they fly in an atmospheric density less than that of the world for which they were designed. For example, an airplane designed for use in a Standard atmosphere could fly in a Dense atmosphere, but not a Thin atmosphere. Exotic, Corrosive, and Insidious atmospheres are considered to have the same approximate pressure for this purpose.

Hovercraft cannot function in Vacuum or Trace atmospheres. Hovercraft absolute movement rates are quartered in Very Thin and halved in Thin atmospheres, multiplied by

1.5 in Dense, and multiplied by 2 in Exotic, Corrosive, and Insidious atmospheres.

Finally, Exotic, Corrosive, and Insidious atmospheres do cumulative damage to all vehicles and equipment. This is handled by increasing the maintenance requirements (see Maintenance, page 241). In Exotic atmospheres, multiply the time required for routine maintenance by 1.5. In Corrosive atmospheres, double this number, and in Insidious atmospheres, quadruple this number.

Completely sealed vehicles and equipment, such as spaceships, submarines, or battle dress, use the multipliers 1, 1.5, and 2 respectively.

	Maintenance Multiplier	
Atmosphere	*Unsealed*	*Sealed*
Exotic	1.5	Unmodified
Corrosive	2	1.5
Insidious	4	2

Tactical Visibility

The tactical visibility rules below again assume a Terran environment for simplicity. However, the concepts should be used in conjunction with the planetary variables above and applied by analogy. For example, the rules for smoke and/or bad weather and vision enhancement could apply in the middle of a relatively "clear" day on a world with an Exotic atmosphere. And a world which has no moon would always be treated as a moonless night.

The attempt to spot something, whether it is a building, vehicle, or group of personnel, is a task rolled against the Observation asset or the Intelligence attribute (the Intelligence attribute is not used as a non-skilled, i.e., at one higher difficulty level, default for this purpose, but is used without penalty). Equipment below which is described as adding 1 to a character's Observation asset also adds 1 to the Intelligence attribute for purposes of spotting tasks. Task difficulty is based upon the short range of the sensor, and difficulty increases just as with aimed shots (see the Firing Range Difficulties chart, page 275), i.e., Average at short, Difficult at Medium, etc.

Referees should exercise common sense when requiring their players to roll to see things. In broad daylight and good weather when looking for a town, sighting should be automatic. However, when looking for a camouflaged enemy position, or trying to spot anything at night or in bad weather, Observation rolls are appropriate.

Vision Devices: Standard human eyes have the best short range of all vision devices, but are limited by certain visibility conditions as noted below. It is under these conditions that the shorter-ranged vision enhancement devices come into play.

Vision Device	*Short Range*
Unaided eyes	1000 meters
IR (Infrared) Goggles	100 meters
LA (Light Amplification) Goggles	100 meters
Image Intensifier	250 meters
Thermal Viewer	400 meters

Once the basic difficulty level of the Observation task is established based on range, difficulty modifiers due to visibility conditions are applied. Although some vision aids are not affected by certain visibility conditions, unaided eyes are affected by all of them.

Visibility Conditions: Visibility conditions are of three types: night, weather, and smoke. Each of these conditions adds one or more levels of difficulty to the basic Observation task. Some of these conditions actually prevent the use of some vision aids, as discussed with each aid.

Night: Visibility at night varies considerably, depending on the amount of background light. The referee should assign a background light level of from 1 to 3, with 1 being the brightest, representing a clear night with one or more full moons high in the sky, and 3 being the darkest, a cloud-covered, moonless night. The background light level equals the number of + diff mods applied to the task. However, night modifiers do not affect some systems, see below.

Weather: Weather is characterized as poor (+1 diff mod) and very poor (+2 diff mods), although referees may stipulate even worse conditions. Weather mods apply during daylight as well as night, although these mods do not affect some vision aids.

Smoke: Smoke can be of varying densities as established by the referee, and imposes difficulty modifiers starting with +1 for light smoke. At higher tech levels, artificially generated smoke can prevent the use of radar or ladar by the use of suspended particles.

Visibility Conditions	*Difficulty Modifier*	*Notes*
Night	+1 to +3*	Applies to unaided eyes and light amplifiers
Poor Weather	+1	Does not apply to Thermal Viewer
Very Poor Weather	+2	Affects all vision aids
Smoke	+1 or more	Affects all vision aids

*Diff mod is equal to the background light level.

Other Modifiers: The following modifiers apply to all Observation tasks with all vision devices.

Target Size: Large targets are easier to spot than small targets. This includes buildings, vehicles, and personnel. See the Vehicle Target Size table on page 294, for specific size data for the size classes. A human-size target is Sub-Micro.

Moving Target: Moving targets are easier to see that motionless targets.

Halving of Short Range: Targets are easier to spot if they are within the vision device's short range. For each halving of the short range, the spotting task is reduced one difficulty level. For example, a character using a vision aid with a short range of 400 would have a –4 diff mod to spot a target at 25 meters (400 halved four times)

Other Modifiers	*Diff Mod*
Target Size Sub-Micro	+2
Target Size Micro	+1
Target Size Very Small	—
Target Size Small	–1
Target Size Medium	–2
Target Size Large	–3
Target Size Very Large	–4
Target Size Gigantic	–5
Target moving	–1
For every halving of short range	–1

Multiple Modifiers: All modifiers, from visibility conditions as well as other modifiers, are cumulative.

Encounter Ranges: Player character parties will periodically run into other groups. Roll for the range at which the PC group first becomes aware of the other group, based on terrain and modified by visibility. In poor weather, halve all encounter ranges (except in woods). In very poor weather, quarter all encounter ranges (except in woods). At night, divide all encounter ranges (except in woods) by 3× the background light level, then modify for poor or very poor weather. Woods are unaffected by reduced visibility, as visibility is already so limited that encounter range depends as much on hearing the encounter as seeing it anyway.

ENCOUNTER RANGES

Terrain	*Range*
Open	1D10×300m
Hill	1D10×100m
Swamp	1D10×30m
Woods	1D10×10m

Vision-Enhancement Devices: A number of vision aids are available. They have the following effects.

Binoculars: Binoculars are useful only during periods of good visibility (daylight and good weather). Characters equipped with binoculars and who have a good field of view have their Observation asset increased by 1. If they spot a group before it spots them, double the range of the encounter. Binoculars have no effect in woods and smoke.

Image Intensifier: An image intensifier has the same effect as binoculars, except that characters add 2 to their Observation assets. The device incorporates both telescopic and low-light intensification, and has a short range of 250 meters. Image intensifiers allow their users to disregard up to 2 night diff mods (i.e., in background light level 3, only takes a –1 difficulty modifier rather than –3), but are fully affected by weather diff mods. Image intensifiers have no effect in woods or smoke.

Color Enhancement: Color enhancement assists in resolving detail at long distances, and is helpful in detecting camouflage. Color enhancement devices add 1 to the Observation asset, but are useless in other than daylight and good weather.

LA Goggles: Light-amplification goggles allow characters to see in all but absolute darkness by intensifying ambient light. They have a short range of 100 meters. LA goggles allow characters to disregard up to 2 night + diff mods, but they are fully affected by weather diff mods, and have no effect in woods or smoke.

IR Goggles: Infrared goggles allow characters to see heat sources at night, and have a short range of 100 meters. In addition, characters wearing infrared goggles can see the beam of an IR spotlight (immediately below). IR goggles are not affected by night diff mods, but have no effect in woods, smoke or poor or very poor weather.

IR Spotlight: An infrared spotlight can illuminate an area 20 meters across at a range of up to 1000 meters. Only characters wearing IR goggles can see the light, and they make Observation rolls against targets within the illuminated area as if it were daylight. However, any character within 3000 meters and wearing IR goggles will see the searchlight. IR spotlights have no effect in woods, smoke, or poor or very poor weather.

White Light Spotlight: A white light spotlight will illuminate an area 20 meters across at ranges up to 2000 meters, and allow characters to make Observation rolls against targets within the illuminated area as if it were daylight. The light itself can be seen by any character at any distance who has a clear line of sight to it. White light spotlights have no effect in woods, smoke, or poor or very poor weather.

Thermal Viewer: A thermal viewer is an advanced form of infrared imaging, sometimes called forward-looking infrared (FLIR), although this is a misnomer when the device allows all-around visibility. Thermal viewers are not affected by night diff mods, and the thermal viewer allows characters to disregard up to 1 + diff mod due to weather (thus poor weather has no effect and very poor weather only applies a +1 diff mod), and up to 1 + diff mod due to smoke. It has a short range of 400 meters.

Thermal viewers have no effect in woods.

Wide Spectrum Visual: This device combines the capabilities of light intensification and thermal viewing above. It has a short range of 400 meters and adds 2 to the Observation asset of characters using it. It is not affected by night diff mods, and allows characters to disregard up to 1 + diff mod due to smoke. The WSV viewer is affected by weather mods, and has no effect in woods.

Illumination Rounds: An ILLUM round will illuminate the area within its burst radius as if it were full daylight. ILLUM rounds have no effect in woods, smoke, or poor or very poor weather.

Sensors: All of the above weapons are vision aids, and are used with the Observation asset. The equipment below allows objects to be detected under poor conditions, although not visually, and are used with the Sensors asset instead of Observation.

Radar: Personnel with all-weather radar sensors (usually vehicle-mounted or as portable ground sets) do not have their visibility within the radar's range and line of sight affected by any atmospheric conditions. Radars have a listed short range and calculate difficulty in the normal ways, and use all of the modifiers from the "Other Modifiers" section above. Radar can, however, be jammed. See Jamming, page 315.

Ladar: Ladar works like radar, but uses laser instead of radio pulses. Ladar cannot be jammed, but is degraded by smoke and bad weather at tech levels below 13.

Space Combat

In the uncertain environment of the New Era, conflict is inevitable. Space combat addresses the handling of such conflicts between space-faring craft.

A space combat situation occurs when adventurers (in a spacecraft) encounter another space-faring craft—and violence is offered by either side.

Space combat is task-based. As with personal combat, the players are familiar with the concepts of tasks, so they can immediately make reasonable decisions about when to fight and when to prudently make a run for it.

These rules are intended for a situation in which the referee is running ships from no more than two different forces, where all the craft of each force begin on similar headings and within a few light-seconds of each other.

OVERVIEW

The space combat system presented here is abstract and does not require a map. It is based on the fact that interplanetary space is so vast that spacecraft will encounter each other only near certain points of interest: worlds where ships stop to trade or undergo repairs, or gas giants where ships stop to fill their fuel tanks. Ships that encounter each other at such locations will either be moving toward or away from the point of interest, or maintaining a position near the point of interest (perhaps guarding it). Because ships are moving with relation to this common point, their courses will tend to converge, or at least come close enough that some interaction is possible. In this abstract system, attention is concentrated on the relation of these ships' vectors to each other. A more detailed and tactical system is presented in the boxed **Brilliant Lances: Traveller Starship Combat** set.

A hostile encounter involves detecting the hostile vessel and maneuvering to intercept or avoid it. Combat involves pinpointing targets with fire control sensors, and performing successive attacks (such as missile fire, laser shots, or spinal meson fire) on the located targets.

A basic "to-hit" task is used in every case to obtain a hit; the basic task is modified by such considerations as range between the attacker and the target, the type of weapon used, the defensive abilities of the target spacecraft, and other such factors. If a hit is obtained, the weapon must penetrate the target's screens and active defenses (such as laser fire destroying incoming missiles). The damage inflicted depends on the type of weapon.

Combat continues until one side is vanquished, flees, surrenders, or is destroyed.

DEFINITIONS

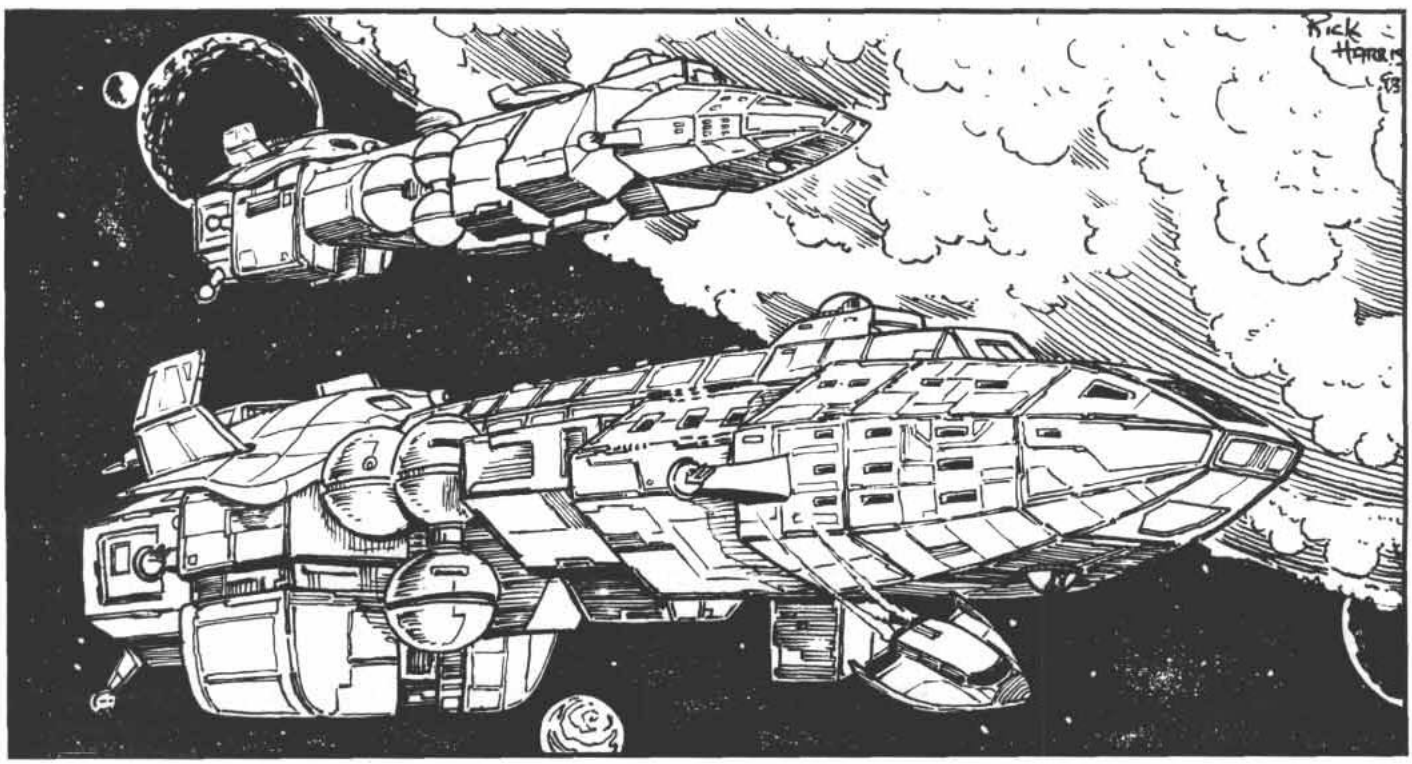
The following terms are used repeatedly in the combat rules.

Combat Turn: Combat is resolved in turns. Each combat turn represents 30 minutes of elapsed time. Thus, two combat turns equal one hour.

Within a single turn, each individual spacecraft is allowed opportunities to maneuver and to attack. Each may be attacked by one or more enemy spacecraft.

Once all spacecraft in the battle have been provided with the opportunity to act, the combat turn is over, and the next combat turn begins.

Range Band: Combat is conducted abstractly without a map or other graphic representation of the vessels. Distance between vessels (used to calculate sensor and weapon



range) is measured in increments of 30,000 kilometers (one-tenth of a light-second), each of which is called a range band.

Velocity: The speed of a vessel or missile expressed in range bands per combat turn. For reference purposes, a velocity of 1 is equal to a real speed of 60,000 kilometers per hour.

G-Turn: An acceleration of 1G for one combat turn (30 minutes). Two G-turns equal one G-hour.

Target: The vessel or vessels belonging to adversaries or potential adversaries.

Friendly: The player characters' spacecraft and those of any potential allies.

Tasks: All combat activities use tasks. Most combat tasks have an absolute time increment of one combat turn. Also, in starship combat, unless specifically stated otherwise, all tasks are "nonrepeatable" tasks. In other words, try the task once, and if it fails, you are finished for the turn.

ENCOUNTER RESOLUTION

Once the referee has determined that a starship encounter has taken place and determined the exact nature of that encounter, the encounter resolution procedure begins. This procedure has up to five steps, depending on whether combat actually takes place. Steps 1 and 2 are only conducted once per encounter, at the beginning. Once the encounter begins, steps 3, 4, and 5 are conducted in order each turn until one side is destroyed or breaks contact.

Step 1: Determine Surprise

Surprise is determined only once per combat encounter. Surprise is possible for either side, and the element of surprise gives an advantage both in attacking and in avoiding the enemy.

Surprise is a Difficult task using the Fleet Tactics skill of the captain. This roll is made one level easier with a successful enabling roll at the same difficulty level by the highest Sensors asset available among the crew. It is rolled by the side which first sights the enemy (referee's decision, based on the relative sensor and crew qualities of the ships). While in most attack situations the chance of surprise is Difficult, the referee must weigh each situation and set the difficulty accordingly. For example, if the defending side has no reason to expect an attack, the surprise may become Average. On the other hand, if the attacking side consists of a pirate vessel known to be in the system attacking some local system defense boats with high-quality sensors, achieving surprise may be a Formidable task. Another common consideration is relative sophistication of sensor suites. If one vessel has a much more sophisticated sensor suite, its chance of achieving surprise will be one level easier, while its opponent's will be one level more difficult.

Benefits of Surprise: The vessel which was surprised may not maneuver or fire on the first turn it was surprised, unless it is able to man battle stations. Manning battle stations is a Formidable task against the vessel captain's Leadership. Battle stations are always manned on the first full turn following surprise.

Readiness: Under certain circumstances, players may stipulate that their vessels are operating at alert status, with some battle stations already manned, or at battle stations. If operating under alert status, the roll to man battle stations is one difficulty level easier (–1 Diff Mod), and obviously no roll is necessary if the crew is already at battle stations. However, these levels may not be maintained indefinitely. There is a maximum number of consecutive four-hour periods for which these conditions can be maintained, shown on the table below. Each additional consecutive four-hour period beyond these limits imposes a one difficulty level penalty on every task attempted by every crewmember (–1 Diff Mod). Thus, if Captain Queegulii kept his crew at battle stations for 20 hours, beginning at (3×4=)12 hours and one minute all tasks would be one difficulty level higher. Beginning at 16 hours and one minute, all tasks would be two levels higher. These penalties remain in effect until at least three consecutive periods (12 hours) are spent at condition 0. So, in the example, if Queegulii let his crew stand down after 20 hours, but called them back to battle stations after only four hours, they would still perform their tasks at two difficulty levels higher.

In addition, once the crew has returned to normal cruising status, the roll to man battle stations is increased in difficulty if the crew had been standing at alert status or battle stations for a long period of time. For each consecutive period at battle stations or two consecutive periods at alert status, the roll to man battle stations is increased in difficulty by one level. This penalty is decreased by one level for each subsequent period spent at normal cruising. Thus, a crew who had been at alert status for four consecutive periods (16 hours) would be at +2 difficulty levels to man battle stations during the first period after they stood down, +1 level the period after that, and back to normal after two full periods of normal cruising.

Furthermore, no maintenance or repairs (see the Maintenance section, pages 241-244) can be conducted under either condition 1 or 2, although damage control may be (see page 323).

Step 2: Determine Target Aspect

This step is only performed once, at the beginning of the encounter, after surprise is determined. At the beginning of the encounter, all ships on the same side have the same speed and course.

The target aspect is the target's (ship or force) position, course, and velocity relative to the friendly ship or force, using the following discrete steps.

READINESS CONDITIONS

Name	*Description*	*Effects on Readiness*	*Max Periods*	*Side Effects*
Condition 0	Normal cruising	Normal	—	None
Condition 1	Alert status	–1 Diff Mod	6	+1 Diff Mod per two periods
Condition 2	Battle stations	Automatic	3	+1 Diff Mod per period

1. Range: Roll on the Detection Range table (page 324); the result is in range bands. For purposes of initial range, a military vessel is considered to be any vessel that is making extensive use of active sensors, a common tactic of military vessels that are "showing the flag." Vessels, even military ones, which are "running silent", using only passive sensors, do not fulfill this criteria.

2. Target Vector: A vector consists of both speed and direction; its general direction and speed are indicated by the target disposition (as rolled on the Ship Disposition table (table 8, page 229) when the encounter is generated). This will tell whether the target vector's direction is inbound (moving toward the nearby gravity well that the friendly vessel is either approaching or departing), outbound (moving away from the well), or neutral (standing by), and will indicate the die roll to determine velocity. The result of the velocity die roll is the target's velocity in range bands per turn.

3. Target Bearing: The target bearing is the angular deflection from the axis of the friendly ship's course. A target directly ahead of the friendly ship or force has a bearing of 0 degrees; a target directly behind it has a bearing of 180 degrees.

To determine target bearing, roll a die and consult the Target Bearing table (page 324). If both the friendly and the target are inbound or outbound, roll 1D10. If the result is 1-3, use the column labeled Same, as the ships are actually following the same course; if one is inbound and the other outbound, if either is neutral, or the D10 result was 4-10, use the column labeled Converging.

4. Friendly Velocity: Multiply the accumulated G-hours of acceleration of the friendly ship by 2. The result is the speed of the friendly vessel in range bands per turn.

5. Closing Velocity: This is the speed at which the target and friendly vessel are approaching each other. This is determined by either adding or subtracting one speed from another, and sometimes conducting a multiplication step. The precise formula is given on the Closing Velocity table (page 324), and the formula used is determined by whether the ships are on converging or parallel courses and by the bearing.

Note that some formulas may yield a negative number. In this case, the two ships are actually moving away from each other at that speed. On parallel courses this means that a faster ship is pulling away from a slower one; on converging courses this means that the current courses, were they projected backward as straight lines, have already reached their closest point at some time in the past, and the ships are now growing farther apart. (Had both ships been on these courses all along, they wound have obviously encountered each other already. However, ships may have maneuvered from other courses to arrive on their current course, or have emerged from jump space, and were therefore not on those courses at their imaginary closest point.) For purposes of simplicity, this number will be referred to as the closing velocity whether its value is positive (a true closing velocity) or negative (in actuality an opening velocity).

6. Closest Approach: Ships moving in opposite directions which are approaching each other on oblique angles will usually not meet at the same point and same time, and will instead pass each other at some distance apart. For simplicity's sake these "closest approach" distances are assumed to be half of the initial detection range. Ships whose courses will intersect (or which already coincide with each other, in the case of the "same" courses) have a "closest approach" of 0. These are a function of course and bearing and are shown on the Closing Velocity table (page 324).

Once a vessel reaches its closest approach, its closing velocity then becomes an opening velocity (assuming it does not maneuver to remain closer to its opponent) and it will begin to move away at that speed.

Step 3: Resolve Maneuver

Once the encounter begins (after steps 1 and 2 above have established the starting conditions), each turn begins with this step.

At this point, one or both of the vessels in the encounter may begin to maneuver, either to intercept (come as close as possible to) the other or to avoid interception. Each vessel maneuvers by firing its thrusters in an attempt to alter the closing velocity. Although the ships are actually changing their vectors relative to each other, for purposes of space combat resolution, only their net closing velocities relative to each other is considered. The following considerations affect interception.

Fuel: Each G-turn of acceleration uses 1/2 of a G-hour of fuel (the spacecraft listings on pages 366-379 list fuel consumption per G-turn under the "G-Turns" heading).

Speed Change: Each ship may spend a number of G-turns limited by its G rating (maneuver performance) in order to modify the current closing velocity. Each G-turn of acceleration spent by a ship changes the closing velocity for the current turn by one. The closing speed may be either increased or decreased. As G-turns of acceleration are spent, the players must declare whether they are going to increase or decrease the closing velocity.

Compute New Range: At the end of each turn, subtract the current closing velocity (after the speed changes above) from the current range to get the new range for the next turn (when the closing velocity is a negative number, remember that subtracting a negative number is the same as adding a positive number, thus actually increasing the current range).

Planned Deceleration: If one or more of the ships in the encounter are moving toward the orbit of a world, they must begin decelerating at a certain point to avoid overshooting the world. This maneuvering will obviously affect the forces' vector relative to the opposing force, usually by constraining its options for maneuvering to escape or intercept the other force. The referee must determine how far the ships are from the planned start of deceleration so that they ships may avoid overshooting their destinations.

Closest Approach: Once the range closes to the predetermined closest approach, the closing velocity becomes an opening velocity (i.e., the current closing velocity becomes a negative number with the same value), and the ships begin moving away from each other.

Matched Vectors: If the closing velocity is ever reduced to 0, this means that the ships have matched vectors. Once two

ships have matched vectors, the closest approach range becomes 0, regardless of what it was initially. Any new vector changes will place them on converging courses. However, depending on how the players choose to spend the maneuver Gs, they may have a closing velocity on this converging course or an opening velocity.

If an interception is not possible (i.e., the aggressive spacecraft cannot close the distance to practical combat range) combat does not take place and the encounter is over.

Firing Range: Once the range becomes small enough, the players may begin to attempt to fire on each other as detailed in step 4.

Step 4: Resolve Combat

If a close approach and/or interception is possible, combat may take place. In each combat turn, each side may maneuver, launch craft, evade and/or fire.

Maneuver: At the beginning of each turn, ships continue to maneuver, that is, increase or decrease the closing velocity by means of acceleration, in step 3 above.

Launch Craft: Each ship can launch small craft that it is carrying, based on its fitted launch facilities (see Starships section, starting on page 366). Small craft which are served by a launch tube are launched at the rate of 10 per 30-minute combat turn per launch tube. Small craft which use normal launch facilities may be launched at the rate of one per (30-minute) space combat turn per launch facility. Unless specified otherwise, each ship has one normal launch facility.

Evasion: Space vessels evade by spending G-turns of acceleration on evasive maneuvers. Each vessel may spend G-turns up to its G rating on maneuver (to change closing velocity), evasion, or a combination of the two. The total number of G-turns spent on maneuver and evasion cannot exceed the vessel's G rating. G-hours already spent in step 3 for maneuver are not available for evasion.

Evasion Procedure: In order to conduct a successful evasion maneuver, the vessel's commander must achieve success at an Impossible test of Ship Tactics. This task is reduced in difficulty one level (–1 Diff Mod) for each G-turn spent for evasion for the turn. Success indicates that all enemy sensor lock attempts and fire attempts against the ship for that turn are resolved at one difficulty level higher. Outstanding Success indicates that all enemy sensor lock attempts and fire for the turn are resolved at a number of difficulty levels higher equal to the number of G-turns spent on evasion divided by two (round fractions down). Catastrophic Failure indicates that not only is there no evasion effect on the enemy fire, but that the unpredictable gyrations have thrown off the ship's own gunnery: All sensors and fire tasks attempted by the ship for the turn are resolved at one difficulty level higher than normal.

This evasion roll is only made once per turn, and its results remain in effect for the entire turn.

Fire: Each weapon on each ship may fire once per turn. Starship weapons are actually powered so that they fire at least 10 times in each 30-minute turn, but the fire control solutions at space combat ranges are so formidable that the roll is only made once to see if any hits at all were scored.

Outstanding Success: An outstanding success on a to-hit roll indicates that two hits were scored, not only one.

Ship fire is resolved in three steps—sensor lock, hit procedure, and defensive weapons.

1. Sensor Lock: Most spacecraft have a number of sensors, each with differing ranges and capabilities. Once the encounter begins, players may attempt sensor locks using the sensors available to them. Each sensor may attempt as many locks per turn as there are enemy targets, but may only make one detection attempt per enemy target. However, different sensors on the same spacecraft may each attempt to detect the same enemy target. Sensor tasks are rolled for following the Resolve Maneuver step. The results of these sensor tasks are in effect through the remainder of the turn.

Obtaining a sensor lock is a task using Sensors skill, with the task difficulty based on the range to the target, just like an aimed shot in direct fire combat (page 274). Each sensor has a listed short range. (Because the ship listings are compatible with **Brilliant Lances,** which uses *hexes,* the ranges are given in hexes. Range expressed in range bands is identical to range expressed in hexes.) Sensor tasks at short range are Average, at medium range (twice short range) are Difficult, at long range (four times short range) are Formidable, and at extreme range (eight times short range) are Impossible (see the Sensor Lock Difficulty table on page 324).

Before any sensor lock tasks are rolled, any and all players involved (particularly when two groups of player characters are opposing each other for whatever reason) must decide which sensors they intend to use, and must announce these decisions to the referee. These decisions are considered simultaneous, so that each of them will affect all sensor lock rolls for that turn. These decisions are important for two reasons, going active, and using folding passive arrays.

Going Active: Ships which go active, by using radar or active EMS sensors, make it easier for ECM-equipped ships to detect them, see under ECM/ECCM below.

Folding Passive Arrays: Some ships carry high-resolution thermal (HRT) sensors or passive EMS arrays that are so large they must be folded to fit on the ship, but must be unfolded to be used. Unfolded arrays make these ships larger targets, therefore easier to detect by active sensors, see under Radar and Active EMS below.

Retaining or Handing Off Sensor Locks: Sensors roll each turn to maintain locks from previous turns, but at one difficulty level easier than normal. Sensor locks may also be "handed off" to other sensors on the same ship or to other friendly ships, so long as both ships have functional communicators with sufficient range to contact each other. This hand-off takes place on any turn following the turn in which sensor lock was gained by the original sensor, and allows a –1 difficulty modifier to the sensor receiving the hand off. Handing off allows active sensors to be shut down, or ships with less capable sensor suites to acquire sensor locks.

The different types of sensors have differing capabilities as follows:

Radar: This is an active sensor which detects its targets by emitting radio energy across wide angles, and detecting the radio energy which bounces back from distant targets. When a spacecraft is using radar, it suffers the penalties of

going active, "lighting up." When a radar is attempting a lock on a target with an extended passive sensor array, it does so at one difficulty level lower (–1 diff mod).

Ladar: This is similar to radar, except that it uses laser rather than radio energy, and does not emit its energy across wide angles. Ladar may not be used to make an initial sensor lock, as it cannot scan broad areas. However, another sensor which has already locked on the target may hand off its lock to the ladar, which can then maintain the lock as if it were its own. Ladar does not carry the same penalties for "going active" as do radars, active EMS, and radio broadcasts. However, if its target is using sandcasters, it is one level of difficulty higher to maintain the sensor lock with a ladar set.

HRT (High-Resolution Thermal): This is a passive sensor that detects targets by their infrared radiation. The more heat the target is giving off, the easier it is for the HRT to detect it. Targets that are heading directly away from the sensor, either to reduce the closing velocity or increase the opening velocity, are pointing their fusion exhausts directly at the HRT sensor and are much easier to detect—see the Sensor Lock Difficulty table (page 324).

EMS Active: This is an advanced version of radar, which incorporates the use of wavelengths other than radio, and adds in sophisticated computerized image enhancement. It is an active sensor, and when used, carries the same penalties for going active (see ECM/ECCM below). When an active EMS sensor is attempting a lock on a target with an extended passive sensor array, it does so at one difficulty level lower (–1 diff mod).

EMS Passive: This is an advanced passive sensor that has the capabilities of the HRT plus EMS direction finders and computerized image enhancement. It has the capabilities of the HRT above, plus the direction-finding capabilities discussed under ECM/ECCM, below.

Other: There are several other types of sensor installed aboard spacecraft, such as densitometers, neutrino sensors, and neural activity sensors, but these do not come into play in space combat.

ECM/ECCM: Although not all of these devices are sensors, they do affect the sensor lock procedure and should be mentioned here. The effects of the ECM and ECCM below only affect task rolls for sensor locks, and not the subsequent to-hit rolls for weapons.

First are direction finders. EMS direction finders are useful in detecting the location of any emitting radar, radio, radar or radio jammer, or active EMS array. These direction finders are built into all passive EMS sensors, and may also be built into radars and active EMS sensors, and their presence is indicated on the spacecraft data pages starting on page 366.

EMS direction finders provide a –1 difficulty modifier to *all sensors* on the ship vs. targets which have gone active (i.e., are using radios, radars, or active EMS sensors), provided the following conditions are met: The direction finder must be within twice the extreme range of the enemy active system (16 times its short range), and must be of a tech level equal to or greater than the enemy active system. If the direction finder is part of a folding array, it must be unfolded in order to provide this benefit.

Ships which are equipped with electromagnetic masking (EMM) increase the difficulty of an HRT or radar lock on them by two levels, and the difficulty of an EMS (active or passive) sensor lock by one level.

A ship equipped with a laser sensor can detect when a ladar set has a sensor lock on it, allowing it to fire sandcasters to increase the difficulty of maintaining sensor lock on the following turn (see Sandcasters, page 317).

Jamming: Vessels equipped with EMS jammers may attempt to jam *active* enemy sensors. Each jammer has a listed short range. Its other ranges, and the base difficulty levels at each of these ranges, are defined the same as for sensors (see under "Sensor Lock" on page 314). The only modifiers made to the task difficulty are for relative tech level, +1 difficulty level for each tech level by which the sensor exceeds the jammer, or –1 difficulty level for each tech level by which the jammer exceeds the sensor.

The jamming task is rolled for each active sensor which attempts a lock on the jammer-equipped vessel, and the jamming result only applies to the sensor against which it is rolled.

Success indicates that the opposing sensor is jammed, and must therefore roll its sensor lock task at one difficulty level higher (+1 diff mod). Outstanding success requires the opposing sensor must roll at +2 difficulty levels.

These are deceptive jammers, not area noise jammers, and therefore their use does *not* count as going active.

2. Hit Procedure: A vessel's weapons can only fire on targets for which the ship has a sensor lock on the current turn. Obtaining a hit on a target is a task using the Gunnery skill of the gunner controlling the weapon, with the difficulty determined by the range to the target, the weapon's fire control parameters, the target's size, and successful evasive maneuvers by the target. The gunner controlling the weapon uses the Gunnery cascade specialty appropriate to the weapon.

Gunnery Cascade	*Weapons Controlled*
Energy Weapons	Lasers, Particle Accelerators, Meson Guns
Missiles	Missiles

All fire is considered to be simultaneous (with the exception of pre-emptive beam and damper antimissile fire, see page 317) which means that all weapons in a turn are fired before any damage is assessed.

Types of Weapons: Lasers use focused beams of coherent light to impart energy to enemy targets over a very small area. Relative to other beam weapons, lasers have good penetration performance, but generate less explosive force and damage. Space combat missiles are also a form of laser weaponry, as their warheads are nuclear weapons which explode to create powerful X-ray laser pulses. Lasers are direct fire weapons and are limited to hitting enemy hit locations visible from the arc of fire they are firing from.

Particle accelerators, as the name implies, accelerate particles, almost exclusively neutral atoms such as hydrogen, to very high speeds at enemy targets. These have less penetrative ability than do lasers, but generate a much greater explosive force. Like lasers, particle accelerators are

limited to hitting only visible hit locations when firing at enemy vessels.

Meson guns also accelerate sub-atomic particles at enemy targets. But in this case the particle is a meson, which does not interact with matter, and therefore passes through all objects without resistance. However, the meson has only a short life, after which it decays into other more destructive particles. By accelerating the meson to relativistic speeds, its subjective passage of time slows, and its decay is delayed. By timing the decay to occur as a group of mesons pass through an enemy ship, powerful explosions can be created within enemy targets without having to penetrate the armor. Because mesons travel through spacecraft hulls to explode within, meson guns are not limited to hitting only visible hit locations on an enemy ship, but roll 1D20 for hit location from any direction of fire (see below).

Fire Control: Each weapon will have at least one, but perhaps two components of its fire control. Every weapon has an on-mount fire control system (OMFCS), which for beam weapons, is called a beam pointer. The capability of this OMFCS provides the weapon's range performance. Each weapon has a listed short range. Medium range is twice short, long range is four times short, and extreme range is eight times short. Just as with sensor and jamming tasks above, the range to the target gives the basic difficulty level of the fire task, see the Fire Control Difficulty table on page 324.

Difficulty modiers to this basic difficulty level are based on range (see below), target size, and evasion, and are all shown with the Fire Control Difficulty table.

Although the basic difficulty level is *already* based on range, this only shows the ability of the weapon using its on-mount fire control to put the weapon's fire on a selected target point in space. The additional difficulty modifier for range is based on the fact that in the time that it takes sensor data to arrive from the target and for a laser (or some other weapon) pulse to get back to the target, the target will have moved some amount, and may not be at the anticipated point the weapon is fired at. The longer the range, the greater the difficulty.

Target size is based on the capability of very large or very small targets to get themselves out of the way of incoming fire aimed at their centers. Obviously small targets need not move as far to be missed.

The effects of target evasion or catastrophic evasion failure of the firing ship are as with sensors.

Some weapons may be fired by control of a master fire director (MFD). An MFD allows one gunner to fire a number of separate weapons at a single target. All of the weapons under the control of a single MFD are referred to as a battery, and must be equipped with the same type of beam pointer (tech level and range), and the weapons must all be of the same type (laser, particle accelerator, meson gun, or missile), although they may be of different power. The difficulty level of an MFD-directed fire task is calculated the same as it would be for the individual weapons of its battery, based on their short ranges and range to the target. However, when calculating increased difficulty levels due to target range and evasion, the MFD allows the gunner to ignore a certain number of increases in difficulty level (see the Master Fire Directors table, page 325, or the individual ship listings). The MFD may only counteract difficulty level modifiers that apply; it may not *reduce* a difficulty level.

To-hit rolls are made separately for each weapon controlled by the MFD, so that each has a separate chance to hit or miss.

Missiles: Missiles use the rules above, but with slight modifications. For purposes of these space combat rules, all missiles are assumed to be armed with a nuclear-pumped X-ray laser warhead. The missile must maneuver to arrive in the same range band as the target (first maneuvering to get the closest approach distance to zero, which may require it to first maneuver to match courses, and then spending the requisite number of turns travelling until its closing velocity reduces the current range to 0). Once in the same range band, the missile makes final targeting adjustments, then deploys a number of laser-generating rods, and detonates its nuclear warhead. The energy of the nuclear explosion creates high-energy (X-ray) photons within the rods, which are focused along the rods' lengths into X-ray beams which travel to the target, and do damage as normal lasers. Mere milliseconds after firing, the rods are themselves consumed by the nuclear explosion.

All missiles are given with their maneuver characteristics in maximum Gs of maneuver per turn and total G-turns, the number and damage values of their lasers, the range of their communicators (laser or maser), and the characteristics of on-board sensors (if any). Most missiles are controlled by operators aboard the firing ship, and are the type assumed by these rules. Fully independent missiles also exist, but are not included in these basic rules.

Each missile launcher (see Starships, page 366) may launch up to 10 missiles per turn, so long as a supply of missiles remains.

When a missile is fired, it behaves just like a vessel, expending G-turns to maneuver to change the closing velocity and arrive at the target. Some missiles have a single amount of Gs, all of which are expended on the turn they are fired, while others maneuver each turn like any other vessel.

If the missile does not carry its own sensors, the firing vessel must maintain sensor lock on the missile's target in order for the missile to fire upon arrival (the firing vessel may lose the lock while the missile is travelling, but the missile requires a final sensor lock on the turn it fires to generate a fire control solution). If the missile has its own sensors, it may generate its own lock (using the Sensor skill of the controlling gunner), and have the sensor lock handed off to it from the firing vessel according to normal hand-off rules.

The missile needs telemetry from its controller in order for it to maneuver and fire. So long as the missile remains within its listed communicator short range from its launching vessel, this communication is considered automatic (and laser and maser communicators cannot be jammed). Beyond this range, the controlling gunner must roll a communications task (this is rolled just like a sensor or fire task, based on the short range of the communicator, and using the gunner's Communications asset) to retain control of the missile. If control is lost, the task may be re-attempted once per turn to regain control.

Each gunner in a missile turret or barbette may control one missile at a time. However, missiles may be controlled several at a time by MFDs, where the number of missiles it can simultaneously control is equal to the number of difficulty modifiers it may ignore.

When the missile arrives in the same range band as the target, the fire task is computed normally as above (all missiles with a listed fire range of 0 have a base difficulty level of Average). If the missile carries its own sensors which have a lock on the target, the range difficulty modifier is calculated from the missile to the target (if 0, there is no modifier). If the missile is relying on a target lock held by the vessel controlling it, the range modifier is computed on the range between the target and the vessel controlling the missile (because of the time lag in sending the targeting data to the missile).

A missile may be fired upon by enemy vessels at any point in its movement. Most missiles are Micro or Sub-Micro-sized targets, although larger missiles can be built. Any hit on a Micro or Sub-Micro-sized missile which can penetrate its armor is sufficient to prevent it from accomplishing its mission. (All missiles listed on page 349 have a hull armor value of 3. Referees who desire more detail may use the Drones column on the Damage Type chart and Critical Hits vs. Unmanned Craft and Missiles table on page 326.)

Missiles which are listed as carrying their own sensors are called semi-independent missiles (SIMs) because, although they are still reliant on control from the firing vessel, they can provide their own sensor locks. Fully independent missiles (FIMs), which require no outside control once they are fired, are not covered by these rules.

3. Defensive Weapons: Defenses on the target vessel may be used to attack specific "hits" which have been scored. Each defense must be directed against a specific "hit." Although more than one weapon may be directed against a specific hit, if one defensive weapon stops the hit, the others may not then be re-targeted against a different one.

Beam Weapons: Beam weapons can be used in a *de facto* defensive role to destroy missiles before they get close enough to fire. Once a missile arrives in its target range band, any beam weapons that are able to fire may fire at it before it detonates and fires its own lasers. This pre-emptive defensive fire takes place in the short period of time that the missile is deploying its laser rods and making adjustments for its final fire control solution. This fire is resolved as any other beam weapon fire, but does count as a beam weapon's fire for the turn, preventing it from firing at other targets. This pre-emptive fire is the single exception to simultaneity of fire in space combat.

Sandcasters: Sandcasters fire cannisters of magnetic ablative crystals. Each sandcaster contains a generator which creates an electromagnetic field which manipulates the location and shape of the cloud of crystals. These clouds are placed in the path of incoming beam weapons, and cause the beam weapon to expend its energy burning through the cloud. The sandcaster operator uses laser warning sensors installed in the sandcaster to detect fire control locks and anticipate incoming beam fire. The roll to intercept a beam weapon with a sandcaster is a Difficult test of the Screens (Sandcaster) asset of the operator, and is modified one level up for each *two* tech levels by which the firing beam weapon exceeds the sandcaster, or downward one for each two tech levels by which the sandcaster exceeds the beam weapon's tech level.

A successful sandcaster "hit" on a beam reduces its damage value (for particle accelerators, damage value = penetration value). See the Sandcasters table (page 325, or the ship data sheet) for the amount of this reduction, based on the sandcaster's tech level. Each such successful sandcaster hit requires that a cannister be used to replace the sand that was burned up by the beam weapon. On Outstanding Success, double the amount of the beam reduction, but still only one cannister is required to replenish the sand cloud.

In order to function against incoming fire, sand must be out in advance of that fire, which means that each sandcaster which is to function in combat must fire one cannister of sand before combat begins. It is this sand which is then replenished following successful hits. Although sand cannot be recovered, it is not lost except by being burned up by incoming fire. Because it is held in an energy field, sand is held in place around the spacecraft regardless of maneuver or evasion (but it is lost when a ship enters jumpspace, as the jumpfield does not extend around the sand cloud).

Nuclear Dampers: Nuclear dampers manipulate the so-called strong and weak forces to prevent nuclear warheads from detonating. By sufficiently strengthening the strong force, atomic nuclei can be prevented from fissioning, and by weakening the strong force, nuclei can be prevented from fusing. Selectively controlling the strong and weak forces can also cause the decay of fissile elements to non-fissile elements, also preventing nuclear detonation. In practice, the actual application varies by tech level and type of target warhead.

The nuclear damper turrets and barbettes on page 349 have a range that permits their use only in the same range band, and are therefore fired using the same pre-emptive antimissile rule as beam weapons. The task to hit a missile (and more importantly, to keep the damper focused on its warhead for long enough to accomplish its purpose) with a nuclear damper is a Difficult test of the operator's Screens (Nuclear Damper) skill. Modifiers are based on tech level of damper and closing velocity of the missile. See the Nuclear Dampers table on page 325. Success indicates the missile's warhead becomes inert and cannot fire.

Meson Screens: Meson screens project an energy field which interacts with incoming mesons, causing them to decay outside of the vessel's hull.

Meson screens come with a listed protection value. Stopping a hit with a meson screen is a Difficult task if the firing meson gun and meson screen are of approximately the same power. Difficulty becomes one level harder if the meson gun's damage value is two or more times the meson screen's protection value, or two levels if the weapon is four or more times the screen's protection value. Difficulty is reduced one level if the screen's protection value is twice the gun's damage value or more, and reduced two levels if the protection value is four or more times the gun's damage value. Success indicates that the meson gun "hit" does no damage to the vessel.

Facing: Facing is not a step in combat, but is a consideration which affects the way fire is conducted. Spacecraft must face in the direction that they are accelerating. This affects which of their beam weapons they can bring to bear on the enemy and which hit locations can be hit by enemy beam weapons.

Any missile launcher on a ship may fire its missiles at any enemy vessel, regardless of facing. Beam weapons (lasers, particle accelerators, meson guns) may only fire if the facing of the firing ship allows the weapon to bear on the target.

Facing also affects the portions of a ship which can be hit by enemy fire. Missiles may hit any point on an enemy vessel, regardless of the enemy vessel's facing, but laser and particle accelerator weapons may only hit hull locations that are facing the firing vessel. Meson guns, because they pass through the hull, may also, like missiles, hit any point on the enemy vessel regardless of facing.

Surface Locations: Each ship has 20 different surface locations as seen in the Hull Surface Locations diagram. Each weapon, sensor, and communicator has an assigned surface location which shows the direction in which it can be used, as well as the direction from which it can be hit.

Attitude: For purposes of this rule there are five possible attitudes with respect to the enemy: bow-on, forward quarter, broadside, after quarter, and stern-on. Any time that a ship is attempting to decrease the closing velocity (or increase the opening velocity) it is stern-on to its opponent. Any time that a ship is attempting to increase the closing velocity (or decrease the opening velocity) it is bow-on to its opponent. Any time that it is evading it is broadside. If none of the above situations are in effect it may chose any attitude desired. If the ship is both accelerating and evading it is either in the bow quarter or after quarter attitude with respect to its opponent, depending on the direction of the acceleration.

Note that ships are always rolling about their long axes in order to bring all of their weapons to bear.

A spacecraft's hull form dictates which surface locations are visible from which attitudes (see the Arcs of Fire and Hit Locations by Hull Form table on page 325). For example, a spherical hull form vessel is in a bow on attitude with respect to its enemy. Enemy laser fire can only hit it in locations which are visible in the bow-on arc: locations 1-11. Likewise, it may only fire beam weapons which can fire into the bow arc, i.e., those which are located in hit locations 1-11.

Each spacecraft data profile (pages 366-379) lists the craft's hull form, and also shows the arcs into which its weapons can fire (assuming it is armed). For reasons of space, the five attitudes above are coded as numerals: 1 is Bow On, 2 is Bow Quarter, 3 is Broadside, 4 is After Quarter, and 5 is Stern On. For example, a ship's laser turret that had listed arcs of 2, 3, and 4 could fire at enemy targets only if the ship were in an attitude of bow quarter, broadside, or after quarter with respect to the enemy. If the ship were bow on (arc 1) or stern on (arc 5) to the enemy, the laser turret could not fire at them.

Note that just as missiles may hit any location on a ship regardless of facing, defensive weapons may pre-emptively fire at missiles in the same range band without regard for arc of fire.

Spinal Mount: A spinal mount is a large, long, weapon which is built into the longitudinal axis of the ship. In a sense, the ship is built around this central spine. A ship must point its long axis directly at an enemy ship in order to engage it with its spinal mount, which fires from surface location 1. While it is doing this, it may not evade or maneuver, except to accelerate directly at the target. Since the weapon is only targeted for part of a combat turn, the ship's available G-turns for evasion or for maneuver in any direction other than straight at the target are halved, rounding fractions down.

Note: ships which are specially built with rearward pointing "stern chaser" or "stinger" spinal mounts use exactly the opposite of this rule.

Step 5: Allocate Damage

Once hits are obtained, and they have successfully made it through the target's defenses, determine what systems were damaged and how much actual damage was sustained.

Weapons are listed with penetration and damage figures that are used to calculate the amount of damage they do when they hit a target. These figures vary with range; make sure to use the correct numbers for the range at which the hit was scored.

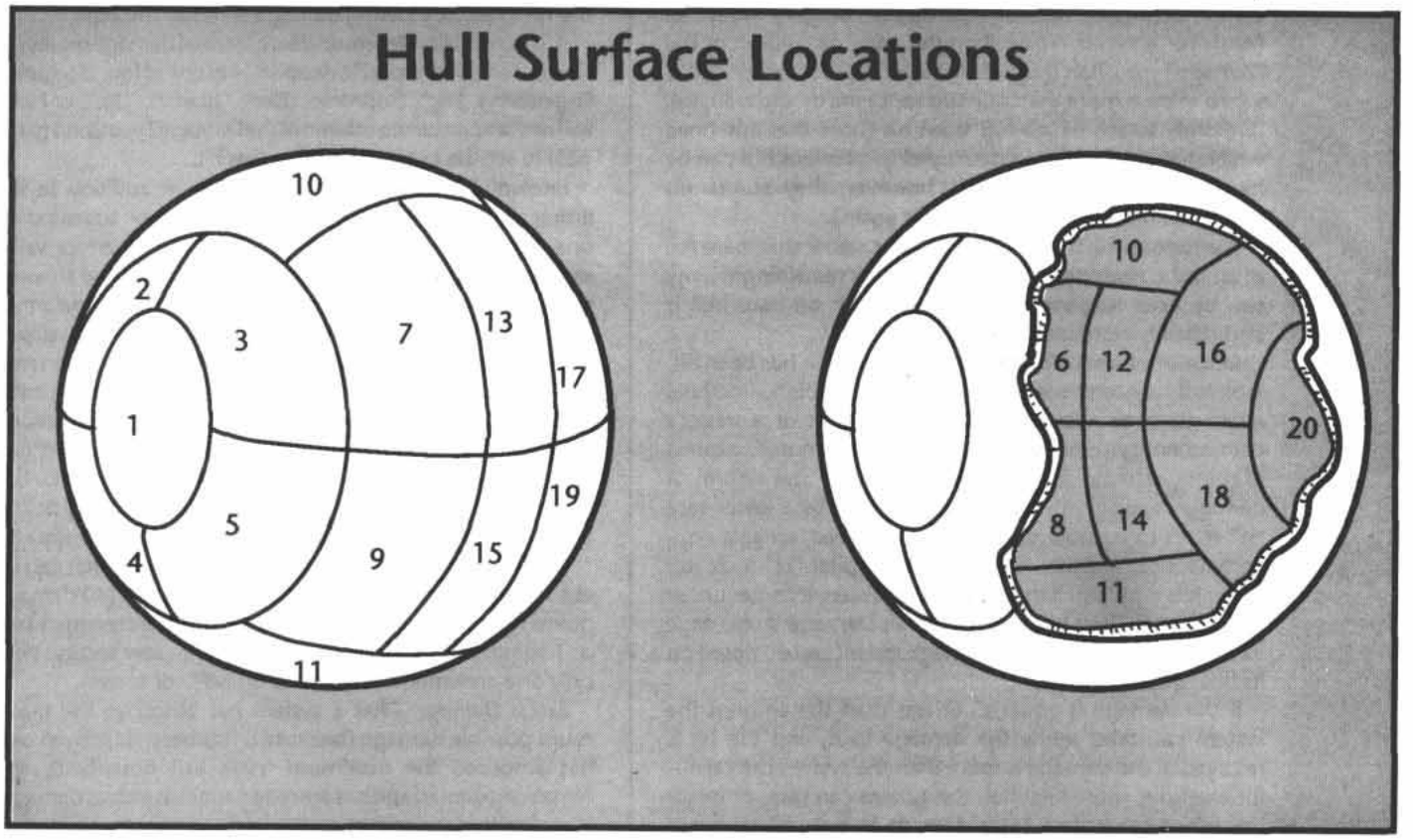
Terms and Concepts: There are two ways for a hit to affect its target: by penetrating (punching holes through) armor, and by explosively damaging equipment. There are several important terms used to describe these effects and capabilities.

Penetration value is a quantification of a weapon's ability to penetrate through heavy structural objects such as starships and their armor and machinery.

Damage value is a quantification of the amount of damage a weapon can inflict on a variety of objects, including heavy machinery.

Penetration rating is a conversion factor used to describe the relationship between a weapon's penetration value and its damage value. The penetration rating is the number of damage value points lost per point of armor value penetrated. For example, a laser with a penetration rating of 1/6 and a damage value of 19 would spend 2 points of damage value to penetrate an armor level of 12, and still have 17 damage points remaining to do interior damage. The penetration rating allows a weapon's performance in terms of damage value to be translated to penetration value (damage value + penetration rating = penetration value), or from penetration value back to damage value (penetration value × penetration rating = damage value).

Not all weapons have a penetration rating. For some types of weapons, such as particle accelerators, the ability to punch holes in armor and the ability to cause explosive damage to heavy equipment are effectively the same. For our purposes, these weapons do not need a penetration rating, because their penetration value is an accurate assessment of their performance in both cases. On the other hand, some weapons, such as lasers, by their very nature have very different penetration and explosive damage effects. The energy contained in a laser is more efficient at punching holes than it is at causing explosions in machinery. For this



reason, lasers use a penetration value for punching holes and a damage value for blowing up equipment, and are also given a penetration rating in order to convert the two values back and forth.

Damage points are the units that are used to describe the amount of damage caused by a hit. Damage points are inflicted on a starship in different ways by different weapons.

Particle accelerators penetrate armor and inflict damage points with their *penetration value*. They also do additional radiation and EMP damage—see that section under "Effects of Damage," below.

Lasers penetrate armor with their *penetration value*, but inflict damage points with their *damage value*.

Meson guns do not worry about penetrating armor, and inflict damage points with their *damage value*.

Lasers and particle accelerators hit the surface of a ship first and do explosive damage to any surface fixture they encounter. If they have remaining energy after damaging the surface fixture, or if they hit bare hull surface instead of a fixture, they hit the hull itself and expend energy for penetration. If they penetrate all the way through the hull armor, they cause internal explosions with their remaining energy.

Meson guns do not follow this pattern. Meson gun beams pass through the hull without interacting with or damaging it and simply cause interior explosions. Because they do not penetrate armored hulls *per se*, they do not have a penetration value or penetration rating.

Final Damage Point Value: A weapon's damage and penetration characteristics vary with the range at which the hit was made. Look at the weapons data on the ship data page to find the values for the correct range.

Because of intangibles in relative target motion, angle of the hit, "lucky shots," etc., there is some variation in the final force of each hit. To simulate this, roll 2D6 for each hit prior to finding the hit location. For particle accelerators, add the result to its penetration value. For lasers, calculate the penetration value (damage value + penetration rating) and add the result to it. Do not make this roll for meson guns. This result is the *final damage point value*.

1. Hit Location: When a weapon hits a ship, roll on the ship's hit location table, as adjusted by the facing/attitude above. Each ship has its own unique Hit Location table, with the entries determined by the actual placement of systems within the ship and on its surface (see the spacecraft data pages, 366-379). In some cases a certain hit location will require an additional roll to determine the exact component hit.

When a hit location line gives numeric ranges for certain hits (such as 1-2 Ant, 3-4 AL), this is always resolved by a D20 roll. For surface hits, the range will not always go up to 20, so a die roll result not listed merely hits the bare hull surface. For internal explosions, all results 1-20 will be present, or else there will be only one possible result with no die roll necessary.

2. Surface Damage Determination: For lasers and particle accelerators, first resolve surface damage. Meson guns skip surface hits and proceed directly to "Internal Hits," below. If the result is not bare hull, the hit will either be against a specific object such as air lock (AL), launch port (LP),

cargo hatch (CH) etc., or against the category Antennae (Ant). For antenna hits, roll on the antenna column of the Damage Type Chart (page 326) to see the exact antenna hit. When there is more than one such antenna on the craft, roll randomly to see which has been hit (note that antennae which have already been destroyed by previous hits can be hit again by this random roll, however, they absorb no additional damage points when hit again).

A weapon which hits such an object rather than bare full must first damage or destroy it before its remaining energy can be used to penetrate the hull. A hit on bare hull is immediately resolved as penetration, below.

Once it has been determined which system has been hit, look at the systems section of the damage table to find how much damage the system can take. Each of a vessel's component systems has a damage capacity noted in terms of minor or major hits required to destroy the system. A damage capacity in parentheses followed by a lower-case "h" refers to number of minor hits required, while a non-parenthetical number followed by a capital "H" indicates major hits required. If the system is not listed, it comes under "All Others." Then use the Spacecraft Damage table (page 325) to find the amount of damage the hit can do based on its final damage points.

If the damage is equal to or less than the amount the system can take, apply the damage to it, and the hit is resolved. If the damage is more than the system can take—for example, more hits than the system can take, or major hits when the system takes damage in only minor hits—reduce the number of damage points by the maximum amount required to destroy the system (e.g., 20 damage points would be absorbed by a system that could take 2 minor hits, 40 points by a system which could take 1 major). Note that while a minor hit could be caused by only 1 damage point when the damage was less than or equal to the maximum sustainable damage, that same minor hit would absorb 10 damage points when absorbing energy from a damage quantity greater than it could completely absorb.

Note that cargo hatch, launch port, and air lock surface hits have no real effects in the game, but are included to help in visualizing the lay-out and functioning of the ship for roleplaying purposes. "Small craft" surface hits do damage to externally carried craft. If such craft are not present, the hit does damage to the grapple used to hold the small craft in place.

Any leftover damage points are then taken to the hull penetration step.

3. Hull Penetration: This is only conducted if damage points remain from particle accelerator or laser hits after the surface damage step. Meson guns skip this step.

If the hit is by a particle accelerator (whose damage points and penetration value are the same), subtract the hull's armor value from the hit's final damage points to see if the hull was penetrated. For lasers, whose damage points represent their damage value, multiply the armor value by the penetration rating for that range to see how many damage points are used up (round all fractions *up*) in penetration.

If there are damage points remaining, the weapon has penetrated the hull. Go to the internal hits step. If there are no damage points remaining, the hull armor has absorbed the hit without allowing damage to enter the hull.

4. Internal Hits Determination: Internal damage results will read out either as a specific weapon or as one of four categories: Engineering (Eng), Electronics (Elec), Quarters (Qtrs), or Hold. Roll on the appropriate column of the Damage Type Chart (page 326) to see the exact system that was hit.

Internal Armor: Some starships have, in addition to the armor of their hull, additional internal armor surrounding one or more systems. These systems and their armor value are indicated on the ship data page. If one of these armored areas is hit, the weapon must first penetrate the additional armor on that area before proceeding to the internal damage step.

Determining internal damage is conducted in the same basic manner as surface damage. However, there are additional limits on the amount of damage that can be absorbed by internal systems. There is a maximum amount of damage that can be deposited in one system by one hit. This maximum is 5 major damage results or 120 damage points, even if the system's damage capacity is more than 5 major hits.

There is also a maximum amount of damage that can be absorbed by a crew hit result; this is 1 major hit (40 damage points) for a crew section with more than one crewmember, or 1 minor hit (10 damage points) for a crew section with only one crewmember (such as an MFD or turret).

Excess Damage: After a system has absorbed the maximum possible damage (because it has been destroyed or it has absorbed the maximum levels just described), any remaining damage points are rolled again as excess damage, meaning that the energy goes to damage another system in the same or adjacent hit location.

Roll 1D6 on the Excess Damage Location table (page 326) to see where the excess damage goes. Use the following notes to interpret the results:

-1 or +1 internal means that an adjacent internal area has been hit, either 1 place lower or higher on the hit location chart (i.e., hit location 15 becomes 16 on +1, 14 on -1). If this would move the hit location off the chart (by reducing it to 0 or increasing it to 21), the hit instead becomes additional surface damage in the same hit location.

The notation "same internal area" indicates that an additional component in the same area absorbs the excess damage.

The notation -1 or +1 surface area indicates that the additional damage is applied to a surface area adjacent to that original hit, either one higher or one lower on the chart. If this would move the location off of the chart, reverse the sign.

Once the new hit location is determined, determine damage normally using the damage tables. If the excess damage has moved to another internal location and there is still excess damage remaining after the new hit is resolved, roll for excess damage again (and again and again until all damage points are used up). If the hit has been taken back to a *surface* location, first spend whatever damage points are required to penetrate through the hull armor again. Then apply damage to surface fixtures there according to the normal procedure. However, if the hit result at the location is bare hull, all remaining damage points are vented to space with no further damage. If a surface fixture was hit and excess damage remained after destroying it, that remaining excess damage is also vented to space.

Example: Our friend the *Gazelle* is hit by a 300 Mj Laser Barbette at a range of eight hexes (short range—see the barbette listed on the *Gazelle*'s data page, page 370) through its bow quarter arc (hit locations **1-19** for a wedge hull form). At this range the damage value is 43 and the penetration rating is 1/14. A hit location of 1 is rolled, and a 6 is rolled on 1D20 for the surface hit column, showing that an antenna was hit. A roll of (5+1 as the Gazelle has no defensive screen =) 6 on the Antenna column of the Damage Type chart shows that the antenna hit was for a communicator. The *Gazelle* has two communicators, a radio and a maser. A roll of 2 on 1D6 indicates that the radio antenna was hit.

The radio antenna can take 1 minor hit, so absorbs 10 damage points of the 43 and is destroyed.

33 damage points remain to penetrate the hull, which has an armor value of 62. Multiplying 62 by the penetration rating gives (62 × 1/14 = 4.43 rounded up to) 5 damage points used up in penetration, leaving 28 for internal hits.

Location 1's internal column requires another 1D20 roll to decide between an Electronics and a Quarters hit. The roll is 9, so it is Electronics. Going back to the Damage Type Chart, this time using the Electronics column, we roll a (2, again adding 1 for no defensive screen, =) 3, again getting a Communicator result. As this is an internal hit, this would be a hit on the communicator's internal controller, rather than its external antenna. Rolling a D6, we get a 3, indicating a hit on the radio controls. The player is lucky; this was essentially a free hit, as the radio was already useless without its antenna. The radio controller takes 1 minor hit, so absorbs 10 damage points and is destroyed, leaving 18 excess damage points.

Rolling on the Excess Damage Table, a roll of 4 indicates that the damage goes to +1 internal area: hit location 2. All internal damage in location 2 is rolled on the Electronics column of the Damage Types Chart. A D10 roll of (9+1=) 10 indicates a Bridge Crew hit. The remaining 18 damage points are enough for 2 minor hits against the crew, which indicates that two casualties are taken.

5. Effects of Damage: Damage is taken and recorded in two basic ways: by systems which are divided into the number of minor and major hits they can sustain ("hit-type systems"), and systems which are recorded in other terms (such as crew, fuel, and cargo, "quantity-type systems").

Hit-Type Systems: As damage is taken by ship's systems, mark off the proper number of hits from the system's total hit capacity. Once all of the hits are marked off, the system is destroyed and cannot function or be repaired. As long as some hit capacity remains, the system may still function, although at reduced levels. Note that systems which are defined in terms of minor hits may only take minor hit damage, while systems that are defined in major hits may take either. However, only major hits cause major hit capacity to be marked off; minor hits on these systems have different effects (see "System Resets and Degraded Performance," below).

The specific effects of a system losing hit capacity and being destroyed or out of service due to system resets are as follows:

Weapons, MFDs, Defensive Weapons or Screens, Communicators, Sensors, and ECM: The destroyed system may not be used nor provide its benefits (e.g., EMM), and for weapons and defenses, any listed crewmembers are casualties when the system is destroyed. Non-destroying hits cause system resets and degraded performance (below). Systems which have an antenna are useless if the antenna is destroyed. Degraded performance or system resets on the antenna confer these effects on the entire system.

Missile Launchers: Damage to missile launchers (turrets and barbettes) also destroys their missiles. Each non-destroying hit destroys missiles: one per minor hit and 1D6 per major hit.

Computers: If there is more than one computer, each time a computer is destroyed, the next computer takes over its functions. Once all computers on a ship are destroyed, all tasks become one difficulty level harder (+1 Diff Mod), and the ship may not use its jump drive.

Staterooms and Low Berths: These are "free hits" from a combat standpoint, although passengers or crew with no battle stations occupying the rooms or berths may be killed by such hits, as ruled by the referee.

Life Support and Emergency Life Support: Once both these systems are destroyed, all crew must be in vacuum suits and all tasks become one level more difficult (+1 Diff Mod). See also Critical Hits, below.

Gravitic Compensators: If this system is not functioning, each turn in which the ship expends more than 1 G-turn maneuvering, all tasks are conducted at +1 Diff Mod for each additional G-turn of maneuver. Crewmembers strapped into a workstation ignore 1 additional G-turn of maneuver before Diff Mods set in. Any G-turns spent on evasion increase difficulty by +1 per G-turn, crewmembers in workstations ignore the first +1 Diff Mod. Crewmembers not in workstations (i.e., damage control parties) may not function at all at 2 G-turns or more of evasion.

Sickbay, Labs, Machine, and Electronic Shops: These have no immediate combat effects, but have obvious roleplaying and campaign consequences.

Jump Drive: If destroyed, the ship may not enter jump space. If not destroyed, find the percentage of hits that have been marked off. Multiply the ship's standard jump performance by this number, and round fractions down. This is the current jump performance number. A jump of this or lesser range may be attempted, but with a +1 Diff Mod, in addition to any degraded performance Diff Mod. If the jump performance has rounded down to 0, the ship may attempt a jump 1, but with an *additional* +1 Diff Mod, thus the highest possible Diff Mod is +3.

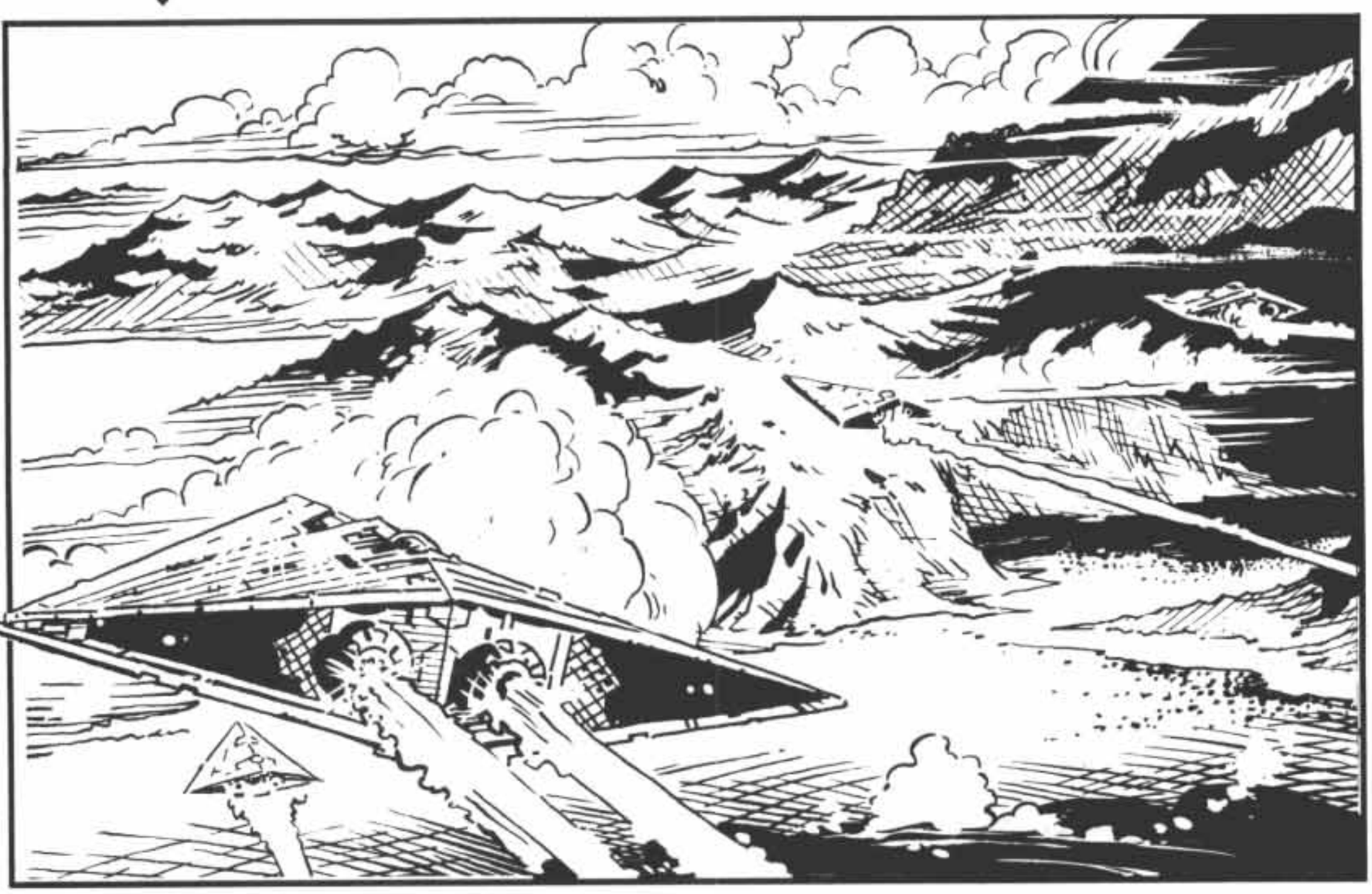
Power Plant: Each hit on the power plant eliminates the listed portion of the ship's power generation capability. System Reset (below) results only affect one hit worth of power as well, with only one system reset allowed at a time.

Contra-Gravity: Landings on and take-offs from planetary surfaces are impossible unless craft as airframe hull configuration.

Quantity-Type Systems: These systems have specific instructions regarding the effects of damage, as follows:

Crew: A minor Crew hit causes one casualty, and a major hit causes 1D6. (Note that an MFD operator may become a casualty on either an MFD hit or a bridge crew hit.

Fuel: Starship fuel tanks have self-sealing features. A minor hit causes the loss of 1D6 displacement tons of fuel before



tanks re-seal. A major hit causes the loss of 1D20 displacement tons of fuel before tanks re-seal.

Objects: Objects include cargo, vessels carried in the hangar, and other items not actually a part of the ship. If these objects are not being used in the battle, the major damage should be recorded and determined later for their campaign effects.

System Resets and Degraded Performance: Whenever a system suffers damage (major or minor) which does not destroy the system (this includes systems which are defined in terms of major hits and suffer minor or major hits), roll a die and consult the Minor and Non-Destroying Damage table (page 326). The two results are System Reset and Degraded Performance.

System reset means that the system is off-line for the next combat turn and may not be used, but that it comes back on-line the following turn and may be used normally. If the ship's computer suffers a reset result, and there are no backup computers available, all ship's systems reset. Note that a System Reset on a power plant does *not* affect the entire power plant, but only one hit worth of the plant, as discussed under Hit-Type Systems above.

Degraded Performance means that all tasks conducted with that system are conducted with a +1 Diff Mod. This applies principally to sensors, weapons, jammers, jump drives, etc., which have clearly defined tasks associated with their use. However, the following systems experience special effects from DP results:

Computer: All ship tasks are conducted with a +1 Diff Mod. However, if another undamaged computer is available, this computer takes over with no penalty.

Life Support and Emergency Life Support: Degraded Performance has no game effects.

Gravitic Compensators: All damage control tasks are one difficulty level harder (+1 Diff Mod).

Power Plant: All damage control tasks to repair the power plant are performed with a +1 Diff Mod.

Contra-Gravity: Any attempt to land on or take off from a planet becomes a Difficult task (Pilot [Interface/Grav]) instead of automatic. Failure indicates an abort back to the planetary surface or orbit; Catastrophic Failure indicates a crash, and the vessel is destroyed.

Maneuver Drive: The ship may no longer divide its acceleration between maneuver and evasion; it must do one or the other in any given turn.

System Redundancy: Most ships carry more than one computer, and so whenever the computer suffers damage, one of the backup systems will automatically take over without interrupting the function of the other ship systems. For simplicity, all computer hits are assumed to be on the computer currently on-line. This means that if two different weapons scored computer hits in the same turn, and the first hit took the primary computer off-line, then the first backup computer would come on-line and be damaged by the second hit.

Carried Vehicles and Vessels: If damage is taken on a carried vehicle or vessel, it should be treated as a hit on the vehicle or vessel just as if it were in combat (except that, if unmanned, it cannot suffer personnel hits, and these are rerolled).

Radiation and EMP Damage: Any hit by a particle accelerator on any part of a ship will automatically cause all computers, except those with fiber-optic circuits (Model Fb), to suffer a System Reset result (fiber-optic computers suffer no additional ill effects). Also, any particle accelerator damage that rolls a Crew hit does twice the normal number of casualties (2 on a minor, and 2D6 on a major hit).

Critical Hits: Under certain circumstances, a weapon may cause one or more critical hits. This is a function of the damage value of the weapon compared to the size of the target ship. The Critical Hits Table (page 326) indicates whether a critical hit is achieved by a weapon and, if so, how many.

If one or more critical hits are achieved, there is a chance that the ship will be vaporized by massive internal explosions. Roll 1D20. If the roll is less than the number of critical hits achieved, the ship is vaporized. If it is equal to or greater than the number of hits achieved, the ship suffers only the actual number of critical hits shown. Roll the appropriate

number of critical hits on the Critical Hits table and apply the result immediately.

There are 11 distinct critical hits possible. As critical hits are scored and applied differently than normal hits, keep track of them separately.

Bridge Destroyed: The ship's bridge explodes, destroying all controls located there (including maneuvering, astrogation, sensors, MFDs, and communication equipment) and killing or incapacitating the entire bridge crew. The ship is no longer capable of maneuvering, entering jump, acquiring new sensor fixes, detecting new targets, communicating, or operating screens. Individually crewed weapons (those with gunners in them, rather than controlled remotely from MFDs) may continue to engage targets which have already been acquired by the ship's sensors, but do so at one difficulty level higher (+1 Diff Mod). Ships equipped with more than one bridge (main operating, auxiliary operating, fire control, flag, etc.) roll to see which is destroyed. Ships with another crewed operating bridge may shift control functions there beginning the following turn. Mark off all appropriate crew as casualties, and MFDs if they were located on the destroyed bridge.

Fire Control: Destroyed circuitry and power spikes disable the ship's fire control interface between weapons, sensors, and targeting processors. The ship may not fire any energy weapons, nor may it operate missiles (all non-fully independent missiles currently in flight are considered lost), nor use MFDs to operate any systems. Ship's defenses (sandcasters, nuclear dampers, meson screens) continue to operate, and fully independent missiles may still be fired.

Power Plant: The power plant is seriously damaged and goes off-line. It may not be repaired or restarted. The ship goes on auxiliary power/batteries. The ship may not maneuver, fire energy weapons, nor operate any active sensors or screens. The ship may fire missiles and operate sensors in passive mode at +1 Diff Mod.

Sensors: Destroyed circuitry and power spikes disable all sensors. The ship may no longer acquire new sensor locks. All weapons may continue to engage targets which have previously been acquired by the ship's sensors, but do so at +1 Diff Mod.

Life Support: The ship's life support has failed and the hull's integrity has been breached, and the crew must rely on their vacuum suits for survival. All tasks are conducted on +1 Diff Mod. This has no additional effect on crews which were at battle stations in their vacuum suits, as these suits have sufficient air and power to keep the crew alive for the remainder of the battle. However, this result does have potentially dire consequences for the long term. Crews which were for some reason not suited up must spend the entire next turn suiting up and may not conduct any other action.

Fuel Explosion: Liquid hydrogen and oxygen escape from shattered storage tanks, combine in the internal spaces of the ship, and explode. Roll for one damage result on the internal explosion table, with the damage value of the explosion determined by the ship size. See the Fuel Explosion Damage Value table on page 326.

Artificial Gravity: The ship's artificial gravity and G compensators fail. See the Gravitic Compensators destruction effects above.

Jump Drive: The ship's jump drive is seriously damaged and the ship may not enter jump space until it is repaired.

Maneuver Drive: The ship's maneuver drive is seriously damaged and it may not maneuver or evade until it is repaired.

Spine: The ship suffers serious structural damage that throws the vessel out of alignment. Any spinal mount weapons are rendered inoperative. In addition, the maneuver drive thrust line is no longer centered on the ship's axis of mass, and so any acceleration must be accompanied by constant attitude correction. Each time the ship accelerates, a Difficult task (Pilot [Interface/Grav]) is required to avoid inducing a tumble. For each G less than the full rating of the power plant used, reduce the task difficulty level by 1. Failure results in the ship beginning to tumble, and Catastrophic Failure indicates a severe tumble. In the case of a tumble, the ship may not maneuver or evade in the next combat turn, as it corrects the tumble, and all tasks are conducted at +1 Diff Mod. The same is true of a severe tumble, except that tasks are at +2 Diff Mod.

Computer: Destroyed circuitry and power spikes disable the ship's data bus and information processing systems. The ship may not launch small craft or enter jump. All other tasks are conducted at one higher difficulty level (+1 Diff Mod).

6. Damage Control: After all damage has been allocated for the turn, players may attempt to repair damage suffered during the current or previous turns. Crewmembers may be used singly or in groups of no more than three to repair major hits, minor hits, or system resets. Major and minor hits may only be repaired if there are hits left in the system (systems which have taken all of their hits are destroyed and may not be repaired). External (surface hits) systems may not be repaired by damage control.

The number of crew available for damage control are equal to one half of the vessel's engineering crew (round fractions down), plus any player characters with Ship's Engineering skill that are not active crewmembers. In addition, the other half of the engineering crew may be used for damage control on Jump Drive, Power Plant, Maneuver Drive, Contra-gravity hits. Each crewmember may be assigned to one damage control task per turn. Difficulty is shown on the Damage Control chart on page 325.

Success indicates that the repair is effective immediately and has no effect on the upcoming turn. Outstanding Success indicates that a degraded performance result on the system is also removed. Asset used should be appropriate to the system being worked on, and the average of the crewmembers involved.

Energy Allocation and Powering Down Systems: As combat damage reduces the power produced by the ship's power plant, players must power down certain systems in order to make sure that energy consumption does not exceed current energy production. The ship data pages include the power draw in megawatts for all systems to enable players to do so.

STARSHIP COMBAT CHARTS

Step 1: Surprise

Difficult task: Fleet Tactics; Sensors enables at same difficulty level.

Step 2: Target Aspect

Detection Range

Range = 1D6×20.

If either vessel is a naval vessel, range = 2D6×20.

Target Vector

Disposition	*Direction*	*Velocity*
Hasty Departure	Outbound	1D20
Leaving	Outbound	1D10
Standing By	Neutral	1D6
Arriving	Inbound	1D10
Hasty Arrival	Inbound	1D20

Note: Velocity given in range bands per turn.

Target Bearing (1D6)

1D6	*Converging*	*Same*
1	0°	0°
2	0°	0°
3	0°	0°
4	45°	180°
5	45°	180°
6	90°	180°

If both are inbound or outbound, courses are the same on a D10 roll of 1-4 and converging on 5-10; if one is inbound and the other is outbound, or if either one is neutral, courses are converging.

Friendly Velocity

V = 2×A.

V = friendly ship velocity in range bands per turn.

A = accumulated acceleration in G-hours.

Closing Velocity

Target is:	*Closing Velocity*	*Closest Approach*
Converging at 0°	Vf+Vt	0
Converging at 45°	0.5(Vf+Vt)	50%
Converging at 90°	0.5Vt–Vf	50%
Parallel at 0°	Vf–Vt	0
Parallel at 180°	Vt–Vf	0

Vf = Friendly velocity.

Vt = Target velocity.

A negative number indicates that range is opening rather than closing.

Step 3: Interception

Maneuvering

1 G-turn = velocity change of 1.

Step 4. Resolve Combat

Sensor Lock Difficulty

Range	*Difficulty*
Short	Average
Effective	Difficult
Long	Formidable
Extreme	Impossible

Difficulty Modifiers

Tasks may be reduced to no lower than Easy difficulty level.

All Sensors:

–1 difficulty level if the sensor had a lock on the target on the previous turn.

–1 difficulty level if target being "handed off" from a sensor aboard the same or another friendly ship which had a lock on the target the previous turn.

+1 difficulty level if target made successful Evasion task roll. +1 difficulty level per G-turns+2 spent evading if target had Outstanding Success on Evasion task roll.

+1 difficulty level if own ship rolled Catastrophic Failure on current turn's Evasion task roll.

Ship Size (in Displacement Tons):

Sub-Micro (less than 1 ton): +2 difficulty levels.

Micro (1-9 tons) targets: +1 difficulty level.

Very Small (10-99 tons) targets: No change.

Small (100-999 tons) targets: –1 difficulty level.

Medium (1000-9999 tons) targets: –2 difficulty levels.

Large (10,000-99,999 tons) targets: –3 difficulty levels.

Very Large (100,000-999,999 tons) targets: –4 difficulty levels.

Gigantic (1,000,000+ tons) targets: –5 difficulty levels.

EM Masking:

+2 difficulty levels for radar and HRT sensors if target equipped with EM masking.

+1 difficulty level for EMS active and EMS passive sensors if target equipped with EM masking.

ECM-Equipped Ships:

If ship is equipped with radio, radar, or EMS direction finder, –1 difficulty level if target ship is using radio, radar, or active EMS sensors on the current turn.

Active Sensors:

If target has a folding passive EMS array which is extended, –1 difficulty level.

Passive EMS and HRT Sensors Only:

Difficulty levels above assume target expending thrust for maneuver or evasion.

+1 difficulty if target coasting (using no thrust for any reason).

+2 difficulty if target in cold mode (laying low with all systems shut down and power plant reduced to bare minimum levels).

–3 difficulty levels if target is accelerating directly away from the sensor (attempting to decrease closing velocity or increase opening velocity).

Ladar:

+1 difficulty level if target is using sandcasters.

Fire Control Difficulty

Range	*Difficulty*
Short	Average
Effective	Difficult
Long	Formidable
Extreme	Impossible

Difficulty Modifiers

Tasks may be reduced to no less than Easy difficulty level.

Range:

Total range in hexes +3 equals +difficulty levels.

Ship Size (in displacement tons):

Sub-Micro (less than 1 ton) *or* Micro (1-9 tons) targets: +1 difficulty level.

Very Small (10-99 tons) targets: No change.

Small (100-999 tons) targets: –1 difficulty level.

Medium (1000-9999 tons) targets: –2 difficulty levels.

Large (10,000-99,999 tons) targets: –3 difficulty levels.

Very Large (100,000-999,999 tons) targets: –4 difficulty levels.

Gigantic (1,000,000+ tons) targets: –5 difficulty levels.

Target Evasion:

+1 difficulty level if target made successful Evasion task roll.

+1 difficulty level per G-turns+2 spent evading if target had Outstanding Success on Evasion task roll.

Own Ship Evasion:

+1 difficulty level if own ship rolled Catastrophic Failure on current turn's Evasion task roll.

Master Fire Directors

Tech Level	Difficulty Mods Ignored
8	1
9	2
10	3
12	4
14	5
15	6

Sandcasters

Base Difficulty: Difficult.

Modifiers

+1 difficulty level per 2 TLs sandcaster is exceeded by firing ship tech level.

Or –1 level per 2 TLs sandcaster exceeds firing ship's tech level.

If sandcaster intercepts beam, beam damage value reduced as below.

TL	Beam Reduction
8	1D6×5
9	1D6×5
10	1D10×5
11	1D10×5
12	1D10×5
13	2D6×5
14	2D6×5
15	2D10×5

Nuclear Dampers

Base Difficulty: Difficult.

Modifiers: Based on tech level.

TL	Difficulty Modifier
12	+1 per closing velocity+2
13	+1 per closing velocity+3
14	+1 per closing velocity+4
15	+1 per closing velocity+5

Meson Screens

Base Difficulty: Difficult.

Modifiers: Based on meson gun Damage Value compared to screen Protection Value.

+2 If meson gun damage value+meson screen protection value = 4+
+1 If meson gun damage value+meson screen protection value = 2+
–1 If meson screen protection value+meson gun damage value = 2+
–2 If meson screen protection value+meson gun damage value = 4+

Spacecraft Damage

Damage Points	Result
0 or less	No effect
1 to 10	1 minor
11 to 20	2 minor
21 to 40	1 major
41 to 60	2 major
61 to 80	3 major
81 to 100	4 major
101 to 120	5 major

No more than five major damage hits can be done in a single location. Remaining damage points beyond 120 are rolled as excess damage in another location.

Damage Control

# Pers	System Reset	Minor Hit	Major Hit
1	Difficult	Formidable	Impossible
2	Average	Difficult	Formidable
3	Easy	Average	Difficult

Arcs of Fire and Hit Locations by Hull Form

Configuration	(1) Bow On	(2) Bow Quarter	(3) Broadside	(4) After Quarter	(5) Stern On
Open Frame	1-20	1-20	1-20	1-20	1-20
Needle	1-15	1-19	1-20	2-20	6-20
Wedge	1-19	1-19	2-19	16-20	16-20
Cylinder	1-5	1-15	2-19	6-20	16-20
Box	1-5	1-15	2-19	6-20	16-20
Sphere	1-11	1-15	2-19	6-20	10-20
Dome/Disc	1-11	1-15	2-19	6-20	10-20
Close Structure	1-9	1-15	2-19	6-20	12-20
Slab	1-5, 10-11	1-15	2-19	6-20	10-11, 16-20

Table shows the weapon locations that can fire into the listed arcs (e.g., a laser in location 10 on a sphere hull form could fire into arcs 1, 2, 3, 4, and 5, but on a cylinder hull form could only fire into arcs 2, 3, and 4), as well as the hit locations which can be hit from those listed arcs. When rolling for hits from a particular arc, re-roll all hit locations which are not listed in the appropriate column.

Note: Firing meson guns are subject to arc of fire limitations, but always roll 1D20 for hit location, regardless of the facing of the target. Missiles also roll 1D20 for hit location, rather than worrying about the target's facing.

Damage Type Chart

D10	*Engineering*	*Electronics*	*Quarters*	*Hold*	*Weaponry*	*Antenna*	*Drones*
1	Jump Drive	Def Scrn	Ship's Troops	Lab/Hangar	Mount	Def Scrn	Weapon
2	Jump Drive	ECM	Ship's Troops	Lab/Hngr Crew	Mount	ECM	Weapon
3	FPP	Comm.	Sick Bay/LB	MES	Mount	ECM	Sensor
4	Power Plant	Comm.	Life Support	Cargo	Mount	MFD	Sensor
5	Power Plant	Sensor	Life Support	Cargo	Mount	MFD	Computer
6	Power Plant	Sensor	ELS	Fuel	Crew	Comm	Comm
7	Man Drive	MFD	DCP	Fuel	Crew	Comm	Fuel
8	Eng Crew	Computer	Grav Comp.	Fuel	Crew	Comm	Fuel
9	Eng Crew	Computer	Staterooms	Fuel	Crew	Sensor	Pow Plant
10+	Contra-Grav	Bridge Crew	Staterooms	Fuel	Crew	Sensor	Man Drive

Abbreviations: **DCP:** Damage Control Personnel; **Def Scrn:** Defensive Screen; **ECM:** ECM and ECCM; **ELS:** Emergency Life Support; **FPP:** Fuel Processing Plant; **Grav Comp:** Gravitic Compensators; **Hngr:** Hangar; **LB:** Low Berths; **Man Drive:** Maneuver Drive (heat exchanger/ignition chamber); **MES:** Machine or Electonics Shops; **MFD:** Master Fire Director (roll on Weaponry column for Mount or Crew)

DMs: **Engineering:** If no jump drive, +2; **Electronics:** If no Defensive Screens, +1, If no Def Screens or ECM, +2; **Quarters:** If no Ship's Troops, +2; if no Ship's Troops or Sick Bay, +3; **Hold:** If no Labs or Hangar, +2; if no Labs, Hangars, or Shops, +3; **Antenna:** If no Defensive Screens, +1, If no Defensive Screens or ECM, +2, If no Defensive Screens, ECM, or MFD, +4; **Drones:** If unarmed, +2

Minor and Non-Destroying Damage

Die	*Damage*
1-3	System reset: Operation interrupted for 1 turn
4-6	Degraded performance: All tasks using system at +1 Diff Mod.

Note: If damage is against the crew, a minor damage is 1 crew casualty.

If damage is against fuel, ship loses 1D6 displacement tons of fuel before the tanks re-seal.

If damage is against sensors, all locks are lost and must be re-rolled when operations resume.

Major Damage

Major damage always causes 1 major damage point to component or 1D6 casualties to the crew. If damage is against fuel, ship loses 1D20 displacement tons of fuel before the tanks re-seal.

Excess Damage Location

Die	*Area*
1	–1 internal area
2-3	Same internal area
4	+1 internal area
5	–1 surface area
6	+1 surface area

Critical Hits Table

Weapon Remaining Penetration Value (after penetrating the hull)

Ship Size	*1-20*	*21-40*	*41-60*	*61-80*	*81-100*	*101-120*	*121-140*	*141-160*	*161-180*	*181-200*	*201+*
SM	2	3	4	5	6	7	8	9	10	11	12
Mc	1	2	3	4	5	6	7	8	9	10	11
VS	0	1	2	3	4	5	6	7	8	9	10
S	0	0	0	1	2	3	4	5	6	7	8
M	0	0	0	0	0	1	2	3	4	5	6
L	0	0	0	0	0	0	0	1	2	3	4
VL	0	0	0	0	0	0	0	0	1	1	2
G	0	0	0	0	0	0	0	0	0	0	1

(The number is number of Critical Hits applied to the target.)

Critical Hit

Vs. Manned Craft

Die	*Hit*
2	Bridge Destroyed
3	Fire Control
4	Power Plant
5	Sensors
6	Life Support
7	Fuel Explosion*
8	Artificial Gravity
9	Jump Drive
10	Maneuver Drive
11	Spine
12	Computer

*See Fuel Explosion Damage Value table.

Vs. Unmanned Craft and Missiles

1D6	*Result*
1-2	Control system (missile goes inert)
3	Payload (warhead, sensor, or ECM package)
4-6	Fuel (target destroyed)

Fuel Explosion Damage Value

Ship Size	*DV*
SM	Destroyed
Mic	5
VS	10
S	20
M	30
L	40
VL	50
G	60

Using Miniatures with Traveller

Roleplaying is all about visualization. Being able to visualize the action, the threat, and even the characters in the adventuring party adds a lot to the enjoyment of the game.

If miniatures are available, the most obvious use is to show the spatial relationship between members of an adventuring party. For example, players exploring a corridor on a derelict starship would place their figures to show who was in the lead, who was trailing, etc. This saves a considerable amount of mental energy on the part of the referee.

The **Traveller** combat system is simple enough that it can easily be used to fight out small unit actions. To do so, first determine ground scale. If a grid system is used, the grid may either be two meters or 10 meters, usually depending on whether it is indoors or outdoors. In larger games, a grid won't be available, so instead use inches as a substitute for the grid. In most tabletop skirmish games, one inch to 10 meters is a good scale.

Really huge battles can be fought by compressing scale even more. Use one inch equals 100 meters as a ground scale and one figure equals 10 actual troops as a figure scale. Player characters should still be single figures, but double all damage rolls against them by 1:10 scale figures and cut the PC's damage die rolls in half when firing at 1:10 scale figures. (Yes, this still makes them much stronger than an average grunt. You got a problem with that?)

Terrain: The heart of any miniatures game is the table top, and this is even more true for science-fiction miniatures. Here are a couple of ideas for science-fiction terrain that we have used.

Ground Cover: Avoid really bright and garish colors for your basic ground cover. I have seen science-fiction games where everything was bright, vivid colors "because they look weird." Yes, but they also look like crap.

Stick to a subdued color for your basic table covering. Most plant life will be green, so a green covering is okay. We prefer a tan or light brown covering because desert seems to play well visually in science fiction.

For fields, use sheets of felt (available in any craft or dime store). These come in a riot of colors, and here is your chance to spark up the board. A nice neutral tan ground cover enables you to have yellow and orange plowed fields that look like they belong there. For green ground, earth tones are better, but there are still plenty of those, and the contrast with the green will look good.

Buildings: There are plenty of model buildings available, and some of them are even designed for science-fiction games. You don't need much help finding those. We use two additional sources of buildings, though, which have a genuine science-fiction flavor:

First, never throw away the Styrofoam that electronic components come packaged in. If computers are used where you work or go to school, the odds are they throw the stuff away; ask nice and they'll give it to you. Friends often have access to this material as well. These things are great because they come in a variety of really weird shapes, all of which look like interesting buildings when painted gray.

The drawback of these is that they tend to be large, and a couple large buildings go a long way in a miniatures game. For smaller buildings, we are always careful to save the clear plastic blisters whenever we buy something that comes in a blister card. These are often very unusual shapes and make very interesting buildings. Glue the blister card to a piece of balsa wood or plastic and paint it. If you intend to take your buildings on the road, it's a good idea to fill the blister card with a lightweight filler, like Spackle, as the blister is fairly fragile and crushes easily.

Two additional easy touches add a lot to their appearance.

If your wife, girlfriend, or mother uses L'Eggs pantyhose, have them save the plastic eggs for you. If they don't, wait for Easter time and buy a couple bags of hollow plastic eggs at your local variety store. Now glue the halves to the tops of the Styrofoam buildings in strategic places, no more than one or two per buildings. After it dries, run caulk, Spackle, or putty around the bottom to ensure a permanent seam.

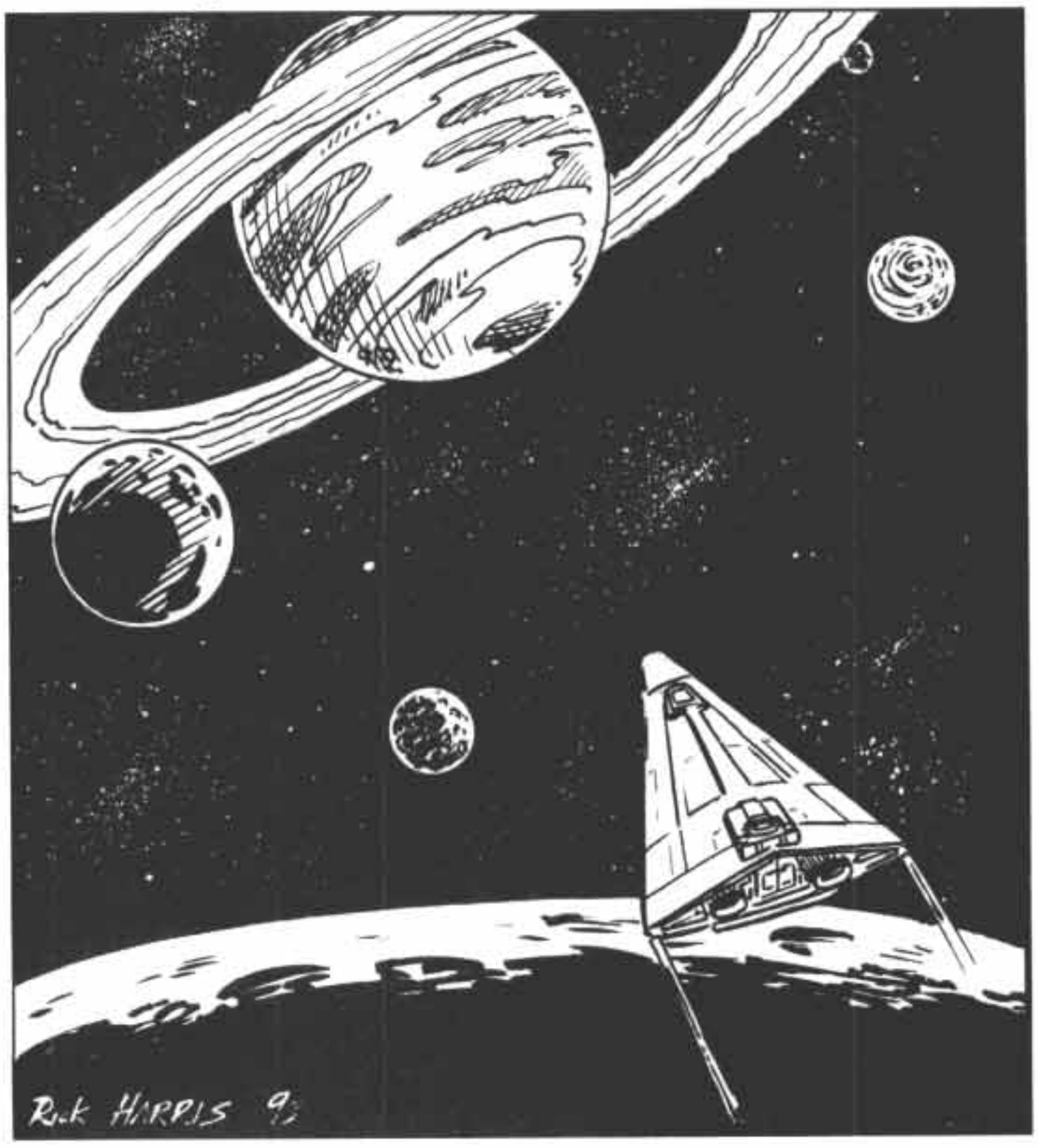
Second, put doors and windows on the buildings. These can be as simple as a square or rectangular piece of balsa wood or can be as elaborate as you want. Or you can wait until the building is painted and then draw doors and windows on with permanent marker.

PAINTING MINIATURES

Everyone has seen beautifully painted miniatures, but most people's efforts to paint a character figure fall far short of what experts are capable of. Given years of practice you can be that good, but what do you do in the meantime?

There are lots of ways to paint a miniature, and there are lots of great instructional works available that will show you how, with time, to become an expert painter. Find them. Read them. Practice. But in the meantime, cheat.

A few years ago, Frank Chadwick won a painting contest at a convention with a regiment of Soviet World War II infantry (about 100 figures in the scale wargaming unit). He hardly ever paints miniatures; he is far



from an expert (trust us), and he painted the regiment in two evenings. Interested?

The technique he used is called stain painting. Experts can do a better job with other techniques, but for average painters it's hard to beat this for ease, speed, and look of the finished figure. This technique works only with acrylic paints—don't bother trying it with enamels.

Step 1: Paint the Figure White. It's better to cover the figure with two thin coats than one thick coat, as this will do less violence to the surface detail of the figure. Let the undercoat dry completely (overnight) before proceeding.

Step 2: Stain the Clothing. A stain is a thin wash of paint applied over the white undercoat. Make the wash by mixing about one part of paint with two parts of water. (More paint for light colors, like yellow and sky blue; less paint for deeper colors, like dark brown and navy blue.) Now take a large brush and slop the stain on all over the area of the clothing. Don't worry about getting it on things like boots, flesh, or equipment, but try to keep it off areas of clothing that will be a different color.

As the stain dries, it will look very light, as if it has mostly run off. Don't worry about it for two reasons. First, as the paint dries, it will tint the white slightly more than when it is wet. Second, the color looks washed-out because you have only it and white to look at. Once there is more contrasting color on the figure, it will look great.

Dark hair should be stained the same as clothing.

Step 3: Paint the Flesh and Equipment. Now paint the exposed flesh and all equipment (including belts, boots, backpacks, etc.) using either full-strength paint or paint slightly thinned (to enable it to flow better). Paint the lower surfaces first and deliberately overlap raised detail that you will paint later. For example, if a figure is holding a rifle, paint the rifle barrel first, then the gun stock around it, then the hand holding it. It is much easier for your brush to catch a raised surface and miss the lower one than vice versa. Light-colored hair should be painted in this step.

When you are done with this step, you will see that the clothing color is much more obvious and has lots of shadows and highlights that add a genuine three-dimensional feel to the figure.

Note that figures that have only equipment rather than clothing, such as troops in combat armor or battle dress, can be stained instead of solid painted, but the stain should be a heavy one rather than a light one.

Step 4: Detailing Washes. A wash is a much thinner version of a stain—anywhere from five to 10 parts water to paint (depending again on how dark the paint is, but washes are almost always done with dark shades). Coat the flesh with a medium brown or dark brown wash. This will bring out facial detail by settling in the folds of the skin. If you don't mind the extra time, hold the figure upside down while letting the facial wash dry; this lets the wash gather in the eye sockets and gives a good shading effect.

Use a light brown wash on light-colored hair (the lighter the hair color, the lighter the wash) and a black or dark brown wash on equipment and clothing. Use black on cooler colors (such as blue and green) and brown on warmer colors (yellow, brown, red). Don't overdo the wash—a little goes a long way, and you can always add more.

An exception to the "little goes a long way" rule is when you want figures to look weather-beaten. In that case, use plenty of brown wash. (A light black wash picks out detail; a heavy black wash makes the figure look oily.)

Step 5: Admire Your Work. That's all there is to it. What you will have is a figure that won't necessarily win a painting contest, but it will be realistic-looking, and your painting will have brought out all of the character and detail that the sculptor put into the figure design. If you like it a lot, do yourself a favor and spray one or two light coats of a flat protective coating on it. This is available at any hobby shop. Most of the paint will adhere well, but it will tend to rub off on raised small detail features (like noses).

EQUIPMENT & TECHNOLOGY

The vast amounts of technology available in the **Traveller** universe can only be briefly touched upon in the chapter that follows. Every imaginable piece of technology was manufactured not only to the capabilities of different technology levels, but also built to satisfy the tastes of individual societies or races.

In this chapter you will find medical and pharmaceutical goods to maintain health, from antibiotics to life-extending anagathic drugs. Following that is equipment to sustain life in exotic, alien environments: vacuum and hostile environment suits, and wilderness survival and exploration equipment. Other essential equipment for travel is also included: communications gear, navigation equipment, data processing technology, and high-technology sensors to allow characters to get around by night or in opaque atmospheres.

And because travel often involves danger, there are a number of weapons. Personal arms such as pistols and rifles function on principles varying from kinetic energy slug throwers to rocket launchers, to plasma and fusion weapons, to lasers. Heavy weapons are based on the same principles, but pack a more powerful punch.

Finally are the vehicles themselves that allow travel. Contra-grav air rafts, personnel carriers, and tanks, all the way up to the starships that form the tissue of interstellar society. The chapter also includes add-on equipment to customize these ships: laser and missile turrets, defensive screens, and advanced sensor suites.

This chapter is only intended to get you started, and cannot cover all of the possibilities of the **Traveller** universe, nor even all the rules presented in this book. Future **Traveller** products will provide greater detail on individual pieces of technology, and the **Fire, Fusion, & Steel** handbook will allow you to design your own custom-made technology to suit any need.



Technology Assumptions

Traveller: The New Era is intended to not be limited to a single campaign background or to a single set of future science assumptions. Its rules are intended as a framework that will ultimately allow the play of a wide variety of science-fiction visions. Such different visions have distinctive technologies that separate them from speculative universes without such technologies. Matter teleportation, stardrives, and antigravity are all forms of technology whose presence in or absence from a setting have a major influence on the overall feel of that science-fiction setting, and are all directions that can be explored with another **Traveller** product, **Fire, Fusion, & Steel: Traveller Technical Architecture** sourcebook.

However, like any roleplaying game, **Traveller** must have a basic set of assumptions which drive a basic campaign setting. Not all referees wish to design their own unique universes. Many would rather start playing in a standard campaign setting that they know will be supported by future products and source material. For **Traveller**, this standard campaign is the Imperial campaign that was started with the first **Traveller** edition. This campaign will continue to be supported as the standard default campaign of **Traveller: The New Era**. Because this initial rulebook does not have enough space to detail all of the different approaches to technology, this rulebook uses the historical and technological assumptions of the standard Imperial campaign background.

The purpose of this chapter is to explain to referees and players how the technological assumptions of this standard Imperial campaign fit into the variable technology schemes presented in **Fire, Fusion, & Steel**. Players and referees who have no desire to use a campaign other than the Imperial campaign need not worry about this chapter.

Different Universes

The approach taken by **Traveller: The New Era** is that each of these different technological visions are actually different universes. The different technologies seen in these universes are the result of differing physical laws. These physical laws will make certain technological breakthroughs more or less difficult, perhaps even impossible. The more a universe's physics resist a certain development, the longer it will take to make the initial breakthrough, and the more time will pass between successive improvements. Likewise, the physics of a universe will allow one form of stardrive to be developed, but not another—say the use of naturally occurring warp points instead of **Traveller**'s standard jump drive.

Traveller divides the technology of the future into two types: baseline technology and projected technology.

Baseline Technology: Baseline technology is technology based on physical laws that we understand and can effectively manipulate in the 20th century. This includes such things as firearms, internal combustion engines, nuclear fission, ballistic computers, etc. Baseline technology also includes one important set of extrapolated technologies: advanced power generation. The ability to create power at a certain level and using a certain amount of fuel is the most important consideration for the use of any other technology, and hence is included in **Traveller**'s baseline technology. This particularly refers to the harnessing of fusion technology at ever increasing levels of efficiency. It is this baseline technology that defines the **Traveller** technology, or tech, level.

Tech Level: Tech level is a shorthand scale to show the level of baseline technology available. See the table for examples.

In different universes, different projected technologies may be added at different tech levels, indicating the point on the baseline scale at which they initially become possible. But not all projected technologies will be possible in a given universe, nor will they become possible at the same time as in other universes.

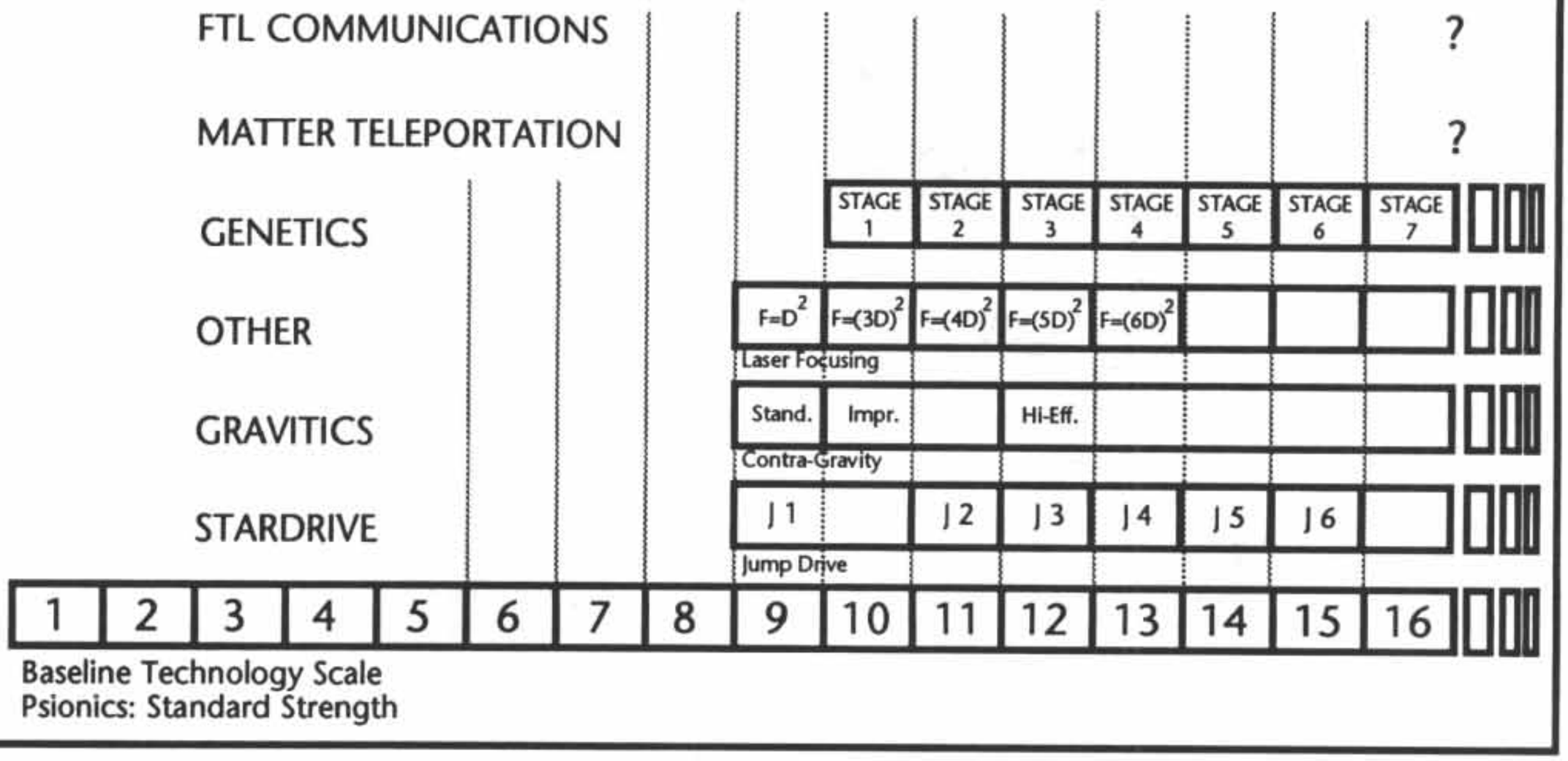
Note that baseline technology levels have fuzzy borders. Certain technologies become available as experimental systems before they are routinely useful and economically practical. Furthermore, the model of Earth history can be misleading when applied to an interstellar community, because worlds do not need to individually discover basic scientific principles. The best example is the discovery in Earth's history of microbes and the medical revolution that this brought about. A low-tech world would not have to develop its own microscopes to learn about these facts. Such a world would only have to be told about certain principles of infection and sanitation in order to realize the great health benefits that come from boiling water, maintaining standards of cleanliness, etc.

Also note that baseline technology allows unusual technical breakthroughs under spe-

AVAILABLE BASELINE TECHNOLOGY

Baseline Tech Level	*Period in Earth's History*	*Available Technology*
0	Stone Age	Fire, stone tools
1	Middle Ages	Wind power
2	c. 1600	Early firearms
3	c. 1800	Steam power
4	c. 1900	Internal combustion engines, electricity
5	c. 1930	Radio, radar, rocketry
6	c. 1950	Jet engines, nuclear fission
7	c. 1970	Low-power lasers, printed circuits
8	c. 1990	Fiber-optics, microchips
9	Beyond 2000	Fusion power
10+	Farther beyond	Increasingly efficient fusion power

Imperial Campaign Technological Fields



cific local conditions. For example, on a world with a dense atmosphere and low gravity (an unlikely combination to be sure), practical aircraft will become available before they were on Earth, as it would be easier to generate sufficient power to keep an aircraft in the air.

Projected Technology: Projected technology refers to breakthroughs using physical laws not currently known (for example, stardrives and antigravity), or physical laws that we do know and understand to some extent, but which we do not yet understand how to completely manipulate (the cloning of higher animals is an example of this). Because projected technology deals with the ability to do certain things in a universe because the physical laws there allow it, projected technology also refers to things not normally thought of as technology, like psionics. Psionics is not a technology *per se*, but rather a natural phenomenon which can be exploited.

The Imperial Campaign as Example

In order to clearly explain these concepts, we will examine the technological underpinnings of the standard Imperial campaign. This campaign is a variant universe like any other described above. It has its own set of technological assumptions which reveal the background physics of the universe.

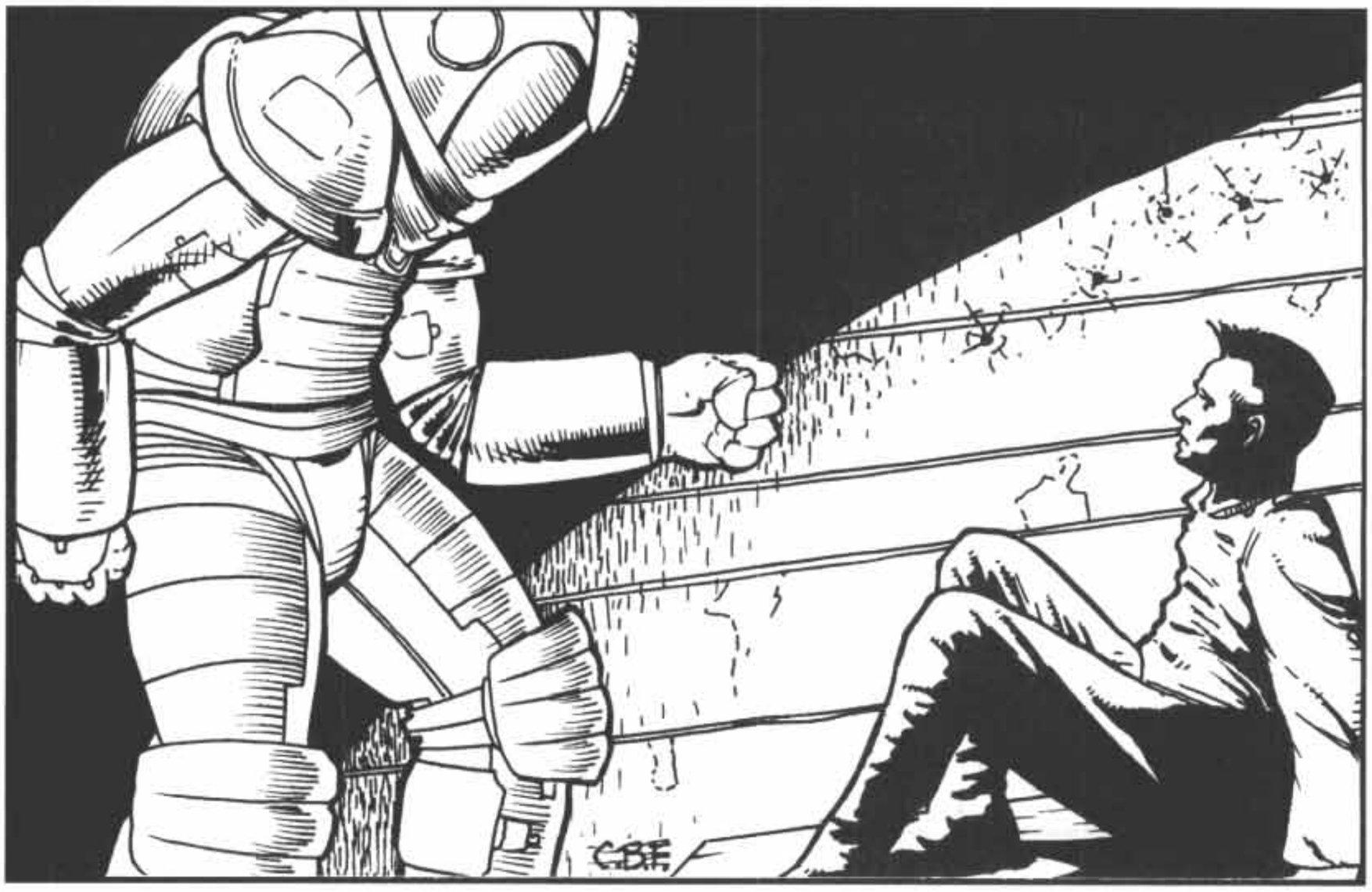
A universe can be thought of as having "settings" which dictate the sort of things that can and cannot be done in that universe, and how difficult these things are. The harder a certain technology is to perfect, the later it will be introduced on the baseline technology scale.

Looking at the technology chart above for the Imperial campaign, we see that, like any **Traveller** universe, it begins with the baseline tech level scale. To this baseline are added the projected technology fields.

Projected technology is divided into several different fields. Each field represents a solution to a problem or goal. For example, the stardrive field answers the problem of how people get from star to star. Some of these fields present alternative approaches to those goals. In the case of the stardrive field, a universe's projected technology can be jump drive, stutterwarp, natural warp points, star gates, hyperspace, or psionic shifting (as a rule of thumb, only one type of stardrive should be included in a universe). Other fields have just one approach and effect (matter teleportation, for example).

When a field is selected to use in a universe, it must be given an initial availability point in relation to the baseline tech level scale. For example, in the Imperial campaign, the stardrive type chosen, jump drive, becomes available at tech level 9.

After setting the tech level of initial availability, the field's "slope" must be set. Most fields will have scales of improvement within them (for example, jump drive availability starts out with jump 1, then advances to jump 2, jump 3, and so on). The slope determines how rapidly these improvements are made with respect to the baseline tech level. The standard 1:1 slope allows one of these improvements per baseline tech level. A shallow slope reflects the fact that each incremental improvement takes



longer. A shallow slope could be designated by the referee as requiring two (a 1:2 slope) or even three (a 1:3 slope) tech levels per improvement. For example, if jump drive technology were placed on a 1:2 slope, jump 1 would become available at tech level (TL) 9, jump 2 at TL 11, jump 3 at TL13, and so on. A universe might also have a steep slope, showing that once a certain breakthrough was made, further development proceeded rapidly. At a 2:1 slope, jump 1 and 2 would appear at TL9, jump 3 and 4 at TL10, and so on. In the Imperial campaign, there is an initial flat spot immediately following introduction at TL9 and 10, but once TL11 is reached, jump performance increases at the 1:1 rate.

Note the other fields used in the Imperial campaign. There is contra-gravity technology appearing at TL9. This is one of the subset approaches to the gravitics field. Contra-gravity means the negation of gravitational attraction. Another gravitic approach is thruster plate technology, in which gravitic force is transformed into directional thrust. Both these also allow the generation of artificial gravity fields aboard spaceships.

Laser focusing technology is another field included in the Imperial campaign, also appearing at TL 9. This allows laser beams to hit targets beyond a mere few thousand kilometers.

Psionics is given at the standard strength level. Some universes may not allow psionics at all, while some might use weaker or stronger variations. Note that psionics has no introduction tech level, as it is not limited by technology, but only by human awareness of its existence.

Genetic manipulation, which allows genetic modification at early tech levels, followed by limb regeneration, accelerated regeneration, cloning, and cultured replacement limbs is also introduced at TL10.

Some fields are not included here, as they do not appear by TL16, which is the current limit of the **Traveller: The New Era** Imperial campaign. Whether such fields as FTL (faster-than-light) communications or matter teleportation become available after TL 16 or are altogether impossible in this universe cannot be known to characters in the universe, as everything is impossible until the first time it is done.

The Representative Fields and Effects table shows certain representative fields and their general effects. All universes should have at least a stardrive and a defined tech level for the beginning of genetic manipulation techniques. All of the other fields are optional, although most campaigns will have a gravitics approach and some form of psionics.

Some of these fields are linked to each other. For example, if using the psionic shifting approach to stardrive technology, not only would the psionic shifting capability have to be assigned to the tech level at which it becomes available, the universe would also require a powerful set of psionic abilities to use with the drives.

For more information on technological settings and underpinnings, see **Fire, Fusion, & Steel.**

REPRESENTATIVE FIELDS AND EFFECTS

Representative Fields	*Effects*
Stardrive	Several styles of approach (jump drive, star gates, etc.)
Gravitics	Several styles of approach (antigrav, thruster plates, etc.)
Psionics	Levels of approach (weak, standard, powerful, etc.)
Genetic manipulation	Initial tech level and slope
Laser Focusing	Yes or no, plus initial tech level and slope
Matter teleportation	Yes or no, plus initial tech level and slope
FTL communications	Yes or no, with styles of approach, tech level, and slope

Equipment

EXPLOSIVES

Black Powder: Generally the only explosive available on low-tech worlds. Each kilogram of black powder has a DP value of 1. Black powder usually comes in 10kg kegs.

TL	Vol	Wt	Price
3	10 liters	10 kg	Cr40

Dynamite Stick: The most common explosive used by civil engineers for demolitions, it is relatively easy to manufacture and is coming into more common military use. A quarter-kilogram stick has a DP value of 1. Dynamite is sold in cases of 100 quarter-kilo sticks.

TL	Vol	Wt	Price
5	30 liters	30 kg	Cr1200

Plastic Explosive: Plastic explosive can be molded to desired shapes and will adhere to desired surfaces. It will not explode if burned, and can only be detonated by another explosion, usually provided by a blasting cap. A 1-kilogram block has a DP value of 6.

TL	Vol	Wt	Price
6	1 liter	1 kg	Cr70

Engineer Demolitions Kit: This kit contains an assortment of items to enable a character to rig explosive charges and fuse them for detonation. Weight and price are given for individual items as well as for the kit as a whole. The explosives must be purchased separately.

A single charge uses up one blasting cap, and whatever fuse, detonators, and so on that the character chooses to use. Wire, tools, and the blasting machine can be recovered after a blast, but all other items are used up. Quantities in a kit are noted in parentheses.

Tools (1 Set): Pliers, knife, tape, cap crimper, and other items needed to prepare explosive charges. *Wt:* 4 kg *Price:* Cr50.

Cap, Blasting, Electric (50): At least one is required to set off a charge. *Wt:* Negligible *Price:* Cr4.

Cap, Blasting, Nonelectric: (50): At least one is required to set off a charge. *Wt:* Negligible *Price:* Cr4.

Wire, Electrical (2×100m Spools): For use with electrical blasting caps. Any length can be fastened to up to 10 caps. Not normally reused. *Wt:* 5 kg/spool *Price:* Cr100.

Wire, Trip (1×500m Spool): A thin wire used in booby traps and the like. Tripwires can be of any reasonable length, but it makes no sense to have them longer than the blast radius of the explosive. *Wt:* 2 kg/spool *Price:* Cr20 per spool.

Blasting Machine (1): A hand-cranked electrical igniter which can fire up to 10 caps electrically. The machine generates current by muscular motion and never needs recharging or battery changes. *Wt:* 0.5 kg *Price:* Cr100.

Fuse, Instant (2×100m Coils): Burns 5900 meters per second; for use with nonelectric blasting caps. May be ignited by any igniter or by flame, and it can be combined with itself (to set off more than one cap) or with time fuse. *Wt:* 3 kg/coil *Price:* Cr100/coil.

Fuse, Time (2×100m Coils): Burns 100 seconds per meter; for use with nonelectric blasting caps. May be ignited by any igniter or by flame, and it can be combined with itself (to set off more than one cap) or with instant fuse. *Wt:* 3 kg/coil *Price:* Cr75/coil.

Igniter, Fuse (50): A weatherproof pull igniter, which can be used to light either instant or time fuse. This igniter can be used in simple (pull-only tripwire) booby traps. Only one tripwire per igniter. It can be fixed directly to a nonelectric blasting cap. *Wt:* Negligible *Price:* Cr3.

Timer (5): This detonator has a digital timer which can be set to any time from 30 seconds to 48 hours, in 30-second increments. It will fire up to 10 electrical caps. Once set and sealed, it is waterproof, but it cannot be set underwater. *Wt:* 0.25 kg *Price:* Cr20.

Igniter, Manual (5): A pull/release detonator, used for sophisticated booby traps. It will detonate either when pressure is placed on a tripwire or released from the tripwire (if a wire is cut, for example). Up to three tripwires may be attached. *Wt:* Negligible *Price:* Cr20.

Full Kit: All of the above, packed in a wooden chest for transport.

TL	Vol	Wt	Price
6	60 liters	30 kg	Cr500

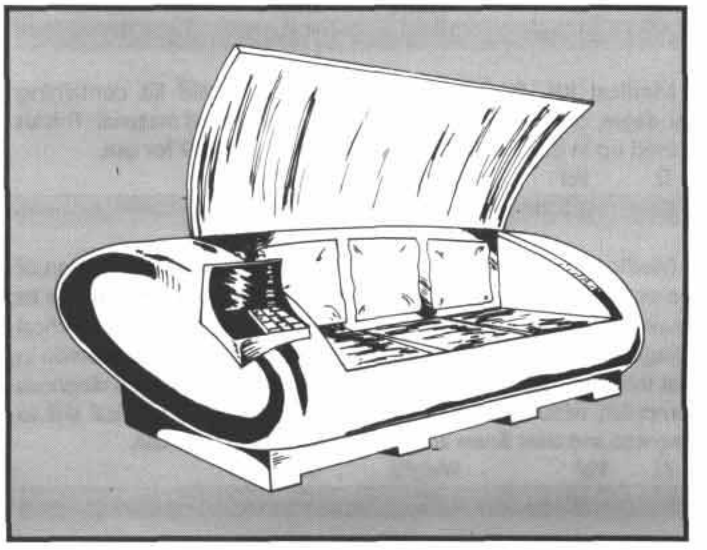
Primercord: A rope-like plastic explosive used in various demolition jobs. Primercord can be wrapped around conduits or small girders to sever them or taped to a wall (in a circle) to blow an entry hole. It can also be used to link other explosive charges together for almost instantaneous detonation (it will detonate other explosives by itself, without need for a blasting cap). Primercord itself requires a blasting cap. Primercord has a DP value of 3 per meter. All values below are per meter of primercord.

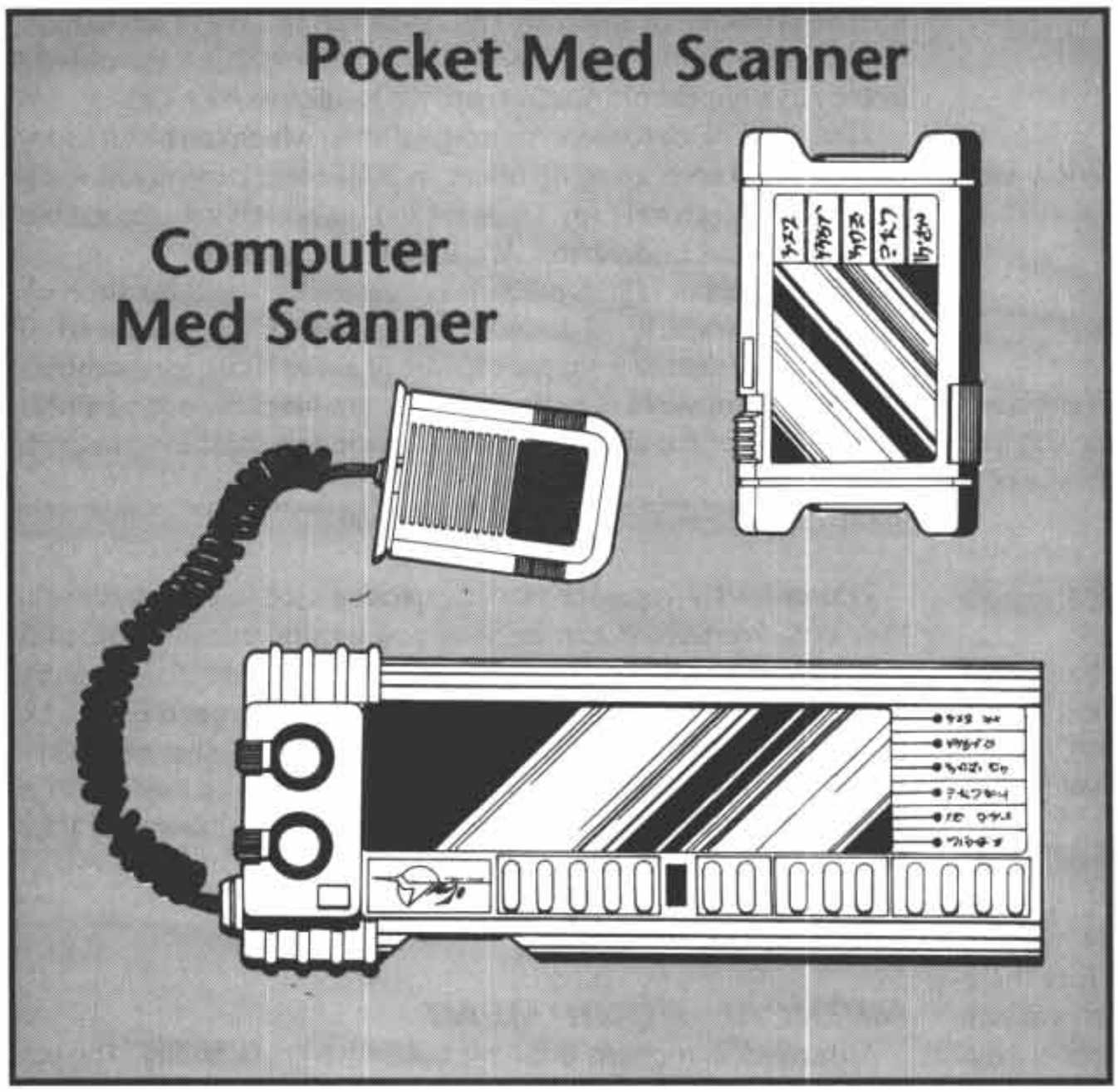
TL	Vol	Wt	Price
6	1 liter	0.5 kg	Cr15

MEDICAL EQUIPMENT

Automed: A modern one-unit automated care facility. The patient is placed in the unit after being stabilized, and the automed monitors vital signs, makes suggestions as to treatment options, regularly injects prescribed medication, and will initiate emergency resuscitation procedures, unless overridden, if the patient's vital signs drop below certain minimum levels. The Medical Modifier shows the number added to a doctor's Medical asset when performing any medical task on a patient in an automed.

TL	Vol	Weight	Price	Medical Modifier
9	3 kiloliters	6 tonnes	MCr0.5	+1
11	3 kiloliters	6 tonnes	MCr0.2	+2
13	3 kiloliters	4.5 tonnes	MCr0.3	+3
15	2 kiloliters	2 tonnes	MCr0.4	+4





Instruments, Surgical: Scalpels, forceps, hemostats, clamps, and other tools for major surgery. See page 290 for use.

TL	*Vol*	*Weight*	*Price*
7	2 liters	5 kg	Cr1000

Medical Kit, Doctor's: A modern first-aid and medical treatment kit containing drugs, surgical supplies, and diagnostic materials for use by doctors and emergency medical technicians. This medical kit is sufficient for both minor and serious wounds, and it can be used for the treatment of animal injuries, radiation burns, chemical burns, poisoning, and drug overdoses. See pages 289-290 for use.

TL	*Vol*	*Weight*	*Price*
7	20 liters	10 kg	Cr1000

Medical Kit, Personal: An individual first-aid kit containing bandages, one unit of antibiotics, and other first aid material. This kit is used up in one first aid operation. See page 289 for use.

TL	*Vol*	*Weight*	*Price*
7	0.5 liters	0.2 kg	Cr100

Medical Scanner, Computer: This larger, hand-held version of the pocket med scanner (below) takes rapid readings just like its smaller cousin, and thus greatly reduces the time spent on a Medical (Diagnosis) task. The larger scanner differs from the pocket version in that this handheld model includes a complete expert system diagnosis computer, which allows individuals with little or no medical skill to diagnose and treat illness and injury. See page 289 for use.

TL	*Vol*	*Weight*	*Price*
12	2 liters	1 kg	Cr25,000

Medical Scanner, Pocket: The pocket med scanner is an indispensable device in the satchel of any physician. Medical skill is not needed to operate the scanner, but the skill is necessary to properly interpret the readings. A doctor or nurse needs only to press against the patient's chest with the small disk-shaped probe. In five to 10 seconds, the scanner accurately determines body temperature, blood pressure, pulse rate, respiration rate, level of neural activity, and fluid balance. This useful device greatly reduces the time needed to make a Medical (Diagnosis) task, effectively reducing to zero the time needed to take a patient's vital signs. The scanner probe can actually be used anywhere on the subject's body, but no respiration rate is available apart from the chest site.

Once the reading is made, pressing a small button on the device records the values in the scanner's memory. These records can be called up later for review. Set points on the scanner can be keyed in, so if readings reach a certain level (either high or low), the scanner beeps to alert the attending physician. Small adhesive pads are used to attach the scanner temporarily to the chest for this purpose.

The med scanner is optimized for use on a given race, so using it on members of another alien race does not work. An individual with Electronics and Medical skill could, however, try to modify a particular device to work accurately for another species. (One exception to this rule does exist: The same device can be used for humans and Vargr.)

Vac suits at tech level 12 and above are designed with special contact points to allow a med scanner to be used without requiring removal of the suit. See page 289 for use.

TL	*Vol*	*Weight*	*Price*
12	0.2 liters	0.1 kg	Cr10,500

DRUGS

A variety of pharmacological developments are available to travellers for medicinal (and other) purposes.

Drug availability, reliability, and price vary considerably from world to world depending upon the local law and tech levels.

Medicinal Drugs: Four types of drugs are useful in preventing or treating contagious diseases: vaccines, antitoxins, antibiotics and metabolics. Antibiotics are also essential to prevent or cure wound infection while blood plasma, whole blood, and anesthesia are important when conducting surgery. Finally, broad-spectrum antivenin and atropine are useful in countering poisons and toxins.

These drugs can generally be obtained only from a physician or with a physician's prescription on worlds with high law levels, but they are generally available at retail on worlds with low law levels. Since all are administered by injection, they must be given by a character with Medical skill.

Vaccines: First appearing at tech level 5, these help prevent illness if administered once per year by reducing both the chance of contracting a disease and the severity of any disease caught. Vaccines against a single disease are available for Cr15 per inoculation. Vaccines that prevent several similar diseases on the world

where they are produced are available at a tech level of 10 or above for Cr20 per inoculation. A separate vaccine must be taken for each disease. Antiviral vaccines are available at tech level 10 as well.

Antitoxins: At tech level 6, antitoxins hasten recovery by combating poisons generated by microorganisms which have infected the patient, again by reducing both the severity and duration of illness. Antitoxins can also help if the patient is in a coma. Antitoxins must be administered once a day throughout the duration of the illness at a cost of Cr20 per injection. Antitoxins are disease-specific, and each affects only one disease.

Antibiotics: At tech level 6, these drugs attack the microorganisms that have invaded the body and thus hasten recovery while lessening severity. While generally effective, antibiotics have drawbacks: They may not be effective against the specific microorganisms in a patient's body, and they sometimes cause allergic reactions. Antibiotics have a cost of Cr50 per injection, and they must be taken once per day during illness.

Metabolics: First used at tech level 8, these are extremely expensive drugs similar to interferon, which are effective against a wide spectrum of diseases. They function by altering the metabolism of the patient, and they enable the patient's body to resist the disease by reducing both the severity and duration of illness. They are always effective, but they are not always available, even on high-tech worlds. Metabolics must be taken once per day of illness at Cr1000 per injection.

Blood Plasma: Each unit of blood plasma weighs 0.5 kg.

Whole Blood: Each unit of whole blood weights 0.5 kg and requires refrigeration or, if it is to be stored for a long period of time, freezing.

Local Anesthetic: Local anesthetic is available in liquid form for injections. Weight is negligible.

Total Anesthetic: Total anesthetic is available in liquid form for injections and gaseous form for inhalation (which is easier to control and so less dangerous to the patient). In liquid form, the anesthetic's weight is negligible. In gas form, a one-dose tank weighs 1 kg.

Antivenin: Antivenin comes packaged in autoinjectors, each of which weighs 0.3 kg.

Atropine: Atropine is useful in combating the effects of military, industrial, and natural nerve agents and comes packaged in autoinjectors, each of which weighs 0.3 kg.

Nonmedicinal Drugs: Each of the following drugs has its own advantages and disadvantages; users should be aware of the effects. For the sake of uniformity and ease of use, all are available in consistent, one-dose pill form. Other drugs not listed here may be available in a variety of forms and dosages.

If more than one drug is taken at a time, the combination may cause an adverse reaction in the individual and result in injury or death. The use or possession of certain drugs may be restricted by local law.

Combat Drug: Taken by fighters (usually military personnel) prior to combat, this drug increases STR and CON by 1 point each. The effect begins 30 seconds after being taken and lasts for about 10 minutes. When the effect wears off, the user suffers 1D6 damage to the chest.

Anagathics: Drugs which counteract the aging process: Supposedly, a regimen of regular monthly doses enables an individual to ignore the debilitating effects of advancing years. Because of the rarity and demand for anagathics, they are quite expensive and are often unavailable at any price. More details on the use of anagathics can be found in Character Generation, pages 33-34.

Truth Drug: Used to compel individuals to answer interrogation truthfully, one dose is sufficient to assure truthful answers for approximately two minutes, after which the user experiences one hour of unconsciousness, and suffers 1D6 damage to each the head and chest.

DRUGS

TL	*Drug*	*Per Dose*
5	Antibacterial Vaccine	Cr15
5	Whole Blood	Cr100
5	Local Anesthetic	Cr20
5	Total Anesthetic	Cr100
6	Antitoxins	Cr20
6	Antibiotics	Cr50
6	Blood Plasma	Cr10
6	Truth Drug	Cr5000
7	Atropine	Cr50
7	Antivenin	Cr50
8	Metabolics	Cr1000
10	Broad Spectrum Vaccine	Cr20
10	Antiviral Vaccine	Cr20
11	Combat Drug	Cr750
15	Anagathics	Cr20,000

PERSONAL TRANSPORT

Grav Belt: A standard-issue tech level 12 grav belt looks like a parachute harness with a "stiffener" that runs down the back, has a series of artificial gravity modules around the waist, and a series of low-energy thrusters for lateral motion. The grav belt weighs about 10 kg, but once it is turned on, a neutral control setting eliminates this weight.

The grav belt has a maximum speed in an atmosphere of 300 kph, a cruising speed of 225 kph, and a nap-of-earth speed of 40 kph.

TL	*Vol*	*Weight*	*Price*
12	25 liters	10 kg*	Cr100,000 (4 hours per charge)
15	15 liters	10 kg*	Cr110,000 (8 hours per charge)

*When not activated

Parachute: The parachute is a large canopy of cloth or other material held to the jumper's body by lines attached to a harness. The simple parachute affords only a small degree of control of the direction and rate of descent, for it is largely at the mercy of wind and drift effects.

Parachutes can use either static cord release (the chute is tripped automatically as the individual jumps) or ripcord release (either activated by the individual or by an automatic device preset for a given altitude). A static cord jump must be made from a minimum of 100 meters altitude and results in immediate deployment of the chute. The ripcord deployment requires 200 meters minimum altitude, but it also permits jumps from much greater altitudes with the chute opening delayed until the 200-meter level is reached.

A basic parachute weighs 10-15 kilograms; when packed, it fits into a pack worn either on the back or the front of the jumper's body. Many parachute packs incorporate a reserve parachute for use in case of faulty deployment of the main chute.

TL	*Vol*	*Weight*	*Price*
4	20 liters	15 kg	Cr250



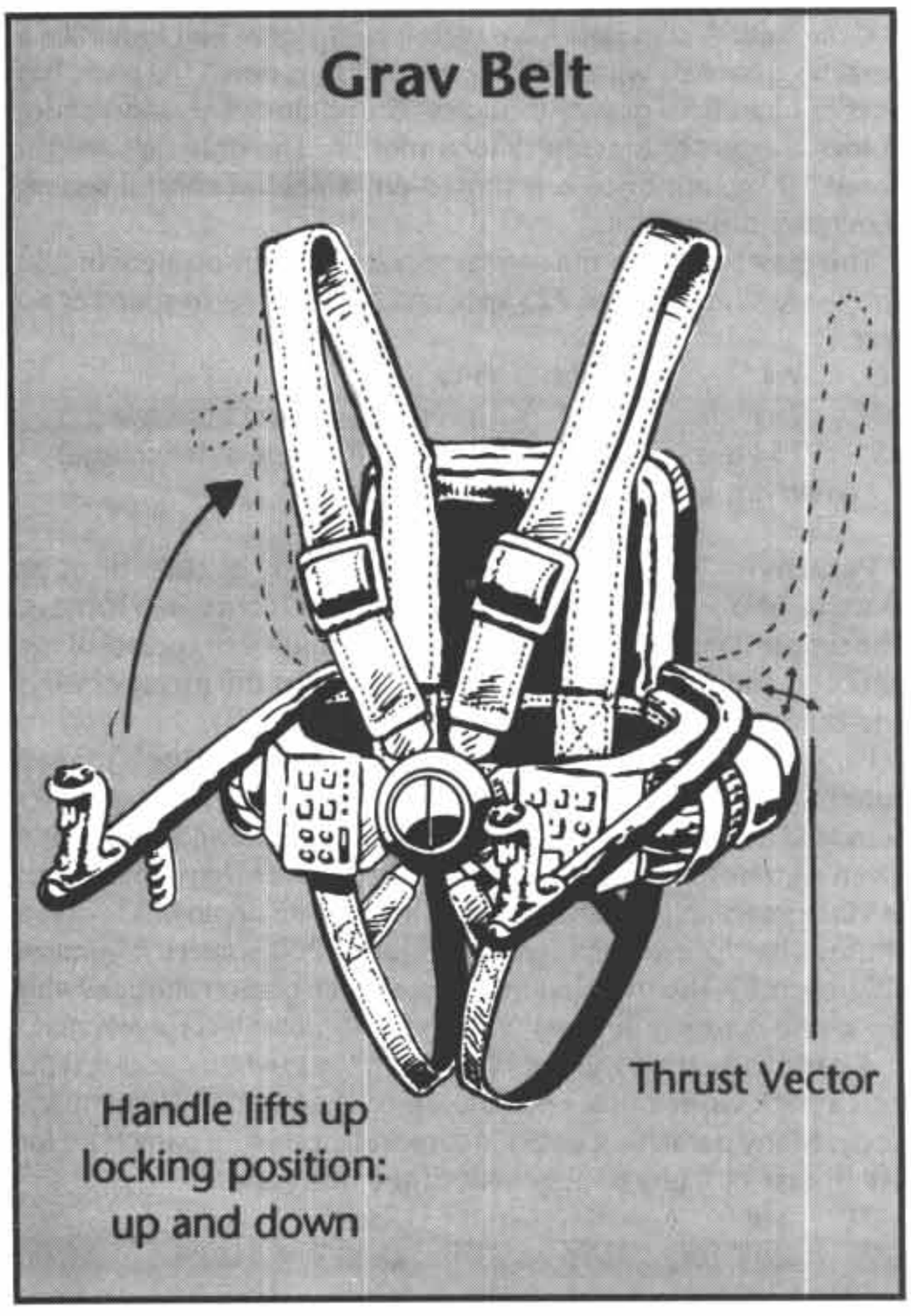
Parachute, Grav: Utilizing a basic grav technology, the grav chute is a compromise between the expense of grav equipment and the basic problems of regular parachutes. A simple grav module capable of nullifying a portion of the individual's body weight (but not of providing motive power, as with the grav belt) is worn as part of the chute harness; a conventional parawing is also deployed. Because the grav module can alter the effective weight of the jumper, it can be used to reduce the distance required for chute deployment by a factor of roughly three-fourths (thus chute deployment is not necessary until an altitude of about 50 meters). Varying the grav setting can also be used to alter the rate of descent, which is a particularly useful ability when staging a military raid.

The grav chute cannot fully offset body weight (normally) and certainly cannot provide lift; the small size of the power pack and the nature of the grav module itself will not permit this.

The parawing is used for steering, to back up the module in case of failure, and is necessary to check the final portion of the descent. It is virtually impossible for a jumper to miss a given target area using a grav chute.

The power pack is capable of operation for a total of five minutes. Power packs can be recharged from the usual power services or replaced at a cost of Cr500.

TL	*Vol*	*Weight*	*Price*
10	15 liters	15 kg	Cr2500



Parawing: More sophisticated than the parachute, the parawing is an airfoil-shaped chute which permits much more control of the descent. Hitting a given target area is easier with a parawing; other performance characteristics are as for the parachute.

Parawings are lighter but somewhat more expensive than standard parachutes. A ripcord release is standard for parawing chutes.

TL	*Vol*	*Weight*	*Price*
7	5 liters	5 kg	Cr400

Personal Reentry Kit: Originally invented as a means of emergency atmospheric reentry from a crippled space vessel, the personnal reentry kit was quickly adopted by the military and provided the glamorous *raison d'etre* for jump troops. So appealing is the image of meteoric descent from orbit that these kits have even enjoyed some popularity among hobbyists.

Each kit consists of an inflatable hemispheric mold, a pressurized cannister of ablative foam, a chemical thruster for attitude control and limited vector adjustment, and a soft landing system (usually a parachute).

TL	Vol	Weight	Price
8	20 liters	14.5 kg	Cr15,000
10	16 liters	11 kg	Cr12,000
13	12 liters	8 kg	Cr10,000

VAC SUITS

The rigors of alien environments contrast with shipboard conditions. When people face extremes of temperature, pressure, and atmospheric composition, a vac suit is the principal survival tool. At lower tech levels, these are unwieldy and uncomfortable, but they become lighter and more flexible with each technological advance. At the higher tech levels, the suits provide improved armor protection. At an additional cost, suits may be made self-sealing at tech level 13. At tech level 15, all suits are self-sealing. Vac suits consist of a suit, gloves, boots, and standard helmet; they protect against temperatures from +100 °C to –110 °C and pressures of up to 5 atmospheres.

At tech level 14, tailored vac suits become available. These include a soft helmet which is more comfortable but is wasteful of air supply: PLSS (see below) air supply duration is divided by two. Other advantages of a tailored suit are style and status.

At tech level 10, holographic heads-up displays become common in hard-helmet suits. The display shows the condition of the suit and the current battery level and air supply.

General-Purpose Vac Suits

TL	*Armor*	*Volume*	*Weight*	*Price*	*AGL Mod*
9	0(1)	3.6 kl	8 kg	Cr7000	–3
10	0(1)	2.7 kl	6 kg	Cr7000	–3
11	1	8 kl	4 kg	Cr7000	–2
12	1	0.9 kl	2 kg	Cr7000	–1
13	1	0.5 kl	—	Cr7000	
	Self-Seal Option		1 kg	+Cr6000	–1
14	1	0.2 kl	—	Cr7000	
	Self-Seal Option		0.5 kg	Cr5000	
15	1	0.2 kl	—	Cr9000	

Note that kl is kiloliters, 1 kl = 1000 liters.

Tailored Vac Suits

TL	Armor	Volume	Weight	Price	AGL Mod
14	1	0.2 kl	—	Cr9000	—
	Self-Seal Option		0.5 kg	+Cr6000	—
15	1	0.1 kl	—	Cr10,000	—

Hostile Environment Vac Suits

TL	Armor	Volume	Weight	Price	AGL Mod
8	0(1)	3.8 kl	35 kg	Cr12,000	–3
9	1	3.8 kl	40 kg	Cr16,000	–3
12	2	3.0 kl	40 kg	Cr18,000	–3
13	2	2.0 kl	10 kg	Cr20,000	–2
14	3	2.6 kl	25 kg	Cr150,000	–2

Accessories: Portable life support systems (PLSS) are a necessity; they can be purchased with different supplies of air. Batteries power the air supply recycler; a recharge lasts as long as the PLSS oxygen supply. Oxygen tanks provide oxygen, price and weights are included; separate table is for spares or replacements.

Portable Life Support Systems

TL	Type	Tanks	Duration	Volume	Weight	Price
9	A	2 std	4 hours	11 liters	7 kg	Cr3000
9	B	3 std	24 hrs (recycle)	20 liters	14.5 kg	Cr5000
9	C	6 std	48 hrs (recycle)	55 liters	29 kg	Cr8000
12	A	1 HP	4 hours	7 liters	4 kg	Cr3000
12	B	1 HP	24 hrs (recycle)	16 liters	11 kg	Cr5000
12	C	2 HP	48 hrs (recycle)	30 liters	18 kg	Cr8000
14	A	1 UHP	12 hrs (recycle)	1.5 liters	0.5 kg	Cr3000
14	B	2 UHP	24 hrs (recycle)	3.5 liters	2 kg	Cr5000
14	C	4 UHP	48 hrs (recycle)	7 liters	3.5 kg	Cr8000

Oxygen Tanks

TL	Type	Volume	Weight	Price	Refill
5	Standard	5 liters	2.5 kg	Cr500	Cr10
12	High-Pressure	4 liters	2.0 kg	Cr400	Cr10
14	Ultra High-Pressure	1 liter	0.5 kg	Cr200	Cr10

Hard Bubble Helmets

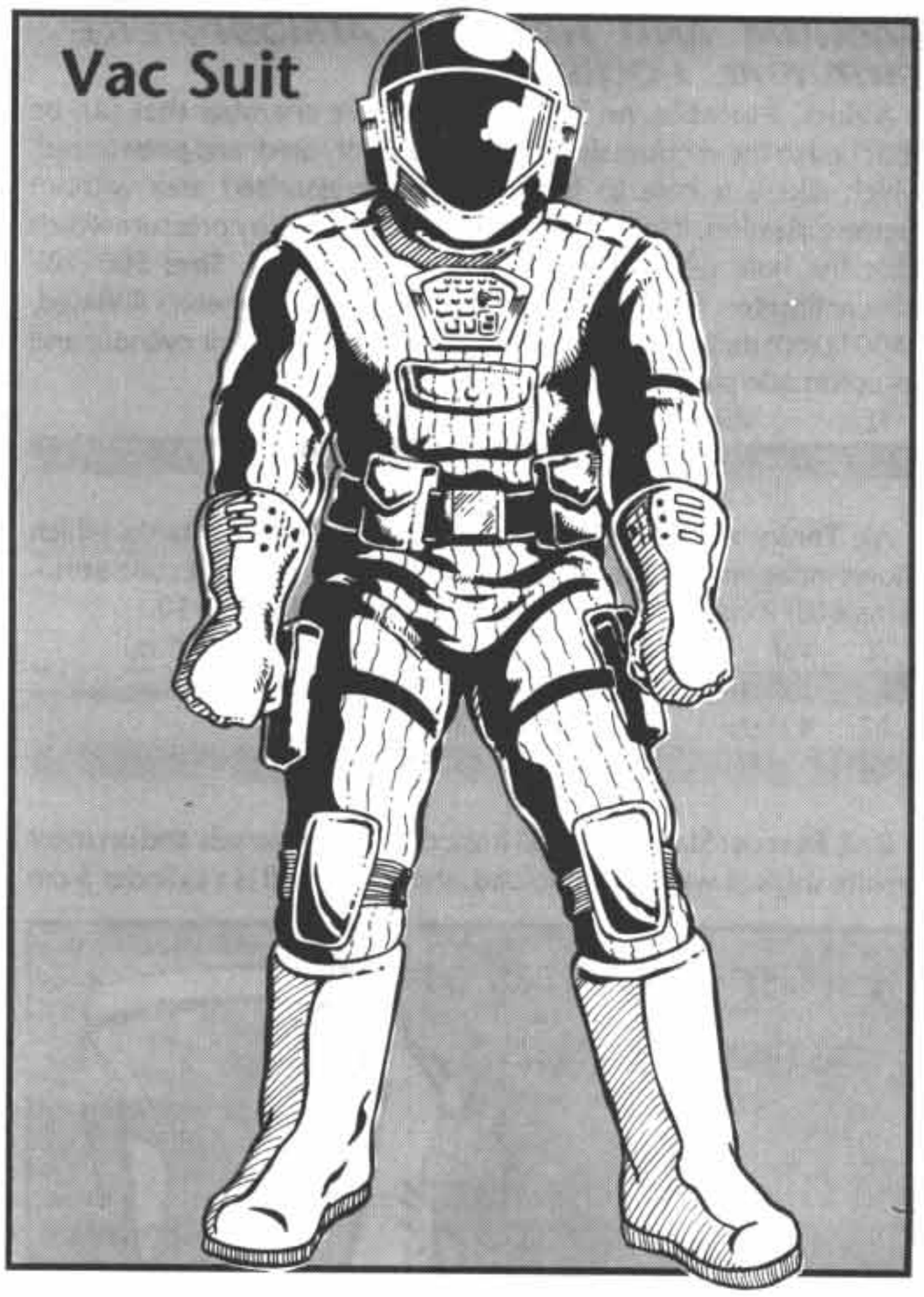
TL	Special Features	Volume	Weight	Price
8	None	14 liters	2 kg	Cr800
14	Integral Heads-Up Display	10 liters	1 kg	Cr1200

Miscellaneous Accessories: Magnetic grips, hand-held or fastened on boots, can make movement easier in low-gravity situations.

Suit patches come in handy in the event of a vac suit breach. They are unnecessary for small holes on self-sealing suits.

The thermal-meteoroid garment is a hooded, coverall-like garment added over the top of a regular vac suit. It lessens the risk from micrometeoroids, and can be used to temporarily "harden" a soft suit. It protects from +130C to –160C.

The long-range thruster pack (LRTP) is bulky, but it provides 1G acceleration for up to 24 hours, using standard starship fuel. It includes a TL-12 Type C PLSS (above) in its volume, weight, and price.



Miscellaneous Accessories

TL	Special Features	Volume	Weight	Price
5	Magnetic Grips	0.5 liter	—	Cr20
7	Suit Patches (pack of 5)	0.2 liter	—	Cr2
8	Thermal-Meteoroid Garment (Armor Value 1)	1 liter	—	Cr400
12	Long-Range Thruster Pack	65 liters	68	Cr8200

Special Purpose Vac Suits: The body pressure suit is light and comfortable (no encumbrance to Agility) to work in for short periods of time under mildly hostile atmospheric conditions. It can be worn under clothes but is of no benefit in pressures less than 0.43 atmosphere (Thin atmosphere) without the vacuum belt. The suit protects against temperatures +50 C to –40 C and pressures up to 2.5 atmospheres.

Body Pressure Suit

TL	Special Features	Volume	Weight	Price
10	Armor	0.2 liters	—	Cr12,500
10	Gloves, Helmet	16 liters		
	Air Charge (20 min)	0.75 liters	—	Cr250
10	Vacuum Belt	2 liters	1.5	Cr2500

VACUUM AND HOSTILE ATMOSPHERE SURVIVAL EQUIPMENT

Airlock, Portable: An inflatable, portable chamber that can be attached to the vacuum side of a bulkhead, entered, and pressurized, which allows a hole to be cut into a pressurized area without depressurization. It includes a patch held in place by pressure which seals the hole when the airlock is depressurized. Size: 500×20×200centimeters (deflated, 2000 liters); 1.5×1.5×2 meters (inflated, 4500 liters); deflated volume includes a pressurized air cylinder and an automatic pump.

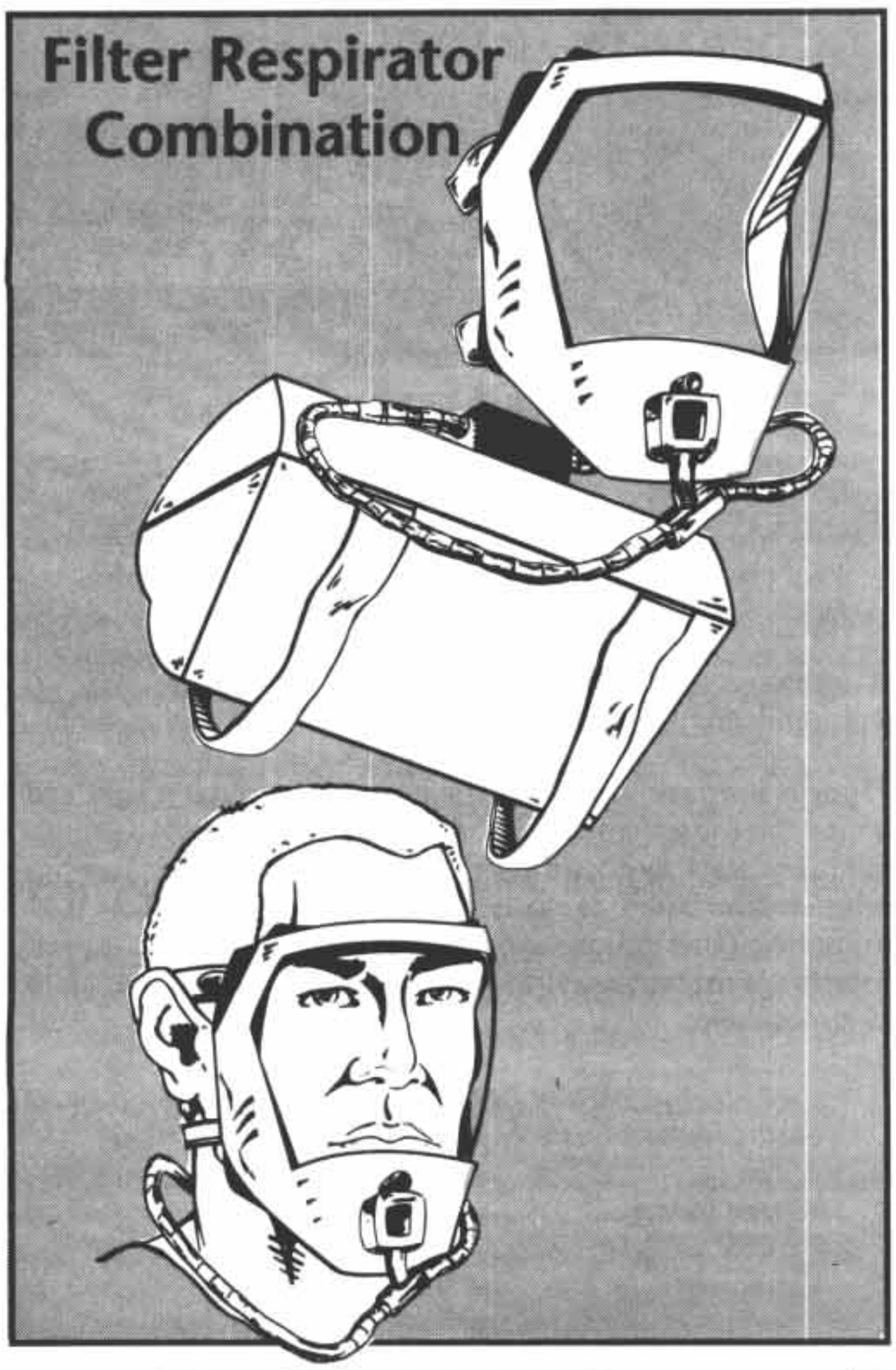
TL	*Vol*	*Weight*	*Price*
9	2000 liters	6 kg	Cr1000

Air Tanks: A complete set of compressed oxygen tanks which allows independent breathing in smoke, dust, gas, or Exotic atmosphere (UPP code A-C) and special situations. *Refill:* Cr10.

TL	*Vol*	*Weight*	*Price*	*Duration (hrs)*
5	5 liters	2.5 kg	Cr500	2
12	4 liters	2.0 kg	Cr400	4
14	1 liter	0.5 kg	Cr200	12

Ball, Rescue: Standard on all Imperial military vessels and on most private ships as well. When folded, the rescue ball is a cylinder 5 cm in diameter and 10 cm long. When deployed, it forms a sphere one meter in diameter which contains air sufficient to last one person for two hours. In the event of explosive decompression or other loss of air, a rescue ball allows an individual not in possession of a vac suit to survive until aid arrives. The user pulls a lanyard, climbs inside and seals the zip closure. The ball is made of a metal-coated plastic film for ease of location by radar and contains a bottle of compressed air, a first aid kit, and a transparent window through which the occupant may observe conditions outside the ball. Rescue balls provide some protection from stellar radiation and Corrosive and Insidious atmospheres for five to seven hours.

TL	*Vol*	*Weight*	*Price*
7	1 liter	5 kg	Cr150



Base, Advanced: Modular pressurized quarters for six persons, with airlock and atmosphere recirculating system. Can be carried in the hold of a starship.

TL	*Vol*	*Weight*	*Price*
8	72 kl	6000 kg	Cr50,000

Filter Respirator Combination: A combination filter mask and respirator which allows breathing of very thin, tainted atmospheres.

TL	*Vol*	*Weight*	*Price*
5	1 liter	0.5 kg	Cr150

Mask, Filter: A filter set which allows an individual to breathe tainted atmospheres.

TL	*Vol*	*Weight*	*Price*
3	1 liter	0.5 kg	Cr10

Mask, Protective: For use in irritant atmospheres, the protective mask covers the wearer's mouth, nose, and eyes, and it hooks up to an oxygen supply, which makes it ideal for use in atmospheres containing mild amounts of ammonia, sulfur compounds, or minimal amounts of chlorine.

TL	*Vol*	*Weight*	*Price*
6	1 liter	0.5 kg	Cr25

Respirator: A small compressor which allows an individual to breathe in very thin atmospheres.

TL	*Vol*	*Weight*	*Price*
5	1 liter	0.5 kg	Cr100

Survival Bubble: A large (two-meter-diameter) plastic sphere with alternating clear and opaque panels, and a small oxygen tank (capable of supporting one person for two hours) for inflation. Access to the interior is through a conforming plastic seal which functions similarly to an air-lock. The bubble can be used for life support in a vacuum (it can be moved by walking on the inside, treadmill fashion), and it can also be used for protection against weather or as a lifeboat on a sea surface.

TL	*Vol*	*Weight*	*Price*
9	3000 liters	3 kg	Cr600

Tent, Pressure: Basic shelter for two persons, which provides standard atmosphere. There is no airlock: The tent must be depressurized to enter or leave.

TL	*Vol*	*Weight*	*Price*
7	30 liters	25 kg	Cr2000

Wall Patches: Steel-backed plastic patches faced with adhesive, activated by peeling off a backing and placing the patch over a hole or leak. These will serve for several days, but must be placed on the interior surface of the leak so that pressure helps hold it in place.

TL	*Vol*	*Weight*	*Price*
10	1 liter	4 kg	Cr150

WILDERNESS EXPLORATION AND SURVIVAL EQUIPMENT

Backpack: Backpacks increase a character's carrying capacity.

TL	*Vol*	*Weight*	*Price*
3	40 liters	3 kg	Cr45

Beacon, Emergency: A combination long-range communicator and signal transponder, the commlink beacon is a very sophisticated emergency signaling device. The internal transponder monitors common emergency search-and-rescue channels (one at a time). When traffic is picked up on this channel, the device simultaneously emits a shrill warning tone to alert users to the possibility that help is at hand and transmits a coded distress signal. Some more expensive models have provision for a taped, auto-repeat distress call, instead of the automatic code signal. In either event, the commlink beacon serves as a means of establishing contact when there is any search being mounted within 500 kilometers, and then it serves to continue communications after that initial contact. The transponder operates for 30 days.

TL	*Vol*	*Weight*	*Price*
9	2 liters	1 kg	Cr750

Cabin, Prefabricated: Modular unpressurized quarters for six persons. 2x6x6 meters. Can be carried in the hold of a starship.

TL	*Vol*	*Weight*	*Price*
6	72,000 liters	4000 kg	Cr10,000

Crampons: Crampons are special spiked attachments strapped to boots to assist in climbs in icy conditions. Wearing crampons decreases the difficulty of crossing ice.

TL	*Vol*	*Weight*	*Price*
4	—	—	Cr20

Desert Survival Kit: A kit containing a variety of items useful in the desert. Includes a one-liter canteen; first-aid kit; salt tablets; folding shovel; plastic, watertraps, straws, and directions for building three solar stills; a knife and sheath; a signal mirror (for attracting the attention of searchers in the day-time); and a water purification kit (see below). The kit comes in a 30x12x12 centimeter pack which can be worn on the back or hip or attached to a larger pack.

TL	*Vol*	*Weight*	*Price*
5	4.5 liters	1 kg	Cr450

Machete: Blade used in cutting vegetation to clear a path, campsite, etc. As a melee weapon, treat as blade.

TL	*Vol*	*Weight*	*Price*
4	2 liters	1 kg	Cr125

Snowshoes: Large, somewhat awkward, but highly effective, snowshoes permit a character to increase speed over snow by 50%.

TL	*Vol*	*Weight*	*Price*
1	4 liters	1 kg	Cr60

Solar Vaporator: A device which collects moisture from the air, especially at night. Yield is two liters per 24 hours in standard or dense atmospheres; one liter per 24 hours in thin atmospheres; and 0.5 liter per 24 hours in very thin atmospheres. The vaporator is stored in a compact (50x20x20 centimeter) package, but it unfolds (an operation requiring five minutes) to 200x10x50 centimeter and stands on a tripod which takes up one square meter.

If the vaporator is not running throughout an entire 24-hour period, partial yields can be calculated by assuming that three times as much water can be collected at night as during the day (0.5 liter during the day on a standard atmosphere planet, 1.5 liter at night).

Solar panels provide power directly during the day and accumulate and store power for operation at night.

TL	*Vol*	*Weight*	*Price*
10	See above	8 kg	Cr1250

Still, Fusion: A bulky device which breaks water molecules free from material placed within it. The amount of water delivered will vary with the type of material fed to the still, but ranges from 1% for very dry sand to 70% for organic material such as wood, plants, or bodies. This percentage of weight in kilograms gives a one-to-one yield of water in liters (thus, 100 kg of sand will yield one liter of water). The still requires one hour to set up, and 30 minutes for each 10 kg of material processed; the hopper must be cleaned out after each load, which requires another 30 minutes.

TL	*Vol*	*Weight*	*Price*
13	150 liters	60 kg	Cr4500

Tarpaulin: A canvas or waterproof cloth sheet used for temporary shelter, measuring 2x4 meters.

TL	*Vol*	*Weight*	*Price*
1	4 liters	2 kg	Cr10

Tarpaulin, Reflectorized: An aluminized sheet which reduces incoming radiation by reflection, measuring 5x10 meters.

TL	*Vol*	*Weight*	*Price*
7	2 liters	1 kg	Cr400

Tent: Basic shelter for two persons. Larger, more elaborate tents weigh and cost more.

TL	*Vol*	*Weight*	*Price*
2	6 liters	3 kg	Cr200

Water Filtration/Distillation Unit: Purifies water for drinking. The unit includes a distilling plant, filters and purification tablets.

TL	*Vol*	*Weight*	*Price*
7	4 liters	1 kg	Cr75

Water Purification Kit: A bottle of 250 tablets to make contaminated water safe. One tablet in one liter will render water safe in 30 minutes. *Reliability:* NA at tech level 7 or higher; reliability equals tech level if tablets are over six months old at tech level 5 or 6.

TL	*Vol*	*Weight*	*Price*
5	—	—	Cr5

COMMUNICATION EQUIPMENT

Communicator: A communicator is defined as a radio transmitter/receiver combination capable of operating off an internal power source; it is portable in the sense that it need not be connected to a power supply. It may transmit and receive both voice and data. Communicators 0.1 liters and under can be worn as earpieces, which are unnoticeable to the casual observer.

TL	*Volume*	*Weight*	*Price*	*Range*
5	50 liters	100 kg	Cr225	3 km
5	100 liters	200 kg	Cr750	30 km
6	150 liters	300 kg	Cr10,000	3000 km
7	10 liters	20 kg	Cr250	30 km
8	0.1 liter	0.2 kg	Cr75	3 km
9	1 liter	2 kg	Cr500	300 km
9	10 liters	20 kg	Cr5000	3000 km
10	1 liter	2 kg	Cr250	30 km
12	1 liter	2 kg	Cr5000	3000 km
14	0.1 liter	0.2 kg	Cr500	300 km

Communicator, Laser: The laser communicator is a line-of-sight device with a 300-km range. This distance is seldom needed on a world's surface since the distance to the horizon limits the range first, but this range usually allows contact with an orbiting ship.

The laser communicator's main advantage is that it provides a tight beam and therefore a private means of communication. Series of laser communicators are often set up in a "repeater" network. Spaced at a horizon-to-horizon distance, the units can almost instantaneously convey a message around a world by retransmitting it from station to station.

TL	*Volume*	*Weight*	*Price*	*Range*
10	8 liters	16 kg	Cr11,000	300 km

Communicator, Video: The video communicator transmits a voice and two-dimensional image over a range of 300 km. The unit is small enough to be carried in a pocket or hung on a belt.

By opening the unit up, interior controls can preselect five different frequencies for current use; one of these can then be chosen using the frequency selection knob on the front of the communicator. The communicator can transmit and receive simultaneously.

TL	*Vol*	*Weight*	*Price*	*Range*
14	0.4 liters	0.8 kg	Cr1000	300 km

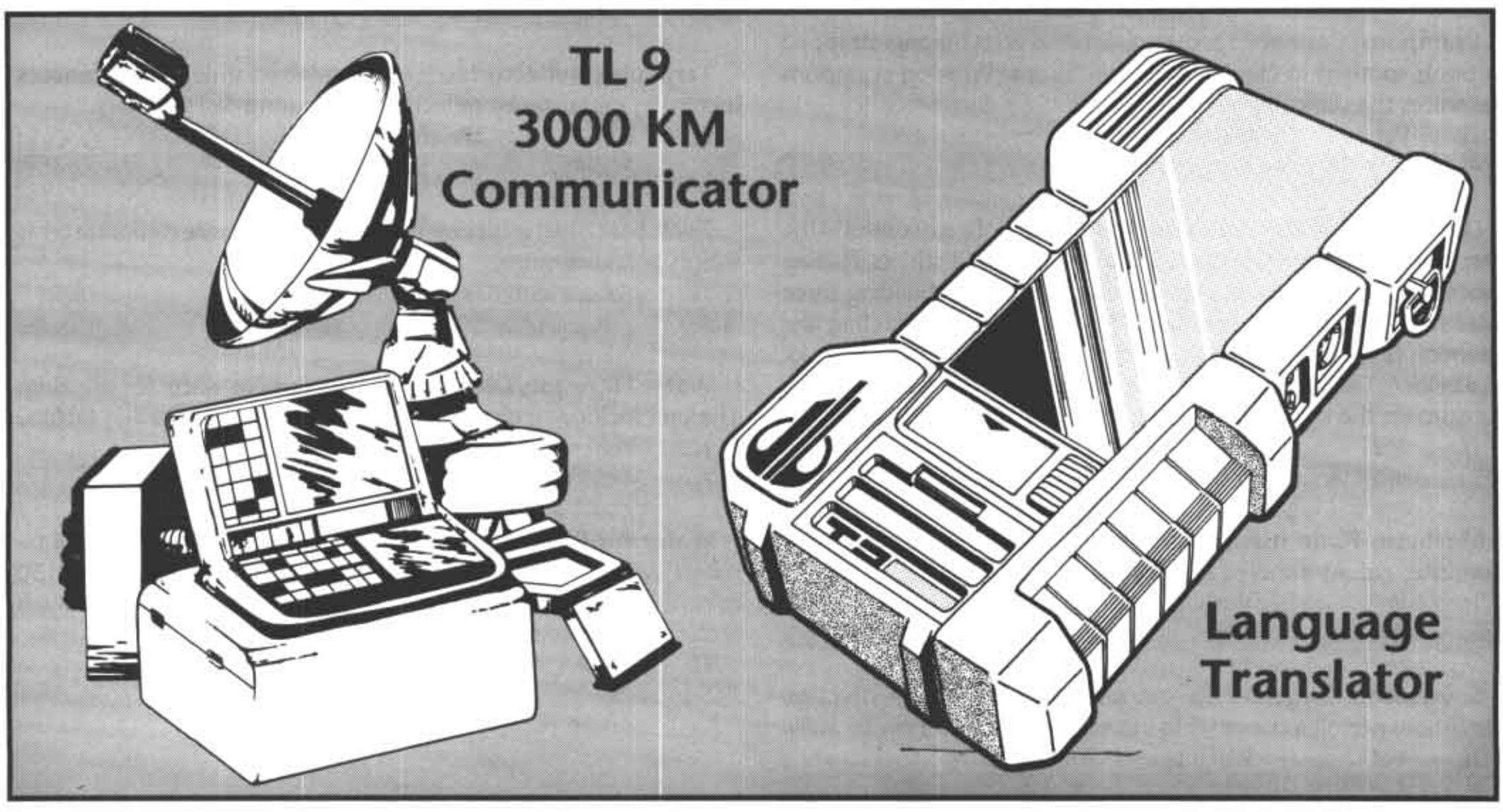
Translators, Language: With the diversity of languages in the former Imperium and neighboring regions, computer language translators (CLTs) became a fundamental element of interstellar trade and communication. Dozens of models could be purchased on worlds throughout the Imperium, and many are still available on worlds with a tech level of 10 or higher (even though it is a TL12 item).

The basis of all portable CLTs is a program package called a memclip. Each memclip contains programming for one language. These clips can be purchased with preloaded language programs for Cr100 to Cr150. Blank memclips cost Cr10 and are programmed by duplicating a preloaded program.

All CLTs work the same way. Two beings, each with a CLT and memclips for both his own and the other's language, adjust their units to a common radio frequency. Each speaks in his own language and the words are translated by the other's CLT and relayed to an earphone worn by the receiving being.

More than 700 languages were on memclips. The CLT can be carried in a hip pouch or by hand. CLTs have two to eight receptacles for memclips, plus the earphone. Prices vary. A standard CLT can be purchased for Cr2000. More expensive units have program correction features, more complete handling of idiomatic phrases, smaller size, bone implant speakers, greater durability, and a large capacity for multi-language conversations.

TL	*Vol*	*Weight*	*Price*
12	1 liter	0.5 kg	Cr2000



DATA STORAGE AND PROCESSING EQUIPMENT

Battle Computer: Man-portable battle-coordination system, capable of collating intelligence estimates, providing approximations of enemy forces, and suggesting tactics. It can be linked to unattended ground sensors to increase its potential, and can provide visual displays overlaid on maps when combined with a map box. When linked to a communicator, it can direct laser/maser-communication beams to ground or orbital stations, and it can automatically switch to secondary beam paths if primaries become unavailable.

TL	*Vol*	*Weight*	*Price*
9	28 liters	15 kg	Cr10,000

Calculator, Hand: Provides basic mathematical calculations.

TL	*Vol*	*Weight*	*Price*
7	0.25 liters	0.10 kg	Cr10

Computer, Hand: This is a small, powerful multi-function computer that can be used to store and recall basic factual data, perform complex calculations, and control other electronic devices.

Hand computers can be optimized for certain fields of knowledge by the use of modular data clips which can be easily inserted and removed (Cr200 each). When fitted with the proper data clip, the hand computer adds +1 to a character's asset for tasks of a purely factual or technical nature, such as Research tasks. Data clips for particular applications allow characters to use the hand computer to calculate jump parameters, ballistic performance, chemical formulae, etc.

The hand computer can be linked to various sensors (pages 346-7) and allows them to be monitored or controlled from a distance. The hand computer also serves as a computer terminal when linked to a larger computer (such as on board a ship).

TL	*Vol*	*Weight*	*Price*
11	0.2 liters	0.5 kg	Cr1000

Data-Display Recorder Headpiece: This headpiece represents a significant breakthrough in holographic display technology at tech level 13. A small rectangle of polylucent cuprothallium provides a constant heads-up three-dimensional display for the wearer. Although useless by itself, the headpiece can be interfaced with virtually any number of tech level 13+ devices.

Their use is common among bridge and engineering personnel on starships as well as smaller craft. For example, someone flying in a grav belt while using a neural activity sensor handset would find it inconvenient (to say the least) to refer to the readout on his backpack. Instead, the sensor's output is immediately displayed on his headpiece. At the same time, he can monitor his altitude, airspeed, position, and the operational status of his grav belt batteries and grav units. If he is also wearing a vac suit, he can read off his oxygen supply and internal temperature besides.

When desired, the headpiece can be swung out of the way above the head; when the display is turned off, the cuprothallium is transparent. About 3% of the population find it difficult to focus properly on the headpiece and are unable to use the device.

TL	*Vol*	*Weight*	*Price*
13	0.1 liters	0.1 kg	Cr5000

BATTERIES

A wide variety of equipment types require power, and an even wider variety of batteries are manufactured to provide that power. Rather than describe specific battery configurations, the following tables can be used to generate the characteristics of any size battery desired at any tech level.

The main table below lists the characteristics of batteries at each tech level assuming a constant discharge time of one hour. Batteries with longer discharge times have lower output per cubic meter, but usually provide more power over time.

To design a battery, follow these simple steps.

1. Determine the tech level of the battery and identify its row on the table.

2. Determine the power duration of the battery. This can be either 1 hour, 10 hours, 100 hours, or 1000 hours.

3. Multiply the maximum power output of the battery (at its tech level, found in the MW column of the table) by the output multiplier on the Battery Discharge Rate table (page 342). The result is the actual output per cubic meter of the battery.

4. Determine the power output level required of the battery. This will be determined by the power needs of the equipment the battery is to power.

5. Divide the required output per cubic meter of the battery (determined in step 4) by the actual output (step 3). The result is the volume (in cubic meters) of the battery. (Multiply this by 1000 to find the volume in liters).

6. Multiply the volume of the battery by the value shown in the Mass column to find the weight of the battery in tonnes. (Multiply this by 1000 to find the weight in kilograms.)

7. Multiply the volume by the value shown in the price column to in the price of the battery in MCr. (Multiply this by 1,000,000 to determine the price in credits.)

Basic Battery Data

TL	*Description*	*MW*	*Mass*	*Price*
4	Storage Batteries	0.04	2	.001
5	Storage Batteries	0.06	2	.001
6	Storage Batteries	0.08	2	.0008
7	Storage Batteries	0.1	2	.0008
8	Storage Batteries	0.2	2	.001
9	Storage Batteries	0.4	2	.002
10	Storage Batteries	0.8	2	.003
11	Storage Batteries	1	2	.004
12	Storage Batteries	1.5	2	.005
13	Storage Batteries	2	2.5	.008
14	Storage Batteries	2.5	2.5	.01
15	Storage Batteries	3	2.5	.015
16	Storage Batteries	3.5	2.5	.02
17	Storage Batteries	4	2.5	.025
18	Storage Batteries	6	3	.03
19	Storage Batteries	8	4	.04
20	Storage Batteries	10	5	.05
21	Storage Batteries	12	6	.1

MW: Maximum output at highest discharge rate, per cubic meter of battery.

Mass: Tonnes per cubic meter.

Price: Price in MCr per cubic meter.

Battery Discharge Rate

The battery's discharge time is the time it takes to drain the battery's charge. The energy output on the table below assumes a discharge time of one hour. If the output is lowered, the discharge time is increased, as shown below. Values may be interpolated.

Output	*Time*	*TL*
×1	1 hour	4
×0.1	10 hours	4
×0.02	100 hours	5
×0.004	1000 hours	6

Solar Arrays

Solar arrays consist of solar collectors, which collect solar radiant energy, and solar cells, which convert radiant energy to electrical energy. Each cubic meter of solar cell requires 10-square meters of solar collectors if deployed in the inner zone of a star system, 100 square meters of solar collectors if deployed in the habitable zone of a star system, and 10,000 square meters of solar collectors if deployed in the outer zone of a star.

TL	*Description*	*Price*	*Mass*	*Vol*
6	Solar Collector	.005	.008	.3
7	Solar Collector	.004	.006	.2
8	Solar Collector	.003	.004	.15
9	Solar Collector	.002	.003	.1
10	Solar Collector	.001	.002	.06
11+	Solar Collector	.001	.001	.04

Price: Price in MCr per square meter.

Mass: Tonnes per square meter.

Vol: Cubic meters of volume required per square meter of surface area if permanently installed.

The values above are for rigid, permanently installed solar collectors. If the solar collector can be retracted and deployed, double the price, mass, and volume requirement.

TL	*Description*	*MW*	*Price*	*Min Vol*
6	Solar Cell	0.01	.5	0.01
7	Solar Cell	0.015	.4	0.01
8	Solar Cell	0.02	.3	0.01
9	Solar Cell	0.025	.25	0.01
10	Solar Cell	0.03	.2	0.01
11	Solar Cell	0.035	.15	0.01
12+	Solar Cell	0.04	.1	0.01

MW: MW output per cubic meter.

Price: Price in MCr per cubic meter.

Min. Vol.: Smallest possible power plant in cubic meters.

Mass: All solar cells mass two tonnes per cubic meter.

Generators

Portable generators run on hydrocarbon fuels and are available in various increments of output power. The entry below shows the values for a generator per 10 kilowatts of output.

TL	*Vol*	*Weight*	*Price*	*Fuel (liters per hour)*
5	25 liters	25 kg	Cr50	2.5 (Cr0.25 per liter)
7	20 liters	20 kg	Cr100	3 (Cr0.25 per liter)
8	17 liters	17 kg	Cr170	2 (Cr0.25 per liter)
12	13 liters	13 kg	Cr267	2 (Cr1 per liter)

VISION ENHANCEMENT EQUIPMENT

Binoculars: Allows improved vision at greater distances than would unaided eyes.

TL	*Vol*	*Weight*	*Price*
3	2 liters	1 kg	Cr75

Binoculars, Electronic: Vision aid providing electronic enhancement of images. Electronic binoculars feature color enhancement (page 310) and range-finding capabilities in addition to the normal binocular benefits. Comes in an over-the-shoulder carrying case; a sling is also provided for separate carrying.

TL	*Vol*	*Weight*	*Price*
8	2 liters	2 kg	Cr750

Binoculars, Image Converter: Many night-vision devices and electronic sights either are sensitive to infrared (heat) radiation or use light amplifiers to detect their targets. Both have minor disadvantages: IR images can be camouflaged by insulation and LA requires background light to amplify. In addition, the user can only see as far as the unaided eye.

Commercially available at tech level 10, the image converter is sensitive to both infrared and visible light, and thus picks up both heat images and visible-light pictures. The converter intensifies these images, allowing night-vision, and magnifies them up to 20 times. Automatic polarizers cut in if the image is bright enough to blind. A laser rangefinder is also included to measure the precise distances to selected objects.

The Image Converter Binoculars combine the features of Image Intensification and IR goggles (page 310), and have a short range of 250 meters in either mode.

Special hardware/software clips are available for hand computers that expand the capabilities of the image converter. When hooked up to a computer using a graphics clip, the image converter can be tied into a map box (allowing others to see what the user sees), and electronic "photographs" can be stored in the computer's memory. Another clip allows the computer to calculate the speed of a target relative to the user.

Physically, the image converter is similar to a set of binoculars. Power packs are mounted inside the converter casing and average one week of constant use.

TL	*Vol*	*Weight*	*Price*
10	1 liter	1.25 kg	Cr3500

Binoculars, PRIS: The portable radiation imaging system (PRIS) has many more capabilities than binoculars from previous tech levels. The PRIS combines the features of the WSV viewer with color enhancement (page 310).

The PRIS can be set to observe images in the spectral range from infrared to gamma rays. (The PRIS will not detect radio waves.) The front surface of the PRIS is transparent to all radiation; just behind it is a series of lenses tailored to various specific bands. Besides this, a tight beam laser rangefinder gives an accurate reading on the target within sight up to about 20 km, depending on conditions, with the range displayed as a digital readout in the viewfinder. The PRIS also has a built-in clock and limited memory, so the rangefinder can determine the velocity of the object being viewed by comparing its distance from the observer over time.

The unit can be calibrated to a standard self-precessing gyrocompass, in which case the bearing of the direction viewed will be digitally displayed in the corner of the viewfinder. The magnification strength of the PRIS is adjustable up to 225. A built-in flywheel for gyro-stabilization ensures a steady field of view at all magnifications.

Besides its obvious uses in the field, the PRIS also finds itself used in a variety of industrial and engineering applications. Its infrared images can be color-coded to show the ambient temperatures of objects in the viewfinder. A PRIS can therefore be found near every jump drive, to be used by engineers looking for "hot spots" on the drive housing. In other areas of a ship, the PRIS can detect problems in electrical circuits, again by finding an area of higher temperature.

TL	*Vol*	*Weight*	*Price*
12	3 liters	2 kg	Cr12,000

Goggles, Combination IR/LA: These goggles combine light-amplification and infrared radiation detection in one unit and are worn like eyeglasses. They have the features of both IR and LA vision aids, see page 310. Most types have automatic sensitivity control in the LA mode to prevent blinding by a bright light source, and they can be adjusted manually in both the LA and IR mode by a knob mounted on the earpiece.

TL	*Vol*	*Weight*	*Price*
9	0.3 liters	0.2 kg	Cr1250

Goggles, Infrared: Allow wearer to see heat-emitting sources in the dark such as animals, fires, or hot engines. The quality of vision is necessarily distorted as heat sources and not reflected light images are being viewed. IR goggles also provide protection from wind-blown particles. See page 310.

TL	*Vol*	*Weight*	*Price*
6	1 liter	1 kg	Cr1000
8	—	0.1 kg	Cr500

Goggles, Light Amplifier: Allow vision by amplifying ambient light and are usable in anything less than total darkness. LA goggles may allow darkness penalties in night or combat situations to be reduced or ignored. LA goggles also provide protection from windblown particles. See page 310.

TL	*Vol*	*Weight*	*Price*
7	1 liter	1 kg	Cr1000
10	—	0.1 kg	Cr1000

Lamp, Gas or Oil: Provides about six hours of light (and heat). Refills of oil or gas cost Cr2 each.

TL	*Vol*	*Weight*	*Price*
2	1 liter	0.5 kg	Cr10

Lantern, Cold Light: The flashlight provides three days of light (no heat) in continuous use.

TL	*Vol*	*Weight*	*Price*
6	0.5 liters	0.25 kg	Cr20

Spotlight, Infrared: Powered by a vehicle or generator. IR goggles must be worn to see by this light.

TL	*Vol*	*Weight*	*Price*
6	3 liters	3 kg	Cr150

Spotlight, White Light: Powered by a vehicle or generator.

TL	*Vol*	*Weight*	*Price*
5	5 liters	5 kg	Cr100

Torches: Each lasts about 20 minutes.

TL	*Vol*	*Weight*	*Price*
1	1 liter	0.25 kg	Cr1

Torches, Electric: Each lasts about 10 hours in continuous use.

TL	*Vol*	*Weight*	*Price*
5	1 liter	0.5 kg	Cr10

Viewer, Tactical Thermal: This is a compact HRT (high resolution thermal) viewer which is tripod-mounted and battery-powered (with power for 10 hours of continuous use before recharging is necessary) and has a short range of 400 meters and is treated as a thermal viewer (page 310). The tactical thermal viewer allows users to "see" through fog, smoke, and in low-light conditions, provided the object is a different temperature than its background. This makes the viewer particularly useful for locating living beings and running machinery or vehicles.

TL	*Vol*	*Weight*	*Price*
9	10 liters	10 kg	Cr2250



Telescopic Sight: A telescopic sight may be mounted on any slug rifle. The sight increases the short range of the rifle by 15 meters (and by extension increases other range bands as well) when conducting aimed shots. In addition, all aimed shots at extreme range are conducted with the difficult of a shot at long range. Note that telescopic sights have no effect on unaimed fire (either quick shots or auto fire).

TL	Vol	Weight	Price
6	0.8 liters	0.1 kg	Cr200

Electronic Sight: An electronic sight has features identical to those of a telescopic sight (see above) with two exceptions. First, it increases short range for aimed shots by 20 meters, not 15 meters. Second, their image enhancement and light amplification characteristics allow firing at night. This second feature is not limited to aimed fire only, although unaimed fire using the night sight feature will not have the range bonus of the system.

TL	Vol	Weight	Price
9	1.5 liters	0.2 kg	Cr2000

Laser Sights: Laser sights do not increase the short range of a weapon, but project a small visible dot onto the point the weapon will hit, allowing quicker and more accurate aiming. A laser sight allows up to three shots fired during a turn to count as aimed shots (instead of only the first one). All other shots fired during the turn count as quick shots. The sight may only be used at ranges up to its maximum listed range. Laser sights *may* be fitted to pistols.

TL	Mass	Range	Price
8	1 kg	40 m	Cr400
9	1 kg	240 m	Cr1000
10	0.5 kg	240 m	Cr300



PROTECTIVE CLOTHING

Clothing, Cold Weather: At low tech levels, cold weather clothing consists of boots, pants, hooded coat, mittens, and face mask, made from animal skins sewn together. These items may be manufactured from local materials provided several large furs, properly cured, are available. At higher tech levels, the protection is afforded by a head-to-toe garment made of several layers of fabric around an insulating layer of fluffy fibers. Below tech level 7, immersion in water renders cold weather clothing totally ineffective.

TL	Vol	Weight	Price
1	16 liters	4 kg	Cr200
6	12 liters	3 kg	Cr200
10	8 liters	2 kg	Cr800

Goggles: Lightweight, plastic eye goggles which provide protection against both windblown sand or dust and sun glare.

TL	Vol	Weight	Price
5	—	—	Cr15

Heatsuit: A skin-tight, head-to-toe covering which provides protection against extreme cold. A power source drives a network of heating filaments in the fabric. An internal thermostat allows any apparent temperature, negating the effects of low temperatures and wind chill. The suit is powered by a disposable battery that powers the suit's filaments for 10 hours.

	TL	Vol	Weight	Price
Suit	8	—	—	Cr300
Battery	8	—	0.5 kg	Cr40

Heatsuit Power Pack: An energy source designed to replace the battery for a heatsuit. It powers the suit for up to 100 hours without recharging, and it is capable of recharging in one hour from any standard power source.

TL	Vol	Weight	Price
10	1 liter	2 kg	Cr500

Helmet, Transparent: A "goldfish bowl" type of helmet, this protective device has certain advantages over the protective mask. It is lighter, offers more complete protection against irritant atmospheres, and does not hamper the wearer as much as the clumsier mask. The helmet can also be worn with a protective suit or vac suit in corrosive atmospheres.

TL	Vol	Weight	Price
8	6 liters	0.75 kg	Cr30

Psionic Shield Helmet: Battery-powered helmet creating a weak electrical field at human brainwave frequencies; psionic-talented individuals perceive this as static, which prevents undesirable telepathic influences or psionic assaults. The helmet gives little physical protection, but it gives the wearer an automatic Psionic Strength rating of 15 (for purposes of defense against psionic assault only). Shielded individuals cannot be detected by characters possessing Life Detection, nor can they receive telepathic suggestions, nor can they be probed or have their thoughts read. The electronics of a psionic shield helmet are relatively simple, but one can break down or be sabotaged; a small meter on the unit allows testing of the helmet's effectiveness.

TL	Vol	Weight	Price
12	0.5 liter	1 kg	Cr4000
13	0.5 liter	—	Cr4000

Suit Air Conditioner: A cooling unit designed to function in hot atmospheres like the suit heater functions in cold.

TL	Vol	Weight	Price
8	6 liters	3 kg	Cr200

Suit, Desert Survival: Cover-all garment with shiny outer surface which prevents major water loss in the desert. The wearer is cooled through evaporation of perspiration, but a series of traps and chemical filters condenses and purifies lost body liquid and stores it as pure water in pouches within the suit. A hood, goggles, and breathing mask (which traps moisture exhaled through the nose and mouth) are included. The chemical filters must be changed once a month, at a cost of Cr50.

Besides keeping the wearer comfortable in sweltering conditions, the suit supplies one liter of water every three daytime hours, and one liter every night.

The suit has certain disadvantages. At TL 11 and lower, the bulkiness of the suit causes a –1 loss to Agility. Also, the suit is extremely shiny, which makes it almost impossible for the wearer to sneak up on anyone, even in rocky terrain. (This last disadvantage could be an advantage for characters lost in the desert who are hoping to be spotted by aircraft.)

Note that vac suits and combat armor will also, by their very nature, provide complete protection for desert travellers, at least as long as their air supply holds out.

TL	Vol	Weight	Price
9	20 liters	5 kg	Cr7000
13	5 liters	—	Cr9000

Suit Heater: A suit heating unit to combat the effects of low-temperature corrosive and insidious atmospheres. Without a heater, a protective suit is worthless in these conditions.

TL	Vol	Weight	Price
8	6 liters	3 kg	Cr250

Suit, Protective: Protects against corrosive atmospheres. The protective suit is sealed, air-conditioned, and has its own air supply (good for six hours). The suit has no water supply of its own, nor will it protect the wearer once the air supply gives out, but so long as it works, the wearer will not suffer the ill effects of the outside environment.

TL	Vol	Weight	Price
6	8 liters	7 kg	Cr1000

Suit, Protective, Heavy: Protects against insidious atmospheres. In other respects, it is similar to the protective suit.

TL	Vol	Weight	Price
7	10 liters	7 kg	Cr1400

TOOLS

Arc Welder: Operates off of an integral generator, which cannot be modified for other use.

TL	Vol	Weight	Price	Fuel Consumption
6	50 liters	75 kg	Cr1000	10 liters per hour

Carpentry Tool Set: Includes basic tools necessary to cut, shape, and build with wood. Woodworking may include construction and repair of shelters, buildings, or furniture.

TL	Vol	Weight	Price
2	30 liters	25 kg	Cr300

Electronic Tool Set: Necessary tools for basic assembly and repair of electronic devices such as communicators, detectors, sensors, and control instruments.

TL	Vol	Weight	Price
7	10 liters	5 kg	Cr2000

Excavating Tools: Picks, shovels, mattocks, and so on.

TL	Vol	Weight	Price
1	20 liters	20 kg	Cr250

Machine Shop, Portable: A trailer containing powered machine tools, including a bench grinder, horizontal and vertical boring machines, a milling machine, metalworking and woodworking lathes, and numerous other machine tools. Exact components and uses are left to the discretion of the referee. It can be towed by most ground vehicles with a cargo capacity of 0.5 tonnes or greater.

TL	Vol	Weight	Price	Power Requirements
6	8 kiloliters	2 tonnes	Cr1000	0.06 MW

Mechanical Tool Set: Includes basic tools necessary to repair and alter mechanical devices, including vehicles and guns.

TL	Vol	Weight	Price
5	30 liters	20 kg	Cr1000

Metalwork Tool Set: Includes basic tools necessary for metalworking, welding, and shaping. Metalwork may include the construction and repair of shelters, vehicle bodywork, and alteration of metal structural items.

TL	Vol	Weight	Price
4	50 liters	50 kg	Cr1500

NAVIGATION EQUIPMENT

Compass, Magnetic: Indicates direction of local magnetic north, if the world has magnetic poles. May be influenced and give false readings in the vicinity of large masses of iron.

TL	Vol	Weight	Price
3	—	—	Cr10

Map, Electronic: The "map box" is a compact (25x25x1 cm, which expands to 100 x100 x1 cm when opened) display system for computerized maps of a world. Scale may be adjusted. Most inhabited planets have mapclips (diskettes until tech level 13, holocrystals at higher levels) available for Cr150. When not available, two orbital sweeps of the world are required to obtain the necessary photographs to construct a map chip. Blank map chips are available for Cr30.

A map box automatically functions as a SatNav receiver (see next page).

TL	Vol	Weight	Price
9	1 liter	1 kg	Cr2500

Mirror, Return: A device consisting of several mirrors in combination such that they will reflect any incoming beam exactly 180 degrees within a field of 15 degrees. Largely a curiosity, the mirror is used in laser surveying. It is also effective in reflecting back any weapons laser which does not have a penetration value (i.e., Nil). A laser with any penetration value will immediately destroy the reflective surface of the mirror.

TL	Vol	Weight	Price
9	15 liters	20 kg	Cr500

Navigator, Inertial: A small (10×6×1 centimeters) inertial navigation computer which allows the user to backtrack on his path by "remembering" movements and turns. Switched on at the point from which the user sets out, it will allow him to find his way back later from any distance. A simple math function can also allow the user to determine a straight line distance and direction to his starting point no matter where he is.

TL	*Vol*	*Weight*	*Price*
8	0.2 liter	0.15 kg	Cr1500
10	—	—	Cr750

Satellite, Navigational: A small satellite placed in synchronous orbit over the hemisphere where exploration is taking place. It provides moment-by-moment information on the precise location of a tracking unit on the ground with an accuracy of one meter or less. For twice the size and price listed below, the satellite can relay the tracking unit (which would then include a TV-like viewscreen) to a plot projected on an accurate map of the region, which is created by the satellite through a combination of laser and radar mapping techniques. A small nuclear power plant provides over a year of operation without servicing, and the satellite can be retrieved and used over and over.

In order to use a navigational satellite, the personnel must have some form of SatNav (satellite navigation) receiver. This can be the small separate SatNav Receiver listed immediately below, or a receiver which is built into another piece of equipment. All standard, (St), fiber-optic (Fb), and flight (Flt) computers include integral SatNav receivers, although flight computers do not include viewscreens. There is also a SatNav Receiver clip available for the hand computer. The electronic map (previous page) also includes an integral SatNav receiver.

TL	*Vol*	*Weight*	*Price*
9	300 liters	100 kg	Cr35,000

SatNav Receiver: This is a small hand-carried receiver for use with the navigational satellite (above), used by personnel who lack access to larger equipment with integral receivers. All of these receivers can be linked into other electronic data systems to display their data. The different entries at each tech level are without and with viewscreens, respectively. Those without viewscreens merely display numeric coordinates which must be placed on maps that are scaled in the proper units.

The receivers include integral batteries which are good for 100 hours (TL 8) or 1000 hours (TL 10+) between recharges. The small tech level 10+ receiver is about the size of a wrist watch.

TL	*Vol*	*Weight*	*Price*
8	1 liter	1 kg	Cr1000
8	8 liters	8 kg	Cr20,000
10+	—	—	Cr300
10+	2 liters	2 kg	Cr4000

SENSOR DEVICES

Atmosphere Tester: A solid-state device with read-outs indicating the atmospheric percentages of elements present. In addition, a red light glows if the atmosphere is not breathable, and a green light glows if the atmosphere is breathable.

TL	*Vol*	*Weight*	*Price*
7	2 liters	1 kg	Cr150

Bugs and Detectors: Bugs are near-microscopic, difficult to detect monitoring devices, which enable an individual to hear conversations or to record them for later monitoring. Typically, a bug array is packaged as a small rod containing fifty implantable bugs, together with a bug detector. Placed by touching the rod to a wall joint, light switch, or some other feature of a room, implanted bugs are not recoverable, but they can be destroyed. Bugs send a constant signal to a central monitor. Bugs, once placed, are impossible to detect without a bug detector. A detector is calibrated to detect the signals of bugs and to note their location. A bug detector can be set on one of three settings: detect, smother, or destroy. "Detect" merely indicates the presence and location of a bug. "Smother" prevents a bug from sensing conversations, but allows the bug to remain active. "Destroy" actually destroys the bug which has been detected.

TL	*Vol*	*Weight*	*Price*
15	1 liter	1 kg	Cr1000

Counter, Radiation: Indicates presence and intensity of radioactivity in the immediate vicinity. Can be preset to give a warning signal if levels of radioactivity rise to dangerous levels. Readouts are given in specifics and in terms of danger to humans.

TL	*Vol*	*Weight*	*Price*
5	2 liters	1 kg	Cr250
10	—	—	Cr100

Densitometer, Hand-Held: An outgrowth of gravitics technology, the remote densitometer uses an object's natural gravity to measure its density.

The densitometer is able to map and display areas of different relative densities, which makes them useful for detecting and mapping the extents of mineral deposits. They can also be used to detect the presence of objects in empty areas, such as spacecraft or asteroids in open space.

TL	*Vol*	*Weight*	*Price*
14	15 liters	7 kg	Cr15,000
15	3 liters	2 kg	Cr25,000

Detector, Metal: Indicates presence of most metals, although degree of reaction depends on amount of metal present and on proximity.

TL	*Vol*	*Weight*	*Price*
6	2 liters	1 kg	Cr300

Detector, Stress: The linear descendant of the polygraph, the stress detector uses readings of a suspect's physical responses, voice stress, and similar phenomena to establish the individual's degree of truthfulness under questioning. It is not, however, necessarily accurate in its readings, and the interpretation of readings is a complex matter.

TL	*Vol*	*Weight*	*Price*
14	2 liters	6 kg	Cr1500

Echo Sounder: A device which sends out a pulse of high-frequency sound and then reads returning echoes to give a range between the sounder and any obstruction. Low-cost models are usually effective to no more than 80 meters, and at ranges of over 40 meters they have little accuracy. More sophisticated models (available at tech level 7) are capable of showing a fairly detailed display of the area at which they are aimed, including animal life and other details.

Echo sounders are usually mounted aboard boats and submersibles, where they serve as depth finders. Portable models, however, can be mounted in waterproof camera housings and used by divers. They not only determine depth but also can be used to find horizontal ranges.

TL	*Vol*	*Weight*	*Price*
6	2.5 liters	1 kg	Cr300
10	0.4 liters	0.2 kg	Cr150

Sensor, NAS, Portable, and NAS Handset: Developed from tech level 12 psionic helmet theory, the neural activity sensor (NAS) was first used medically. It remotely detects the electrical activity of a life form's central nervous system and classifies it according to amount and complexity. The data system compares the activity pattern to known types of life, especially intelligent life.

The portable unit has a short range of 75 meters. It consists of a backpack and a handset with a retractable parabolic dish focuser. The handset in fact is not attached to the backpack, and it can be operated up to 100 meters distant, which further extends the range.

Description	*TL*	*Vol*	*Weight*	*Price*
NAS Backpack	15	20 liters	10 kg	Cr15,000
NAS Handset	15	0.5 liters	0.3 kg	Cr20,000

"Sniffer" Bioscanner: The bioscanner "sniffer" scans for evidence of biological, metabolic activity in the area. It is a highly advanced combination sampler/analyzer. The tech level 15 sniffer is a breakthrough in molecular analysis. The device provides both improved analysis speed and a cheaper price than sniffers of tech level 14 and less. Not only is the bioscanner useful for biological studies, but it also helps with regular chemical analysis. (A cheaper and smaller tech level 15 chemical analyzer is available, but it is not very useful for biological scanning).

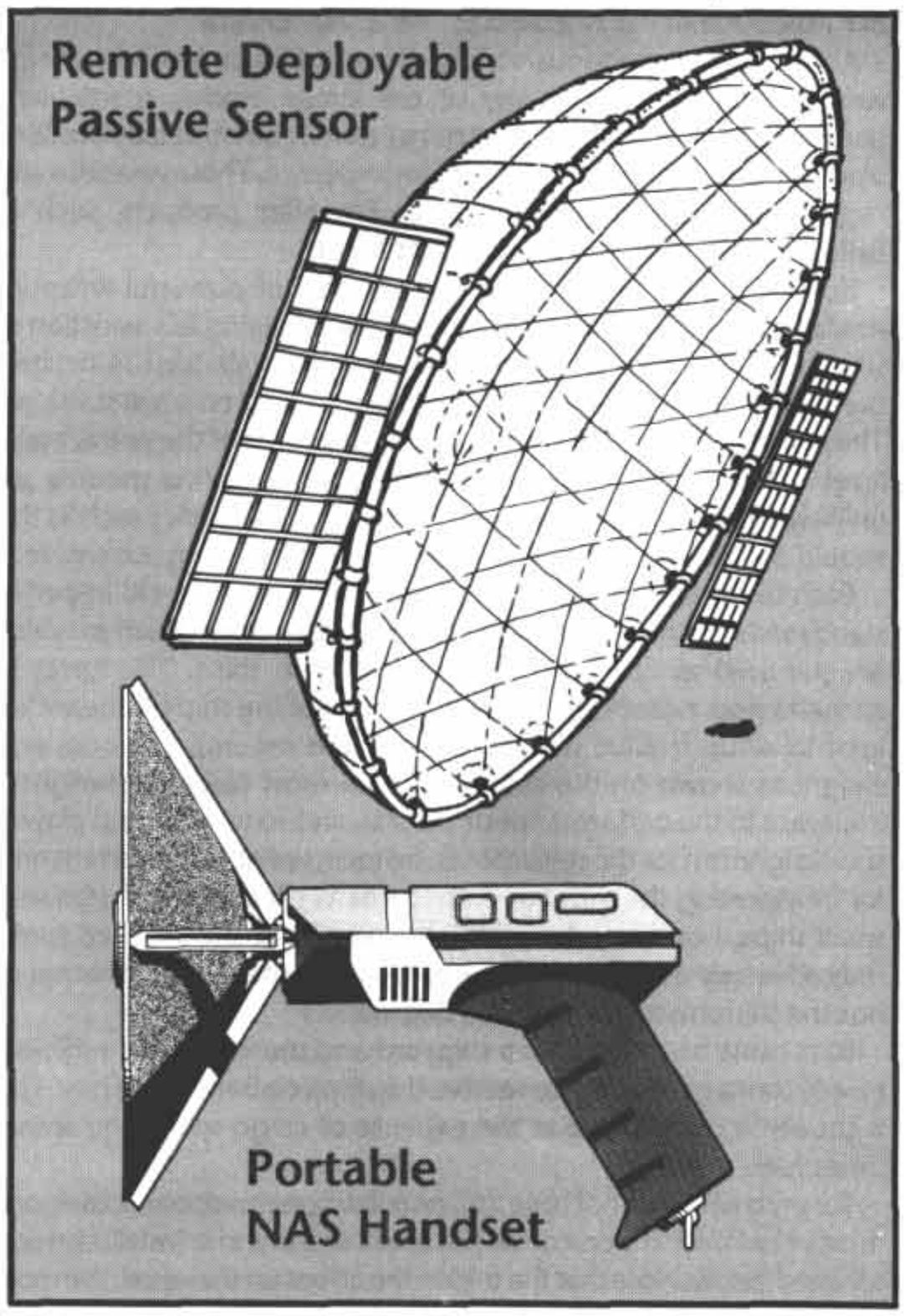
The portable tech level 15 unit listed here incorporates both analyzer and collector into one. It has two modes and corresponding equipment: one mode for mass sampling of atmospheric content and the other for minute sampling.

The evidence of biological activity must be within short range of the scanner, for anything beyond short range is undetectable. The bioscanner helps a user to recognize or categorize evidence of familiar and unfamiliar organisms, which allows ecological classification, determination of potential hazards to other life forms, and estimation of potential uses (form of food, commercially valuable).

TL	*Vol*	*Weight*	*Price*
15	8 liters	3.5 kg	Cr350,000

Radar, Field Surveillance: The field surveillance radar is designed to provide surveillance of open approach areas in conditions of limited visibility when personnel limits make regular sentry duty impractical. It has a short range of 300 meters (extreme range of 2400 meters) and comes with a tripod mount. The detection roll is made based on the Sensors skill of the operator who installed the radar, even if it is left untended and operating in a remote mode. The radar will detect moving objects with a gross volume of about 0.1 kiloliter or more. The radar must be connected to a vehicle power source or a generator of some kind with output of 0.002KW to function.

TL	*Vol*	*Weight*	*Price*
9	10.5 liters	20 kg	Cr5000



Radar Power Pack: A battery pack which provides sufficient energy to power the field surveillance radar for 100 hours.

TL	*Vol*	*Weight*	*Price*	*Power*
9	250 liters	500 kg	Cr500	0.002 MW

Remote Deployable Passive Sensor (RDPS): This is a very large passive EMS array, whose antenna size precludes deployment as part of a starship's sensor suite. Instead, the array is collapsible, with all structural supports made of hollow flexible tubing with sensor receivers attached along their length. The entire sensor folds into a comparativly compact continer. Upon release by the starship (usually through an open cargo hatch) it deploys by inflating the structural members with inert gas at low pressure.

The deployed sensor array is 400 meters in diameter and includes a laser communicator for tight-beam data transfers to the mother ship. Once launched the array drifts freely, as it has no means of propulsion. The sensor does include a closed-cycle fuel cell with fuel sufficient for 24 hours of continuous operation. Permanently deployed RPDS units are usully supplied with a solar array (illustrated) for power.

TL	*Vol*	*Wt*	*Power*	*Price*	*Short Range*
10	26/260*	260 tonnes	0.45 MW	MCr2600	8 range bands

*Volume collapsed/deployed in kiloliters.

STARSHIP ENERGY WEAPONS

Although a tremendous variety of performance levels in energy weaponry is available, many of the larger models (particularly particle accelerators and meson guns) cannot be carried by the fairly small ships shown in the basic roleplaying game. These weapons and larger vessels are covered in other **Traveller** products, such as **Brilliant Lances** and **Fire, Fusion, & Steel.**

However, even small ships have a variety of powerful weapons available to them, particularly lasers. The following is a selection of standard modular three-ton (42 kiloliter) turrets, six-ton (84 kiloliter) barbettes, and larger bays which can be installed on small starships. They are available at most functioning shipyards of the correct tech level, although this means that the higher tech level mounts are unlikely to be routinely available. Higher tech weaponry such as this should only be provided as the result of a roleplaying adventure.

Each turret and barbette is designed to fit into the old Imperial-standard turret hardpoint socket or barbette socket, both of which are still used as common design features in ships. The turret or barbette does not add to the displacement of the ship (as the socket itself takes up the full displacement of the mount), but does add weight as shown on the chart below. In most cases this weight is irrelevant to the performance of the ship and so referees and players should ignore it for those purposes. Instead, weight is important only for transporting the turret or barbette before it is installed. (On very small ships, however, the additional weight of the installed turret may adversely effect performance. It is up to the referee whether or not the performance should be degraded.)

Bays must be installed at a shipyard and there must be sufficient empty tonnage in vessel to receive the displacement of the bay. This is usually accomplished at the expense of cargo space and sometimes fuel.

For ships which do not have a turret or barbette hardpoint socket, one must be installed. The cost of the hardpoint socket and its installation cost are listed below. Note that the thicker the armor on the vessel, the more expensive it is to install the socket.

Installing the turret or barbette itself into an already installed socket costs 5% of the cost (MCr ×0.05) of the turret or barbette itself.

Turret Hardpoint Socket

Displacement: 3 displacement tons; **Mass:** None
Starport Required: Type C+ (double price at type C starport)
Price (Including Installation): MCr = (hull armor+50) ×.0001

Barbette Hardpoint Socket

Displacement: 6 displacement tons; **Mass:** None
Starport Required: Type C+ (double price at type C starport)
Price (Including Installation): MCr = (hull armor+50) ×0.0001

Bays

Bays are built in 50-ton and 100-ton versions. There are no standard sockets for bays, and they are instead custom installed. Installation price of a 50-ton bay in MCr is equal to (hull armor+50)×0.001. Installation price of a 100-ton bay in MCr is equal to (hull armor+80) ×0.001.

Weapons Listing

Each weapon includes a fire control workstation for a gunner and may either be fired from the turret/barbette workstation or patched into a master fire director (if the ship has such a device).

TL: This is the tech level of the weapon, and determines the lowest tech level world on which the weapon can routinely be purchased. Turret and barbette weapons and their beam pointers are self-contained systems and so the tech level of the ship's computer does not limit the tech level of mounted turrets. A TL-15 laser turret, for example, can be mounted in any turret hardpoint socket in any tech level ship.

Description: This indicates power of the laser's pulse (in megajoules) and the mount type: turret (3 displacement tons), barbette (6 displacement tons), or bay (either 50-ton or 100-ton displacement).

MW: This is the continuous power requirement of the mount.

If more power is provided to the weapon it increases the rate of fire. This does not allow the weapon to make more hit rolls in a turn, but rather allows it to ignore difficulty level increases the same as if it was using a master fire director. If power input is multiplied by 5, the laser may ignore one difficulty level increase. If power input is multiplied by 10, the laser may ignore two difficulty level increases.

For example, the TL10 laser turret requires 1.6 MW per turn. If 1.6 MW were allocated to the turret, it would fire normally. If 8 MW were allocated, it could ignore one difficulty level increase. If 16 MW were provided, it could ignore two difficulty level increases.

Wt: The weight of the weapon in tonnes.

Short: The first number is the short range of the weapon in starship combat range bands (tenths of a light-second). The first number following the colon is the penetration rating of the weapon and the second number (following the dash) is the damage value of the weapon.

Medium, Long, Extreme: These show the same values as above but for the weapon's medium, long and extreme range.

Socket Laser Turrets and Barbettes

TL	Description	MW	MCr	Wt	Short	Medium	Long	Extreme
9	70 Mj laser, 100-ton bay	1.9	267	1402	1:1/7-21	2:1/3-10	4:1/2-5	8:1-3
10	60-Mj laser turret	1.7	1.56	55	1:1/6-19	2:1/6-19	4:1/3-9	8:1/2-5
10	450 Mj laser, 50-ton bay	12.5	104	873	4:1/17-53	8:1/17-53	16:1/9-28	32:1/4-14
11	80-Mj laser turret	2.2	2.08	59	2:1/7-22	4:1/7-22	8:1/6-19	16:1/3-10
11	150-Mj laser barbette	4.2	6.56	119	10:1/10-31	20:1/5-17	40:1/3-8	80:1-4
12	120-Mj laser turret	3.3	0.94	65	4:1/9-27	8:1/9-27	16:1/6-19	32:1/3-9
13	150-Mj laser turret	4.2	0.72	68	1:1/10-31	2:1/10-31	4:1/10-31	8:1/10-31
13	106-Mj laser turret	2.9	1.45	59	10:1/8-26	20:1/6-20	40:1/3-10	80:1/2-5
14	150-Mj laser turret	4.2	0.72	63	2:1/10-31	4:1/10-31	8:1/10-31	16:1/10-31
14	300-Mj laser barbette	8.3	2.16	131	10:1/14-43	20:1/14-43	40:1/8-26	80:1/4-13
15	150-Mj laser turret	4.2	0.86	57	10:1/10-31	20:1/10-31	40:1/10-31	80:1/10-31

STARSHIP MISSILES

Starship missiles are launched from missile turrets or barbettes which fit into the standard hardpoint sockets. Missile turrets and barbettes are equipped with a gunner's workstation and a 300,000km range communication laser, which is used to control the missile in flight. The only difference between turrets and barbettes is the number of missiles carried.

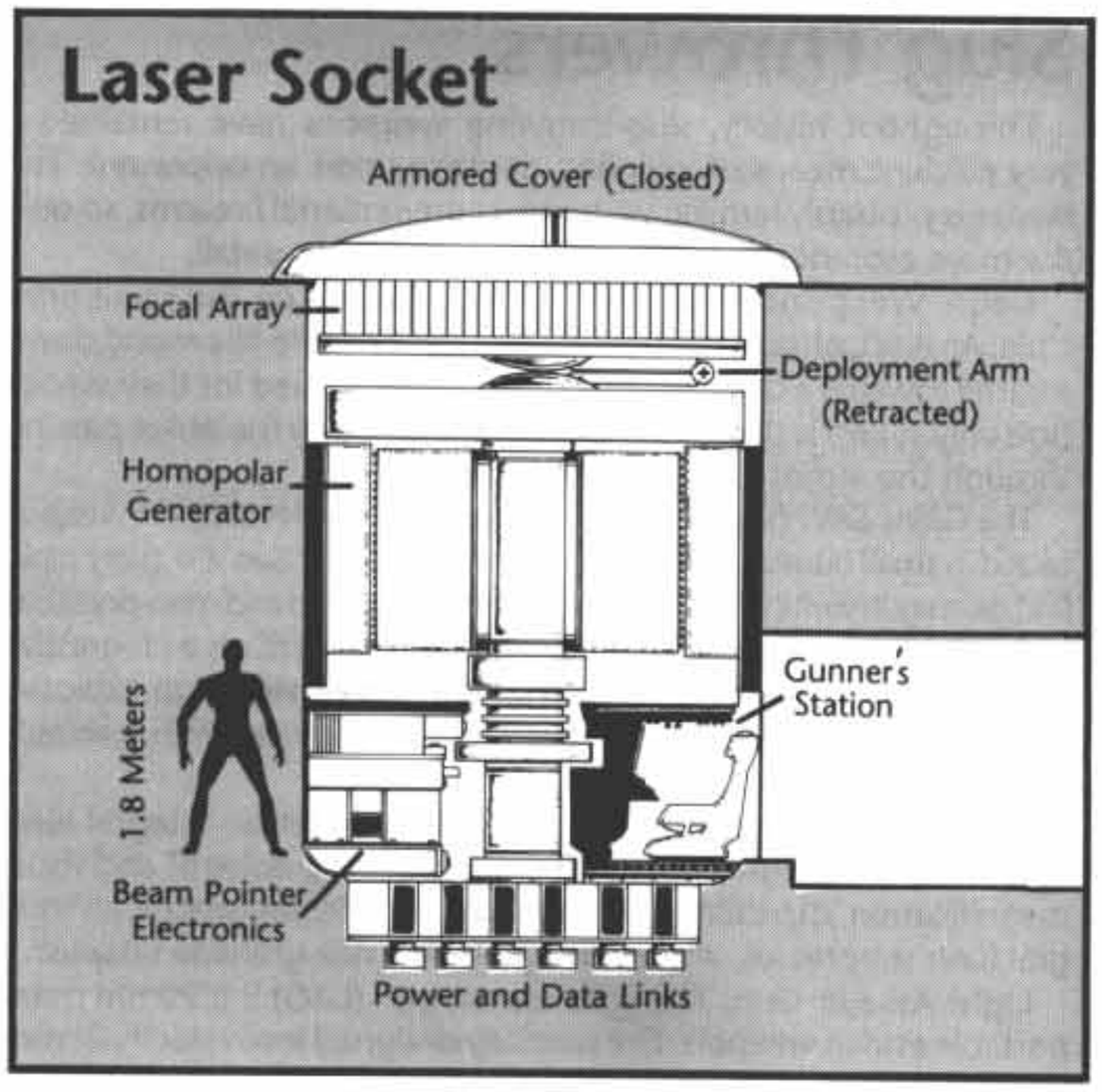
Additional missiles may be carried in cargo spaces, but an hour is required to reload a turret or barbette once its missiles are expended.

Missile Launchers

Type	TL	Missiles	Volume (kl)	Mass (tonnes)	Power (MW)	Price (MCr)
Turret	8	2	42	28.4	0.15	0.08
Barbette	8	5	84	70.4	0.15	0.11

All of the missiles listed below are all of the nuclear detonation variety. The table below gives their warhead yield for those who are interested, as well as the number of G-turns of fuel carried, and the damage value of its laser. Note that each of these missiles can, if desired, spend all of its G-turns of fuel in a single turn, or spread it out over several turns.

Each time one of these missiles hits its target, roll 1D6, the result being the number of actual laser pulses which hit. Roll hit location and damage separately for each of these hits.



Missiles

TL	Guidance	Yield	Mass	MCr	G-Turns	Hits	Damage	Range	Comm	Sensor	Signatures
8	Controlled	50	7	0.85	10/10	1D6	1/14-43	0	10L	—	+2/+2/+2/+2/+1
9	Controlled	50	7	0.85	12/12	1D6	1/14-43	0	10L	—	+2/+2/+2/+2/+1
11	Controlled	100	7	0.95	12/12	1D6	1/18-56	0	10L	—	+2/+2/+2/+2/+1
12	Semi-Ind.	500	7	2.0	8/8	1D6	1/25-79	0	10L	1P	+4/+3/+4/+3/+1
13	Controlled	200	7	1.15	12/12	1D6	1/21-66	0	10L	—	+2/+2/+2/+2/+1
14	Semi-Ind.	500	7	2.7	8/8	1D6	1/25-79	0	10L	3P	+4/+3/+4/+3/+1
15	Controlled	500	7	1.25	12/12	1D6	1/25-79	0	10L	—	+2/+2/+2/+2/+1

Yield: Warhead yield; **Mass:** In tonnes; **MCr:** Price in millions of credits; **G-Turns:** Number of G-turns of fuel carried (followed by maximum number of G-turns which can be used in a single turn; **Hits:** Die roll for number of hits from the laser; **Damage:** Damage value of each laser hit; **Range:** Absolute range in range bands (0 = same range band only); **Comm:** Type of communicator (L = laser) with short range in range bands; **Sensor:** Sensor short range (in hexes) and type (P = passive EMS); **Signatures:** Missile's signature vs. radar, active EMS, HRT, passive EMS, and fire

Nuclear Dampers

A nuclear damper unit manipulates the strong and weak forces to render nuclear warheads incapable of detonating.

Damper units are mounted in barbettes and turrets and fit into standard hardpoint sockets. Each has space for one crewmember.

TL	Description	Mass (tonnes)	Price (MCr)	Power (MW)
12	Damper Barbette	75.2	1.95	15
13	Damper Barbette	72.2	2.7	9
14	Damper Barbette	60.2	4	6
15	Damper Turret	33.2	4.5	3

Sandcasters

A sandcaster is a turret-mounted anti-laser defensive system. The turret projects an electromagnetic field and uses the field to hold in place a cloud of highly reflective crystals of silicon, called sand (although it is artificially manufactured, not the kind found on beaches). The turret contains a gunner's workstation, a series of linked laser sensors to warn the gunner (or fire director) when a ranging or targeting laser is focused on the ship, an electromagnetic field generator, and a magazine of sand canisters.

All sandcaster turrets fit in the standard turret hardpoint socket. Each turret masses 50 tonnes, requires 1MW of continuous power while in operation, and has space for one crewmember.

The table below lists the price of the turret in megacredits, the number of sand canisters carried in the turret, and the beam reduction made per successful beam interception. Additional sand canisters may be stored in cargo but it takes one hour to resupply a turret.

TL	Price (MCr)	Cannisters Carried	Beam Reduction
8	0.6	16	1D6×6
9	0.65	18	1D6×5
10	0.7	20	1D10×5
11	0.75	24	1D10×5
12	0.8	30	1D10×5
13	0.85	35	2D6×5
14	0.9	40	2D6×5
15	1	50	2D10×5

Slug Throwers

Throughout history, slug-throwing weapons have remained a very efficient means of inflicting damage upon an opponent. The reader is probably familiar with most conventional firearms, so only the more esoteric weaponry will be described in detail.

Gauss Weapons: Gauss weapons all operate on the same principle: An electromagnetic field accelerates a needle-like round down a barrel towards a target. Gauss weapons are valued for their silence (the only sound is that of the shockwave made by the bullet passing through the atmosphere), and deadliness.

The Gauss SAW (squad automatic weapon) is a fire support weapon issued in small numbers to infantry units. Ratings for two VRF (very rapid fire) gauss gun variants are included: vehicle mounted and man-portable.

Advanced Combat Rifle: The advanced combat rifle is a progressive development of the assault rifle. The ACR fires either a high-explosive round or a discarding-sabot kinetic energy penetrator with a muzzle energy of 4800 joules.

Standard equipment with most ACRs includes an integral electronic battlefield sight (with light amplification, passive IR and visual magnification capabilities), a laser rangefinder/designator, an integral flash suppressor, and an integral RAM rifle grenade adaptor.

Light Assault Gun: The light assault gun (LAG) is a 20mm man-portable assault weapon. The specially designed low-velocity 20mm round and recoil compensation mechanisms keep the recoil down, making the LAG a popular close-assault weapon.

LAGs are normally fitted with flash suppressors. Laser, electronic, and telescopic sights can be fitted at extra cost.

Tranq Rounds: Some weapons can fire tranquilizer rounds (as noted below). At TL6-8, these are hypodermic rounds containing a measured dosage of drug, and fired at low pressures for reduced velocity, minimal tissue damage, and reduced performance. At tech level 9 and above, the round consists of thin-walled plastic capsule containing a measured dosage of drug and a "carrier" compound to help the drug's absorption through the skin of the target.

Any armor is enough to prevent a tranq round from taking effect, but ordinary clothing provides no protection.

For each tranq round that strikes any part of the body of the target, the targeted character must make a successful roll versus their constitution to remain conscious, as follows:

TL of Tranq Round	*Difficulty Level*
6-8	Difficult
9-10	Formidable
11+	Impossible

Failure means the character loses consciousness for 1D6 minutes. The roll must be repeated each turn until the targeted character loses consciousness.

WEAPON DESCRIPTIONS

Slug throwers are presented below, broken down by broad classes. The weapons' physical characteristics are presented in tabular form, followed by their combat performance in tabular form.

Physical Characteristics: TL = Tech level. **Ammo** = Ammo type, given in the format: cartridge diameter (millimeters) × cartridge length (millimeters). **Empty Weight** = the weapon's weight with no ammunition, but including the weight of an empty magazine (where applicable). **Loaded Weight** = weapon's weight with a full load of ammunition. **Ammo Weight** = weight of a full load of ammunition (does not include magazine weight which is included in weapon empty weight). **Magazine** = indicates number of rounds in a full load of ammo. If there are two entries separated by a slash, left entry is number of rounds, right entry is weight of an empty magazine or ammo/battery box in kg. Letter notations indicate feed type for non-box magazine weapons (see page 273). **Weapon Price** = price of unloaded weapon in credits (includes one empty magazine). **Ammo Price** = price per round in credits/price of full load of ammo or loaded magazine if weapon uses detachable magazine. Unless specifically indicated otherwise, ammo price is for "ball" (basic solid slug) rounds; discarding sabot, HE, and tranq are ×2; HEAP is ×3. **Features** = codes for special capabilities of these weapons. See notes beneath each table.

Combat Performance: ROF = weapon's rate of fire, defined and described on pages 272-3. If a weapon has more than one rate of automatic fire, these are separated by slashes. **Dam Val** = weapon's damage value in personnel damage dice (D6). **Pen Rtg** = weapon's penetration rating at short and medium range-long range-extreme range. If only two values are given, second number is for long and extreme; if only one value given, value is for all four ranges. **Bulk** = weapon's bulk for use in resolving ties, page 265. **Magazine** = weapon's ammunition capacity and type of feed system (see page 273). **SS Recoil** = weapon's single shot recoil (page 275). **Burst Recoil** = weapon's burst recoil (page 276). If there are two or more numbers separated by slashes, these are for the different rates of fire in the ROF column. **Short Range** = weapon's short range in meters. Medium range is 2×short, long is 4×short, extreme is 8×short. If a number is given in parentheses, this is the weapon's "iron sight" short range, its basic short range used when calculating the improved performance resulting from the addition of telescopic or electronic sights.

Archaic Firearms

These weapons are typical of a variety of muzzle loading black powder firearms used on primitive worlds.

			Weight (kg)				Price (Cr)	
Caliber	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon*	*Ammo*
Musket	3	18mm P&B	5.1	5.14	.04	1*	60	0.5
Rifle-Musket	4	12mm P&B	4.1	4.14	.04	1*	100	0.5

*The weapon holds one individually loaded round. These muzzle loading weapons require two actions to reload.

						Recoil		
Weapon	*Rld*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*SS*	*Burst*	*Short Range*
Musket-3	2	2	Nil	6	1i	1	—	20
Rifle-Musket-4	2	3	1-Nil	6	1i	3	—	60

Slug Rifles and Carbines

Most rifles shown are combat weapons, although the 12mm rifle is a big game rifle used for hunting and sport.

			——Weight——				Price	Price	
Caliber	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon*	*Ammo*	*Features*
7mm carbine	5	7x26mm	2.985	3.085	0.1	10/0.084	385.2	0.2/3	F, B
7mm carbine (fold stk)	5	7x26mm	2.785	2.885	0.1	10/0.084	415.2	0.2/3	F
7mm carbine (civilian)	5	7x26mm	2.555	2.605	0.05	5i	381.2	0.2/1	—
7mm rifle	5	7x57mm	5.254	5.694	0.44	20/0.317	855	0.44/9.8	F, B
7mm rifle (Civilian)	5	7x57mm	4.967	5.077	0.44	5i	796	0.44/2.2	—
9mm rifle	7	9x44mm	8.462	9.022	0.56	20/0.403	1157	0.56/16.2	F, B
12mm hunting rifle	5	12x45mm	3.35	3.555	0.205	5i	558	1.8/9	—
7mm autorifle	6	7x57mm	5.254	5.694	0.44	20/0.317	998	0.44/12.8	F, B, RG
4mm gauss rifle	12	4x20mm	4.923	4.943	0.02	40/1.483	1092	0.01/3.4	F, B, O, RG
5mm assault rifle	7	5x50mm	3.653	3.953	0.3	30/0.252	737	0.2/9	F, B, RG
7mm assault rifle	7	7x70mm	4.325	4.805	0.48	30/0.327	920	0.32/13.6	F, B, RG
7mm ACR	10	7x46mm	5.895	6.135	0.24	20/0.553	4097	0.24/107.8	E, L, F, B, RG
2cm LAG	8	20x35mm	11.4812	11.921	0.44	5/0.475	2476	1.76/13.8	F

Features: B = Bayonet lug; E = Electronic sight; F = Flash suppressor; L = Laser sight; O = Optic sights; RG = RAM rifle grenade adapter.

						— Recoil —		
Round	*ROF*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*SS*	*Burst*	*Short Range*
7mm carbine-5 ball	SA	2	1-Nil	5	10	3	—	50
7mm carbine (fold stk)-5 ball	SA	2	1-Nil	3/5	10	3	—	50
7mm carbine (Civilian)-5 ball	SA	2	1-Nil	4	5i	3	—	50
7mm rifle-5 ball	SA	4	2-Nil	7	20	3	—	60
7mm rifle (Civilian)-5 ball	SA	4	2-Nil	7	5i	3	—	60
9mm rifle-7 ball	SA	4	2-3-Nil	8	20	3	—	90
9mm rifle-7 HEAP-9*	SA	5	2-2-2	8	20	3	—	60
9mm rifle-7 tranq-8*	SA	–1**	Nil	8	20	3	—	30
12mm hunting rifle-5 ball	BA	4	2-Nil	5	5i	3	—	150
12mm hunting rifle-5 tranq-6*	BA	–1**	Nil	5	5i	3	—	30
7mm autorifle-6 ball	5	4	2-Nil	7	20	3	8	60
4mm gauss rifle-12 dart	5/10	4	1-2-Nil	5	40	2	5/9	(85) 100
4mm gauss rifle-12 tranq	5/10	–1**	Nil	5	40	2	4/8	(30) 30
5mm assault rifle-7 ball	5	3	1-Nil	7	30	2	6	50
7mm assault rifle-7 ball	5	4	2-Nil	6	30	3	6	40
7mm ACR-10 DS	5	5	1-2-3	7	20	1	2	(97) 120
7mm ACR-10 HE	5	5	Nil	7	20	1	2	(61) 80
7mm ACR-10 HEAP	5	5	2-2-2	7	20	1	2	(61) 80
7mm ACR-10 tranq	5	–1**	Nil	7	20	1	2	(30) 30
2cm LAG DS	SA	6	1-3-5	6	5	2	—	250
2cm LAG HE	SA	9	Nil	6	5	2	—	160
2cm LAG HEAP-9	SA	9	2-2-2	6	5	2	—	160
2cm LAG tranq	SA	–1**	Nil	6	5	2	—	30
2cm LAG flechette (Short)	SA	18	1	6	5	2	—	70
Medium-Long	SA(10)	2	1-Nil					

*Shows round available at a later tech level than the weapon is manufactured.
**1D6–1 points of damage plus tranq effect on page 350.

Shotguns

Originally developed as hunting weapons, shotguns are also widely used in law enforcement and have some military application as well. Their principal features are that they are large bore (for a small arm), fairly low in muzzle velocity, smooth bore (instead of rifled), and capable of firing buckshot as well as large slugs. Both versions shown carry thier ammunition in a tubular magazine under the barrel.

			Weight				Price	Price	
Caliber	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon*	*Ammo*	*Features*
18mm pump shotgun	4	18x70mm	3.846	4.217	0.371	7i	578	0.53/3.71	—
18mm auto shotgun	7	18x70mm	3.941	4.471	0.53	10i	434	0.53/5.3	—

						Recoil		
Round	*ROF*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*SS*	*Burst*	*Short Range*
18mm pump shotgun-4 Slug	PA	4	3-Nil	6	7i	4	—	50
18mm pump SG-4 Shot (Short)	PA	9	Nil	6	7i	4	—	30
Medium	PA	1	Nil					
18mm auto shotgun-7 Slug	SA	4	3-Nil	8	10i	4	—	80
18mm auto SG-7 Shot (Short)	SA	9	Nil	8	10i	4	—	50
Medium	SA	1	Nil					
18mm auto shotgun-7 HE	SA	6	Nil	8	10i	4	—	60

Pistols

Slug pistols fall into two general categories: revolvers and automatics. Revolvers hold their bullets in a cylindrical chamber which revolves one space each time the pistol is fired. Automatics hold their rounds in box magazine usually inserted in the pistol grip.

			Weight				Price	Price	
Caliber	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon*	*Ammo*	*Features*
5mm revolver	5	5x22mm	0.658	0.679	0.021	6R	89.7	0.14/0.84	—
7mm revolver	5	7x23mm	0.783	0.832	0.049	7R	107.5	0.28/1.96	—
9mm revolver	4	9x20mm	0.816	0.876	0.06	6R	110	0.4/2.4	—
9mm revolver	5	9x20mm	0.836	0.896	0.06	6R	114	0.4/2.4	—
9mm magnum rev.	5	9x33mm	1.132	1.234	0.102	6R	158	0.68/4.08	—
10mm snub revolver	8	10x17.5mm	0.915	0.981	0.066	6R	117.8	0.44/2.64	—
10mm snub auto	8	10x17.5mm	1.044	1.198	0.154	14/0.119	160	0.44/8.16	—
5mm body pistol	8	5x27mm	0.55	0.662	0.112	28/0.077	280.8	0.48/16.44	—
7mm autopistol	6	7x30mm	0.884	1.01	0.126	14/0.097	173.6	0.36/6.04	—
9mm autopistol	6	9x20mm	0.908	1.018	0.11	11/0.09	169.6	0.4/5.4	—
4mm gauss pistol	13	4x20mm	0.768	0.785	0.0175	35/0.207	248.5	0.01/1.35	—

						Recoil		
Round	*ROF*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*SS*	*Burst*	*Short Range*
5mm revolver-5 ball	DAR	-1	Nil	1	9R	3	—	8
7mm revolver-5 ball	DAR	1	Nil	1	7R	3	—	10
9mm revolver-4 ball	SAR	1	Nil	1	6R	4	—	10
9mm revolver-5 ball	DAR	1	Nil	1	6R	4	—	11
9mm magnum revolver-5 ball	DAR	2	1-Nil	1	6R	3	—	13
10mm snub revolver-8 HE	DAR	3	Nil	1	6R	3	—	3
10mm snub revolver-8 HEAP-9*	DAR	3	2-2-2	1	6R	3	—	3
10mm snub revolver-8 tranq	DAR	-1**	Nil	1	6R	3	—	4
10mm snub auto-8 HE	SA	3	Nil	1	14	3	—	4
10mm snub auto-8 HEAP-9*	SA	3	2-2-2	1	14	3	—	4
10mm snub auto-8 tranq	SA	-1**	Nil	1	14	2	—	4
5mm body pistol-8 DS	SA	1	Nil	0	28	3	—	5
7mm autopistol-6 ball	SA	1	Nil	1	14	3	—	11
9mm autopistol-6 ball	SA	2	Nil	1	11	3	—	13
4mm gauss pistol-13 dart	5	2	Nil	1	35	2	6	12
4mm gauss pistol-13 HEAP	5	3	2-2-2	1	35	2	6	9
4mm gauss pistol-13 tranq	5	-1**	Nil	1	35	2	4	7

*Shows round available at a later tech level (9) than weapon is originally manufactured.
**1D6-1 points of damage plus tranq effect on page 350.

Submachinegun

Submachineguns are short, lightweight, fully automatic weapons usually firing low-powered pistol cartridges. They have tremendous firepower but restricted range and penetration. The example below is representative of the class.

			Weight				Price	Price	
Caliber	TL	Ammo	Empty	Loaded	Ammo	Magazine	Weapon	Ammo	Features
9mm SMG	5	9x24mm-5	2.403	2.763	0.36	30/0.245	400	0.24/8.2	—
9mm (fold stk) SMG	6	9x24mm-5	2.203	2.563	0.36	30/0.245	430	0.24/8.2	—

						Recoil		
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	SS	Burst	Short Range
9mm SMG-5 ball	5	2	1-Nil	3	30	1	3	40
9mm (fold stk) SMG-6 ball	5	2	1-Nil	2/3	30	1	3	40

Autoguns

Autoguns include a variety of heavier weapons used almost exclusively in the automatic fire mode. These include light, medium, and heavy machineguns, rotary (or Gatling) guns, and very rapid fire (VRF) gauss guns. At lower tech levels these are belt-fed weapons, but higher rate of fire weapons at the higher tech levels substitute linkless-feed hopper cassettes. The tripod column shows the weight of the weapon's tripod to the left of the slash, and its price in credits to the right.

			Weight				Price	Price		
Caliber	TL	Ammo	Empty	Loaded	Ammo	Magazine	Weapon	Ammo	Features	Tripod
7mm MMG	5	7x57mm	9.953	12.153	2.2	100B	2223	0.44/44	F	4 kg/Cr140
7mm LMG	6	7x57mm	10.074	12.274	2.2	100B	2248	0.44/44	F	—
5mm LMG	7	5x50mm	6.676	7.676	1	100B	1594	0.2/20	F	—
13mm HMG	6	13x75mm	30.8	40.8	10	100B	6458	2/200	F	11 kg/Cr210
5mm rotary	7	5x50mm	20.187	45.187	25	2500C/2	6472	0.2/600	—	31 kg/Cr410
7mm rotary	7	7x57mm	32.686	87.686	55	2500C/2	7827	0.44/1320	—	54 kg/Cr640
5mm rotary	8	5x50mm	23.427	73.427	50	5000C/2	7730	0.2/1100	—	30 kg/Cr400
7mm rotary	8	7x64mm	40.602	103.102	62.5	2500C/2	12961	0.5/1470	—	78 kg/Cr880
4mm gauss SAW	12	4x20mm	12.599	12.649	0.05	100/6.219	1252	0.01/14	O	—
VRF gauss gun (veh)	10	4x20mm	26.68	41.68	15	30000C/2	4213	0.01/320	—	—
VRF gauss gun (mp)	10	4x20mm	162.68	162.43	0.25	500C/137	5103	0.01/915	—	39 kg/Cr490

						Recoil		
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	SS	Burst	Short Range
7mm MMG-5 ball	10	4	2-Nil	8	100B	3	13	70
Bipod	10	4	2-Nil	8	100B	2	7	100
Tripod	10	4	2-Nil	8	100B	1	3	150
7mm LMG-6 ball	5	4	2-Nil	8	100B	2	4	80
Bipod	5	4	2-Nil	8	100B	1	2	100
5mm LMG-7ball	5	3	1-Nil	7	100B	2	5	50
Bipod	5	3	1-Nil	7	100B	1	3	70
13mm HMG-6 ball	5	7	2-3-4	9	100B	4	11	80
Tripod	5	7	2-3-4	9	100B	1	3	160
5mm rotary-7 ball	5/50	3	1-Nil	6	2500C	3	3/31	60
Tripod	5/50	3	1-Nil	6	2500C	3	1/8	120
7mm rotary-7 ball	50	4	2-3-Nil	7	2500C	2	54	110
Tripod	50	4	2-3-Nil	7	2500C	1	14	230
5mm rotary-8 ball	5/50	3	1-Nil	7	5000C	3	3/30	80
Tripod	5/50	3	1-Nil	7	5000C	3	1/8	150
7mm rotary-8 ball	50	5	2-3-Nil	10	2500C	3	78	130
Tripod	50	5	2-3-Nil	10	2500C	1	22	270
4mm gauss SAW-12 dart	5/10	5	1-3-Nil	6	100	2	4/8	130 (110)
Bipod	5/10	5	1-3-Nil	6	100	1	2/4	170 (140)
4mm gauss SAW-12 HEAP	5/10	6	2-2-2	6	100	2	4/8	100 (90)
Bipod	5/10	6	2-2-2	6	100	1	2/4	130 (120)
VRF gauss gun (veh)-10 dart	50	6	1-3-5	8	30000C	†	†	300
VRF gauss gun (veh)-10 HEAP	50	7	2-2-2	8	30000C	†	†	230
VRF gauss gun (mp)-10 dart	50	6	1-3-5	8	500C	1	19	150
Tripod	50	6	1-3-5	8	500C	1	5	300
VRF gauss gun (mp)-10 HEAP	50	7	2-2-2	8	500C	1	19	110
Tripod	50	7	2-2-2	8	500C	1	5	230

Note: All autoguns fired from vehicle mounts have negligible recoil (noted as †) and use the short range listed for use with tripods.
Features: F = Flash suppressor; O = Optic sights.

LASERS

Lasers damage their targets with concentrated pulses of focused light. Laser pistols are small, readily portable weapons; carbines are larger, more powerful versions with shoulder stocks; and rifles are the largest.

Lasers are of two types: DEI (direct electrical input) lasers which draw their energy directly from an electrical power pack, and CLC (chemical laser cartridge) lasers which use the chemical energy stored in a cartridge (similar to that of a slug-firing small arm) to power their laser pulses.

Laser Sights: All of the lasers below incorporate an integral laser sight (see pages 275 and 344). For the DEI lasers, this laser sight is a very low power level of the laser itself, while the CLC lasers incorporate a dedicated battery powered laser sight. Slight pressure on the trigger activates the laser sight which projects a visible dot on the target, and full trigger pressure fires the laser.

Optic Sights: All the lasers below incorporate optic sights. However, no iron sight range is given for these weapons, as telescopic sights or electronic sights (pages 275 and 344) cannot further increase the short ranges already listed. Electronic sights may be fitted (to rifles and carbines) in order to gain their night-firing capabilities, but the listed short range is not changed.

Recharge Times: Power Packs for DEI lasers can be recharged in ten minutes (120 turns) from a high-energy power source such as a starship power grid. CLC lasers are not recharged, they use ammunition like slug-firing firearms.

The tables below display the following information.

Physical Characteristics: Pulse = the laser's "typical" pulse energy, used by its first line on the combat performance table. **TL** = the laser's tech level. **Ammo** = describes the laser's energy source, either DEI or the CLC cartridge diameter and length in millimeters. **Weapon Weight** = for DEI lasers, this is weight of the weapon without its power pack. For CLC lasers, this is weapon's empty weight, without magazine or ammunition. **Loaded Weight** = for DEI lasers, this is weight of the power pack *only*. For CLC lasers, this is the weight of the weapon with a magazine and full load of ammunition. **Magazine** = For DEI lasers, this is number of shots available in the power pack for the laser's "typical" pulse energy (that used on its first line of the combat performance table). For CLC lasers, this shows number of cartridges in a loaded magazine. **Weapon Price** = price of the laser itself, without power pack, ammunition, or magazine. **Ammo Price** = for DEI lasers, price of a power pack, for CLC lasers, price of a single cartridge/price of a fully-loaded magazine. **Features** = special capabilities as noted beneath the table.

Combat Performance: ROF = laser's rate of fire, see pages 272-3. Lasers with multiple ROFs have a separate line for each. **Dam Dice (S-M-L-E)** = the laser's personnel damage dice at short-medium-long-extreme ranges. These are damage *dice*, not damage value (see page 297). **Dam Dice (W-X-Y-Z)** = damage dice ratings for use in non-standard atmospheres—see facing page. **Pen Rtg** = the laser's penetration rating, usually nil. **Bulk** = the laser's bulk, for resolving ties, page 265. **Magazine** = for DEI lasers, shows number of shots or bursts for that rate of fire contained in the power pack. Some ROFs use up the power pack's energy at different rates. For CLC lasers, the number of cartridges in a loaded magazine. **Short Range** = laser's short range in meters.

Lasers

				Weight			Price		
Type	*Pulse*	*TL*	*Ammo*	*Weapon*	*Loaded*	*Magazine*	*Weapon*	*Ammo*	*Features*
10 cm DEI Carbine	0.01	8	DEI	4.33	19.5 PP	50 PP	2310	215 PP	H, L, O, R
5 cm DEI Pistol	0.01	9	DEI	1.67	19.6 PP	50 PP	1250	320 PP	H, L, O, R
8 cm DEI Rifle	0.02	9	DEI	4.21	44.3 PP	100 PP	2855	656 PP	H, L, O, R, RG
2 cm CLC Pistol	0.01	13	10x30 CLC	2.64	3.26	14	2535	1.5/24	H, L, O, R
3 cm CLC Carbine	0.02	13	13x39 CLC	4.78	5.7	10	4650	3/34	H, L, O, R, RG
4 cm CLC Rifle	0.04	13	16x48 CLC	8.87	10.71	10	8800	6/68	H, L, O, R, RG
6 cm CLC SSL	0.06	14	27x80 CLC	59.39	132.5*	100	57,835	27/2981	H, L, O, R

*Weapon is fired from a tripod with mass: 66.25 kg and price: Cr763 not included in figures above.

Features: H = weapon is capable of firing a high-capacity pulse, i.e., fewer high-powered shots in a combat turn rather than the several less powerful shots permitted by the weapon's ROF; L = Laser sight; O = Optic sights; R = ruggedized to grenade standards; RG = RAM rifle grenade adapter

Weapon	*ROF*	*Dam Dice (S-M-L-E)*	*Dam Dice (W-X-Y-Z)*	*Pen Rtg*	*Bulk*	*Magazine*	*Short Range*
10 cm DEI Carbine-8	SA1	5-3-1-1	0-0-0-0	Nil	4	50 PP	200
	1x3	3-1-1-0	0-0-0-0	Nil	4	50 PP*	200
	1x10	2-1-0-0	0-0-0-0	Nil	4	50 PP*	200
5 cm DEI Pistol-9	SA2	5-3-1-1	0-0-0-0	Nil	2	50 PP	90
	SA1	7-4-2-1	1-0-0-0	Nil	2	25 PP**	90
	2x3	3-2-1-0	0-0-0-0	Nil	2	50 PP***	90
	2x10	2-1-0-0	0-0-0-0	Nil	2	50 PP***	90
8 cm DEI Rifle-9	SA2	7-4-2-1	0-0-0-0	Nil	4	100 PP	160
	SA1	10-5-3-1	1-0-0-0	Nil	4	50 PP**	160
	2x3	4-2-1-1	0-0-0-0	Nil	4	100 PP***	160
	2x10	2-1-1-0	0-0-0-0	Nil	4	100 PP***	160
2 cm CLC Pistol-13	SA3	5-5-3-1	1-0-0-0	Nil	2	14†	90
	3x3	3-3-2-1	0-0-0-0	Nil	2	14†	90
	3x10	2-2-1-0	0-0-0-0	Nil	2	14†	90
3 cm CLC Carbine-13	SA3	7-5-3-1	1-0-0-0	Nil	4	10†	300
	3x3	4-3-2-1	0-0-0-0	Nil	4	10†	300
	3x10	2-2-1-0	0-0-0-0	Nil	4	10†	300
4 cm CLC Rifle-13	SA3	10-10-7-3	2-1-0-0	Nil	5	10†	300
	3x3	6-6-4-2	1-1-0-0	Nil	5	10†	300
	3x10	3-3-2-1	1-0-0-0	Nil	5	10†	300
6 cm CLC SSL-13	SA5	21-21-21-16	8-4-2-1	Nil	8	100†	300
	5x3	12-12-12-9	5-2-1-1	Nil	8	100†	300
	5x5	10-10-10-7	4-2-1-1	Nil	8	100†	300
	5x10	7-7-7-5	3-1-1-0	Nil	8	100†	300
	5x50	3-3-3-2	1-1-0-0	Nil	8	100†	300

Parenthetical figure in range column is the iron sight short range.
ROF column shows number of bursts "N" per combat turn and number of shots "S" in each burst in the format "NxS."
*Each *burst* consumes ammunition energy equivalent to one shot at the SA1 rate.
**Each shot at the high-powered rate (SA1) counts as two shots at the low-powered rate (SA2).
***Each *burst* consumes ammunition energy equivalent to one shot at the SA2 rate.
†One CLC cartridge is used per SA shot or per burst, not one cartridge per shot in the burst.

Laser Atmospheric Adjustments

Lasers have widely differing performance in different atmosphere types. The combat performance chart on the facing page shows performance in a standard atmosphere (codes 6, 7). For performance in other atmosphere types, use the following procedure. Use the listed short range from the SR column to resolve hits, and then find damage at that range by consulting the column for the correct atmosphere type, Vacuum (code 0), Trace (code 1), Very Thin (codes 2 and 3), Thin (codes 4 and 5), Dense (codes 8 and 9), and Exotic (codes A-C). All of these columns provide four entries, for short-medium-long-extreme ranges (for atmosphere codes D-F, use the other atmospheres listed here, depending upon altitude). The entry will usually be a letter code, showing which damage entry on the facing page to use. For example, in a trace atmosphere, a TL-8 10 cm carbine which scores a hit at extreme range will do the damage listed for its *medium* range on the facing page. The entries W-Z are listed in a separate column on the facing page, and are used for heavy atmospheres. If the entry reads "0," the laser does no damage at that range.

Note that some of the weapons listed on the facing page have their performance optimized for standard atmospheres, and use a lower short range in order to maximize their damage performance. The column on this page for standard atmospheres will allow players to use the maximum theoretical short range for these weapons in a standard atmosphere, but with a penalty in damage performance.

For dense and exotic atmospheres, there is an additional parenthetical listing. This shows the weapon's short range in meters in this atmosphere to achieve the same S-M-L-E damage performance it would have in a standard atmosphere as listed on the facing page. This allows players to use their weapons at shortened ranges in thick atmospheres. If the entry reads "NA," there is no shorter range that may be used to regain damage performance.

Weapon	*SR*	*Vacuum*	*Trace*	*Very Thin*	*Thin*	*Standard*	*Dense*	*Exotic*
10 cm DEI Carbine-8	290	S-S-S-M	S-S-S-M	S-S-M-L	S-M-L-E	M-L-E-0	L-E-0-0 (100)	0-0-0-0 (20)
5 cm DEI Pistol-9	90	S-S-S-S	S-S-S-S	S-S-S-M	S-S-M-M	S-M-L-E	M-L-E-W (50)	W-0-0-0 (10)
8 cm DEI Rifle-9	300	S-S-S-S	S-S-S-S	S-S-M-L	S-M-L-E	M-L-E-W	L-E-W-0 (80)	0-0-0-0 (16)
2 cm CLC Pistol-13	90	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-M	S-M-L-E	S-L-E-W (100)	W-0-0-0 (20)
3 cm CLC Carbine-13	300	S-S-S-S	S-S-S-S	S-S-S-M	S-S-M-L	S-M-L-E	M-L-E-W (230)	W-0-0-0 (45)
4 cm CLC Rifle-13	300	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-M	S-M-L-E	S-L-E-W (NA)	W-X-0-0 (80)
6 cm CLC SSL-13	300	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-S	S-M-L-E	S-S-E-W (NA)	W-X-Y-Z (180)

Heavy Weapons

Assault Rocket Launcher: The assault rocket launcher (ARL) is a shoulder-fired infantry support weapon that fires a variety of 6 cm direct fire rockets. As the ARL is merely a rocket launching tube with a box magazine-fed autoloader on top of it, it generates no recoil. However, the backblast from the rocket motor generates a quite visible signature, and makes it impractical for firing from enclosed structures.

The weapon comes with simple optical sights, and the range listed is its maximum acheivable range, as free-flight unguided rockets are only so accurate. Laser or electronic sights (to enable night vision) can be fitted at additional cost.

			Weight				*Price*	
Weapon	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon*	*Ammo*
6 cm ARL	10	6 cm rocket	6	18.32	1.2/12.32	4	Cr210	Varies

The table below shows the combat values for the types of rockets that may be fired by the 6 cm ARL-10. *Con-Brst* is the warhead's concussion and burst values, *Pen Val* is the warhead's penetration value, *Dngr Spc* is the width × length of the flechette primary danger space in meters, *Dam Val* is the damage value of flechettes in the primary/secondary danger space, and *Pen Rtg* is the penetration rating of flechettes in the primary/secondary danger space.

Weapon	*ROF*	*Con-Brst*	*Pen Val*	*Dngr Spc*	*Dam Val*	*Pen Rtg*	*Bulk*	*Magazine*	*Short Range*	*Ammo Price*
6 cm HE	1*	9-35	2C	—	—	—	12	4	200	Cr12.4
6 cm HEAP	1*	6-25	65C	—	—	—	12	4	200	Cr18.4
6 cm WP	1*	2-15	Nil	—	**	—	12	4	200	Cr24.4
6 cm Flechette	1*	—	Nil	10x50	2D6/1D6	1/Nil	12	4	200	Cr60.4

*One shot per combat turn, not per fire action. **See burns, page 286.

Plasma Bazooka: Earliest and least sophisticated of the plasma weapons, the plasma bazooka is designed to give light ground troops an antiarmor capability vs. advanced AFVs, albeit at closer range than many would consider healthy.

Unlike the more sophisticated plasma rifles which separate their firing units from their support hardware, the plasma bazooka comes in one piece, and is fired from the shoulder. It fires an individually loaded chemical plasma cartridge (CPC). The cartridge contains the ignition chamber for the plasma stream and a disposable chemical laser ignition system. The cartridge also vents a significant amount of its energy out of the rear of the bazooka, effectively negating all recoil. However, this creates considerable backblast, and the weapon may not be fired from inside an enclosure (such as a building or bunker).

The plasma bazooka takes two combat turns to reload (one turn is spent on the cooling cycle, the second is spent loading the new CPC).

Weapon	*TL*	*Pulse*	*Ammo*	*Empty Wt.*	*Loaded Wt.*	*Round Wt.*	*Weapon Price*	*Round Price*
9 cm Plasma Bazooka	10	2	90x320 CPC	27	43.2	16.2	Cr67,500	Cr400

Weapon	*Rld*	*Dam Val*	*Pen Rating*	*Pen Value*	*Bulk*	*Magazine*	*Recoil*	*Short Range*
Plasma Bazooka 10	2	16	1-2-10	16-16-8-2	5	1i	—	60

PLASMA RIFLES AND FUSION RIFLES

Plasma weapons use a chemical laser to heat hydrogen to a plasma state, containing it in a magnetic bottle until it reaches maximum energy, then opening an aperture in the bottle, releasing the plasma in a high-temperature, high-velocity jet (in excess of 8600 meters per second). Fusion weapons contain the plasma until it reaches a higher energy state, and actually begins to undergo nuclear fusion.

Plasma and fusion weapons each consist of a weapon, a backpack, and tube (containing the power cable and cooling/purge line) connecting the two. Plasma and fusion weapons make use of plasma or fusion cartridges as their ammunition. Each high-temperature ceramic cartridge is laser ignited and serves as the liner for the magnetic bottle that contains the plasma generated inside it. Part of the energy of the explosively expanding plasma is bled off to pump a homopolar generator which in turn powers a "pilot" laser. The pilot laser vaporizes a tunnel through the atmosphere through which the plasma pulse is discharged. (Without the pilot laser the plasma bolt dissipates far too quickly.)

Recoil energy activates a purge cycle, during which liquid nitrogen is bled into the cartridge to cool it before a new one is fed into the chamber from the magazine, kicking what's left of the spent one out of the weapon (some of the mass of the cartridge becomes a part of the plasma jet). After the purge/eject cycle, the action locks closed, and the weapon is ready to fire again. The spent cartridge case is still hot enough to inflict burns on unprotected skin, although the purge cycle cools it enough so that it is no longer a fire hazard.

The backpack contains the cooling system and the power pack for the magnetic bottle, and the homopolar generator for the pilot laser. The cartridges are loaded into the weapon in detachable box magazines.

The heat of the ejected cartridges and the incidental heat from the plasma stream require users to wear protective clothing of some sort. The flame-retardant properties of most standard military uniforms provide adequate protection.

The plasma rifles that appear at tech levels 12 and 13 are intended for powered troops (i.e., those equipped with battle dress), due to the high recoil of the weapons, not to mention their great weight. In place of a conventional stock, these weapons are built with a combination data socket and recoil cylinder which fits into the distinctive two-prong sockets present on the left and right breast of most battle dress. When the weapon is fitted, a targeting prompt is displayed on the firer's faceplate.

Recoil compensators (gyroscopic at TL 10, replaced by more effective inertial compensators at TL 14+) may be fitted to these weapons, allowing their use by troops not operating in battle dress. The recoil compensator is actually in the backpack, which is connected to the weapon by an articulated arm which allows the weapon to be traversed freely, but which inertially locks when the weapon fires, transmitting the recoil to the backpack where the compensator reduces its force.

Plasma Splatter: When plasma from plasma or fusion weapons strikes a target, some of the shot splatters, scattering fragments of white-hot plasma in all directions. Plasma/fusion splatter has a primary burst radius of five meters. All characters within the primary and secondary burst radii are subject to hits by fragments of plasma, including the target. Plasma fragments are the equivalent of white phosphorus fragments for damage purposes (see page 286).

Plasma and fusion weapons which strike armor produce blunt trauma for those damage points absorbed, the same as slug throwers.

The table below shows the important physical information for an assortment of plasma and fusion rifles. The weapon is identified by the diameter of the pulse plasma cartridge (PPC) or pulse fusion cartridge (PFC) used in the rifle. Each PPC or PFC has a length three times its diameter. Empty weight is the weapon alone without ammunition or magazine, while loaded weight adds the weight of a full magazine. BP weight is the weight of the weapon's backpack, which is not included in the previous figures. Magazine shows the number of rounds in each fully loaded box magazine. Price is in credits for an empty weapon, and for a single round of ammunition/fully loaded magazine.

Dam Val is the weapon's damage value and its number of personnel damage dice. The *Dam Val* and *Pen* (penetration) *Rating* (short/medium-long-extreme) columns are used for firing against personnel. The *Pen* (penetration)*Value* column (short-medium-long-extreme) is used for firing at vehicles.

High-Energy Weapons

				Weight				Price (Cr)	
Weapon	*TL*	*Pulse*	*Ammo*	*Empty*	*Loaded*	*BP*	*Magazine*	*Weapon*	*Ammo*
4.3cm plasma rifle	12	0.6	4.3 PPC	2.4	17.4	4.8	5	18,000	15/153
4.7cm plasma rifle	13	0.8	4.7 PPC	3.2	35.53	4.8	10	20,000	20/361
4.1cm plasma rifle/comp	14	0.8	4.1 PPC	3.2	14.5	6.4	4	40,000	6.4/87
4.7cm fusion rifle	14	1.2	4.7 PPC	4.8	40.1	4.8	10	72,000	9.6/257
4.7cm fusion rifle/comp	14	1.2	4.7 PPC	4.8	21.7	9.6	4	156,000	9.6/131
5.1cm fusion rifle/comp	15	1.5	5.1 PPC	3	24	6	4	97,500	12/163

The notation "comp" indicates that the weapon is fitted with a recoil compensator in the backpack.

							Recoil		
Weapon	*ROF*	*Dam Val*	*Pen Rating*	*Pen Value*	*Bulk*	*Magazine*	*SS*	*Burst*	*Short Range*
4.3 plasma 12	SA1	9	1-2-10	9-9-5-1	5	5	11	—	20
4.7 plasma 13	SA1	10	1-2-10	10-10-5-1	5	10	8	—	20
4.1 plasma 14c	SA1	10	1-2-10	10-10-5-1	4	4	7	—	20
4.7 fusion 14	SA1	13	1/2-1-4	26-26-13-3	6	10	8	—	60
4.7 fusion 14c	SA1	13	1/2-1-4	26-26-13-3	6	4	6	—	60
5.1 fusion 15c	SA1	14	1/2-1-4	28-28-14-4	3	4	5	—	80

The notation "c" indicates a weapon fitted with a recoil compensator.

4 cm TL-8 Low Velocity Grenade Launcher

This is a folding stock shoulder-fired weapon which can fire a wide variety of indirect fire and direct fire warheads. Versions of it can also be fitted beneath the barrels of rifles and serve as attached grenade launchers.

Weapon	*TL*	*Ammo*	*Empty*	*Loaded*	*Ammo*	*Magazine*	*Weapon Price*	*Ammo Price*
4 cm Low Vel GL	8	4cm LVGL	2.1	2.34	0.24	1i	Cr450	Varies

In the table below, *ROF* is rate of fire, *Round* is type of round, *SR* is (direct fire) short range in meters, and *IFR* is maximum indirect fire range (meters). *Dam* is listed as concussion (C) and burst radius (B) in meters, or as simple damage dice for flechettes. *Pen Val* and *Pen Rtg* are penetration value and penetration rating. *Bulk* is given with the stock folded/extended.

										—*Recoil*—	
Weapon	*ROF*	*Round*	*SR*	*IFR*	*Dam*	*Pen Val*	*Pen Rtg*	*Bulk*	*Mag*	*SS*	*Burst*
4 cm LVGL-8	SS	HE	100	400	C: 3, B: 15	Nil	—	3/4	1i	2	—
	SS	HEAP	100	400	C: 2, B: 5	33C	—	3/4	1i	2	—
	SS	WP	100	400	C: 2, B: 5	Nil	—	3/4	1i	2	—
	SS	Flech (S)	13	—	5	Nil	Nil	3/4	1i	2	—
	SS (10)	Flech (M-L)	13	—	–1	Nil	Nil	3/4	1i	2	—

The two lines for the flechette round show its performance at short range and at medium and long ranges. Ammo Price: HE, Cr2.4; HEAP, Cr3.6; WP, Cr4.8; Flechette (shotgun), Cr2.4.

4 cm RAM Rifle Grenades

The 4 cm RAM (rocket-assisted multipurpose) rifle grenade may be fitted to and fired from the barrel of any small arm fitted with the proper rifle grenade adapter (usually indicated by the note "RG" in the *Features* column). These provide an inexpensive means to distribute moderate heavy weapons or indirect fire capabilities throughout small units.

The RAM rifle grenade is launched simply by firing the weapon to which it is fitted (after pulling a safety pin from the grenade). A small launching charge kicks the grenade a few meters away from the weapon, at which time the main propelling rocket ignites, carrying the grenade downrange to its target. RAM rifle grenades are designed so that the launching charge may be ignited by laser energy, electromagnetic energy (in gauss weapons), or by the hot gases produced by a slug-firing weapon, and so may be used on any type of small arm.

RAM rifle grenades are manufactured with numerous warhead types, a small sample of which are shown here. RAM rifle grenades are fired using the Grenade Launcher skill.

Type	*TL*	*SR*	*IFR*	*Conc-Brst*	*Pen Val*	*Dngr Spc*	*Dam Val*	*Pen Rtg*	*Mass*	*Price*
4 cm RAM HE	8	30	500	C: 3, B: 15	Nil	—	—	—	0.48 kg	Cr48
4 cm RAM HEAP	8	30	500	C: 2, B: 5	33C	—	—	—	0.48 kg	Cr72
4 cm RAM Flech	8	30	500	—	Nil	2 x 6	2D6/1D6	1-Nil	0.48 kg	Cr240
4 cm RAM HE	9	40	550	C: 3, B: 15	Nil	—	—	—	0.48 kg	Cr48
4 cm RAM HEAP	9	40	550	C: 2, B: 5	41C	—	—	—	0.48 kg	Cr72
4 cm RAM Flech	9	40	550	—	Nil	2 x 8	2D6/1D6	1-Nil	0.48 kg	Cr240

Flechette penetration value is for the entire round, should it hit an armored surface. To use flechettes, see the Bursting Flechettes rule, page 280.

Tac Missiles

The assortment of missiles shown below is a representative sample of weapons from different tech levels. The laser designated missiles may be designated by any laser. The columns show tech level of the missile, the guidance system used, the missile weight (in kilograms), the launcher weight (in kilograms), the missile price (in credits) the launcher price (in credits), the concussion and burst radius of the explosive warhead, the penetration value of the warhead, the range of the missile in meters (maximum range for command-guided and designated missiles, short range for homing missiles), the movement of the missile in meters per five-second combat turn, and the agility rating of the missile.

All missiles and launchers have a volume of one liter per kilogram.

TL	*Guidance*	*MWt*	*LWt*	*MP*	*LP*	*C-B*	*Pen Val*	*Range*	*M/turn*	*AGL*
7	Laser Cmnd	11.2	110	249	7128	6-25	57C	7575	975	4
7	Homing	7.6	4.3	1018	538	4-25	1C	10,735	2500	5
9	Laser Desig.	13.8	126	614	13572	11-35	101C	12,470	1250	4
9	Homing	14.2	7.6	1536	571	7-25	2C	10,560	3900	6
11	Laser Desig.	19.4	167	646	16,036	17-45	113C	15,030	1950	6
11	Homing	14.2	7.6	1536	571	9-35	2C	15,835	3900	7
13	Laser Desig.	21	176	670	16,740	20-45	125C	13,530	1950	6
13	Homing	16.4	8.7	1539	582	4-25	53C	8900	7785	8

Hand Grenades

Mass: 0.35 kg; **Price:** HE/Frag: Cr3.5

Type	*Rng*	*Dam*	*Pen*
HE/Frag TLs 6-7	*	C: 3, B: 15	Nil
Concussion TLs 6-7	*	C: 5, B: —	Nil
HE/Frag, TLs 8-9	*	C: 4, B: 15	Nil
Concussion TLs 8-9	*	C: 6, B: —	Nil

* See Thrown Weapons (page 282) for range and deviation.

Personal Armor

The following items of armor and personal protection are generally available. The weight of personal armor is kept track of as part of the character's load (see page 35; normal clothing is assumed to have negligible weight), with the exception of battle dress, which is treated as having no weight as its powered operation allows for its own mass. Only one form of personal armor may be worn per body part.

Parenthetical Armor Values: Personal armor which has a parenthetical armor value affects only melee attacks (both armed and unarmed); it has no effect on fire combat. Armor with both a non-parenthetical and a parenthetical armor value use the non-parenthetical value vs. fire combat and the parenthetical value vs. melee combat only.

Armor Value Zero: Armor with a 0 value prevents penetration by weapons with a penetration of Nil, but has no effect on weapons with a higher penetration. These types of armor will have a second parenthetical value showing their effect on melee attacks.

Armor vs. Lasers: Armor that is not made of solid metal or ceramic plates is treated as no armor when hit by lasers. The "AV vs. Lasers" column displays the information for convenient reference. The notation "—" indicates no armor value vs. lasers.

Agility and Initiative: Some armor reduces the Agility of the wearer and, in extreme cases, the wearer's Initiative. These reductions are noted in the AGL and INIT columns.

Helmets: In its original usage, a helm provided full coverage of the head while a helmet (little helm) covered only part of the head, leaving the face exposed. The modern usage of the term helmet, however, applies to all protective head coverings. Those helmets which cover the entire head have the notation H in the hit location column, while those which cover only half have the notation (H).

Split Values: Some examples of combat armor have two armor values separated by a slash. The higher value is for the chest and head; all other areas are protected by the lower value.

Leather: A natural or synthetic leather or heavily padded and quilted fabric vest covering the chest and abdomen. Leather armor is effective only versus melee attacks, not fire combat.

Jack: As above, but also covering the arms.

Mail Vest: A jacket made of natural or synthetic leather and either covered or lined with a flexible metal mesh, made either of linked rings or individual scales riveted or sewn in place. Mail is effective only versus melee attacks, not fire combat. A mail vest covers only the chest and abdomen.

Half Mail: As described above, but half mail is only the upper half of a mail vest, protecting only the chest.

Full Mail: As described above, but full mail covers all of the body except for the head.

Flak Jacket: A cloth vest covering the chest and abdomen in which solid sheets of ceramic or metallic armor are inserted.

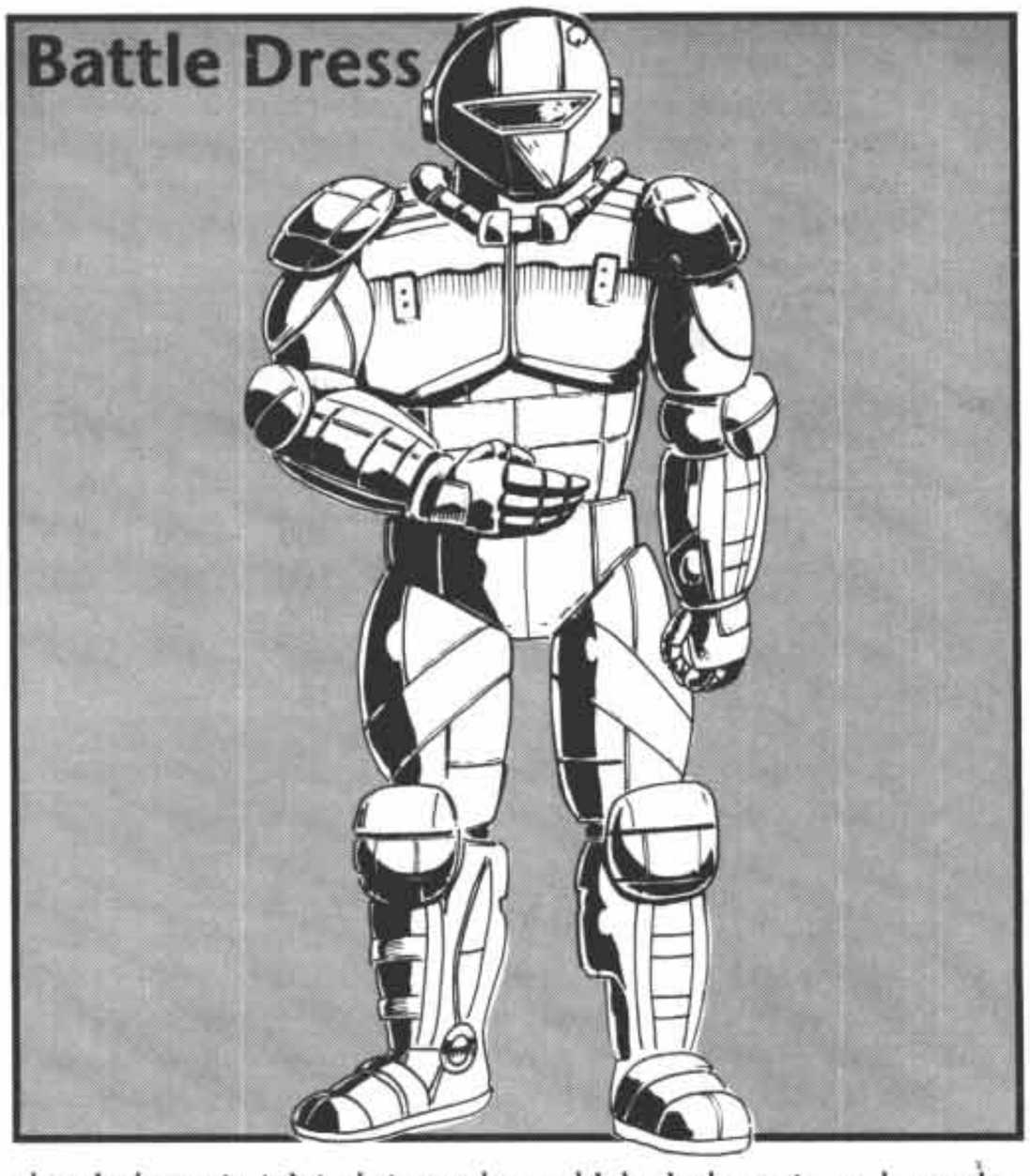
BC Vest: A vest covering the chest and abdomen made of ballistic cloth. The fabric absorbs impact energy of a projectile and distributes the blow over the body. Ballistic cloth, however, has no effect against armed melee attacks conducted with edged weapons.

BC Body Suit: As described above, but the ballistic cloth body suit covers all hit locations except the head.

BW Vest: Identical to a ballistic cloth vest, but constructed of ballistic weave, which has reinforced fibers added to increase armor protection and which allows the armor to withstand edged weapon attacks as well. Ballistic weave is also sometimes called mesh.

BW Body Suit: As described above, but the ballistic weave body suit covers all hit locations except the head.

Combat Environment Suit: Identical to the BW body suit, but with an air-tight liner. Generally worn open at the neck and wrists, the combat environment suit can be sealed by donning gauntlets and a clear plastic flexible headpiece. The suit gives complete protection against most



chemical agents, tainted atmospheres, biological agents, and a moderate defense against radiation. Heat buildup in the suit is handled by a simple solid-state cooling system that is woven into the garment and which eliminates all infrared signature except on the exposed face, hands, and heat exhaust. The heat exhaust is a very pronounced IR source, but this can be dampened by inserting a chill can into the cooling system. The chill can completely eliminates the signature for from 45 minutes to two hours, depending on the background temperature. At the end of that time the can is used up and discarded.

Combat Armor: A neck to toe air-tight array of metallic and synthetic armor, with a separate visored helmet. Most surfaces are rigid armor, although surfaces requiring flexibility (such as joints) are made of advanced forms of ballistic weave. None of the combat armor suits listed have communicators or other extra features included; these may be added at additional cost.

Battle Dress: The ultimate in individual protection, battle dress is an advanced and powered version of combat armor. Battle dress enhances the strength and senses of individuals wearing it with variable feedback personal controls, servo-powered limbs, and various electrical assistance. The individual wearing battle dress is effectively doubled in Strength and given unlimited Constitution. Integral batteries power the suit for 10 hours of continuous operation. (Tech Level 14 suits have an endurance of 100 hours.) None of the battle dress suits listed have communicators or other extra features included; these may be added at additional cost.

Chameleon Option: At tech level 12, a chameleon surface becomes available for the combat environment suit, combat armor, and battle dress, at an additional cost of Cr1000. It selectively bleeds heat to match background IR levels and effectively renders the wearer invisible to IR sensors.

Psionic Shield Option: Beginning at tech level 12, psionic shielding is available as an option for any helmet (and for battle dress, which includes a helmet as part of the armor), for an additional Cr4000. Psionic shielding protects the wearer from psionic mind reading and life sensing.

Body Armor Protection

Description	TL	Vol (liters)	Weight (kg)	AV	AV vs. laser	Hit Location	Price (Cr)	AGL	INIT
Leather Vest	0	1	0.5	0(1/2)	—	C,A	5	—	—
Jack	0	1.5	1	0(1/2)	—	C,A,Ar	10	–1	—
Mail Vest	1	2	10	0(1)	—	C,A,	200	—	—
Half Mail	1	1	5	0(1)	—	C	100	—	—
Full Mail	1	3	23	0(1)	—	C,A,Ar,L	460	–1	—
Helmet	1	1	1.6	0(2)	0	(H)	30	—	—
Visored Helmet	2	2	2.6	0(2)	0	H	50	—	–1
Breastplate	2	20	8	0(2)	0	C,A	160	–1	—
Plate	2	40	18	0(2)	0	C,A,Ar,L	360	–2	—
Flak Jacket	5	2	12	1(2)	1	C,A	180	–1	—
Helmet	5	1	1	1(2)	1	(H)	30	—	—
Flak Jacket	7	2	8	1(2)	1	C,A	200	–1	—
BC Vest	7	1	4	1(2)	—	C,A	320	—	—
BC Body Suit	7	2.5	9.3	1(2)	—	C,A,Ar,L	750	–1	—
BW Helmet	8	1	0.5	1(2)	—	(H)	50	—	—
BW Vest	8	1	4	1(2)	—	C,A	400	—	—
BW Body Suit	8	2.5	9.3	1(2)	—	C,A,Ar,L	930	–1	—
Combat Environment Suit	9	2.5	9.3	1(2)	—	C,A,Ar,L	6930	—	—
Visored Helmet	10	2	1.4	2	2	H	880	—	—
Combat Armor	10	40	13.3	2/1(2)	2/1	H,C,A,Ar,L	7950	–1	—
Battle Dress	10	100	419	4	4	H,C,A,Ar,L	114,750	–3	–2
Visored Helmet	12	2	1.8	3	3	H	920	—	—
Combat Armor	12	40	20.4	3/2	3/2	H,C,A,Ar,L	8700	–1	—
Battle Dress	12	100	197	6	6	H,C,A,Ar,L	146,000	–2	–1
Visored Helmet	14	2	1.2	4	4	H	975	—	—
Combat Armor	14	40	18	4	4	H,C,A,Ar,L	10,080	–1	—
Battle Dress	14	100	296	8	8	H,C,A,Ar,L	218,250	–1	–1

Hit Location Abbreviations: C = chest, A = abdomen, Ar = arms, L = legs, H = full head coverage, (H) = partial head coverage (face exposed)

Melee Weapons

A variety of lethal weapons are available, particularly on primitive worlds, for armed melee attacks.

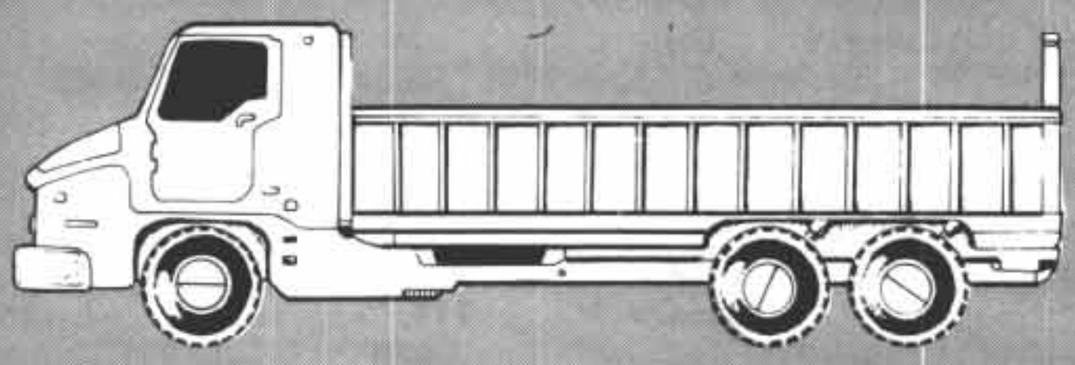
Weapon	TL	Vol (liters)	Weight (kg)	Price (Cr)	Range	Hit Mod	Damage
Club	0	2	2	—	S	–1	1D6+(STR+2)
Spear	0	2	2	10	L	—	1D6+(STR)
Dagger/Knife	1	0.2	0.2	10	S	+1	1D6
Hatchet	1	1	1	50	S	—	1D6+(STR+2)
Blade	1	0.2	0.3	50	S	+2	1D6
Pike	1	3	2.5	40	L	+1	1D6+STR
Axe	1	2	2	100	L	–2	1D6+STR
Sword	1	1	1	100	L	—	2D6
Cutlass/Sabre	1	1	1.2	150	L	+1	2D6
Broadsword	1	1.5	2.5	300	L	—	2D6+(STR+2)
Rapier/Foil	2	0.6	0.5	200	L	+2	1D6
Battle Axe	2	2	3	200	L	–1	2D6+STR
Halberd	2	2.5	2.5	200	L	—	2D6+STR
Bayonet*	3	0.2	0.2	20	L	+1	1D6+(STR+2)

*Combat values are for a bayonet mounted on the end of a rifle or carbine. If used by itself, a bayonet uses the dagger combat values.

Vehicle Data

Tech Level: The tech level at which the vehicle was constructed. **Price:** Includes all weapons listed under Armament, all ammunition listed under Ammo, and one full load of fuel. **Size:** Volume in kiloliters (cubic meters), followed by its standard rated displacement in starship tons (14 cubic meters each), and its target size abbreviation. **Weight:** Gross weight, including ammo and fuel but not cargo. **Power:** Power output of the vehicle's power plant. **Maint:** Maintenance number. **Fuel Capacity:** Fuel capacity, in liters, followed by fuel type. **Fuel Consumption:** Fuel consumption rate, in liters of fuel per hour, followed by endurance in hours. **Travel Move:** Travel movement. Road movement is followed by off-road movement and water speed, if applicable. For aerial vehicles high flight speed is followed by NOE speed. Movement rates are expressed in kilometers travelled per period (4 hours). **Combat Move:** Combat movement. Road movement is followed by off-road movement. For aerial vehicles high flight speed is followed by NOE speed. Ground vehicle movement rates are expressed in meters moved per combat turn (5 seconds). Aircraft and grav vehicle movement is expressed in 10-meter grid squares per 5-second turn. **Controls:** The type of controls used and the type and number of computers, if any. **Commo:** All communication equipment. **Sensors:** All sensor devices, including flight avionics. **Life Support:** All life-support features of the vehicle. **Load:** Interior cargo capacity, given in tonnes unless otherwise noted. **Crew:** Number of crew. **Passengers:** Number of passengers. **Fire Control:** Fire control bonus. **Armament:** The weapon or weapons with which the vehicle is normally equipped and which are included in the vehicle price (*MG:* Machinegun). **Stabilization:** Any special weapon stabilization machinery. **Ammo:** The amount of ammunition carried in ammunition stores (additional ammo may be purchased and carried, but counts as cargo). **Weapons Mounts:** Most weapons are fired by the vehicle's gunner. Weapons fired by other crewmembers are mounted in weapons mounts. The entry for each vehicle explains the location of its weapons mounts (if any) and who fires weapons in them (*C:* Commander *P:* Passenger). **Susp:** Suspension type. W = Wheel; T = Track; G = Grav, A = Air Cushion. The number following the suspension type is its armor rating or, if in parentheses, its cumulative damage level. **T:** Turret armor. The face of the turret is indicated by the second letter (F = Front, S = Side, R = Rear) **H:** Hull armor. The face of the hull is indicated by the second letter (F = Front, S = Side, R = Rear). If the values are in brackets, the vehicle is partially open and characters receive only partial cover from the armor. **Deck:** Top or overhead armor of both the hull and turret (if present). **Belly:** Hull belly armor.

Heavy Cargo Truck



Primitive cargo carriers such as this are common on emerging and recovering worlds. Larger versions carry 10 or 20 tonnes. This version is effectively open on the top (and provides no protection) while the front, rear, and sides of the vehicle provide only partial cover (which is why their values are shown in brackets).

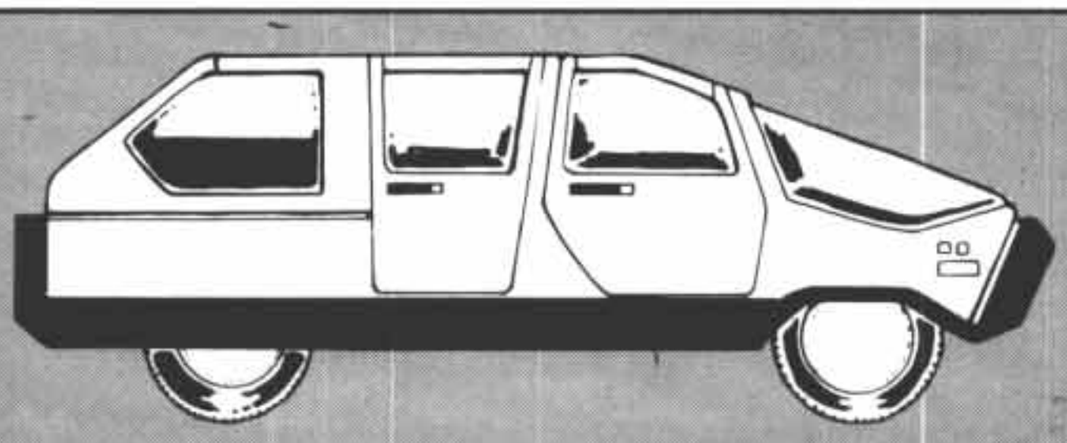
Tech Level: 5
Price: Cr2540
Size: 28 kiloliters displacement = 2 tons (Mc)
Mass: 3.6 tonnes empty, 8.9 tonnes loaded
Power: 0.15 MW internal combustion engine
Maint: 5
Controls: Primitive mechanical
Life Support: Light, heat
Cargo: 4.5 tonnes
Crew: 1
Passengers: 1

Travel Move: 110/20
Combat Move: 25/5
Fuel Capacity: 600 liters hydrocarbon distillates
Fuel Consumption: 30 liters/hour (endurance of 20 hours)

Combat Statistics

Config: Open vehicle	**HF:** [1]
Susp: W (3)	**HS:** [1]
	HR: [1]
Deck: Open	**Belly:** 1

Ground Car



The ground car is a personal transport vehicle used widely on recovering worlds. This version has fairly high performance characteristics. It is also effectively open on the top (and provides no protection) while the front, rear, and sides of the vehicle provide only partial cover (which is why their values are shown in brackets).

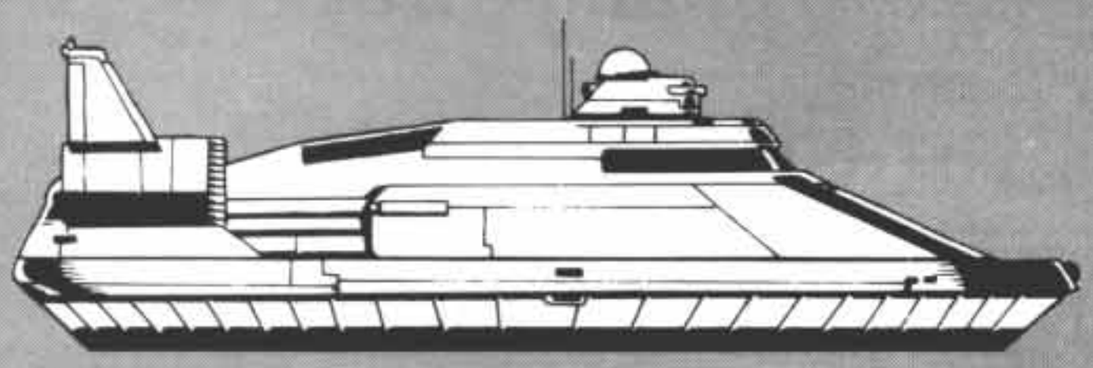
Tech Level: 6
Price: Cr2695
Size: 14 kiloliters displacement = 1 ton (Mc)
Mass: 2.96 tonnes empty, 3.79 tonnes loaded
Power: 0.2 MW improved internal combustion engine
Maint: 2
Controls: Primitive mechanical
Life Support: Light, heat
Cargo: 175 kilograms
Crew: 1
Passengers: 3

Travel Move: 325/65
Combat Move: 75/15
Fuel Capacity: 250 liters hydrocarbon distillates
Fuel Consumption: 50 liters/hour (endurance of 5 hours)

Combat Statistics

Config: Open vehicle	**HF:** [1]
Susp: W (2)	**HS:** [1]
	HR: [1]
Deck: Open	**Belly:** 1

Hovercraft



This is an early version of an air cushion vehicle used to transport passengers and light cargo over water or flat terrain. Hovercraft were among the most versatile surface transports available until the appearance of grav vehicles, and are highly prized on worlds which do not have access to contra-gravity lifter technology.

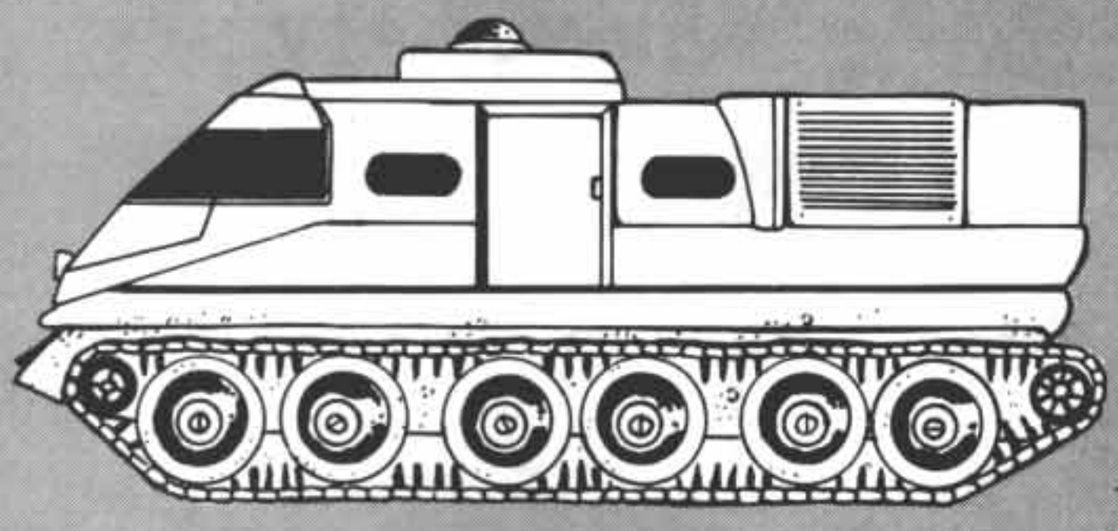
Tech Level: 7
Price: Cr289,025
Size: 56 kiloliters displacement = 4 ton (Mc)
Mass: 8.4 tonnes empty, 13.8 tonnes loaded
Power: 0.45 MW gas turbine power plant, plus a turbofan thruster generating 5.4 tonnes of thrust. (0.0274 MW excess power)
Maint: 5
Controls: Electronic, with tech level 7 land navigation
Commo: 300-km radio
Sensors: 0.3-km HRT
Life Support: Light, heat
Cargo: 1.25 tonnes
Crew: 1
Passengers: 7

Travel Move: 800/605
Combat Move: 185/140
Fuel Capacity: 3400 liters hydrocarbon distillates
Fuel Consumption: 783 liters/hour (endurance of 4.34 hours)

Combat Statistics

Config: Standard	**HF:** 1
Susp: H (4)	**HS:** 1
	HR: 1
Deck: 1	**Belly:** 1

Tracked ATV



The tracked all terrain vehicle is a rugged, enclosed vehicle with excellent cross-country performance. It is used for wilderness exploration, particularly on lower tech level worlds. They are sufficiently well protected that some governments arm them and use them as combat vehicles.

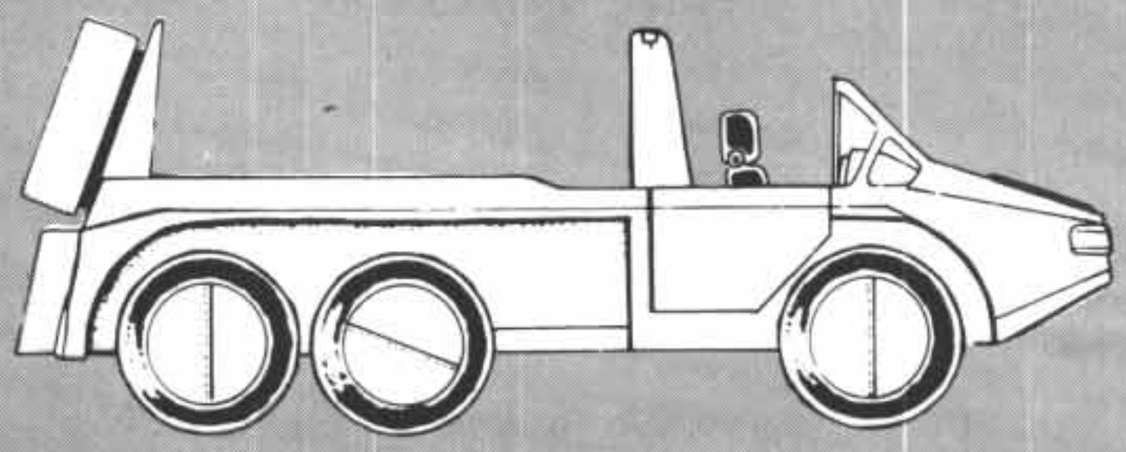
Tech Level: 7
Price: Cr56,520
Size: 42 kiloliters displacement = 3 tons (Mc)
Mass: 18.3 tonnes empty, 27 tonnes loaded
Power: 0.6 MW gas turbine power plant. (0.0095 MW excess power)
Maint: 9
Controls: Electronic, with tech level 7 land navigation
Commo: 300-km radio
Sensors: 0.3-km HRT
Life Support: Light, heat, pressurized, extended life support.
Cargo: 1.75 tonnes
Crew: 1
Passengers: 4

Travel Move: 110/85/13
Combat Move: 25/20/3
Fuel Capacity: 6500 liters hydrocarbon distillates
Fuel Consumption: 180 liters/hour (endurance of 36 hours)

Combat Statistics

Config: Standard	**HF:** 2
Susp: T 6	**HS:** 2
	HR: 2
Deck: 2	**Belly:** 2

Range Truck



This small cross-country utility vehicle also is often called a jeep, hummer, or landrover. It has good off-road performance for a wheeled vehicle and is a handy way to explore wilderness areas when the environment is not hostile and continuous ground contact is required.

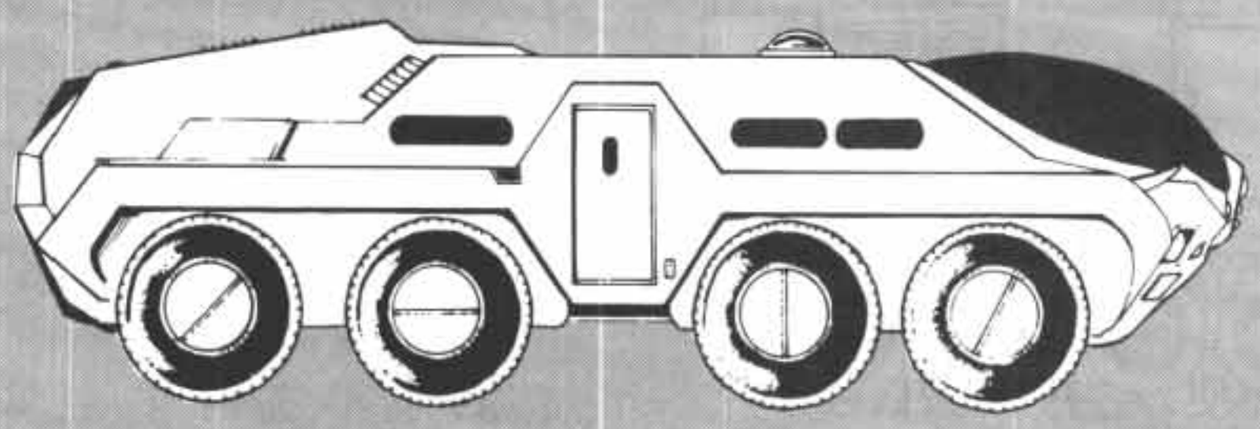
Tech Level: 8
Price: Cr3948
Size: 14 kiloliters displacement = 1 ton (Mc)
Mass: 1.9 tonnes empty, 3.65 tonnes loaded
Power: 0.2 MW improved internal combustion engine. (0.0295 MW excess power)
Maint: 1
Controls: Enhanced electronic
Life Support: Light, heat
Cargo: 1 tonne
Crew: 1
Passengers: 1

Travel Move: 300/130
Combat Move: 70/30
Fuel Capacity: 550 liters hydrocarbon distillates
Fuel Consumption: 50 liters/hour (endurance of 11 hours)

Combat Statistics

Config: Open vehicle	**HF:** [1]
Susp: W (2)	**HS:** [1]
	HR: [1]
Deck: Open	**Belly:** 1

Wheeled ATV



Tech Level: 8
Price: Cr126,308
Size: 98 kiloliters displacement = 7 tons (Mc)
Mass: 14 tonnes empty, 44.4 tonnes loaded
Power: 1.44 MW MHD turbine power plant. (0.0456 MW excess power)
Maint: 11
Controls: Enhanced electronic, with TL-8 land navigation
Commo: 300-km radio
Sensors: 0.3-km HRT
Life Support: Light, heat, pressurized, extended life support (1 bunk), air lock.
Cargo: 3 tonnes
Crew: 1
Passengers: 4

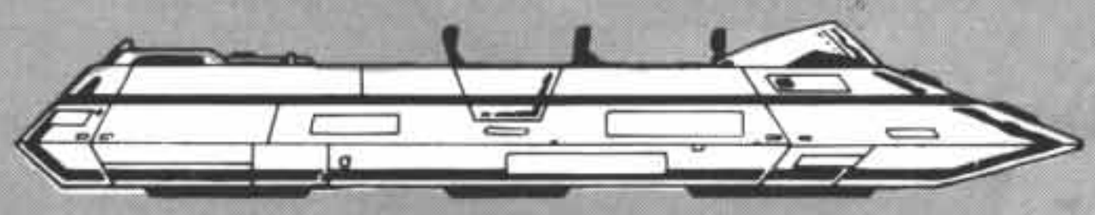
This massive all-terrain vehicle is designed for extended ground exploration in hostile environments.

Travel Move: 175/85/20
Combat Move: 40/20/5
Fuel Capacity: 27,000 liters hydrocarbon distillates
Fuel Consumption: 288 liters/hour (endurance of 93.75 hours)

Combat Statistics

Config: Standard	**HF:** 2
Susp: W (8)	**HS:** 2
	HR: 2
Deck: 2	**Belly:** 2

Air Raft (Open)



Common on higher tech worlds, the air raft is a fast, efficient, and reliable means of transportation. Its ability to make vertical takeoffs and landings and to hover using its contra-grav lifters makes it the most versatile of light transport vehicles. This version is completely open on the top (and provides no protection) while the front, rear, and sides of the vehicle provide only partial cover (which is why their values are shown in brackets).

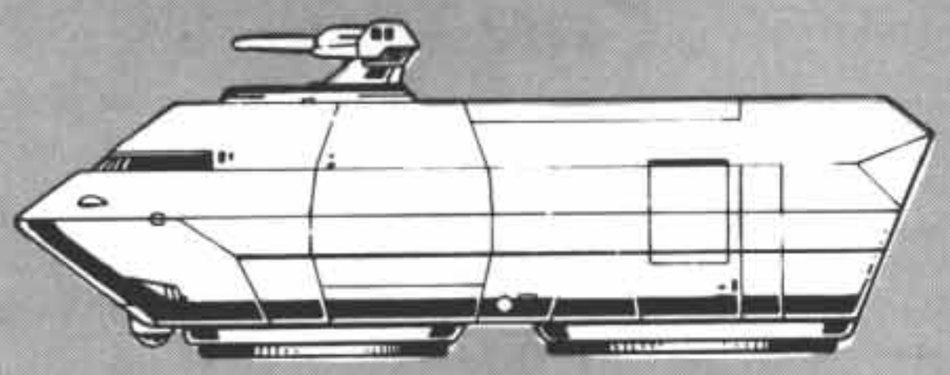
Tech Level: 10
Price: Cr118,401
Size: 28 kiloliters displacement = 2 tons (Mc)
Mass: 3 tonnes empty, 4.8 tonnes loaded
Power: 0.75 MW MHD turbine power plant, with HEPlaR thruster generating 3 tonnes of thrust. (0.129 MW excess power)
Maint: 1
Controls: Computer linked, TL-6 flight avionics, 2×TL-9 FLT computers
Commo: 300-km radio
Life Support: Light, heat
Cargo: 1 tonne
Crew: 1
Passengers: 5

Travel Move: 1200/240
Combat Move: 56/6 grid squares
Fuel Capacity: 2600 liters liquid hydrogen
Fuel Consumption: 187.5 liters/hour (endurance of 13.9 hours)

Combat Statistics

Config: Open vehicle	HF: [2]
Susp: Grav	HS: [1]
	HR: [1]
Deck: Open	Belly: 1

G-Carrier



The G-carrier is an enclosed military or quasi-military grav vehicle. Similar in concept to an armored air raft, the G-Carrier has a gun mount and an armored rear hatch.

Tech Level: 11
Price: Cr719,204 (Cr200 per pulse cartridge for the plasma gun)
Size: 84 kiloliters displacement = 6 tons (Mc)
Mass: 25 tonnes empty, 29.4 tonnes loaded
Power: 2.008 MW MHD turbine power plant, with HEPlaR thruster generating 12 tonnes of thrust. (0.0016 MW excess power)
Maint: 6
Controls: Dynamic linked, TL-10 flight avionics, TL-11 terrain following avionics, 2xTL-11 FLT computers
Commo: 300-km radio, 30-km laser
Sensors: 3-km passive EMS
Life Support: Light, heat, basic life support (pressurized)
Cargo: 1 tonne
Crew: 2
Passengers: 10
Fire Control: –3 Diff Mods
Armament: Remote turret with 2-Mj cradle-mount plasma gun, 7.5mm coaxial MG
Stabilization: Advanced
Ammo: 200 pulse cartridges, 1800 rounds 7.5mm

Travel Move: 1890/900
Combat Move: 88/21 gr. sq.
Fuel Capacity: 3400 liters liquid hydrogen
Fuel Consumption: 551.6 liters/hour (endurance of 6.16 hours)

Combat Statistics

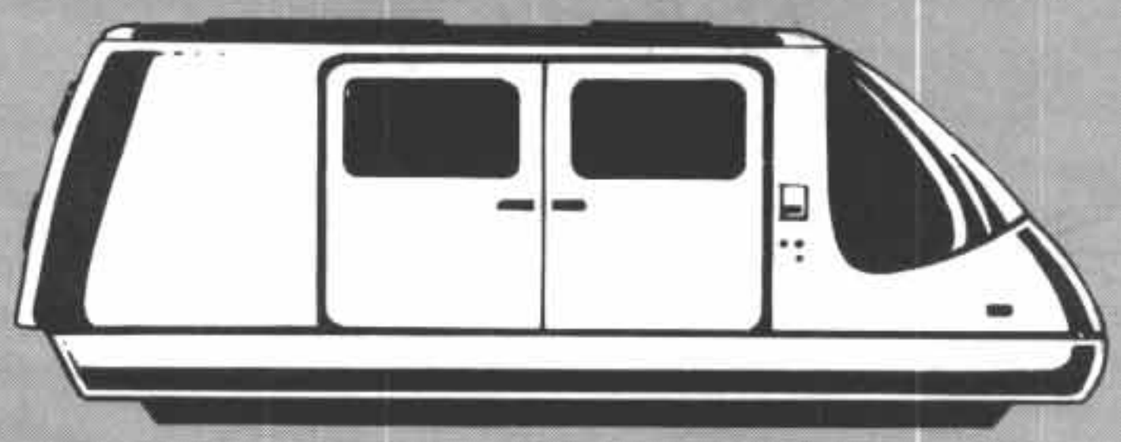
Config: Small Turret	TF: 16	HF: 16
Susp: Grav	TS: 8	HS: 8
	TR: 8	HR: 8
	Deck: 8	Belly: 8

Weapon Values

Type	*ROF*	*Range*	*Dam Val*	*Pen Rtg*
2-Mj plasma cradle gun	SA1	60*	16	1-2-10
7.5mm coax MG	5	300	7	2-3-4

*The plasma gun's accuracy does not go down (and thus gunner task difficulty does not increase) with range. Range bands change the weapon's performance only by reducing penetration and defining the weapon's maximum range.

Enclosed Air Raft



Tech Level: 12
Price: Cr400,728
Size: 42 kiloliters displacement = 3 tons (Mc)
Mass: 4 tonnes empty, 7.06 tonnes loaded
Power: 0.9 MW MHD turbine power plant, with HEPlaR thruster generating 6 tonnes of thrust. (0.0928 MW excess power)
Maint: 1
Controls: Dynamic linked, TL-10 flight avionics, TL-12 terrain following avionics, 2xTL-12 FLT computers
Commo: 300-km radio, 30-km laser
Life Support: Light, heat, basic life support (pressurized)
Cargo: 2.375 tonnes
Crew: 1
Passengers: 3

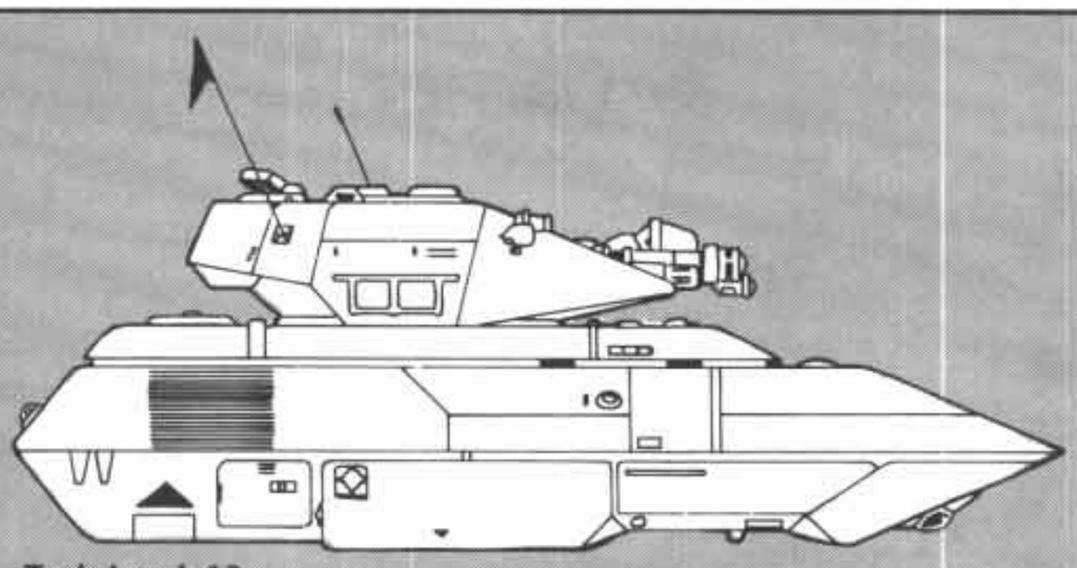
The enclosed air raft is another version of this common and versatile vehicle. It is not only more comfortable than open-topped versions, but it is also capable of extended operation in hostile environments.

Travel Move: 1890/945
Combat Move: 88/22 grid squares
Fuel Capacity: 3450 liters liquid hydrogen
Fuel Consumption: 255 liters/hour (endurance of 13.5 hours)

Combat Statistics

Config: Standard	**HF:** 2
Susp: Grav	**HS:** 1
	HR: 1
Deck: 1	**Belly:** 1

Grav Tank



Tech Level: 13
Price: Cr2,010,979 (Cr300 per pulse cartridge for the plasma gun)
Size: 98 kiloliters displacement = 7 tons (Mc)
Mass: 25.5 tonnes empty, 41.8 tonnes loaded
Power: 3.3 MW fusion reactor (1 year endurance) with HEPlaR thruster generating 16 tons of thrust (0.0572 MW excess power)
Maint: 7
Controls: Holographically linked, TL-10 flight avionics, TL-13 terrain following avionics, 2×TL-13 FLT computers
Commo: 300-km radio, 30-km laser communicator
Sensors: 30-km passive EMS, 3-km active EMS, 3-km EMS jammer.
Life Support: Heat, light, pressurized, basic life support
Cargo: 4 tonnes
Crew: 3
Passengers: 1
Fire Control: –4 Diff Mods
Armament: 12-Mj plasma cradle gun, coaxial 7.5mm MG, coaxial painting laser
Stabilization: Advanced
Ammo: 400 pulse plasma cartridges, 3000 rounds 7.5mm

The grav tank is a heavily armed and protected combat platform intended to fight the main close action battle on a planetary surface. This example was intended to work in concert with either static or vehicle-mounted tac missile launchers. For long-range action it uses its laser to designate targets for the tac missiles while at closer ranges it relies on its own plasma gun. Without supporting missile units the tank is at a disadvantage at long range and in open terrain.

Travel Move: 2160/1020
Combat Move: 100/24 grid squares
Fuel Capacity: 4000 liters liquid hydrogen
Fuel Consumption: 200 liters/hour (endurance of 20 hours)

Combat Statistics

Config: Turret	**TF:** 60	**HF:** 60
Susp: G	**TS:** 8	**HS:** 8
	TR: 4	**HR:** 4
	Deck: 8	**Belly:** 4

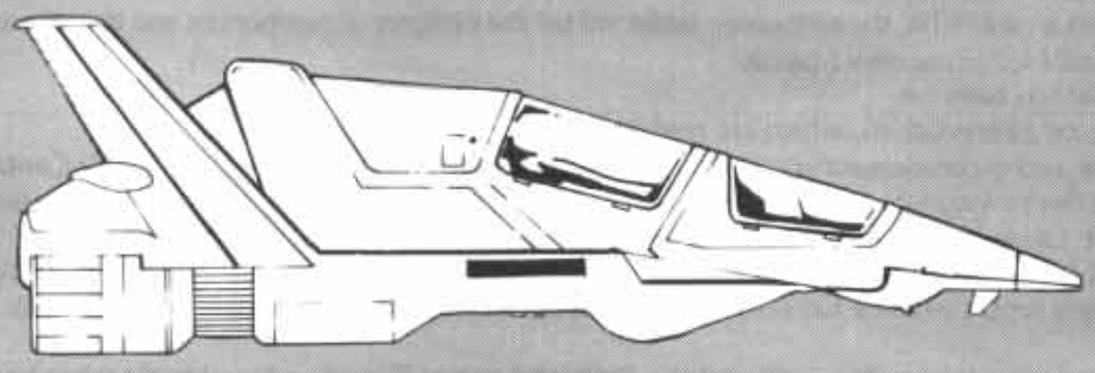
Weapon Values

Type	*ROF*	*Range*	*Dam Val*	*Pen Rtg*
12-Mj plasma cradle gun	SA1	360*	40	1-2-10
7.5mm MG	5	300	7	2-3-4
8cm coax laser rifle	SA3	300	—†	—†

*The plasma gun's accuracy does not go down (and thus gunner task difficulty does not increase) with range. Range bands change the weapon's performance only by reducing penetration and defining the weapon's maximum range.

† The laser is powered direct from the tank's power plant, but only at target designation intensities.

Speeder



Tech Level: 15
Price: Cr396,067
Size: 28 kiloliters displacement = 2 tons (Mc)
Mass: 2.2 tonnes empty, 3 tonnes loaded
Power: 0.9 MW fusion power plant (1 year endurance), with HEPlaR thruster generating 8 tonnes of thrust. (0.0747 MW excess power)
Maint: 1
Controls: Holographic linked, TL-10 flight avionics, TL-15 terrain following avionics, 2×TL-15 FLT computers
Commo: 300-km radio
Sensors: 3-km passive EMS
Life Support: Light, heat, basic life support (pressurized)
Cargo: 0.25 tonne
Crew: 1
Passengers: 3

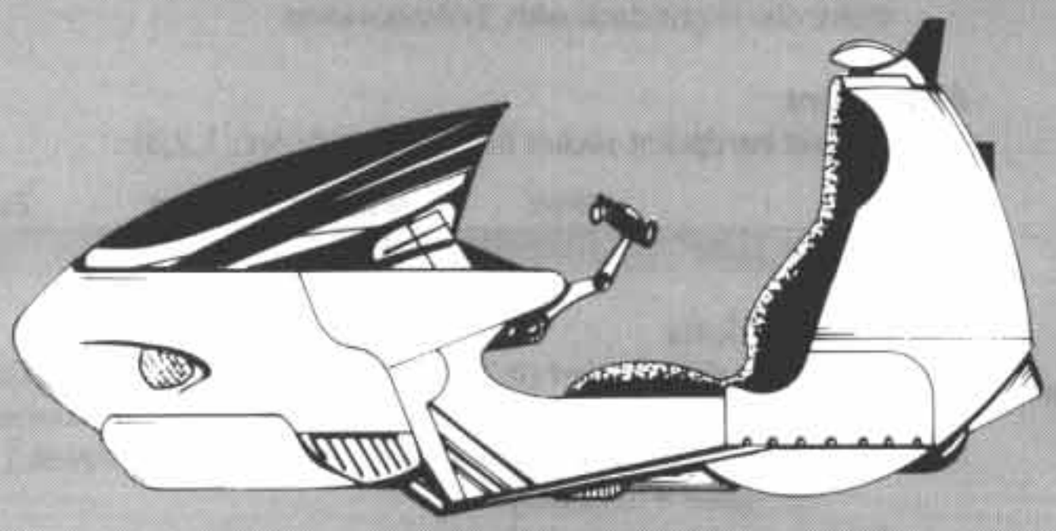
The speeder is a streamlined grav-craft intended for high-speed transport between points on a world surface. Contra-grav units provide lift while a fusion-powered jet provides thrust.

Travel Move: 3600/1140
Combat Move: 167/26 grid squares
Fuel Capacity: 2000 liters liquid hydrogen
Fuel Consumption: 100 liters/hour (endurance of 20 hours)

Combat Statistics

Config: Standard	**HF:** 2
Susp: Grav	**HS:** 1
	HR: 1
Deck: 1	**Belly:** 1

Grav Bike



Tech Level: 15
Price: Cr69,525
Size: 7 kiloliters displacement = 0.5 ton (SM)
Mass: 0.78 tonnes empty, 1.38 tonnes loaded
Power: 0.135 MW fuel cell, with HEPlaR thruster generating 0.7 tonne of thrust. (0.01475 MW excess power)
Maint: 1
Controls: computer linked, TL-6 flight avionics, 1×TL-9 FLT computer (no back-up)
Life Support: Light, heat
Cargo: 0.25 tonne
Crew: 1
Passengers: 1 (restricted seat)

A small contra-grav sport and utility vehicle capable of carrying its driver and one passenger.

Travel Move: 1200/240
Combat Move: 56/6 grid squares
Fuel Capacity: 148.5 liters high grade hydrocarbon distillates, 50 liters LHyd
Fuel Consumption: 27 liters HGHD, 8.75 liters LHyd/hour (endurance of 5.5 hours)

Combat Statistics

Config: Motorcycle	**HF:** [2]
Susp: Grav	**HS:** [1]
	HR: [1]
Deck: Open	**Belly:** 1

STARSHIP LISTINGS — Scout/Courier

The following pages contain an assortment of starships and interplanetary "slow boats" that are representative of the sorts of vessels which have survived into the New Era. The main data listings are largely self-explanatory, and provide a listing of the components in the ship and its capabilities. Unless otherwise stated, all weights are in tonnes, all lengths in meters, and all volumes in cubic meters (kiloliters).

The damage section lists the components found in each part of the vessel. When an area is hit, the hit location tables will tell the category of component and the referee or player then rolls on the appropriate component damage table (page 326) to find the specific system or crew type hit.

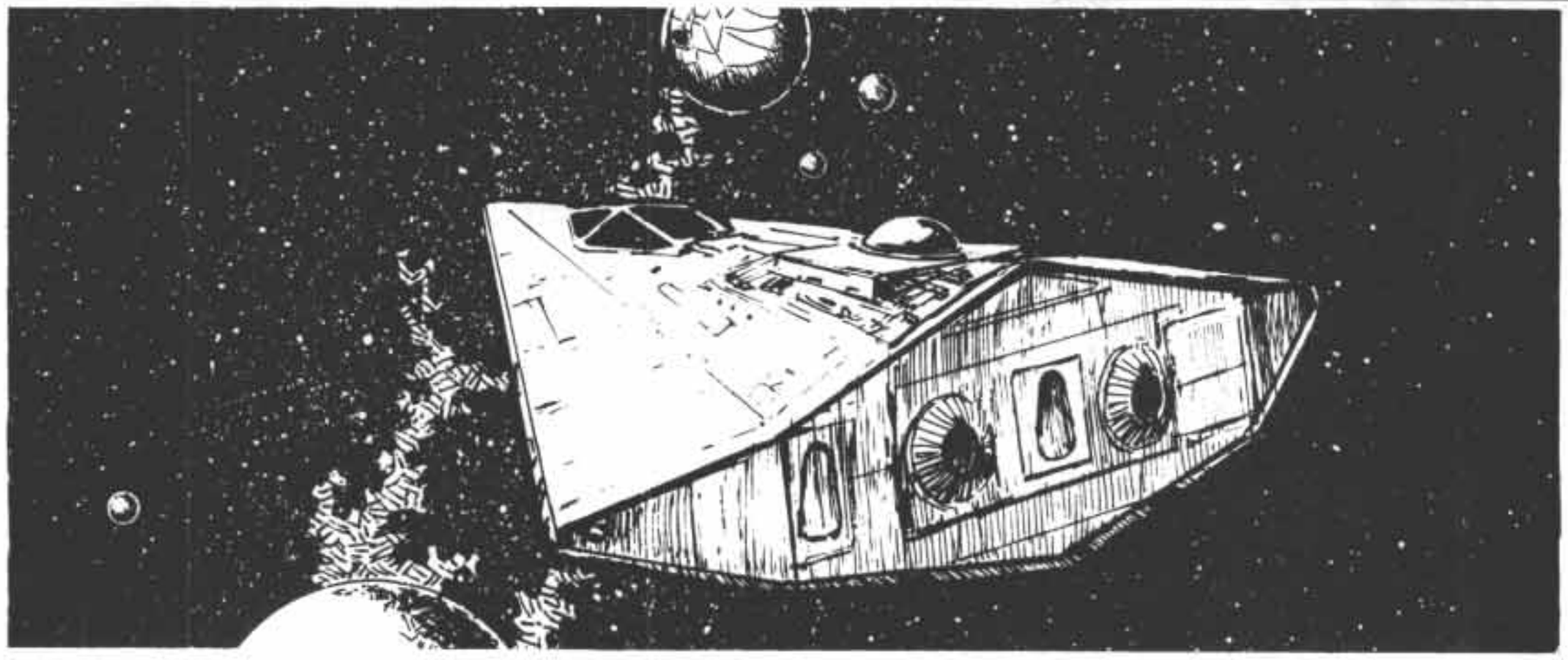
If an antenna is hit, roll randomly to determine which antenna on the vessel has been hit.

The listing of system and their damage capacities relies, for sake of brevity, on abbreviations, which are read as follows:

AEMS: Active Electromagnetic Sensor; **AG:** Artificial Gravity (environmental and g-compensating); **AL:** Air Lock; **Ant:** Antenna; **Bs:** Barbette Socket; **CG:** Contra-Gravity Lifters; **CH:** Cargo Hatch; **Elec:** Electronics; **ELS:** Emergency Life Support; **EMM:** Electromagnetic Masking; **EMMR:** Electromagnetic Masking Radiators; **Eng:** Engineering; **FPP:** Fuel Processing Plant; **JD:** Jump Drive; **LB:** Laser Barbette; **LS:** Life Support; **LSR:** Large stateroom; **LT:** Laser Turret; **MB:** Missile Barbette; **MD:** Maneuver Drive; **MFD:** Master Fire Director; **MT:** Missile Turret; **PEMS:** Passive Electromagnetic Sensor; **PEMS Ant:** Passive Electromagnetic Sensor Antenna; **PP:** Power Plant; **Qtrs:** Quarters; **RC Ant:** Radio Communicator Antenna; **SSR:** Small Stateroom; **TS:** Turret Socket, i.e., an empty socket where a turret could be installed. All empty sockets take 1 minor hit (1h). If a turret or barbette is in the socket, it takes damage normally.

Note: The listings below are fully compatible with the TNE Space Combat system (pages 311-326) and the **Brilliant Lances: Traveller Starship Combat** boardgame. Maneuver performance is given in G-turns. Number of G-hours available equals G-turns + 2. Fuel consumed per G-hour is fuel per G-turn listed below x 2. Communicators and sensors have their short ranges listed below (in parentheses) in hexes for use with **Brilliant Lances**. Their range in TNE Space Combat range bands is identical, merely read "hexes" as "range bands." Fuel capacity is given under "Notes" in cubic meters and displacement tons (used when resolving fuel hits).

Prices: Prices for ships do *not* include carried small craft, cutter modules, vehicles, etc., which must be purchased separately.



General Data

Displacement: 100 tons
Length: 35 meters
Price: MCr50.48
Configuration: Wedge SL
Mass (Loaded/Empty): 697.9/477.0
Hull Armor: 28
Volume: 1400m³
Target Size: S
Tech Level: 15

Engineering Data

Power Plant: 147 MW Fusion Power Plant (147 MW/hit), 1 year duration (0.557 MW excess power)
Jump Performance: 2 (210 m³ fuel)
G-Rating: 2G (50 MW/G), Contra-Grav lifters (10 MW)
G-Turns: 80 (113.6 using jump fuel), 6.25m³ fuel each
Maint: 23

Electronics

Computer: 3×TL-15 Mod St Computers (0.55 MW ea.)
Commo: 300,000km radio (10 hexes, 10 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 150,000km (5 hexes; 0.15 MW), Active EMS 300,000km (10 hexes; 15 MW), TL-15 Densitometer (0.4 MW), TL-14 Neutrino detector (0.01 MW)
Controls: Flight deck with 3×Workstation

Armament

1 turret hardpoint socket fitted (Loc: 10; Arc: 1,2,3).

	Short	*Medium*	*Long*	*Extreme*
150-Mj Laser Turret	10:1/10-31	20:1/10-31	40:1/10-31	80:1/10-31

Accommodations

Life Support: Extended (0.28 MW), Grav Compensators (6G; 7 MW)
Crew: 3 (2×Maneuver, 1×Electronics). Seeker adds 1×Gunner.
Crew Accommodations: 2×Large Stateroom (0.001 MW ea.), double occupied if necessary.
Passenger Accommodations:
2×Small Stateroom (0.0005 MW ea.)
Cargo: 161.8 m³, one large cargo hatch
Small Craft and Launch Facilities: Air raft with internal hangar (Minimal) and one launch port
Air Locks: 1.

Notes

Standard practice is for one maneuver crewmember to double as the ship's electronics operator. Fuel purification machinery (1.05 MW), 20.28 hours to refine 710 m³ (50.7 tons).

The Seeker is built on the Scout/Courier design, converting the two small staterooms and 116 m³ of the cargo hold into a special 172 m³ ore bay, and the addition of a 150-Mj TL-15 mining laser turret to the socket already installed, adding MCr0.86 to the price and 57 tonnes to its mass. (Turret Loc: 10; Arc: 1,2,3; 4.2 MW, 1 Crew)

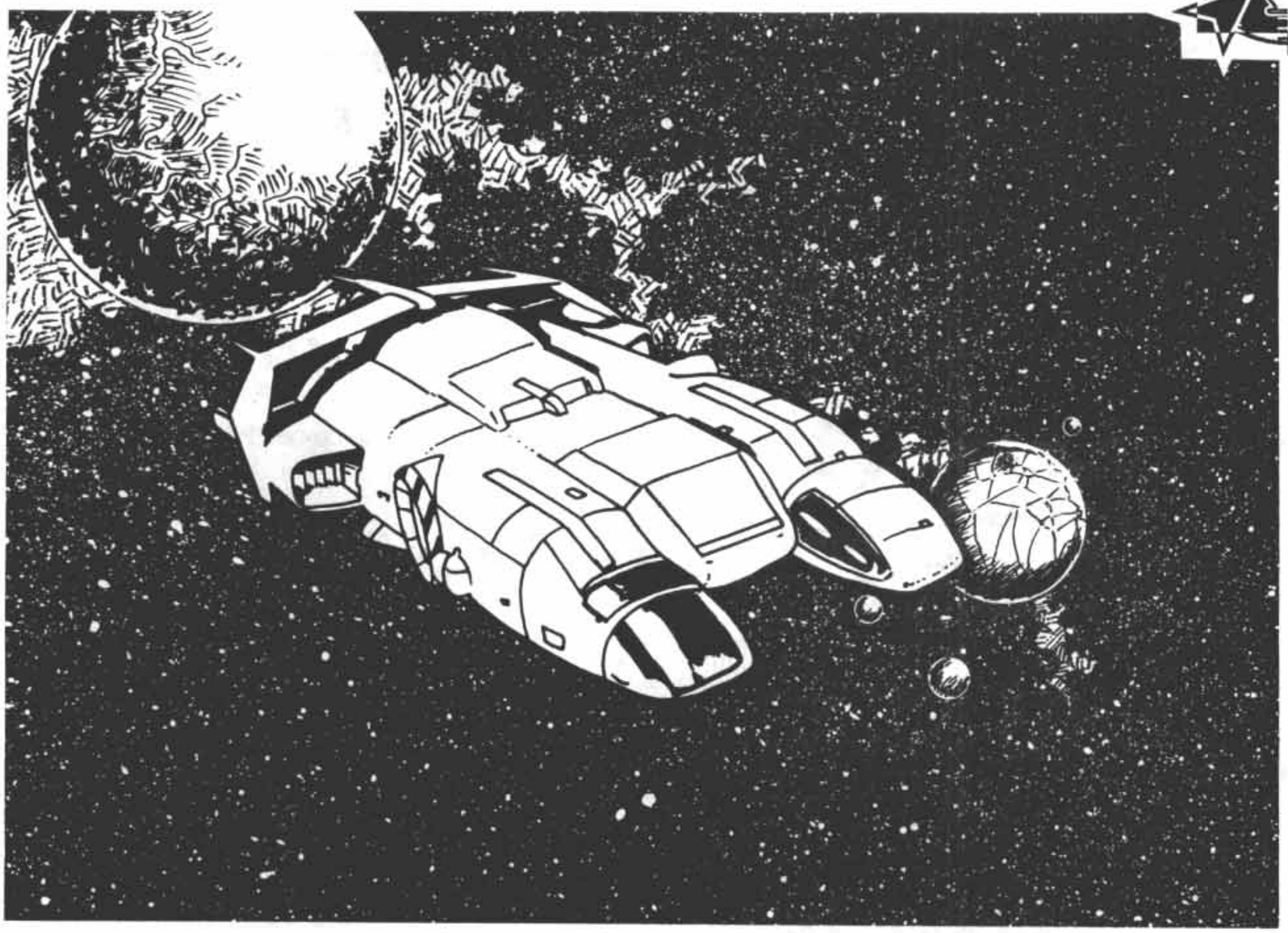
DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	Ant	1-18: Elec, 19-20: Hold
2-3	Ant	1-12: Qtrs, 13-20: Hold
6-7, 12-13		1-10: Qtrs, 11-20: Hold
4-5, 8-9, 11, 14-15		Hold
10	1: AL	1-12: TS, 13-20: Hold
16-17		1-5: Eng, 6-20: Hold
18-19	1-5: Ant, 6-9: LP	1-6: Eng, 7-20: Hold
20		Eng

Systems

JD-1H	LS-1H
PP-1H	SSR (2h)
CG-(4h)	Hangar-1H
ELS-1H	All Others-(1h)
MD-(2h)	
FPP-1H	
AG-1H	
LSR-1H	

Jayhawk-Class Far Trader



General Data

Displacement: 200 tons
Length: 43 meters
Price: MCr57.21
Configuration: Wedge SL
Mass (Loaded/Empty): 1918.38/1093.78
Hull Armor: 10
Volume: 2800m³
Target Size: S
Tech Level: 12

Engineering Data

Power Plant: 148 MW Fusion Power Plant (49 MW/hit), 1 year duration (0.7705 MW excess power)
Jump Performance: 2 (420 m³ fuel)
G-Rating: 1G (100 MW/G), Contra-Grav lifters (20 MW)
G-Turns: 48 (81.6 using jump fuel), 12.5 m³ each
Maint: 89

Electronics

Computer: 3×TL-12 Model St (0.4 MW ea.)
Commo: 30,000 km radio (1 hex, 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000km (1 hex, 0.03 MW), Active EMS 3000 km (0 hexes; use long range for task difficulty in same hex; 8 MW)
Controls: Flight deck with 3×Workstation, 1 other workstation

Armament

2 turret hardpoint sockets fitted (Loc: 8,9; Arcs: 1,2,3)

Accommodations

Life Support: Extended (0.56 MW), Grav Compensators (3 G; 14 MW)
Crew: 5 (2×Maneuver, 1×Electronics, 1×Engineering, 1×Steward)
Crew Accommodations: 5×Small Stateroom (0.0005 MW ea.)
Passenger Accommodations: 10×Small Stateroom (0.0005 MW ea.)
Cargo: 743.8 m³, 2 large cargo hatches
Small Craft and Launch Facilities: Air raft with internal hangar (Minimal), 1 launch port
Air Locks: 2

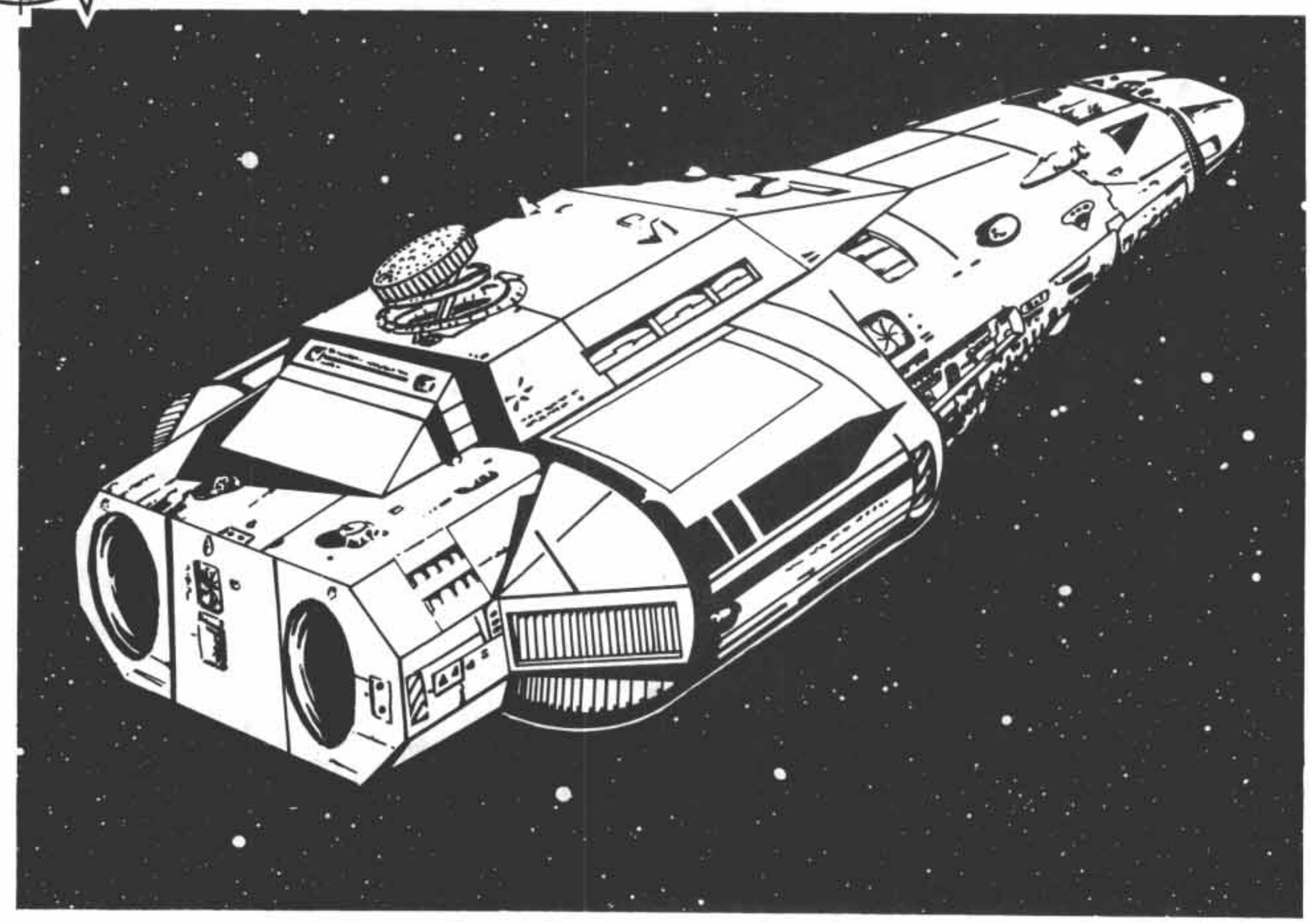
DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*System*
1	1-4: CH, 5-9: LP, 10: Ant	Hold	JD-3H
2, 3	1: Ant	1-2: Elec, 3-20: Qtrs	PP-3H
4-5	1: Ant	1-2: Elec, 3-19: Qtrs, 20: Hold	FPP-2H
6-7, 10-15		Hold	AG-1H
8-9	1-4: CH	1-6: TS, 7-20: Hold	ELS-1H
16-17		1-7: Eng, 8-20: Hold	LS-2H
18-19	1: AL	1-7: Eng, 8-20: Hold	SSR-(2h)
20		Eng	MD-(2h)
			CG-1H
			All Others-(1h)

Notes

Fuel purification machinery (1.53 MW), 24 hours to refine 1020 m³ (72.86 tons).

Moraine-Class Free Trader



General Data

Displacement: 200 tons
Length: 43 meters
Price: MCr46.47
Configuration: Wedge SL
Mass (Loaded/Empty): 1908.146/1074.746
Hull Armor: 10
Volume: 2800m³
Target Size: S
Tech Level: 10

Engineering Data

Power Plant: 156MW Fusion Power Plant (52 MW/hit), 1 year duration (17.967 MW power shortfall)
Jump Performance: 1 (280 m³ fuel)
G-Rating: 1G (100 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 56 (78.4 using jump fuel), 12.5 m³ fuel each
Maint: 89

Electronics

Computer: 3×TL-10 Model St (0.3 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000km (1 hex; 0.06 MW), Active EMS 300km (0 hexes; use extreme range for task difficulty in same hex; 15 MW)
Controls: Flight deck with 3×Workstation, plus 2 other workstations

Armament

2 turret hardpoint sockets fitted (Loc: 16/17, 18/19; Arcs: All)

Accommodations

Life Support: Extended (0.56 MW), Gravitic Compensators (1G; 14 MW)
Crew: 6 (2×Maneuver, 1×Electronics, 2×Engineering, 1×Steward)
Crew Accommodations: 6×Small Stateroom (0.0005 MW ea.)
Passenger Accommodations: 8×Small Stateroom (0.0005 MW ea.), 8×Low Berth (0.001 MW ea.)
Cargo: 764.8 m³, 2 large cargo hatches
Air Locks: 2

Notes

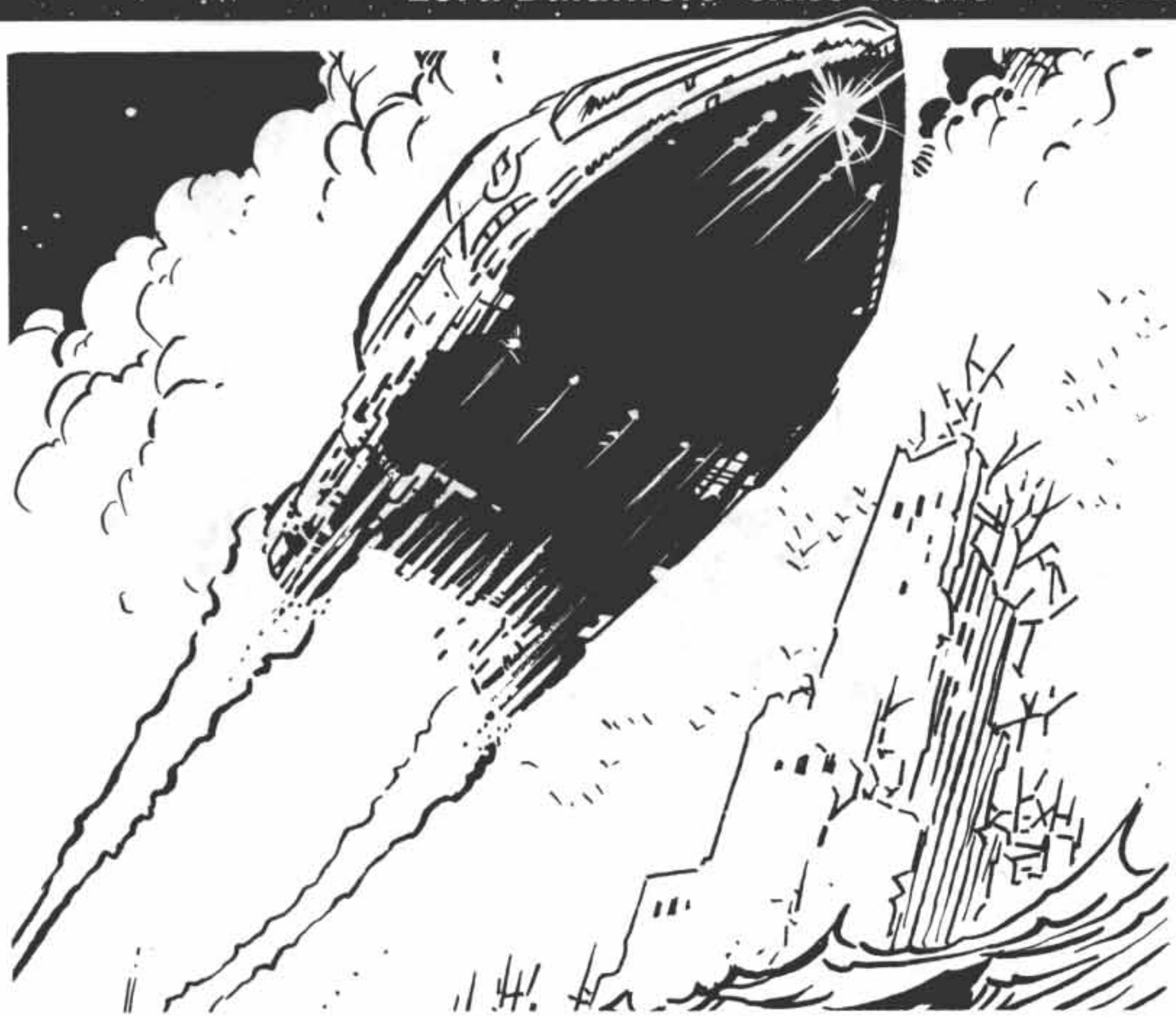
The *Moraine* is the TL-10 version of the more popular and useful *Beowulf*-class. The *Moraine*'s systems consume 174 MW of power, meaning that it cannot operate them all at once with its 156 MW plant. In space, the contra-grav drive is shut down to conserve power. When taking off from a planet, the *Moraine* cannot power its G-compensators, and thus all crew and passengers must be strapped in for this evolution.

Fuel purification machinery (1.53 MW), 30.8 hours to refine 980 m³ (70 tons)

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1	1-6: Ant	1-9: Elec, 10-20: Hold	JD-2H
2	1: AL	Qtrs	PP-3H
4		1-3: Eng, 4-20: Hold	FPP-2H
5, 8-9, 11		Hold	CG-1H
12-15	1-3: CH	Hold	SSR-(2h)
3, 6-7		Qtrs	AG-1H
10		1-3: Qtrs, 4-20: Hold,	LS-1H
16-19		1-3: TS, 4-8: Eng, 9-20: Hold	ELS-1H
20		Eng	MD-(2h)
			All Others-(1h)

Lord Baltimore-Class Yacht



General Data

Displacement: 200 tons
Length: 51 meters
Price: MCr84.8
Configuration: Needle USL
Mass (Loaded/Empty): 1502.83/1207.44
Hull Armor: 42
Volume: 2800m³
Target Size: S
Tech Level: 15

Engineering Data

Power Plant: 456MW Fusion Power Plant (228 MW/hit), 1 year duration (0.2275 MW excess power)
Jump Performance: 4 (700 m³ fuel)
G-Rating: 4G (100 MW/G), Contra-Grav lifters (20 MW)
G-Turns: 32 (88 using jump fuel), 12.5 m³ of fuel each
Maint: 48

Electronics

Computer: 3×TL-15 Model St (0.55 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 150,000km (5 hexes; 0.15 MW), Active EMS 300,000km (10 hexes; 15 MW)
Controls: Flight deck with 3×Workstation, plus 3 other workstations

Armament

1 turret hardpoint socket fitted. (Loc: 10; Arcs: All)

Accommodations

Life Support: Extended (0.56 MW), Gravitic Compensators (6G; 14 MW)
Crew: 9 (2×Maneuver, 3×Engineering, 3×Small Craft Flight Crew, 1×Command). Air raft pilot doubles as Steward
Crew Accommodations: 9×Small Stateroom (0.0005 MW ea.)
Passenger Accommodations: 10×Small Stateroom (0.0005 MW ea.), 1×Large Stateroom (0.001 MW) (owner's suite)
Cargo: 125 m³, one large cargo hatch
Small Craft and Launch Facilities: 10-ton launch and internal hangar (Minimal), air raft with internal hangar (Minimal), one launch port each
Air Locks: 2

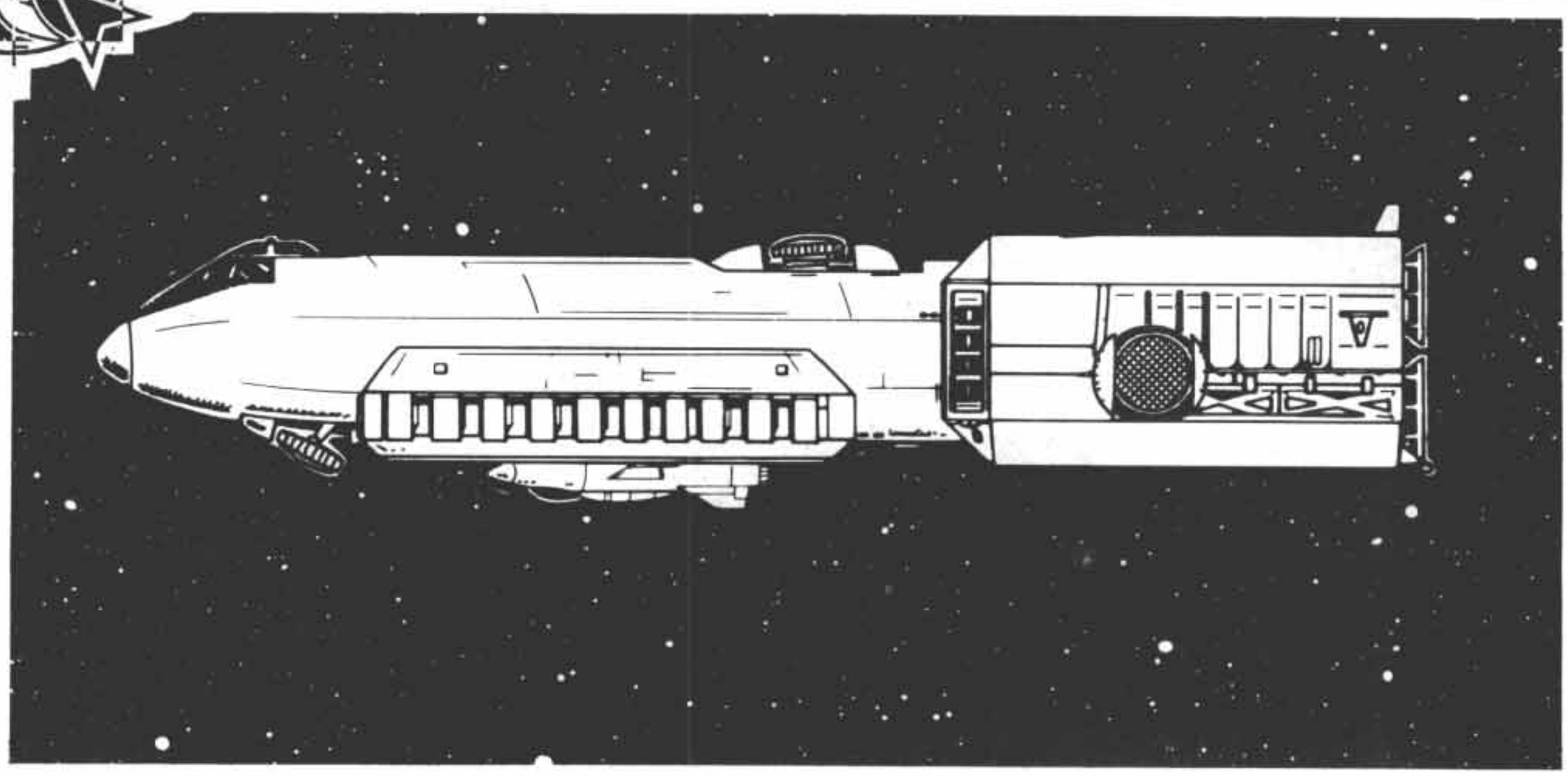
DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1	1-9: Ant	1-10: Elec, 11-20: Qtrs	JD-3H
2, 4		Qtrs	PP-2H
3	1: AL	Qtrs	CG-1H
5-6		1-10: Qtrs, 11-20: Hold	LS-2H
7		1-5: Qtrs, 6-20: Hold	AG-1H
8-9	1: LP	Hold	FPP-2H
12-17		Hold	LSR-1H
10		1-6: TS, 7-20: Hold	ELS-1H
11	LP	Hold	Hangar-3H
18		1-19: Eng, 20: Hold	SSR-(2h)
19-20		Eng	MD-1H
			All Others-(1h)

Notes

Fuel purification machinery (2.5 MW), 13.2 hours to refine 1100 m³ (78.57 tons)

Gazelle-Class Close Escort



General Data

Displacement: 280/400 tons
Length: 48.5 meters
Price: MCr224.65 (+MCr6.78 tanks)
Configuration: Wedge SL
Hull Armor: 62
Volume: 3920 m³/5600 m³
Target Size: S
Tech Level: 14
Mass (Loaded/Empty): 4662.15/4155.53 with tanks
4154.87/3742.43 without tanks

Engineering Data

Power Plant: 891 MW Fusion Power Plant (99 MW/hit), 1 year duration
Jump Performance: 3 with tanks attached (1120m³), 5 without (1260 m³)
G-Rating: 3G with tanks (200 MW/G), 5G without (150 MW/G), Contra-Grav lifters (30 MW)
G-Turns: 112, 25 m³ fuel each, with tanks attached; 77.6, 18.75 m³ each, without tanks
Maint: 143

Electronics

Computer: 3×TL-14 Model Fb (1 MW ea.)
Commo: 300,000km radio (10 hexes; 10 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 150,000km (5 hexes; 0.15 MW), Active EMS 300,000km (10 hexes; 15 MW)
ECM/ECCM: EMS jammer (10 hexes; 30 MW), EM masking package (5.6 MW)
Controls: Bridge with 7×Bridge Workstation, plus 7 other workstations

Armament

Offensive: 2×TL-14 150-Mj Laser Turret (Loc: 16,17; Arcs: All; 4.2 MW, 1 crew ea.), 2×TL-14 300-Mj Laser Barbette (Loc: 4/5, 10; Arcs: 1,2,3; 8.3 MW, 1 crew ea.)
Master Fire Directors: 1 TL-14 (5 Diff Mod; Non-Msl; 10 hexes; 1.62 MW, 1 crew)

	Short	*Medium*	*Long*	*Extreme*
150-Mj Laser Turret	2:1/10-31	4:1/10-31	8:1/10-31	16:1/10-31
300-Mj Laser Barbette	10:1/14-43	20:1/14-43	40:1/8-26	80:1/4-13

Accommodations

Life Support: Extended (0.784 MW), Grav Compensators (5G; 19.6 MW)
Crew: 22 (7×Engineering, 1×Electronics, 2×Maneuver, 5×Gunnery, 1×Maintenance, 3×Small Craft Flight Crew, 3×Command)
Crew Accommodations: 2×Small Stateroom (0.0005 MW ea.), 8×Large Stateroom (0.001 MW ea.) (multiple-occupancy)
Cargo: 10.8 m³, one small cargo hatch
Small Craft and Launch Facilities: SL external grapple for 20-ton small craft
Air Locks: 3

Notes

As with many other small military designs, the *Gazelle* is very tight. Its 22 crewmembers share accommodations for 18, requiring some "hot bunking."

Without drop tanks, the *Gazelle* consumes 899.465 MW, requiring the contra-grav to be shut down, or the EMS jammer to function with a six-hex short range to make up the difference. With tanks attached, only 749.465 MW are needed.

Although it is streamlined with the drop tanks attached, the *Gazelle* only has contra-grav performance for 300 tons, not 400.

2800 m³ of fuel total (200 tons), 1345 (96 tons) carried in 2 50-ton drop tanks, 1455 (104 tons) internal. 1120 m³ fuel for jump 3 with tanks attached, 1260 m³ for jump 5 without tanks. Fuel purification machinery (7.6 MW), 11.05 hours to refine 2800 m³.

Drop tanks are armored to same level as ship, and equipped with EMM.

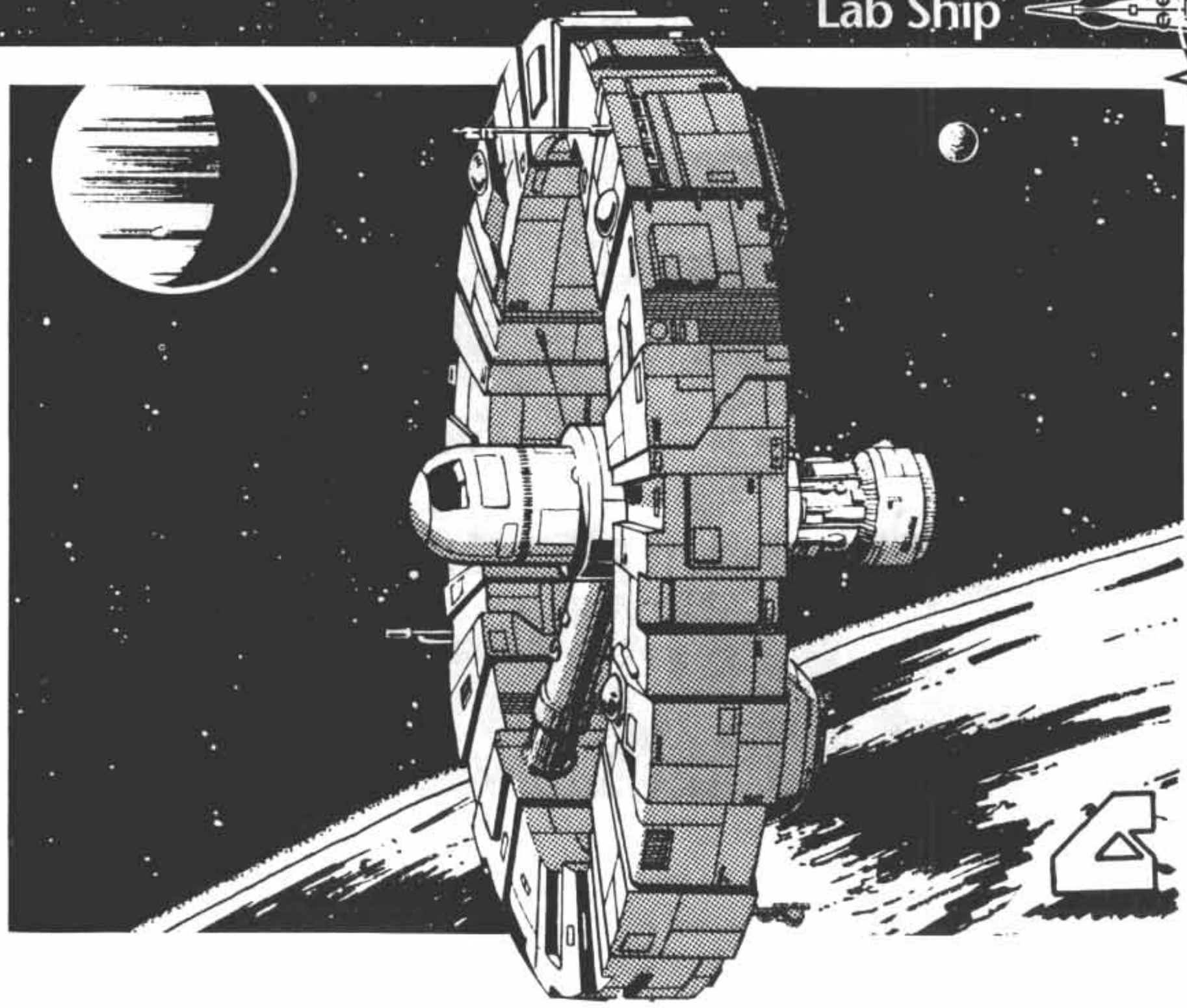
Damage tables below assume drop tanks are attached.

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	1-14: Ant	1-12: Elec, 13-20: Qtrs
2	Ant	Elec
3		Qtrs
4-5	1-10: Small Craft	1-4: LB, 6-20: Qtrs
6-7		Hold
8-9	1: EMMR, 2-14: Small Craft	Hold
10	1-2: EMMR, 3: AL	1-8: LB, 9-20: Hold
11	Small Craft	1-12: Eng, 13-20: Hold
12-13	1-2: EMMR	1-12: Eng, 13-20: Hold
14-15	1: EMMR, 2-14: Small Craft	Hold
16-17	1-2: CH	1-5: LT, 6-7: Hold, 8-20: Eng
18-19	1: Small Craft	1-14: Eng, 15-20: Hold
20		Eng

Systems	
PP-9H	EMMR-(5h)
JD-7H	CG-1H
LS-5H	SSR-(2h)
LB-2H	MD-1H
LT-1H	LSR-1H
FPP-8H	EMM-1H
Hangar-1H	MFD-(4h)
ELS-2H	All Others-(1h)
AG-1H	

Lab Ship



General Data

Displacement: 390/400 tons
Diameter: 76 meters
Price: MCr129.41
Configuration: Open USL
Hull Armor: 10
Volume: 5460/5600 m³
Target Size: S
Tech Level: 15
Mass (Loaded/Empty): 2032.38/1352.49

Engineering Data

Power Plant: 265.2 MW Fusion Power Plant (265.2 MW/hit), 1 year duration (0.355 MW excess power)
Jump Performance: 2 (840 m³ fuel)
G-Rating: 1 (200 MW/G), no contra-grav
G-Turns: 96 (129.6 using jump fuel), 25 m³ of fuel each
Maint: 74

Electronics

Computer: 3×TL-15 Mod Fb Computer (1.1 MW ea.)
Commo: 300,000km radio (10 hexes; 10 MW), 1000AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 180,000km (6 hexes; 0.2 MW), Active EMS 300,000km (10 hexes; 15 MW), TL-15 Densitometer (0.4 MW), TL-14 Neutrino detector (0.01 MW)
Controls: Flight deck with 4×workstation, plus 11 other workstations

Armament

4 turret hardpoint sockets fitted. (Loc: 12-15; Arcs: All)

Accommodations

Life Support: Extended (1.092 MW), Gravitic Compensators (6G; 27.3 MW)
Crew: 17 (2×Maneuver, 1×Engineering, 1×Electronics, 2×Small Craft Flight Crew, 1×Command, 10×Science Personnel)
Crew Accommodations: 17×Small Stateroom (0.0005 MW ea.)
Cargo: 359.7 m³, one large cargo hatch
Small Craft and Launch Facilities: USL External Grapple for 10-ton Launch, Internal Hangar (Minimal) for Air Raft (one of the crew doubles as air raft pilot), one launch port for air raft
Air Locks: 4

Notes

The Lab Ship itself displaces 390 tons, and with its launch attached displaces 400. Its jump, maneuver, contra-grav drives, and controls are configured to work with the 400-ton figure.

Workstations are provided for all 10 scientists.

Fuel purification machinery (3.55 MW), 27.38 hours to refine 3240 m³ (231.4 tons).

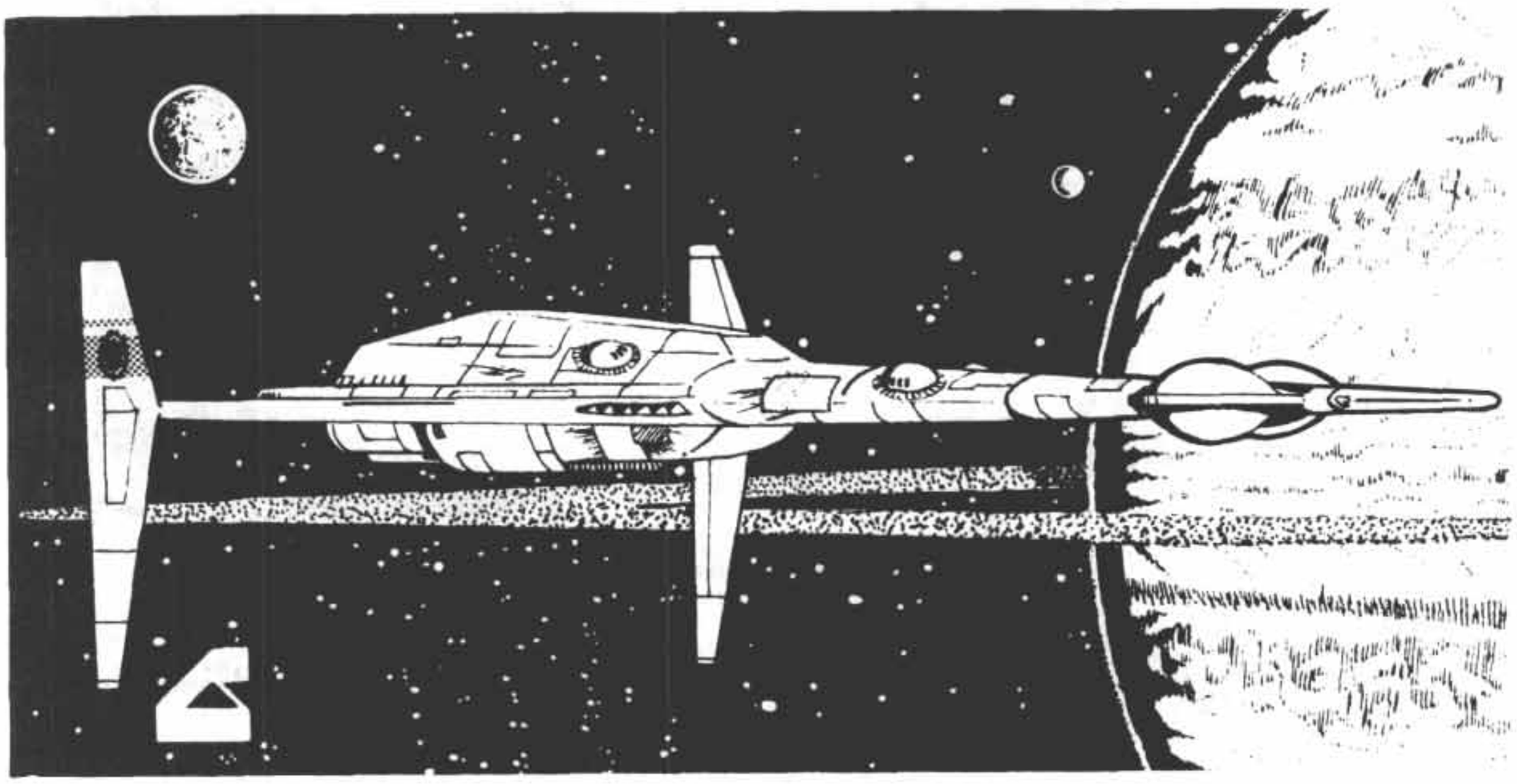
4×Laboratory

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	1-4: LP, 5-9: CH	Hold
2-9, 16-20		Hold
10-11		1-13: Eng, 14-20: Hold
12-13	Ant	1-3: Elec, 4-6: TS, 7-17: Qtrs, 18-20: Hold
14		1-3: Elec, 4-6: TS, 7-17: Qtrs, 18-20: Hold
15	1-16: Ant, 17-18: AL	1-4: Elec, 5-7: TS, 8-18: Qtrs, 19-20: Hold

Systems	
JD-4H	Grapple-(3h)
PP-1H	MD-(4h)
LS-2H	FPP- 3H
Lab-1H	SSR-(2h)
AG-1H	All Others (1h)
ELS-1H	
Hangar-1H	

Patrol Cruiser



General Data

Displacement: 400 tons
Length: 66 meters
Price: MCr197.5
Configuration: Needle AF
Mass (Loaded/Empty): 3545.28/2933.8
Hull Armor: 42
Volume: 5600 m³
Target Size: S
Tech Level: 15

Engineering Data

Power Plant: 886.5 MW Fusion Power Plant (295.5 MW/hit), 1 year duration (39.65 MW power shortfall)
Jump Performance: 3 (1120 m³)
G-Rating: 4G (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 60 (104.8 using jump fuel), 25 m³ of fuel each
Maint: 106

Electronics

Computer: 3×TL-15 Mod Fb Computers (1.1 MW ea.)
Commo: 300,000km radio (10 hexes; 10 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 180,000km (6 hexes; 0.2 MW), Active EMS 300,000km (10 hexes; 15 MW)
ECM/ECCM: EM Masking (5.6 MW)
Controls: Bridge with 7×bridge workstation, plus 5 other workstations

Armament

Offensive: 2×TL-15 150-Mj Laser Turret (Loc: 2,3; Arcs: 1,2,3,4; 4.2 MW, 1 crew ea.), 2×Missile Turret (Loc: 12,13; 2 ready Msls ea.; 0.15 MW; 1 crew ea.) (total of 4 ready Msls, plus 8 in cargo).
Master Fire Directors: 2 TL-15 (6 Diff Mod; Msl 10 hexes; 10 hexes; 1.71 MW, 1 crew ea.)

	Short	*Medium*	*Long*	*Extreme*
150-Mj Laser Turret	10:1/10-31	20:1/10-31	40:1/10-31	80:1/10-31

Accommodations

Life Support: Extended (1.12 MW), Gravitic Compensators (6 G; 28 MW)
Crew: 19 (2×Maneuver, 1×Electronics, 5×Engineer, 6×Gunnery, 3×Small Craft Flight Crew, 2×Command)
Crew Accommodations: 2×Small Stateroom (command crew; 0.0005 MW ea.), 5×Large Stateroom (multiple-occupancy; 0.001 MW ea.)
Cargo: 0 m³, plus storage for eight missiles, one large cargo hatch
Small Craft and Launch Facilities: 30-ton Ship's Boat with internal hangar (Minimal), and one launch port
Air Locks: 4

Notes

The Patrol Cruiser is a rather tight design. The 19 crewmembers share accommodations for 12, requiring "hot bunking" for the gunnery and engineering crew.

The cruiser's total power requirement is 926 MW, limiting it to only 3G performance when the contra-grav is engaged.

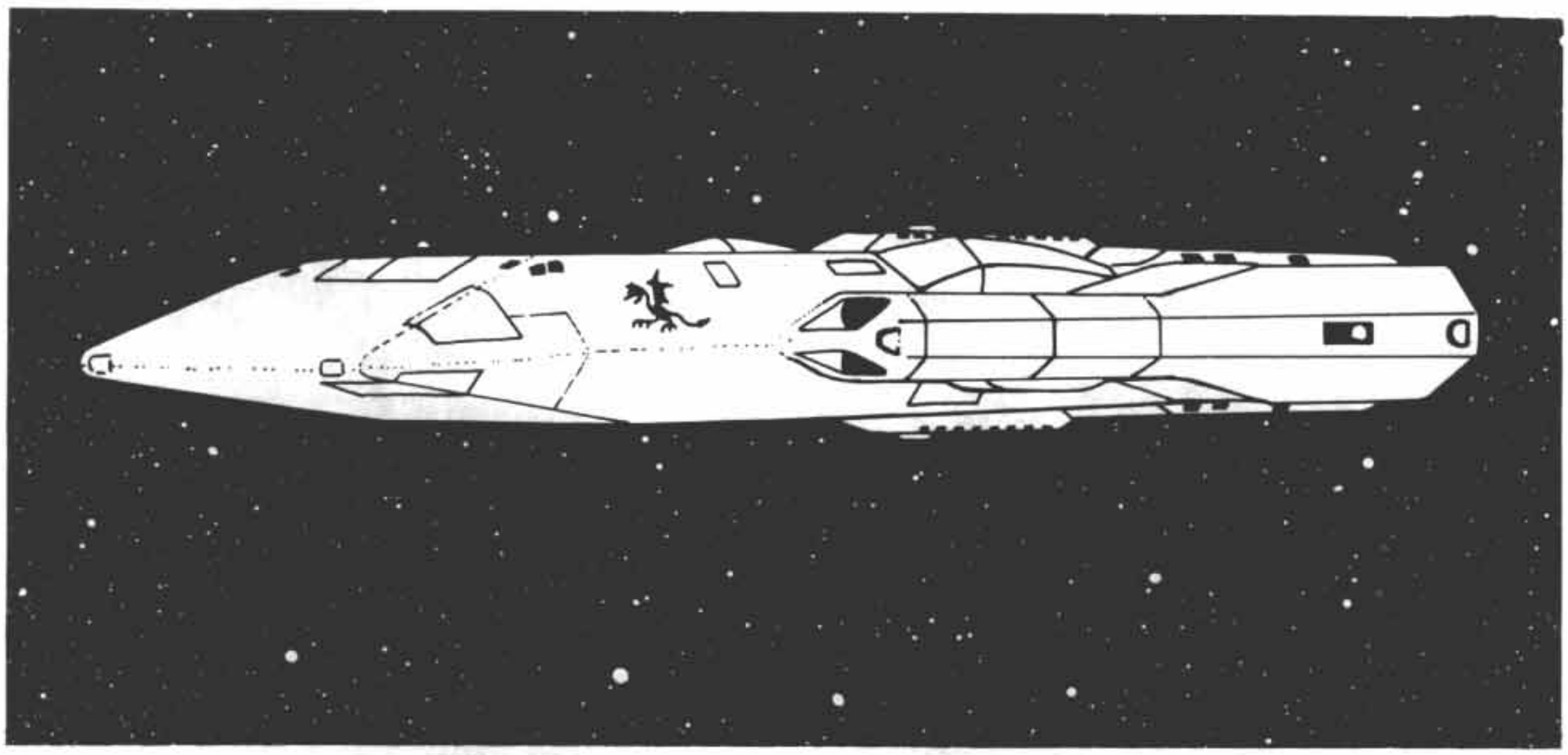
Fuel purification machinery (9.7 MW), 8.1 hours to refine 2620 m³ (187.14 tons).

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	Ant	Elec
2	1-6: Ant	1-3: LT, 4-17: Hold, 18-20: Elec
3		1-3: LT, 4-20: Hold
4-5, 8-11, 14	Hold	
6	1: AL	Qtrs
7		1-15: Qtrs, 16-20: Hold
12-13		1-3: MT, 4-20: Hold
15		1-19: Hold, 20: Eng
16-19	1-2: EMMR	1-12: Eng, 13-20: Hold
20		Eng

Systems	
JD-5H	MD-1H
PP-3H	LSR-1H
CG-1H	LT-1H
LS-5H	MT-1H
AG-1H	FPP-8H
ELS-2H	MFD-1H
SSR-(2h)	Hangar-8H
EMM-1H	All Others-(1h)
EMMR-(5h)	

Shukugan (Dragon)-Class System Defense Boat



General Data

Displacement: 400 tons
Length: 61 meters
Price: MCr166.79
Configuration: Slab SL
Hull Armor: 101
Volume: 5600 m³
Target Size: S
Tech Level: 12
Mass (Loaded/Empty): 6075.18/5799.18

Engineering Data

Power Plant: 920 MW Fusion Power Plant (48 MW/hit), 1 year duration (7.64 MW excess power)
G-Rating: 4G (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 112, 25 m³ of fuel each
Maint: 203

Electronics

Computer: 3×TL-12 Mod Fb Computer (0.8 MW ea.)
Commo: 300,000km radio (10 hexes; 10MW), 1000AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 120,000km (4 hexes; 0.15 MW), Active EMS 3000km (0 hexes; 8 MW) (use long range for task difficulty in same hex)
ECM/ECCM: EM Masking Package (5.6 MW)
Controls: Bridge with 7×bridge workstation, plus 10 other workstations

Armament

Offensive: 2×TL-11 80-Mj Laser Turret (Loc: 10, 11; Arcs: All; 2.2 MW; 1 Crew ea.), 2×Missile Barbette (Loc: 12, 13; 5 ready Msls ea.; 0.15 MW; 1 Crew ea.; 10 ready Msls total, plus 12 in cargo)
Master Fire Directors: 2 TL-12 (4 Diff Mod; Msl 10 hexes; 2 hexes; 1.44 MW; 1 Crew ea.)

	Short	*Medium*	*Long*	*Extreme*
80-Mj Laser Turret	2:1/7-22	4:1/7-22	8:1/6-19	16:1/3-10

Accommodations

Life Support: Extended (1.12 MW), Gravitic Compensators (3G; 28 MW)
Crew: 23 (1×Maneuver, 1×Electronics, 10×Engineering, 6×Gunnery, 2×Maintenance, 3×Command)
Crew Accommodations: 12×Small Stateroom (double-occupancy; 0.0005 MW ea.)
Cargo: 80 m³ (plus storage for 12 missiles), one small cargo hatch
Air Locks: 4

Notes

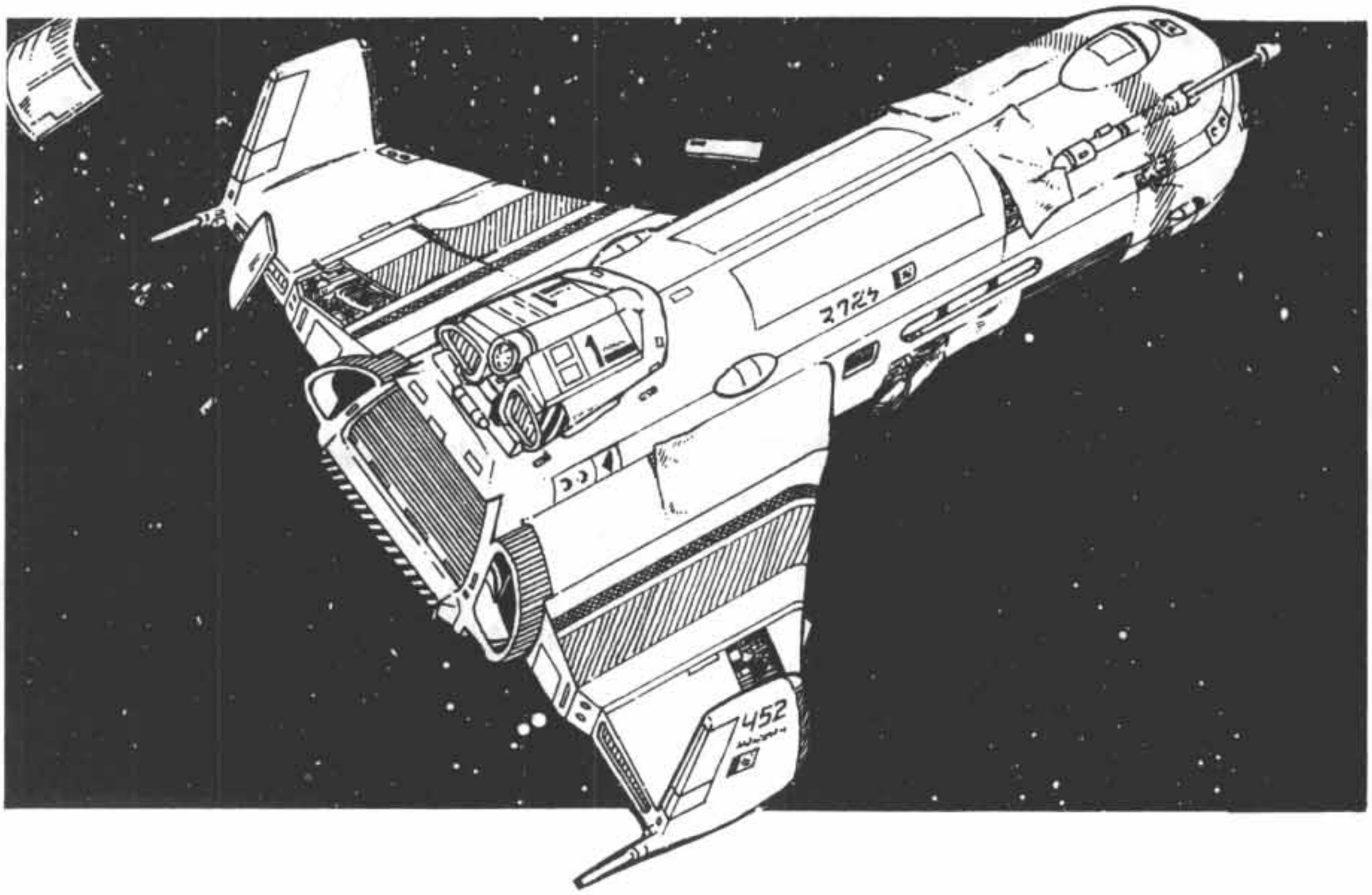
Fuel purification machinery (8.4 MW), 12 hours to refine 2800 m³ (200 tons).

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	Ant	Elec
2		1-10: Eng, 11-20: Qtrs
3	1: AL	Qtrs
4-5, 20	1-2: EMMR	Hold
6-7		1-6: Qtrs, 7-20: Hold
8, 14-15		Hold
9		1-10: Eng, 11-20: Hold
10	1-3: Ant, 6-7: CH	1-3: LT, 4-8: Elec, 9-20: Hold
11		1-3: LT, 4-10: Eng, 11-20: Hold
12		1-6: MB, 7-20: Hold
13		1-6: MB, 7-20: Hold
16-17	1-2: EMMR	Eng
18-19		1-10: Eng, 11-20: Hold

Systems	
PP-19H	EMMR-(5h)
FPP-11H	MFD-(2h)
LS-15H	MD-1H
ELS-8H	SSR-(2h)
CG-1H	All Others-(1h)
LT-1H	
MB-1H	
EMM-1H	
AG-1H	

Petty-Class Subsidized Merchant



General Data

Displacement: 390/400 tons
Length: 44 meters
Price: MCr87.65
Configuration: Cylinder AF
Hull Armor: 10
Volume: 5460/5600 m³
Target Size: S
Tech Level: 12
Mass (Loaded/Empty): 3906.28/2371.59

Engineering Data

Power Plant: 286 MW Fusion Power Plant (48 MW/hit), 1 year duration (0.04 MW excess power)
Jump Performance: 1(560 m³ fuel)
G-Rating: 1G (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 60 (82.4 using jump fuel), 25 m³ of fuel each
Maint: 180

Electronics

Computer: 3×TL-12 Mod St Computer (0.4 MW ea.)
Commo: 30,000km radio (1 hex; 1MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 60,000km (2 hexes; 0.06 MW), Active EMS 3000km (0 hexes; use long range for task difficulty in same hex; 8 MW)
Controls: Flight deck with 4×workstation, plus 3 other workstations

Armament

4 turret hardpoint sockets fitted (Loc: 2-5; Arcs: 1,2,3)

Accommodations

Life Support: Extended (1.092 MW), Gravitic Compensators (3G; 27.3 MW)
Crew: 9 (2×Maneuver, 1×Electronics, 3×Engineering, 2×Steward [double as Small Craft Flight Crew], 1×Command).
Crew Accommodations: 1×Small Stateroom (command; 0.0005 MW ea.), 4×Large Stateroom (double-occupancy; 0.001 MW ea.)
Passenger Accommodations: 13×Small Stateroom (0.0005 MW ea.), 13×Low Berth (0.001 MW ea.)
Cargo: 1306.5 m³, four large cargo hatches
Small Craft and Launch Facilities: 10-ton Launch in AF External Grapple
Air Locks: 4

Notes

The ship itself displaces 390 tons; with its launch, it displaces 400. Jump, maneuver, and contra-grav drives are all configured to support the 400-ton figure.

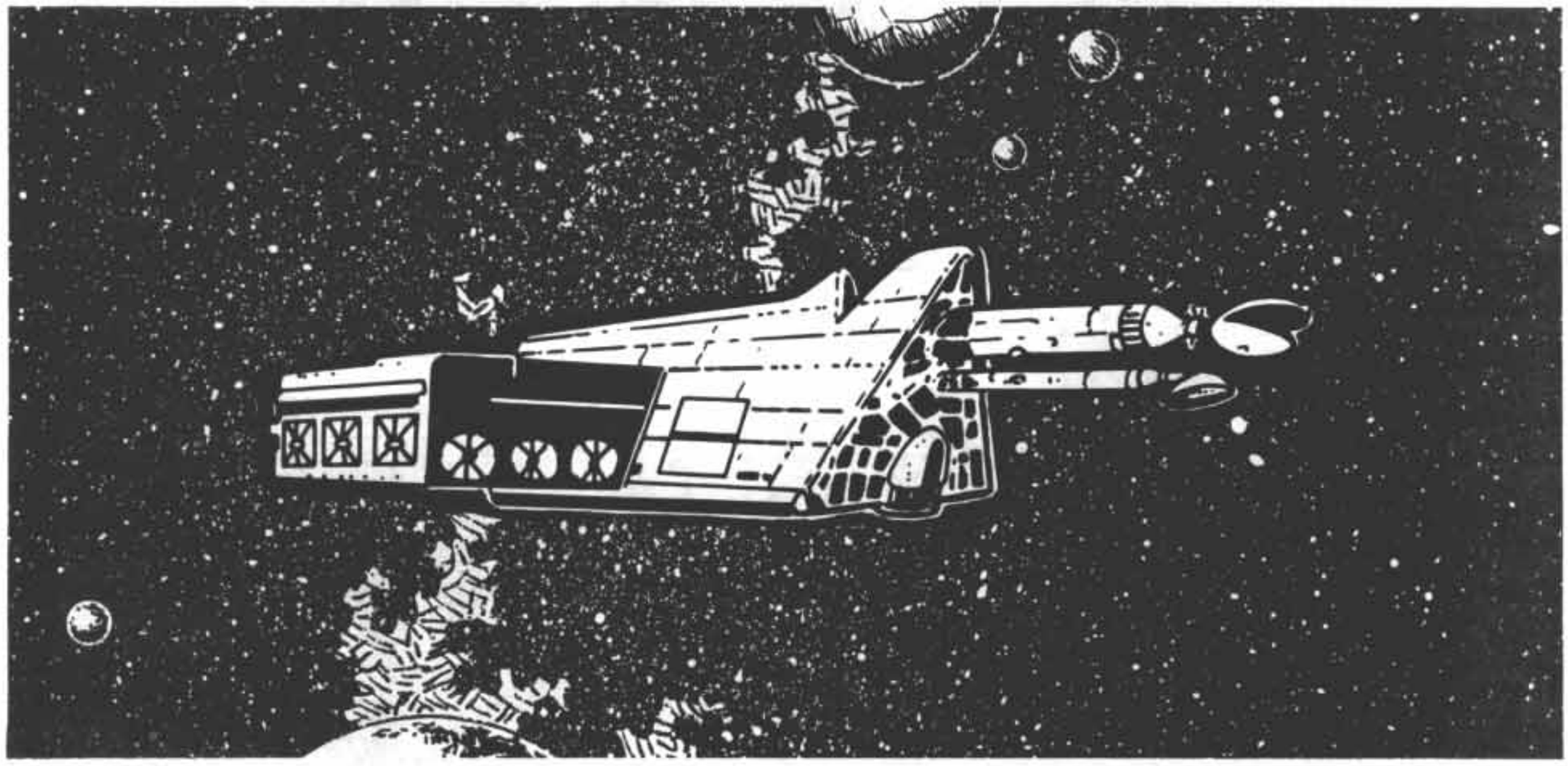
Fuel purification machinery (6.18 MW), 12 hours to refine 2060 m³ (147.14 tons).

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	1-3: Ant	1-6: Elec, 7-20: Qtrs
2-3	1: AL	1-3: TS, 4-17: Qtrs, 18-20: Hold
4-5	1-3: CH	1-3: TS, 4-16: Qtrs, 17-20: Hold
6-13, 16-17		Hold
14		1-9: Eng, 10-20: Hold
15		1-10: Eng, 11-20: Hold
18-19	1-4: CH	1-10: Eng, 11-20: Hold
20		Eng

Systems	
JD-4H	MD-(4h)
PP-6H	SSR-(2h)
CG-1H	FPP-9H
AG-1H	ELS-1H
LSR-1H	All Others-(1h)
LS-2H	
Grapple-1H	

Donosev-Class Survey Ship



General Data

Displacement: 600 tons
Length: 44 meters
Price: MCr306.18
Configuration: Close Structure, USL
Mass (Loaded/Empty): 4076.99/2206.44
Hull Armor: 20
Volume: 8400 m³
Target Size: S
Tech Level: 15

Engineering Data

Power Plant: 705 MW Fusion Power Plant (235 MW/hit), 1 year duration (0.0035 MW excess power)
Jump Performance: 3 (1680 m³ fuel)
G-Rating: 2G (300 MW/G), no contra-gravity
G-Turns: 104 (148.8 using jump fuel), 37.5 m³ of fuel each
Maint: 112

Electronics

Computer: 3×TL-15 Mod Fb Computers (1.1 MW ea.)
Commo: 2×300,000km radio (10 hexes; 10 MW ea.), 2×1000 AU maser (∞; 0.6 MW ea.)
Avionics: TL-10+ Avionics
Sensors: 1×Passive EMS folding array 240,000km (8 hexes; 0.3 MW), 1×Passive EMS folding array 180,000km (6 hexes; 0.2 MW), 2×Active EMS 300,000km (10 hexes; 15 MW ea.), TL-15 Densitometer 0.4 MW), TL-14 Neutrino Sensor (0.01 MW)
Controls: Bridge with 6×Bridge Workstation, plus 4×Crew Workstation

Armament

4 turret hardpoint sockets fitted.

Accommodations

Life Support: Extended (1.68 MW), Gravitic Compensators (6G; 42 MW)
Crew: 15 (2×Maneuver, 2×Electronics, 4×Engineering, 1×Command, 6×Surveyor Specialist)
Crew Accommodations: 1×Small Stateroom (command; 0.0005 MW), 7×Large Stateroom (double-occupancy; 0.001 MW ea.)
Cargo: 388 m³, one large cargo hatch
Small Craft and Launch Facilities: 50-ton modular cutter with internal hangar (1 each Fuel Scoop and Lab modules carried), 3×Air Raft with internal hangars, all four with launch ports
Air Locks: 6

Notes

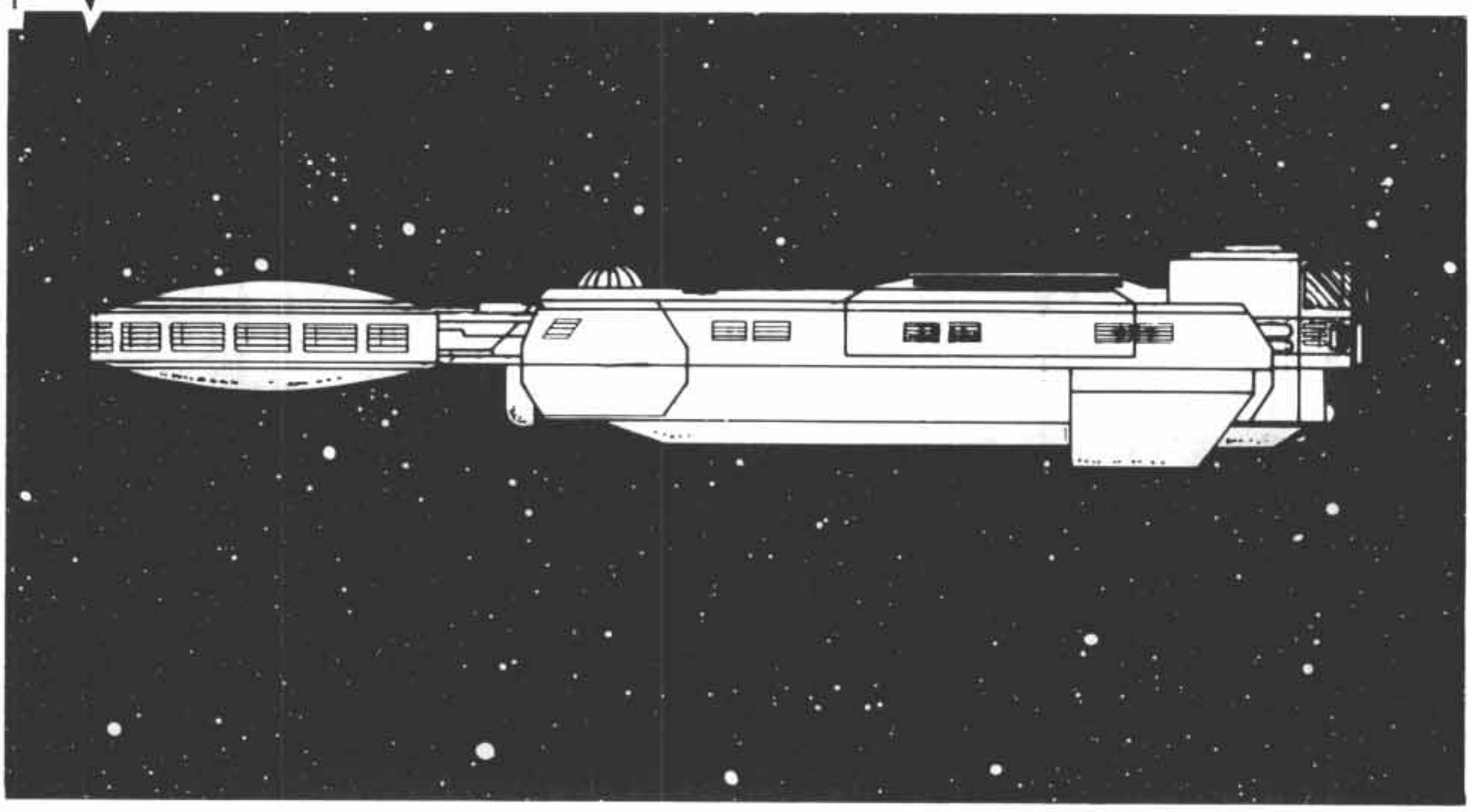
Fuel purification machinery (3.6 MW), 46.5 hours to refine 5580 m³ (398.6 tons)

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	Ant	1-15: Elec, 16-20: Qtrs
2	1-2: AL, 3-20: Ant	Qtrs
3	Ant	1-10: Qtrs, 11-20: Hold
4-5, 7, 10-12	Ant	Hold
6		Hold
8	1-7: LP, 8-10: CH	1-2: TS, 3-20: Hold
9	Ant	1-2: TS, 3-20: Hold
13-15		Hold
16	1-10: Ant	1-2: TS, 3-20: Hold
17	1-10: Ant	1-2: TS, 3: Eng, 4-20: Hold
18-19	1-9: LP	1-5: Eng, 6-20: Hold
20		Eng

Systems	
JD-7H	Sickbay-1H
PP-3H	All Others-(1h)
SSR-(2h)	
LS-3H	
240K PEMS Ant-2H	
ELS-2H	
LSR-1H	
Hangar-4H	
FPP-3H	
MD-1H	
AG-2H	
Lab-1H	

Bastien-Class Subsidized Liner



General Data

Displacement: 600 tons
Length: 69 meters
Price: MCr169.5
Configuration: Slab SL
Hull Armor: 10
Volume: 8400 m³
Target Size: S
Tech Level: 12
Mass (Loaded/Empty): 4985.02/4154.33

Engineering Data

Power Plant: 426 MW Fusion Power Plant (47 MW/hit), 1 year duration (0.307 MW excess power)
Jump Performance: 3 (1680 m³ fuel)
G-Rating: 1G (300 MW/G), Contra-Grav lifters (60 MW)
G-Turns: 76 (120.8 using jump fuel), 37.5 m³ of fuel each
Maint: 249

Electronics

Computer: 3×TL-12 Mod St Computer (0.4 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000km (1 hex; 0.03 MW), Active EMS, 3000km (0 hexes; use long range for task difficulty in same hex; 8 MW)
Controls: Flight deck with 4×workstation, plus 4 other workstations

Armament

3 turret hardpoint sockets fitted (Loc: 11; Arcs: All; Loc: 12,13; Arcs: 2,3,4)

Accommodations

Life Support: Extended (1.68 MW), Gravitic Compensators (3G; 42 MW)
Crew: 12 (2×Maneuver, 1×Electronics, 4×Engineering, 1×Maintenance, 2×Stewards [double as Small Craft Pilots], 1×Command, 1×Medical).
Crew Accommodations: 1×Small Stateroom (0.0005 MW ea.), 6×Large Stateroom (double-occupancy; 0.001 MW ea.)
Passenger Accommodations: 21×Small Stateroom (0.0005 MW ea.), 20×Low Berth (0.001 MW ea.)
Cargo: 429.6 m³, one large cargo hatch
Small Craft and Launch Facilities: 10-ton Launch in Internal Hangar (Minimal), with one launch port
Air Locks: 6

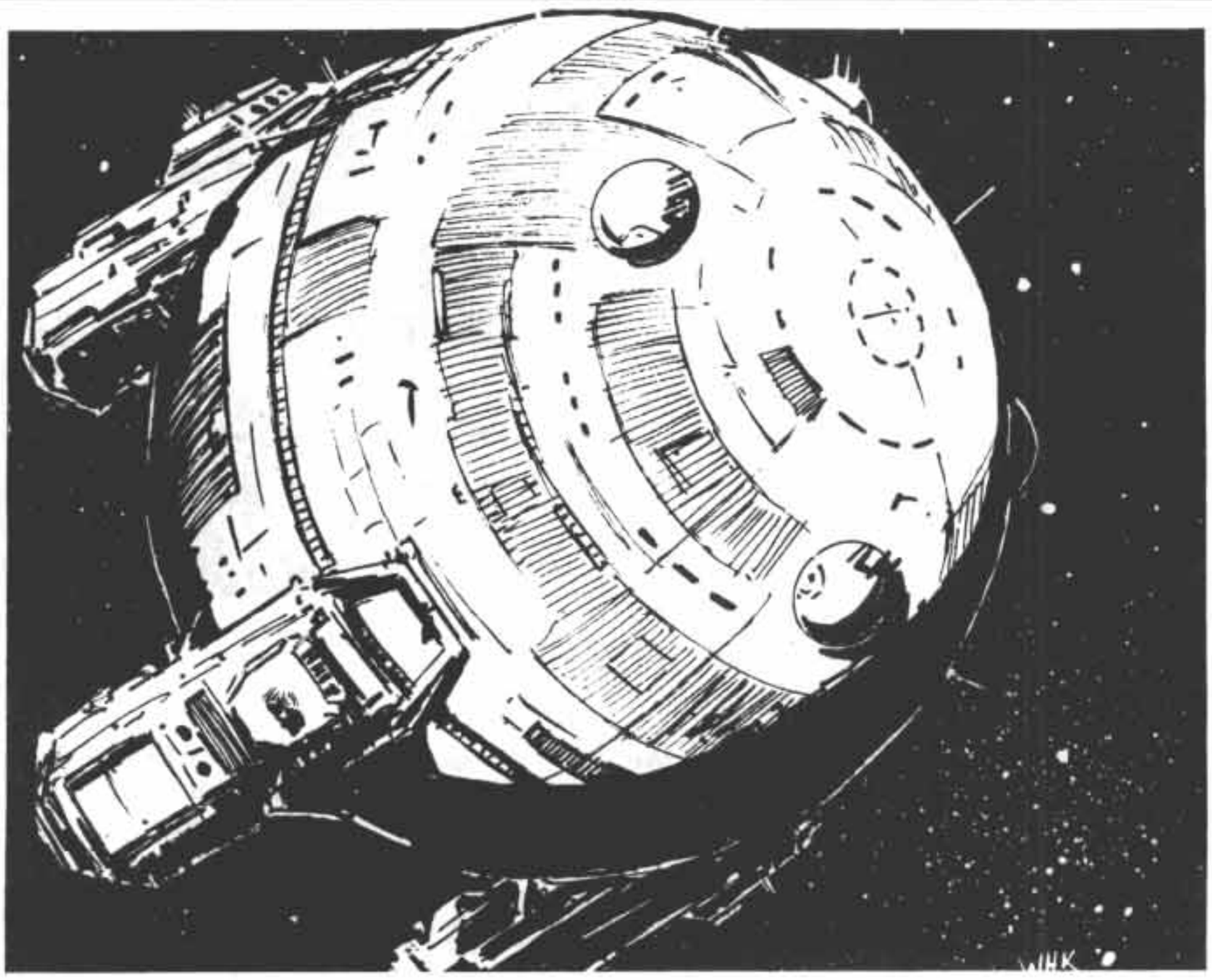
Notes

The *Bastien*-class liner is quite similar to the more well-known Stellar class, but keeps its launch in an internal hangar, rather than in an external grapple, and carries a different arrangement of turret hardpoints.
Fuel purification machinery (10.44 MW), 15.62 hours to refine 4530 m³ (323.6 tons)

DAMAGE TABLES

Area	*Surface Hits*	*Internal Explosion*	*Systems*
1	1-2: Ant	1-4: Elec, 5-20: Qtrs	JD-10H
2-3		Qtrs	PP-9H
4	1-2: AL	1-12: Qtrs, 13-20: Hold	CG-1H
5, 8-9, 14-15		Hold	LSR-1H
6-7	1-3: LP	Hold	SSR-(2h)
10	LP	Hold	FPP-14H
11-13		1-2: TS, 3-20: Hold	LS-3H
16-17	1: CH	1-5: Eng, 6-20: Hold	AG-2H
18		1-19: Eng, 20: Hold	ELS-2H
19-20		Eng	MD-1H
			Hangar-3H
			All Others-(1h)

Broadsword-Class Mercenary Cruiser



General Data

Displacement: 800 tons
Length: 28 meters
Price: MCr315.1
Configuration: Sphere SL
Mass (Loaded/Empty): 6491.1/3723.3
Hull Armor: 28
Volume: 11,200 m³
Target Size: S
Tech Level: 15

Engineering Data

Power Plant: 1050 MW Fusion Power Plant (262.5 MW/hit), 1 year duration (5.206 MW power shortfall)
Jump Performance: 3 (2240 m³ fuel)
G-Rating: 2 (400 MW/G), Contra-Grav lifters (80 MW)
G-Turns: 48 (92.8 using jump fuel), 50 m³ of fuel each
Maint: 177

Electronics

Computer: 3×TL-15 Mod Fb Computers (1.1 MW ea.)
Commo: 300,000km radio (10 hexes; 10 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 150,000km (5 hexes; 0.15 MW), Active EMS 300,000km (10 hexes; 15 MW)
ECM/ECCM: 300,000km EMS jammer (10 hexes; 30 MW), EM Masking (11.2 MW)
Controls: Bridge with 15×Workstation, plus 7 other workstations

Armament

Offensive: 8×TL-15 150-Mj Laser Turret (Loc:2-5; Arcs: 1,2,3; Loc: 12-15; Arcs: 2,3,4,5; 4.2 MW ea.; 1 Crew ea.)
Master Fire Directors: 2 TL-15 (6 Diff Mod; No Msl; 10 hexes; 1.56 MW; 1 Crew)

	Short	*Medium*	*Long*	*Extreme*
150-Mj Laser Turret	10:1/10-31	20:1/10-31	40:1/10-31	80:1/10-31

Accommodations

Life Support: Extended (2.24 MW), Gravitic Compensators (6G; 56 MW)
Crew: 72 (7×Engineering, 1×Electronics, 2×Maneuver, 10×Gunnery, 2×Maintenance, 31×Ship's Troops, 6×Small Craft Flight Crew, 10×Command, 2×Steward, 1×Medical).
Crew Accommodations: 26×Small Stateroom (single/double-occupancy; 0.0005 MW ea.), 8×Large Stateroom (quadruple-occupancy; 0.001 MW ea.)
Cargo: 555 m³, two large cargo hatches
Small Craft and Launch Facilities: 2×50-ton modular cutters in docking rings, each with its own launch port (each cutter with one fuel scoop module and one ATV module), 2×ATV (in modules), 1×Air Raft with internal hangar (Minimal) and launch port
Air Locks: 8

Notes

This *Broadsword* variant gives up G-hours and internal comfort for improved jump and maneuver performance, plus an ECM/ECCM suite. Because of its power shortfall, the ship's EMS jammer may only be run at the 180,000 km (6 hexes; 22 MW) power level while at full thrust or while the CG lifters are engaged.

The docking ring housings for the two cutters do not allow maintenance or repair work to be done on them while they are docked. The modules may not be swapped while the cutters are docked; this must be done outside of the ship.

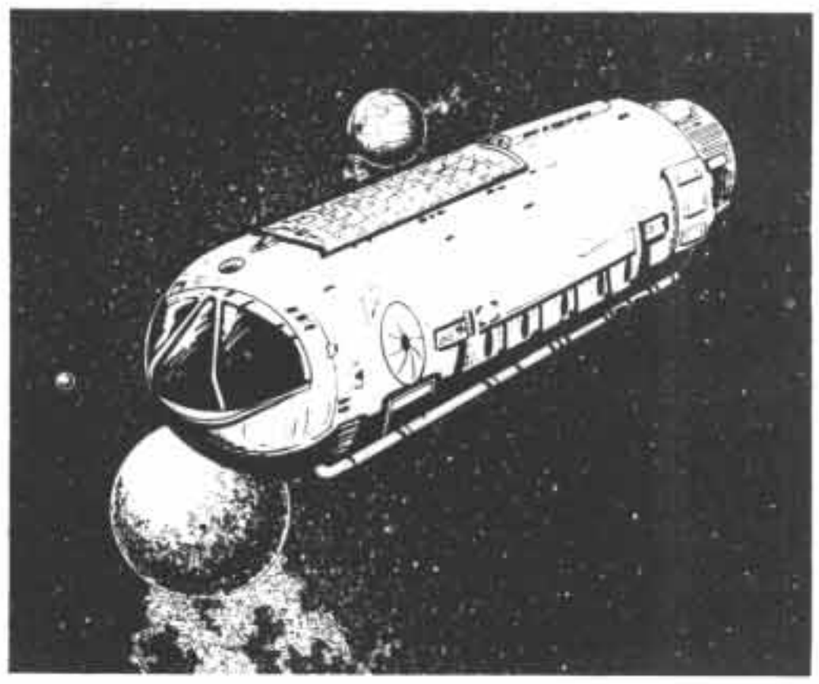
Fuel purification machinery (9.067 MW), 15.35 hours to refine 4640 m³ (331.4 tons).

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*
1	Ant	Elec
2		1-2: LT, 3-14: Qtrs, 15-20: Hold
3-5	1: AL	1-2: LT, 3-14: Qtrs, 15-20: Hold
6-9	1-5: EMMR	Hold
10-11		Hold
12		1-2: LT, 3-20: Hold
13	1-3: CH	1-2: LT, 3-20: Hold
14	1-3: LP	1-2: LT, 3-17: Hold, 18-20: Qtrs
15		1-2: LT, 3-17: Hold, 18-20: Eng
16-19	1-10: LP	1-6: Eng, 7-20: Hold
20		Eng

Systems	
JD-9H	MD-1H
PP-4H	FPP-8H
CG-2H	SSR-(2h)
ELS-2H	EMM-1H
LT-1H	EMMR-(11h)
LSR-1H	All Others-(1h)
LS-3H	
AG-3H	
MFD-(2h)	
Hangar-5H	

Launch & Ship's Boat



General Data

Displacement: 10 tons
Length: 14 meters
Price: MCr9.9
Configuration: Cylinder, SL
Mass (Loaded/Empty): 83.99/74.83
Hull Armor: 14
Volume: 140 m³
Target Size: VS
Tech Level: 12

Engineering Data

Power Plant: 14MW Fusion Power Plant (14 MW/hit), 1 year duration (0.255 MW power shortfall)
G-Rating: 1 (5 MW/G), Contra-Grav lifters (1 MW)
G-Turns: 16, 0.625 m³ of fuel each
Maint: 3

Electronics

Computer: 2×TL-12 Model St (0.4 MW each)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000 km (1 hex; 0.03 MW), Active EMS 300 km (0 hexes; use extreme range for task difficulty in same hex; 5 MW)
Controls: Flight deck with 2×workstation

Armament

None

Accommodations

Life Support: Basic (0.014 MW), Gravitic Compensators (3G; 0.7 MW)
Crew: 2 (1×Maneuver, 1×Electronics)
Crew Accommodations: 2×Workstation
Passenger Accommodations: 20×Seat (Adequate)
Cargo: 8.46m³, one small cargo hatch
Small Craft and Launch Facilities: None
Air Locks: 1

Notes

Passenger seats may be removed, each adding 3.5 m³ to the cargo capacity. st shut down radio or maser when taking off.

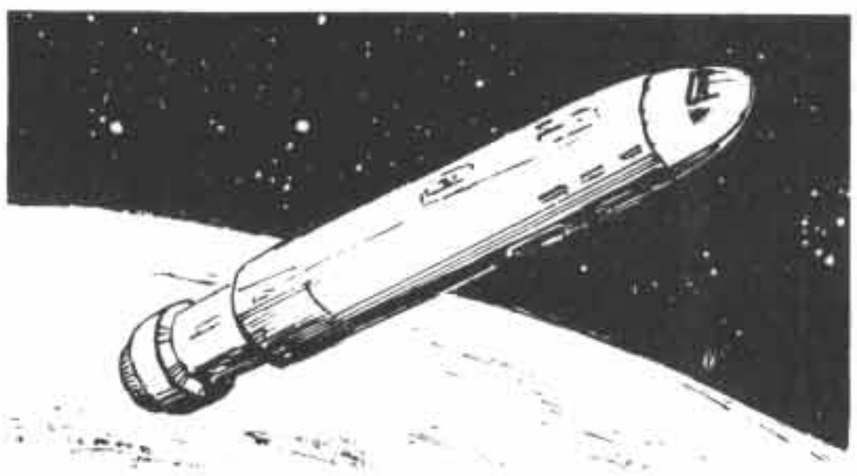
No fuel purification machinery, 10 m³ (0.7 tons) of reaction mass is carried.

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1		Hold	PP-1H
2-3		1-5: Elec, 6-15: Qtrs, 16-20: Hold	LS-1H
4-5, 8-9	1-2: Ant	Elec	ELS-(2h)
6	CH	Hold	All Others-(1h)
7	1-4: AL	Hold	
10-17		Hold	
18-19		1-5: Eng, 6-20: Hold	
20		Eng	

General Data

Displacement: 30 tons
Length: 27.6 meters
Price: MCr17.67
Configuration: Needle SL
Mass (Loaded/Empty): 428.08/378.48
Hull Armor: 40
Volume: 420 m³
Target Size: VS
Tech Level: 12



Engineering Data

Power Plant: 90MW Fusion Power Plant (45 MW/hit), 1 year duration (17.297 MW excess power)
G-Rating: 4 (15 MW/G), Contra-Grav lifters (3 MW)
G-Turns: 96, 1.875 m³ of fuel each
Maint: 14

Electronics

Computer: 2×TL-12 Model St (0.4 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000 km (1 hex; 0.03 MW), Active EMS 300 km (0 hexes; use extreme range for task difficulty in same hex; 5 MW)
Controls: Flight deck with 2×workstation, plus 1 other workstation

Armament

None

Accommodations

Life Support: Basic (0.042 MW), Gravitic Compensators (3G; 2.1 MW)
Crew: 3 (1×Engineering, 1×Electronics, 1×Maneuver)
Crew Accommodations: 3×Workstation
Passenger Accommodations: 20×Seat (Adequate)
Cargo: 37 m³, one small cargo hatch
Air Locks: 1

Notes

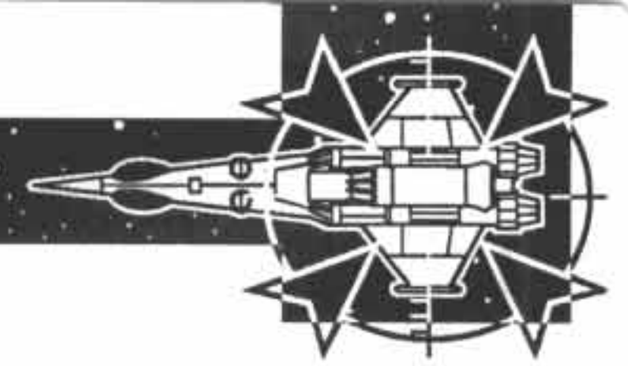
Passenger seats may be removed, each adding 3.5 m³ to the cargo capacity. No fuel purification machinery, 180m³ (12.86 tons) of reaction mass is carried.

The Ship's Boat design has 17.3 MW of power left over, which allows the mounting of weapons or more powerful sensors at the expense of cargo space.

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1		Elec	PP-2H
2-3	1-4: Ant	1-3: Elec, 4-8: Qtrs, 9-20: Hold	1-10: Elec, 11-4
4-5	1-4: Ant	1-4: Elec, 5-9: Qtrs, 10-20: Hold	LS-1H
6-7, 10-15		Hold	AG-(2h)
8	1-2: AL	Hold	ELS-1H
9	1-14: CH	Hold	All Others-(1h)
16-17		1-12: Hold, 13-20: Eng	
18-19		1-11: Hold, 12-20: Eng	
20		Eng	

Modular Cutter & Shuttle



General Data

Displacement: 50 tons
Length: 22.4 meters
Price: MCr18.98 (cutter alone)
Configuration: Needle SL
Mass (Loaded/Empty): 353.82/340.72 cutter alone
727.45/684.96 with fuel module
Hull Armor: 30
Volume: 700 m³
Target Size: VS
Tech Level: 12



Engineering Data

Power Plant: 100 MW Fusion Power Plant (50 MW/hit), 1 year duration (10.9196 MW excess power used to power modules)
G-Rating: 3 (25 MW/G), Contra-Grav lifters (5 MW)
G-Turns: 48, 3.125 m³ of fuel each
Maint: 13, +13 for fuel module

Electronics

Computer: 2×TL-12 Model St (0.4 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000 km (1 hex; 0.03 MW), Active EMS 300 km (0 hexes; use extreme range for task difficulty in same hex; 5 MW)
Controls: Flight deck with 2×workstation, plus 1 other workstation

Accommodations

Life Support: Basic (0.0294 MW), Gravitic Compensators (3G; 1.47 MW)
Crew: 3 (1×Engineering, 1×Electronics, 1×Maneuver)
Crew Accommodations: Flight Deck
Passenger Accommodations: Varies depending upon module fitted.
Cargo: Varies depending upon module fitted (388 m³ in cargo module), 2.6 m³ in cutter
Air Locks: 1

Notes

Modular Cutter may be fitted with a variety of 29-ton (406m³) modules, including lab module (336.3 tonnes loaded/284.4 empty, MCr14.12), passenger/cargo module (311.59 tonnes loaded/133.59 empty, MCr0.4, carries 30 passengers and 178 m³ cargo—passenger seats, 7 m³ each, can be traded for cargo or for smaller seats, but if cargo mass exceeds 284 tonnes, cutter G-rating will drop to 1G), ATV module (211.84 tonnes loaded/161.84 empty, MCr0.16, includes space for a single ATV of up to 50 tonnes).

Data assumes the fitting of a fuel scoop module (373.63 tonnes loaded/344.24 empty, MCr0.17). The module can scoop and carry 277 m³ (19.8 tons) of fuel and has fuel purification machinery sufficient to refine 277 m³ in 6 hours.

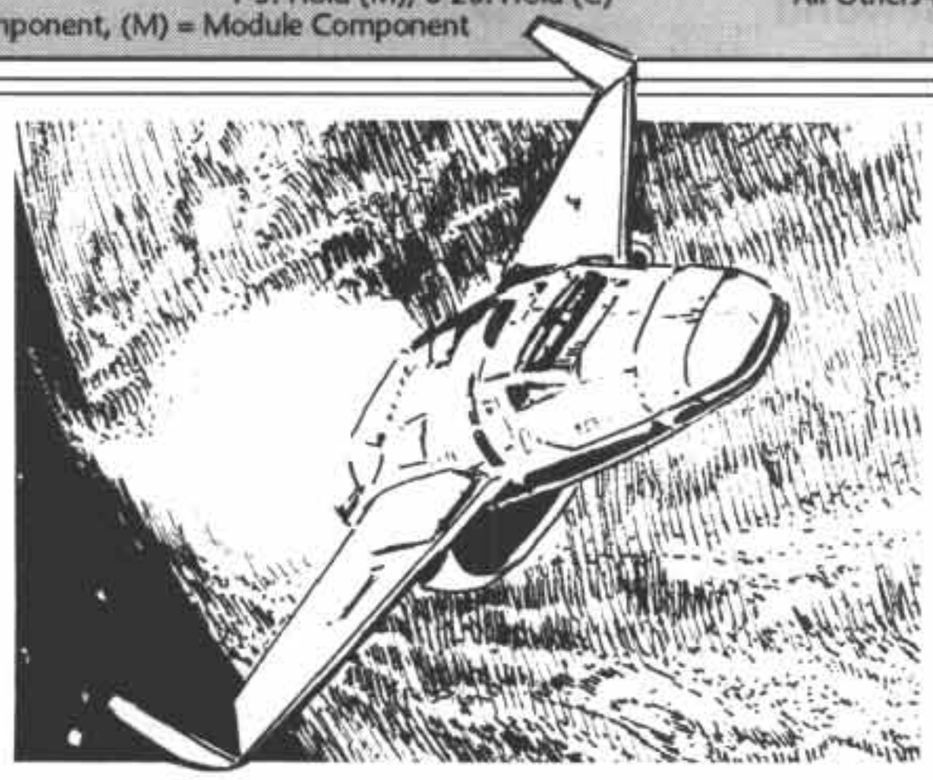
DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1	1-2: Ant	1-10: Elec (C), 11-20: Qtrs (C)	PP-2H
2-3	1-2: AL	1-5 Qtrs (C), 6-10: Elec, 11-15: Hold (C), 16-20: Eng (M)	FPP-3H
			LS-1H
4-5		1-15: Hold (C), 16-20: Hold (M)	MD-(2h)
6-9, 11-15		1: Eng (M), 2-20: Hold (M)	ELS-1H
10, 20		Eng (C)	CG-(2h)
16-19		1-5: Hold (M), 6-20: Hold (C)	All Others-(1h)

(C) = Cutter Component, (M) = Module Component

General Data

Displacement: 95 tons
Length: 27.6 meters
Price: MCr29.04
Configuration: Cylinder AF
Mass (Loaded/Empty): 953.11/711.21
Hull Armor: 31
Volume: 1330 m³
Target Size: VS
Tech Level: 12



Engineering Data

Power Plant: 170 MW Fusion Power Plant (42.5 MW/hit), 1 year duration (3.591 MW excess power)
G-Rating: 3 (4.75 MW/G), Contra-Grav lifters (9.5 MW)
G-Turns: 96, 5.9375 m³ of fuel each
Maint: 34

Electronics

Computer: 2×TL-12 Model St (0.4 MW ea.)
Commo: 30,000km radio (1 hex; 1 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 30,000 km (1 hex; 0.03 MW), Active EMS 300 km (0 hexes; use extreme range for task difficulty in same hex; 5 MW)
Controls: Flight deck with 2×workstation, plus 1 other workstation

DAMAGE TABLES

Area (1D20)	*Surface Hits*	*Internal Explosion*	*Systems*
1	1-7: Ant	1-12: Elec, 13-20: Qtrs	PP-4H
2		1-5: Qtrs, 6-20: Hold	LS-2H
3	1: AL	Hold	ELS-1H
4-10, 12-17	Hold		MD-(3h)
11		1-13: TS, 14-20: Hold	AG-1H
18-19	1-5: CH	1-11: Hold, 12-20: Eng	CG-(4h)
20		Eng	All Others-(1h)

Armament

1 turret hardpoint socket fitted (Loc: 11; Arc: 2,3,4)

Accommodations

Life Support: Basic (0.133 MW, Gravitic Compensators (3G; 6.65 MW)
Crew: 3 (1×Engineering, 1×Electronics, 1×Maneuver)
Crew Accommodations: 3×Workstation
Passenger Accommodations: 80×Seat (Adequate)
Cargo: 202m³, one large cargo hatch
Air Locks: 1

Notes

Passenger seats may be removed, each adding 3.5 m³ to the cargo capacity. No fuel purification machinery is fitted, 570m³ (8.14 tons) of reaction mass carried.

Traveller® Character Generation Worksheet

1. Name _____

2. Race _____

3. Basic Attributes (2D6–1 each, assigned as desired. If attributes total less than 36, you may add points as desired to bring the total up to 36. Aging, homeworlds, and/or activities may raise or lower certain attributes.)

Attribute	*Roll*	*Mods*	*Final*
Strength (STR)	___	___	___
Agility (AGL)	___	___	___
Constitution (CON)	___	___	___
Intelligence (INT)	___	___	___
Education (EDU)	___	___	___
Charisma (CHR)	___	___	___

Additional Attributes

Psionic Strength (PSI)	___	___	___

Psionic strength is only rolled upon examination (see page 246).

Social Level (SOC)	___	___	___

Roll: Roll/allocation; *Mods:* Modifications

4. Homeworld _____ SP____

Sz____ Atm____ Hyd____ Grv____

Pop____ Gov____ Law____ TL____

5. Careers

1st Term _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

2nd Term _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

3rd Term _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

4th Term _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

5thTerm _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

6th Term _____
- Scndry Act _____
- Contact _____
- Spec Assignmt _____
- Promotion _____ Ship DM _____

6. Skills

Skill Name	*Level*
_____	_____
_____	_____
_____	_____

TRAVELLER: THE NEW ERA

Character
Player
Gender
Homeworld
Age

Universal Personality Profile

STR	AGL	CON	INT	EDU	CHR	PSI	SOC
						-	-

Initiative ____ Rank ____

HOME WORLD DATA

Starport ____
Size ____
Atmosphere ____
Hydrographics ____
Gravity ____
Population ____
Government ____
Law Level ____
Tech Level ____

SKILLS & ATTRIBUTES

Strength (STR) ....

Agility (AGL) ....

Constitution (CON) ....

Intelligence (INT) ....

Education (EDU) ....

Charisma (CHR) ....

Psionic Strength (PSI) ....

DERIVED VALUES

Weight ____ Load ____

Throw Range ____ Unarmed Combat Damage ____

HIT CAPACITY

	Current	Scratch	(Base) Slight	Serious	Critical
Head					+
Chest					+
Abdomen					+
Right Arm					+
Left Arm					+
Right Leg					+
Left Leg					+

CONTACTS

#	Type

AMMO AND NPC RECORDS

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
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ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

Magazine 33
Caliber _____
ID _____

100-Round Belt/ Power Pack
Type/Caliber _____
ID _____

100-Round Belt/ Power Pack
Type/Caliber _____
ID _____

100-Round Belt/ Power Pack
Type/Caliber _____
ID _____

100-Round Belt/ Power Pack
Type/Caliber _____
ID _____

100-Round Belt/ Power Pack
Type/Caliber _____
ID _____

NPC: _____
Experience Level: _____
Physical Attributes: _____
Combat Assets: _____

Other Assets: _____

Initiative: _____ Unarmed Cbt Dmg: _____
Motivation Primary: _____
Secondary: _____
Weapon: _____
Magazines: _____
Special Notes: _____

Wounds

Slight Wound: -1 Initiative

Seriously wounded: -3 Initiative, STR X 1/2

All boxes filled = dead or unconcious (See TNE page 288-289)

NPC: _____
Experience Level: _____
Physical Attributes: _____
Combat Assets: _____

Other Assets: _____

Initiative: _____ Unarmed Cbt Dmg: _____
Motivation Primary: _____
Secondary: _____
Weapon: _____
Magazines: _____
Special Notes: _____

Wounds

Slight Wound: -1 Initiative

Seriously wounded: -3 Initiative, STR X 1/2

All boxes filled = dead or unconcious (See TNE page 288-289)

COMBAT TASKS SUMMARY

Unarmed Melee

Attack Type	*Difficulty*	*Asset*	*Effect*
Hand Strike	Difficult	Unarmed Martial Arts	Damage UCDR*
Kick	Difficult	Unarmed Martial Arts	Damage UCDR*x1.5
Block	Formidable	Unarmed Martial Arts	Avoid Strike/Lose Action
Aimed Strike	Formidable	Unarmed Martial Arts	Damage Chosen Location
Leaping Kick	Difficult	Agility**	Damage 2xAtkr's CON
Avoid Leaping Kick	Difficult	Agility**	Avoid Attack/Lose Action
Grapple	Average	Agility**	Controlling "Hits" UCDR*
Grapple Escape	Average	Agility**	Remove Controlling "Hits" UCDR*
Strangling	Average	Agility**	Damage UCDR*
Strangle Block	Average	Agility**	Avoid Attack/Lose Action
Combat Throw	Formidable	Unarmed Martial Arts	Damage 2xDefender's CON
Limit Throw Damage	Difficult	Agility**	Damagex1/2
Diving Blow	Auto if not avoided		([Atkr's CONx2]+1D6) – (Dfndr's STR+CON)
Avoid Diving Blow	Average	Agility**	Avoid Diving Blow

*UCDR = character's unarmed combat damage rating.
**Plus Acrobatics skill, if any.

Armed Melee

Attack Type	*Difficulty*	*Asset*	*Effect*
Attack	Difficult	Armed Martial Arts*	Damage by Weapon
Block	Formidable	Armed Martial Arts**	Avoid Strike/Lose Action
Aimed Attack	Formidable	Armed Martial Arts*	Damage Chosen Location

*Some weapons have die modifiers.
**Must have object to block with.

Thrown Weapon

Attack Type	*Difficulty*	*Asset*	*Effect*
Throw	Difficult	Thrown Weapon	Damage STR+1D6*
Throw, Long Range	Formidable	Thrown Weapon	Damage STR+1D6*

*For most objects. Throwing knife is always 1D6; grenades do explosive damage.

Direct Fire Combat

Attack Type	*Difficulty*	*Asset*	*Effect*
Aimed Fire, Short Range	Average	Appropriate to Weapon	Damage by Weapon
Aimed Fire, Medium Range	Difficult	Appropriate to Weapon	Damage by Weapon
Aimed Fire, Long Range	Formidable	Appropriate to Weapon	Damage by Weapon
Aimed Fire, Extreme Range	Impossible	Appropriate to Weapon	Damage by Weapon
Quick Fire (any range)*	+1 Level*	Appropriate to Weapon	Damage by Weapon
Fire, Target Obscured	+1 Level	Appropriate to Weapon	Damage by Weapon
Fire, Automatic	**	**	Damage by Weapon

*Modify difficulty level based on Aimed Fire, not possible at extreme range.
**See automatic fire rules (page 276).

Indirect Fire Combat

Attack Type	*Difficulty*	*Asset*	*Effect*
Conventional	Formidable	Forward Observer*	Explosive Damage
Hand-Held	Impossible	Grenade Launcher*	Explosive Damage

*Or appropriate weapon asset of the firing character, whichever is lower. Bonuses for repeated fire.

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