

TRAVELLER:

THE STRATEGY OF SURVIVAL

BY Edward C. Cooper

Recently, while attending a good sized gaming convention sponsored by the local wargaming club, I took advantage of the opportunity to observe the *TRAVELLER* phenomenon first hand. A full fledged campaign version was announced to the crowd. With a roar of approval, a throng of players squeezed themselves into the playing area, some leaving wide-eyed opponents still staring at now vacated wargames.

However, the scene attracting my eye as I approached nearer was a small, late twentyish gentleman seated at the far end of one table. Sensing something amiss in his obvious detachment, I politely inquired into what war was disturbing him.

He had generated a UPP (Universal Personality Profile) of 375A99 — and was grumbling over the “chance” involved in the game and the *bad luck* he’d received on the roll! I looked at him twice and still had to ask if he was serious. Somewhat taken aback, he retorted of course he was — and that was that.

Later, I watched the same individual enlist his character, with low strength and endurance, but an intelligence of 10 and social, educational levels of 9 each, successfully into the Scouts.

Had I been a referee, I would have convicted the guy of cold blooded murder on the spot. Clearly, he simply did not know what to do with his character, nor did I believe he’d taken the time to stop and examine all his alternatives. Somewhat puzzled by the turn of events, I declined an offer to play and continued watching.

Several other similar occurrences proved to me then that the success or failure of a character in most cases cannot be traced to “dice or chance” as often as it can to poor handling on the part of a player. I was both surprised and disappointed that some players even blamed a character or given situation for their own bad decisions. But then again, I was extremely excited, awed, by the skill some showed in manipulating their character’s life.

Looking back now, *Traveller* is simply too well made for a player to bow out using “character” as an excuse. The roles generated that afternoon certainly did have their weaknesses, but *all* were people who could have been successful in their lifetimes. I found as a general rule, *the characteristics of the players themselves were the true limiting factor of their representatives in Traveller.*

It’s a scary idea to think about — that it might be possible to learn something of yourself and your reactions to various situations from such a “game.” Some might scoff at this and perhaps they have a right, but still I wonder . . .

It’s only one intriguing step on to speculate on the therapeutic values of role playing in general if such is the case. From the way a person handled a given part in a situation made to seem realistic in the strict sense of the word, doctors might be able to analyze and pinpoint various problems.

Yet returning, had the particular gentleman’s character had a UPP of 99A375 instead of 375A99, I might have agreed with his action, though such a character could have done well in a service such as the Army, and learned through experience.

As it was, the player did not want to enlist his 375A99 character in the Merchant Marine, yet a quick look at that category shows every requirement from enlistment to promotion requires intelligence alone. This “man” could have easily won a commission and promotion with his DMs for intelligence if he’d been directed to the right service.

A further close look at the Acquired Skills Tables shows the strength and endurance he required to round himself off as an individual were available. *Notice that all categories, the Acquired Skills Tables directly complement the abilities an individual possesses when he joins a particular service.* In this case, the Merchant category is the logical pick for characters who lack the physical requirements for a military service, though not surprisingly it is seldom picked.

For my own insight, I assumed the character did enlist in the Merchant Marine and received both a commission and a promotion in his first term — probable with his assets. He then has four skills coming. The rolls, right now . . . On the Personal Development Table . . . 4,2,1 and on Service Skills . . . a 3. Two strength points, one dexterity and a course in electronics. With the rank of 3rd Officer and an intelligence of 10, the man would have had a very successful career going at age 22.

The strategy of survival, and success, in *Traveller* is not an especially difficult one. But there are three prerequisites a player must develop to achieve survival and success, three very important virtues more easily gained by some than others: Patience, Imagination, and an ability to see F.M. Busby’s (Via his book

Rissa Kerguelen) “The Long View.”

With six characteristics to generate, not all are going to be 10 or above (though I have seen it happen — and using my own character’s above average intelligence, decided to tag along with that individual!!!) but by the same token, they are not all going to be 4 or below either. Initial character generation does not have to be a painful process, but the results do require a little bit of ingenuity to bind up the weakness of a character. Sure, dice *are* used, yet measure our own births and talents in comparison. I’d say the chances of what *we* get endowed with are about the same . . .

ENLISTMENT

The enlistment period in *Traveller* paints intricate and absorbing picture of the basic features that will influence a character’s life decisions. Skill and expertise mature over a range of attributes, which in turn enables a detailed historical background to be formulated from birth to present.

These character profiles can be extremely important in reflecting other “special” details about the 18 year old; such as skills and talents developed by a situation or particular event, personality traits, perhaps even attitudes toward a particular life type, etc., brought about through his upbringing. Inheritance is another example for a character with a high social attribute. In fact, all characters should have *some type* of inheritance to work with.

How and where do the three virtues mentioned earlier come into play? There are three distinct sub-phases incorporated within the Enlistment phase:

1. Choosing a Service
2. Skill acquisition
3. Mustering Out

Patience, Imagination, and Seeing the Long View each influence the outcome of one or more of these subphases.

To see how, enter Sir Ivan Sa’Lyn whose generated UPP is 784B6B.

Though born to the Duke and Duchess Sa’Lyn of the planet Arius, (the nobility level of parentage was determined by consulting the Nobility Table in *Book 3, page 22*, numbering the titles given from one through six and then generating a 6 on a die roll) and hence in line for succession, the Title must still be earned and seeker found worthy on Arius, a Charismatic Oligarchy and emerging power in the K’risilan Sector.

Ivan’s father, a member of the Kings Council of Three, and administrator over Sa’Lyn, one of the three predominate land masses on Arius, earned his right as did the eight generations of Sa’Lyn before him.

Ivan and his father have already held talks lasting long into the mornings over the future of the Sa’lyn. Ivan is the sole male heir to the Title in the Family. The two twins had died shortly after birth leaving Ivan’s mother grief stricken and unable to have further children.

Ivan himself is well aware of the problems that confront him. His intelligence is sound, the product of refined gene pairing. He is, his father told him, the most promising Sa’lyn in this category to come along. But Ivan knows too, his physical qualities are not what they should be in the ideal eyes of a young nobleman. While fair of strength and dexterity, the sickness that racked him while yet a young cub has left his endurance suspect. And like all the Sa’lyn before, with the Coming of Age, he must leave the household and the safe shadows of the family guard and venture off-world in proof of his right to succession.

Should he fail, not all — but many of the Imperial Estates would be forfeit on the death of his father. Yet more importantly, the family influence in the Council would vanish, perhaps never to be regained. The private businesses of the Sa’lyn would cease to flourish without this influence. Both he and the family have everything to gain by his success.

The Time of Choice is upon him.

CHOOSING A SERVICE

After heavy consultation with father and family patriarchs, many nights alone in personal planning — studying of the different requirements, chances, advantages, disadvantages — Ivan elects to try for service with the Empire Navy. It was easy narrowing the field down to the Merchant Marine or the Navy, but then, he reflects, the choice remained a hard one.

Though Ivan realizes he is ideally suited for the Merchant Marine, the Long

View has dictated him along another path. Much more so than the Merchant Marine, the Navy is a “class” service where social influence can be won and powerful friends made which in turn will support the position of both himself and the Sa’Lyn. His chances of survival (a grave concern to his father) will not be diminished by this choice since both are intellectual services. With his social standing, chances for commission are good. And though his education is not what it should be (because of his already heavy involvement in politics back home, being sole heir) with regard to promotion, the overall chance for an intelligent individual is only slightly less than that in the Merchant Marine. Looking at the educational opportunities available, Ivan feels the Navy will best provide him with the abilities needed to succeed his father. The Long View already tells him he will not make the service a career.

Endurance is of course an over-riding concern, yet he rationalizes, it can best be improved with relative safety in the Navy, and more importantly, it must be improved. The Long View ability again tells him to let his ingenuity be the strength in his life’s armor, with the armor’s joints in turn being strengthened with experience.

With a roll of seven, +1 DM for intelligence, the Navy decides to overlook his past medical history in light of his recent good health, outstanding intelligence and social standing. He is accepted into service.

Of course, the important point to recognize here is the tie-in to be found between the service chosen by Ivan and the possible skill requirements needed to successfully follow in the footsteps of his father.

It is only to the best advantage of a player that the time be taken to thoroughly examine background and inheritance, plus any other pertinent factors governing a selected career path, and only then — with this information concrete — select a service for the character from which he can reach that career.

Ivan weighed the physical risk involved in Naval Service versus the chance of gaining social influence to support the Sa’Lyn in the coming time of crisis.

Had Ivan not been the sole male heir, and the family not so badly in need of influence to preserve its position should something happen to Ivan, it’s a safe bet Ivan would have joined the Merchant Marine with a sharp eye on increasing the family’s own fleet and already well established trading ties — perhaps even extending them out of the K’risilan sector altogether and into neighboring Malchin.

SKILL AQUISITION

Ivan understands that the key in preparing for the Rites of Leadership lie in a passive state of being. He cannot force qualities to be something not of nature’s own choosing, but instead, should seek to develop talent from seeds already sprouted.

The words of the first patriarch remain with him, *“The single key to absolute readiness springs of gaining VARIETY in skills through your enlistment period. Master nothing, seeking all. Experience shall then hone the sword’s edges into tempered sharpness.”*

The first term of service holds no undue hardships for Ivan. (survival throw = 8) Ivan wins a commission and subsequently finds himself promoted to Lieutenant. He has learned well. In recognition of the achievement, Arius increases his social position and corresponding privileges to that of Baron. His powers of intelligence also continue to sharpen, thanks to Naval training and discipline — and Ivan finds his abilities not limited to any one field. (Jack-O-Trades) This, Ivan knows, is good revelation indeed. Though routine ship operations also require that he be familiar with a Vacc Suit, physical testing shows a worried Ivan the endurance he had hoped to gain has not improved significantly. Calmly, Ivan realizes his duty tours have not been exactly in line with this seeking.

The now Baron Ivan Von Sa’Lyn reenlists at age 22. Assigned to combat duty by his own request in a move that nearly splits the family in two, but unknown to them secretly secures several important young friends also assigned to the flagship squadron as junior officers, Ivan’s unit is one that responds when an uprising breaks out in a nearby system.

Sent down in one of a number of Ship’s Boats in an effort to restore order, the rebels — with unexpectedly sophisticated weaponry, manage to hole Ivan’s craft and it crashes on landing.

Multiply wounded, suffering from exposure, and barely alive, Ivan is found by friendlies three weeks later after avoiding capture several times. Most of his next year is spent at a Regrowth and Rehabilitation Center recovering from the incident.

Though decorated twice for his courage, his superiors reluctantly decide promotion is not possible until a probation period on his health has ended. Grimly, Ivan smiles when later testing shows his endurance up +1.

Ivan again reenlists at age 26. With an intelligence and wit that continue to leave friends behind him, Ivan is recommended for a second-in-command spot on an Empire Light Cruiser. With this comes a promotion to Lt. Commander. For a time, life is pleasant and easygoing. Ivan’s duty tour is a diplomatic one, with Captain Teregard dipping the ship into a system here and there to assure all of the Empire’s continued interest and good-will. Then, on Argus IV, one year into the cruise and a scant six months from his tours’ end, action finds Ivan once again.

Captain Teregard is killed in an ambush by terrorists. Short on manpower, as usual, the Empire orders Ivan to continue the tour with the acting rank of Commander in response to his report.

Subjectively, time seems to pass slowly for Ivan in the next few months. Yet several crisis decisions and continued personal appearances throughout the diverse volume of the ship win him an uncanny personal loyalty from the crew. In his time alone he becomes familiar with a Ship’s Boat, often taking it out to ponder his future moves in solitude. A tremor within himself tells of still another hard career decision. A small bright moment occurs when the Chief Engineer commends him on his overall excellent knowledge of ship systems. (Jack-O-Trades)

Two weeks out from Final Port, Ivan announces his retirement to the crew, taking a Captain’s privilege in breaking regs to explain to them of his responsibilities at home and his gratitude for a tour well run and efficient crew. Wide-eyed at their reaction, for the first time in his life, Ivan Sa’Lyn was truly taken off-guard.

In fact, among the huge volume of retirement and enlistment papers shuffled at Headquarters Central, the Empire did not even notice it had lost an entire crew from the same vessel . . .

. . . but a greedy executive beamed with pleasure when a 1000 person Archaeology Expedition personally chartered a Liner to Arius . . .

MUSTERING OUT

Mustering Out is an integral part of the Enlistment Phase in Traveller. Done too soon or too late, a character’s chances for survival, and success, can be considerably diminished. Every roll made at this time should be weighed and analyzed separately before deciding on which chart the next one is to be thrown.

Avoiding duplicity of effort is a function of common sense and *not* the simple reason this should be done. Rather a player must consider the tie-in between the character’s attributes and a desired profession — whether it might be to that character’s benefit to strengthen certain areas almost lopsidedly if you will, or if a general rounding out can better insure a certain degree of success.

Patience and caution stem from the same mold. While some encounter situations dictate reflective response, the majority of decision making in *Traveller* have no specific deadlines attached to them. Many players, upon completing a four year enlistment without promotion, decide to muster out.

Characteristic of the character’s youth, the *player* becomes anxious to be on the way. Resist the temptation! True satisfaction comes only from success — and ill-equipped characters frequently meet death at the most inconvenient of times. The question then is raised, how does one determine the proper time to muster out?

Let us again return to the example of Ivan Sa’Lyn.

Ivan’s decision to return to Arius at age 30 was, as the story suggests, far from easy. One of the first factors he took into account was his *inheritance*. His father was fast approaching the age where he could not manage the family assets alone. The transition of power would take both time and Ivan’s continued presence on Arius.

Ivan would also not be wise unless he admitted to himself he was rather gifted in the area of intelligence and recognize he could use this for all its worth. Though weak *physically*, he was not *weak*. Financially, he could more than manipulate the forces around him to insure adequate protection as well as his own strengthening through tutors and advisors — as you will see.

Had he been stronger physically, the effects of aging might not have concerned him so. As reality goes, better he was out now and making expensive, but *certain* preparations that he would be fit to survive.

Another minor point, but still a consideration to take into account, was the simple fact that it would take *at least* two more terms, eight long years, for him to rise from Lt. Commander to the possible rank of Captain where he would receive increased preference in his mustering-out benefits. (It might be wise for a player to ask the referee for a report on the galactic situation here) Eight years is a long time for an aging officer to die in. In terms of overall effectiveness, at thirty eight years of age, any added skills would only be offset by a reduction in physical qualities — and he would be well into the aging process.

There are many skills that can be learned through living life and experience, especially to one of Ivan’s intelligence-12. While one should not blow these possibilities out of proportion, they are not small and it’s fatal to underestimate them.

The above are only a few of the many ‘pointers’ that can be employed in an effort to narrow down the right time to retire. Hopefully, others may have already occurred to you.

If asked for a general rule, the best time to think about retirement is when the benefits and skills a character can gain by staying in the Service begin to equal out with other disadvantages — such as the magnifying of some weakness the character has, because of age and endurance (as was the case for Ivan), or a similar handicap. *Never magnify a weakness in pursuit of a strength!*

Be warned, however, that apart from the last sentence, the above can only be a general guideline to be *considered* when making your decision — *not make it for you*. By the very scope of *Traveller*, there can arise an endless variety of situations one rule cannot govern absolutely. It can only restrict.

Ivan looked at his chronometer, glad the tests were drawing to a close. His final aptitudes would be listed along with any Command recommendations in his dossier. The Service always reserved the right to recall any upper ranking officer to active duty in time of conflict. Ivan had been more than happy to agree

REVIEWS

TRAVELLER

Science fiction role-playing games have lagged behind fantasy RP games for a few years now. No real efforts were made to come up with a SF game to equal the scope and appeal of *DUNGEONS & DRAGONS*.

Summer 1977 saw the release of *TRAVELLER*, the first complete major effort role-playing SF game and GDW's first science fiction game since *TRI-PLANETARY*.

The wait, for those of us who had finally tired of trolls and treasures, was well worth it. *TRAVELLER* is **not** D&D in space. It has its own unique flavor and style.

Physically, *TRAVELLER* is first class, a tradition with Game Designer's Workshop. The box lid and covers of the three booklets are done in a simple but highly effective combination of red and white lettering on a black background. The interior layout and printing is also of the best quality; the printing is an entirely professional job. Some thought was given to the appropriate use of capitalization, bold face, and italics, points that will be appreciated by anyone who has been forced to disrupt a game for fifteen minutes to seek out some rule hidden in the morass. There are three to seven basic rules section in each booklet, further divided into subsections and finally, into specific rules. Main and subsections are listed in a table of contents found in the fore of each book.

As is the case with most role-playing games, there is a plethora of charts and tables. All of these are found with the appropriate rules sections. It is unfortunate that GDW did not print some of the more common charts on a few fold out sheets (as in *D&D* and *EPT*); this certainly would save wear on the booklets themselves.

Playing *TRAVELLER* requires a group of players, a referee (not absolutely necessary but helpful and more interesting), a lot of paper and pencils, some note cards and a strong measure of imagination. Using miniature spacecraft and figures is optional and certainly adds color.

For a description of the game, I'll let the rules speak for themselves.

Book 1, "Characters and Combat" contains an introduction, rules Character Generation, and Personal Combat. As in other role-playing games, players are rated for a variety of characteristics, in this case, endurance, strength, dexterity, intelligence, education and social standing. Ratings are determined by the roll of two dice. However, where most RP games are in a hurry to usher the newly created character out into adventures, *TRAVELLER* has some extensive rules dealing with fleshing out the character, making him more of a person and less of a mere "body".

Most players will enlist in one of the services, for doing so offers the best opportunities to accumulate cash, skills and other benefits. Enlistment is not automatic; prerequisite die rolls are necessary, as modified for certain characteristics. The various services include: Navy, Army, Scouts, Marines and Merchants.

During each term of service (four years) a number of die rolls are made for survival (failure here ends a character's career early) promotion and commission. Terms of service and promotions allow a player to roll on the Acquired Skills Table, selecting the desired column (such as Personal Development or Service Skills) under their particular service type. The different columns for each service reflect the

fact that the knowledge gained in one is likely to be different than that gained in another. Marines, for example, are more likely to learn brawling gun combat, while naval personnel are more apt to increase intelligence and navigation skills. If a player should roll a certain skill a second time, the roll is not wasted, but provides improved skill in that category often resulting in increased die roll modifications (DMs) later in the game.

When the long years of service are over, the final process of mustering out takes place. This will result in material benefits such as weapons or increased abilities and cash allowances with which to begin adventuring. This is followed by the more unpleasant experience of the aging table to see if players lose some of their physical abilities.

This creation procedure may seem long (actually it only takes about twenty minutes per character) but it is vital and interesting to the game. The initial skills and abilities learned during this period may well determine the player's later employment, or even his survival in a combat situation.

TRAVELLER's rules for individual combat are also fairly innovative. Once an encounter has been made for surprise and range, and possible escape and avoidance.

Tactical movement is used only to determine relative range between combatants; maneuver and terrain do not come into play.

Combat resolution is made by a two dice throw of eight or more to hit, subject to modification for range, expertise, movement and weapons. Strength primarily effects hand weapons (a variety of daggers, polearms and sword-types are offered) while endurance determines how many full strength blows may be struck. Dexterity effects the accuracy of fire weapons. These are primarily projectile guns, though both laser rifles and carbines are listed. Armor, from the futuristic equivalent to leather all the way to battle armor, affects hit due rolls.

If a hit is obtained in the first combat round, the number of dice appropriate the weapon used are rolled and the resulting number applied to any one of strength, dexterity or endurance. If the wound reduces the characteristic to 0 the character is unconscious. Wounds in the second round or further may be distributed as the player sees fit, with reduction of any to 0 resulting in unconsciousness. If all go to 0, death is the result (combats tend to be short and sweet). Reductions during combat affect the conduct of that combat. However, if a player survives he may regenerate factors with medical attention or rest.

The bulk of Book 2 covers Starships, their economics, construction, and use in combat.

Players may purchase passage on starships. Luxurious high passage is available for the rich while the more frugal can opt for middle, or even low passage, a risky form of cold sleep.

The section of starship construction is one of the most fascinating. Buying a starship can be very expensive, even with a long mortgage. First a hull size is selected and then the various components are chosen. These include jumpdrives for interstellar travel, and power plants and maneuver drives for interplanetary travel. Matching of drive and hull size will determine final speed.

Elements of the main compartment include cargo holds and staterooms and most importantly, the bridge, which houses the ship's computer. Computer programs are required for all types of movement and combat. They often provide valuable DMs for fire and defense. The computer's capacity to store and process will largely determine what programs are selected; more advanced programs are more expensive and take up more computer capacity.

If a ship is to have weapons these must be purchased and placed in turrets on hardpoints of the ship's hull. Turrets may be fitted with sandcasters, pulse lasers, beam lasers, or missile launchers.

Crews are an important consideration. Often

players as a group can fulfill some of these positions. Others must be hired at a stated salary per month. Crew positions include such jobs as navigator, pilot, steward, medic, gunner, and engineer.

Spaceships that are non-jump capable may be purchased as well. Small ones, such as shuttles or lifeboats, may be carried within larger craft.

Combat between ships is for tabletop, using miniatures or suitable fascimiles.

In combat, ships move using their maneuver drive, via vector. The system is easy to use with a little practice. Gravity may play an important role in altering vectors.

Fire is by laser or missile. Laser fire is heavily influenced by both offensive and defensive computer programs. Programs may allow a pilot to use his expertise in that field for a defensive DM while another may allow a gunner to use his for fire. The judicious use of computer programs and character expertise allow players to affect combat substantially, rather than leaving it all up to just a die roll.

Missiles are potent weapons; if and when they strike, they do considerable damage. For movement purposes they function as small, independent ships.

In addition to evasive maneuvers, ships may cast a cloud of sand around themselves in order to obtain favorable DMs. Presumably, sand acts to diffuse the destructive power of laser weapons. Sand is the closest the game comes to any active defense; *TRAVELLER* ignores the nearly universal SF game concept of screen or energy shields.

Other major sections of Book 2 are Drugs, a fairly self-explanatory section, and Experience. Unlike most role-playing games, the acquisition of "experience points" is not a prime consideration in *TRAVELLER*. It is refreshing to see that the adventures and color of the game's play is reward enough and the players are not channeling their energy into the rather silly chase of ethereal experience points. Too often, this chase becomes more important than actual play itself! In *TRAVELLER*, players may attempt to improve their skills and abilities through long years of training and study. Increases are neither large nor rapid.

The final section of the book deals with Trade and Commerce, a section of interest to those players who are inclined to operate a trading ship. A large chart lists various types of cargo, base prices and quantity, and die roll modifications for both purchase and resale. These take into account, for example, the fact that items such as electronic parts can be had relatively cheaply on an industrial planet and go for a much higher price on a non-industrial world, while the converse would not be true.

Book 3, "Worlds and Adventures" deals first with the creation of a star map, the strategic field on which the various planets adventurers will visit are laid out. The subsector hexgrid is ten hexes by eight. There is a 50% chance of a world appearing in a given hex. Further die rolls determine starport type and whether jump routes (well-plyed spacelanes) exist between planets. A further series of die rolls is made for each world to determine size, atmosphere, hydrography, population, government type, law level and technology. These factors will often affect one another. Thus a large planet has a better chance for a thick atmosphere. Characteristics such as population, law level and government type help to provide some flavor to a given world, as well as saving the referee some set up time.

I found this world creation process fascinating and highly enjoyable. The randomness of the charts and die rolls offered some very interesting planets. An interesting entry from my own subsector appears below:

GRENDAL	Human/Free	Trade	(name and political affiliation)
Starport:	A		(best type)
2000	mile diameter		
Atmosphere:	Trade		(mostly due to small size)
20%	Liquid		
Population:	100		

Government: Self perpetuating
oligarchy
Law Level: 1 (very lax)
Technology: 14 (very high)
Non-industrial world

As you can see, "Grendal" nearly created herself. The small population, high technology and government type seemed to dictate to me that Grendal is some sort of research base on a fairly inhospitable little world. And so she shall be when any adventurers land upon her.

A large equipment section lists a plethora of items, from communicators and vision aids to exotic vehicles. Price and uses of items are given as well.

Encounters with natives and animals form a major portion of the adventures that occur on a planet. Encounters with non-player humans such as a patron can steer player characters into interesting and perhaps profitable adventures. Random encounters with the likes of soldiers, peasants, fugitives or tourists, among others, could lead to fighting or friendship, depending on a die-roll on a reaction table.

Animal encounters are handled with a complex set of rules that create creatures suited for each world. A series of direolls will determine basic creature type (such as carnivore or herbivore) and then more specific information such as size, speed and weapons like horns or claws. Information given in the booklet gives specific ideas on how creatures of a certain type would behave. Physical attribute, such as size may be altered by the terrain where encountered.

These animal encounters are generally handled well, though some appearance charts, to help define a creature's physical looks, might have been in order so the referee could give his players some information as to general form the animal takes.

The final section of Book 3 deals with psionic powers, a nearly obligatory section in games of this type. Psionics seem to take the place of personal magic power, often to the same result. Psionic ability is determined through an examination. Training in one of the six specific talents takes place at a Psionic Institute. Each talent is further subdivided into more exact powers. The use of psionic powers can be affected by range and the use of power-heightening drugs.

TRAVELLER is a unique SF game and probably the best of the role-playing variety. It offers a colorful but consistent future for players to adventure in.

TRAVELLER is \$12.00 (3 booklets, boxed) and is available from Game Designers Workshop, 203 North St., Normal, Illinois 61761. It was designed by Marc W. Miller — TW

The Emerald Tablet

The Emerald Tablet is a fine book of rules for fantasy gaming with miniature figures.

It is difficult for me to discuss rulebooks for miniatures, since I do most of my gaming over a board. Besides, the state-of-the-art in miniatures rules is somewhat diffuse. Admitting my lack of expertise, I think these rules are a cut above the rest of the entries in the field.

The rules for movement and combat are well written and organized. They are also numerically indexed, a nice touch. More, they seem to be both complete and innovative. The payoff is in the handling of magic and here they would be worthwhile even without the other systems.

The game designers have done their homework. The rules for magic are solidly based in the literature of Medieval demonology and ritual magic. This is quite a change from the rules of ordinary fantasy games. In this system, the abilities of magic users are divided into such things which are innate abilities of the character — levitation, invisibility and the like — and those things which require the intercession of an

angel, demon or other spirit. The calling of such astral persons is fatiguing to the magician and also dangerous. The costs and risks involved are proportional to the thing attempted. Summoning Lucifer is costlier but if that's what you need, it's the best way.

Further, each invocation or evocation has associated with it rituals and ephemera which can raise or lower the chance of success. All of these things have been taken from sources on the magic of the Middle Ages and are quite correct. Such sources can also be used to expand the repertoire, if you feel like doing the necessary research. It's open ended for anyone one with a Grimoire.

Without taking anything away from the people who have put work into *D&D*, this is the most developed and "realistic" set of rules for magic I have ever seen. They are readily adaptable to any fantasy campaign and, I think, they are better suited to them. The rules of *The Emerald Tablet* are much more consistent with the expectations of Medieval magic. You don't get something for nothing and the abilities of magic users are confined to those things which the sorcerers of past centuries actually attempted.

It's something new to see a set of rules for magic which are logically developed and consistent. This is not to say that no existing rules are any good. It does mean that the design team for these rules did the kind of research which should have gone into most others. The magic rules are worth the price of the book. I recommend them to anyone who knows something about Medieval magic and wants to bring that into wargaming. — DM

Available from *Creative Wargames Workshop, Inc.*
330 E. 6th Street #1E
New York, NY 10003

\$6.95 + 30¢ postage and handling (before the last postal hike)

Imperium

The biggest advances in science fiction gaming seem always to come from Game Designers' Workshop. This tradition is continued by *IMPERIUM*, a board game which, like the role-playing *TRAVELLER*, was designed by people who know and like science fiction literature. They also have a good grasp of current and possible technologies, another thing which puts them a step ahead of most of their competitors.

Now, the basic situation postulated for *IMPERIUM* is a bit hard to swallow, if you are readily critical in your outlook on SF, but it's nothing which SF authors haven't been writing about for a loooong time. The situation is this; the expanding Terrans run up against an established stellar empire, the Imperium. The battlelines are clear. Either the Imperium will put down these upstarts or they will be swept aside by the manifest destiny of earthlings, the *next* rulers of all space. I couldn't begin to count the number of times and ways this theme has been done in Science Fiction. A number of the classics of the field have been constructed on just this foundation. It is very likely that it will be able to satisfy even the most skeptical science fiction gamers; I liked it, for instance, even if I don't believe in the scenario.

The game is played in sequenced turns, representing two years standard (Terrestrial) time. Hexes are ½ parsec across — about 1.6 light years. Because of the immense area covered by the game map and the distances involved, most movement is by Hyperspace Jump. Such movement is instantaneous but it may only be done along marked transit routes, from star to star but *not* between each star and every other star. For example, there is no direct route of transit from Sol to Sirius but only via some other star. Effectively, this introduces "terrain" to the game.

The stars on the map are all identified by name and spectral class and further differentiated for the

type of planetary system they may have. Most stars are assumed to have some sort of available planets, only Sirius and Altair are devoid of some sort of planetary surfaces for bases. This lack may prove important to a game.

It is assumed that the interplanetary craft operate powered by thermonuclear fusion, requiring hydrogen for fuel. This hydrogen may be taken from the oceans of terrestrial-type planets, the atmospheres gas giants or, with the aid of Tankers, from stellar atmospheres. Fuel is available wherever there is a planet and refuelling is assumed whenever a Hyperspace Jump passes to or through such a star system. Passing *through* Sirius or Altair (without the aid of a tanker) is impossible because of the absence of planets. Sirius is on one fairly important transit route and it represents some very important "terrain".

Hyperspace Jumps are possible only in star-to-star steps and will be interrupted by the presence of enemy ships at a star. The nature of the transit routes is such that some star systems will be critical to movement. Sirius is one, as are Procyon and Nysku/Dushaam. It is possible to move from system-to-system *without* using the lines of hyperspace travel but this will be very slow. Also, some of the ship-types are unable to move by Jump and must depend on the slow, sub-light movement allowance; one hex per turn.

IMPERIUM is not a perfect science fiction game, it's not even close, really, but it's a big step in the right direction. In its favor, it is a medium sized game of no great complexity which demands strategic attention and can be in doubt to the end. It is simple in many respects and has some excellent solutions to design problems which work well. The slightly abstract combat procedures are one such. It has all of the rewards of the early Avalon Hill "classics" except historicity. That may be a plus since it can't be swept away by better research.

On the minus side, the "sense of wonder" is all on the surface. There is no "historical" background given — very little, at least — and the gamers must either accept the situation or supply their own. The designers have taken another track from most and demanded that players/purchasers exercise faith in the idea or pass it by. They have not, to my standards, done anything to help keep up the illusion of reality which is most important to science fiction literature. I don't really think this is justified but . . . I'm willing to call this a science fiction game but if it were a novel, I'd never touch it.

Another drawback is the physical system. The counters are the usual GDW variety, graphically quite nice and well printed but painfully thin and incompletely die-cut. The printing of the mapboard is imperfect, too, with some errors of color and even at least one misnumbering of the hexes. Procyon's binary companion is properly placed on the map but Procyon still is given planets, unlike the binaries Altair and Sirius and though the rules mention that binary stars are unlikely to have planets. Last of all, I wish the stars were identified by some other system than their "proper" names. I'd rather see a uranometric name (such as Alpha Centauri, Epsilon Eridani) or even a Groombridge or Harvard catalog number than the Arabic name. All of the other possible designations convey some sense of position, if you know the naming system. The Arabi names given most of the stars won't do that for anyone who doesn't have an extensive grounding in historical astronomy. Expertise in this field, called Astrog-nosis, is surely rarer among gamers than a knowledge of the Groombridge catalog.

IMPERIUM has good points and bad, the good ahead by a slim margin. I think it's worth your time since it shows a real regard for science fiction among the designers. The Steve Fabian box art is nice, too. If only you hadn't named that one star system "Remulak" . . . — DM

The Asimov Cluster

by William B. Fawcett

One of the challenges inherent in the *Traveller* adventures is to overcome obstacles and opponents of the type found in Science Fiction novels and movies. To our group of players it seemed only obvious that the next logical step was to actually recreate the scenes and incidents described in our favorite novels.

At first this seemed easy as there is normally a wealth of detail in a full length novel. Eventually several problems emerged. It was discovered that in most cases there was no information on the planetary sizes and hydrographics. Often the planetary population can also only be gotten by inference. In nearly all of the cases it proved necessary to create the rest of the solar system from random die rolls. The technological level also proved a problem where alien artifacts or pre-collapse Terran Empire artifacts played a major part in the characteristics of a world.

The ships and technology portrayed in many novels also proved to be too advanced or effective for the format of *Traveller*. Most of Van Vogt's aliens and ships simply were too powerful. The starship Enterprise of Star Trek would easily dominate any combat, (and she is only one of several of her class). The opposite of this can also prove true. If the use of modern technology is allowed on a planet with too low a technological level (4 or below) without some factor to counterbalance it, such as the need for secrecy, psionics, or other technologically equal foes, a few fantasies of power may be fulfilled, but the gamin suffers. (In a Burroughs or Lin Carter story the hero is almost always limited to the weapons common to the planet.) Occasionally a disparity can be interesting if only one or two items are retained by a small number of individuals. What would you do among a level two population with nothing but a few communicators, two grav belts, and one laser carbine with half a charge left? Especially if you're trying hard not to be found by the Cluster Police or its equivalent.

Another fascinating concept that must unfortunately, be held to a very minor role unless you wish to see it rapidly become the center of your

Campaign is Fred Saberhagen's *Berserker* series. Unless their presence is only minor, the threat of the Berserker attacks on all life soon have everyone trying to neutralize their planet(s). One easy way to include this interesting concept and still keep it within limits is to set the defeat of the strength of the Berserkers in the distant past and allow only small, isolated pockets to exist. Saberhagen's novel *Berserker Planet* printed some years ago in *Analog* is a good example of this.

Finally, there is one very subjective decision that should be made and stuck to consistently. Most novels cover the events of a fairly long period. Many events take place over the time described and changes in the nature of the planets and their governments often occur. It is necessary for the scenerio you set up to be consistent in the status of all the planets in the cluster. An example of this is the Planets described in the *Foundation Trilogy* by Isaac Asimov. These three novels cover a time span of nearly 2,000 years. They portray the collapse of a galactic empire and its effect on the planet's peoples and economies. The novels center around the efforts of a group of "Psychohistorians" to shorten the dark ages they see approaching the action revolves around the Encyclopedia Foundation, who become an island of science and scientific method, in a barbarian environment on the fringes of the galaxy growing into a pseudoreligious empire. Where to place the planets in this richly endowed time line is a major problem.

A good rule of thumb, it seems, is that often the time with the most potential for adventure is the situation that the novel begins with. (After all, the situation was created to allow for at least one interesting story to be written within its context.) In the case of the *Foundation Trilogy* it was decided to portray the planets at the time when the Foundation is still struggling against its barbarian neighbors for survival and old Empire is still a force of distant power only. The borders of what the empire still really controls have contracted far from any of the planets described, but vestiges of the old ways remain in the titles and goals of the planetary rulers. There is also the added bonus of a large potential for treasure in the form of still working artifacts left over from the Imperial days.

The planets listed here are those to be found in the Asimov Cluster. The cluster is found on the fringe of one of the spiral arms and is dominated by a large purple-grey nebula (with apologies to the *Flying Sorcerer*).

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Terminus

Starport level A
Atmosphere 6
Size 6
Hydrographics 5
Population 6
Government type 8
Law Level 3
Technological Level 9
Light Industry and Agricultural

Terminus is a smaller earthlike planet with a shortage of heavy elements and fertile soil. It is the home of the Encyclopedia Foundation whose mission is to retain and preserve the scientific knowledge of the old Empire. It is controlled by a popularly elected Mayor and has only one major population center which the starport is nearby. No major predators known. It is not at this time a major military power.

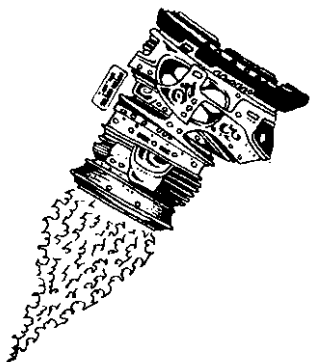
Anacreon

Atmo 6-7
hydro 4
size 8
pop. 9
Starport B
Government 3
Law Level 3
Tech 6
Rich world

Anacreon is the former Imperial perfect capital. As such it was spared many of the ravages of the decline. Its tech level has been down for many years and most items above the 1970 earth level cannot be repaired or replaced. It is hereditary monarchy with the support of the military. Control of population not tight or overly restrictive (due to a lack of means). A dangerous predator is the Nyak, which is a large winged carnivore. Due to reliance on coal and oil, pollution is a major problem.

Smyrno

Starport B
Size 7
Atmo 7
Hydro 4
pop. 9
gov't 8
Law Level 4
Tech Level 6
Rich world



A strong economic and military competitor of Anacreon, Smyrno is run by a bureaucracy left from the old Imperial Administration. Much of this bureaucracy is controlled directly or indirectly by the large trading families who control much of the planet's industry. A world still rich in natural resources, but with a declining technological level. Most starships, as with Anacreon, are Empire holdovers or small merchants copied from earlier designs.

Loris

Starport B
Size 7
atmo 6
hydrographics 2
pop. 9
gov't A
Law 4
Tech 5
Industrial and mining

Mentioned as one of the "four kingdoms" that surrounded Terminus, little detail is given. Most of the figures here are estimates or speculation. (I can't even find the name of the fourth.)

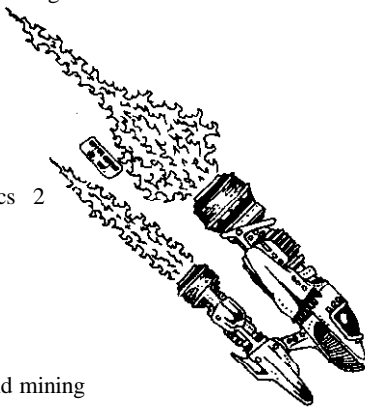
Gamma Andromeda

Starport B
Size 7
Atmo 7 (with radiation)
Hydro 3
Pop. 7
Gov't 6
Law 5
Tech 8
economy still crippled
by explosion

This world still gives its allegiance to the distant Empire. (In reality the probability of any real aid is minimal). Nearly half of the planet is a radioactive waste as the result of a Titanic power plant explosion that resulted from the degeneration of the equipment as the Empire lost its ability to service its existing equipment. The result is a strict ban on any items of atomic nature. Those remaining are the exclusive property of the planetary gov't. Located far from Terminus.

Askone

Starport C
size 7
atmo 6
hydro 5



pop. 6
law 6
tech 5
Rich world,
but fading in resources

Strong religious and legal restrictions on the importation or use of any device above tech level 6. Leftover Imperial items may be used until they stop working as they have the "ancestral blessing". Fleet is comprised of a few leftover Empire scouts. There is a strong competition between several nations on the planet for dominance. As a rule each nation is run by a hereditary aristocracy, most of whom are also industrial barons. (Very machiavellian environment with a disregard of restrictions, but fear of the masses and churches, by rulers.)

Korellia

Starport D
size 8
atmo 6
hydro 5
pop. 8
gov't 3
law 5
tech 5
Industrial declining
to Agricultural.

Once a wealthy trade and manufacturing center, Korellia has been steadily declining as it loses its atomic technology. Jealous of the rise of Terminus. Some useable Empire ships in fleet, mostly ungunned traders. Few vestiges of atomic technology left on planet. The planetary dictator is known as the Commdor and claims to be popularly elected. Actually every Commdor has been from the same family, the Argo. The Argo family also control much of the remaining heavy industry.

Siwenna

Starport A
size 8
atmo 6
hydro 5
pop. 6
gov't 6
law 8
tech 9
Economy broken down,
production and wealth
centered in fleet

Occupied after its Viceroy revolted by portions of the Imperial Fleet, Siwenna was once a rich planet. Nearly 2/3 of its

cont. on page 25

Asimov Cluster from page 21

population and much of its industry was lost in a bombardment preceeding the occupation. Virtually an independent kingdom under the new Viceroy (who headed the fleet), but still giving lip service to the far off Emperor. Native population bitterly opposed to Viceroy and Fleet and is restricted from any technical training or positions. (The bombardment was ordered *after* they surrendered.) Technology and the remaining power plants are controlled by the hereditary Techs guild, who as a group are faithful to the Viceroy and are a privileged class. Much of their learning is by rote and any repairs by them are of questionable value.

The Red Stars

Several marginally habitable planets grouped among a number of older, red suns.

At least one Class A starport

sizes vary

atmosphere no type 6

population of all totals 6

hydro varies

gov't A (all individuals in military)

tech level 9

Few industrial resources mean that it is all that can be done to keep the ships flying and people fed.

Piracy (they call it revolution) is the main occupation

The Red Stars are the refuge of the outlawed ex-Viceroy of Siwenna. After losing the bulk of his fleet to the current Viceroy the remainder fled to this cluster. Having few resources they quickly turned to piracy and raiding. This is their primary occupation now, with little interest in political matters that do not effect them. All individuals are considered to be member of the fleet from birth. Viceroy rules with that title as fleet head.

*It can be debated whether or not Trantor can be included in the cluster as it is located quite distant from the rest of the planets described. If used probably the best gaming time would be to assume the fall is completed as in **The Second Foundation**. Trantor has been abandoned as undefendable and unliveable by the remnants of the Empire.*

Trantor

Starport E

atmo 7

size 9

hydro 1 or 2

pop. 5

gov't 0 local clans or villages only

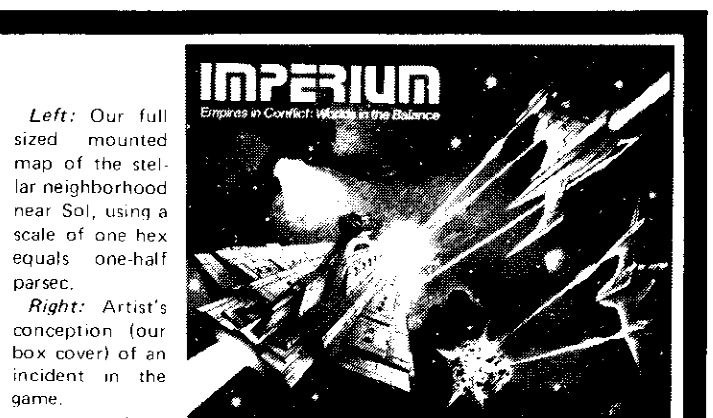
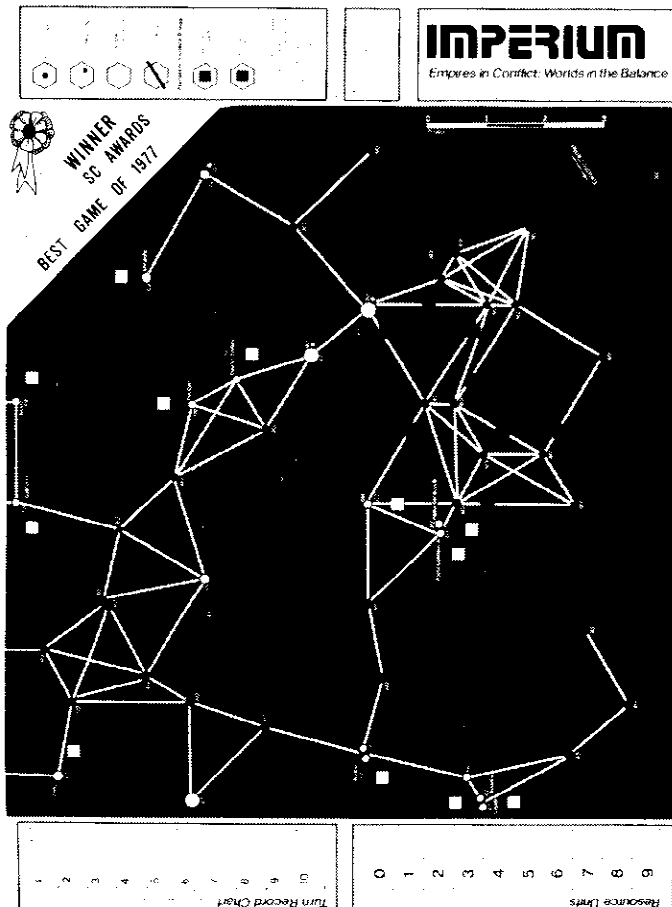
law level 0

tech varies from 1 to 6
generally 4 to 6

Former site of the Capital of the galactic Empire. Trantor grew to be one giant city with the planet covered by several levels of buildings. Abandoned when it became impossible to protect the food convoys needed to sustain the population. Some areas of the surface have been stripped to permit subsistence farming by local groups. Possible trade in artifacts by locals, but there is a suspicion of strangers. Planet is now rarely if ever visited. Large areas unexplored and unknown. Rumors of a colony of Psionics with unknown powers.

Normally the planets described in several novels by the same author are included in this cluster. The Asimov cluster also contains Sark and Florina from *The Currents of Space*, and several planets described in short stories such as *Nightfall*. Of course there is at least one planet that is a major manufacturer of robots of the several types the good doctor has described.

Many authors' works lend themselves to being recreated for *Traveller*. The many and varied worlds of the Dorsai series are a prime example. The novels of Anderson, Reynolds, and Laumer also are suitable for this treatment. So long as the technology doesn't upset the balance of play virtually any world can be recreated. Somewhere out there, circling a star in the Lovecraft cluster. . .



Left: Our full sized mounted map of the stellar neighborhood near Sol, using a scale of one hex equals one-half parsec.

Right: Artist's conception (our box cover) of an incident in the game.

Imperium is a game of interstellar empires in conflict. It envisions a young, struggling Terran Empire expanding out into the territory held by an older, less vital Imperium, which resists, but slowly. Within the situation, the fate of worlds hangs in the balance as interstellar wars rage through the skies.

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CONFLICT GAME

from Game Designers' Workshop

THE TRAVELLER NAVY WANTS TO JOIN YOU:

New Service Opportunities for Navy Characters

R.D. Stuart

With the success of GDWs *Mercenary* supplement to their *Traveller* game system players generating Army and Marine personnel now have a wide range of skills and expertise areas from which to produce well-rounded characters. While *Mercenary* leaves the "ground pounders" in fair shape, other Traveller services can occasionally appear lacklustre in comparison.

Given the importance of any future naval institution capable of insuring security over interstellar distances, it seems only fitting that the naval arm in *Traveller* be given equal time. The following therefore is a proposed variant on the standard method used to generate naval personnel in *Traveller*, utilizing the same format as in *Mercenary*, with the following changes and additions.

Any character choosing (or drafted into) the navy must choose a branch of that arm in which to serve: Ship's Complement Support Services, or Security. Skills are attained by completing yearly assignments with occasional throws for survival, commissioning, promotion, etc. Ranks for enlisted men and officers are given by the following tables. Note that two additional officer ranks between Captain and Admiral have been added.

Skills acquired are identical to those presented in Booklet One, with the following additions specifically for naval personnel:

Jump-Drive: Expertise in hyper-atomic physics and propulsion systems for space flight

Fleet Tactics: Strategic & Tactical handling of fleet warships in combat conditions

Wenching: Basic Carousing. Can also be used as a DM+ Level against Reaction Table when non-player character is of the opposite sex.

Decorations are awarded to naval personnel as follows: on the exact die roll required, player is awarded the *Naval Star of Bravery*. On a DR of +1 required, player is awarded the *Sunburst for Conspicuous Gallantry*. If DR +2 is achieved the player is awarded the *Naval Cluster for Heroism*.

In the course of their four-year terms of duty players will draw either routine fleet or special assignments. NOTE: The first assignment of any player consists of one-year basic training & advanced service training. Players must successfully throw against a survival roll, as per *Mercenary*, and receive a basic +1 Blade Combat as an addition to their N.O.T. roll an advanced skill.

It is hoped that in utilizing this variant players and referee will now be able to generate characters able to compete with specialized army and marine personnel already on hand. And while naval star-men are not generally considered for Mercenary assignments, specialized characters can of course apply for deep-space exploration teams, colonizing efforts, and a host of other possibilities. Given skills and a little imagination on the players' behalf no doubt new and rewarding gaming opportunities will occur. And so, now, the *Traveller* navy is ready to join you!

NAVAL OCCUPATION TABLE

Die Roll	Ship's Complement	Support Services	Security
1	Ship's Boat	Steward	Bld. Combat
2	Vac. Suit	F.O.	Gn. Combat
3	Gunnery	Medical	Gn. Combat
4	Mechanical	Engineering	Vac. Suit
5	Jack-O-Trades	Computer	Survival
6	Navigation	Electronics	Zero—G
7	Pilot	Jump Drive	Battle Dress

DM (+1) If Tech Level of world is 12 +

RANKS

Enlisted Men

S1 Starman	01 Ensign (Trav. Rank 1)
S2 Starman II class	02 Lieutenant (Trav. Rank 2)
S3 Starman I class	03 Lt.-Commander (Trav. Rank 3)
S4 Starman (Chief)	04 Commander (Trav. Rank 4)

S5 Starman (Gunnery Chief)
S6 Starman (Ship's Chief)
S7 Starrman (Master Chief)
S8 Starman (Fleet Chief)

05 Captain (Trav. Rank 5)
06 Commodore (Trav. Rank 5)
07 Fleet Captain (Trav. Rank 6)
08 Admiral (Trav. Rank 6)

SKILL TABLES

Die Roll	Navy Life	Chief Skills	Command Skills	Staff
1	+1 Str	Gn. Cmbt.	Navigation	F.O.
2	+1 Dex	Navigation	Computer	Medical
3	+1 End	Jump Drive	Leadership	Fleet Tactics
4	+1 Itell	Instruction	Leadership	Mechanical
5	Gambling	Leadership	Fleet Tactics	Admin
6	Wenching	Gunnery	Pilot	Admin
7	Brawling	Admin	+1 Soc	+1 Soc
8	Bld. Cmbt	+1 Soc	+1 Soc	+1 Soc

Navy Life: 01 +1, 02 +2, 03 Above +3

Chief Skills: S4 +1, S5 +2, S6+3, S7+4, S8 +5

Command/Staff Skills: Rank 3-4 +1, Rank 5-6 +2

Above modifiers are optional at player's discretion

GENERAL ASSIGNMENT

Die Roll	Ship's Complement	Support Services	Security
1	Command	Command	Command
2	Command	Command	Command
3	Command	Staff	Staff
4	Command	Staff	Staff
5	Staff	Staff	Special
6	Special	Special	Special
7	Special	Special	Special

AU except officers treat Command and Staff Rolls as Fleet assignments.

DM (+) Education 9 + allowed

Officers may choose DM (-1)

FLEET ASSIGNMENT

Die Roll	Ship's Complement	Support Services	Security
2	Raid	Raid	Raid
3	Raid	Fleet Act.	Raid
4	Anti-Piracy	Planetary Support	Raid
5	Refit & Repair	Patrol	Fleet Action
6	Refit & Repair	Refit & Repair	Fleet Action
7	Refit & Repair	Refit & Repair	Patrol
8	Patrol	Patrol	Patrol
9	Patrol	Exploration	Patrol
10	Patrol	Planetary Support	Refit & Repair
11	Fleet Action	Planetary Support	Refit & Repair
12	Fleet Action	Patrol	Exploration

DEFINITIONS

Raid Raid on planetary system in conjunction with other military support

Anti-Piracy Ship assignment against commerce raiders

Patrol Protection of planetary systems and normal space lanes

Exploration Mapping expedition — survey of uncharted planet system

Planetary Support. Planetary Support to established colonies or naval installations.

Refit & Repair Refitting, drydocking, repair of vessel, relaxation, rest leave for ship's crew

SPECIAL ASSIGNMENT

Die Roll	Enlisted Men & Chiefs	Officers
1	Recruiting	Recruiting
2	Cross Training	Naval Intelligence
3	Protected Forces	Fleet Command School
4	Specialist School	Staff School
5	Marine Attach.	Marine Attach.
6	O.C.S.	Military Aide/Attache
7	O.C.S.	Fighter Command

FLEET ASSIGNMENT RESOLUTION

	<i>Fleet Act.</i>	<i>Raid</i>	<i>Ant-Piracy</i>	<i>Patrol</i>
Survival	6+	5+	4+	4+
Decoration	8+	9+	10+	12+
Promotion	6+	7+	7+	(8+)
Skills	5+	6+	6+	7+

	<i>Exploration</i>	<i>Refit & Repair (auto)</i>	<i>Planet. Supprt. (auto)</i>
Survival	6+	none	10+
Decoration	9+	none	10+
Promotion	9+	none	(8+)
Skills	7+	8+	5+

Players add DM+1 on survival throws if any N.O.T. skill is level 2 or greater

For promotion Rolls (8+) add DM+ 1 if Education is 9+

SPECIAL ASSIGNMENT RESOLUTION

Die Roll *Enlisted Men and Chiefs* Enlisted Men DM + 1 if educated past level 8

1. *Recruiting* Player has been given a recruiting assignment and receives an automatic Recruiting Level + 1
2. *Cross Training* Player may have his character cross train either of the two branches not originally selected, receiving a die roll that branch N.O.T. Table.
3. *Protected Forces Training* Player rolls for following skills, received on 4+: Zero-G Cmbt., Vac. Suit, on one die.
4. *Specialist School* Player has been sent to specialist school. Roll one die and receive skill level in the following areas:
 1. Communications
 2. Admin
 3. Medical
 4. Electronics
 5. Jump-Drive
 6. Computer
5. *Marine Attachment:* Player has been temporarily assigned to a Marine regiment for a yearly assignment. Roll 4+ on one die for the following skills: + 1 Gun Cmbt., +1 Bld. Cmbt., + 1 Hvy. Weapons.
- 6-7. *O.C.S.* Player has been selected for Officers' Candidate School. Roll 4+ on one die for additional Navy Life or NOT Table Skill. Roll one die automatically for one Command and one Staff Skill. After completion of assignment player is commissioned as an Ensign.

Officers Officers add DM+ 1 if Intelligence is better than 9

1. *Recruiting:* Officer receives same assignment as enlisted men. Officer receives automatic + 1 Recruiting skill for this one-year assignment.
2. *Naval Intelligence:* Officer has been posted to Naval Intelligence School. Roll 5+ on two dice for following skills: Interrogation, Forgery, Bribery, Fleet Tactics.
3. *Fleet Command School:* Roll 5+ on two dice for following skills: Fleet Tactics, Leadership, Navigation, Jump Drive. If three skills are successfully rolled player may roll 10+ on two dice for promotion.
4. *Staff School:* Roll 4+ on one die for the following skills: Admin, Computer, Electronics
5. *Marine Attachment:* Same as enlisted men, officer rolls 5+ on one die for the following skills + 1 Gn Cmbt., + 1 Bld. Cmbt., + 1 Ground Tactics
6. *Military Aide/Attache:* Officer rolls one die DR 1-4 player has been posted as naval attache, receives automatic promotion and + 1 Soc. level 5-6 player is posted to aide for Admiral and may select own special assignment for next term other than a continuing aide assignment.
7. *Fighter Command:* Officer has been posted to navy special fighter command. Player receives an automatic promotion and + 1 Fighter skill. Player must immediately roll survival throw of (6+) DM per prior number fighter assignments only. Player may attempt to continue assignment next term if DR 10+ on two dice achieved. (No reenlistment roll required if this assignment last in current term and 10+ DR achieved).

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Variant

Tesseracts: A Traveller Artifact

Gary Jordan

Tesseracts (or hypercubes) have appeared in the pages of TD before, as a gimmick to confuse the mapmakers of D&D. Rather than attempt to confuse the players of TRAVELLER, I'd like to present that device as a boon to them.

Readers of that previous article will recall that tesseracts have the peculiar property of containing eight times their actual physical volume, sort of a technological bag of holding. Considered as an artifact, rather than a magical nexus, I postulate the tesseract as a cubical structure with no openings into the "normal" three dimensional space. This is merely the framework, connected to a hyperspace generator; inside is the tesseract itself, consisting of eight cubical rooms or compartments weirdly interconnected (for how weirdly, see the previous article) and each with the same volume as the framework which contains them. Figure 1 is the layout of the internals and their interrelationship; Figure 2 is how the tesseract might be represented in ship's plans.

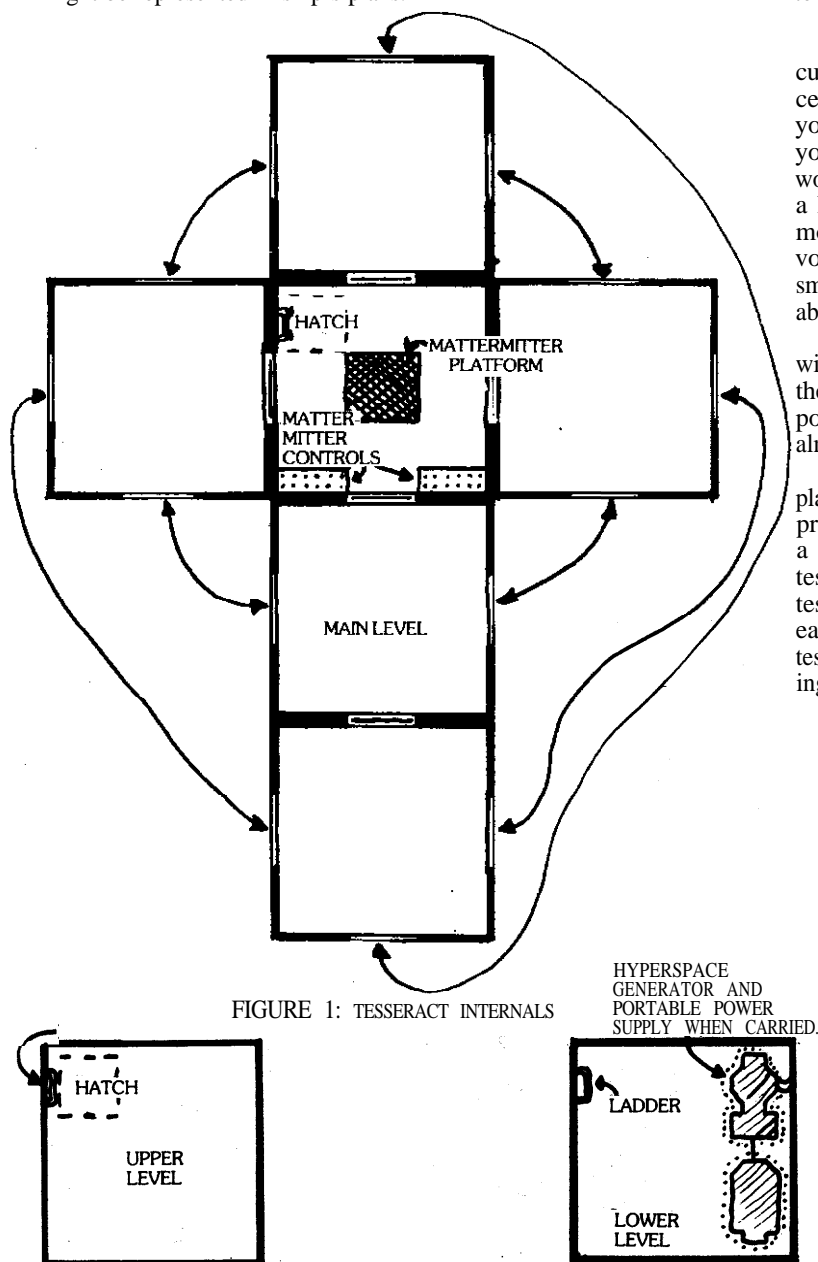


FIGURE 1: TESSERACT INTERNALS

Access/egress to the tesseract is via matter transmitter/receiver pairs (mattermitters). One is located within each tesseract employed, while one is located outside the tesseract but within its limited range. The internal structures within are constructed by the ship-builder and mattermitted into the operating hyperfield. The contents of a hyperfield are impervious to influences exerted from without. Nothing, up to and including a supernova will affect a tesseract in operation, *so long as the hyperspace generator continues to function*. Interruption of power to the generator for durations of longer than 60 seconds or destruction of the generator itself will cause the field to degenerate and collapse, resulting in the permanent loss of the contents in hyperspace.

For that reason, it is possible to mattermit the components of a generator and a portable power supply into the tesseract, connect and start them, and de-energize the external generator. The generator is now protected by the very hyperspace fields it is maintaining.

The obvious question is, why bother with all this?

For one answer, consider a given hull, say a type 2000. After customizing the hull, equipping your ship with the jump drive, acceleration and power plant not to mention weapons and computers you feel necessary to avoid pirates, privateers, and hostile forces, you find you have only 30 tons left for cargo space. Any merchant would probably go broke at that point trying to find goods that will turn a high enough profit to make the mortgage. Installation of one or more tesseracts would increase the cargo volume eightfold, less the volume taken up by mattermitters, and support equipment. Thus the small, highly maneuverable merchant might compete far more favorably with the larger lines.

For another answer, a small tesseract strategically located and with generator and power supply inside could provide a safe haven in the event of disaster. Such an arrangement would include life support and medical facilities and be self sufficient for several months, almost assuring rescue.

If those reasons alone are not sufficient, no doubt an ingenious player can come up with reasons of his own. At any rate, the cost may prove to be the deciding factor. All components are available only at a class A tech level 16 shipyard. Hyperspace generators: one per tesseract at CR 12,000,000 each. Mattermitters: at least one per tesseract and one outside, range 100 meters, cost CR 9,000,000 each. Portable power plants: optional unless generator is inside tesseract, duration 5 years, cost 10,500,000. Installation fees, including internal structures at shipyard: CR 2,000,000.

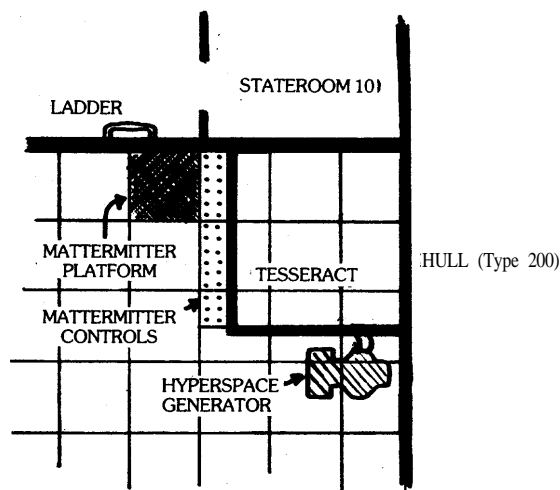


FIGURE 2: TESSERACT SHOWN IN CARGO HOLD OF FREE TRADER TYPE A

Variant

TRAVELLER: Star System Generation

Gary Jordan

Being a science fiction fanatic since age 10, I immediately went ape over TRAVELLER. I enjoyed just creating a universe and populating it nearly as much as playing the roles. But my universes seemed to lack something and it wasn't long before I figured out what.

For each hex of each subsector, the GM determines if a planet is there, then type of starport, etc. It's naturally assumed that the planet is circling a star and that there are other planets in the system. The rules even mention diving into the gas giants for fuel.

Well, what else is in that planetary system? What kind of star are the planets circling? How long is their year? How far from the sun? All answers left up to the GM's discretion, obviously. A GM can burn out his creative braincells long before coming up with a fleshed-out subsector. That's why I use the following system:

STAR LOCATIONS. Hexes will have a star system in them on a roll of 4+ on 2D6: Whether or not an inhabited planet is present is determined on the usual roll of 4, 5, or 6 on one six-sided die.

STAR TYPES. Star classification varies according to size and temperature, among other things. Roll 2D6

Die Roll	Type
2	Binary star - roll twice on this table, DM + 1
3	Dwarf star - roll again on this table, 1D6 + 2
4	Type M - red star, coolest variety
5	Type K - orange star, cooler than earth's sun
6	Type G - yellow star, just like earth's
7	Type G
8	Type F white star, hotter than earth's
9	Type a blue-white, very hot
10	Type B or O (50% chance either) hottest types, blue
11	Giant Star - roll again, 1D + 2 for color
12	Variable Star - roll again for color

NUMBER OF PLANETS. Roll 2D6 - 1 DM's + 1 if Type 0 or binary

DISTANCE OF PLANETS FROM SUN. There are 11 possible positions for planets to occupy, based on Bodes Law. Taking position 3 as one astronomical unit, the positions are: 0.4 AU, 0.7 AU, 1.0 AU, 1.6 AU, 2.8 AU, 5.2 AU, 10.0 AU, 19.6 AU, 39.0 AU, 77.2 AU, and 15.0 AU. 1 AU = 2D6 X 10,000,000 miles. DM's - (Millions of miles) red; -2 yellow +2 white: +5 blue-white: +10 Everything else except orange: +25.

STARPORT TYPE. Roll normally for a starport in an inhabited system. To determine if more than one starport is present, roll for each other planet in the system, using the DM 2D6 + Last number rolled as modified which produced a starport.

PLANETARY SIZE. Roll planetary size normally for each planet; any planet beyond position 4 whose size is 3 or better may be a Jovian planet or gas giant. Roll 1D6, 4 + = gas giant; multiply size by 10.

PLANETARY ATMOSPHERE AND HYDROGRAPHICS: Roll normally.

POPULATION. Roll normally for any planet with starports.

GOVERNMENT, LAW LEVEL, AND TECHNOLOGICAL INDEX. Roll normally for each inhabited planet.

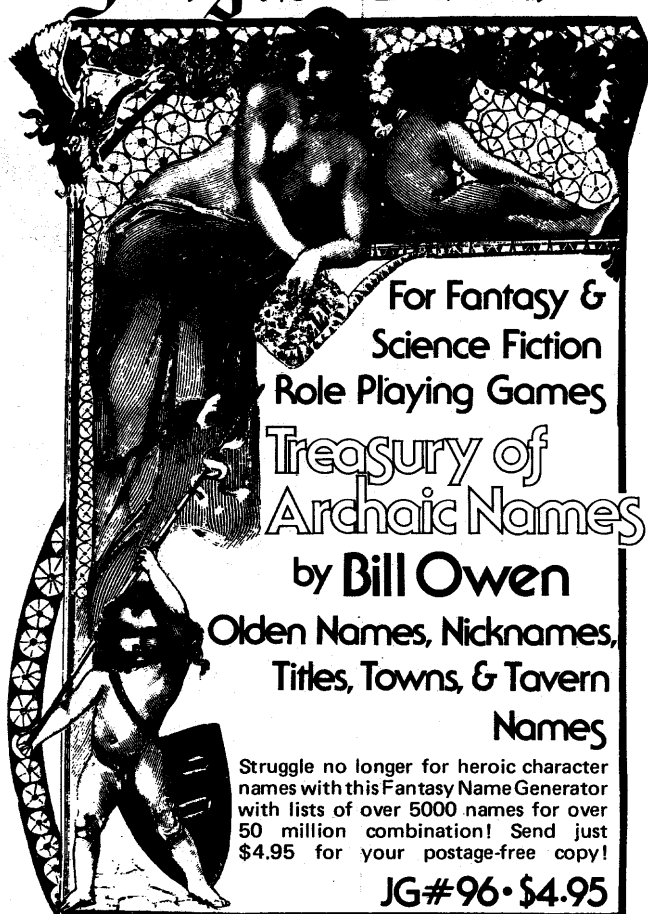
WORLD TYPE. Determine from trade chart for inhabited planets.

NUMBER OF MOONS. Roll 1D6 - 7 + planet size. For gas giants roll 2D6.

SIZE OF MOONS. Roll 1D6 - 1 against planet size and multiply by one-half except gas giants.

UNIVERSAL STAR SYSTEM PROFILE. This is a set of single digit numbers which indicate the following data about a given planet: Star Type, Planet Number, Position Number, Starport Type, Planetary Size, Planetary Atmosphere, Hydrographics, Population, Government, Law Level, Tech Index, World Type.

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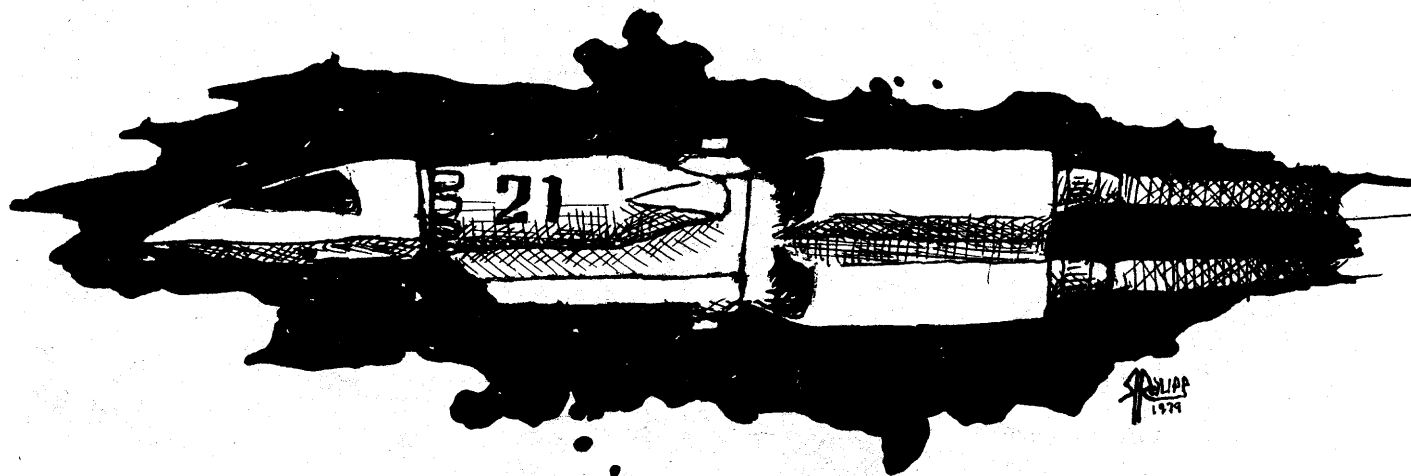
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The Traveller Politician:

Diplomacy and Intrigue in the Traveller Universe

Rick Stuart

The current TRAVELLER role-playing system offers players opportunity in abundance to create characters of high skills in an effort to win fame and fortune through a military career. But fame—and for that matter *power*—are to be had by means other than strictly military. For players looking for alternatives or for characters mustering out and looking for a new career, the following variant is offered as an introduction into Imperium politics. Utilizing this variant, players hold terms of office, build individual power bases, cultivate influence, and with a little luck—and a lot of credits—reach for the summit of Empire.

Entering the Political Arena

Players enter Imperium politics in one of two ways: either at age 18 in lieu of a standard military career, or following their mustering out of a given service branch with at least 12 years (three terms) experience. Like the military, the political sphere is divided into distinct branches, briefly noted as follows:

Administrative Politics: responsible for routine functions of Imperial bureaucracy.

The Judiciary: concerned with the daily enforcement of Imperial policies.

The Security Mandate: Charged with the overall defense of the Imperium, as such working with local officialdom coordinating military activities.

The Diplomatic Corps: Deals with the “foreign relations” aspects of empire at various levels.

The Secretariat: Formulates Imperium policy, reserving the majority of executive powers unto itself.

To enter Imperium politics, a player selects a given branch and rolls for acceptance on Table I, meeting his qualifications roll with the help of suitable modifiers where applicable.

Failing to meet a given qualification roll, the player may select a secondary branch of service, repeating the procedure but with a -2DM penalty. If a character age 18 fails on his second qualifications attempt, he is subject to standard military draft as per Booklet I. A player with prior military service may not be drafted again, but failing to meet qualification rolls twice prohibits any further attempts and the player must start looking for another line of work.

Terms of Office

Having successfully entered a service branch, players proceed through individual two-year political “terms of office.” During a player’s first term he automatically rolls twice on the Power Base Table (III) to determine his initial clout. Beginning with his second term of office, the following procedure is used.

During each two-year term, players must first roll a saving throw against political opposition. Unsuccessful attempts require players to immediately consult the Political Opposition Table (IV) and apply the results as rolled. If an assassination attempt is called for, the player must immediately make a two-dice roll greater than the gamemaster’s to survive the action.

Given a successful saving throw vs. opposition, players may again consult their Power Base Table (III) or may instead attempt to gain a promotion (Elevation) within their own respective branch. An unsuccessful attempt at elevation, however, necessitates an immediate additional saving throw vs. opposition.

Having garnered their increase in clout or an elevation in their given term, players now must roll successfully on Table I for reappointment to an additional term. Given successful rolls, there is no theoretical limit to the number of terms a player can hold, but failure to meet a reappointment roll effectively ends one’s political career.

Transfer Between Political Branches

While certain branches of politics are “safer” than others with respect to opposition, not every branch affords players equal opportunity for advancement. Accordingly, players may wish to transfer from one branch to another after a time. To do so, players must first achieve level four within their own political branch. Thereafter they may transfer if they successfully make a saving throw against political opposition. Allowing for internal politicking and the limited availability of open slots to be filled, saving throws against opposition in this instance are done with an automatic -2DM. A successful roll will allow the player to enter his new branch at the same attained *level* as currently held—not necessarily the same title!

Benefits and Privileges

Politics, naturally enough, offers certain material benefits and ad-

vantages which those in the military must of necessity do without The Power Base Table III below notes various benefits or advantages that can be accrued while in office. Some, requiring brief explanation, are noted below:

Appeal: Right of personal appeal to Emperor to overturn a conviction of a lower court Success of appeal is judged by standard Political Opposition roll, with an automatic modifier of +2DM.

Bear Arms: Right to bear arms in contravention of local planetary law levels.

Cash Grant: Basic grant of salaries and/or pay increases. Roll 1d6 (x) 10,000 credits per point for *annual* income.

Escort: Player has right of personal escort in contravention of local law levels. Roll 2d6 for number of individuals. These may be armed with any type weapon, with the exclusion only of energy weapons where normally prohibited.

Estate: Acquisition of personal property. Roll 2d6 (x) 10,000 credits value per point More than one estate may be jointly owned and player may resell property using Commerce Value Table as per TRAVELLER Booklet II.

Feudatory: Player—if already noble-receives grant of local autonomy in a given stellar system. Roll 2d6 for number of habitable planets in this "fief." Thereafter, roll 1d6 (x) 10,000 crs. per point for annual income in revenues received from each planet, minus 10% of total as annual "gift" to the Emperor. If player is non-noble, roll again.

Hereditary Noble: Player's noble status made hereditary. All family members raised in social status to one level below family head. Each may roll 2d6 (x) 10,000 crs. per point for immediate inheritance from the Imperium.

Right of Passage: Player has right of reserved passage (High

Table I: Political Branches-Requirements
(roll 2d6)

	Secretariat	Diplomatic Corps	Security Mandate	Judiciary	Admn.
Qualification	9+	7+	6+	6+	4+
Opposition	9+	8+	6+	5+	4+
Saving Throw					
Elevation	9+	8+	8+	7+	5+
Roll					
Reappointment	5+	5+	6+	5+	3+

DR Modifiers: Qualification: All branches +1DM Soc. Level 10+,
Officer rank prior service level 5+
Opposition: All branches +2DM Education 10+
Elevation: All branches + ()DM Bribery or Court Influence

Table II: Rankings

Level	Secretariat	Dplmt. Corps	Security	Judiciary	Admn.
1 Director	Page	Agent	Councilor	Administrator	
2 Comptroller	Dept. Envoy	Chief	Banister	Technocrat	
3 Dept. Envoy	Envoy	Asst. Gvm.	Prosecutor	Director	
4 Envoy	Senator	Governor	Justicar	Comptroller	
5 Envoy Extra.	Viceroy	Senator	Asst. Gvm.	Asst. Gvm.	
6 Senator	Quad. Leader	Viceroy	Governor	Governor	
7 Viceroy	Minister		Senator		
8 Quad. Leader					
9 Minister					
10 Emperor					

Abbreviations: Asst. Gvm. = Assistant Governor
Dept. Envoy = Deputy Envoy
Envoy Extra. = Envoy Extraordinaire
Quad. Leader = Quadrant Leader

Class) on interstellar transport without costs at any time-even to the exclusion of other passengers.

Rebate: Financial kickback arrangements. Player rolls 2d6 (x) 1,000 crs. per point for annual rebate. This rebate lasts only until player is elevated to the next level, although subsequent additional rebates may be collected. Each term player must roll 1d6. Roll of "6" indicates detection, and player must renounce rebate and make immediate saving throw against political opposition.

Title: Player has been awarded a noble title. Player's social status automatically raised to "11" (Knight/Dame). If player already holds a nobility his social level is then automatically raised by "1."

This variant is specifically designed to allow players the maximum benefit from their educational-intellectual-social backgrounds as possible in contrast to strictly physical ability per se. This notwithstanding, there is little reason why a civilian character generated by the above variant cannot easily fit into a referee's campaign, given a little imagination and effort.

The above suggestions are given as guidelines and not dogmatic truths. Players and referees are encouraged to experiment and modify the above as suits their tastes. In any event, the TRAVELLER politician has now come into his own. Enjoy!

Table III: Power Base

All Service Branches: Levels 1-3 roll 1d6; Levels 4-6 roll 2d6; Levels 7+ roll 3d6.

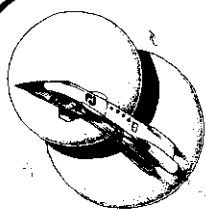
Roll	Secretariat	Dplmt. Corp	Security	Judiciary	Admn.
1	Cash	Cash	Cash	Cash	Cash
2	Cash	Cash	Cash	Cash	Cash
3	Forgery	Bribery	Cash	Cash	Cash
4	Bribery	+1 Soc.	Rebate	+1 Int.	Cash
5	Cash	+1 soc.	Rebate	+1 Educ.	Bribery
6	Estate	+1 Int	+1 Educ.	+1 Educ.	+1 Educ.
7	Estate	Estate	+1 Soc.	+1 Soc.	+1 Educ.
8	Passage	Estate	+1 Soc.	+1 Soc.	+1 Educ.
9	Rebate	Passage	Bribery	Rebate	Cash
10	Escort	Passage	Forgery	Rebate	Rebate
11	Rebate	+1 Soc.	+1 Soc.	Title	Forgery
12	Bear Arms	Rebate	Escort	Title	Title
13	Bear Arms	Court Inf.	Passage	Estate	Estate
14	Court Inf.	Court Inf.	Cash	Escort	Cash
15	Court Inf.	Court Inf.	Bear Arms	Court Inf.	Estate
16	Hereditary Nbl.	Cash	Bear Arms	Court Inf.	Cash
17	Feudatory	Feudatory	Court Inf.	Appeal	Title
18	Appeal	Hereditary Nbl.	Court Inf.	Appeal	Appeal

Abbreviations: Court Inf. = Court Influence
Hereditary Nbl. = Hereditary Nobility
+1 = +1 Education, social Standing, Intelligence

Table IV: Political Opposition
(roll 2d6)

Roll	No effective opposition.
	No elevation attempt permitted next term.
2-3	No subsequent elevation attempt permitted in this branch.
	-2DM next elevation attempt-all branches.
5-6	-3DM next elevation attempt-all branches.
	Pay-off to opposition required: Roll 1 die (x) 10,000 crs./pt.
7	Same as (7), only roll 2 dice.
9	Lose all existing court influence; if none then treat as (8).
10+	Assassination Attempt.

Players may use current Bribery or Court Influence levels as (-) DM on assassination rolls.



TRAVELLER VARIANT 1

IBIS: PROFIT AND PERIL

Kenneth Burke

In addition to the other branches of Traveller military service, characters may join the Interstellar Bureau of Internal Security, known as IBIS. This is the Imperium's combination secret police force, intelligence-gathering agency, and law-enforcement organization; it is answerable to no one but the Emperor himself.

The missions IBIS sends its members on are dangerous, but the rewards for success are great. While IBIS has a lot to offer potential members, it also has a serious drawback—an IBIS member cannot leave the service until (a) he is ordered to, (b) he serves for 20 years, or (c) he is dead.

IBIS Prior Service Table:

Enlistment, 11+ (DM + 1 if Education 10+; DM +2 if Dexterity 10+; DM +3 if Intelligence 10+)
Draft, n.a. (not applicable)
Survival, 10+ (DM +1 if Endurance 8+; DM +2 if Dexterity 9+; DM +3 if Intelligence 10+)
Commission, n. a.
Promotion, n.a.
Re-enlistment, 3 +

Note: Characters cannot be drafted into IBIS, nor may they leave the service until they roll a "2" for re-enlistment or until 20 years have passed, in which case they are automatically retired. Characters who successfully enlist receive an automatic Combat Rifleman-2, Pistol-2, Jack of all Trades-1 and Dagger-1 as service skills.

IBIS Acquired Skills Table:

Personal Development—Roll of 1 = +1 Strength; 2 = +1 Dexterity; 3 = +1 Endurance; 4 = +1 Intelligence; 5 = +1 Education; 6 = +1 Administration.

Service Skills—Roll of 1 = ATV; 2 = Air/Raft; 3 = Ship's boat; 4 = Pilot; 5 = Vac Suit; 6 = Gunnery.

Advanced Education—Roll of 1 = Gun Cbt; 2 = Blade Cbt; 3 = Demo; 4 = Hvy Wpns; 5 = Zero-G; 6 = Survival.

Advanced Education (allowed only for characters with Education of 11 +)—Roll of 1 = Forgery-2; 2 = Interrogation-2; 3 = Bribery-2; 4 = Gambling-2; 5 = Streetwise-2; 6 = Administration-2.

IBIS Mustering Out Table:

Material benefits—Roll of 1 = Hgh Psg; 2 = +2 Education; 3 = +2 Intelligence; 4 = Travellers'; 5 = 4 gun; 6 = Scout; 7 = Merchant, Type R (ship has had all monthly payments met).

Note: 4 Gun is the same as receiving four Gun results. Scout, Merchant and Travellers' can only be received once.

Cash benefits—Roll of 1 = 100,000cr; 2 = 200,000, 3 = 300,000; 4 = 400,000; 5 = 500,000; 6 = 600,000; 7 = 700,000.

DM + 1 for ranks 15 and higher on both rolls.

Annual retirement pay: Characters retired from IBIS receive an annual retirement pay equal to the number of terms they served times 10,000cr.

Aging: Due to monthly anagathic treatments, the Aging Table is never consulted for IBIS personnel. They literally remain 18 years old until they leave the service.

Action duty: Upon successful enlistment into IBIS, characters may volunteer for Action Duty, which is resolved following the procedure in the Mercenary booklet, with the following tables used as substitutes for those in the booklet.

IBIS MOS Table:

Roll of 1 = Gun Cbt; 2 = Blade Cbt; 3 = Hvy Wpns; 4 = Gunnery; 5 = Vat Suit; 6 = Zero-G Cbt; 7 = Battle Dress.

Note: DM + 1 if Dexterity is 10+. Character starts with Gun Cbt-3 plus one skill rolled for on above table.

IBIS General Assignment Table:

Roll of 1 = Special; 2 = Aciton; 3 = Action; 4 = Action; 5 = Action; 6 = Special.

For "Action" result, consult Action Assignment Table (below); for "Special" result, consult Special Assignment Table (below).

IBIS Action Assignment Table:

Dice roll of 2 = Hazardous duty; 3 = Hazardous duty; 4 = Raid; 5 = Espionage; 6 = Subversion; 7 = Training; 8 = Investigation; 9 = Espionage; 10 = Raid; 11 = Hazardous duty; 12 = Hazardous duty.

IBIS Assignment Resolution Table:

	Survival	Promotion	Skills
Training	4+		9+
Investigation	5+	12	8+
Subversion	6+	12+	7+
Espionage	7+	11+	6+
Raid	9+	10+	5+
Hazardous duty	11+	9+	4+

Note: On Survival column, DM + 1 if Endurance 8+; DM +2 if Dexterity 9+; DM +3 if Intelligence 10+. DMs are cumulative.

On Promotion column, DM = character's current Intelligence level minus 8.

Ranking system: Unlike the other services that employ ranking systems, the ranks of IBIS have no title, simply the letter "R" followed by the rank attained. All characters start at R-0 and can advance as high as R-20. Characters can receive only one promotion per term, regardless of dice rolls.

IBIS Special Assignment Table:

Roll of 1 = Intensive Interrogation Training; roll one die, with the result equaling the Interrogation skill level which the character receives.

Roll of 2 = Assassination Training; a roll of 2+ on one die provides the following: Brawling, Blade Cbt, Gun Cbt, Demo.

Roll of 3 = Commando School (see *Mercenary*, page 5).

Roll of 4 = Protected Forces Training (see *Mercenary*, page 5).

Roll of 5 = Intensive Combat Training; character receives training in Brawling, Blade Cbt or Gun Cbt (his choice). A die roll equals the skill level received in the chosen area.

Roll of 6 = Naval Training; character rolls one die and on a roll of 4+ receives the following skills: Pilot, Navigation, Computer; Gunnery, Ship's Boat and Vacuum Suit.

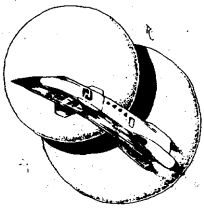
IBIS Skills Table:

Roll of 1 = +1 Strength; 2 = +1 Dexterity; 3 = +1 Endurance; 4 = +1 Intelligence; 5 = +1 Education; 6 = +1 Administration.

Modified roll of 7 = ATV; 8 = Air/Raft; 9 = Ship's boat; 10 = Pilot; 11 = Vat Suit; 12 = Gunnery; 13 = Gun cbt; 14 = Blade Cbt; 15 = Demo; 16 = Hvy Wpns.

Modified roll of 17 = Zero-G; 18 = survival; 19 = Forgery-2; 20 = Interrogation-2; 21 = Bribey-2; 22 = Gambling-2; 23 = Streetwise-2; 24 = Administration-2; 25 = Battle Dress; 26 = Any skill-3 or characteristic +3.

Note: DM + 1 per level of rank; PM may be modified to any number lower than its present level, down to zero. Players may use IBIS MOS table instead of IBIS Skills Table to determine skills, if desired.



TRAVELLER VARIANT 2

USEFUL SKILLS

Alexander von Thorn

In the game of Traveller, Administration skill is described as a skill to be used in dealing with bureaucracies. This is a useful ability, to be sure, but administrative ability is divided into several specialized areas which are also useful in the game. Therefore, whenever a character rolls Administration skill according to the character generation rules in Book 1 and in Mercenary, roll two dice, On a 6 or less, roll on the Administration chart (below) to determine which specific skill is learned. On a 7+, one may choose the skill desired.

Administration Chart: 1 = Secretary; 2 = Manager; 3 = Journalist; 4 = Market; 5 = Law; 6 = Accounting.

All types of Administration skill may be used to cut through red tape as described in Book 1. To get the benefit for raises and promotions, the character must have the skill(s) which are germane to his job. If a character has no Administration skill in a particular area, he does not get any of the benefits of that particular skill. For example, a character with Secretary and Manager skill but no Market skill would not get any benefit when rolling on the Actual Value Table in Book 2, p. 42. However, characters with a particular skill may add half of all their other Administration skills to their functional skill level in that area. The skills should be recorded as they are received so as to avoid confusion. Example: A character with Secretary - 3, Manager - 2, and Accountant -1 would have functional skill levels of Secretary -4 (4% rounded down), Manager +4, and Accountant -3.

Following are descriptions of all skills mentioned in this article:

Secretary— The character is familiar with shorthand, business correspondence, office procedures, and the use of alphanumeric keyboards (such as typewriters, keypunch machines, teletypewriters, etc.), dictation transcription machines, and filing systems, including computer filing systems.

Secretaries are essential to every office. A character applying for a secretarial job must roll a 9 +, with a DM-3 for having no skill at all and DM+2 for each functional level of skill. Most of the administrative jobs on cruisers or larger starships are secretarial jobs. These pay CR 500 per month. Landbound secretarial jobs pay better.

Secretarial skill may be added to Computer skill for the purpose of getting information from a computer. This is because secretaries are trained in the use of computer filing systems. The character gets this benefit even if he has no Computer skill at all. Obviously, this skill does not confer any ability to actually program a computer.

Individuals of high secretarial skill may apply for higher-paying jobs, such as personal secretary to some interstellar businessman, which would obviously mean lots of travel.

Manager— The character is experienced with office procedures, interviewing techniques, motivation, worker supervision, writing, and executive policy formation and decision making.

Managers are the core of every business and government organization and agency. Manager skill is a prerequisite for any executive, managerial, or supervisory position. Persons of high managerial skill will be hired for jobs with more responsibilities (also more pay, benefits, and possibly more travel).

Journalist— The character is skilled in interviewing techniques, writing, investigation, television reporting, and operation of newstape machines.

The journalist is an integral part of any advanced society. For a journalist to sell a story to a news service, he must roll 11 + on two dice, with the following modifiers: DM -3 for no Journalist skill, DM +1 for each level of skill, DM +1 for every two stories sold to that news service in the past twelve months, DM -2 for each service the story has already been sold to, and DM +2 for an exclusive story. The referee may apply other die modifiers for the nature of the story.

A news service will pay CR 50 per day spent working on the story, with a bonus of CR 50 per day spent in a combat area. They will also reimburse a journalist for any film or tape that they use (i.e. don't waste any!), and for any travel, medical or other expenses that are incurred in investigating the story.. See the section on Journalism (below).

Market— This skill involves sales and purchasing skills.

A character may use Market skill as a DM on the Actual Value Table when buying or selling items. Other types of Administration skill may not be used for this purpose if the character has no Market skill. Persons with a functional skill level of Market -3 and at least one year's experience in interstellar commerce may become interstellar purchasing agents for large firms. See also the section on Brokers and Advertisers (below)

Law— The character is skilled in legal procedures.

Understanding of the law is an extremely useful skill as the universe becomes increasingly more complicated. Because of the nature of an interstellar society, there will be many individuals in a Traveller universe who have legal skill, but no license to practice. Therefore, laws on most worlds allow non-lawyers with sufficient legal skill to perform many legal functions.

Persons with Law —1 may work as paralegals, who do much of the research and paperwork (such as land title searches and other document searches) necessary in legal work.

Persons with a functional skill level of Law -2 may work as legal consultants. These may advise clients on legal matters, do investigative groundwork, draw up some contracts and wills, and even prepare legal briefs, but they may not represent their clients in any legal capacity.

Individuals with a functional skill level of Law —3 may select an area of legal specialty, such as tax law or customs law (the varieties are endless). Each additional level of skill allows the person to select another level of specialty, either in the same area or another.

See the section on Bar Exams (below) about becoming a lawyer.

Accountant— The character is skilled in accounting, inventory, and shipping procedures.

Although accountants are vital to any organization, most accounting jobs are planet-bound occupations. These jobs pay well enough, but they are not usually interesting enough for Traveller characters. Large starships, however, usually hire an accountant or two, and the skill is also useful for shipping, cargo, and inventory clerks.

Other skills

The following skills may be developed according to the sabbatical rule in Book 2, p. 40, or according to the Skill Improvement rule on the following page, subject to the conditions specified. These are not Administration skills, and characters may not add half of their other Administration skills to their functional skill levels in these areas, or vice versa.

Photography— The character is skilled in the use of low-technology (levels 5-8) photographic equipment.

Any character may develop Photography skill, although it is most common among journalists. A character may not develop this skill to a level higher than his dexterity characteristic.

A character with Photography-1 may use still-photography equipment.

A character with Photography-2 may operate motion-picture cameras, including sound cameras.

(Turn to page 41)

USEFUL SKILLS

(From page 8)

A character with Photography—3 may manually operate a newstape machine.

Broker— This skill is the ability to locate purchasers for goods who are willing to pay the highest price.

Persons with Broker skill may use their skill level as a DM on the Actual Value Table to help someone else sell his goods. The seller's Market and Bribery skills are also added (but not the broker's). The Broker may use his skill when selling his own goods, in which case he does add his Market and Bribery skills. The standard fee for a broker's services is 5% times the broker's skill level. This must be paid even if the prospective seller decides not to sell. Half of this fee goes to expenses (office expenses, computer searches, sales tax, trade journals and other information sources, etc.), and the broker gets to keep half. Broker skill may only be developed by characters with Market skill, and their Broker skill may not exceed their Market skill (however, the character may develop both skills simultaneously). See the section on Brokers and Advertisers (below) on setting up a brokerage firm on a planet.

Advertising— The character is skilled in organizing single- or multi-media campaigns aimed at a mass audience to get them to buy a particular product.

Characters with Market skill may develop Advertising skill, but not any higher than their Market skill. The referee will decide what opportunities in this field are available, and what expenses and fees are standard for each medium on each planet where the character does business. See the section on Brokers and Advertisers (below) on setting up an advertising firm on a planet.

Generally, the average non-player character will not have Broker or Advertising skills, unless he is a broker or an advertiser. Some characters will have Photography skill, however. Non-journalists will have this skill on a roll of exactly 2 on two dice, while journalists on worlds of technology levels 5 through 8 will have the skill on a roll of 6 or less. Other journalists will have the skill on a roll of 4 or less. Skill level for non-player characters is computed as follows: for military characters, one level of skill for each eight years or fraction thereof after mustering out; for civilian characters, one level of skill for each eight years or fraction thereof past the age of 22.

Persons with Secretary and Law skills may become legal secretaries. Persons with Secretary and Accountant skills may become accounts payable or receivable clerks. Journalist—2 and Computer—2 are required to be able to write a text editor program (space—1, cost CR 100,000). Market—2 and Computer—3 are necessary in order to be able to write market simulation programs (space -3, cost CR 1 million; a separate program must be written for each different simulation). A person with Accountant and Computer skills may write accounting, banking, and inventory programs, with complexity of the programs dependent on the person's skills.

Extra information

JOURNALISM: The possibilities for adventure for a journalist are endless. Every war or military action (including every mercenary operation) requires at least one journalist from each major news agency on the planet (or planets) involved. An interstellar war with several theaters of operation will have thousands of war correspondents covering it. Because of the scarcity of individuals who will undertake high-risk assignments, freelance journalists who will cover a dangerous story are in great demand.

Generally, anything which is interesting, important, and new or not commonly known can be made into a news item, provided it is well written. Players usually pick up numerous leads in the form of rumors or clues in their adventures, and they usually choose their own stories to pursue. Some editors will give assignments to reporters who have proven able to write a good story in the past. The referee will determine the details if a player wishes to become a regular employee of a news service (generally, this pays better than freelance work, but most player characters will find it too restrictive).

The following items are most commonly used by journalists:

Newstape machine (9) CR 9000. This is a gyrostabilized videotape camera simple enough for anyone to use; it is the mainstay of the journalist. It has a very simple automatic focusing device: a logarithmic control with range settings based on metric calibration. Just set the range (from 1 meter to 99.99 million kilometers), and it focuses. Its field of vision is from .003 to .2 times the range of the target. At a distance of up to 10,000 miles, starships can be picked out as dots on the screen: beyond that range, the resolution of the camera is insufficient even at maximum magnification. It is capable of picking up the size and outline of ships in orbit. The newstape machine is also equipped with a directional microphone capable of picking up a 60-decibel sound at a range of 100 meters. Also, there is a helium-neon laser range-finder and target-painter for ease of use. The laser does no damage.

The machine is equipped with an SHF audiovisual transceiver, with coded access to prevent electromagnetic interference from other SHF transmitters. This transceiver is used to receive commands from a remote-control box, or to transmit to a relay receiver for use for a live broadcast.

The newstape machine has a standard 3-meter electrical power cord which may be plugged into any standard socket, and a power pack adapter. It will operate for three hours on a power pack. The gyrostabilizers make it possible to keep the camera aimed in a particular direction, even while moving. Thus, it is very secure if aimed at a fixed target. However, in order to turn it, it is necessary to turn off the gyrostabilizers. This makes it very difficult to follow a moving target.

A character with Photography-3 may operate the camera without the gyrostabilizers. Alternatively, a character may purchase a special tripod with directional motors. This requires the use of a remote-control box to operate, but makes it very easy to keep a moving target on camera. Without film or other equipment, it weighs 4 kg. (Journalists are called "newstapers" on high-technology worlds because of the universal use of the newstape machine.)

Newstape Machine Tripod (9) CR 130. The tripod supports the newstape machine. The legs are retractable, with suction cups on the ends, making it possible for the tripod to support the camera level on any hard surface, regardless of whether the surface is flat. The suction cups may be removed so that the legs may be driven firmly into any soft surface (such as soil). The legs are 200 cm long when fully extended; they may be retracted to 50 cm. Weighs 1.5 kg.

Newstape Machine Remote Control Box (9) CR 450. The control box has controls for the camera itself. And for several support devices: a tripod, a video monitor, and three wireless microphones. (It can also switch off the directional microphone on the camera and just use one or more of the others.) It keeps in contact with the camera and other devices by means of a coded-access SHF transceiver, with a maximum range of 200 km (subject to planetary curvature limitations). It has a 3-meter power cord and a power pack adapter; it operates for eight hours on a power pack. Weighs 0.5 kg.

Wireless Microphone (9) CR 20. This is a high-fidelity monaural omnidirectional wireless microphone with a short-range SHF transmitter. At technology level 7, there are more primitive models available; these are heavier, cost much more, and use a lower frequency transmitter. Weighs 0.25 kg. Eight-hour battery recharge cost: CR 1.

Video Monitor (9) CR 400. Has a 250x250 mm screen to show what is on camera, to assist in aiming and range-finding. Color screen. It has a 2-meter cord for use with a remote-control box or other device. Draws power from the control box (or other device) on that cord. Dimensions: 300x300x100 mm. Weighs 700 g.

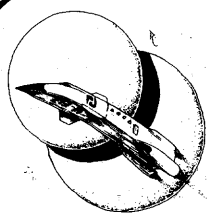
Power pack (9) CR 1500. Standard rechargeable power source (interchangeable with laser rifle power pack). Recharge cost: CR 300. Weighs 4 kg.

Electrical Extension Cord (5) CR 50. 10-meter cord. Weighs 5 kg.

Light Electrical Extension Cord (9) CR 500. Light 50-meter cord on a spool device with spring-loaded retractor for ease of use. Weighs 2.5 kg.

Newstape Film (9) CR 1000. One hour videotape. May be erased and reused. Weighs 1 kg.

(Turn to page 45)



TRAVELLER VARIANT 3

THE 'OTHER' OPTIONS

Charles Ahner & Rick Stuart

Are you one of those Traveller players who always fails to make his character's enlistment roll by one? Do you consistently compound the problem by consigning an otherwise great character into limbo by drafting him into the "Other" Service branch? What do you do-Grin and bear it? Roll a new character? Seriously consider a game of checkers?

One way out of this dilemma lies in considering the "Other" service branch itself. The following variant is presented with the intent of expanding existing skill opportunities currently available, allowing non-military types specialized careers that can enable them to compete with their armed forces counterparts.

A'La Mercenary: This proposal divides the "Other" Service into six distinct categories: Academia, Administration, The Arts, Finance, and Politics. Players generate characters as per standard procedure, with the modifications listed below. Specialized skills are per category rolled for, in addition to regular PDT skills available as before. In addition in each category, one skill is designated as a Prime Requisite Skill (PRS) which can be utilized as a (+)DM for survival throws and as a handy modifier for reaction table checks as needed.

Given that the "Other" service branch represents the civilian equivalent in Traveller, characters in this branch appropriately place a greater emphasis on monetary rather than military gain. Accordingly, this variant proposes player use of "investments."

An investment here constitutes any activity(ies) oriented towards monetary rather than "skill" improvement. As such, in any given term wherein a player has made his/her survival roll that player may opt to "make an investment" in lieu of his standard skill roll. Upon mustering out, players may make additional Cash rolls on their Benefit Tables, corresponding to the number of investments held.

The investments accumulated are limited by one's PRS level, with one investment being permitted for every PRS level gained-and not before!

The "Other" Character: New Service Skill Definitions

Architecture- Expertise in design and construction. Specify skill in naval, industrial, or commercial areas.

Courtesan- A variety of skills oriented toward pleasing the opposite sex. (+1)DM on reaction table for each level 3 or above.

Entertainment- Various skills designating professional entertainer: singing, dancing, etc.

Finance- Business-management expertise: Treat as (+)DM for

resale of merchandise on the Commercial Value Table, Booklet II.

Geology- Expertise in planetary surface analysis. Ability to recognize mineral deposits, surface abnormalities, etc.

Industry- Same as finance but at corporate level. Above level 2 treat as Finance DM but with +2 per level in place of +1.

Law- Familiarity with local civil codes. Also reflects "influence" over local officials. Use as (-)DM to avoid local police/official harassment.

Literature- Basic writing techniques.

Painting- Basic artistic ability.

Physics- Familiarity with physical sciences and related fields. Specify skill in mathematics, nuclear physics, astronomy.

Politics- Measure of political clout. Treat as (+ or -) DM when dealing with officials or other politicians against reaction table rolls.

Psychology- Science skill dealing with human behavior. May be used as DM against situations requiring crowd or riot control.

Cuisine- Expertise in exotic culinary preparation. Level 2 and above guarantees employment with nobility.

Scholarship- Basic research techniques involving evaluation of data.

Sculpture- Basic artistic skill.

Weaponry- R&D expertise in empire weaponry. Specify skill in following areas: Slug-throwers, Lasers, Plasma weapons, Missiles.

Note: Players gain basic combat skills one per each level above level 3 in their assigned field.

"Other" Service: Character Skill Tables

	Politics	Finance	The Arts	Academia	Admin.
Standard Service Skills					
1	+1 STR	Admin.	+1 Educ.	+1 Educ.	Brawling
2	Gn.Cmbt.	Gn.Cmbt.	Steward	Electncs.	Gn.Cmbt.
3	Gn.Cmbt.	Bribery	Painting	Engineerng.	Blade
4	Jk-O-Trds.	Bribery	Literature	Medical	Gambling
5	Streetwise	Gambling	Entertain.	+1 Int.	Bribery
6	+1 Social	+1 Social	+1 Social	+1 Social	+1 Social
Advanced Skills					
1	<u>Politics</u>	<u>Finance</u>	<u>Music</u>	<u>Scholarship</u>	<u>Admin.</u>
2	Streetwise	Computer	Entertain.	Geology	Streetwise
3	Forge y	Electncs.	Gambling	Psychology	Brawling
4	Bribery	Computer	Literature	Engineerng.	Gn.Cmbt.
5	+1 Social	Admin.	Courtesan	Medical	Gambling
6	+1 Social	+1 Social	Courtesan	Computer	Bribery
Advanced Education Skills (Education level 8 + only)					
1	<u>Politics</u>	<u>Finance</u>	<u>Music</u>	<u>Scholarship</u>	<u>Admin.</u>
2	Computer	<u>Finance</u>	Architect.	Physics	Forge y
3	Law	Industry	Quisene	Weaponry.	Computer
4	Law	Law	Sculpture	Weaponry.	Computer
5	Electncs.	Industry	Architect.	Medical	Law
6	Law	+1 Social	Courtesan	Geology	Law

Underlined skills are Prime Requisite Skills for each branch and may be used as a +DM for survival throws in *addition* to the standard DM for Intelligence +.

All PDT Skills as per Book One available for all categories given above.

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Most referees of Traveller, as well as of many other games, have had a run-in with this type of player: the pompous one who has high abilities and goes around shooting up your neat little empires and worlds that you have spent hours in developing. Black holes are a way to get back at players who act this way, and also a good exercise for all players. There is a way for the player to get out, but a lot of sweating, thinking, and just plain good luck will be needed if the player is to get out with his ship intact. That should teach the "super" players not to be so pompous!

Black holes are large fields of gravity which, supposedly, are sent out from a dwarf (a star which has used up all its resources, exploded, and then fallen in upon itself to make a very small sphere. It is so dense that a small particle of it would go through almost any type of metal simply by placing the particle on the metal.) whose gravitational pull is very great. All matter that is caught in this field is sucked toward the center of the black hole (the dwarf), leaving nothing but blackness.

To incorporate black holes into your game system, when making a subsector, roll for worlds as usual. If there are any hexes where there are no worlds or asteroids, and there is absolutely nothing within one hex (no worlds or other things in a hex adjacent to that hex), roll again (1d6). If you, roll a 6, there is a black hole in that particular hex. There will be no more than one black hole in one subsector, because of the havoc that would be wreaked by two black holes pulling and battling for matter, which would finally make the entire subsector a black hole.

Next, roll for the size of the black hole by rolling 2d6. Consult the table below for size and notes:

TABLE I: BLACK HOLE SIZES

Roll	Size of dwarf	Size of black hole*	GPDM**	Notes
2	1m diameter	100km diameter	- 2	Very small field
3	2m diameter	200km diameter	-2	Small field
4-6	10m diameter	500km diameter	- 1	Below average size
7-8	100m diameter	1,000km diameter	0	Average
9-10	250m diameter	2,500km diameter	+1	Above average size
11	500m diameter	5,000km diameter	+2	Large field
12	1 km diameter	10,000km diameter	+3	Huge field
		(1 hex)		

*— including dwarf and its gravitational fields

**— Gravitational Pull DM (See Table II below)

After determining the size of the black hole, find the gravitational pull of the hole. Use this formula: Roll 2d6 and add or subtract the GPDM from Table I above.

TABLE II: GRAVITATIONAL PULL OF BLACK HOLES

Roll	Gravitational Pull*	Notes
0-3	½ G	Strong enough to pull in asteroids and ships that have no engine power.
4-8	2 G	Generally pulls in all ships which have an acceleration factor of 2 G or less (see Table III below)
9-10	4 G	Generally pulls in all ships with acceleration factor of 3 G or less
11	6 G	Generally pulls in all ships with acceleration factor of 6 G or less
12	7 G	Without luck, practically any ship is a goner.

*— All gravitational pulls are expressed in Earth Gravities.

There are usually two precautions which can be used to spot black holes:

1) A simple program, which costs as much as a maneuver -1 program, that will detect, measure and steer clear of the hole from far enough away that the pull does not affect the ship. It will work in any ship's computer. Each time it is used, roll for a malfunction. The chance of a malfunction is rolling 11 or 12 on 2d6. The program can be installed into a computer in any type A or B space port Note: There will be no well-travelled commercial paths across the hole. Most commercial crafts have this program (roll 4+ on 2d6 to have the program).

2) A special technician, called a spotter, who is trained to note and steer away from black holes by using ship's equipment. He can be hired when the rest of the crew is hired, but can only be hired on a type A port. There is a chance, because of the demand for these technicians, that he will turn the offer down (roll 5 + to avoid this). If so, the hirer may raise the salary offer to try to get the spotter back. For each time that the hirer offers the spotter at least 500 CR beyond the original salary, roll again to see if the hirer is turned down, with the same chance of being turned down as above. The hirer may do this as many times as he wishes to or has the money for. The base salary for a spotter is 5000 CR. There is a slight chance that the spotter might not note the black hole (12 rolled on 2d6).

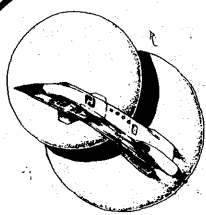
If a ship happens into a black hole, cross-index the acceleration factor of the starship with the gravitational pull of the black hole on Table III below:

TABLE III

GP	ACC. FACTOR					
	1	2	3	4	5	6
½	A	A	A	A	A	A
2	7	3	A	A	A	A
4	11	9	7	3	A	A
6	N	N	11	9	7	3
7	N	N	N	11	9	7

To read the table, find the symbol in the spot where the acceleration factor and the gravitational pull of the hole meet. If it is the letter A, the ship easily avoids the black hole. If N is at the spot, it can't avoid the hole. If a number is at the spot, that number or higher must be rolled on 2d6 to avoid the black hole.

If the starship does not avoid the hole, these tactics must be used: The ship must wait until it gets very close to the dwarf. Then it must fire into the dwarf with all the power it has, including weapons and lasers. This tactic works on a roll of 6+. If this does not work, there is a slight chance (10+) that the ship will actually go through the black hole and be deposited in a totally unknown subsector. If the ship does not get out of the hole either way, it hits the dwarf and is crushed. The above tactics, if successful, will create a "hole" in the black hole where there is no gravity, and where the ship can pass through.



TRAVELLER VARIANT 4

MORE CLOUT FOR SCOUTS

**Anthony Previte
and
James Cavaliere**

Since Mercenary and other material developing Traveller characters has been released, it only seems fair that the same thing should be done for the Scout service. The following is a system which gives more opportunities and abilities to those who join the Scouts.

Scout ranks, and the skills which are acquired upon reaching each rank, are as follows (listed low to high):

- S1—Air/Raft Pilot (Air/Raft skill)
- S2—Gunner (Gunnery skill)
- S3—Medic (Medical skill)
- S4—Science Officer (Science skill)
- S5—Engineer (Engineering skill)
- S6—Navigator (Navigation skill)
- S7—Pilot (Pilot skill)

Note: when a character enters the Scout service, he does not receive Pilot (S7) skill, only Air/Raft (S1) skill as an Air/Raft Pilot. When a character is promoted, he receives the skill which accompanies his rank, unless he has already obtained it.

Expertise levels within each rank, and the levels of skill which they denote, are as follows:

Expertise Level 1—Beginner (enrolled in basic course).

Expertise Level 2—Qualified for starship duty, or working for a company, or for teaching.

Expertise Level 3—Technician level of proficiency.

Expertise level 4—Scientific (professional) level of proficiency.

Note: Any character in the Science branch who reaches level 2 or 4 must teach for one year, but does not receive a fleet assignment. No character is permitted to stay beyond 5 terms, unless he does so as a teacher, and in that case he automatically receives Instruction-1.

Scout tables, and die modifiers (where applicable) are as follows:

**Occupation Table
Branches**

Die	Exploration	Patrol	Science
1	Gun Cbt	+1 Str	Medical
2	Vac Suit	Gun Cbt	Jack of all trades
3	Survival	Gun Cbt	Chemistry
4	Pilot	Pilot	Physics
5	Jack of all trades	Navigation	Biology
6	Navigation	Gunnery	Astronomy
7	Roll on Science table	Vac Suit	Cybernetics

Note: DM + 1 if world Tech is 12+

Skill Table

Die	Scout Life	Science	Command	Staff
1	+1 Intel	Biology	Grav vehicle	Grav vehicle
2	+1 Educ	Geology	Mechanical	Vac Suit
3	Gun Cbt	Psionics	Electronics	Navigation
4	+1 Dex	Astronomy	Jack of all trades	Mechanical
5	+1 Endur	Chemistry	Gunnery	Electronics
6	+1 Str	Physics	Medical	Jack of all trades
7	+1 Educ	Hyperatomics	—	—
8	+1 Intel	Cybernetics	—	—

Note: On Scout Life column, DM +1 for ranks S1, S2 or S5; DM +2 for ranks S6 or S7; DM +4 for ranks S3 or S4.

On Science Skill Table, a roll of 4+ awards DM +1 if Education is 9+; DM +2 if Intelligence is 9+.

Skill descriptions:

Chemistry, physics, geology, biology—Indicates proficiency in that particular field, with Special abilities obtained according to referee's discretion; for instance, a character qualified in chemistry could be capable of concocting a drug or other chemical once per month on a roll of 10+, with Exp used as a DM.

Astronomy—Indicates proficiency in astronomy. For every two points of Astronomy skill, character receives automatic Celestial Navigation-1 (see description below).

Psionics—Indicates proficiency in psionics. Character will know how to give the test for psionics if he or she has an expertise level of 2 or higher.

Hyperatomics—Indicates proficiency in the field of jump principles.

Cybernetics—Indicates proficiency in the field of robot design and construction. If a character had Cybernetics-3 and Jack of all Trades-3, for instance, he could possibly build a robot.

Celestial navigation—Character has knowledge of the positions of the stars, so therefore can navigate without most usual navigation equipment. However, this kind of navigation is not possible during a jump.

General Assignment Table

Die	Exploration	Patrol	Science
1	Command	Command	Command
2	Command	Command	Staff
3	Staff	Command	Science research
4	Staff	Staff	Science research
5	staff	Special	Science research
6	Special	Special	Science research
7	Special	Special	Special

Note: DM + 1 if Education 9+; DM -1 if bucking for command
Special: Roll on Special Assignment Table (below)

Fleet Assignment Table

Die	Exploration	Patrol	Science
2	Exploration	Raid	Research
3	Exploration	Raid	Research
4	Raid	Planet support	Research
5	Planet support	Planet support	Refit & repair
6	Patrol	Patrol	Refit & repair
7	Patrol	Patrol	Patrol
8	Fleet action	Patrol	Patrol
9	Planet support	Patrol	Fleet action
10	Exploration	Fleet action,	Exploration
11	Exploration	Raid	Exploration
12	Exploration	Raid	Research

(Turn to page 44)

Plane Shift (others), Speak with Dead, Blade Barrier, and Cure Disease. Once per day the Angel may Control Weather as a 12th level Druid.

* * *

A particular group of cabalistic Throne Angels are closely involved in the magic arts and can be invoked by Good Magic Users. They are knowledgeable in all matters arcane, but part with any knowledge reluctantly, feeling that a Magic User is best served by advancing himself through his own efforts. In the Sixth and Seventh Books of Moses, 15 of these Angels are mentioned, including: Thronus, Techom, Haseha, Amarzyom, Schawayt, Chuscha, Zawar, Yahel, Adoyahel and five others.

Angels are also assigned to look after the seasons and their manifestations. This list is based on those in *The Magus*:

Spring—Spugliguel is the governing Angel, for rebirth, planting, and new beginnings.

Summer—Tubiel, for heat, flame, lightning and storms.

Fall—Torquaret, for harvests, gathering wealth, colors.

Winter—Attarib, for cold, ice, darkness.

* * *

In *The Book of Jubilees* the watchers are the Sons of God (Genesis 6). Some of these fell from grace, as described earlier, but many remained. They are the Holy Watchers of today; treat them as ordinary Angels with special knowledge, as follows:

Armaros—Teacher of enchantments.

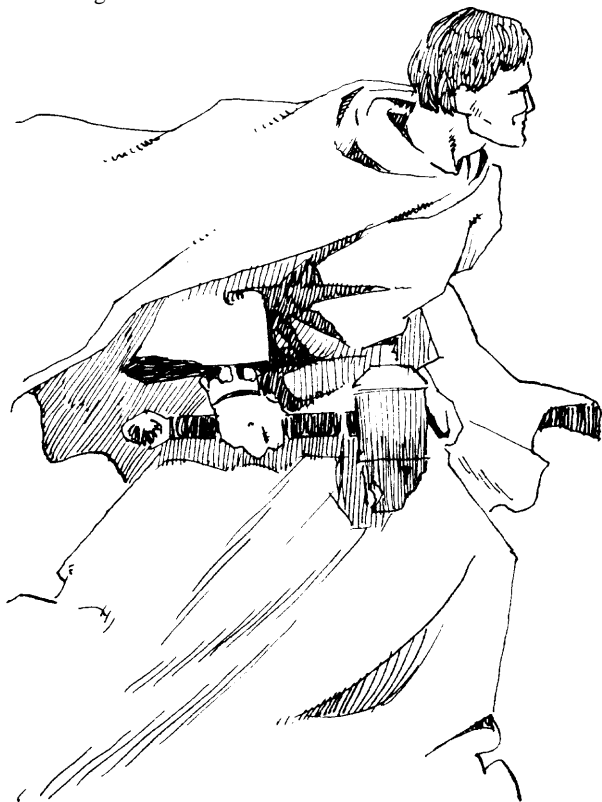
Araziel—Taught the signs of the Earth.

Baraqijal—Taught astrology.

Gadreel—Introduced weapon of war to Man.

Penemue—Taught man writing, and for this is eternally damned.

Sariel—Taught the courses of the Moon.



Many of the Princes of the Angels also have other roles of interaction with men. They possess and can grant to an especially worthy man knowledge in a certain area. A few of these are:

Akatriel—Revealer of mysteries.

Gabriel—Mercy and vengeance.

Metatron—The sustainer of Mankind.

Michael—Angel of repentance; Chief angel

Raphael—Healing, science, and knowledge.

Sopheriel Mehayye and Sopheriel Memeth—Keepers of the Book of Life and Death.

Sandalphon—Angel of Power and Glory.

Zagzagel—Angel of Wisdom.

* * *

Angels can be easily included in most campaigns. They can be viewed as serving the concept of Good, Love or whatever and definitely are not limited to use only in a Christian, quasi-Christian, or even pre-Christian theology. They can be as accessible as you desire, so long as their role and purposes are remembered. They do have a respect for men's free will and will let a fool act foolishly if he disregards their warnings.

Using Angels can greatly expand the scope of opponents and the activities of an Evil Player Character. They should be treated as the Good counterpart of Devils or Demons, as described in AD&D, and are considerably less powerful than is often portrayed today. Do not also forget to include the hatred that the fallen Angels have for their still-blessed bretheren and those who assist them. Having such a powerful friend can create powerful enemies. Angels in the Middle Ages were also often the inspiration of Quests.

MORE CLOUT FOR SCOUTS

(From page 10)

Special Assignment Table

Die	Ranks S1-S4	Ranks S5-S7
1	Recruiting & Instruction	Weapons School
2	Protected forces	Naval attachment
3	Naval attachment	Engineer school
4	Special training school	Navigators school
5	Cross training	Pilots school
6	Specialist school	Ship's school
7	Roll on S5-S7 column	Ship's school

Note: DM + 1 for ranks S1-S4 if Education 8+

DM + 1 for ranks S5-S7 if Intelligence 9+

Special assignment descriptions:

Recruiting & Instruction—Character receives automatic +1 Recruiting & Instruction.

Protected forces—On a roll of 3+, character receives Gun Cbt, Zero-G.

Naval attachment—Character is placed on a one-year naval assignment.

Special training school—Roll again to receive a special skill: 1 = Medical or Science skill; 2 = Air/Raft; 3 = Vac Suit; 4 = Pilot; 5 = Computer; 6 = Jack of all trades.

Cross training—Character may choose skill from one of the other two branches (Exploration, Patrol or Science) in which he is not employed. A character who is cross trained is entitled to two rolls on the Mustering Out Table (below).

Specialist school—Roll again to receive a special skill: 1 = Vac Suit; 2 = Mechanical; 3 = Electronic; 4 = Gunnery; 5 = Computer; 6 = Navigation.

Weapons school—Character rolls again for each of the following skills, receiving them (maximum of three) on 5 or 6: Blade Cbt, Combat rifleman, Heavy weapons, Zero-G weapons.

Engineers school—Character rolls again for each of the following skills, receiving them (maximum of two) on a roll of 3+; Engineering, Mechanical, Electronic.

Navigators school—Character rolls again for each of the following skills, receiving them (maximum of two) on a roll of 3+; Navigation, Pilot, Celestial navigation.

Pilot school—Character rolls again for each of the following skills, receiving them (maximum of two) on a roll of 3+; Pilot, Ship's boat, Navigation.

Ship's school—Roll again to receive a special skill: 1 = Air/Raft, 2 = Gunnery; 3 = Computer; 4 = Pilot; 5 = Navigation; 6 = Engineering.

Note: If character rolls 7 on S1-S4 column followed by 3-5 on S5-S7 column, he is promoted to that rank but does not receive skills of ranks in between.

Fleet Assignment Resolution Table

	Expl.	Raid	P.S.	Pat.	R&R	F.A.	Res.
Survival	6+	5+	3+	4+	Auto	6+	3+
Promotion	7+	8+	8+	9+	12+	8+	11+
Skill	6+	7+	6+	8+	7+	6+	5+

Note: For promotion rolls requiring 8+, add DM + 1 if Education 9+; for survival rolls, DM +1 if Endurance 9+; DM +2 if Endurance 11+.

Mustering Out Table

Die	Exploration	Patrol	Science
1	+1 Intelligence	+1 Strength	+2 Intelligence
2	+1 Endurance	+1 Dexterity	+2 Education
3	+ 1 Strength	+ 1 Endurance	Lab setup
4	Gun	Gun	Gun
5	Variable blade	Variable blade	Hand Computer
6	Type 1 ship	Type 2 ship	Type 3 ship

Descriptions of mustering-out benefits:

Variable blade (a device invented by Robert P. Barger and first written about in *The Space Gamer* #18)—DM + 1 if Dexterity 8+, DM -3 if Dexterity 7 or less. It receives -1 close, +4 short, does 4 dice damage. If the required hit is missed on a roll of 8+ the character hits himself, doing 1 die damage. Nothing will stop the blade except battle dress. It can be used for 10 combat rounds before the battery goes dead. It can be charged like a laser. Weight is 400 grams, length is 15mm to 1200mm when opened. The blade is adjustable like a telescopic antenna. Characters may choose a normal blade instead.

Hand computer—This small (2kg) device is capable of many things, such as spectrum analysis, gas density analysis, and other things as the Tech level increases. It has a basic range of 250 km, and can only be jammed by a jammer at least 4 Tech levels higher. It cannot be psionically blocked when it is used to scan life forms. Base price 1,500,000cr to 2,000,000cr, depending on Tech.

Type 1 ship—As a normal Scout, but does Jump-3, Maneuver-2, Power Plant-2. No air/raft is installed, one stateroom is missing, and there is only one ton of cargo hold installed. It requires 50 tons of fuel. Base price 34,000,000cr.

Type 2 ship—As a regular Scout, but a triple is installed. On a roll of 9+ on two dice, the Scout service will give the character a pulse laser.

Type 3 ship—As a normal Scout, but has a missile probe usable for gathering atmospheric and planetary data. One stateroom is turned into a laboratory, but no equipment is given (it may be purchased at 100cr per Tech level). No air/raft is installed; instead, there is a small, 4-ton Grav ATV. The computer is a model number 2 with a special scientific library program which can, on a roll of 9+, determine abilities and functions of most objects. The computer also holds knowledge of most fields of science. Fuel tankage is 40 tons. Base price is 35,000,00cr to 40,000,000cr, depending on Tech level.

Mustering Out Money Benefits

Die	Exploration	Patrol	Science
1	10,000	10,000	3,000
2	20,000	20,000	5,000
3	20,000	20,000	10,000
4	30,000	30,000	10,000
5	40,000	50,000	20,000
6	50,000	50,000	30,000
7	50,000	50,000	40,000

Note: DM + 1 if rank S5, S6 or S7.

USEFUL SKILLS

(From page 41)

Cassette Tape Recorder (:7) CR 50. Records sound on magnetic cassette. Lower technology (levels 5-6) models are much heavier; more expensive models give higher fidelity. Microphone included. Weighs 400 g. without cassette.

Cassette (6) CR 1. One-hour magnetic tape cassette for use with cassette tape recorder. Weighs 50 g.

Still Photograph Camera (5) CR 30. Basic hand-operated camera. A wide variety of features are available at higher cost. Many different kinds of film are available, with costs varying from world to world. Generally, color and/or self-developing film is more expensive than regular black-and-white film, and infrared film is much more expensive. At technology level 5, only regular black-and-white film is available. Camera weighs 500 g. or more.

Motion Picture Camera (6) CR 200 and up. Takes motion pictures. Film extra, with cost dependent on type of film and planet of purchase. Weighs 1 kg.

Sound Camera (7) CR 500. Motion-picture camera with capability to record a soundtrack with the film. Film (with soundtrack) extra (see above). Microphone included. Weighs 1.5 kg.

Light Intensifier (9) CR 500. Allows photography in near-total darkness. Must be purchased to fit a particular lens size. Weighs 400g.

BROKERS AND ADVERTISERS: A character who wishes to set up a brokerage firm or an advertising firm on a planet must spend one month per level of expertise in necessary preparatory work, such as establishing local contacts, studying planetary laws and procedures, or determining the major corporations on that world (especially those that use imported goods, in the case of brokers).

When this period is completed, the character must invest CR 100,000 per skill level in setting up the firm. One month of preparation and CR 100,000 in investment must also be spent each time the character's skill level goes up. Also, in addition to the expenses for each individual contract or transaction, there is a cost of CR 1000 per month per level of expertise for general overhead. If a character wishes to close up a firm, he may recover half of his initial investment.

Long absence from a planet may mean that the character will have to spend time brushing up on new developments upon his return before starting up again. However, research assistants or partners can obviate this requirement. The referee will determine the details.

Usually, brokers and advertisers will be civilians, with no military training at all. They will always have Market skill, and will often have other Administration skills or other skills which are not of a combative, technical, or starship-oriented nature.

Brokers and advertisers sometimes form partnerships, or even corporations, on worlds with a high population level. Costs and benefits of this will vary from world to world; the referee will provide details. Some large advertising firms will have branch offices on several worlds, in order to run advertising campaigns for companies that sell their goods on an interstellar basis. Brokerage firms practically never do this. Low-population worlds will have very few, if any, advertisers (a population 5 world might have two or three, lower-population worlds probably wouldn't have any).

BAR EXAMS: A character who wishes to practice law on a planet must pass that planet's bar exam. Roll 17+ on two dice, with the following DM's: DM + 2 per level of law skill, DM + 1 per month of study (maximum DM + 3), DM + 1 per previous attempt on that planet (maximum DM + 2), DM + 2 for Education 13 +, DM -2 for Education 8 or less, DM +2 for Intelligence 12+, DM -2 for Intelligence 7 or less. Persons with no law skill are incapable of legitimately passing a bar exam. Licenses to practice law are only good on the planet where they are issued, and are usually good for life. Some planets require a renewal of the license every five or ten years; this usually simply means a reapplication on that planet, but sometimes another exam is also required. On some planets, the license to practice lapses at the standard retirement age on that planet.

November 1980

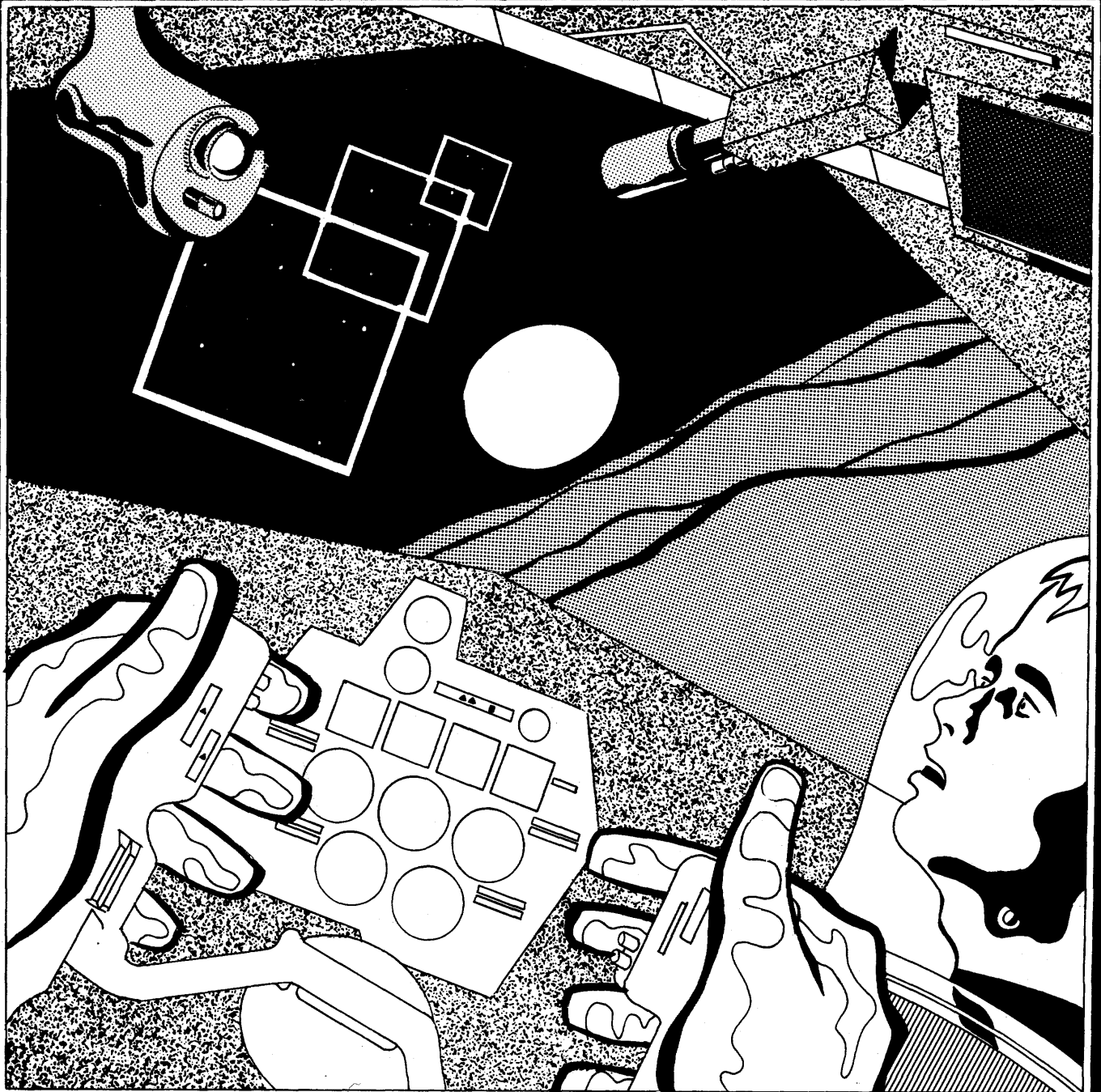
Dragon

CANARD

A Traveller adventure

by Roberto Camino

art by *Chris Roth*



CANARD

A Traveller adventure

You are in the shuttle Tempest, speeding from Windsor/Glisten (0305-C783511-9) bound towards Canard (C630000-0), the next planet in towards the sun, at the request of the retired trader Roland Whittington (age 78, 564A89). Twenty years ago some of his closest companions departed Windsor in a new free trader to Canard in hopes of finding mineral deposits their home world was deficient in. They were never heard from again. The trader has told you the coordinates of their landing spot and what little is known of your destination.

It is a medium-sized world, possessing a very thin atmosphere, no standing water, and no life. With an extremely slight axial tilt, its surface temperature remains nearly constant at 30°C year round.

Upon determining the cause of the demise of Whittington's friends and relaying it to him, the papers for the shuttle will revert to your party.

The information which follows is intended solely for the use of the Traveller referee until the adventure has been completely exhausted by player characters in Traveller. If you are a player, do yourself a favor and don't read what follows until after you have fully run through the adventure with your referee. Plan scale is compatible with Snapshot, which will allow close combat to be conducted easily.

REFeree'S INFORMATION

Worlds suitable for the Ancients were rare and far apart (just as is the case for humans, since they inhabit roughly the same worlds), and became even scarcer as the strife between the Ancients claimed entire planets as victims. Thus, when an arid, practically airless world was found, but one with a temperate climate and pockets of liquids and gases trapped beneath the surface, one faction ventured to terraform it. This would be accomplished in two stages.

First a core tap would be sunk. With a shaft reaching to the molten core, its power plant, using the temperature difference between the core and surface, would supply energy to allow the complex to manage the world's seismic and volcanic activity. In this manner, the pockets containing water and air (among other resources) could be forced to the surface to provide the atmosphere and oceans which an inhabitable world desperately needs. By directing the mantle's convection currents, the metal-poor soil could be replenished with minerals and radioactives.

Housed in the complex would be a directional gravity-wave generator using a quantum black hole to manipulate sunspots by tidal forces, thereby controlling weather in the newly formed atmosphere.

In the second phase, an automated manufacturing combine would convert the raw materials brought up directly by the shaft into the masses of vital necessities the first wave of settlers would require.

The second phase was never reached. The mechanism for the first phase was completed, put on standby, and not disturbed until 300,000 years later, when Roland's comrades found the core tap complex and were killed by its anti-intruder defense system.

Thermal readings and Whittington's information will lead the explorers directly to the core-tap complex. From above ground, the living, command, and auxiliary modules appear as three disks each 36 meters in diameter, 180 meters apart, occupying the corners of an equilateral triangle. Evidently made of stone, they extend about half a meter above the flat, sun-baked plain. They also project about six meters below the ground, connected by tunnels about three meters deep. Also not visible are the shaft and power plant. The outlines of a small round hatch and a large rectangular one are clearly visible on the tops of two of the structures. On the third disk is a much larger single circular hatch. All these hatches slide open incredibly easy (from outside and inside), since their contact edges are coated with a friction-neutralizing film. They provide direct access into the modules.

The complex's life support system (air, lights, water, and power) is on. Since the players are aware that the last party never returned, their characters are presumably heavily armed and maintaining vacc suit (or equivalent) discipline. Thus, they will be a bit clumsy, so impose a -2 DM on any weapon if its user is in vacc suit, and the individual does not have vacc suit skill. Reduce personal dexterity by 2 also. The air is breathable, but the referee should not influence the decision whether or not to discard vacc suits (and weapons).

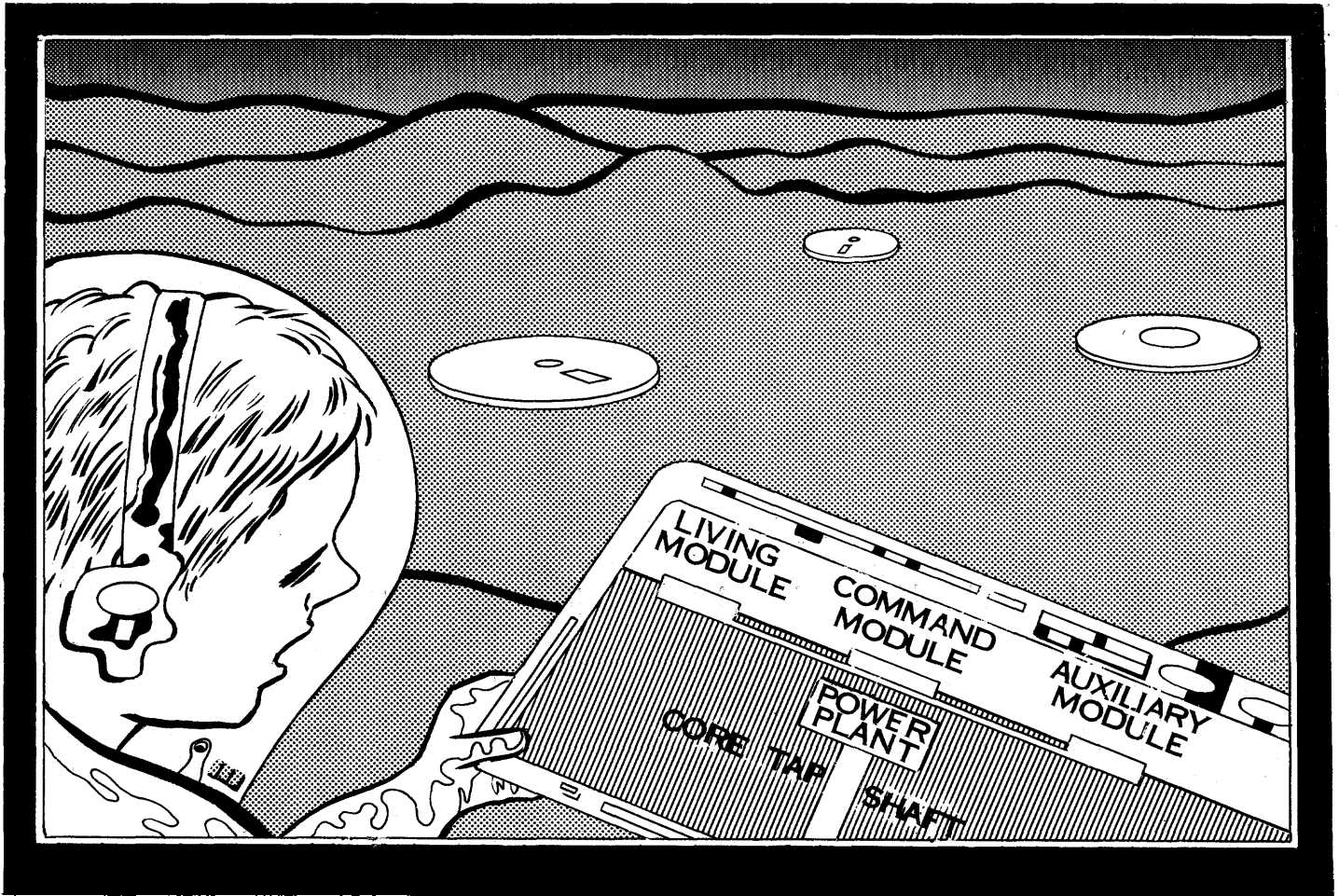
Construction: The complex is made of local stone, but finely cut. Walls, floors, and ceilings are built of thick slabs of stone. Doors and hatches are made of thinner sections and, like the entrance hatches, are coated with a friction-neutralizing film in certain parts to allow ease of operation.

Machinery: The machinery throughout the complex is solid-state and very dependable. It is difficult to learn much about the equipment from the exterior, and achievement of access into interior portions generally results in the device's destruction. Note that the power plant and shaft are inaccessible. The extent of technological secrets discovered by the adventurers is entirely up to the referee, keeping in mind that extensive infusion of advanced technology will have a dramatic influence on his universe.

Size: Though by and large the proportions of the complex are generous, most humans (strength 7 or more) will be uncomfortable in some furniture and with personal objects found, and the humans' size will make them clumsy in many situations, since the Ancients were less than 1.5 meters tall.

Lift Shafts: These are the major means of vertical movement in the complex. They are lined by an iridescent, smooth material which has recessed handholds. Objects are simply raised or lowered by a black anti-gravity band which appears on the shaft sides at the foot of the object. The controls, a set located at each level, consist of two buttons, red for up, violet for down. Each level has a sliding hatch to seal off the opening if need be. There is an automatic safeguard to prevent crushing an individual against a hatch. The shafts have no limits on capacity, except for space considerations. They are 1.5 meters in diameter. The entrance hatches and the portion of the lift shafts (also the cargo lifts) adjoining them have an airlock capability.

Subway: The modules are connected at their second levels by a simple pneumatic subway. The tunnels are three meters in diameter, 180 meters long. Each tunnel has its own



small car, with amorphous benches fore and aft, and a center space for cargo. The cars enter the designated area in each module to load and unload. There is a mechanism to remove the car from the tunnel. On the wall near the loading area is a red circle. It will light up when the car is approaching.

The car in the tunnel connecting the command and living modules has blood stains in it.

Anti-Intruder Defense System: When the previous explorers entered the complex, they activated the anti-intruder defense system. When they were recognized as unauthorized entities by the defense computer, it dispatched chameleon beasts which, as soon as they were grown to maturity, promptly slew the intruders.

Once entry is made by the adventurers, the computer will set the operation in motion again. Chameleon beasts will be grown from base cells (fully developed in 12 hours), one beast for each intruder. New ones will be started to maintain that ratio if more intruders enter or any beasts are killed. The only way this process can be terminated is for the adventurers to destroy the intruder defense computer or the chameleon beasts' hatchery (located in the biological center), or failing that, leave. The computer can open hatches, doors, and operate the subway to aid the beasts.

As their name implies, the beasts have the power to change their coloring at will, making them extremely difficult to detect. Their skins can become mirror-like, giving the protection equivalent of reflect against lasers. They can also control their thermal signature somewhat.

The first attack by the chameleon beasts will have sur-

prise. Later attacks may also have surprise, if the adventurers are not extremely alert, or if they are fatigued. The beasts will always attack and will fight to the death.

Since the beasts are programmed to drag any corpses (including other beasts) to the refuse room once all intruders have been killed, the only remaining traces of the first party are dried blood and weapons.

Animal	Weight	Hits	Armor	Wounds & Weapons
Chameleon Beast	50kg	10/6	mesh (reflec)	2 as pike

Free Trader Excalibur: Located prominently near the complex is the ship the first party arrived in. The jump drive is ruined for lack of maintenance, but except for that, the free trader (type A) can be made spaceworthy in a few days. The programs in its computer are: jump 1, navigation, maneuver, target, gunner interact, and auto evade. The Excalibur has one double pulse laser turret. In the cargo hold is a modified PGMP-12 of Windsorian construction. It is wheeled, quite heavy (20kg), bulky, and therefore clumsy to use.

Excalibur is registered at Windsor, and completely paid off. The probability is high that the adventurers will be awarded ownership by right of salvage.

Starting: Once entry has been achieved, the players will want to investigate the interior of the complex, in search of its identity, its crew, the key to its operations, and any other information they can think of. Guide them through this process by describing what they encounter in each module.

The following sections of the text cover the major details of the complex, and are keyed to the floor plans.

COMMAND MODULE

Upper Level:

1. Core Tap Control Room. Through this room's transparent plastic floor the weather control room (described in its own section) can be seen below. Together these two rooms serve as the command center of the complex.

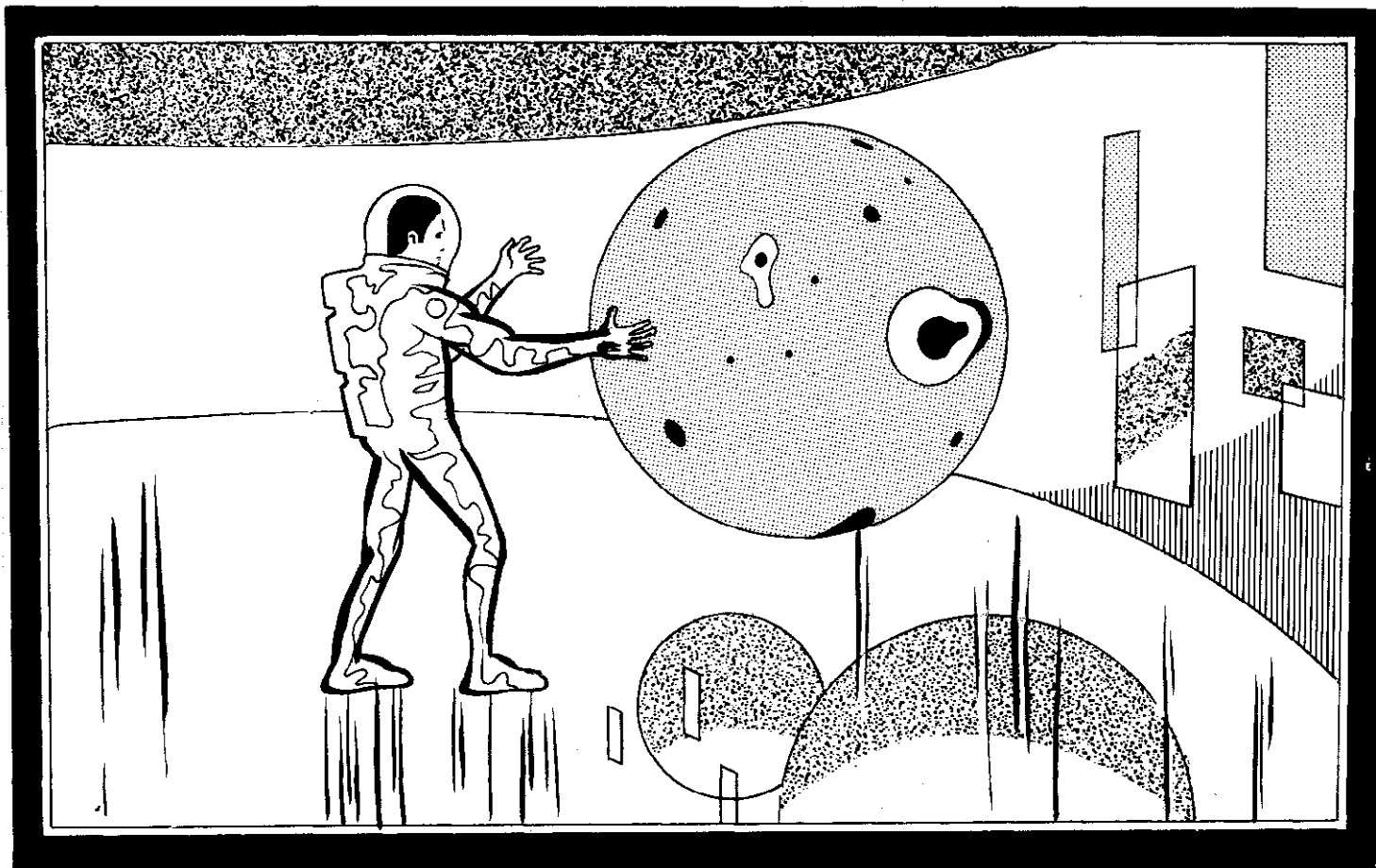
The prominent feature of the core tap control room is a transparent relief globe of Canard measuring 2 meters in diameter. Besides showing the features of the world at a 1:3,000,000 scale, it can display Canard's internal details—from the molten core, to convection currents in the mantle, to the pockets of gases and liquids below the crust. Red dots of varying size and brightness can be projected on the surface of the globe, though not within a distance (in scale) of 500 km of

electronic, mechanical, and jack of all trades skill possessed by the group.

The furniture in this room consists of roughly hewed stone tables and amorphous mounds that yield slightly when sat on, but otherwise serve as respectable benches. One cluster of tables and benches is set apart on a slightly higher platform, giving an impression of being a place of authority. These benches are splattered with dried blood (human). A trail of blood leads from here into the open area (9), and then to the lift shaft there.

There are lift shafts here also, at the far ends of the room, that descend to the weather control room below.

2. Core Tap Computer Room. The computers dedicated to the operation of the core tap are located here. They are



the complex. Observation by explorers outside the complex will reveal, after a delay of a few hours, violent volcanic and seismic behavior on the surface of Canard corresponding to the location of the red dots on the globe. The extent and intensity of the activity are proportional to the size and brightness, respectively, of the dots.

Other graphic displays include viewscreens on the curving wall giving: computer-generated images, temperature, pressure, magnetic flux, spectrograph analysis, and other vital information on any point on or in Canard. (All readings are, of course, in alien figures.)

The controls for the globe and its attendant displays are not immediately comprehended. To understand them sufficiently to achieve operational mastery of the core tap requires a basic roll of 12+ by the investigating party, rolling every four hours of study. Allow a DM of +1 for each level of computer,

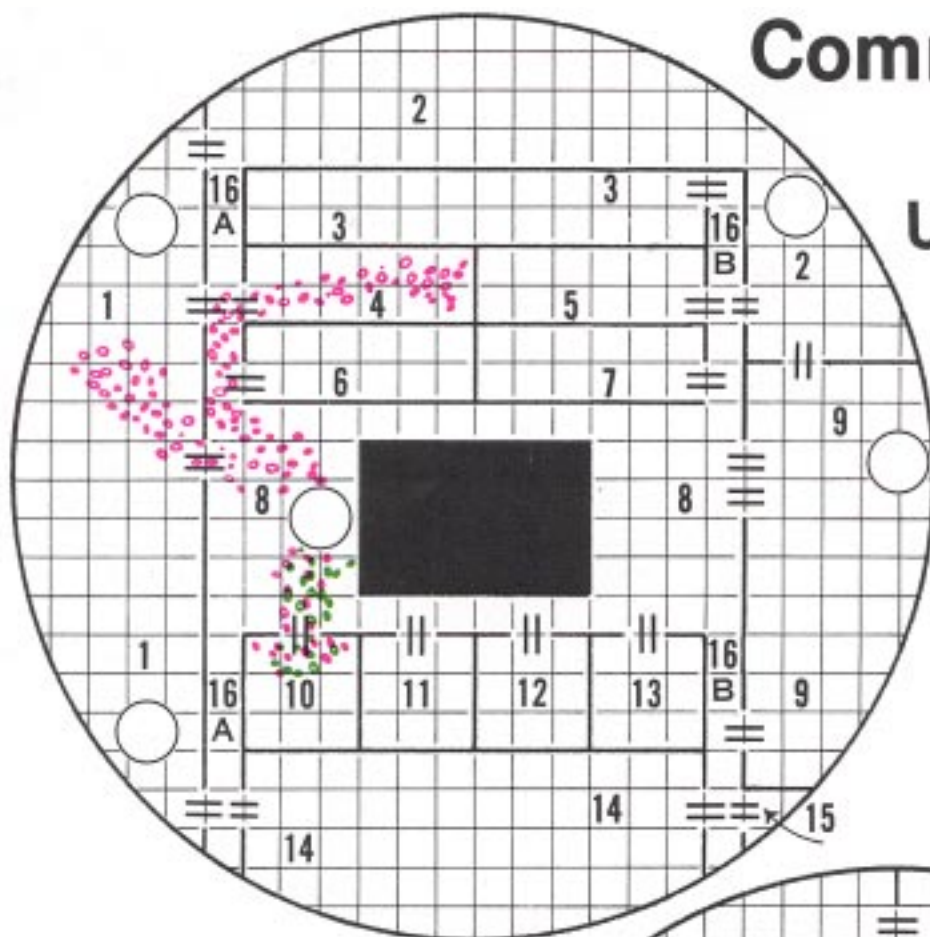
heavily shielded, immune to all but the most intense radiation. The reason for their great bulk is that the makers of the complex had difficulty acquiring advanced compact computers and had to settle for these. They are roughly equivalent to three model 7's, but cannot be reprogrammed. These computers' circuits are permanently impressed with their programs, so they cannot be dumped. Like most of the machinery in the complex, determined investigation of them results only in their destruction.

Scattered throughout the room are the ubiquitous tables and mound benches (as though the technicians remained here for long stretches of time). There is a lift shaft to the storage room below in the narrow part of the room.

3. Communications Room. This has been strongly reinforced to become a vault room. It may be opened only by

Command Module

Upper level



Scale: 1 square = 1.5 meters

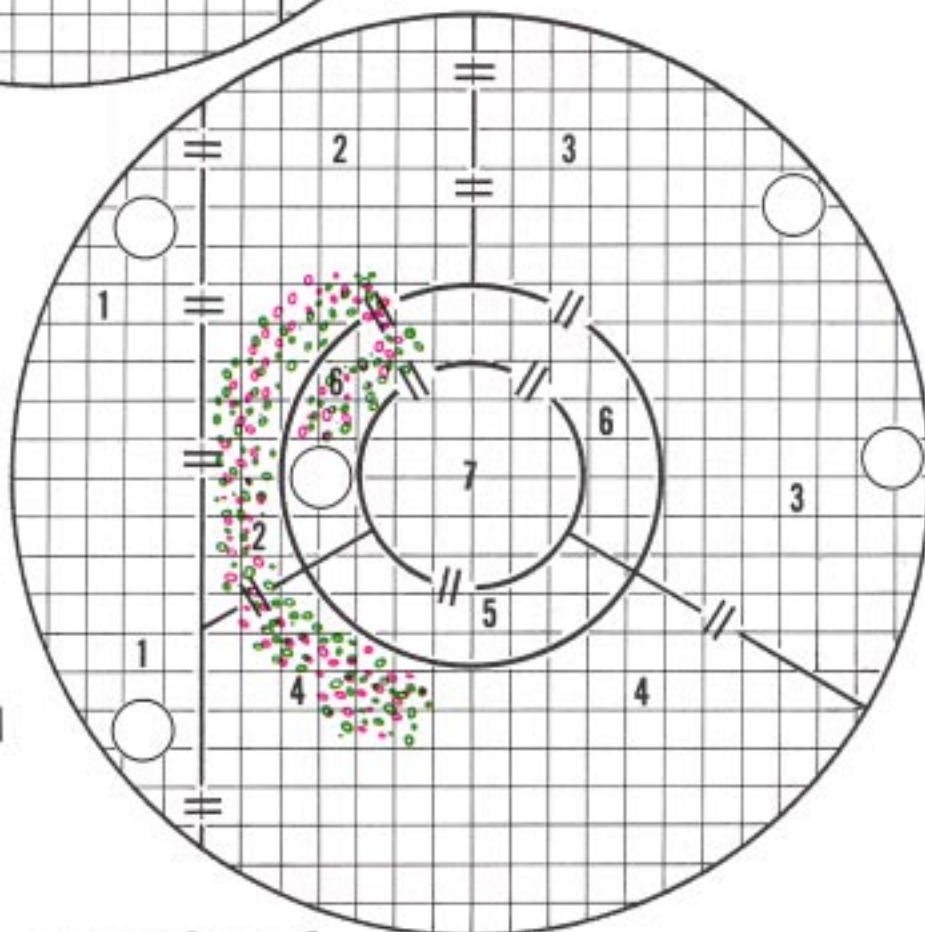
—||— Door

○ Lift shaft

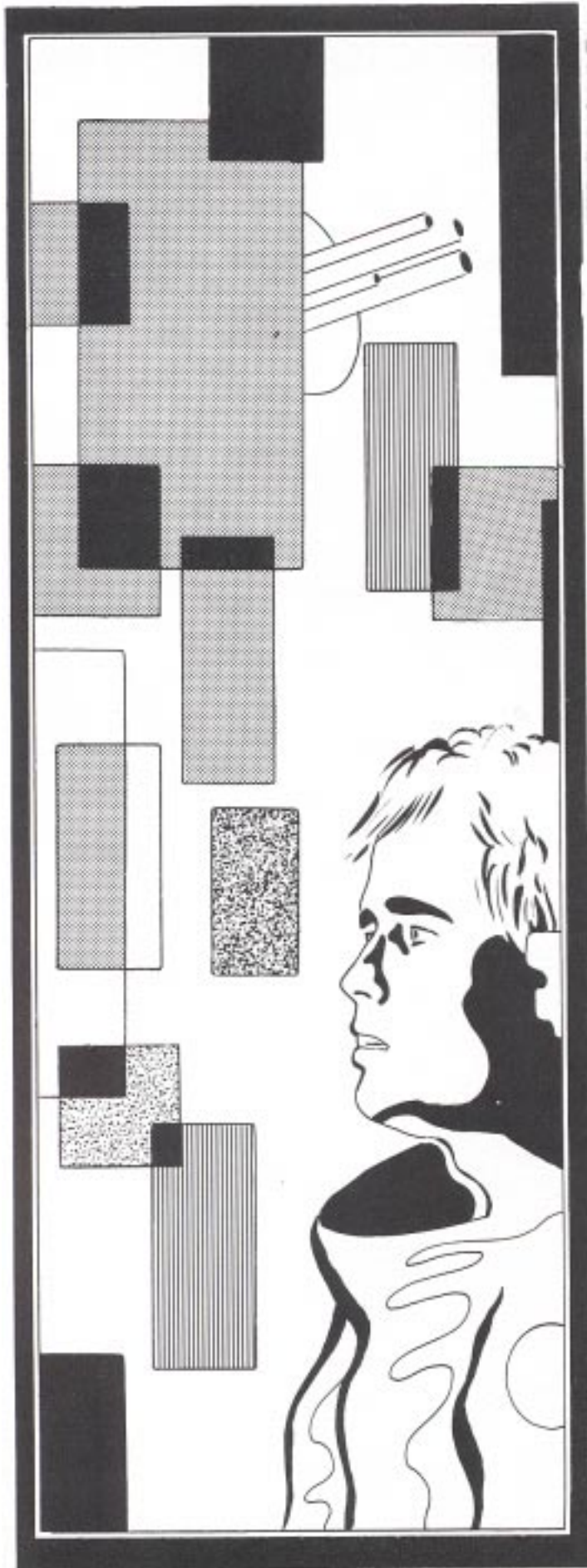
—|— Wall

■ Cargo lift

••• Trails of blood



Lower level



correctly touching a combination on its massive front door, or with a signal from the commander's cabin or the intruder defense computer. All sensory and communication gear for interaction with the outside is located here. In addition to office furnishings, there are viewscreens, holographic projection equipment, and several computer terminals. In the middle of the room is a powerful communication laser perched atop a telescoping boom. The ceiling slides open to allow the boom to extend up 100 meters above the ground. The sliding hatch is not detectable from the outside.

4 through 7. Offices. They contain tables, benches, computer terminals and other miscellaneous items.

In 4 there is a great deal of dried human blood on the back wall, some on the floor (continuing into corridor 16a on to open area 8, and to the lift shaft there), and a drained laser carbine (human-made) at the foot of the wall. The weapon's optical sights have been jarred out of alignment.

In 7, in a drawer of a desk arrangement, is a small crystalline bar which can be easily held in one hand, with some characters engraved on it. It is a combination lock. When placed over a flat surface with a break in it, like the break between the door and frame of a safe, it will affix itself. The only way to remove it then, besides destroying it (and it's as strong as diamond), is to touch the characters in a specific sequence. By placing the bar in a slot of a computer terminal, the current combination will be shown on the viewscreen, and a new one up to ten characters long may be programmed in by simply using the terminal's keyboard.

8. Open area. This open chamber is a major passageway. A lift shaft reaching to the surface and to 6 below, and a cargo lift to the surface, are located here. The cargo lift is identical to the lift shafts, except that it is much larger and rectangular in shape.

Trails of blood from 1 and 4, and one from 10, of blood and a green substance (chameleon beast blood), pass through here and enter the lift shaft. By the lift shaft is a dagger stained with green blood.

9. Storage. Extra parts for all machinery and computers on this level are stored here. These spare parts are in black boxes and are as difficult to examine as their parent machinery. Since the room is extremely crowded, the lift shaft against the wall may be overlooked.

10 through 13. Offices. These are offices similar to 4 through 7, but smaller.

In 10, a barricade of light furniture is by the door. There is evidence of an extensive fight having taken place here. Damage from lasers and bullets is substantial. An automatic pistol and a laser rifle (human-made), both spent, are on the floor. An unmarked box of a dozen grenades, ripped open, is by them. The grenades consist of four smoke, two tear gas, and four anti-laser aerosol grenades. Remnants of two tear gas grenades are by the barricade. The tear gas is non-persisting, so the explorers will not be molested. There is quite a bit of dried green and red blood, especially on and near the barricade. A path of mixed blood leads into the passageway and on to the lift shaft there.

14. Lounge. This spartan but agreeable room has numerous tables and amorphous benches.

In a rack by the wall are rods, each with a lens in one end. Turn the lower half of a rod clockwise till it clicks and infrared light will be emitted; counterclockwise, ultraviolet. If the infrared light is shined on an amorphous bench, it will deform under slight pressure, making a bed, for instance, until the ultraviolet light is played upon it, when it will stop deforming except for its natural "give."

There are, some heating and freezing consoles in the corners against the curving wall. The entire front wall is a viewscreen.

15. This is a lavatory of exceedingly alien design.

16a and 16b. Corridors. Cutting across 16a from 1 to 8 is a trail of human blood. A similar trail from 4 merges with 16a for a short distance and then continues into 8.

Lower Level:

1. Weather Control Room. This room is laid out similar to the core tap control room, which can be seen through the transparent ceiling.

There is a holographic globe projection of Canard's surface and atmosphere. Slaved to it are screens with meteorological data. This entire graphics package can show Canard's present condition or a computer-generated construction of the planet fully terraformed.

A setup analogous to the one for Canard in the core tap control room, but this one for the sun, is also here. It is geared towards the study of sunspots.

This passive display of conditions on Canard and the sun is rather straightforward. To understand the controls sufficiently to be able to vary the degree of detail and the location of investigation takes a basic roll of 8+ by the party, rolling every four hours of study. Allow a DM of + 1 for each level of computer, mechanical, electronic, and jack of all trades skill possessed by the party.

However, this room controls the directional gravity-wave generator (located in the lower level of the auxiliary module), and thus can influence sunspots and manipulate Canard's (also Windsor's) weather. Assume players have no chance of learning this until they have explored both this room and the gravity-wave generator room. To understand the controls sufficiently to control weather then takes a basic roll of 15+, rolling every four hours of study. Allow DM's as above.

In the process of investigating the controls, the adventurers (unwittingly) could easily disturb drastically the weather of Canard or Windsor. The last would trigger intervention by Windsor's self-defense forces.

There are lift shafts in the corner of this room.

2. Weather Control Computer Room. The contents of this room are identical to those of the core tap computer room, but are for weather control. Blood paths from 6 pass through here and go on into 4.

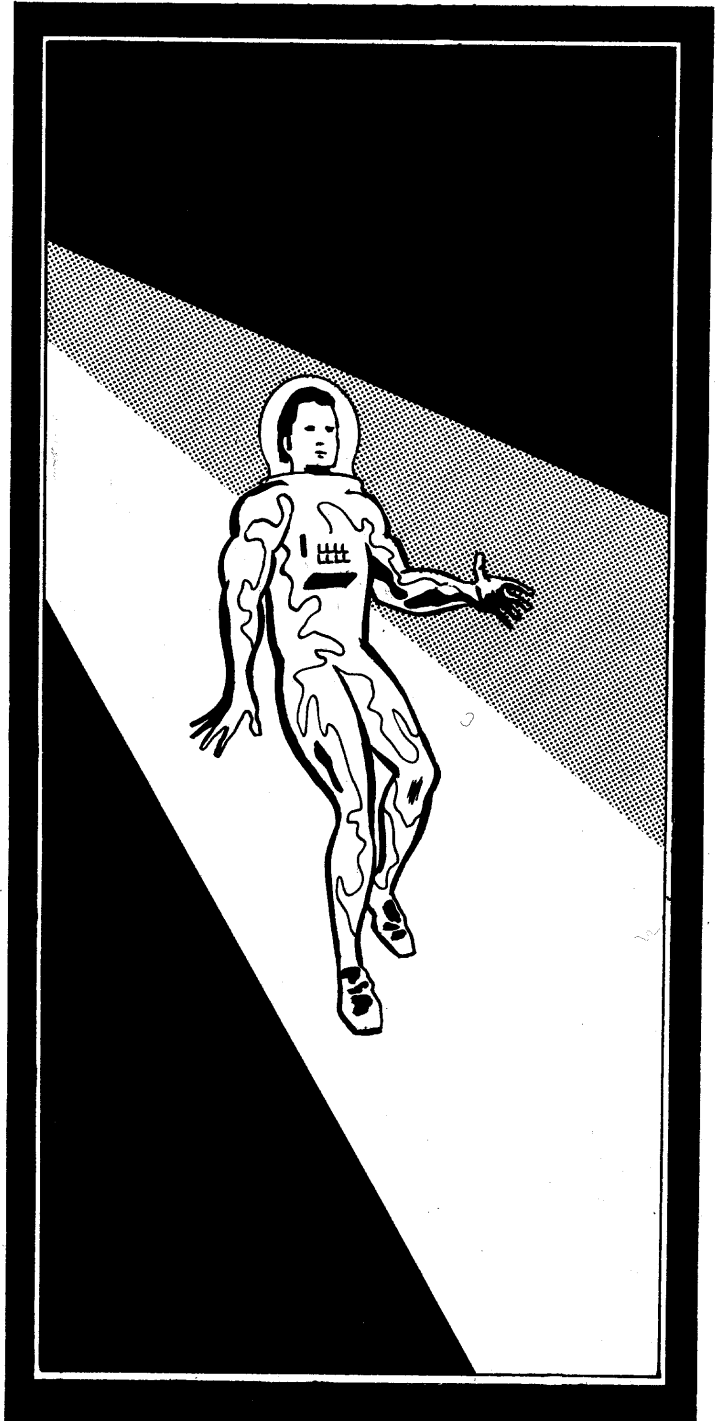
3. Storage. This room is about half filled with spare parts for the equipment on this level. The rest of the room is empty except for some water tanks, and two lift shafts against the outer wall.

4. Subway Station Chamber. Trails of blood from 2 enter here and proceed into the subway car.

5. Intruder Defense Computer Room. The only access to this room is the door leading from 7. The door will not readily open, and must be blasted open with about 2000 hits from energy weapons or explosives. There is a red circle above the door. The room itself has no internal defenses.

6. Life Support. This room contains life support machinery for this module. The lift shaft here has red and green blood trails leading out of it, through 2 into 4.

7. Conference Room. The tables located here are concentric rings with three walkways cut through them. The tables have computer terminals and other devices built in. There are various forms of seating. The complexity of the tables' equipment, and the degree of luxury of the seating arrangements, increases toward the center of the room.



LIVING MODULE

Upper Level (Upper Castes' Quarters):

1. Common Room and Recreation Area. A lounge which can be converted into a theater takes up about half the room. The other portion is a recreation center with various games, a swimming pool in the form of a grotto (currently dry), some open area, etc.

2. Upper Castes' Dining Hall. At the end by 1 there is a very delicate-looking glass abstract sculpture garden mounted on a vibration-absorbing base.

At the opposite end is an alcove divided into two sections by a transparent plastic sheet. For all intents and purposes it appears to be a torture chamber. When two individuals are inside it, they will be simultaneously exposed to all manner of unpleasanties: electric shocks, high pressure, extreme temperatures, sonics, and so on. These effects will not go beyond a certain point (the damage thresholds of the Ancients). A person can turn off the current discomfort by touching a prominent violet disk. Then a new distress replaces the old. When this is done, one of ten violet dots on a tally board in the opposite half of the alcove will light up.

The middle of the room has numerous tables placed end to end to form one long dining table.

3. Galley. This serves the dining hall. There is a lift shaft to the technicians' mess below.

4. Second in Command's Cabin. An anteroom, used as a reception room, has been created for this cabin with a thin partition. The entire cabin is plushly appointed. The shapeless lump that passes for a bed is covered with dried human blood. The bloodstains continue out the door into corridor 17b and from there to the lift shaft in 10.

In one of the drawers of the numerous storage units is a plastic cone 40 cm long, 18 cm in diameter at its base, lying on its side. Placing it upright, so that its axis is roughly aligned with the direction of gravity, will activate a transparent hemispherical field 3 meters in radius. This field will not pass through walls. Gases are the only matter that can enter the field; anything can leave it freely.

5 through 8. Elder Upper Castes' Quarters. These are smaller, more modest versions of the previous cabins, without the anteroom.

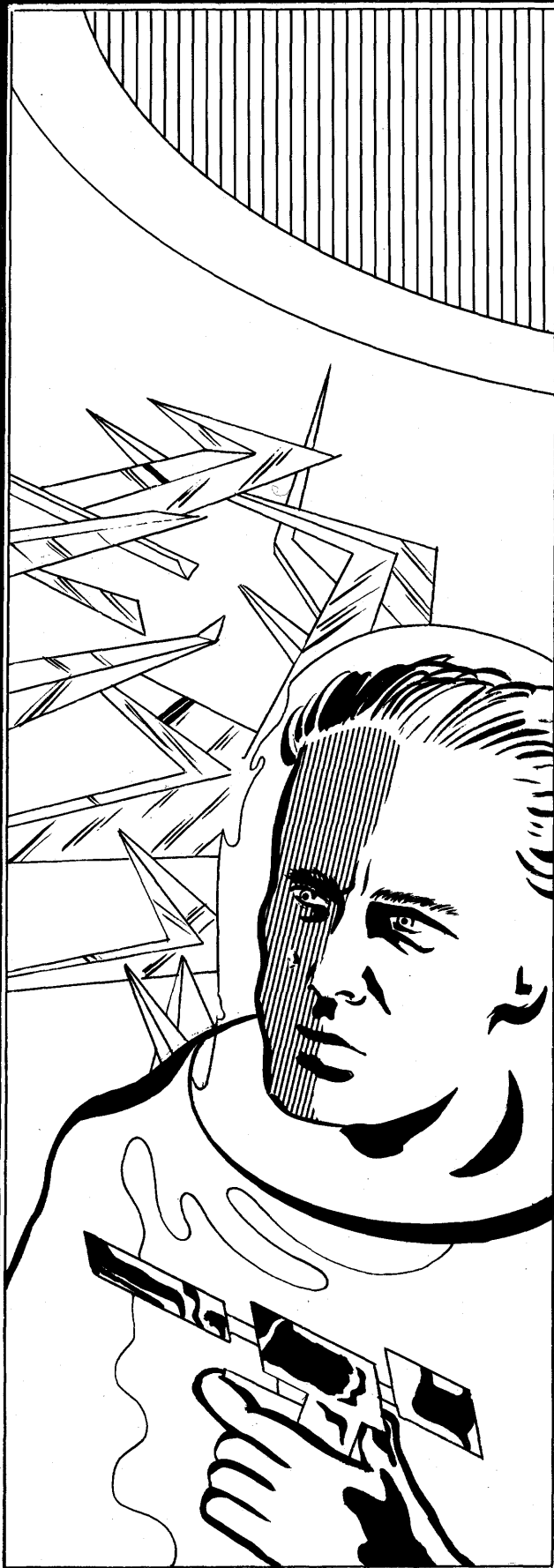
In a closet in 5 are a pair of harnesses. These are similar to grav belts, but will only fit humans of strength 6 or less, which is just as well, since it is doubtful they could lift anyone of large size.

Lying on the floor in 8 is a harpoon, its point covered with green blood. The ornamental mounting for it is on the wall. It is roughly equivalent to a pike. The blood trail leads into corridor 17b and there merges with the path from 4.

9. Open. This open space is identical to the one on the command module's upper level.

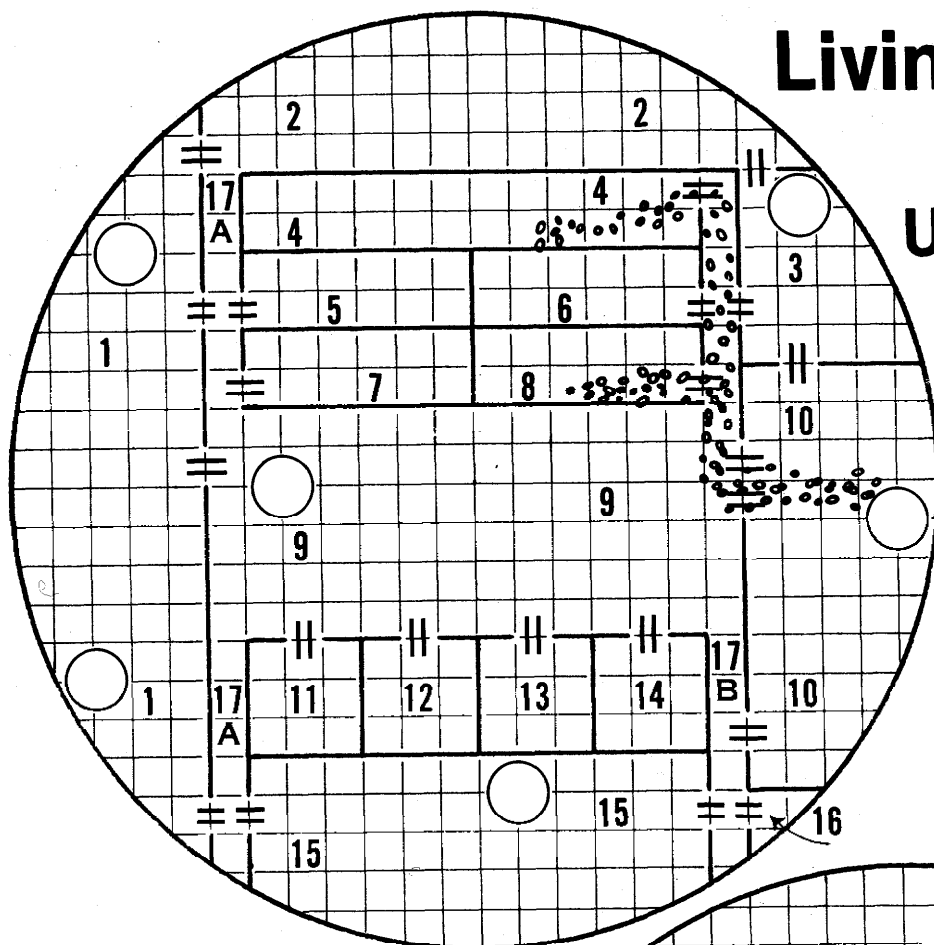
10. Storage. This area serves as a pantry and general storeroom for utensils, spare furniture and the like.

11 through 14. Immature Upper Castes' Quarters. In contrast to the previous quarters, these are stoic in their furnishings.



Living Module

Upper level



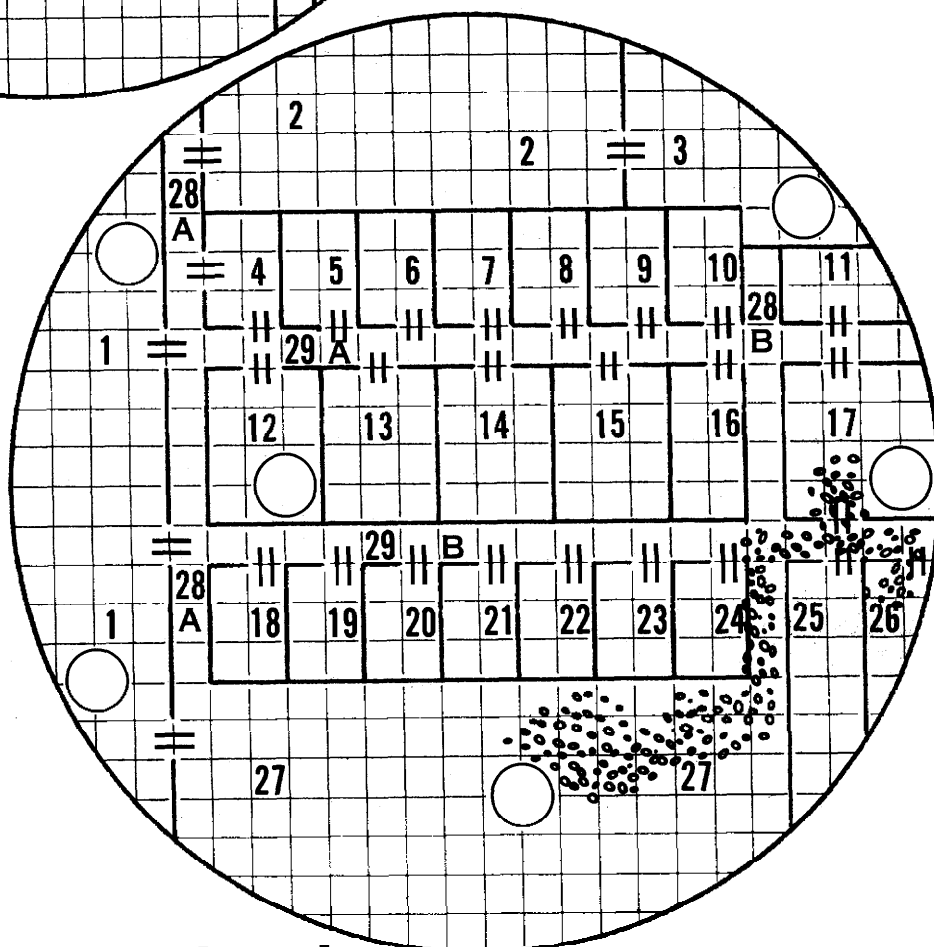
Scale: 1 square = 1.5 mete

—||— Door

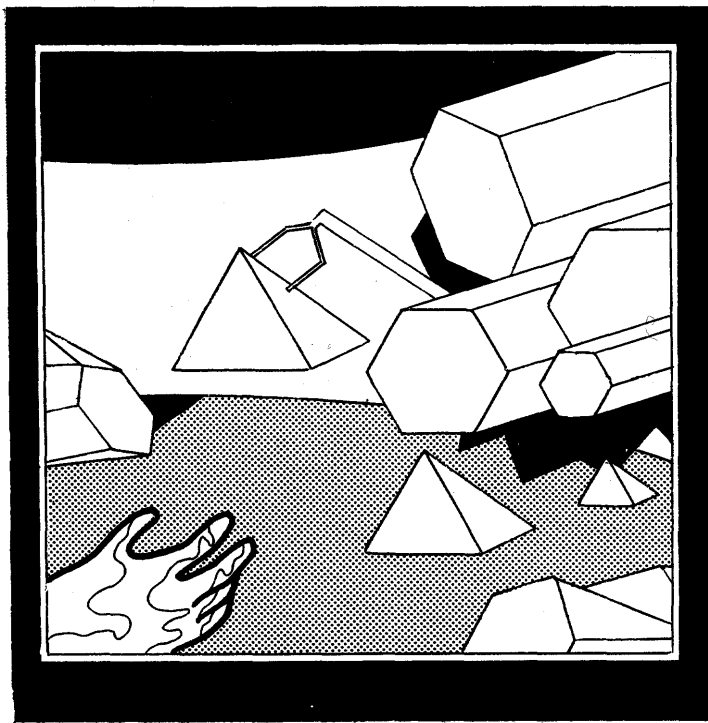
○ Lift shaft

—||— Wall

... Trails of blood



Lower level



In 12 an alcove, perhaps for meditation or other religious purposes, has been made with purple curtains.

In 14, behind a false partition in a drawer, is a ruby about the size of an egg. Its case has a stylized etching of a space battle and three lines of written characters on it. By the case is a net, 2 by 3 meters, made of a strong synthetic mesh.

15. Commander's Cabin. This room has reception, office, living, dining, sleeping, and fresher areas, all lavishly outfitted.

In the office section is a traditional globe of Canard as it would appear terraformed: a blue-white paradise. From the viewscreen of the computer terminal here, the entire complex can be inspected. Currently, the gravity generator room is featured. If by chance a person should cause the communications room to appear on the screen, a yellow button will light up. Pressing that button will open the door to that room.

The fresher is quite cold. Its bath is more like a small pool. It is about half filled with water. If it is in the process of being emptied, a hatch will be visible in the center. Through it a lift shaft leads to the subway station underneath. The hatch will not open if any appreciable amount of water is in the pool.

16. Galley. This is a small galley that supplies the commander's table on occasion.

17a and 17b. Corridors. 17a is a featureless hallway. 17b has trails of red and green blood leading into rooms 4, 8 and 10.

Lower Level (Technicians' Quarters):

1. Technicians' Lounge. This area is densely strewn with tables and mound benches. In storage bins are games and other amusements; of note are two solid puzzles made of brightly colored plastic.

One puzzle is either an illustration of the probability density distribution of the electrons of (most likely) mendelevium or a dissertation of the big bang theory. Excalibur's computer will not be able to say which with a certainty greater than 60%.

The other puzzle seems to involve the solution of the equations of motion of a stellar system's major celestial bodies by successive approximations. Additional pieces can be added to include more bodies, or model different stellar systems.

2. Technicians' Mess. The tables are arranged quite orderly for dining. One wall has a large viewscreen so the room can be used as a theater and lecture room.

3. Kitchen. This room is the kitchen that serves the technicians' mess.

4 through 11. Junior Technicians' Quarters. These rooms have frugal living accommodations for two. Like all other quarters, one human will find them comfortable. Room 11 has arrangements for three.

In 10 is a small plastic band. If fastened around some part of an animal, it will render the creature immobile, allowing it only to breathe.

12 through 15. Senior Technicians' Quarters. Larger, more luxurious, and for single occupancy, these are otherwise the same as the junior techs' rooms.

12 has a lift shaft to 9 above.

In 13, on a desk, is a model of the complex showing modules, subway tunnels, shaft, and powerplant.

16. Storeroom. This is a storeroom for use by the senior technicians.

17. Life Support. This room holds the life support machinery for this module. A trail of green and red blood comes from the lift shaft, crosses corridor 29b, and continues on to room 26.

18 through 24. More Junior Technicians' Quarters. 20 is a charred shambles, looking as though an explosion took place there. Under debris in 23 is a box with high-quality lenses and precision optical tools.

25. Biological Center. The machinery here will not appear greatly different to the adventurers from any other machinery in the complex. The chameleon beasts are created here. If a party does not actually see a beast emerge from the hatchery equipment, members will have a 1/3 chance of destroying the hatchery with a random shot into the room's machinery, with their chances improving as more equipment is destroyed.

26. Refuse Disposal Room. When the door to this room is opened, a red circle above it will light up. If anything remains on the floor when the door is completely closed, the floor will slide away. The contents then drop through a tunnel (not shown) to the core tap shaft below and the awaiting lava. Paths of blood from 17 and 26 terminate here.

27. Subway Station Chamber. A path of red and green blood goes through 28b to 29b and then to 26. There is a lift shaft that connects to the Commander's cabin here.

28a, 28b, 29a, and 29b. Corridors. In the vicinities of rooms 17, 26 and 27, 28b & 29b are stained with green and red blood.

AUXILIARY MODULE

Upper Level:

1. Air/Raft Dock. In the open space near the center of the module are three air/rafts of Ancient design; they enter and leave through a large, round hatch in the ceiling. They weigh 18 tons each, can carry up to 10 tons, and have a top speed of 200 km/h. They have a pressurized cabin which humans will find cramped. Due to this space shortage, the controls are difficult to operate, though easy to learn. After a few hours of travel, the referee should impose fatigue penalties.

These air/rafts do not consist of four identical modules, but the forward section can be detached from the rest of the air/raft. (The remainder will operate normally.) This forward section then becomes two small pressurized one-man (strength 6 or less) units with a top speed of 500 km/h.

2. Air/Raft Garage. This curving room has three recesses in which the air/rafts fit snugly. An air/raft placed in a recess will be automatically examined and repaired.

3. Generator Room Extension. This area is closed off by transparent plastic sheets. The gravity wave generator extends into this space. The rest of the generator room can be seen from the periphery of this area.

4. Cargo Hold. This region is used as a cargo hold (empty now), and to house additional small vehicles if need be. It merges with the air/raft dock. There are two lift shafts.

Lower Level:

1. Subway Station Chamber.

2. Directional Gravity Wave Generator Room. In the center, dominating the room, is a massive contraption jutting through an opening above it in the ceiling, leading to the upper level. It's a huge, double-ended hammer, mounted on a ponderous pedestal so it can swivel and elevate. A mass detector aimed at it will display incredibly high readings. This is a directional gravity wave generator. Its heart is a quantum black hole restrained and controlled by an electromagnetic field. It can be directed from the cramped facilities lining the walls, or from the weather control room in the command module.

Its intended purpose was to control Canard's weather, once a suitable atmosphere was created, by suppressing and producing sunspots by means of the tidal effects of the gravity waves. The climate of Windsor may be influenced similarly.

Given proper fire control (as from the Excalibur), it can be used as a weapon against spacecraft; causing massive tidal forces over their hulls, ripping ships in two, or at least rupturing structural integrity. Note: Drive coils are especially sensitive to this.

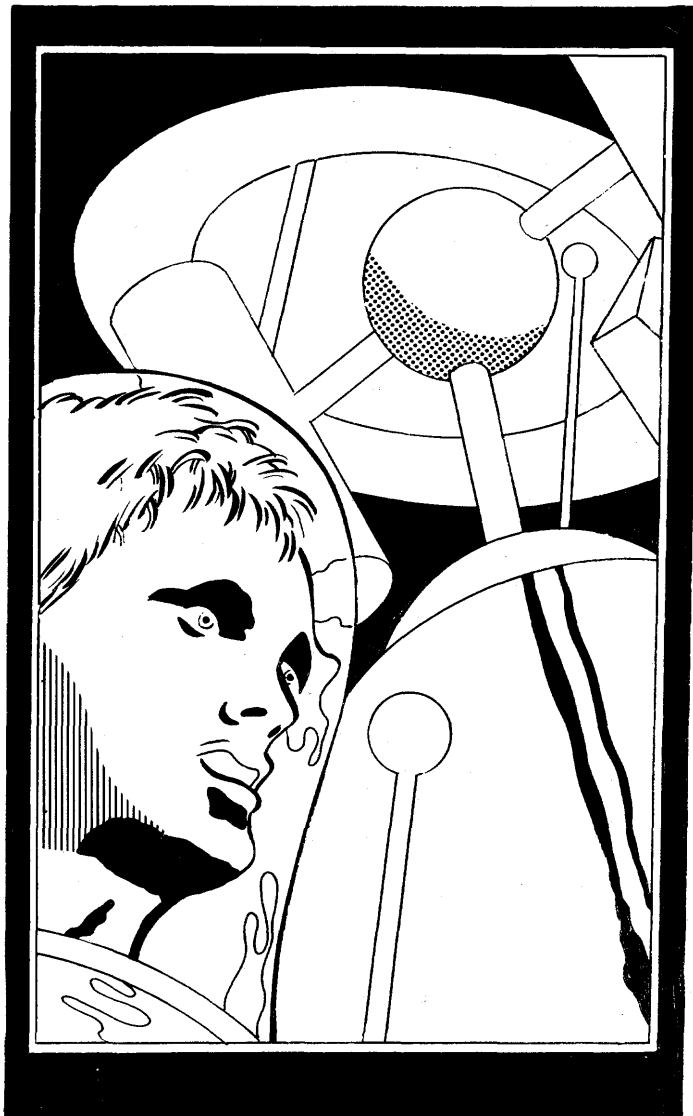
There are safeguards against shutting off the electromagnetic field and releasing the quantum black hole. Should the electromagnetic field be in danger of imminent termination, or if someone starts disassembling the device, it and everything within two meters of it will be engulfed by a stasis field. No time will pass for anything within the stasis field. In effect, that volume of space has been cut off from the rest of the universe.

3. Storage. Here the spare parts for the module's machinery are stowed. A lift shaft in the center goes up to 4 above.

4. Life Support. A lift shaft here reaches to 4 above.

5. Sick Bay. This is a small but well-outfitted medical facility. However, it is not designed to handle humans. The referee should use his discretion judiciously regarding adventurers taking advantage of this room.

6. Geology Laboratory. Here samples from the core tap shaft are brought up by a tunnel (not shown) to be analyzed. It is unlikely that the adventurers will have the skills to utilize this lab.

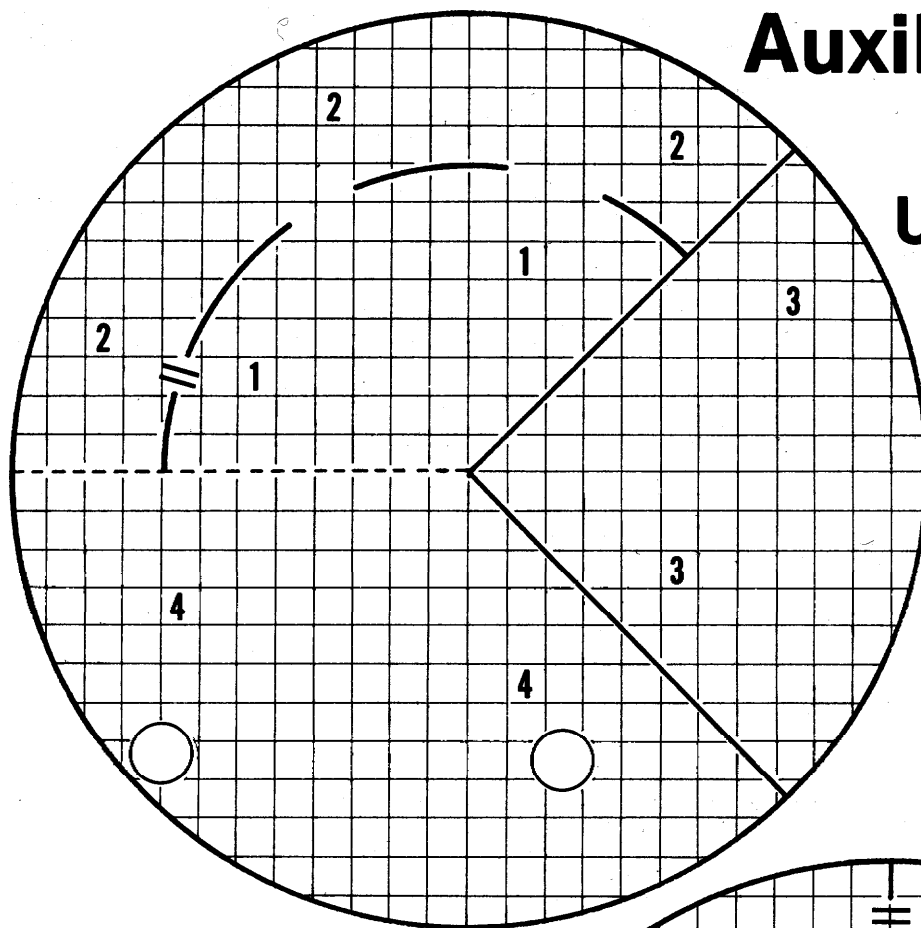


7. Electromagnetic Accelerator Room. The EMA's for the centrifuge chamber are located here.

8. Centrifuge Chamber. This room is a centrifuge chamber. Unlike the rest of the complex, it is made of an ultra-high-strength alloy. This, combined with the frictionless film it is coated with, and its electromagnetic accelerators, allows an extremely high rotational speed. It is used to prepare samples for the geology lab.

Auxiliary Module

Upper level



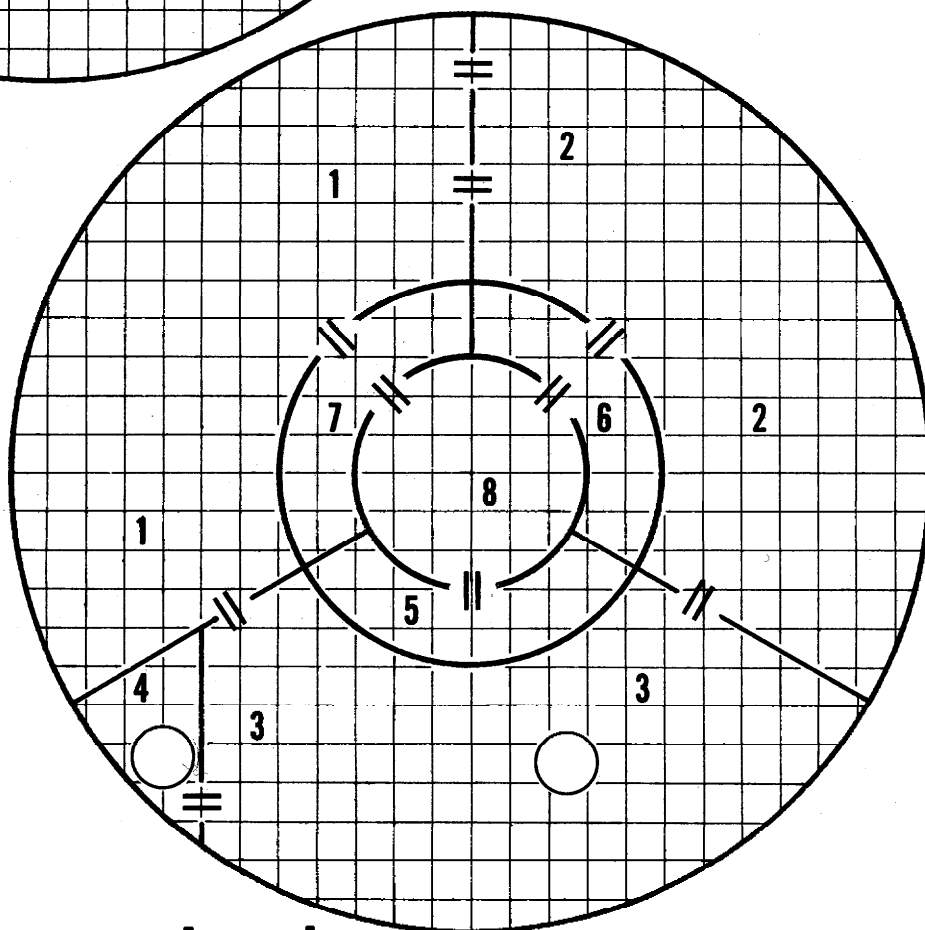
Scale: 1 square = 1.5 meters

—||— Door

○ Lift shaft

----- Area boundary

—||— Wall



Lower level



THE
FUTURE
IS
HERE

TRAVELLER™

*Science-Fiction Adventure
in the Far Future*

Traveller™ is Game Designers' Workshop's trademark for its science-fiction role-playing game.



by Roger E. Moore

One of the most frequently heard criticisms of the *Traveller* gaming system is that there is little provision for including aliens in the Imperial universe, particularly as player characters.

Andy Slack's "Expanding Universe" series in the late 1979 issues of *White Dwarf* (#13-16) gave a brief but useful set of tables for creating alien races. The following is an expansion of those rules, designed to allow creation of many sorts of alien beings.

The *Traveller* Imperium is assumed to be dominated and directed by humans; one can, of course, institute any sort of interstellar government one desires in a campaign, but humans will likely form at least part of the core of the most important societies/governments in the Galaxy.

Humans are the standard against which alien capabilities are measured. To be playable and keep the proper balance of a campaign, an alien character should not be overly more or less powerful than a human character, and any special skills or powers should be carefully allotted. If a particular race is made too strong, it could ruin the campaign quite easily. Who would be a man if one could be a "superman"?

Alien races would need to be compatible with human environments to be useful as player characters. They can be assumed to be carbon-based, oxygen-breathing beings with at least one manipulatory limb and some form of land mobility. They should have a definite structure and form. The aliens should be able to obtain the basics needed for their survival as easily as humans obtain theirs, possibly enjoying some of the same foods and living conditions. Some variation is fine, but

should not be so great as to hamper aliens' relationships with people. For example, an aquatic alien that needs to be submerged in water continuously will have a rough time performing daily tasks with the rest of the starship's crew unless the ship is flooded or the alien wears a water-filled vacc-suit at all times, which may prove clumsy and troublesome. Under these guidelines, many exotic creatures common in science fiction would not be used. Imagine the problems confronting a player who has a crustacean-like being that breathes methane, ammonia, and hydrogen and requires an atmospheric pressure a hundred times greater than Earth's to survive. How could this character work alongside human characters aboard a starship?

Certain other types of aliens would be rare or nonexistent in *Traveller*. Because of numerous biological considerations, flyer-type beings should be excluded as characters. An alien would have to be very light in order to fly, and would need a wing with a great amount of surface area. For a man-sized being these requirements would be impossible to meet and still have enough mass left for a sufficiently developed brain. The being's skeleton might be very fragile, and blows could cripple or kill it quickly. Winged beings could only fly in light gravity. All in all, it isn't worth it to have wings.

Swimmers would be a problem because of their environmental needs, as pointed out above. They might have little opportunity in a campaign to use their talents unless frequent stopovers are made on worlds with extensive water cover. Amphibious beings who could move about well on land and go for short periods without needing to moisten their skin are feasible, however, and would work out fairly well as characters. Highly intelligent triphibians (compatible with land, air and water) would be

even more unlikely than flyer-types, and can likewise be excluded from consideration as characters.

Regardless of their shape, size, or color, all aliens are assumed to be as intelligent and educated as humans are, and to be tool-users able to manipulate things within their environment. In a galactic society, aliens are motivated to go "traveling" by the same urges humans feel: need for living space, curiosity, desire for wealth, warfare, scientific research, etc.

Using the following tables, a referee can generate an alien being in general outline, elaborate on it as desired, and open it up as a character race or as a non-player race that may be hired out. If no referee is used, players may decide on the details and use the races as they please. These tables are not meant to be all-inclusive and may be changed at will to suit any campaign.

TABLES FOR ALIEN GENERATION

I. Primary environment

01-90	Land surface
91-99	Amphibian
00	Other

II. Symmetry of alien

01-90	Bilateral (along a plane)
91-97	Radial or rotational (along an axis)
98-00	Asymmetrical (none)

III. Brain

01-95	One brain
96-00	Two brains (it is 90% likely that the second brain only handles physical coordination and does little or no thinking).

IV. Body arrangement (bilateral or asymmetrical)

A. Head (roll for each brain separately to see if it is in a head, separate from the central body of the alien)

01-95	Brain is in a head
96-00	Brain is internal to body

B. Tail (there is a 5% chance that a tail will serve as a manipulative organ in addition to the alien's hands)

01-65	No tail
66-99	One tail
00	Two or more tails

C. Feet (or other locomotive limbs)

01-70	2 feet
71-90	4 feet
91-93	6 feet
94-96	3 feet
97-98	1 foot
99	5 feet
00	7 or more feet

D. Arms (or other manipulatory limbs)

01-80	2 arms
81-90	1 arm
91-95	4 arms
96-99	3 arms
00	5 or more arms

V. Body arrangement (radial/rotational)

A. Head (roll for each brain separately to see if it is in a head, separate from the central body of the alien)

01-70	Brain is in a head
71-00	Brain is internal to body

B. Feet and Arms (there will be the same number of each; roll only once on this table)

01-60	3 feet and 3 arms
61-95	4 feet and 4 arms
96-99	5 feet and 5 arms
00	6 or more feet and arms

VI. Extremities (digits and toes)

A. Digits (fingers)

01-95	2-7 (d6 + 1)
96-00	1 (acting as a tentacle)

B. Feet

01-40	Plantigrade (heel on ground) (human-like 50%, paw-like 50%)
41-80	Digitigrade (toes on ground) (single hoof 50%, cloven hoof 50%)
81-95	Unguligrade (elephant-like pad)
96-00	Other

Amphibious beings will have webbed or broadened digits. They will also have flipper-like feet and should not roll on the Feet table above.

Beings with only one foot are either hoppers (with Perfect Balance from the Special Abilities Table), or they have a large snail-like foot (movement reduced to one-half ordinary speed, but with Climbing Ability from the Special Abilities Table). Types with a snail-like foot need not roll on the Feet table.

VII. Dietary class and speed

Roll	Class	Speed
01-40	Hunter (omnivore)	Double
41-60	Gatherer (omnivore)	Ordinary
61-80	Chaser (carnivore)	Triple (60%) or Double (40%)
81-90	Pouncer (carnivore)	Double
91-95	Intermittent (herbivore)	Double
96-98	Grazer (herbivore)	Double
99	Hijacker (scavenger)	Double
00	Intimidator (scavenger)	Double

VIII. Personality

Type	Society	Initiative	Intraspecies	Interspecies
Hunter	communal	high	cooperative	aggressive
Gatherer	individual	low	cooperative	passive
Chaser	communal	high	competitive	aggressive
Pouncer	individual	high	competitive	aggressive
Inter.	individual	low	either	passive
Grazer	communal	low	cooperative	passive
Hijacker	either	high	competitive	aggressive
Intim.	either	high	co-operative	aggressive

"Society" is an indicator of whether a being is group-oriented or solitary by nature. "Initiative" is the ability of an individual to take action when left on its own. "Intraspecies" refers to how well a being gets along with others of its kind. "Interspecies" refers to how well a being gets along with other races.

Other factors may be considered in determining personality; carnivores may not like herbivores (and vice versa), scavengers may not get along well with anyone, etc.

IX. Weight

Roll	Kilograms
01-05	12 (3)
06-15	25 (6)
16-35	50 (12)
36-65	100 (25)
66-85	200 (50)
86-95	400 (100)
96-00	800 (200)

First number is base weight; number in parentheses is the amount of variation, (plus or minus) possible from base. The size of being should be deduced as well as possible from the weight given here and the overall body description.

(Turn to page 80)

PLOTTING A COURSE FOR CHOOSY PLAYERS

by Jeff Swycaffer

My friend Chaim is a *Star Wars* freak. His favorite character in all fiction is Han Solo. He lives, breathes, talks, and (unfortunately) drives like Han Solo. To be a hotshot pilot, throwing his spaceship through a maze of uncharted planets, is his greatest dream.

When Chaim plays *Traveller* he invariably rolls things like Administration skill, or Battle Dress. He's rolled Demolition, Medical, Recruiting; he's rolled Blade and Bow Combat . . . but almost never Piloting.

This is somewhat unjust. *Traveller*, with its provision for rolling skills randomly, necessarily involves injustices of this sort. Proposed below is a variation on the standard *Traveller* character generation routine, emphasizing freedom of choice.

Procedure

Every player receives 50 Personal Characteristic Points, hereafter referred to as Points. These may be spent as Die Roll Modifiers (DMs) when desired throughout the character-generation routine outlined below. Points may be added to or subtracted from dice rolls, but the resulting number must lie within the normal range of the dice: If two dice are being thrown, the final result after modification must lie between 2 and 12 inclusive. There are a few exceptions to this normal rule, but these will be clearly marked.

Each character to be generated must start at age 18, and must roll (Step One) for his or her personal characteristics. After that, a choice must be made between going to College, one of the Military Academies, or directly into one of the branches of the Military. (Step Two, Three, or Five). After College or Military Academy, some characters will have the option to attend a Specialty School (Step Four). This will either be Medical School, Law School, Sciences School, or Flight School. After schooling is completed, all characters have the option of enlisting in one of the branches of the Military. This will likely be voluntary; a Medical School graduate, for instance, need not enlist, it is merely recommended.

Step One: Personal Characteristics

For each of the six characteristics (Strength, Dexterity, Endurance, Intelligence, Education, and Social Standing), roll two *average* dice. These are six-sided dice that have faces numbered 2, 3, 3, 4, 4, 5. If you have no *average* dice, roll regular dice and treat 1's and 6's as 3's and 4's respectively. The result from two dice will be a range of numbers from 4 to 10. To these numbers, add as many Points as you wish, raising up to a maximum score of 12 in each category.

Each Point expended is deducted from the starting total of 50. Although later additions to these categories may bring personal characteristic numbers up to 15, at this point 12 is the maximum.

Step Two (optional): College

The character, at age 18, may wish to spend four years in College, improving his or her Education, and possibly earning several Points. This is the only instance when Points are given to the character, and this award depends on whether a player succeeds on the rolls for Education and Honors (see below).

The following rolls must be made on two six-sided dice:

Admission	9+	DM +2 if Educ 9+
Success	7+	DM +2 if Intel 8+
OTC (optional)	8+	DM +1 if Social 10+
Education	1d-2*	DM +1 if Intel 9+
Honors	10+	DM +1 if Educ 10+

Points may be added to these die rolls, to insure that the roll succeeds — with the exception of the Education roll, which must remain unmodified.

If either the Admission or Success rolls fail, the character must proceed to Step Five: The Military (below). The only way this is likely to happen is if the player decides that the Points needed to bring the actual roll up to the value needed would be excessive.

The OTC (Officers Training Cadre) roll is voluntary: if successful, the character is commissioned as rank 1 in the Army, Navy or Marines, and proceeds to Step Five. Exception: if the character succeeds in the Honors roll, then he or she is eligible for one of the Specialty Schools (Step Four), regardless of the OTC roll.

The Education roll is conducted in a special manner. First, roll one die and subtract two from the result to arrive at a number between -1 and +4.

This number must be rolled on two six-sided dice for the Education roll to succeed. Obviously, a "needed to roll" number of 2 or less portends automatic success for the Education roll. However, the 1d-2 number has a further application, which is explained below:

If the Education roll succeeds, the result of the 1d-3 roll is added immediately to the character's Education characteristic — before the Honors roll is attempted. For this purpose, results of less than 1 are treated as 1 (there is always at least 1 point of increase), and the increase to the Education characteristic may not exceed 4. The highest possible Education is 15.

At this time a number of Points equal to the increase in Education are earned, gaining the character from 1-4 Points. Further, if the Honors roll was successful, the character gains another 4 Points.

Step Three (optional): Military Academy

Instead of attending College, the character may apply at age



18 to one of the four Military Academies: Army, Navy, Marines or Merchants.

Admission	10+	DM +2 if Social 10+
Success	9+	DM +2 if Intel 8+
Education	1d-3	DM +1 if Intel 9+
Honors	9+	DM +1 if Intel 9+

If either the Admission or Success rolls are failed, the character must proceed to Step Five. The Education roll is added immediately to the character's Education characteristic, identical to the procedure described for College.

Points may be added to increase die rolls upward to the needed number — however, no Points may be added to the Education die roll (1d-3), which must remain unmodified. Unlike College, in the Academy no Points are earned for success on the Education or Honors rolls.

Success in an Academy awards the following skills automatically, depending on the type of Academy attended:

Army:	Gun Cbt-1	Leader-1	Tactics-1
Navy:	Engnrng-1	Navigation-1	Vacc Suit-1
Marines:	Gun Cbt-1	Leader-1	Zero G Cbt-1
Merchants:	Admin-1	Streetwise-1	Vehicle-1

After graduation from one of the Academies, the character is commissioned at rank 1 in the appropriate branch. Exception: the Honors roll, if made, allows the character to apply for admission to one of the Specialty Schools; if this fails, he or she is commissioned as above. After Specialty School, the character must be commissioned in the appropriate branch, as rank 2. (After they've spend that kind of money on you, they're doggone if they'll let you go).

Step Four: Specialty School

Note: Specialty School may only be undertaken by characters who graduated from either College or an Academy with Honors.

Admission	9+	DM +2 if Educ 10+
Success	8+	DM +2 if Intel 9+
Honors	11+	DM +1 if Educ 11+

If either the Admission or Success rolls fail, the character must proceed to Step Five, maintaining any previous options or commissions. It should be noted here that Flight School is only open to Academy Honors graduates, while Medical, Law, and Sciences Schools are open to both College and Academy Honors graduates.

If successful:

- Medical:** +1 Education; Medical -3; Adminstration -1.
- Law:** +1 Education; Adminstration -3; Forgery -1.
- Sciences:** +1 Educ.: Electronic -2; Mechanical -1; Computer -1.
- Flight:** Pilot -2*; Ship's Boat -1 Navigation -1; Gunnery -1.

If Honors:

- Medical:** Medical -1; Computer -1.
- Law:** Forgery -1; Interrogation -1.
- Sciences:** Gravities -1; Engineering -1.
- Flight:** Pilot -1*; Computer -1.

*— For Army or Marine Academy graduates, Piloting skill is replaced by Air Craft skill: the Ground Armed Forces are considered to have taken over air and sub-orbital forces, leaving Orbital, Interplanetary, and Interstellar control to the Navy.

At this point, a character who has fulfilled certain requirements receives his or her commission:

College + Specialty	=	Commission rank 1 (choose branch)
OTC	=	Commission rank 1 (Army, Navy, or Marines)
Academy	=	Commission rank 1 (appropriate branch)
Academy + Specialty	=	Commission rank 2 (appropriate branch)
College + Specialty		
Honors=		Commission rank 2 (choose branch)
Academy + Specialty		
Honors=		Commission rank 2 (appropriate branch)

Step Five: The Military

Characters embarking on a military career should roll as per usual on the Prior Service Table, located on page 10 of *Traveller* Book 1 (*Characters and Combat*) —except that the Survival roll is deleted. (You are considered to automatically have survived to the present; otherwise, why waste time rolling?)

To enlist (unless automatically commissioned), roll two dice for the number or higher as shown on the table. Points may be added to the roll to insure that the total is high enough. If the roll fails, roll one die for the Draft section. The number resulting is the Draft number of the branch into which you have been drafted. Exception: One may be added to or subtracted from this die roll for every two Points spent.

When the Reenlistment roll fails or the character wishes to muster out, final adjustments are made and skills are purchased.

Now comes the hard part. Skills must be bought and paid for, the cost being in Points. Each skill of the 51 listed below has a price in Points. To purchase more skills, players may "sell back" points of Strength, Dexterity, Endurance, Intelligence, Education, and Social Level, at the rate of one Point per two points of characteristics lost (not necessarily two points from the same characteristic).

Skills and costs			
Skill	Book	Cost	Exceptions to cost
Air Craft	S4	3	
Administration	1	5	Merchant (4)
Battle Dress	4	5	Marines (4)
Blade Combat	1	3	
Bow Combat	S4	2	
Brawling	S4	2	
Bribery	1	9	Merchant, Other (7)
Carousing	5	3	
Cbt Engnrng	4	4	
Communication	5	4	
Computer	1	5	
Demolition	4	4	Army, Marines (3)
Electronics	1	4	
Engineering	1	4	
Fld Art Gunnery	4	5	
Fleet Tactics	5	5	Navy (3)
Forgery	1	9	Other (6)
Fwd Observer	1	4	Army, Marines (2)
Gambling	1	8	Other, Scouts (5)
Gravitics	5	5	
Gun Combat	1	4	Army, Marines (2)
Gunnery	1	4	
Heavy Weapons	4	4	
Hunting	S4	4	
Instruction	4	9	
Interrogation	5	9	
Jack-o-T	1	10	Merchants (8)
			Scouts (6)
Leader	1	5	Army, Marines (4)
Liaison	5	4	
Mechanical	15		

Medical	1	5	
Navigation	1	4	Navy, Scouts (2) Merchants (3)
Pilot	1	5	Navy (4) scouts (3)
Prospecting	S4	4	
Recon	4	3	Army (2)
Recruiting	4	5	Merchants (4)
Ship Tactics	5	3	
Ship's Boat	1	3	
Streetwise	1	7	Other, Scouts, Merchants (5)
Survival	4	4	
Tactics	1	3	
Vehicle*	1	2	
Vacc Suit	1	5	Scouts, Merchants (3)
Water Craft	S4	1	
Zero G Combat	4	5	Marines (4)

* — Subsumes Air Raft, ATV, other vehicles

Further increases in personal characteristics may also be purchased with Points at this time, according to the following cost schedule:

+1 Social Level 6	+1 Strength	2
+1 Intelligence 4	+1 Dexterity	2
+1 Education 3	+1 Endurance	2

Remember that no characteristic may ever be raised higher than 15.

Mustering out is done as in *Traveller* Book 1, page 9.

Step Six: Experience

For every month of successful adventuring that a character undergoes, that character gains one-quarter Point. Since even a bad experience is still an experience, for every month of unsuccessful adventuring that a character undergoes, that character gains one-eighth Point. A player who is saving up Points must declare what he or she is saving them toward, i.e., what particular skill or characteristic will be increased. A successful adventure, to gain the character the full quarter Point, must involve the character using that particular skill to some reasonable degree. (The definition of "successful" is left to the referee.)

Step Seven: Psionics

If the referee agrees that Psionics are allowed in the campaign, the following method of purchasing Psionics may be used.

A person's Psionic rating may be from zero (by far the most common) to 11; higher ratings may not be achieved naturally. A Psionics rating of 1 costs 30 Points, and each Psionics rating point above that costs 2.5 Points more, fractions being rounded up. Exception: for every point of Intelligence above 8, the total cost drops by 1 point. A character with Intelligence of 15 could buy a Psionic strength of 11 for 44.5 Points (which would actually cost 45 Points when purchased).

After this initial purchase, Psionic strength may not again be raised by the expenditure of Points, even if such Points become available through experience gains. However, Points gained through experience may be applied to increasing subsequent die rolls for Psionic Talents.

When the Talents table is consulted (*Traveller* Book 3, page 35), one may be added to each die roll for every two Points spent. Note: In this instance, unlike all others, Points must be spent before the die roll is made. With this method, rolls to find a branch of the Psionics Institute are not needed, nor is the cost: Psionics becomes a personal skill, much like Strength or Intelligence. Taking Psionics does not count as an ordinary skill and may be mixed with ordinary skills.

Points may also be added to the die rolls for increasing a Psionic proficiency (the monthly rolls to increase such things as range). Again, add one to these rolls for every two Points spent, and again such expenditure must be made *before* the die roll.

Players will note that this system tends to produce "average" characters. A person with many skills will tend to have unimportant ones, while a person with but a few may choose powerful ones.

The spirit of *Traveller* is preserved as much as possible, in that the rules are stacked against you, and success will be dictated by more than just good (or even average) die rolls. If you really want Psionics, good luck; you will have precious few Points left for skills.

In many respects this system adds nothing to a character's chances of ultimate success in a *Traveller* campaign, and in some ways it costs a character more than it helps him or her. The goal of choice is what this method aims to achieve, even if it should turn out to be somewhat illusory.

NEW IDEAS FOR OLD SHIPS

by Paul Montgomery Crabaugh

How new is a new starship? *Traveller* characters not infrequently receive starships as mustering-out benefits, and one wonders how closely those ships hew to the "book" descriptions of them.

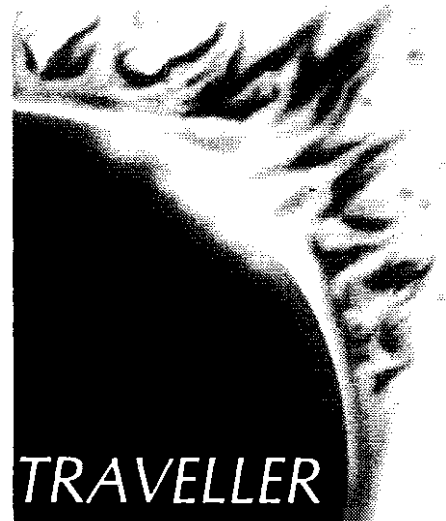
After all, a fair number of them, such as Seekers, have seen service, perhaps *lots* of service. Surely they no longer are perfect adherents to their. specifications. Perhaps more importantly, surely most are armed. Life in the Imperium is dangerous for travellers, and an unarmed starship would be as conspicuous —and vulnerable — as a hang-glider in a dogfight.

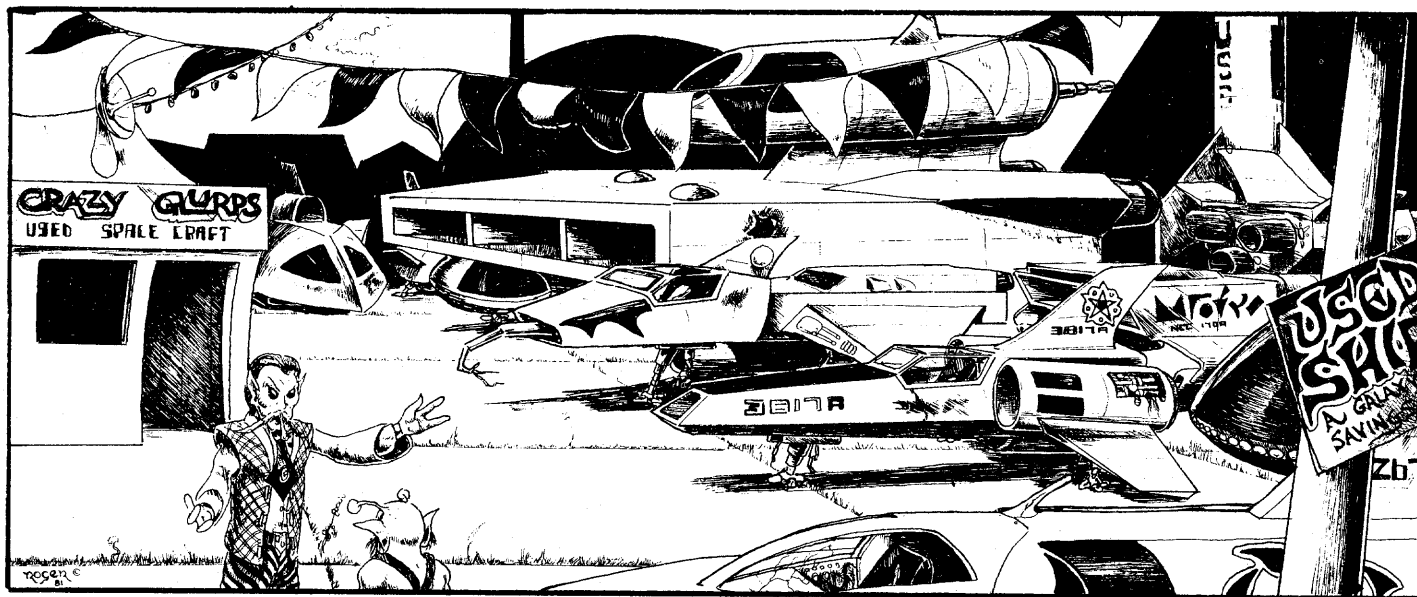
Presented here is a set of tables to customize ships received by characters

as mustering-out benefits. Each type of ship has two tables. One modifies the ship itself in various ways from the original specifications; the other arms the ships with various mixes of weapons. Roll once on each table when the ship is received.

Notes

The jump governor is as described in *High Guard*, first edition; it allows ships to burn their fuel for jumps in amounts proportional to the length of the jump, rather than the whole supply regardless of far the jump is. When a larger computer is specified for a ship, it comes with MCR 2 additional credit for software, over and above the standard software package. If a free trader is stated to be a





Far Trader, use the description in Supplement 7, *Traders and Gunboats*. In cases where the fuel supply has been increased, an entry such as "2 x J2" indicates that the ship has sufficient fuel capacity for a pair of two-hex jumps without refueling. Similarly, "J1 + J2" indicates the ability to make a jump-2 followed by a jump-1. Note that the jump drive itself has not been altered; it can only accomplish a jump of the specified distance. An entry such as "jump 1" or "2G maneuver" indicates an actual change in the drive abilities.

Two new non-starships are mentioned as ship's boats. The Life Slip is virtually the minimum possible ship: it masses 3 tons, costs MCR 2, and is capable of 1 G of acceleration. It has one ton of fuel, a computer model/1, and barely room for its single occupant.

The Light Auxiliary masses 8 tons and costs MCR 4.5. It, too, has one gravity of acceleration and one ton of fuel. However, it has no computer, just a standard small craft bridge, with capacity for two occupants: pilot and passenger. It has no cargo capacity.

Both non-starships were designed according to *High Guard*, second edition.

The weapons described are assumed to come with a sufficient supply of turrets to house them. With each weapon entry are one or more of three letters: T, L and/or G. "T" indicates that the ship may be assumed to come with the Target program supplied; "L" indicates Launch, and "G" indicates Gunner Interact. An exception is the entry for a Safari ship for 2 autocannon; although mounted in a ship's turret, they are worthless against enemy ships and are intended for support of personnel on the ground.

An entry such as "cargo 10" or "fuel 20" indicates that the cargo or fuel tankage has been altered to that many tons.

scout

- 1 jump governor, cargo 2
- 2 no change
- 3 6 low berths, cargo 0
- 4 computer 2, cargo 2

- 5 3 staterooms, cargo 7
- 6 computer 3, cargo 1

Safari Ship

- 1 no change
- 2 no lifeboat, 2 ATVs
- 3 jump governor
- 4 computer 2
- 5 as 2, but 1 ATV, Lt. Aux.
- 6 no change

Weaponry

- 1 none
- 2 pulse laser, T
- 3 two pulse lasers, T
- 4 beam laser, missile launcher, T, L
- 5 two beam lasers, T
- 6 two missile launchers, T, L

Weaponry

- 1 none
- 2 pulse laser, T
- 3 two autocannon
- 4 beam laser, sandcaster, T, L
- 5 missile, sandcaster, T, L
- 6 beam laser, missile, T, L

Free Trader

- 1 no change
- 2 Far Trader (A1)
- 3 Far Trader (A1)
- 4 fuel 50, cargo 62, 2 x J1
- 5 computer 2, cargo 81
- 6 20 staterooms, cargo 42

Lab Ship

- 1 no change
- 2 ATV, cargo 14
- 3 air/raft, cargo 20
- 4 ATV, air/raft, cargo 10
- 5 20 low berths, cargo 14
- 6 computer 7, cargo 20

Corsair

- 1 no low berths, cargo 170
- 2 20 staterooms, cargo 120
- 3 no change
- 4 computer 3, cargo 169
- 5 fuel 150, cargo 130 J1 + J2
- 6 fuel 190, cargo 90, 2 x J2

Seeker

- 1 J1, cargo 43, fuel 20
- 2 2G, fuel 40, cargo 20
- 3 no change
- 4 computer 2, cargo 32
- 5 normal cabins, cargo 25
- 6 Life Slip, cargo 30

Weaponry

- 1 none
- 2 pulse laser, T
- 3 two beam lasers, T
- 4 two pulse lasers, two sandcasters, T, L
- 5 two beam, two sand, two missile, T, L
- 6 three beam lasers, three missile, T, L

Weaponry

- 1 none
- 2 none
- 3 pulse laser, T
- 4 pulse, sandcaster, T, L
- 5 two beam, two sandcasters, T, L
- 6 two beam, two sand, two missile, T, L

Weaponry

- 1 three beam lasers, T, G
- 2 three beam, three missile, T, L, G
- 3 three missile, T, L, G
- 4 3 beam, 3 missile, 3 sand, T, L, G
- 5 six beam, three missile, T, L, G
- 6 nine beam lasers, T, L

Weaponry

- 1 pulse laser, T
- 2 beam laser, T
- 3 two pulse lasers, T
- 4 one pulse, one sandcaster, T, L
- 5 one beam, one sandcaster, T, L
- 6 two beam lasers, T

This should add some uncertainty to ship encounters — especially if the referee uses the tables on his NPCs' ships...

"Don't worry, it's just a lab ship."

"Oh? Why does it have the Jolly Roger painted on its side?"

IN DEFENSE OF COMPUTERS

by Paul Montgomery Crabaugh

A great deal has been written about the computers in *Traveller*, much of it critical of GDW's handling of the whole subject. The two greatest complaints are that the computers are too massive and too expensive; a less frequently heard complaint is that they do too little.

Well, this limb looks fairly sturdy; I think I'll crawl out on it a ways. The computers described in *Traveller*, their workings and nature, are not merely acceptable; they are a superb simulation of their subject.

Let's start by considering the cost of the machine. The cheapest computer is 2,000,000 credits, which certainly sounds like quite a bit to someone who may have spent as little as \$200 on a home computer. The exact conversion rate is impossible to determine; some common items cost many credits and vice versa. This is what one would expect of a very different economy, with different values and resources.

However, examination of some of the most basic and unchanging goods — such as ammunition — would support a ratio of 10 credits to the dollar. That gives us a price of \$200,000 for a model/1 computer — with a very great margin of error in the estimate.

Still quite a bit of currency, I grant. But this computer is not strictly comparable to a home computer. It has to be sturdier and perform more difficult tasks. Since it is the computer of choice for free traders, it might not be too far off-beam to consider it analogous to small business computers, with several terminals and output devices. Currently, such systems cost tens of thousands of dollars. Not many tens of thousands, but tens of thousands nonetheless. Actually, relatively little of that is the computer proper, and virtually none is the processor itself; the cost piles up from things like printers and terminals, which are fairly straightforward mechanical devices and which have not been affected by the marked decline in cost of integrated circuits.

There's still a gap of tenfold in the cost estimates; giving the best possible breaks for error and such, it's still a gap, although not as great as critics claim.

There is another factor, however. Regardless of the real cost of a computer, currently, that cost is always, it seems, a major investment. The amount of hardware available is so great, the range of capabilities so vast, that a potential buyer must always make hard choices about what it would be nice to have, what is available, and what is needed. If you are

designing a starship which costs, at a minimum, several tens of millions of credits, then the computers for it, to maintain this flavor, must cost millions of credits. It might well be more justified to charge only a thousandth of the listed price for a computer — but then everyone would buy model/7 computers, regardless of whether they were needed or not, just because the relative cost was trivial.

I don't intend to spend a lot of time dealing with the software, because intelligent discussion of it is nearly impossible. I don't know, and nobody else does, exactly what is involved in most of the programs listed, except in a general way. Several points come to mind. Such things as accounting programs are not even mentioned, even though their presence would be essential to proper running of a



commercial ship; nor are games, always a high investment, especially if the owner does a lot of work on his/her own computer. Apparently these items are so cheap that they are simply assumed to be present. They also consume little of the computer's resources: you don't have to unload your Anti-hijack program to make room for your payroll program.

Some of the programs, in fact, casually imply an enormous capability, almost a frightening amount of expertise. Anti-hijack, for example, monitors the movements of passengers and if any of them are judged to be potential hijackers, bars them from the bridge. I don't think you could write that program in BASIC. The computer would have to have on tap vast amounts of data regarding patterns of movement and — Bog save us — psy-

chology, body language and so forth. It can't simply slam the door and sound a red alert if a passenger approaches the bridge; suppose the passenger simply wants to tell the Captain that the intercom in his cabin is broken?

Or consider the various Predict programs. Now we're really getting into heavy material: To predict, in combat, where a target will be, calls for (among other things) a knowledge of strategy and tactics of space warfare, an appreciation of the immediate tactical and astrographic situation, a knowledge of your own ship's weapons and abilities, an estimate of the enemy's weapons and abilities, and an estimate of the enemy's estimate of your weapons and abilities. If you can fit that into a home computer, I'll eat the processor chip. With horseradish.

Even a modest Library program raises questions. It seems to contain, at a minimum, all the information contained in *Traveller* Supplement 3 — *The Spinward Marches*. In addition, it has all the library entries of all the published adventures, as well as all the information implied by those entries: The existence of a brief biography of the Empress Arbellatra, for instance, implies the existence of similar entries for all the other rulers of the Imperium.

The actual mechanics of using the computer are, again, a place where the flavor of the situation has been caught so perfectly that one need not spend a great deal of time wondering if the exact details are correct. The programmer or system operator of such a computer, in real life, is usually busy trying to balance the demands on the system's scarcest resources. Finagle's Law insures that when the computer is available, no one will need it, while everyone's pet crisis requiring immediate attention will occur at once. Furthermore, the same law requires that if the computer has an ample supply of terminals but no more available disks, then no one is going to need another terminal, but everyone will require more disks. And so forth; and all of this is captured in the *Traveller* computers, which invariably have too little capacity to run every program that is needed, causing players to indulge in an intricate juggling act and establish priorities.

Finally, as with the hardware itself, the cost of software is justified in order to simulate the situation the architect of the computer system is in. The cost of software is a major consideration once the hardware is chosen; it is easily possible to spend as much on programs as was spent on circuitry. In *Traveller* terms.

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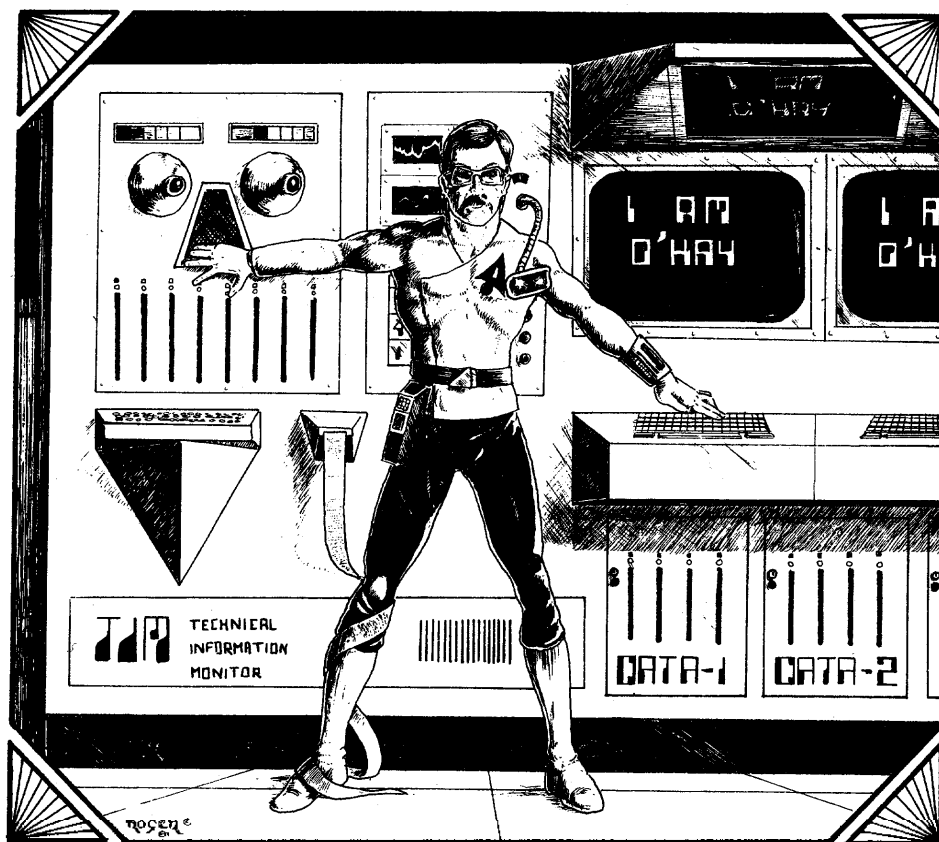
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this means that programs must cost hundreds of thousands of credits if the computers themselves cost millions.

The topic of mass of a computers is saved for last because that was initially the hardest premise to swallow — and subsequently became the easiest.

Computers that mass tons (never mind the *High Guard* computers that mass dozens of tons) seem unreasonable. The IC at the core of the computer could blow away on a stray wind even now. Granted that support of that circuit will always be (relatively) incredibly massive — still, the fact remains that you can pick up a home computer with one hand, easily, and much more powerful systems are not all that much heavier. Certainly not tons heavier, unless they are built with vacuum tubes.

That was before the publication of *High Guard*, wherein it was revealed that "ton" did no mean 2,000 pounds; the use of tons in measuring starships referred to *volume*: the volume of one ton of liquid hydrogen, or fourteen cubic meters, or two 1.5-meter squares on *Snapshot/Azhanti High Lightning* maps. This is actually a useful convention, or at any rate a not-improbable one: Since at least 10% and up to about 70% of a starship will, in fact, be liquid hydrogen — the fuel tanks — one can see the volume of a ton of hydrogen gradually becoming a unit of measure.

That changes the whole picture. Granted the computer may only mass a

few kilograms; nevertheless it must rest on a desk or something, so people can get at it. And you need a chair next to it for the operator to sit on. Look at the *Azhanti High Lightning* maps; the console would take up one square, the chair another. Bingo! One "ton" of computer.

Each additional terminal will require the same: room for the terminal itself, on a typewriter stand or something, and room for the operator. Probably each additional input/output device — each printer, monitor, free-standing piece of hardware and so forth — will require at least one square on the map, 1/2 of a "ton." You'll need desks for the programmers and operators, bookshelves for their references, containers for spare disks and tapes (or whatever is used in year 1107 of the Imperium) and so on.

Y'know, I think I could make a case for the *Traveller* computer being *not massive enough*....

... But I don't think I'll bother. The main point of this exercise is not really to completely exonerate the game's computers from the charge of unrealism. They may well be a poor simulation of the "actual" situation. All I intended to demonstrate is that they are not *necessarily* a poor simulation, that the rules are not a cut-and-dried failure on this subject.

Or, at least cause people to think harder about their objections to the system. Then maybe they'll come up with a better one.

PLANET PARAMETERS

by Paul Montgomery Crabaugh

Ever wonder how hard it is to walk around in the gravity of the planet your *Traveller* character just landed on? Or how many hours there are until sunup (if any)? Well, fret no longer. Here are six of the most useful tidbits anyone might need to know about a world (other than whether there's an atmosphere or not).

The main reference for all of the following is Stephan Dole's book, *Habitable Planets for Man* (American Elsevier, 1970).

Table first, then explanations:

Size	G	V _{esc}	P	Mass	O(t)	O(synch)
1	1	2	56	0.1	185	4900
2	1	2	40	0.1	145	7700
3	2	3	32	0.1	130	10100
4	3	5	26	0.1	115	12300
5	5	6	21	0.2	105	14200
6	7	8	19	0.4	100	16100
7	8	9	17	0.6	95	17800
8	10	11	15	1.0	90	19500
9	12	13	14	1.6	85	21100
10	15	15	13	2.4	85	22600

Size is the usual 2D-2 figure, expressing diameter in thousands of miles.

G is surface gravity in meters per second per second. Since one Earth gravity is 10 m/sec/sec, the given figure divided by 10 gives you the planet's surface gravity in "gees."

V_{esc} is escape velocity for the planet in kilometers/second. Normally no problem for characters' fusion-powered starships, but you never know...

P is the planet's rotational period in hours, if the

planet's rotation has not been retarded: the length of the day, in other words. More will be said later about the odd entry for a size 8 world.

Mass is the mass of the planet, relative to Earth. The lower three sizes are best described as "very small." If it is necessary to have a figure in pounds, by all means look it up. But the relative figure is the most useful.

O(t) is the period, in minutes, of a tight orbit (200 miles). A useful figure for planning pickups or surveys.

O(synch) is the altitude of a synchronous orbit in kilometers. A good place to be to maintain communications with a ground party. Once again, the planet is assumed to have an unretarded rotation; retarded rotations produce other altitudes.

Concerning retardation and the 15-hour period of 8000-mile-wide worlds: 15 hours, more or less, is how long the Earth's day would be but for the good graces of (mostly) the moon, which has been slowing our rotation down, bit by bit, over the eons. This phenomenon is called "retardation."

How common is retardation? Hard to say. Too much retardation for human taste is evident with Venus and Mercury; no retardation at all is observed for Mars, which is a good long ways from the Sun and has no moons worthy of the name, and is thus subjected to very little tidal stress.

For game purposes, unless there is some reason to believe otherwise (such as a world being stated to be the innermost of a system with a small star), assume that 50% (1-3 on 10) of the worlds encountered are not tidally retarded and thus have days of the length given on the chart. For others, add 1-36 (1D x 1D) hours to the rotation shown.

All figures given are very approximate and heavily rounded off. This is primarily because the size of the worlds as stated is not known except to the nearest thousand miles, a considerable amount of vagueness.

MASERS & CAMERAS

by Paul Montgomery Crabaugh

For spicing up your *Traveller* starships:

The Maser

Masers are microwave lasers. Actually, technically, a laser is a visible-light maser, to reflect the priority of invention. However, the term laser has become ascendant.

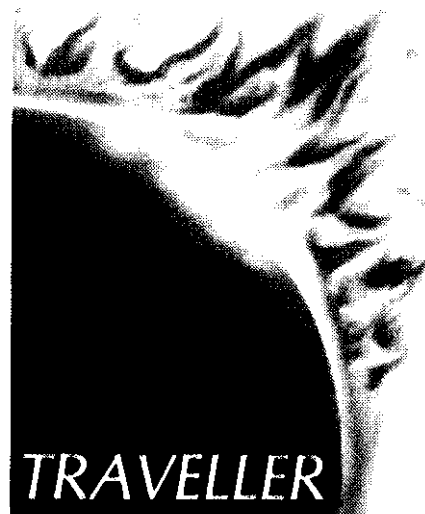
A ship-mounted maser cannon is not much of an offensive weapon, although at close (boarding) range it could have unpleasant effects on a person's nervous system. Maser cannons are intended primarily as defensive weapons, since a hit by a maser would tend to confuse electromagnetic sensors (such as radar) rather thoroughly.

A maser is similar to a beam laser in size, shape and so forth. It costs MCR

1.25, since it is not a commonly used item. It is not affected by sand in combat. If the target ship has a fibre optic computer, a DM of -2 is imposed to hit (actually, there is the same chance of hitting, but less chance of confusing the target).

A successful hit by a maser has the effect of imposing a -1 DM on the enemy's attacks for the next turn. This effect is cumulative; three hits by masers cause a -3 DM on all attacks made during the next turn.

For use with *High Guard* (either edition), compute the USP code, batteries and so forth as if for beam lasers. In attacking, masers function as beam lasers, but ignore all normal defenses (except the Black Globe Generator, if present). The maser attack is, however, required to "penetrate" the target's computer; use the Sandcaster defense table, substituting the computer rating for the Sandcas-



ter value. If the target has a bis model computer, add 1 to the defense value; if a fibre optic, add 2. Failure to defend reduces the target's computer rating by 1 for the next turn (essentially the same effect as with the Book 2/Mayday combat rules, but executed differently).

The Survey Module

For those of you who spend a lot of time poking around uncharted planets wondering what things are like at ground level, there is the Survey Module. The module is an array of cameras, side-scanning radar, IR cameras, telescopes and such, along with various support equipment, to gather the information needed to map a planet.

The Survey Module masses three tons and costs MCR 1. The three tons are fairly amorphous, being mostly free-standing consoles and the like, and can thus be fit into any three-ton volume aboard which has at least one exterior wall. The most common installation is in the erstwhile cargo hold of a Scout ship.

To operate the Survey Module requires one or two people possessing between them (one apiece) two skills: Forward Observer-1 and either Communications-1 or Electronics-1. Unskilled users can operate the equipment, but their surveys tend to miss little things, like active volcanoes. Or oceans.

A full survey requires that the survey ship remain in a pole-to-pole orbit for one local day. In cases where that may be inconvenient (for example, where solar tides have locked the planet's face with respect to its primary, so that one local day is also one local year), it is

usually possible to make one orbit, transfer to a slightly different orbit for the next pass, then a slightly more different orbit, and so on. This procedure is somewhat time-consuming (and fuel-burning); generally, forced-orbit surveys require one week and consume half of the maneuver fuel reserve.

Once the survey is completed, the information can be used to create a planetary map with something approaching 15-meter resolution. Creating the map can be done by a ship's computer, if it has the Interpolation program — inevitably sold separately. The program has a space requirement of 1 CPU unit and costs MCR 0.2. Writing the program from scratch requires Forward Observer-2, Computer-1, and a throw of 10+ for success.

The ship-mounted maser cannon is available at the same tech levels as the beam laser; the Survey Module is available at tech level 7.

Autocannon

One final suggestion, not calling for any additional rules but fairly unusual, and sparked by the earlier mention of using masers at boarding ranges: To save expenses and enhance surprises, a merchant ship might consider mounting autocannon instead of lasers and such in

its turrets. Autocannon, of course, would be worthless against a pirate ship itself, but could play merry hell with a boarding party in vacc suits, as well as providing welcome support on the ground if a fire-fight erupts around the ship.

A VRF Gauss Gun would be even more effective, but is larger; at two tons, it would require its own turret, and an over-large one at that, where the autocannon (0.3 tons) would fit neatly into the same slot as a missile or laser.

The effect of a maser cannon on personnel at short range? Well . . . assume that a hit reduces Dexterity, Intelligence and Education of the target by 1 each. Roll 7+ (DM for available medical skill) for said loss to not be permanent. A morale check must be made immediately, as well as a check for losing control in weightless situations. Roll 7+ (DM for medical skill again) to avoid blindness. After the immediate situation is over, throw 8+ (DM for medical) to avoid internal injuries and damage which will otherwise inflict 2 dice of damage to Endurance. Finally, throw 4+ to avoid instant death, no saving throw.

Don't have the time or interest required to individually shatter every component of whomever was foolish enough to cross your gunsight? Assume that the target takes 6 dice damage immediately.

THE MILLER MILK BOTTLE

by Marc Miller

Although the *Traveller* rules are rather complete, they do have a glaring omission in the equipment section, and indeed, it has not been filled in the *Journal of the Travellers' Aid Society Ship's Locker* section, either. This important piece of equipment is the milk bottle.

Milk bottles are glass (fused silicon) containers used to hold cow's milk for sale by merchants; less frequently (and depending on local animal presence), goat or other mammal milk may be sold instead. Milk bottles appear at about tech level 3 or 4 (supplanting larger metal containers) and do not occur past tech level 6 or 7, where they are replaced by waxed-paper or plastic containers.

Milk bottles are easy to find. They are always found in markets selling food-stuffs and sundries; they may be found on urban doorsteps in morning hours on a throw of 9+. At times, they are concealed in small cubical metal insulating lockers, so a search may be necessary. Milk bottles are rarely found in restaurants, except in the kitchen, where they may be obtained from refrigerators on a throw of 6+; otherwise, the restaurant utilizes a bulk-storage system.

Milk bottles have a variety of uses.

They may be employed as clubs, breaking to form daggers after the first blow is struck. The fact that they are glass makes them excellent as cutting tools, to sever cords which bind hands, to slice tires, or to cut cloth or leather. Broken glass can be used to make a simple alarm system: The glass is spread on the floor, and if intruders approach, the crunching sound gives them away. If the intruders are barefoot, their screams of pain add to the effectiveness of the alarm.

Correctly used, a milk bottle can perform as a signal mirror for code (heliograph) transmissions or to blind an unsuspecting enemy. The sparkle of a reflective glass bottle can be used to attract (or sometimes it repels) birds, small animals, or other beings. At times, shards of glass can be traded to pack rats or other scavengers who occasionally accumulate truly valuable things. It is advisable to convert such shards to beads, however crudely, by heating the edges to dull them; in addition, their value is enhanced by piercing them (a laser rifle works nicely) for stringing.

Milk bottles serve admirably for their original intended use: carrying liquids. They can hold water or other refreshments, or can be used to carry fuel.

The liquid-carrying ability can also be

used to create weapons. Since glass is impervious to most acids, the acid attack comes immediately to mind. Throw 8+ for 5D damage; otherwise only 2D damage. Allow DM -4 if the victim has Dexterity of 9+, DM +3 if the attack is made with surprise. Throw separately 9+ to blind the victim (permanently unless tech level 8+ eye transplant is available) regardless of other hits or wounding. Another weapon possibility is the firebomb. When thrown, the firebomb will shatter and burst into flame covering an area 15 meters in diameter. All within the area will receive hits amounting to 2D per turn; saving throw of 7+ (DM +2 if Dexterity 9+) is allowed. In addition, DM +2 on saving throw for heavy clothing or personal armor is allowed; a firebomb will not affect the wearer of battle dress unless an exact 12 is thrown.

Milk bottles can be a source of income, too. Because of their innate value, they are generally provided as refundable/returnable containers. At tech level 3 the refund price for such containers is one cent (Cr0.01); this effectively doubles at each succeeding tech level, up to 20 cents at TL 7. In dire circumstances, a door-to-door search for bottles (empty or full) to return can provide enough funds for small necessities.



by Dennis Matheson

TRAVELLER Books 4 and 5, *Mercenary* and *High Guard*, gave players a set of expanded tables for creating Army, Marine, and Naval characters. Past issues of DRAGON™ magazine have contained new tables for the Scout and "Others" services. All of these expanded tables have the effect of putting Merchant characters at a severe disadvantage. In order to give all services equal time, the following system is presented to allow the Merchant service to compete on the same level as everyone else.

Enlistment: Enlistment is handled as in Book 1.

Terms: Each term is broken down into four years, with the actions for each year being resolved separately. The first year of the first term is used for basic and advanced training. During this time, each character chooses the Merchant branch he wishes to enter (Trader, Ship's Complement, or Support). He receives the skill Admin-1, plus one skill rolled at random from the Merchant Occupation Specialty table corresponding to the branch he chose. If the character is from a planet with a Technological Level of 12 or greater, there is a +1 DM to this roll. Once the year of basic and advanced training has been completed, the assignment resolution procedure begins normally.

General Assignment: At the start of each year, the character must determine his assignment for that year. He first rolls one die on the General Assignment Table to determine if he will be in a command or crew position. If he is already a commissioned officer, he may elect to take a -1 DM on this die roll, while if he has an Education of 8 or better, he may use a DM of +1 on this roll. A result of "Command" indicates that the character has been placed in charge of some part of the mission. "Crew"

indicates that he is simply part of the crew, with no command functions, and "Special" indicates that the character is involved in some activity outside the realm of normal merchant functions and must roll on the Special Table to determine his assignment for this year.

If a character has already been promoted to Captain, treat all "Crew" results as "Command." When a character rolls "Command" for the first time, he is automatically commissioned as a Fourth Officer, and is given the rank of 01. This reflects the fact that Merchant Captains will often make field commissions for purposes of having a leader for a landing party or trade station, and such commissions are usually honored when the ship returns to port.

Specific Assignment: After determining a general assignment, the character then rolls two dice and notes the result from the Specific Assignment table. He then proceeds to the Assignment Resolution Table.

Assignment Resolution: The first line on this table represents the number the character must equal or exceed on two dice in order to survive the assignment. The character is allowed to use a +1 DM on this roll if he has any MOS skill of level 2 or higher.

The second row under each column heading is the number that must be rolled in order to be promoted to the next rank. A character may only be promoted once per term, and may not be promoted at all until commissioned.

The last row gives the number which must be rolled in order for the character to receive a skill for that year. The character may roll for a skill on either his MOS table, or on the Merchant Life table — one of three Skill Tables provided below. If his general assignment was "Crew," a character may roll on the Crew Skills table. And, if his general assignment was "Command," he may roll on the Command Skills table.

Re-enlistment and Mustering Out: Performed as in Book 1.

Merchant Occupation Specialty Table

Die	Trader	Ship's Complement	Support
1	Brawling	Gunnery	Vehicle
2	Gambling	Jack-o-T	Steward
3	Streetwise	Vacc Suit	Mechanics
4	Bribery	Computer	Electronics
5	Forgery	Engineering	Gun Cbt
6	Admin	Navigation	Vacc Suit
7	Computer	Pilot	Admin
DM+1 if TL12+			

General Assignment Table

Die	Result	Die	Result
0	Command	5	Crew
1	Command	6	Special
2	Command	7	Special
3	Crew	DM -1 if Officer	
4	Crew	DM +1 if Education 8+	

Commissioned at rank 01 when "Command" is rolled for the first time.

Specific Assignment Table

Dice	Trader	Ship's Comp.	Support
2	Smuggling	Smuggling	Estab Rt
3	Sub Run	Sub Run	Sub Run
4	Sub Run	Sub Run	Ships Dfnce
5	Trading	Estab Rt	Psng Run
6	Trading	Trading	Trading
7	Training	Training	Training
8	Trading	Trading	Trading
9	Estab Rt	Trading	Maint
10	Maint	Maint	Maint
11	Trading	Mail Run	Security
12	Mail Run	Ships Dfnce	Mail Run

Trading: buying and selling of cargoes.

Estab Rt: establishing a new trade route between two planets.

Sub Run: carrying subsidized cargoes.

Mail Run: carrying mail.

PsngR Run: carrying passengers.

Smuggling: carrying illegal cargoes.

Ships Dfnce: defense of ship while under attack.

Security: ship's internal security.

Assignment Resolution Table

Training Maint. Smuggle Sub Run Trading

Survival	auto	auto	7+	4+	4+
Promotion	12+	none	10+	11+	9+
Skills	6+	9+	5+	7+	7+

Estab Rt Mail Run Defence Security PsngR Run

Survival	5+	3+	6+	5+	4+
Promotion	8+	12+	7+	9+	10+
Skills	6+	8+	6+	7+	7+

Skill Tables

Die Merchant Life

- 1 Gambling
- 2 Brawling
- 3 Streetwise
- 4 +1 Str
- 5 +1 Str
- 6 +1 Dex
- 7 +1 Int
- 8 Forgery

DMs+1 if rank 04
+2 if rank 05+

Crew Skills

- Vehicle
- Gunnery
- Steward
- Mechanics
- Electronics
- Gun Cbt
- Medical

+1 if Ed 8+

Command Skills

- Ship's Boat
- Navigation
- Engineering
- Computer
- Pilot
- Jack-o-T

Special Assignment Table

Die Result

- 1 Cross Training
- 2 Trade Station
- 3 Economics School
- 4 Ship Systems School

Cross Training: The player may roll one skill from any MOS table other than his own.

Trade Station: The character has been posted to a Trade Station, and receives an automatic Admin skill.

Economics School: Roll 4+ for each of the following: Admin, Streetwise, Bribery, Forgery.

Ship Systems School: Roll 4+ for each of the following: Pilot, Navigation, Engineering, Computer, Medical.

Ship Defense School: Roll 4+ for each of the following: Gunnery, Gun Cbt, Blade Cbt, Zero-G Cbt, Vacc Suit.

Diplomatic Attache: Character assigned as diplomatic attache to another service, gets automatic promotion, and may pick next assignment (but may not pick another Diplomatic Attache assignment). Roll 1 die (ignore 5's); consult Draft column on Book 1 character generation tables to find service assignment. Character gets one skill from each of the four skill tables for that service.

Ship Command School: Roll 5+ for each of the following: Pilot, Navigation, Computer, Engineering, Medical, Streetwise, Admin, Bribery, Forgery, Ship's Boat.

Table of Ranks

01-04	Fourth Officer	Traveller Rank 1
05-06	Third Officer	Traveller Rank 2
07-08	Second Officer	Traveller Rank 3
09	First Officer	Traveller Rank 4
10	Captain	Traveller Rank 5

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Filling in SKILLS

Experience, service-switching make *TRAVELLER* more ability-oriented

by Jon Mattson

The *Traveller* game system, over the passage of years, has metamorphosed in many ways. Not only has it developed and changed noticeably with the addition of various supplements, but it has also been transformed to suit the style and creativity of each individual referee. *Traveller* is very open-ended in this respect: It can easily be added to or changed to come up with one's own version of the "ideal" science fiction role-playing game.

When all is said and done, the thing which has probably undergone the most transformation in my campaign without changing the premise of the system greatly is the prior service and skills procedure. The skill system in the *Traveller* rules is a double-edged blade: On one hand, it is easy to utilize and fits very well with the rest of the game system (and many other science-fiction game systems, for that matter) but, on the other hand, when used directly as is, it can be a source of several problems and much misuse. The ideas presented below are an attempt to solve some of these problems.

Experience

Probably my biggest complaint with the *Traveller* system right from the beginning was its lack of some form of experience system. Basically, once a character is generated with his prior service and skills, he changes very little, if at all, through the course of his adventures. Since the player cannot improve his character, one of two things often occurs: Either he becomes somewhat disinterested in the character after several adventures (certainly the worst possibility in role-playing games, which depend for success on a player's ability to relate to his character), or his motives quickly turn from improving himself to improving his financial situation (which also usually results in the discontinuation of the character if and when he becomes rich and his player gets bored).

I have experimented with several systems of "learning by doing" experience, trying to keep them simple, with a minimum of paperwork and an optimum amount of realistic playability. The following system seems to work the best and seems generally the most acceptable to players.

During the course of an adventure, whenever a player's character uses a skill successfully in a trying situation (hits an opponent in combat, flies a ship through hazardous conditions, etc.), he notes this on his character sheet (a small tick mark for each successful usage pencilled in beside the skill listing is the easiest way to do this). Then, after the adventure, when he has time to relax and learn from his experience, the character may attempt to improve the skill in question by one level. This will require a number of days of practice equivalent to the number of the skill level being practiced for. (For example, to advance from level 2 to level 3 in a skill area takes 3 days of practice.) A maximum of two skills can be practiced in this manner at one time. At the end of this practice period, the player makes an experience roll to see if he has improved the skill by one level.

The experience roll required is equal to:

$(3 - \text{Present skill level}) + (\# \text{ of times skill was used})$

The player must roll this number or less on 2d6 to successfully make the experience roll. A DM of -1 is applied if the character's intelligence is 8 to 12, and a DM of -2 if it is 13 or more. The referee may also award any other reasonable DMs he sees fit (some skills would be easier to increase than others). In any event, a roll of "2" is always successful (as long as the skill was used at least once since it was last raised), and a roll of "12" is always failure, regardless of DMs.

Example: Jor Roger's, galactic merchant with an intelligence of 9, uses his Bribery skill (present level of 2) three times during an adventure. Thus, his basic roll is 4 or less to learn from experience (3 minus 2 plus 3). He rolls a 5, which would normally be a failure, but subtracts one from the roll because of his high IQ, to get a modified result of 4. He has successfully made the roll and increases his Bribery skill level to 3.

Players should note that *when* they take the experience roll is totally at their option, as long as they take the required practice time just before it. Thus, a player could save the roll for several adventures, hoping to increase his chances of making it by using the skill more often (although getting fewer total rolls because of this). There must always be at least one adventure between each roll, and rolls cannot be "saved up," although the chance of making any single roll can be increased by waiting as noted above. (Waiting for three adventures does *not* entitle a

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player to three rolls, only *one* roll with a better chance of success.)

Optional combat rule: Referees may rule that for combat skills (only), the "number of times skill was used" should be halved (rounding fractions up) in the above formula. Otherwise, it may become too easy to assure oneself of improving a combat skill just by participating in one long battle. Or, instead of doing this, the referee may rule that, regardless of the number of times a character hits an opponent in combat, each battle (not each hit) counts as only one use of the skill (and then only if the character hits at least once). Either method is acceptable, but the referee should be consistent.

Limitations on skills

When judging how adept a character is with a given skill, the referee must make some kind of decision about just what each skill level represents. In my campaign, I have rated each skill level as follows:

Novice, skill level 0: The character has no real knowledge of the skill in question and may receive certain penalties (especially in combat) because of this, as noted in the *Traveller* rules:

Inexperienced, skill level 1/2: The individual may have some vague knowledge of the skill in question, but has no formal training in it. This level will not give him bonuses, but will prevent him from receiving non-proficiency penalties in combat, as noted in *Traveller*.

Above average, skill level 1: The individual has an above-average knowledge of the skill in question, enough to use it in an elementary manner.

Knowledgeable, skill level 2: The individual has a good background knowledge of the skill and can use it fairly well (with a reasonable bonus) in most situations.

Adept, skill level 3: The individual has a good back-

ground knowledge of the skill in question and has mastered some of the more intricate workings of it. He is qualified to obtain a job using this skill.

Expert, skill level 4: The individual has profuse knowledge of almost all areas of the skill in question and has no difficulty finding a job using this skill if one is available.

Master, skill level 5 or higher: The individual is a veritable encyclopedia of knowledge on the skill in question and understands its most intricate workings with ease. He will be a leader in any field involving the use of this skill and may well be much sought after. He does not need to look for jobs using this skill; they are *made* for him.

Obviously, when considering skills in this light, there must be some realistic limitation on how high a skill level can be increased, either through the prior service tables or through experience (if the experience rules above are used). Thus, the following rule:

Once a character begins increasing a skill beyond level 5, it will no longer go up by a full level for each increase. Instead, it will increase by a fraction. To move from level *x* to level *y* when *x* is 5 or more will take a number of steps, according to the formula:

$$\text{Skill Increase} = 1 / (x / 2)$$

The amount of level increase is the reciprocal of one-half the lower level, *x* (fractions rounded down when halving). This means that the number of steps needed to rise from one whole-numbered level to the next one increases as the skill level increases.

Thus, a character increasing a skill from level 5 to 6 would only add one-half a level per increase; the reciprocal of 2 (half of 5, rounded down) is 1/2. Going from level 5 to level 6 would take two steps: going from level 6 to 7 and from level 7 to 8 would take three steps, and so on. The fraction of increase is noted on the character sheet each time one is achieved, but the improvement

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has no effect on the skill's usage until it is increased to the next higher whole number.

Jack-of-all-Trades

"Jack-of-all-Trades" is without a doubt the least used and yet most misused skill in *Traveller*. More often than not, players who attempt to use their Jack-o-T skill will be met with one of two reactions from the referee: He will either let them get away with murder ("Well, you do have Jack-of-all-Trades-1 so I guess you could fix the computer while piloting the ship at top speed through the asteroid belt..."), or he will ignore the possible effects of the skill entirely ("Aw, that doesn't mean you can do anything..."). For those referees who cannot decide how to use this skill arbitrarily, I offer the following system.

When a character wishes to use his Jack-o-T skill to assist him in an endeavor, rate the difficulty of the task at hand on a scale of 1 to 3 with 1 being the least difficult (fixing a slightly damaged radio, driving an unusual vehicle) and 3 being the most difficult (piloting a ship through an asteroid belt when your pilot skill is only 1, or piloting a ship *at all* if your pilot skill is only one-half). Subtract this difficulty rating from the character's Jack-o-T skill (minimum result of zero), and the remaining number represents the effect the Jack-o-T skill will have. This number can be used in one of three ways, depending on the situation:

1: If the player has skill of at least level 1 in the field in question (for example, if he is trying to shoot down enemy ships and has Gunnery of at least 1), the number can simply be added to this skill level temporarily.

2: The number can be used to modify any dice rolls involving the situation to which the player has applied his Jack-o-T skill.

3: The number can be used to represent the chance out of 6 (i.e., this number or less must be rolled on 1d6 to succeed, and a roll of "6" is always failure) that the character will be able to gain the advantage in a given situation. This generally results in the character temporarily acting as if he had a skill level of 3 in an applicable skill. For example, for a character trying to pilot a ship through an asteroid belt, the applicable skill would be either Pilot or Navigation, at the referee's discretion.

The referee must decide which of the above three methods of applying the modifier should be used in each situation.

Multiple services

I have often wondered why a character cannot, after leaving one service, join another one. In terms of playability I can understand this rule to some extent: A character who goes into more services will get too many skills. Yet, all things considered, this argument doesn't hold much water: If it is all right for a character to go into one service for six terms and get a large amount of skills there, why shouldn't he be able to go into two or more services for less time and get an equal number of skills? In terms of realism, age must certainly be a factor, as must training. A 50-year-old man will obviously have trouble getting into some services (such as the military), and a barbarian could not usually become a doctor. But why couldn't a young belter become a merchant or a scout?

Obviously, if multiple services are to be allowed, they must be limited to certain combinations for realism and playability, but, equally obviously, a character should not be restricted to one service all of his life.

The table below lists which services can be combined and under what conditions. These combinations have, for the most part, been playtested and work quite well; however, the referee may suit his own views. Note that only services from *Traveller Book One* and *Citizens of the Imperium* are included here (although Army and Marines are considered to be as of Mercenary, and Navy is considered to be as of *High Guard*). Also note that, using this system, it is possible for a character to enter even more than two services (though age limits him to one or two terms in each); in this case, all Enlistment DMs are cumulative.

Service	Possible prior services	Max. age	Enlistment DMs
Merchant	Military	22	-1
	Pirate	22	-2
	Belter	26	0
	Bureaucrat	22	-1
	Rogue	22	-2
Scout	Navy	26	+1
	Merchant	22	0
	Belter	22	0
Other	Rogue	26	0
	Barbarian	22	-1
Pirate	Any*	22	-1
	Navy	22	+1
	scout	26	0
	Other	22	0
	Merchant	26	+1
Belter	Rogue	26	+1
	scout	26	0
	Merchant	22	0
Diplomat	Educated	26	-1
	Bureaucrat	30	-1
	Noble	34	0
Doctor	Educated‡	30	0
	Navy-Medical Branch	38	+2
Bureaucrat	Educated		0
	Noble	+1	+1
Rogue	Any*	26	0
	Other	30	+1
	Pirate	30	
Noble	Any*	22	-3†
	Diplomat	26	-1†
	Doctor	26	-1†
Scientist	Educated	22	-1
	Doctor	30	0
Hunter	Army	26	0
	Barbarian	26	+1
	Any*	22	-1

* — Except for other services listed specifically under the same heading.

‡ — Requires one term spent at a medical school (maximum age for enrollment is 26). This is treated in all respects like Navy Medical School (*see High Guard*).

† — Assume that the basic Enlistment Roll for Nobles is 2+, but a minimum Social Standing of 10 is still required.

Military is a group heading which refers to Army, Navy, Marines, and Scouts.

Any is a group heading which refers to all services except those also listed under the same service heading.

Educated is a group heading which refers to any service which is able to receive at least "+1 Education," either on its skills table or as a mustering-out benefit, but which is not already, listed under the same service heading.

Example: Flash Indapan, after having spent two terms in the Scouts, fails his re-enlistment roll and is given the boot. He decides that he would like to become a Belter now and try to make his fortune mining asteroids. From the table under the service heading of Belter, it is found that a Scout can indeed become a Belter as long as he is 26 or younger. Flash is 26, so he has no problem there. He attempts to make his enlistment roll with no modifications ("0" under *Enlistment DMs*), and manages to enter the new service. He would then continue in the Belters normally as if he had entered that service in the first place, except that he already has 8 years of experience behind him.

Exonidas Spaceport

A Traveller™ adventure

No spaceport can ever be said to be typical; these facilities have more individuality than many cities. When spaceports are under consideration, however, Exonidas Spaceport on the planet Horltheur is among the better examples of a well-planned port adapting to unusual circumstances.

Horltheur is the third planet of the main-sequence star Taledde, a rather ordinary star of spectral class G3. (For a graphic display of the system, see Figure 4 on page 41.) Of the seven planets and many asteroids orbiting Taledde, only Horltheur is extensively settled. Coad, its satellite, boasts a significant base, however, and Donade and Corrade, two Mars-like planets in an outer orbit, have permanent scientific colonies. There is a technologically advanced mining colony about the gas giant Colosse that slings compressed liquid hydrogen toward Horltheur. The Lesser Ring, similar to the asteroid belt of Sol's system but slightly less dense, also is host to several standing colonies.

Horltheur is a world of average size, composition, atmosphere, and hydrographic percentage. It has good deposits of most strategic minerals, and its indigenous life is richly varied, with beasts, birds, and sea creatures in orders of complexity up to, but not including, true intelligence.

The UPP of A-866A78-F applies to Horla, the smaller of the world's two major continents. The other continent, Theury, can best be described by the UPP of D-866500-0, having recently undergone a cataclysmic war.

By the time the planet's technology had advanced to the point where it could destroy itself, each of the two continents had fragmented into opposing nations with conflicting ideals. The crusading spirit rose, and nations tried to impose their solutions upon their neighbors. Each of the Theuran nations was jealous and proud of its sovereign status, unwilling to unite; ultimately, they all found equality in annihilation.

Destroyed along with every important

city on the continent was the Tatheur Great Port, a spaceport that was essentially the property of the interstellar government (as is Exonidas); the loss was resented, to say the least, by the government's leaders.

Horla continent escaped untouched by the weapons of the short but deadly war. Its fifteen nations were shocked into dropping their own squabbles by what they monitored as it took place across the ocean. Right after the war all progress, all business, all activity, on both the ruined continent and the still-rich one, stopped. The world was numbed by the disaster. Those in power knew that the full effects of the war were yet to be felt. Within a couple of days, the realization came that three billion people had died, and tens of millions more were destined to die as well unless a quick and efficient rescue effort was mounted.

Into this hushed atmosphere came a great fleet: one of the interstellar government's first-line Battleships, along with enough support craft to take on an empire. The fleet was led by Grand Admiral Jennifer de la Noue. First on her agenda: Rescue the people who could be rescued, and save what could be saved. Second was the laying of blame, and third the job of determining what changes needed to be made to punish those at fault and prevent a recurrence of this disaster.

With her was Adrian Redmond of the interstellar government's Department of Commerce, aboard an electromagnetic effects and communications ship that was a flying switchboard of tremendous capacity. His job was to find a way to restore the economy of a world more than half destroyed.

Directly on the site of the ruined capital city of Tatheur, one of the Theury nations now dead, de la Noue's fleet set up Emergency City, a class D spaceport, to aid survivors and treat the wounded.

On the continent of Horla lies the nation named Dirla, and within that the city of Exonidas, Dirla's capital. The most populous of the fifteen Horlan nations,

Dirla wears its great city (pop. 950,000) like a crown. Now, With Theury continent dead, Exonidas, with its huge spaceport, is the biggest city on the planet; the port is (by default) the center of all off-planet activity of any importance.

Lying at the northern end of a long bay on the Sea of Lamps, Exonidas Spaceport is actually the land-bound half of a two-element port facility. The other half is an orbiting structure whose path keeps it always over the longitude of Exonidas City. Twice each planetary day, the High Port is directly above the Down Port. The orbit, at a constant altitude of 38,500 kilometers, pulls the High Port around the world at a velocity of 3.3 kilometers per second. The same orbit is a convenient parking spot for cargo and for ships. This is the orbit that the fleet in presence now occupies,

FIGURE 1: EXONIDAS DOWN PORT

A: Spaceport Terminal. See Figure 2 for detailed description.

B: Main Boost-Grid. The boost-grid is the heart of any spaceport with the technological base to support one. At older ports, ships must land under their own power, relying upon pilot expertise to avoid mid-air collisions or dangerously clumsy setdowns. Here, the boost-grid can reach out with gravitic force and either ease a ship to its landing pad or boost a ship from the ground into orbit. Using power from the main city power reactor (not in area of map), the boost-grid can focus gravitic energy with micrometer precision.

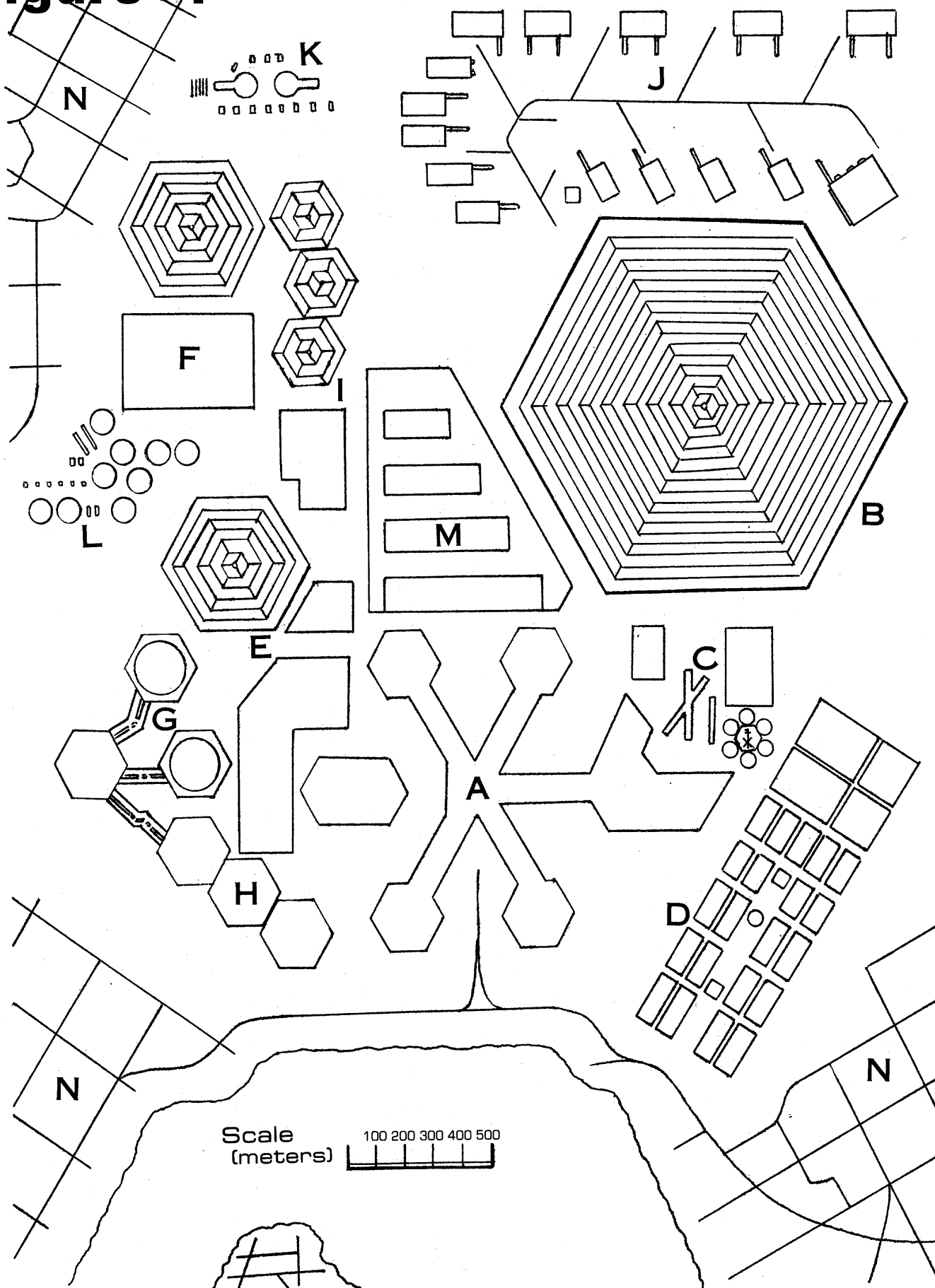
The grid is composed of tungsten-steel rails 10 cm wide, set into the flat surface of the landing field in a precisely defined pattern. The energy conducted along these rails is perfectly controlled by the main computers in the Port Authority building.

Any ship of up to 7,500 tons that is capable of landing on the field can be lifted up into high orbit, or can be brought down out of orbit and landed gently on the field. The point of focus can be moved by computer control in such a way as to take hold of objects as far as sixty degrees from the vertical line through the center of the grid; the range, or effective "reach," is 50,000 kilometers.

The main advantage of the boost-grid is that the ship being boosted into orbit has no need to use its own drives, or

by Jeff Swycaffer

Figure 1 Exonidas Down Port



indeed even to have a working drive. The grid can, for instance, boost prefabricated sections of a larger ship up into orbit to be assembled in weightlessness. In general, the grid is used to lower shuttles and small spacecraft that nevertheless do have a backup drive for use in case of grid failure. The boosting and lowering of cargo and passenger containers without drives is not considered safe enough to justify the economy of such a measure.

The fuel saved by a ship using the grid instead of its own thrusters is on the order of one ton of fuel times the ship's drive number times the ship's mass in kilotons (but always a minimum savings due to use of the grid of one ton of fuel). Thus, a 5,000-ton ship using 2G drive to escape the world's gravity would use ten tons of fuel, which could be saved by use of the boost-grid.

The grid has 100 channels, meaning that up to 100 ships can be simultaneously handled by the grid, so long as the total tonnage being boosted does not exceed 7,500 tons. This multi-channel capacity helps cut down the average waiting time for use of the grid.

The procedure for a small ship — a Scout, for example—taking off from the grid would be as follows: After final approval for takeoff is received from the Port Authority computers, the ship, under its own power, flies up from its current docking bay (location M, see text below) until it is within the cone of the grid's effectiveness. At an altitude of about thirty meters, the gravitic focus of the boost-grid is aligned upon the ship, and a gentle force begins to push it away from the planet, while the ship's own maneuver drives are throttled back to an "idle" setting. The grid has the precision to release the ship either into an escape orbit, any of a number of closed orbits, or exactly into the orbit of the High Port. For more on the High Port and its own boost-grids, see below.

C: Airport and Heliport. This all-in-one transportation center has an international airport, a national heliport, a train station and a subway terminal.

D: Headquarters and home location of the 119th Heavy Marine Division. This division is a regular unit in the military of the interstellar government, and is based here with the permission of the Dirlan nation. Although Dirla is the host nation to the Exonidas Spaceport, the port area itself is considered to be legally a part of the interstellar government. Relations are cordial, and the right to base the division here was freely given by the Dirlan government. The 119th supplies the spaceport with security personnel and can provide riot-control troops if needed. At this time, only one of the division's four regiments is based here; the other three are working to clean up the disorder on Theury continent.

E: Naval Base with military boost-grid. This smaller but stronger grid is run off an independent power supply, as are all of the military installations at the spaceport. This grid also has 100 channels, and can boost loads totaling 10,000 tons at one time; despite this, the military commander here prefers to, purchase power from the city and use the larger, public grid in Peacetime, because of the greater computer power (hence, less chance of a crash) available to the civilian authority.

F: Scout Base with military boost-grid. This grid is identical to the Navy's grid. Normally, a force of 30 Scouts is based here, most of which would be in high orbit at any given time. Currently, due to the attention being paid this planet in its unusual circumstances, 48 more Scouts are attached to the fleet in orbit; this base supplies their needs as well.

G: Energy reactor. This reactor supplies emergency power to the entire spaceport, and all power for the military bases.

H: Fuel storage. Most of the fuel for planet-based energy production comes from the system's gas giant, Colosse. It is skimmed, refined, and compressed in facilities in orbit about the gas giant, then shipped toward Hortheur in huge, free-falling fuel canisters. At the High Port, this fuel is pumped into great fuel tankers which are lowered by the boost-grid to the surface to be unloaded. The overall benefit seems marginal: roughly a thirty-five per cent savings in fuel, considering what is gained and what is used to get it into storage. But multiplied by the thousands of ships and tens of thousands of cargo shuttles that yearly visit the port, the savings are substantial.

I: Fighter Base. While most of the in-system Fighter strength is based at the High Port, this base has a portion of the spaceworthy Fighters and is also an Aircraft base. Currently, 200 Fighters and 700 Aircraft are based here. While spaceworthy Fighters must be made to maneuver in vacuum, and to operate as well in any atmosphere, aircraft, specifically high-performance jets, can be tailored to the planet's air. The result is that many Aircraft can outfight Fighters as long as the battle is limited to the lower atmosphere. This base was built with that fact well in mind.

J: Construction Yards. The yards here, with direct access onto the landing field and boost-grid, have a total construction capacity of 6.8 million tons, limited primarily by the boost-grid's capacity of 7,500 tons. The yards are generally involved with building Scouts, Merchants, and Colonial Cruisers for resale; larger ships are not generally under construction at any given time.

K and L: Planetary Defense Sites. The batteries of heavy lasers and rapid-fire missile launchers based here are situated in heavily armored combat wells.

The city has many other such sites.

M: Hangars and Storage. The hangars have the capacity to house two million tons of spacecraft and shuttles, plus eight million tons of cargo.

N: Exonidas City. The city, its population temporarily (at least) swelled to more than one million by the influx of refugees, soldiers, and fortune seekers wrought by the war, is a nexus for communication and transportation of all types; phones, electricity, and broadcasting facilities are among its strong points, as are all modes of ground, air, sea, and space transport.

FIGURE 2: SPACEPORT TERMINAL

Although Figure 2 (facing page) only shows one level of the five-level building, the levels are all laid out in similar fashion. Level 4 is the highest-class, with the most expensive shops and most competent businesses. (This is not to say that Level 1, with the most approachable and inexpensive places of business, is "low class." Far from it.)

In Figure 2, general areas of interest are labeled with letters, followed by a number which designates the level, unless all levels are laid out similarly with respect to the function, in which case the suffix "-all" is appended. Specific offices, shops, or other items of interest will be labeled with a number for reference, and a number to show the level. (See also Figure 8: A typical office suite.)

A-1: Main Entrance. The road loops close to the entrance, with automatic parking service in nearby underground garages.

B-1: Terminal services and customer service counters. Ticketing and weigh-in is handled here.

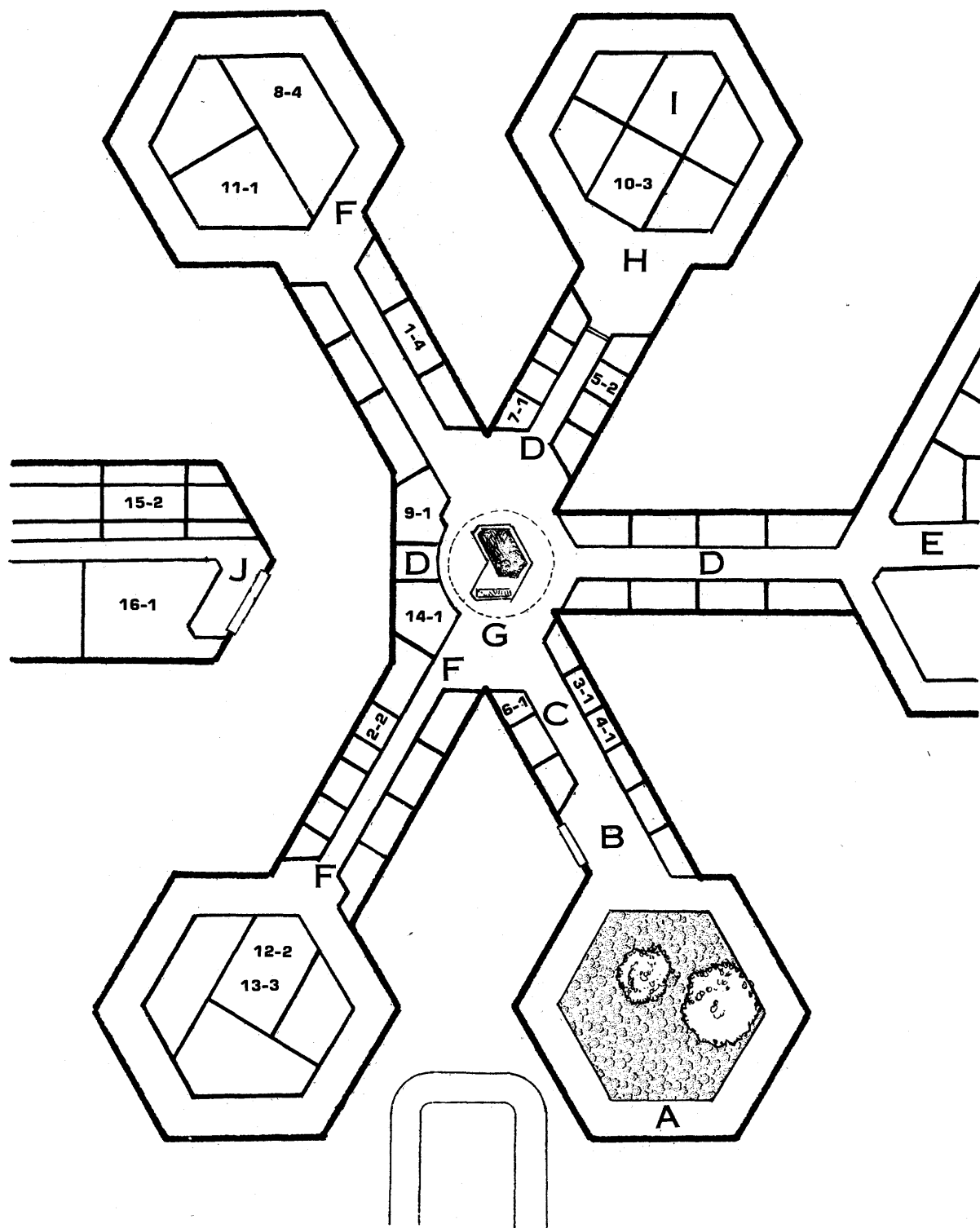
C-1: Portmaster's Representative. In effect, a high-class advertising agency for the interstellar government. Maps, insurance, and miscellaneous services can be had here.

Currently working out of this office, using a false name and papers, is Inspector General Robert Lawrence of the Interstellar Port Authority. His mission is to investigate the feasibility of ending the planet's political independence by absorbing it into the domain of the interstellar government.

D-all: Shops. Always within easy walking distance in these areas are restaurants, gift shops, services (barbers, information booths, rest rooms), luggage, clothiers, jewelers and watchmakers, pharmacies, travel agencies, stores for sporting goods and supplies, military recruiting offices, and a large establishment belonging to the Travellers' Aid Society. Several individual shops will be described below. See also the note on area F below for details on room layouts.

E-1: The International Airport. This is one section of the transportation complex described in area C on Figure 1.

Figure 2 Spaceport Terminal



Activity in this area of the complex is much less than normal, now with far fewer travel sites left on the planet.

F-all: Businesses and Offices. Shipping brokers in abundance operate here, as do resale brokers, importers, manufacturers, shipping line headquarters, and mercantile guilds.

Note: the divisions and lines shown on the map are those between larger sections of rooms; the walls portrayed are the permanent, load-bearing walls. Each of the "rooms" shown in Figure 2 is actually a suite of rooms or shops. The average business-office suite will be of this configuration: Entrance is through a large, lockable plate-glass door, either a swinging or a sliding type. Reception areas, work areas, and conference cubicles might be separated by small, flimsy screens, while file rooms, computer rooms, and meeting rooms might be separated by more permanent walls (which do not show on the floor plan). The floors are quite thick, made of perma-concrete and reinforced with structural steel. The ceilings; however, are often mere panels of decorative material at a height of 2½ to 3 meters, somewhat lower than the full 4-meter height of the main ceiling that is the floor of the next higher level. The hollow space between the ceilings is often filled with piping, wiring, and air-conditioning conduits.

(Several years ago, noted criminal Echel Anstove escaped capture by crawling through such a space with enough silence and dexterity to avoid his pursuit. The feat was unknowingly duplicated by the then-hunted Navy Captain Athalos Steldan on the world Chirkun.)

G-all: Open Area. On the second through fifth levels, the area inside the circle of dashes is open to the first level. On the first level is a planted area, styled as an indoor garden.

H-1: Security Gate. Tended at all times by a small but efficient 119th Division Marine detachment, this gate has a very secure weapons detector.

I-all: Observation Area. On the first level, this is an open waiting area where passengers prepare for imminent departure. On higher levels this area is an extension of the shopping promenade, with an observation deck overlooking the boost-grid.

J-1-3: Port Authority Building. Spaceport Authority Kevin Munrow, and his flight controllers, computers, radio traffic controllers, and other staff are here.

The Port Authority (or, technically, Commissioner of the Port) is a member of the Commerce Department, and therefore subordinate to Adrian Redmond. From working with the local planetary authorities as long as he has, Portmaster Munrow has developed a great deal of respect for Dirlan policies. He does not favor forcing the world into subservience to the interstellar government.

The Port Authority computers are roughly equivalent to three model/g-fib computers; their main purpose is to maintain a clear and free airspace.

Area 1-4: The offices of Dentos, Cahn, and Cahn, shipping and resale brokers. For *Traveller* purposes this is a +4 broker. Approaching a clerk of this office with even a hint of an unsavory or illegal deal is to invite immediate report and arrest. The brokers here have an almost uncanny reputation for being unbribeable, incorruptible, and, in business dealings, savage.

Area 2-2: S. Grimaldi, shipping and resale broker. Equal to a +3 broker. Criminals might find a warmer reception here than at Dentos, Cahn, and Cahn, but be warned: S. Grimaldi will play both sides of any fence. If reselling hot cargo turns out to be unprofitable, blackmailing the seller might not be.

Scattered throughout the terminal are +2 and +1 brokers of any stripe, from struggling and honest to filthy rich and totally criminal.

Area 3-1: In a visible spot stands the recruiting booth of the Turga Lancers, a mercenary regiment active on this world. The Lancers are carving out a fledgling empire in the ruins of Theury continent, across the ocean; the appeal of so much untenanted real estate was too much to be resisted. As much as the interstellar government and the Portmaster resent such an operation, no laws are being violated, and thus Commissioner Munrow is unable to legally evict the Lancers' recruiters.

Area 4-1: Drake's Slashers, another mercenary regiment, has a recruiting booth here. The Slashers, unlike the Turga Lancers, are building their empire on a foundation of good will. Where the Lancers, a heliborne unit, are conquering wherever they can, the Slashers, a heavy armor unit, have mobilized in what is basically a rescue mission, bringing food, supplies, medicines and medical aid, and most importantly order, to the survivors of the war on Theury. In exchange for the relief the Slashers bring, the survivors are all too glad to legally cede great estates of land that are currently useless to them in any case. Whether or not these contracts bear the force of law is an issue the Slashers feel will be decided in their favor by their prowling hoverships.

See Figure 9 (on page 48) for the current zones of operation of these and other military units.

Area 5-2: Hansen's Supplies Store. Respirator helmets, air tanks, filters, masks, and all other manner of survival gear is for sale here. Atmosphere testers and fallout detectors are popular items these days. The Theury war was fought with heavy, high-explosive warheads, very few of which were thermonuclear.

Thus, fallout over Horla continent has not been, and will not be, severe. Radiation testers are popular items nevertheless, and public awareness of health hazards is high.

Area 6-1: Navy, Army, and Marine recruiting. Situated near the Portmaster's representative, this is the sanctioned recruiting effort of the interstellar government. Policy dictates that recruits be trained on a planet other than their home world, but in this time of troubles, few recruits care to leave home. Even in spite of this, the station is pulling in its quota of man and womanpower.

Area 7-1: Bank of Exonidas. An interstellar exchange bank, fully integrated with the computers that run banking throughout the sector, the Bank of Exonidas can convert currency, make loans, prepare stock portfolios, collect forfeitures, and in general take care of just about any financial needs of travellers and businessmen. The bank is protected by a system similar to a spaceship's anti-hijack program; further, at any given time there will be two Marines of the 119th keeping a somewhat alert eye on the doorway.

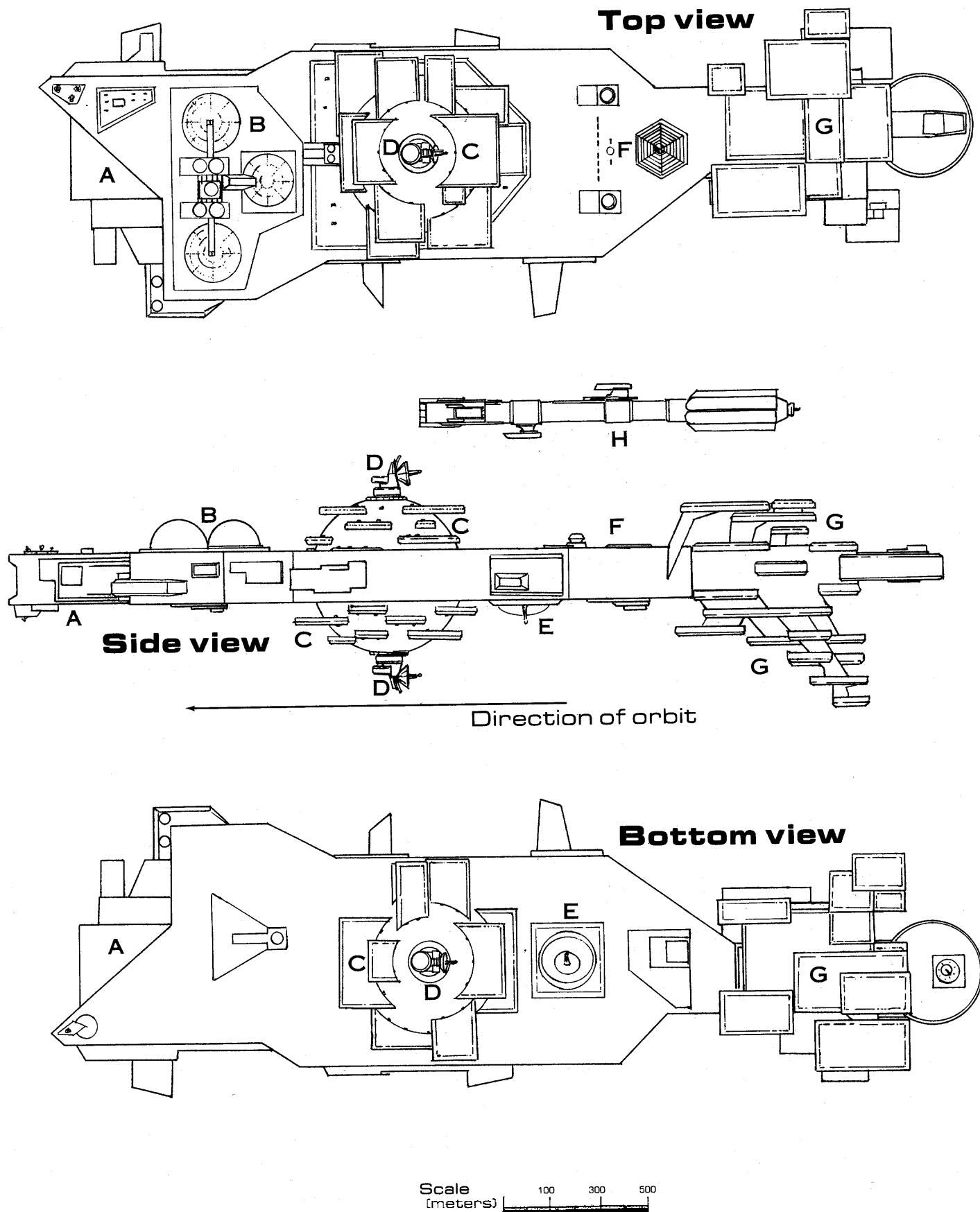
Area 8-4: Wrokla's Port Best. This restaurant is an offshoot of Wrokla's Downtown, which itself makes a plausible claim to be the best restaurant in the city. Although this place endeavors to cater to the better class of people, it is managed by a man, Hill Darsen, who knows that most spaceport travellers are not rich. Thus, to avoid a very unpleasant meal, a diner intending to patronize this spot must have a minimum social level of 9. This is better than Wrokla's Downtown, where even to be admitted to the foyer requires a social level of 11. A meal here for two, including tipping and other required gratuities, will cost upwards of 100 credits.

Area 9-1: Traveller's Aid Society Outpost. The main Traveller's Aid Society station was destroyed with Tathour Spaceport in the war. The station here is working hard to gain the rich reputation the Theuran station once enjoyed.

Twice-hourly tram service is made available to the better hotels in the city, for those who are staying for some time; for the casual passenger, stopping here only for a connection, good-quality meals are dispensed, and a waiting lounge is provided away from the noise of normal traffic. A travel agency is based here, staffed by experts who are easily capable of helping travellers schedule their routes most efficiently. Ticketing can be prearranged here also, as can luggage check-through and most passport requirements.

Although the Traveller's Aid Society deals mostly with members of the Society, non-members may benefit from the services offered, at prices that are actually reasonable. How the higher-ups of the

Figure 3 Exonidas High Port



Society can consistently manage to bring good to excellent services to the public at comfortable prices has ever been a mystery; the policy is very well received.

Area 10-3: Susato, Morely, and Dowland Legal Services. This law office, recuperating from an unfortunate incident in which a live grenade was tossed through the doors, is perhaps the planet's leading firm for dealings in interstellar law. Local law and criminal law cases will also be handled by the firm.

Area 11-1: The Brass Beast. A wood-paneled alehouse with a low ceiling, reproducing the popular image of a rowdy hotspot of an era long past. Few things in the "inn" are beyond tech level 2, and the things that are — the soundproofing, the beer coolers, and the splat-gun hidden beneath the bar — are well out of sight. Managed with precise absurdity by a well trained pair of anachronists, the spot's rare dull moments are relieved by staged fights between trained duelists, whose choreographed swordfights take them from the fireplace to the kitchen and back, noisily but with no damage done.

Area 12-2: Offices of Birkenlines Interstellar Shipping. Characters seeking employment will find it at the following probabilities: Roll two six-sided dice. If the result listed below is achieved, employment is offered immediately. If the result is one or two less than the minimum needed, employment will be available in that many months. Required rolls are: Pilot 7+; Navigator 7+; Engineer 6+; Steward 6+; Medic 8+; Gunner 9+. Die Modifiers: +1 for every level of expertise above level 1.

In general, when using the above method of hiring on, the higher the two-dice roll, the better the position obtained. For example, a roll of 7 for a pilot hiring on might land him or her the position of backup pilot for a Subsidized Trader, while a roll of 16 (assuming the pilot had at least Pilot-5 skill) might mean the job of chief pilot for a large luxury liner. As always, the referee may choose to moderate these results.

Area 13-3: Pilots' lounge. A private and secluded gathering spot for pilots and navigators, where a quiet atmosphere is carefully cultivated. A discreet player character, having either pilot or navigator skill, can sometimes find rumors here — rumors of the most productive and rewarding sort. Too many people have the notion that a pilot is no more than a chauffeur, with no considerations beyond the comfort of his or her passengers. But pilots are more than this, and the popular illusion is resented. Who has the best view of the planet during terminal approach? The pilot. Whose life depends upon keeping two eyes always carefully open? The pilot. Whose job is it to know exactly where he or she is at any moment? The navigator . . .

"You may not have noticed, but the last ship that left, just as we were coming in, was in a tearing hurry, and his identification transponders weren't working." Who but a pilot would have noticed?

Area 14-1: First aid station. Treatment is available here for the many little things that plague travellers: nausea, overstress, headaches, and so on.

Area 15-2: Port Hospital. For things that no first aid station can be expected to handle. Excellent medical care is dispensed here by trained Naval medical personnel. The fact that the medics here are acting in an official capacity means that if a character comes in suffering from bullet wounds, for example, the fact will be reported, and the character will likely be interviewed by the police, or by port officials. Given a choice between crawling off somewhere to die and giving oneself up in order to receive treatment, most people will choose the latter course. Some, however, will try to reach a civilian hospital away from the spaceport to minimize the ramifications. Some people even know of outlaw doctors in the city who work for organized crime.

The port hospital has a special area staffed with experts on burn medicine, a necessary specialization considering how flammable spaceship fuel is. Currently this department is desperately understaffed, since all doctors and medics having any expertise in burn treatment are working desperately at Emergency City to save survivors of the war.

Area 16-1: Computer and traffic control center. Here the massive computers control the multi-channeled boost-grid. The machines are constantly alert for fluctuations in the titanic gravitic forces constantly being re-focused. There is a human backup for any computer system, for the very good reason that machine failures are always possible. Safety is uppermost in the minds of the area's personnel, and the first consideration of the computers' programming.

FIGURE 3: EXONIDAS HIGH PORT

The High Port is a 100-million-ton facility quite removed in structure from any spaceship. Despite this, it can be described in the terms of *Traveller* Book 5, 1980 edition, as follows:

100,000,000 tons
SW-Z400GJ4-00000Z-00000-L
Batteries 2
TL=15
Crew = 1400
Fuel tankage = 10,000,000 tons

More than anything else, the High Port is an orbiting fuel tank where ships can refuel before Jump, without having to carry that fuel down to the planet and back up. Since Jump fuel usually composes a sizable percentage of a ship's mass, the overall savings are significant.

A: Accelerator Terminus. This facility sends unmanned cargo containers at high velocity outward into minimum-energy transfer orbits, providing the main source of supplies and expendables for the five major bases in the system other than Horltheur itself.

B: Fuel Storage and Power Plant. Fuel coming in from the gas giant Colosse is held here for eventual transshipment to Horltheur, for use in refueling ships before their departure from the system. The fuel is sent from Colosse to the High Port in great, unmanned cannisters which are then grappled by the High Port's gravitic boost-grids and unloaded.

C: Main Port Building. Located here are the offices and apartments of the many permanent residents of the High Port. The platforms extending from the central sphere are landing decks for such ships that can land; these decks are oriented by small gravitic generators, so that small ships landing on any of the many platforms are held firmly "down" toward the main body of the port with an even 1 G acceleration. Ships that cannot be landed on a planet likewise cannot be landed on these platforms. However, several of the platforms are landing-shuttle bases, with a quick enough cycle of takeoffs and landings to comfortably ferry the passengers and cargo of, for instance, a Liner, to the world below with minimal delay. The main port facility here has no shopping complex, and very little hotel space; the High Port is primarily a working port.

Some of the facilities to be found in the Main Port Building; but not shown individually on the map, are:

C-1 The Manufacturing Alley. Here, in an area of zero gravity, with industrial quality vacuum readily to hand, high-tech manufacturing concerns have based themselves, to manufacture and build everything from ball bearings to precision microelectronics to made-to-order microorganisms.

Although the High Port is, legally, entirely the property of the interstellar government, it has been judged wise to rent manufacturing space to the corporations of the planet below. The result is a profit for everyone. The companies renting space here are from everywhere on the planet, Horla and Theury alike. Since the major population centers of Theury continent are virtually dead, this now means that some 50% of Theury's wealth is tied up at the High Port, with the orbiting factories suddenly having become entire corporations, rather than just branch offices. The legal questions are still hanging over everyone's heads.

C-2: The Portmaster's Assistant's Office. Here, the Commissioner of the High Port, Donald Wensley, oversees the complex operations of the port. He checks all cargo handling, monitors traffic, and maintains law and order, and provides a

human backup for the all-important computers that control the smaller boost-grids. Fortunately for the irascible ex-Navy Pilot, he has a capable aide to handle public relations and to deal with complaints. Merely keeping the port operating smoothly takes up all of Wensley's time, and most of his temper.

C-3: Zero-Gravity Hospital. This has become the ideal place to treat burn victims, leprosy patients, and those suffering from damage to large muscles. Healing in zero-gravity is not much slower than healing on a planet's surface, and the absence of hampering gravity and weight is a godsend for suffering patients. It would be possible, using gravitic neutralizers, to construct a zero-G hospital or ward on the planet's surface, and for extreme emergencies this is indeed done. But the high cost of running such neutralizers makes the High Port's hospital a better investment.

At this time, the hospital is virtually overrun with burn victims from the warheads that fell on Theury continent just five weeks ago. It has been estimated that of all the people burned on that fiery day, less than five per cent ever received any treatment. Since burns, when left untreated, are more deadly than nearly any other injury, this means that about ninety per cent of those burned that day who might have been saved have already died. This is, of course, a drop in the bucket when compared to the 2.8 billion people who died within minutes of the falling of the first bombs.

C-4: The Research Alley. High-energy research in weightless conditions has been an ongoing concern of the High Port since its dedication. The sub-quantum labs here are most heavily involved with duplication of other labs' experiments, for validation purposes; little truly original research is done here. The same is true for the jump-technology labs and the meson-gun experimental station; testing the claims of more advanced research is the order of the day.

D: Gravitic Boost-Grids. Like the main boost-grid at the Down Port, these are used for the landings and takeoffs of spacecraft, and of the unmanned canisters that this port handles. Unlike the Down Port's, these grids are tightly focused by their dish antennae, have only one channel, and maneuver the point of focus by rotating and elevating of the dishes themselves.

These grids are distinctly less powerful than the main grid below, since there is no gravity to be overcome, and they have a more sharply limited range. Each of these grids can exert a push or pull of 100,000,000 Newtons — which means that a ship of 10,000 tons could be pushed or pulled at an acceleration of 1G, or a 1,000-ton ship at 10G. Since

there is no weight to work against, even a ship much larger than 10,000 tons can be pushed into place. . . slowly. Each grid's reach is 5,000 kilometers, with a sharp dropoff in power beyond that range. Like the main boost-grid at the Down Port, these grids are not limited to simple pushing or pulling in the straight line between them and their targets; transverse force can also be applied.

The operation of these smaller grids is as follows: A ship, either coming into the system from its in-jump or moving up from the planet below, passes at low velocity near the High Port. Guided by the gravitic equivalent of radar, whichever of the two grid-dishes is closer maneuvers itself until it points at the ship. Then (assuming the ship is to be docked at the High Port) the dish swings slowly about, towing the ship closer to the landing platforms at location C or location G (described below). As soon as the ship has been settled comfortably onto the platform, the dish swings back around to latch on to its next target. The same procedure is used for capturing the infrequent fuel canister shipments from Colosse; the canisters, massing 150,000 tons, once slowed, are maneuvered to location B.

These grids can be used for pushing objects away, as well as for pulling targets in; this explains the two batteries of Repulsors-Z listed in the USP above. Militarily, these are of questionable value in a fight, but the High Port was never designed as a fighting port.

E: Solar Power Relay. Aimed always at one of three receiving stations on the world below, this facility beams solar power that is collected from five large, sail-like reflective mirrors (not shown) in an orbit parallel to the High Port's.

F: Weapons Station, and Scout and Fighter Base. In truth, the High Port is not capable of defending itself. The heavy lasers and missile bays mounted here are a meager defense at best. The Scout and Fighter fleets based here go only so far to make up the gap. As just mentioned, the High Port was never designed with warfare in mind, at least not as a primary concern. This small installation is somewhat of an afterthought.

G: Landing Platforms. Similar to the platforms at C, above, these grids are used more for cargo than for passengers.

H: The Battleship *Fair Phyllis*, for scale comparison. Ships too big to be landed on either the planet or the platforms of the High Port can hang in orbit parallel to the port, tended by shuttles. This is how large ships are constructed; there is no "drydock" as such. When a ship too large to be handled by the Down Port is to be built, its pieces are boosted into the High Port's orbit and assembled. Indeed, this is how the High Port itself was built.

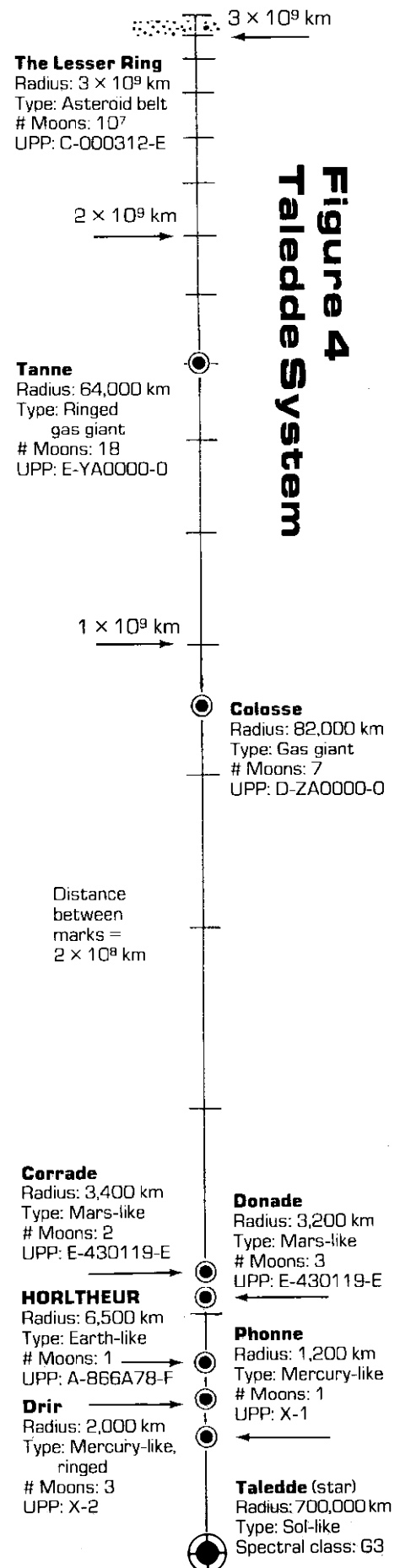
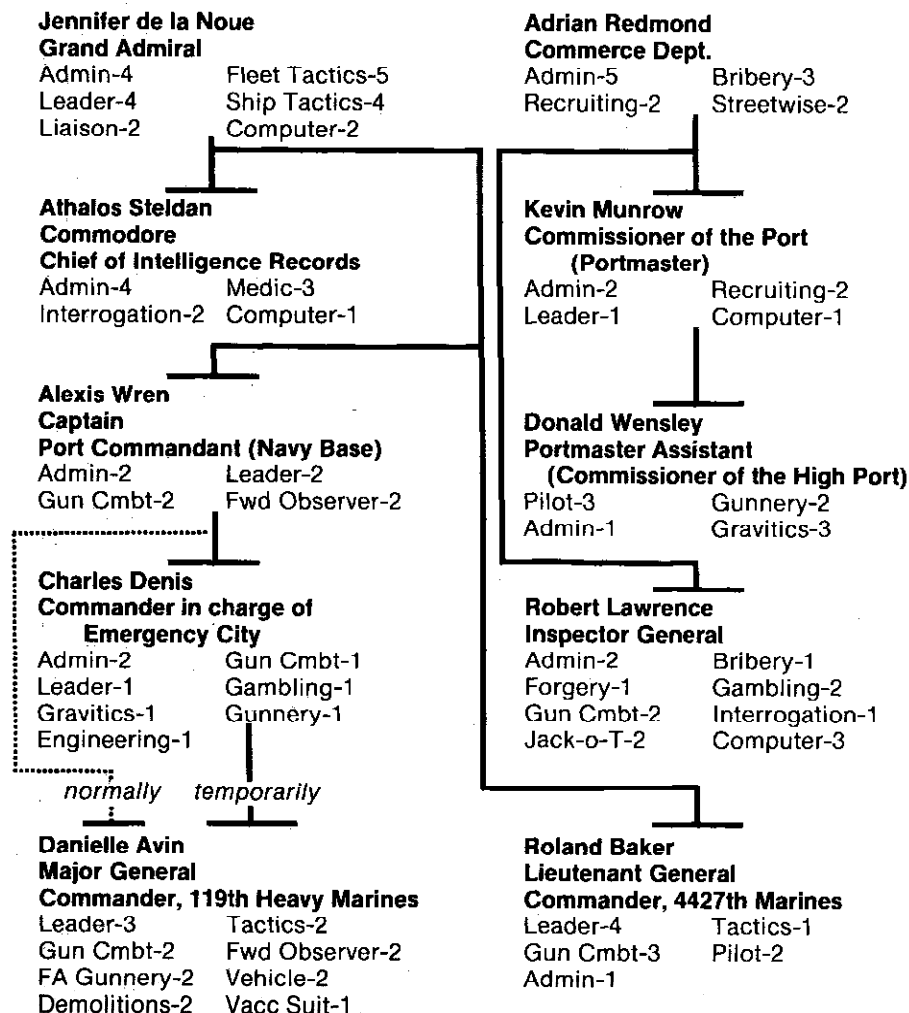


Figure 5 Chain of command



Thumbnail sketches

Grand Admiral Jennifer de la Noue
667BF9; age 42

The youngest-ever Grand Admiral of the Navy, de la Noue has risen to the top through the vacancies left by her superiors, who either died in the disaster at First Binary or were forced to resign after the cover-ups of Second Binary. De la Noue has survived primarily by being uncorrupt and 'incorruptible'. She passed through the recent ethics investigations of the higher ranks with an absolutely untarnished record.

Commodore Athalos Steldan
687BB9, age 38

Although Steldan has a slightly more scandalous service record than is usual for his rank, including one unprecedented case of flight from prosecution, the facts have always served to acquit him. He seems to attract misunderstandings from his superior, the Grand Admiral, in direct relation to his frequent — some would say regular — breakthroughs and successes in his field. If he appeared to have sparked the abortive mutiny of two years past, the fracas clearly revealed

the degree of danger in the old fleet organization. Steldan's greatest coup was to rescue Grand Admiral Rothar Sienne from six years' captivity, when all others thought the old war hero dead.

Captain Alexis Wren
89A999, age 34

Of good record and unimpeachable reputation, Captain Wren's top achievement seems to be the remarkable speed with which he reacted to the Theuran war. By the time his orbital satellites warned him of the missiles, there was nothing he could do to prevent the death of a continent. Singlehandedly, however, he kept the war from crossing the sea to Horla continent. His Fighter command intercepted and destroyed the very few intercontinental missiles launched — which seemed to have been fired for no better reason than to leave no survivors at all, neutrals or not — and his desperate videophone diplomacy with the leaders of the Horlan nations quieted their fears thoroughly enough to prevent an outbreak on that continent.

Commander Charles Denis
9A88A9, age 34

Sent to Theury continent directly on the heels of the war, Commander Denis had the assignment directly from Captain Wren to bury the dead, treat the injured, aid the survivors, enforce order, put out the forest fires, and get food to the people starving in the hinterlands. That the commander has succeeded at all is amazing; that he has succeeded well is little short of miraculous. Working out of Emergency City, little more than a tent town built around a makeshift Type D Spaceport (See Figure 7), he has established a system of advance camps that distribute medical supplies, and has put people to other work than fighting.

Major General Danielle Avin
B9D999, age 38

Using the mobile elements of the 119th Heavy Marines, she has stopped the outbreak of violence across the wastelands of Theury continent, sometimes without firing a shot. The interstellar Marines have long enjoyed a reputation for invincibility; no would-be bandit chieftain could stand against them, and few would try. General Avin leads her troops with a personal touch that is respected and admired, overseeing every aspect of the subdivisional operation with untiring attention. In areas she has pacified, no one has dared to renew the fighting.

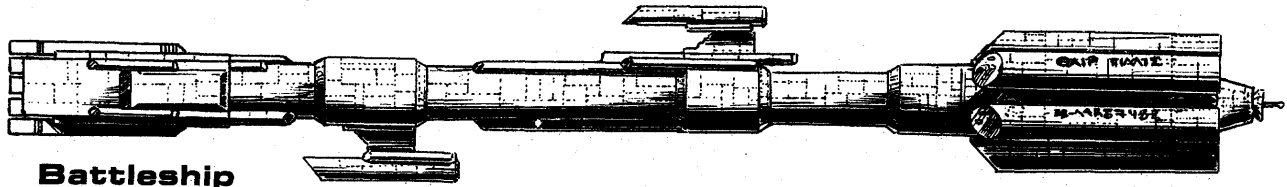
Lieutenant General Roland Baker
687989, age 46

When the great battleship *Fair Phyllis* dropped out of jumpspace, the first people from its fleet to set foot on Horltheur were the 4427th Marines, and first among them was General Baker. This has been the first operation in the Division's history when the order of the day was to keep peace, suppress banditry, and help ferry casualties of someone else's war to safety. General Baker has adapted fairly well. Proud of being "a soldier, not a policeman," his operations have been perhaps carried out with too much of a show of strength. Advised by his staff against such overreactions as softening up target zones with artillery, air strikes, or orbital bombardment, he has swallowed his pride and proven himself quite a policeman indeed.

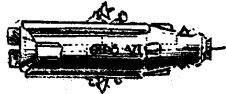
Adrian Redmond
596DF9, age 50

Aboard his complex command post of a spaceship, Redmond is here as a representative of the Commerce Department of the interstellar government. Wars disrupt commerce almost as much as they disrupt human life; Redmond's job is to do what he can to restore economic order. The peculiarities of the world Horltheur — its independent status and fierce nationalistic pride, its high taxes and great armies — brought about a

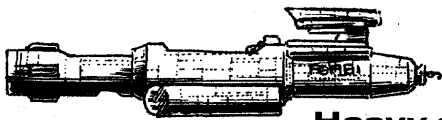
Figure 6 The Fleet in Presence



Battleship



**Electromagnetic effects /
communications ship**



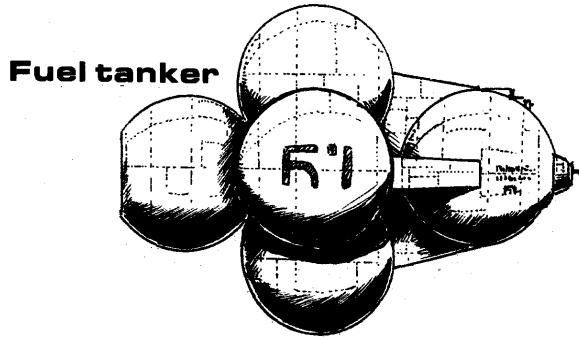
Heavy cruiser



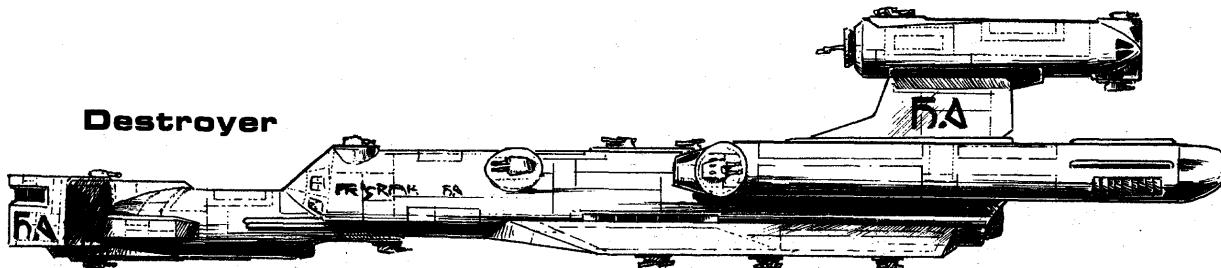
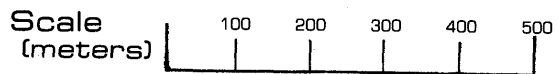
Light cruiser



Hospital ship



Fuel tanker



Destroyer



Scout



Fighter

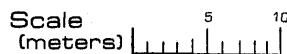


Figure 6: The Fleet in Presence

Battleship: <i>Fair Phyllis</i>			Hospital ships: <i>Barber, Diezette, Remedy, Haven, First Assist, Health, Tinct, Salve</i>		
1,000,000 tons	BB-Y3336J4-F09909-90009-W		30,000 tons	AH-M3334J3-000200-0	
Batteries bearing	400	100 400	TL=15	Crew = 950 Agility = 0	
Batteries	800	200 800			
TL=15					
Crew = 38,000			Electromagnetic Effects/Communications Ship: <i>Graphein</i>		
Agility = 3			9,000 tons	NL-J3336J3-200000-00000-0 x8	
Heavy Cruisers: <i>Cator, Dynamme, Forodh, Horor, Interpe, Flamme</i>					
75,000 tons	CR-Q3336J3-F09909-90009-3		TL=15	Crew = 400 Agility = 3	
Batteries bearing	45	10 45			
Batteries	60	15 60			
TL=15			Fuel Tankers: x		
Crew = 700			40,000 tons	A0-N5334C3-400700-00000-0	
Agility = 3			TL=13	Crew = 250 Agility = 0	
Light Cruisers: <i>Desideriche, Todanga, Todega, Okemo, Lusederiche, Posata, Dand, Rung, Crusedereche</i>					
20,000 tons	CL-L3336J3-F09909-90009-0				
Batteries bearing	15	4 15	Destroyers: x23		
Batteries	16	4 16	2,000 tons	DD-B333CJ2-F07609-90009-0	
TL=15			Batteries bearing	31	1
Crew = 450			Batteries	31	1
Agility = 3			TL=15		
Fighters: 300 aboard the <i>Fair Phyllis</i> and 30 aboard each of the heavy cruisers			Crew = 45		
25 tons	FF-0106Y31-000000-40000-0		Agility = 3		
Batteries bearing	1		Scouts: x48		
Batteries	1		100 tons	S-13339R1-000000-40000-0	
TL=15			Batteries bearing	1	
Crew = 1			Batteries	1	
Agility = 6			TL=13	Crew = 1 Agility = 3	
			Crew = 1		

state of confusion when the war hit. Even though no more bombs will fail, the untouched areas will be hit with economic dislocations that only a master hand can minimize. No one has ever denied that Adrian Redmond is a master hand.

Kevin Munrow
768899, age 30
As Portmaster, Munrow has the duty to aid his superior, Redmond, in any way he might. For five weeks now, since the war, flights have been coming and going via the international airport to and from Theury, carrying volunteers, supplies, and other aid. Since Redmond's arrival, the additional use of the Spaceport has been called upon, and it has been Munrow's job to keep it running smoothly as a participant in the rescue/recovery without interrupting its other, usual duties.

Donald Wensley
7F6889, age 34
This grouchy ex-pilot is in charge of the High Port, and has been strained to the limit taking care of de la Noue's fleet.

Most of the shuttles transporting material from orbit to ground, from ground to orbit, and from one orbit to another, have come from his port; when the spacehands of de la Noue's fleet take a break from duty, they take it at his port. His other duties cannot be forgotten either, leaving him busy with some problem or other for thirty hours out of every twenty-four-hour day. If one of his lieutenants is foolish enough to volunteer to take over some trivial chore, Wensley has plenty of energy to curse the fellow up and down. Since these emotional outbursts seem to relax Wensley, his staff somehow manages to provoke one every ten hours or so. Work gets done much more efficiently because of this, and so everyone is happy.

Robert Lawrence
ABAA99, age 34
Paradox: A loud-voiced, thick, tall man, with an aggressive manner of conversation, who is actually of a retiring disposition when allowed to be, Inspector General Lawrence of the Interstellar Port Au-

thority wields more behind-the-scenes power than do either de la Noue or Redmond, while technically subordinate to the latter.
Lawrence's responsibility is to investigate, tactfully, whether or not it would be a good idea for the interstellar government to quash Horltheur's independence and incorporate the planet. How is one to investigate an issue of such sensitivity without causing repercussions? Lawrence manages. He is to be a field agent for Redmond, without anyone knowing it. When neither one's employer nor one's contacts know whom is being dealt with, how can results be achieved? Lawrence manages. And when one is himself such a contradiction, how can he reconcile himself to his somewhat distasteful mission? Lawrence manages. Perhaps Redmond is better off not knowing just how.

FIGURE 7: EMERGENCY CITY
A: Water Desalinization and Power Reactor. This facility supplies 600 liters of drinkable water per minute, and nine

per cent of the city's electrical power. The rest of the power comes from imported fuel.

B: Hospitals. Like all the other hospitals on the planet, these are filled to overflowing, primarily with burn victims. Treatment has been effective, however; very few patients have been lost after being hospitalized.

C: Tent City. The city proper. Plumbing, drainage, and heating are all supplied from prefabricated units shipped here by cargo carrier and set up virtually overnight. Living is as comfortable here as might be expected, with little in the way of luxuries, but with all subsistence needs cared for. Currently, some 7,600 people inhabit the "city"; of these, only 280 are Navy and Marine personnel. Virtually every citizen of the city is single, and the only survivor of his or her family. Only luck has allowed them to live; the psychological injuries treated here are very nearly as deadly as the physical ones — or, say some doctors, more deadly. Since more citizens here die

from suicide than wounds, this may well be true.

D: The Ruins. Extending for dozens of miles to the north, the ruins of the old city are perhaps the prime cause of these suicides. Beyond the horizon, occupying the entire northern aspect of Emergency City, the blackened hectares present one of the most memorable and horrifying vistas conceivable. The toppled buildings all lean to the south, away from the impact point of the nearest of the seventeen bombs that hit this once-city. Black, gritty dust constantly drifts to the east, a thin veil against the sun.

A short distance into the ruins, some survivors have erected a small monument, built of stones salvaged from the toppled buildings and covered with cement. No one had the means to cast a bronze plaque, so the legend was scrawled into the wet cement, which then hardened, leaving the inscription permanent. The words are a quote from an anonymous survivor, who was heard to utter, just before dying of his burns: "This

whole thing was kind of dumb, wasn't it?"

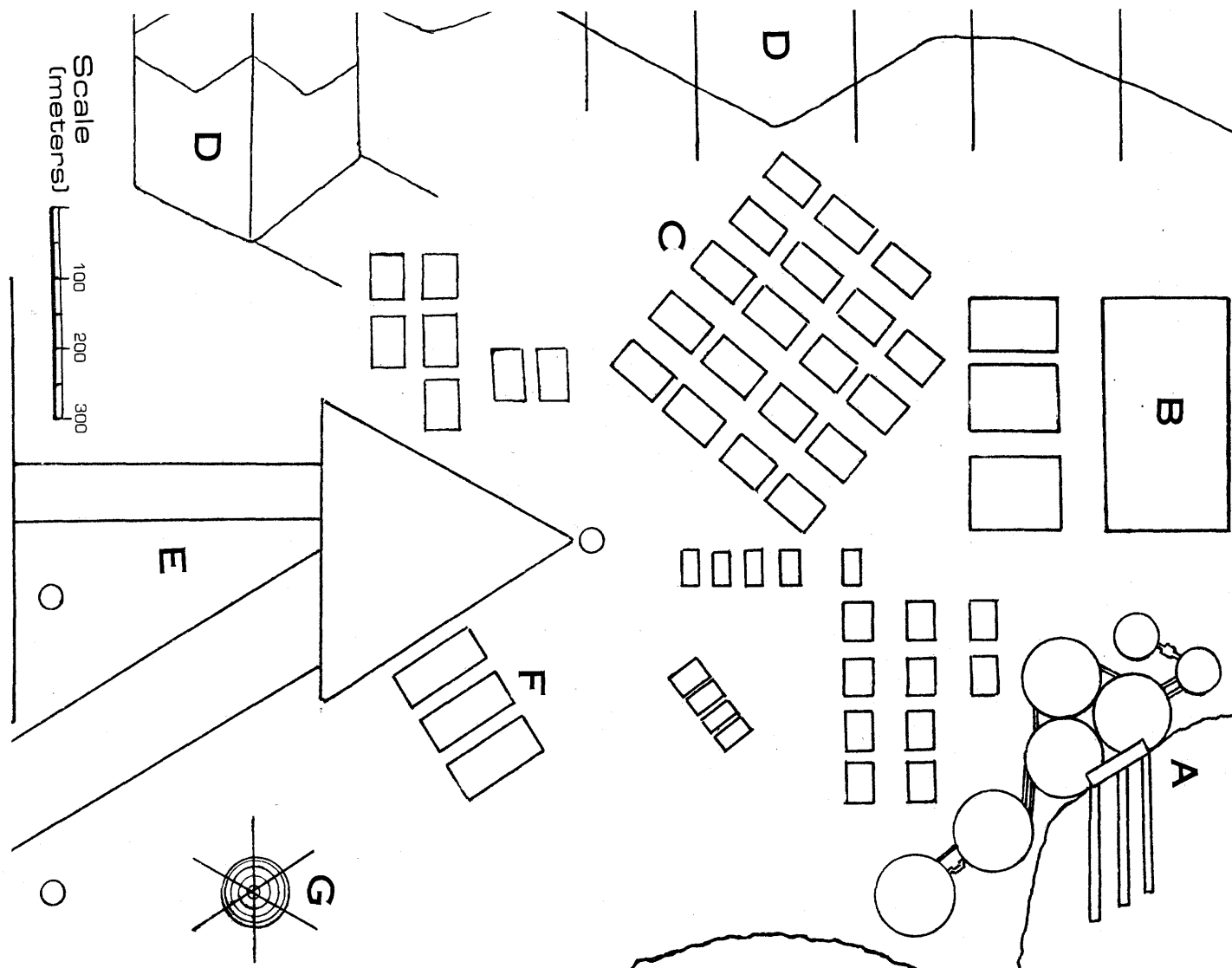
E: The Spaceport, class D. No boost-grid is installed here, nor terminal building, shops, construction yards, or warehouses. Ships must take off and land on their own power, and must share the runway strips with normal aircraft that fly in regularly from Horla continent. Spaced around the flattened and cemented field are landing-signal towers, so that ships may land by instrument during the city's frequent thick fogs.

F: Headquarters. From here Commander Charles Denis oversees the operation of the city, as well as activities around the continent. There are five computer model/1's here, some radio equipment, and little else. Contact is maintained with the advance camps spread over the continent from this headquarters, and with the orbiting fleet. For its part, the fleet sends down updated orbital photographs of weather patterns and of surviving settlements.

G: Radio tower. Equipped to send and

Figure 7

Emergency City



receive radio signals, and with the gravitic equivalent of radar, this tower is the city's link with the rest of the world.

FIGURE 8: TYPICAL OFFICE SUITE

A: Corridor. Each square is 1.5 meters on a side.

B: Offices.

C: Entrance to Torman and Son, excess stock liquidators. The firm is a struggling concern, equivalent to a +1 broker. No one can quite tell if the Tormans are honest businessmen or not, although their twice-yearly audit never uncovers anything more suspicious than arithmetic errors. They don't run a rich firm, or a really successful one, but they seem capable of handling the assignments people bring to them. In this area of the office, the receptionists deal with customers by phone, vid, or in person. There is a waiting room, neither spacious nor comfortable, but Torman and Son are not usually so busy as to keep customers waiting overlong.

D: Work cubicle. Here, clerk Jan Warner makes his retreat, filing his personal papers and worksheets. A customer coming into the offices with an assignment that didn't require the personal attention of the Messrs. Torman would probably be shown in here to deal with Warner as a representative of the company. Jan can handle his routine, perhaps without imagination, perhaps without initiative, but with something close to competence.

E: Work cubicle. Similar to D (above), this is the work space of Hjalmar Tar, company senior clerk. Although he'd never admit it to anyone, Tar has every hope of someday wresting control of the company from the younger Mr. Torman. Tar's every effort has gone into knowing more about how the company works than either of his employers — so that, on the long-awaited day when the senior Mr. Torman dies, Tar will be the only one capable of keeping the company afloat.

F: Office of Richard Torman, the junior partner. In general, Richard runs the office while Arnesco Torman, his father and the senior partner, runs the company. There are phones to be answered, letters to be dictated, and clerks to be harried. Richard keeps things running smoothly enough, not knowing that Hjalmar Tar, the senior clerk he hates and is hated by, has already made himself indispensable. Richard wouldn't last ten days without Tar; when the proper time comes, Tar intends for Richard to find that out.

G: Office of Arnesco Torman, the senior partner. Privacy, more than anything else, is to be found here. Arnesco's dealings are almost always by video-phone, where his aggressive personality can most effectively be applied. Arnesco's foes accuse him of browbeating customers and clients; in truth, his tactics go far beyond mere browbeating. By

switching from being stubborn to being reasonable, and at exactly the right moment, he achieves amazing results. Arnesco is not just the crank old price-gouger he lets himself appear to be, but a crafty and successful businessman, self-trained, poorly educated, and, if the truth be said, just a little bit brilliant. For eight months now, he has secretly been training a more loyal replacement for the insidious Hjalmar Tar, so that when the time comes, the disloyal clerk will unexpectedly find himself unemployed. That, he congratulates himself, was easy. Now on to real work.

H: The junior clerks' work area. someone needs to draft the sales contracts into good legal formula; three junior clerks take care of that necessary bit of drudgery.

I: Files Room. Somewhere in here, filed where not even Arnesco Torman could find it, is the first credit ever made by the firm. The rest of the files are duplicates of such things as stock certificates, letters mailed out, letters received, contracts signed, and so on. The originals of anything truly valuable are deposited downtown at the main branch of the Bank of Exonidas.

J: Hallway. This way to the restrooms. In this area are the commonplace things to be found in any office: unopened boxes of forms, the copying machine, and of course, the water cooler.

K: The Computer. Only Hjalmar Tar really knows how to use the computer — or so he thinks. Hjalmar gains prestige and pay bonuses for programming it, debugging it, kicking it when it crashes, and tending it in general. Of course this takes some time away from his regular duties, and some of the office staff have come to look on him as a well trained loafer. Hjalmar's replacement, when the surprise is finally sprung, knows more about this class of computer than Hjalmar has any hope of learning. There is no justice.

L: Conference room. Since Torman and Son holds very few conferences, this has turned into an unofficial storeroom, with boxes, bundles, and form verifiers. The table is nice, though, when it hasn't got junk piled a meter deep on top of it.

Outer space encounters

Immediately upon breaking out of Jumpspace, player characters' ships have a great chance of having an orbital or insystem encounter. Roll 2D6 and consult the following table.

2: No encounter of note: Normal traffic about the system.

3-5: Free Trader. Roll on subtable below.

6: Pirate. Although the law level of this system as a whole is quite high, the immensity of the system makes the occasional grab for loot a feasible act — even now, while the system is swarming with

Navy ships because of the one-continent war below. Roll on subtable below.

7-8: Patrol. Roll on subtable below.

9-10: Subsidized Merchant. Roll on subtable below.

11-12: Yacht. Roll on subtable below.

Free Trader subtable

2-3: Smuggler

4-8: Legitimate

9-10: Forged papers

11-12: Forged papers/smuggler/referee's choice

Pirate subtable

2-4: Scout

5: Yacht

6-10: Cruiser

11: Roll twice, ignoring 11 or 12

12: Roll three times, ignoring 11 or 12

Patrol subtable

2-6: scout (x 1D6)

7-10: Cruiser (x 1-2)

11: Something heavier (ref's choice)

12: Roll twice, ignoring 12

Subsidized Merchant subtable

2-4: Smuggler

5-8: Legitimate

9-11: Forged papers

12: Carrying inspector plus bodyguard squad; or, ref's choice

Yacht subtable

2: Kidnap victim

3-5: Smuggler

6-11: Legitimate

12: Ref's choice

In all cases, before radio contact is established, roll 2D6 for the other ship's captain's reaction, with 2 meaning overt hostility, 12 meaning genuine friendliness, and other results being shaded in between. Modify these results due to the realistic mission of the encounter. A Pirate, rolling a 2, will attack, to board and kill; rolling a 12, he might seek to entice the players into a partnership. A Patrol, on the other hand, would be limited to extremes of either firing a warning shot and boarding for inspection, or letting the players pass without delay, while radioing across a friendly and perhaps useful message.

Down Port encounters

Roll 1D6 twice, to give results from 11 to 66, reading one die as tens and one as digits.

11: Unexpected -2 on sale price of cargo.

12: All the passengers you need.

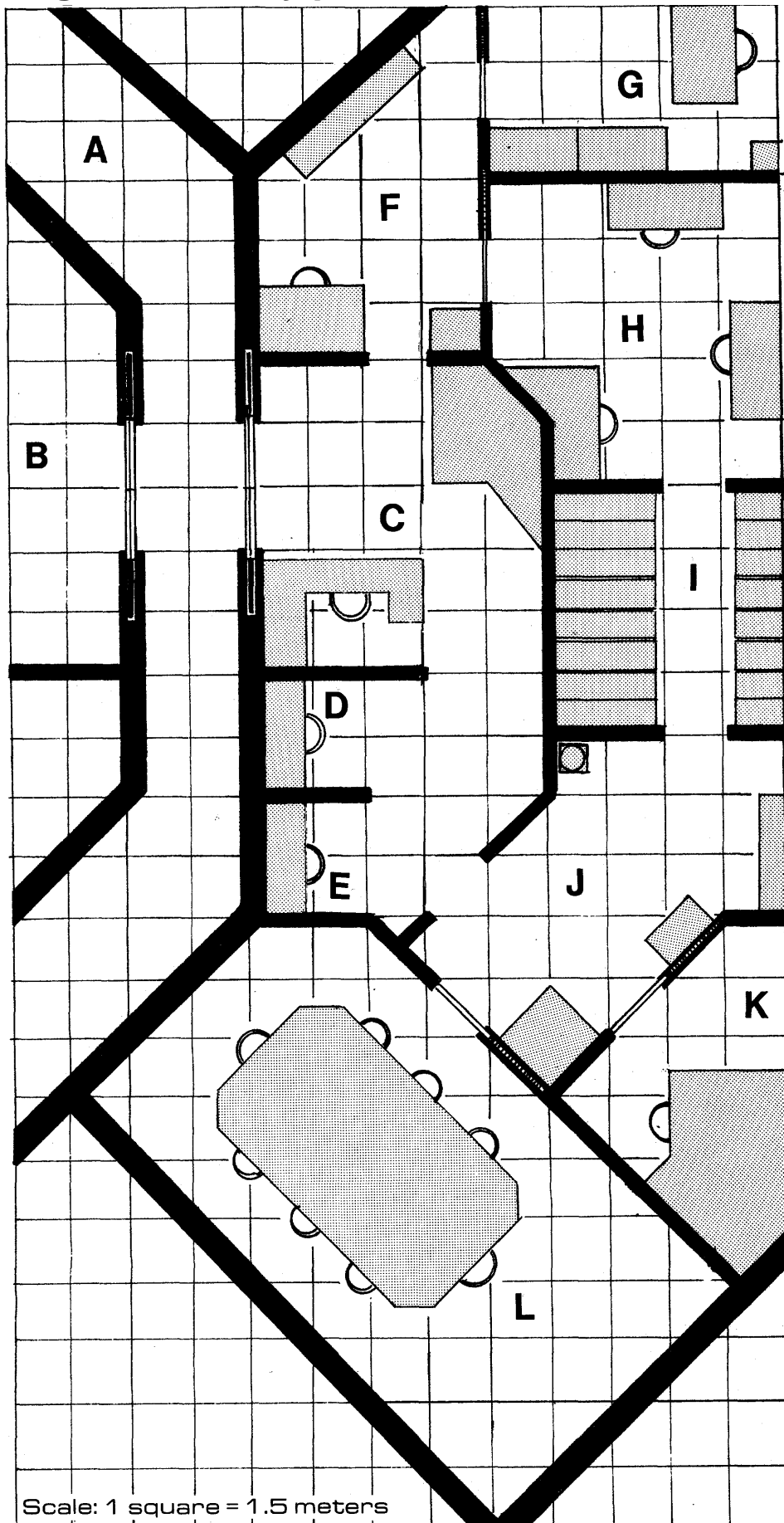
13: Ship's weapons for sale at 5% discount.

14: Unexpected +3 on cargo resale.

15: Cargo for sale: your choice of first digit on Trade table.

16: Cargo for sale: Your choice.

21: Unexpected +1 on cargo resale.

Figure 8 Typical office suite

- 22: Fuel at 75% normal cost.
 23: Unexpected +2 on cargo resale.
 24: Cargo for sale at -1 on price.
 25: -10% on annual overhaul, good here only, any time in the next six months.
 26: -30% on price of missiles/reloads.
 31: Bargain in a shop or store (low value).
 32: Bargain in a shop or store (low to average value).
 33: Bargain in a shop or store (above average value on needed items).
 34: Bargain in a shop or store (excellent value).
 35: Rumor.
 36: Rumor.
 41: Favorable business offer; ref's choice.
 42: Rich passenger in need of quick passage.
 43: Shipping delay.
 44: Insult.
 45: False accusation.
 46: Papers served on your ship, preventing departure or loading.
 51: Small bomb placed on your ship; 50% chance bomb threat called in.
 52: Broker defaults, pocketing his fee.
 53: Embarrassing fiasco with friendly natives and two marines.
 54: You are mixed up with and implicated in illegal drug dealings.
 55: An accident occurs (1-2, to you; 3-6, to another).
 56: Illegal business offer (1-2, trap; 3-6, for real).
 61: You suffer a false arrest.
 62: You suffer a false arrest, and find that the evidence could easily lead to a conviction.
 63: An attack from a person with a club or fists (1-2, on you; 3-6, on another).
 64: An attack from a person with a knife (1-2: on you; 3-6: on another).
 65: An attack from a person with a gun (1-2, on you; 3-6, on another).
 66: An attack from a hidden Psionicist (1-2, on you; 3-6, on another).

This table is used once per day, at most. At the players' option, this table might be used only once per week.

Players may, by their option, act with circumspection, trying to avoid unpleasant encounters. If so, results on the table will be restricted to 31-46 inclusive.

Options for adventure

This world is legally independent of the larger interstellar government, so that going into business as an importer, for instance, while difficult, may be rewarding. There is great profit to be made in mining or salvaging the sites of the ruined cities of Theury continent, organizing relief efforts (for pay), capitalizing on the nearly vacant continent itself (land prices are wildly unpredictable), or even setting oneself up as a bandit king. (Many such have gone into business despite the order-keeping efforts of the

Navy and the Marines. Can you do better than they have?)

In space, the Fleet in Presence tends to put a damper on piracy, a disadvantage equally offset by the presence of plentiful, rich traffic ripe for raiding. In other fields, trade is needed in the items that Theury continent used to produce. Shortages of these products — mostly high-tech stuff such as computers — will begin to be felt on Horla continent before too long.

The operations of the fleet are concentrated toward the planet below. What would happen if an enemy fleet made a sortie at this time? Although this is felt to be unlikely, so were the historic raids on Pearl Harbor and on Port Arthur.

Back in the hinterlands of Theury, up in the high hills, survivors and bandits skirmish for control of the few undestroyed resources. The Marines are spread dangerously thin. Could a bandit horde, of tech level equivalent to 5 or 6, successfully ambush a patrol of Marines at tech level 15? Can the Marines keep order while killing an absolute minimum of troublemakers?

There's an assassin high in the mountains, stalking one of the few living officials of Theury continent. Is that intended victim now the legal president of the continent? Can he be saved?

Emergency City needs doctors. Theury needs able and willing workers of any description. No skill would be unwelcome. There is a government—an entire continent — to rebuild from scratch.

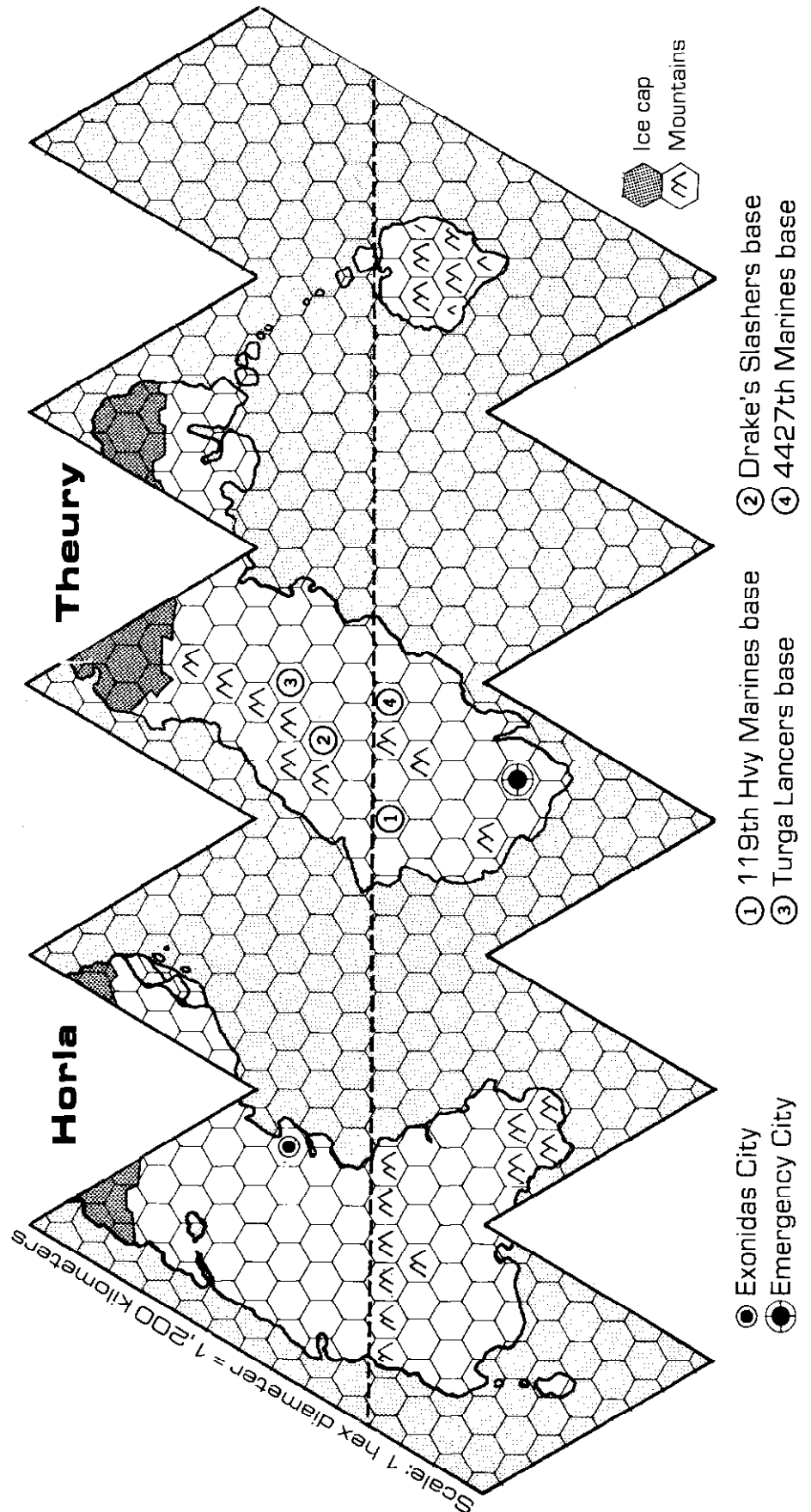
A rumor: Fifteen massive warheads are unaccounted for. Are they buried, undetonated, where they fell? Were they ever launched? Are the records incorrect? Some might object that this is a trifling complaint: The Turga Lancers carry more than forty low-power tactical warheads, and Drake's Slashers more than one hundred. But these that are rumored to be missing are city-busting devices. In the wrong hands . . .

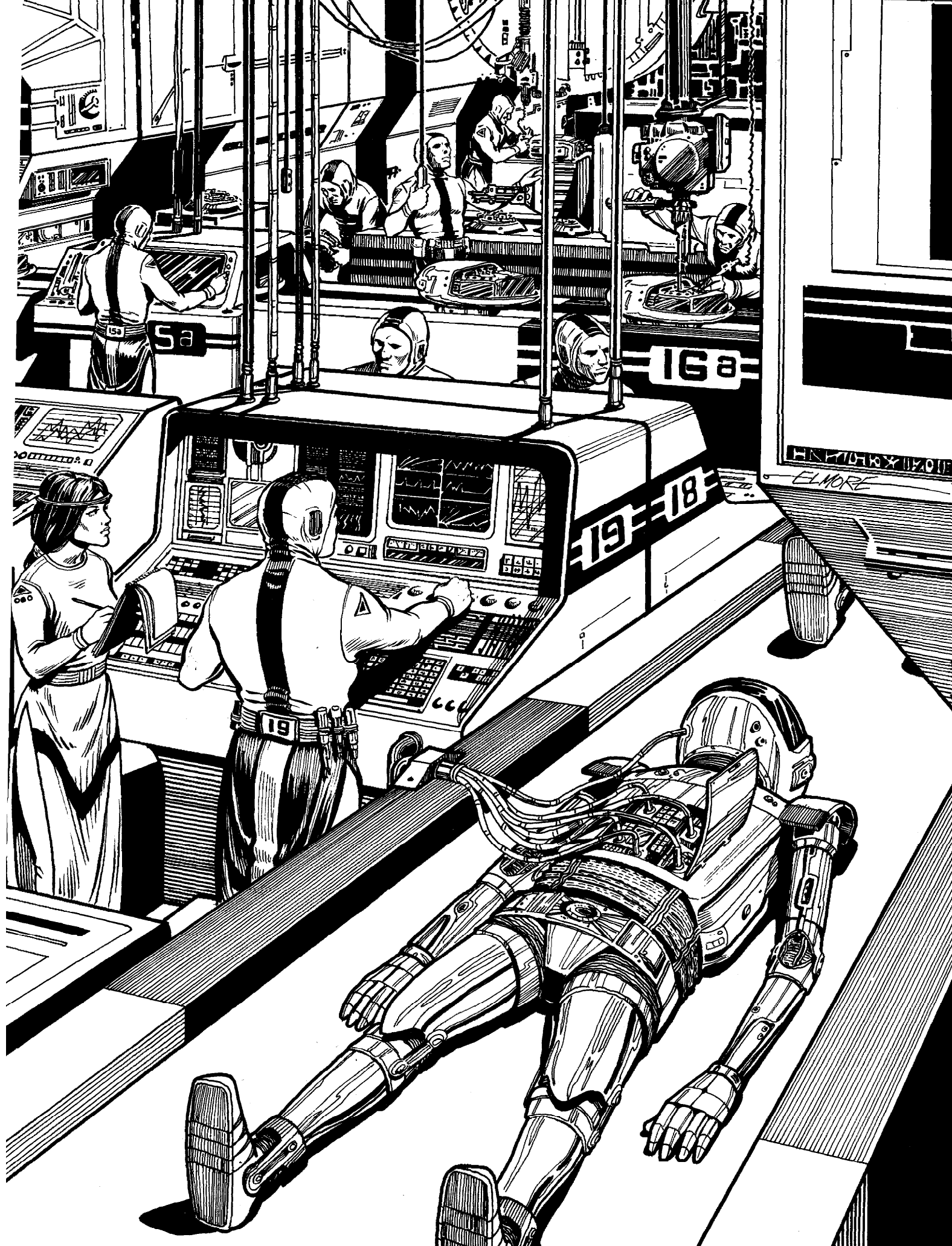
A rumor: A group called the Planetary Independence Party is planning to use this opportunity for confusion to take over the Spaceport at Exonidas in a commando-style guerrilla raid. Is it nonsense, propaganda, or truth?

A rumor: Theury continent has been opened up to colonization. It's up for grabs, folks. Although not true, the story has gotten wide enough circulation that entire planetloads of would-be adventurers have gotten themselves a grubstake and some camping equipment, intending to become frontiersmen and settlers. How are they to be stopped? Or should they be?

There are opportunities on Horltheur; if you don't seek them out, they'll never pay off.

Figure 9 The planet Horltheur





ROBOTS

Mechanical sidekicks for TRAVELLER™ players

by Jon Mattson

The TRAVELLER™ game system thoroughly covers many aspects of technology. However, there is, surprisingly, no procedure in the rules for creating robots, androids, and similar computerized companions. Robots play an integral part in many science fiction stories and should, logically, be equally important in a science fiction game. This article suggests a way to create custom-designed robots for use in a TRAVELLER campaign.

The Universal Robot Profile

Like humans, robots are described by a string of digits and letters that differentiate them from each other, using hexadecimal (base 16) notation. This code is known as the *Universal Robot Profile*, or *URP*.

The first six digits of a robot's URP represent its basic characteristics, which are the same as the six characteristics in a human character's UPP: Strength, Dexterity, Endurance, Intelligence, Education, and Social Standing. Unlike humans, robots do not generate these characteristics by rolling two six-sided dice. Instead, each score is calculated by totalling a number of other factors in the robot's URP (size, number of limbs, programming, and so on). The following table indicates which factors affect each attribute and shows the minimum and maximum scores a robot can have in each characteristic.

Category	Factors	Min	Max
Strength	Shape; Size; Material	1	18(I) ¹
Dexterity	Shape; Size; Limbs	1 ²	15(F)
Endurance	Shape; Size; Material	1	18(I) ¹
Intelligence	Computer Brain	2	20(K) ¹
Education	Programming	0	21(L) ¹
Social Standing	Base score of 2	2	8 ³

¹ — Dexterity lower than 1 indicates that the robot cannot move.

² — Scores above 15 (F) simply follow the same letter pattern; 16 is G, 17 is H, 18 is I, and so on.

³ — This may vary in robot-oriented societies at the referee's discretion.

Some characteristics, particularly Social Standing, may be further modified by the robot's programming.

Other characteristics

The remainder of a robot's URP lists other characteristics such as size, shape, and material. These other characteristics are explained in the following tables, along with costs, minimum Tech Level for manufacturing, and their effects on the six basic characteristics.

Note that the base cost of a robot in credits (CR) is determined by its size, and is modified by size and material. The system will become clear as one progresses through the various tables and reads the checklist at the end of the charts.

1. SHAPE

Code	Shape	Base cost	Tech Level	Str	Dex	End
0	Box/Tank	800	5	+1	-2	+2
1	Cylinder/Bullet	850	6	+1	—	+1
2	Cone	850	6	+1	-2	+2
3	Sphere	900	6	+1	—	+1
4	Plane/Disc	800	7	-1	+1	+1
5	Human top, Box bottom	1500	7	+1	+1	+1
6	Humanoid	1200	7	—	—	2
7	Human ¹	2000	8	—	+3	-1
8	Animal Shape ²	Variable ²	8	—	Variable ²	—
9	Unusual Shape ²	Variable ²	8	—	Variable ²	—

¹ — These robots are commonly known as androids. At the referee's discretion, an android can be made to look exactly like a certain person; however, this will drastically increase the cost of the 'droid (usually at least 200%), and may require a higher Tech Level for manufacturing.

² — This should be fully explained on the robot's design sheet; the cost, Tech Level, and attribute effects of these forms may vary widely, and it is up to the referee to decide what effects each specific form will have.

2. SIZE

Code	Size (ft/meters)	cost Modifier	Tech Level ¹	Str	Dex	End
0	Less than 1'/0.3 m	1.0	+2	+4	+3	-4
1	1'/0.3 m	0.8	+1	+5	+2	-3
2	2'/0.6 m	0.5	—	+6	+1	-2
3	3'/0.9 m	0.6	—	+6	+1	-1
4	4'/1.2 m	0.8	—	+ 7	—	—
5	5'/1.5 m	1.0	—	+ 7	—	—
6	6'/1.8 m	1.2	—	+ 8	—	—
7	7'/2.1 m	1.5	+1	+9	-1	+1
8	8'/2.4 m	1.8	+1	+10	-1	+2
9	9'/2.7 m	2.0	+2	+11	-2	+3
A	More than 9'/2.7 m ²	2.5	+2	+12	-3	+4

¹ — This is added to the base Tech Level found for Shape.

² — Cost, Tech Level, and attribute effects may vary in extreme cases; the referee must calculate the exact effects of this.

2A. WEIGHT

Although the weight of a robot is not especially important (and it has not been given a space in the URP code), it may be determined by using the following formula:

$$\text{Weight (in kg)} = (\text{Size Code} \times 12)^3 \times \text{Material Code} \times \text{Shape \%} \times 0.000048$$

The Size and Material codes are taken from the URP. The

Shape % is a function of the Shape Code, and is determined by referring to this table:

Shape Code	Shape %
0 or 1	150%
2, 6, or 7	100%
3	125%
4	80%
5	140%
8 or 9	Variable

Thus, a humanoid robot (Shape Code 6) standing 1.8 meters tall (Size Code 6) and having a Material Code of 7, would weigh roughly 125.4 kg. Any weight figure arrived at using this formula is approximate and can be modified as the referee sees fit.

3. MATERIAL

Rather than list all the possible materials a robot could be made from, different codes are used to indicate the relative strength and endurance of a given material, with "0" being the weakest (aluminum, ceramic, and the like) and "9" being the strongest (titanium, for instance). The material a robot is made from may give it "skin" equivalent to armor in some cases, as indicated on the following table.

Code	Armor Equivalent	cost Modifier	Tech Level	Str	End
0	None	0.25	1	-3	+3
1	None	0.4	1	-2	+4
2	Jack — 1	0.6	2	-1	+5
3	Jack	0.8	3	-1	+6
4	Jack	1.0	4	—	+7
5	Mesh	1.2	5	—	+7
6	Mesh	1.4	6	—	+8
7	Cloth ¹	1.6	7	+1	+9
8	Cloth ¹	1.8	8	+2	+10
9	Battledress	2.0	A	+3	+12

¹ — Except where Mesh would be better, in which case use Mesh.

3A: BASIC COST

Once the robot's Shape, Size, and Material have been determined, its basic cost can be calculated by multiplying the Base Cost (for Shape) by the cost modifiers for Size and Material. Thus, a robot with a Shape Code of 4, Size Code of 7, and Material Code of 6 has a basic cost of CR 1680 (800 x 1.5 x 1.4). This basic cost will be further modified by limbs, programming, and other attributes explained hereafter.

4. LIMBS

Code	Limb Type	Number	Tech Level	Dex	Cost
0	None	0	—	+1	—
1	Interface ¹	1 or 2	7	+3	CR 500/Attachment
2	Interface ¹	3 or 4	7	+3	CR 500/Attachment
3	Interface ¹	5+	8	+3	CR 500/Attachment
4	Tentacle	1	8	+4	CR 750/Tentacle ²
5	Tentacles	2	8	+5	CR 750/Tentacle ²
6	Tentacles	3 or 4	9	+7	CR 750/Tentacle ²
7	Tentacles	5 or 6	9	+9	CR 750/Tentacle ²
8	Tentacles	7+	9	+9	CR 750/Tentacle ²
9	Arm/Leg	1	8	+5	CR 1000/Limb ²
A	Arms/Legs	2	8	+7	CR 1000/Limb ²
B	Arms/Legs	3 or 4	9	+9	CR 1000/Limb ²
C	Arms/Legs	5+	9	+10	CR 1000/Limb ²
D	Wheels	1 or 2	4	+4	CR 50/Wheel ³
E	Wheels	3 or 4	3	+6	CR 50/Wheel ³
F	Wheels	5+	4	+7	CR 50/Wheel ³
G	Combination ⁴	(See below)			

¹ — For plugging into other robots, computers, terminals, and so on (mainly used for transmission of information or energy).

² — Modify by the Size Cost Modifier as for the rest of

the basic form. Note that a tentacle is considered to be about two-thirds of the robot's size, and this length can be increased for CR 150 per foot per tentacle.

³ — Modify by the Size Cost Modifier as for the rest of the basic form. Treads can be added at a cost of CR 200 per tread (this facilitates all-terrain travel).

⁴ — Combination robots have two or more types of limbs— for example, tentacles and wheels. Of course, the exact types and number must be listed on the robot's design sheet. The Tech Level is equal to one number higher than the level of the highest-level type included; a robot with two wheels and two tentacles, for instance, would have a Tech Level of 9. The Dexterity bonus is equal to the bonus for the best limb type, plus 1 for each additional limb of another type included (excluding "interface" limbs), up to a maximum additional bonus of +4. The cost of a combination robot is equal to the combined cost of all limb types plus an additional 20% of that number.

5. COMPUTER BRAIN

The computer brain of a robot is perhaps its most important feature. In addition to affecting its Intelligence score, the computer brain also limits the number of programs that the robot can store at one time. The following table lists the program capacity (the number of programs the brain can hold), equivalent Intelligence score, cost, Tech Level, and size requirement (the minimum Size Code a robot must have to contain that brain) for each of the Computer Brain Codes.

Code	Program Capacity	Equiv. Int.	cost	Tech Level	Minimum Size Code
0 ¹	0	2	250	5	0
1	1	3	500	6	0
2	2	4	1000	6	0
3	3	5	2000	7	1
4	5	6	3000	7	1
5	7	7	5000	7	1
6	10	8	7500	8	2
7	12	9	10000	8	2
8	15	A	15000	8	2
9	18	B	20000	9	2
A	20	C	30000	9	3
B	22	D	40000	A	3
C	24	E	50000	A	3
D	26	F	60000	B	3
E	28	G	80000	C	3
F	30	H	100000	D	4
G	32	I	125000	E	4
H	35	J	150000	F	4
I	40	J	200000	G	4
J	2	K	300000	H	5

¹ — This "robot" will have only automatic, pre-programmed functions: it can open cans, toast bread, or something similar, but not much more.

² — A Code J robot brain has artificial intelligence and is not programmed per se; instead, it learns skills just as a character would and has a virtually unlimited programming capacity. It is considered to have a normal Education score (see below); however, when it has attained 41 or more points of programming, its education is considered to be 21 (L).

6. PROGRAMMING

The robot's URP Programming Code is equal to one-half (round fractions up) of the programs *presently* stored in the computer brain. The hexadecimal letter system is still used for numbers above 9. Thus, a robot with 8 points of programming stored would have a Programming Code of 4, and one with 21 points of programming stored would have a Code of B, and so on. If more than 72 points of programming are stored (a highly unlikely occurrence, and only possible in a robot with artificial

intelligence), the Programming Code is considered to be Z.

The robot's Education Code is also based on the programs presently stored in it, and is determined in the same manner as the Programming Code. However, a robot's Education Code cannot exceed 21 (L), so if it has 41 or more points of programming, its Education Code is automatically L.

6A. Basic Command & Vocabulary Programs

Basic Vocabulary: Allows the robot to speak and understand one language for each "loading" of the program. The language must, of course, be specified for each application of the program. Audio sensors are required for the robot to hear the language, and speakers are required for it to be able to emit sounds in that language. Program Capacity Point Cost: 1 per application. Cost: CR 5000 per application. Tech Level: 8.

Basic Command: Allows the robot to understand and obey simple, one-word commands—"Come"; "Go"; "Bring"; and so on—in as many as three different languages for each application of the program. It does not require *Basic Vocabulary* (in fact, the loading of that program makes this one obsolete), but does require audio sensors. Program Capacity Point Cost: 1 per application. Cost: CR 3000 per application. Tech Level: 7.

Advanced Command: Allows the robot to understand and obey complicated instructions such as "Call me if another ship appears or if we get too close to a planet." Requires the *Basic Vocabulary* program and audio sensors. Program Capacity Point Cost: 1. Cost: CR 4000. Tech Level: 9.

Advanced Reasoning & Ego: Allows the robot to do things independently and act on its own initiative (though it will usually obey its master), and gives it a self-preservation instinct. It takes the place of *Basic Command* or *Advanced Command*, and does not require *Basic Vocabulary* (although the robot will doubtless have this program as well so that it can communicate verbally). It is the closest thing to artificial Intelligence below Tech Level H, and all robots with artificial Intelligence are

considered to have this program naturally. Program Capacity Point Cost: 2. Cost: CR 20000. Tech Level: 12 (C).

6B. Attribute Control Programs

These programs can be used to increase some of a robot's basic characteristics (all of them except for Intelligence and Education, which are based on programming anyway). Specifications for each of the four types of programs in this group are as follows:

Strength can be increased a maximum of 2 points, with a Program Capacity Point Cost of 1 for each point of extra Strength desired and a Cost of CR 800 per point of increase. This program is Tech Level 9.

Dexterity can be increased a maximum of 4 points, with a Program Capacity Point Cost of 1 per point and a Cost of CR 750 per point. Tech Level 8.

Endurance can be increased a maximum of 3 points, with a Program Capacity Point Cost of 1 per point and a Cost of CR 1000 per point. Tech Level 9.

Social Standing (considered to be training in protocol, etiquette, and the like) can be increased a maximum of 6 points, with a Program Capacity Point Cost of 0.5 (round fractions up) per point and a Cost of CR 500 per point. Tech Level 8.

6C. Skill Programming

These programs enable a robot to perform skills at various levels, just like a human character; a robot can have Pilot—2; Gunnery—1; Medical—3; and so on. Robots incur the usual penalty of five when using a weapon they do not have skill with.

The costs, Tech Level, and other characteristics of these skills must be set by the referee, since there are far too many to list here, but the Program Capacity Cost will always be 1 point per level of skill in each skill. The average cost will be between CR500 and CR 1000 (for a skill level of 1), and the average Tech Level will be 7 to 9. As a rule of thumb, skills involving the use of

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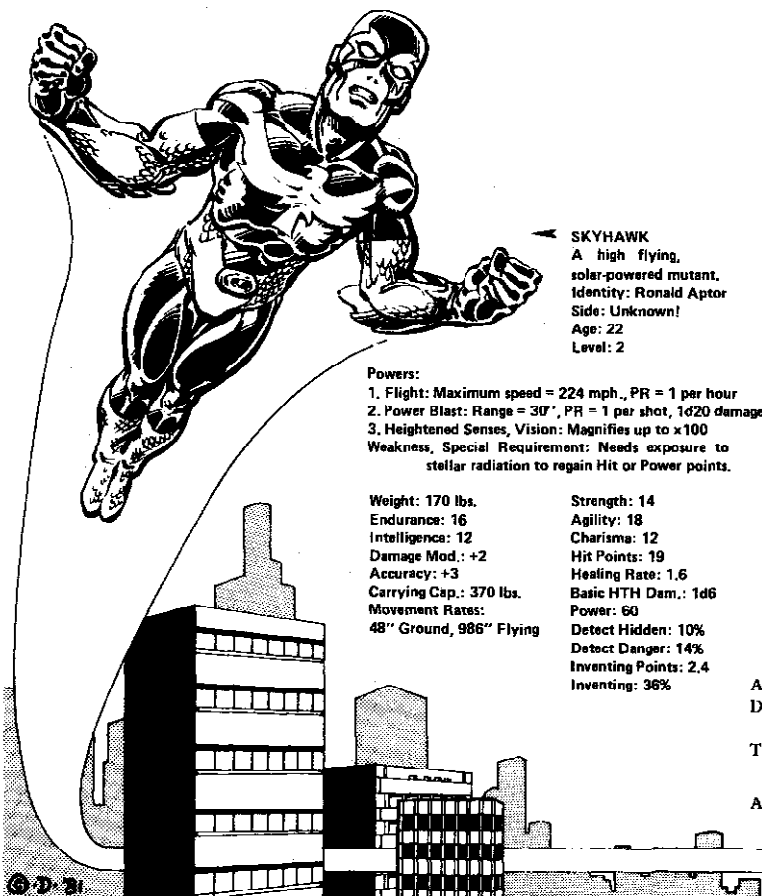
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solar-powered mutant.
Identity: Ronald Apter
Side: Unknown!
Age: 22
Level: 2

Powers:
1. Flight: Maximum speed = 224 mph., PR = 1 per hour
2. Power Blast: Range = 30', PR = 1 per shot, 1d20 damage
3. Heightened Senses, Vision: Magnifies up to x100
Weakness, Special Requirement: Needs exposure to stellar radiation to regain Hit or Power points.

Weight: 170 lbs.	Strength: 14
Endurance: 16	Agility: 18
Intelligence: 12	Charisma: 12
Damage Mod.: +2	Hit Points: 19
Accuracy: +3	Healing Rate: 1.6
Carrying Cap.: 370 lbs.	Basic HTH Dam.: 1d6
Movement Rates:	Power: 60
48" Ground, 986" Flying	Detect Hidden: 10%
	Detect Danger: 14%
	Inventing Points: 2.4
	Inventing: 36%

a technological weapon or vehicle will be one Tech Level higher than that of the device in question. The minimum Tech Level for implementation of any of these programs is 6.

The cost of each program increases by an increment of 25% plus the base cost for each level of skill beyond the first. Thus, a skill which costs CR 1000 for level 1 would cost CR 2250 for level 2 (1000 + 1250), CR 3750 for level 3 (1000 + 1250 + 1500), CR 5500 for level 4 (1000 + 1250 + 1500 + 1750), and so on.

Examples of how some skills might be rated are given below:

Program/Skill	Cost	Tech	Program/Skill	Cost	Tech
Pilot	1000	10	Medical	1200	8
Ship's Boat	800	8	Survival	900	8
Vacc Suit	500	8	Jack-of-Trades	1500	9
Fwd Obsv	800	8	Gambling	1000	8
Gun Combat	750	6-10+	Brawling	800	7
Blade Combat	750	6	Vehicle	800	6+
Gunnery	800	8-10+	Tactics	1200	9
Mechanical	900	7	Administration	800	7
Electronic	900	7	Steward	800	7
Engineering	1000	8	Streetwise	1000	8
Computer	1000	8+	Forgery	1200	8
Navigation	1250	10	Bribery	1250	9
Demolitions	850	8	Combat Engineer	1000	8
Instruction	1000	8	Interrogation	800	8
Recon	900	7	Recruiting	900	8

7. EXTRA FEATURES

The URP Code for extra features is simply equal to the number of extra features the robot has (three extra features would be Code 3; 11 extra features would be code B). The particular features are listed on the robot's design sheet. Some basic features, with costs and tech levels, are listed below. The list given here is by no means exhaustive. Individual features of the same type are counted separately for the URP Code (i.e., three visual sensors would count as three features).

Feature	cost	Tech Level
Visual sensors (eyes)	500/eye ¹	7
Telescopic eyes (about 50x)	1000/eye ¹	8
IR or LI eyes	+250/eye ¹	9
Audio sensors (ears)	250/ear ²	6
Increased-sensitivity ears ³	+200/ear ²	7
Olfactory sensors (nose)	1500 ¹	9
Taste sensors	1750 ¹	9
Touch sensors	1500 + 200/Size Code ¹	9
Voder (speaker)	500 ²	8
Built-in weaponry	Weapon cost +20%	4
Built-in armor	Armor cost +10%	4
Built-in lights	30/Light	5
Grav pads	10000	12
Hover-vents	5000	9
Electrical protection circuit	200 ¹	7
¹ — Includes all costs for necessary circuitry and so on.		
² — Includes all costs for necessary circuitry and so on.		
Note that these items require the appropriate Basic Command and/or Basic Vocabulary programs to be of much use.		
³ — A robot with these audio sensors cannot be surprised in most normal situations.		
⁴ — Equal to one number higher than the Tech Level of the device in question.		

8. POWER SOURCE

The power source of a robot is very important, since it limits the number of things a robot can do at a given time. There are three basic power source types:

Low: Must be recharged or refueled at 24-hour intervals. Will fail to function in emergency situations on a roll of 10+ (2d6).

Medium: Must be recharged at 72-hour intervals or be exposed to a suitable power source (solar energy, heat, etc.) at all

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times so that it does not have to use its own power supply. Will fail to function in emergency situations on a roll of 12+ (2d6).

High: This source has a semi-regenerative power supply, and it will function for at least a month before requiring recharging (a bit of power is lost in each regenerative cycle). After a month without a checkup or recharging, +1 is added to the "failure roll" for each additional week spent without such an overhaul. It will fail to function in emergency situations on a roll of 13+ (2d6, modified as explained above if overdue for recharging).

Each type of power source has a rating of 1 to 5, which indicates how many functions the power source can handle at one time. The various functions and features a robot has are defined on the following table as to how much power they use. These figures are totalled, and the robot's Power Rating Code (see following text for how to determine this rating) must be at least equal to this amount for it to use all of the available features at one time.

Function/Feature	Power required
Per limb (excluding wheels)	0.2
Motor for movement	0.8 + 0.1/Size Code over 6
Grav pads ¹	0.5 (while functioning)
Hover vents ¹	0.6 (while functioning)
Computer brain	0.2 plus 0.1/Int pt. over 10
Per program stored	0.01
Per sensory unit (each ear, eye, etc.)	0.1 ²
Electrical protection circuit	0.4 (while functioning)
Built-in energy weapons	0.05/dice of damage
Other features	As decided by the referee

¹ — "Motor for movement" cost is 0.3 plus 0.15/Size Code over 4 for these features.

² — Plus an extra 0.1 for coordination if three or more different senses (ears, eyes, odor sensors, touch sensors) are possessed.

Once a figure for the power needed to operate a robot's features and functions has been totalled, subtract it from the robot's Power Rating Code. The remainder is applied to determine the robot's effective Strength, at a rate of 0.05 power unit per point of Strength. Thus, if a robot could normally have a Strength score of 10, but had only 0.4 power unit left over for Strength, its effective Strength score would be 8 instead of 10. (it could be increased up to, but not past, the maximum normal score of 10 if the robot took power from some other purpose — movement, for example — and applied it to its Strength. A robot will always have a minimum effective Strength of 1, regardless of its available power, as long as every other characteristic of the robot (size, shape, etc.) permits this.

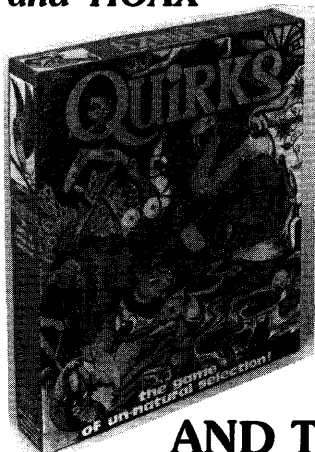
Example: A robot with four arms, normal mode of movement (no grav pads or hover vents), a computer brain with an Intelligence of 12, seven programs stored, plus eyes, ears, and taste sensors, and a built-in 4D laser carbine would require 2.87 units of power, calculated as follows:

$$0.8 (\text{limbs}) + 0.8 (\text{motor}) + 0.4 (\text{brain}) + 0.07 (\text{programs}) + 0.6 (\text{senses}) + 0.2 (\text{laser}) = 2.87$$

Such a robot would require a minimum Power Rating Code of 3. If it had a rating of 4, for example, it would have 1.13 power units left over, which would easily cover its Strength requirements (since this would be enough power to supply a Strength of 22).

Recharging: Robots can be recharged at proper terminals set up for this purpose, or at any ship or similar power source if the robot has at least one interface limb. Recharging, regardless of the Power Code Rating of the robot or the amount of power being charged into it, usually costs about CR 250. (A robot — or its owner — can, of course, try to steal power, especially with an interface limb.)

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POWER RATING CODE TABLE

Power Code	Type	cost	Minimum Size ¹	Tech Level
0	None ²	0	0	—
1	Low Power—1	500	0	5
2	Low Power—2	1000	1	6
3	Low Power—3	2000	2	7
4	Low Power—4	3000	3	8
5	Low Power—5	5000	5	8
6	Medium Power—1	1000	1	6
7	Medium Power—2	2000	1	7
8	Medium Power—3	3000	2	8
9	Medium Power—4	4500	3	9
A	Medium Power—5	6000	5	A
B	High Power—1	2000	1	8
C	High Power—2	3000	2	9
D	High Power—3	5000	3	A
E	High Power—4	7500	4	B
F	High Power—5	10000	6	C

G Multiple³ — (See note below) —

¹ — Minimum size may be reduced by 1 factor for every 2 Tech Levels of the basic robot unit (round fractions down), but cannot be reduced below one-half of the usual minimum size (a minimum of zero in any event — again, rounding fractions down).

² — Must be hooked into an outside power source to function (interface limbs are necessary for this).

³ — A robot can have more than one power source if desired. In this case, Minimum Size is determined by totalling the Minimum Size Code needed for each source. Cost is equal to the combined Cost of all power sources, plus 5% of that figure, and Tech Level is equal to that of the highest-level source.

URP CHECKLIST

As explained previously, robots have URP codes, just as players have UPP codes. A robot's URP code is a string of 15 digits and/or letters: the six attribute digits, the eight robot feature digits, and the Tech Level of the robot, which is equal to that of the highest-level component used to manufacture the robot; higher-level bases can manufacture lower-level robots more cheaply, as described on page 43 of *Mercenary*. In summary, the order of listings in a robot's URP is:

- | | |
|--------------------|--------------------|
| 1. Strength | 9. Material |
| 2. Dexterity | 10. Limbs |
| 3. Endurance | 11. Computer Brain |
| 4. Intelligence | 12. Programming |
| 5. Education | 13. Extra Features |
| 6. Social Standing | 14. Power Rating |
| (followed by dash) | (followed by dash) |
| 7. Shape | 15. Tech Level |
| 8. Size | |

Example: A sphere-shaped, four-foot-diameter robot made of average material (5) and having four tentacles, space for 10 points worth of programming in its brain, loaded with two programs (+1 Dexterity and Ship's Boat—1), plus two special features (one IR eye and a built-in Laser Carbine), and a Medium—4 power source, would have this URP:

888812—34566129—9

Construction time: If all materials required are on hand, a robot will usually take a number of days to build equal to its Size Code (0 and 1 count as 2) plus 0.05% of its cost. Thus, a Size Code 5 robot worth CR 30,000 would take 20 days to build. This duration is increased by 1 day for each Material Code point higher than 7 and for each 4 programs beyond the first 8 (round fractions up).

Construction time can be reduced by spending more money, or by building at a factory with a higher Tech Level than the robot being built. For every additional 1% of the robot's Cost which is spent to speed things up, the time required is reduced

by 1%, with a maximum decrease of 25% possible by this means. If the factory is of a higher Tech Level than the robot being manufactured, time is reduced by the difference in Tech Levels multiplied by 5%, with a maximum reduction of 50% possible in this manner. In either of these time-reduction methods, fractions should be rounded down.

Example: The robot described above, costing CR 30,000 with a base construction time of 20 days, could be built in 19 days (5% less time) for an additional expenditure of CR 1500 (5% of the base cost). If the robot being constructed is Tech Level 5 and the factory being employed is Tech Level 7, the construction time would be decreased by another 10% of the original 20-day figure, or 2 days, so that this robot could be built in only 17 days under these conditions.

Robots can be constructed either at special factories designed for this purpose, or at Type A starports.

Repairs and Overhauls: Occasionally a robot will need a complete overhaul in addition to minor repairs. "Overhaul time," the number of years between each major repair job, is calculated using this formula:

Overhaul time (in years) =

$0.5 \times (\text{Endurance} + \text{Material} - \text{Power Rating Code} - 4)$
Treat Power Rating Codes of 0, 1, and 2 as 3, and Power Rating Codes of D (13), E (14), and F (15) as 12.

The minimum overhaul time for any robot is half a year. Thus, a robot with Endurance 6, Material Code 5, and Power Rating Code 7 would need maintenance once every half a year. One with Endurance 12 (C), Material Code 8, and Power Rating Code 10 (A) would need maintenance once every three years.

An overhaul costs 0.5% of the robot's initial Cost. If it is not performed within the required time, the robot may malfunction. The initial chance of a malfunction due to lack of maintenance is a roll of 12+ (2d6). This roll is made at the deadline time, if an overhaul is not immediately forthcoming, and other "malfunction rolls" are made every two months thereafter, with +1 added to the roll each time it is taken until the maintenance is done.

Over and above the need for regular maintenance, there is a chance (12+ on 2d6, with appropriate DMs made by the referee, rolled once every two months) that the robot will require minor repairs costing anywhere from CR 10 to CR 60. Of course, situations may arise in which much more extensive repairs are required — if the robot gets damaged in combat, falls off a cliff, or suffers some similar calamity. The referee must decide the cost of these repairs, based on the extent of the damage.

Longevity: A robot will typically last 80 to 100 years before being beyond repair — and even in such a case, its memory circuits (the computer brain) can be installed in a new body so that it does not actually "die." To find the maximum "lifetime" of a robot in years, compute its Endurance Factor and Material Factor (defined below) and use this formula:

Maximum lifetime =

$100 + \text{Endurance Factor} + \text{Material Factor} - \text{Power Rating Code}$

A robot's Endurance Factor = $5 \times (\text{Endurance} - 8) \times 5$. This number can be negative.

A robot's Material Factor = $(\text{Material Code} - 5) \times 10$. This can also be a negative number.

Robot design sheet: Referees and players will find it particularly useful to make "character sheets" (called "robot design sheets" in this article) for their robots, just as they do for characters. At least one sheet should be made for each type of robot (for the prototype model), and many players will no doubt wish to have character sheets for their "one-of-a-kind" robot companions. These sheets should include room for the URP code, plus space for notes to elaborate on some of the information given in the Code (features, programs, and so on). It should also have room for noting the robot's general condition and overhaul requirements. The *Ship's Data* sheet on page 35 of *High Guard* is a good framework to use for a robot design sheet.



DWARVES in SPACE

by Roger Moore

One of the most aggravating things about fantasy and science fiction, for me anyway, is the knowledge that there are few times when one will be able to confront the other in role-playing games. I'm a serious fan of both the AD&D™ game and the *Traveller*™ system, and I've sometimes wished that I could take the characters from one universe and go visit the lands of the other. . . . But even a rudimentary knowledge of both games is enough to tell that the basic differences between them are too great to bridge with a simple set of rules, the way the AD&D system can be linked to the GAMMA WORLD® game or the BOOT HILL® game. However, there is no reason why creatures and items from an

AD&D world cannot exist in a *Traveller* universe in their own right. The galaxy is a big place (100,000 light-years across, with literally millions of stars and planets) and I suppose that if you look long enough for anything, eventually you may find it.

To begin with, though, I strongly suggest that the *Traveller* referee not include magical spells and items as part of the universe that he/she creates. Gunpowder and technological devices beyond medieval advancement do not exist in the world of the AD&D rules, and this preserves the flavor of the game. This prohibition also maintains game balance, as DMs who've let players get hold of laser rifles and force blades have discovered.

Any advantage that players get is sure to be exploited fully (or perverted fully), and their characters may become too powerful to play comfortably.

Traveller works the same way. Try to imagine the results of allowing *Traveller* players to find a *ring of wishes*; a referee who is confident that he or she could handle the situation is probably overestimating his or her abilities as a referee and underestimating the players. The orientation toward science and technology, and away from magic, in the "new" universe should be maintained — even played up, especially when the players hint that they'd love to see a few +5 flaming cutlasses lying around on their planet.

One area that would lend itself well to the "conversion" of an AD&D game to a *Traveller* adventure would be the introduction of new weapons in the family of blades and polearms. Granted, in a star-roving society there is not much call for expertise with a glaive-guisarme, but worlds with a tech level of 0 to 3 will likely have many types of hand-to-hand combat weapons. In particular, the character class of the Barbarian (*Traveller* Supplement 4, *Citizens of the Imperium*) would likely have access to a wide variety of archaic combat weapons that other classes would not. Statistics for the various sorts of primitive weaponry can be derived using the notes in the AD&D Players Handbook, but careful readers will discover some discrepancies between *Traveller* weapons and their AD&D equivalents. For example, a "broadsword" in *Traveller* is a two-handed affair, yet is about the same size and weight as an AD&D "broadsword," which is a one-handed weapon: it is smaller, in fact, than the AD&D hand-and-a-half sword. Further comparisons between each game system's version of daggers, swords, spears, cutlasses (scimitars), cudgels (clubs or morning stars), and so forth reveal other differences, but with some good guesswork a referee should be able to generate the characteristics of javelins, tridents, axes, and other items as desired.

A second possibility, more complicated than introducing new weapons into the *Traveller* system, is the introduction of some of the creatures common to fantasy games. It is going to take the referee quite a while to calculate the sizes, weights, attack damage, speed, etc., of the various denizens of the *Monster Manual* in *Traveller* terms, but the results can be very interesting indeed. Non-magical beasts like the anhkheg, purple worm, shrieker, and yellow mold can be developed as the fauna of several different worlds; retaining the AD&D name for such monsters often helps develop a clearer picture of them for the players, particularly if they are already familiar with the AD&D versions. Referees may want to modify the monsters to prevent

players from being too familiar with the creatures.

Some monsters may need to be placed in tailor-made environments; rocs, for example, probably couldn't fly unless they were on low-gravity worlds. Giant-sized versions of common terrestrial animals (badgers, rats, wolves) might be natural mutations resulting from living in a cold environment (the way mammals became gigantic during the Ice Age on Earth), or they might be the results of an Imperial genetic engineering program. Postulating that some creatures can develop psionic powers allows the referee to create beasts with some magic-like effects, like blink dogs who use a form of limited teleport ability. *Traveller* psionics, although very different from AD&D psionics, can still duplicate the attack powers of su-monsters, gray oozes, and brain moles. Even fire-breathing dragons are possible (as they are in Heinlein's *Glory Road* and McCaffrey's novels of the *Dragonriders of Pern*). As always, the referee should be the final arbiter of what is reasonable and what is not.

Creatures with strong ties to other AD&D planes (that do not exist in *Traveller*) such as aerial servants, lichs, efreeti, and ki-rin cannot be converted if they have too many magical powers or are not material beings. You could assume these sorts of beings are energy creatures or specimens of incredibly advanced cultures, but use your own best judgement.

Perhaps the most interesting, and most difficult, fantasy addition to *Traveller* would be the creation of new character races for the players and/or for non-player characters. At this point I want to urge the reader to examine or re-examine Gary Gygax's column from issue #29 of *DRAGON™ Magazine*. (Editor's note: *This column was reprinted under the title "Humans and hybrids" in Best of DRAGON Vol. II.*) He discusses balancing the AD&D campaign in terms of the available character races, and makes many appropriate comments. The referee should use his or her discretion, remembering that the Imperium is a human-dominated society and a human-oriented one as well. Unless the referee and players have created a sort of "United Federation of Planets" universe as in *Star Trek*, aliens will generally play second fiddle to humanity. Care should be used in creating new player races to ensure that they are compatible with the game. Storm giant player characters, for example, are much too powerful for a *Traveller* scenario, and sometimes would be at a serious disadvantage (trying to crew a missile battery without training, trying to fit through a ship's airlock, etc.). New races, therefore, should not be overly more powerful than humans. (Otherwise, as Mr. Gygax put it, why would anyone want to be a human?)

Skeptics should note that there is literary precedent for introducing fantasy beings into a science-fiction setting, not the least (and perhaps one of the best) of which is Ursula K. LeGuin's *Rocannon's World*, a book I cannot recommend highly enough to science-fiction or fantasy fans.

As an example of such a fantasy race in *Traveller*, and for the benefit of all dwarfophiles everywhere, I present here my version of *Traveller* dwarves. *Rocannon's World* had a dwarven race called the Gdemiars, but my version is drawn straight from the AD&D game, with minor changes. For *Traveller* purposes, I assume that Imperial humanity discovered a world (code X9666C72, Non-Industrial, of a K2 variable sun) inhabited by a race of beings much like the dwarves of old mythology. The variable nature of their sun encouraged their construction of underground cities, and the stronger gravity of their homeworld produced their shorter stature (1.2 m average) and greater constitution and strength. Underground living and the increased infrared from their sun also produced a form of infrared vision effective for up to 20 meters. Dwarves generally have expressed a desire to avoid contact with the Imperium, but a few individuals would be willing to make a trek to the stars if a ship were to land nearby. The *Traveller's Aid Society* has listed the dwarven homeworld as a Red Zone, due to Imperial restrictions, and special permission to land there is required from the Imperium (throw 12+ for permission, DM's applicable for Admin and Bribery skills). No starport facilities of any kind exist on-planet, though there are several space stations in orbit.

Two-thirds of all dwarves are male, and the rate of population increase is very slow. Their low reproductive rate is balanced by their longer lifespans (400 Imperial years or more). Dwarves also take a longer time to learn their initially generated skills. Some dwarves are assumed to have had previous contact with humans; the skills of Gun Combat, Mechanical, and Jack-of-all-Trades reflect this source of knowledge. They speak their own language, as well as the standard Imperial tongue. Because of their non-intervention in the matters of human politics, dwarves cannot exceed a Social standing of 10 (A) in the Imperium, though they may have higher positions on their homeworld; let any scores over 10 become 10 when the dwarf is travelling away from "home."

For game purposes, dwarven physiology is assumed to be much like human physiology, so Medical skills are interchangeable. Dwarves survive a low-passage journey on a roll of 4+ on two dice, with normal DM's if someone with medical expertise is nearby.

The characteristics of dwarven travellers are generated as per the human

norm, and they may be male or female. They must have initial minimum scores of 6 for Strength and 9 for Endurance. Dwarven travellers are generated at a starting age of 60 years (dwarven years being about the same as Imperial years), and they enter the career table from this point. Rank titles may be kept as part of the dwarf's name, if desired, when the career ends (e.g., Myrmidon Gimli the Wanderer). Psionic potential for dwarves is optional.

Enlistment into a career is automatic for a dwarf; no other option is open due to cultural and Imperial restrictions on letting non-humans into the armed forces of the Imperium. Players who consider this unfair should consider the thought that I also wanted to preserve the flavor of dwarven personality; Gimli the Wanderer has more believability with Battle Axe-3 than with Battle Dress-3.

As shown on the Aging Table, the terms of career service are for twenty years each, reflecting various cultural and personal factors inhibiting their acquiring of skills (and preventing them from becoming too powerful, as well). Survival, positions and promotions, skills and training, and reenlistment are all as per *Traveller Book 1*, p. 5-6. Reenlistment is mandatory on a roll of 12. Dwarves may serve up to ten terms voluntarily, and may retire any time after the fifth term of service. Mustering out is conducted exactly as described on p. 7 of Book 1, with extra die rolls for higher ranks and with restrictions on how many times the cash benefits table may be consulted. Except for the terms of service being quite a bit longer than the human norm, aging effects are applied in the same way as for humans. See the Dwarven Aging Table (given in this article) and p. 7-8 of Book 1 for details. Dwarves usually live to be about 520 years of age. Note that aging effects can reduce strength and endurance below the initially rolled minimums of 6 and 9, respectively.

If a dwarven character uses any of the drugs listed in Book 2, there is a chance of this action having a harmful effect on the dwarf due to biochemical differences between them and humans. On a roll of 8+ (throw each time a dwarf uses a drug) there will be serious side effects from the medication. In these cases, the drug's effect will still occur as desired, but the dwarf will take 1-3 dice of damage as well (unless Medical drug is alone administered, in which case there are no bad side effects).

Dwarven Characteristics Table

Strength:	6—15
Endurance:	9—15
Dexterity:	2—15
Intelligence:	2—15
Education:	2—15
Social Standing:	2—10
(max. 15 on homeworld)	

Dwarven Traveller Career Table

Enlistment:	(automatic)
Survival:	6+
	(DM +2 if Endur 8+)
Position:	7+
	(DM +1 if Stren 8+)
Promotion:	9+
	(DM +1 if Stren 10+)
Re-enlistment:	5+

Automatic Skills Table

Dwarf:	Blade Cbt-1, Prospecting-1
Dwarf Lord:	Leader-1

Acquired Skills Table

Personal Development Table

1	+1 Stren	4	+1 Dext
2	+1 Endur	5	+1 Endur
3	+1 Stren	6	Blade Cbt

Service Skills Table

1	Blade Cbt	4	Prospecting
2	Blade Cbt	5	Prospecting
3	Bow Cbt	6	Brawling

Advanced Education Table

1	Prospecting	4	+1 Soc
2	Medical ¹	5	Survival
3	Leader	6	Tactics

¹—Dwarven medicine, not human

Advanced Education Table

(for characters with Educ 8+)			
1	Gun Cbt	4	Prospecting
2	Mechanical	5	Leader
3	Instruction	6	Jack-o-T

Table of Rank

Rank 1:	—
Rank 2:	Hero
Rank 3:	—
Rank 4:	Myrmidon
Rank 5:	Champion
Rank 6:	Lord

Benefits Tables

Material	Cash
1 Blade	1 ———
2 Blade	2 ———
3 Blade	3 ———
4 +1 Endur	4 1000
5 +1 Stren	5 5000
6 Low Psg	6 10000
7 High Psg	7 20000
(+1 DM for Rank 5-6)	(+1 DM for retired characters)

Blades and Polearms Table

Dagger	Mace
Blade	Great Mace
Hand Axe	Sword
Battle Axe	Hammer
Great Axe	Sledgehammer
War Pick	Cudgel
Great Pick	Spear
Pike	

Bow Weapons Table

Short bow
Military crossbow
Sporting crossbow
Repeating crossbow

NEW WEAPONS TABLES

Weapon	Base weight	Length overall	Base price	Wound inflicted	Range Close	matrix Short
Hand Axe	1000	450	40	2d+1	+1	+1
Battle Axe	1500	1000	75	3d	-1	+1
Great Axe ¹	2250	1800	100	4d-3	-4	+2
War Pick	1250	900	50	2d+2	-1	+1
Great Pick ¹	1750	1300	100	3d+1	-3	+1
Hammer	1000	500	20	1d+3	0	0
Sledgehammer ¹	1750	1500	75	3d-3	-1	+1
Mace	2000	1000	70	2d+2	0	+1
Great Mace ¹	2500	1500	100	3d+2	-2	+3

¹ — Two-handed weapon.

All weights are in grams, lengths in millimeters, prices in credits.

Attacker's Weapon	None	Jack	Defender's Armor Mesh	Cloth	Reflec	Ablat	Battle
Hand Axe	+2	+1	-3	-3	+2	-2	-6
Battle Axe	+3	+2	-3	-3	+3	-2	-6
Great Axe	+4	+3	-2	-3	+4	-2	-5
War Pick	+2	+1	-2	-2	+1	-3	-6
Great Pick	+4	+3	-2	-2	+3	-3	-6
Hammer	0	0	-2	-3	0	-2	-7
Sledgehammer	+1	0	-2	-3	+1	-2	-7
Mace	0	0	-2	-3	0	-2	-7
Great Mace	+2	+1	-1	-2	+2	-1	-6

Weapon	Required strength level	Required strength DM	Advantageous strength level	Advantageous strength DM	Weakened blow or swing DM
Hand Axe	5	-1	8	+2	-2
Battle Axe	6	-2	9	+2	-2
Great Axe	6	-2	10	+2	-3
War Pick	5	-2	9	+2	-2
Great Pick	6	-2	10	+2	-2
Hammer	5	-1	8	+2	-1
Sledgehammer	7	-2	10	+2	-2
Mace	6	-1	9	+2	-1
Great Mace	8	-2	10	+2	-2

CONDENSED COMBAT CHART

Weapon Type	None	Jack	Armor Type and Range Mesh	Cloth	Reflec	Ablat	Battle
	C S	C S	C S	C S	C S	C S	C S
Hand Axe	5 5	6 6	10 10	10 10	5 5	9 9	13 13
Battle Axe	6 4	7 5	12 10	12 10	6 4	11 9	15 13
Great Axe	8 2	9 3	14 8	15 9	8 2	14 8	17 11
War Pick	7 5	8 6	11 9	11 9	8 6	12 10	15 13
Great Pick	7 3	8 4	13 9	13 9	8 4	14 10	17 13
Hammer	8 8	8 8	10 10	11 11	8 8	10 10	15 15
Sledgehammer	8 6	9 7	11 9	12 10	8 6	11 9	16 14
Mace	8 7	8 7	10 9	11 10	8 7	10 9	15 14
Great Mace	8 3	9 4	11 6	12 7	8 3	11 6	16 11

Note: Number shown is the minimum needed "to hit" rolled on 2d6.

DWARVEN AGING TABLE

Term of service:	6	7	8	9	10	11	12	13	14+
Age:	180	200	220	240	260	280	300	320	340
Strength	(.....1 (7+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)
Dexterity	(.....-1 (7+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)
Endurance	(.....-1 (7+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)	(.....-1 (8+)
Intelligence	.....	no effect before age 400; then -1	(8+)	(8+)	(8+)	(8+)	(8+)	(8+)	(8+)
Education	.....	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.
Social Standing	.....	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.	unaffected by aging.

"Term of service" refers to the end of that numbered term. "Age" refers to the first day of the personal (physiological, not chronological) year.

The negative shown is the potential reduction in characteristic if the saving throw (given in parentheses) is not made, using two dice.