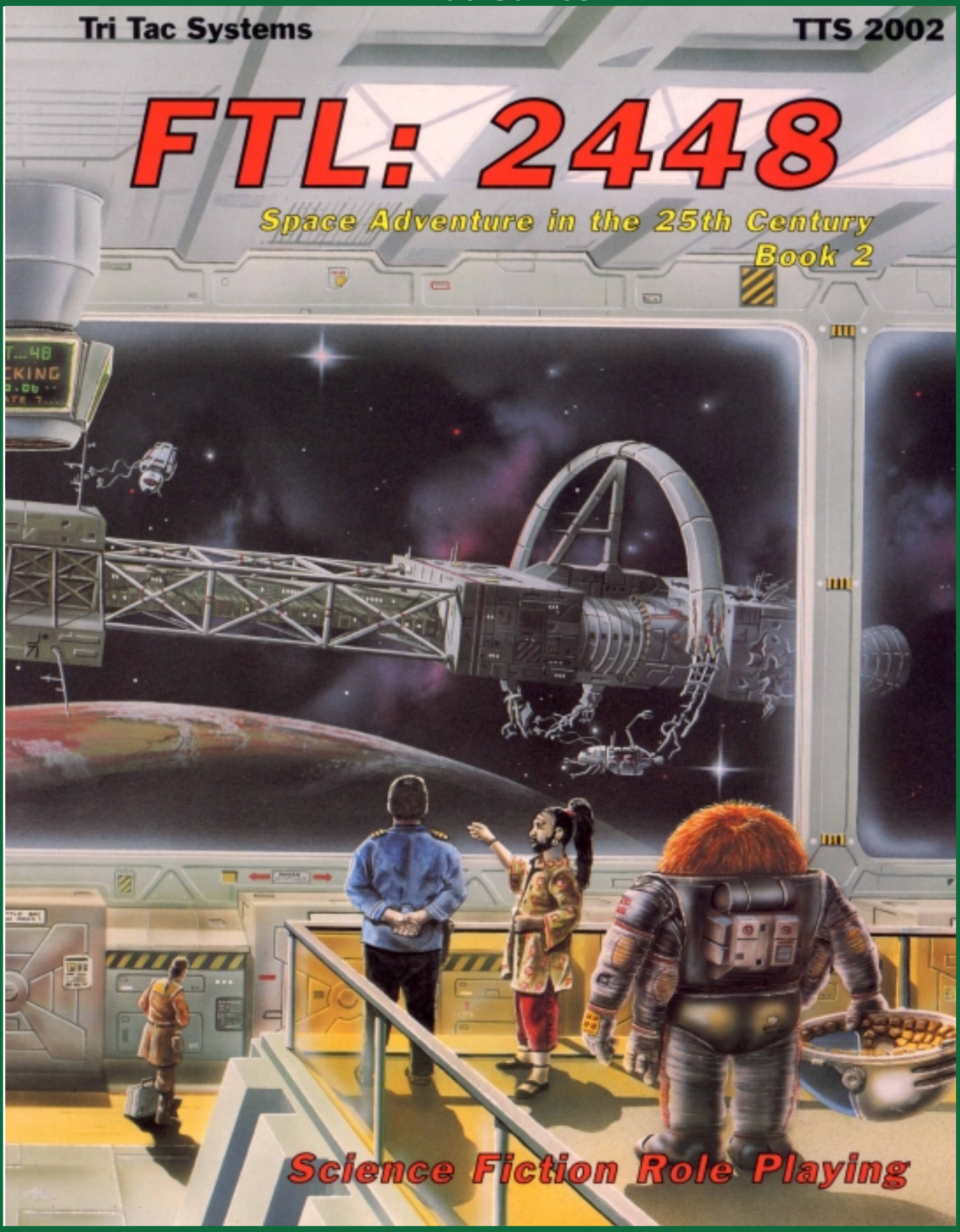
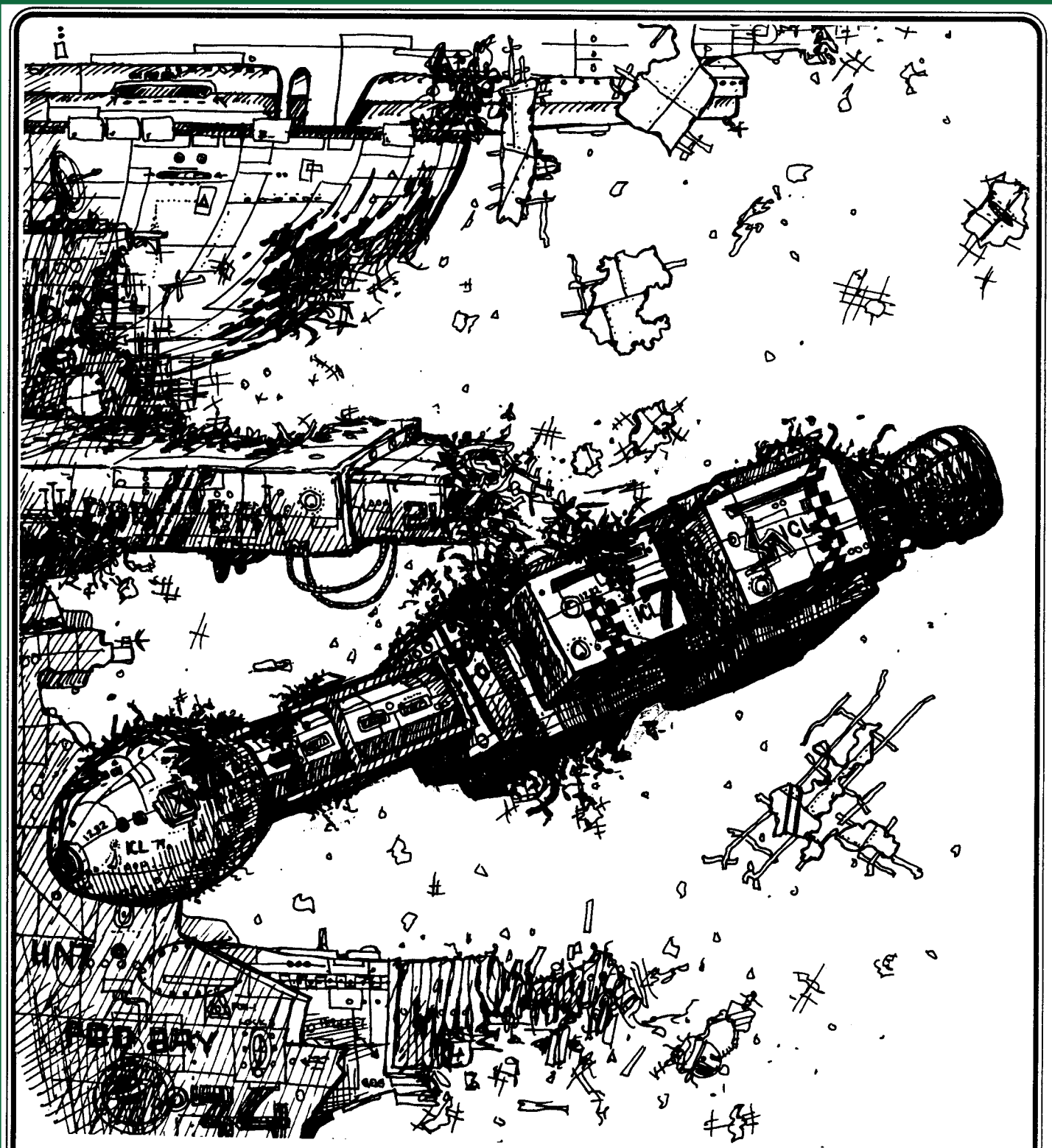

Tri Tac Systems
TTS 2002
FTL: 2448
Space Adventure in the 25th Century
Book 2
Science Fiction Role Playing

Tri Tac Games



FTL: 2448

Book 2

by Richard Tucholka

FTL: 2448 --Book 2

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In Memory of:	Josh Saulnier
William Welsh	Ted McAdam
Joseph Tucholka	Dan Truman

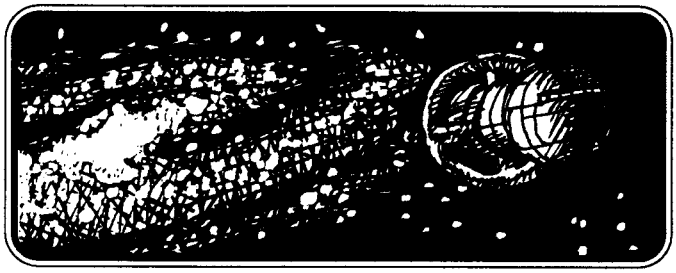
DESIGNER'S NOTE

So many gamers and technical advisors have commented and helped, that I can't mention them all.

I especially dedicate this edition to the crews of thefollowing Starships.

Santa Barbara ISCO 0024	Ventura ISCO 0013
The Busted Flush	Gooseberry Fool
Lancaster/Disaster	HMS Aardvark
Rio Dawn	Altamera
Fontana	FG Sanford

And to the Canadians at the University of Windsor who fought the Hagonni behind Enemy Stars.



Tri Tac Games
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INTRODUCTION:

The Light Fantastic --Book 2

> "There is a new age dawning, an age of friendship, peace and plenty for all, an age of growth and expansion across this spiral arm of the Galaxy. Space is ours."
>
> ***Henderson Putnam***

> "I wish!"
>
> ***Henderson Putnam***

FRONTIER 2448

As humanity and its alien friends expanded across space a second empire began to keep a watchful eye on the fledgling star travellers.

Ancient and hostile, the Hagonni Empire is now looking towards the frontier of ISCO space and the resources and technology that make them look primitive by comparison. While the Hagonni have numerical superiority, they lack the dedication and drive of humanity and its allies.

As lines form across the Colonial boundries, ISCO Space realizes the problems it will be facing. It begins preparations for the upcoming conflict, expanding its Marine and Space Navy. Behind the scenes ICL Special Forces are being equipped and trained to be dropped far behind Hagonni slave worlds where they hope to damage the Hagonni infrastructure and start rebellion.

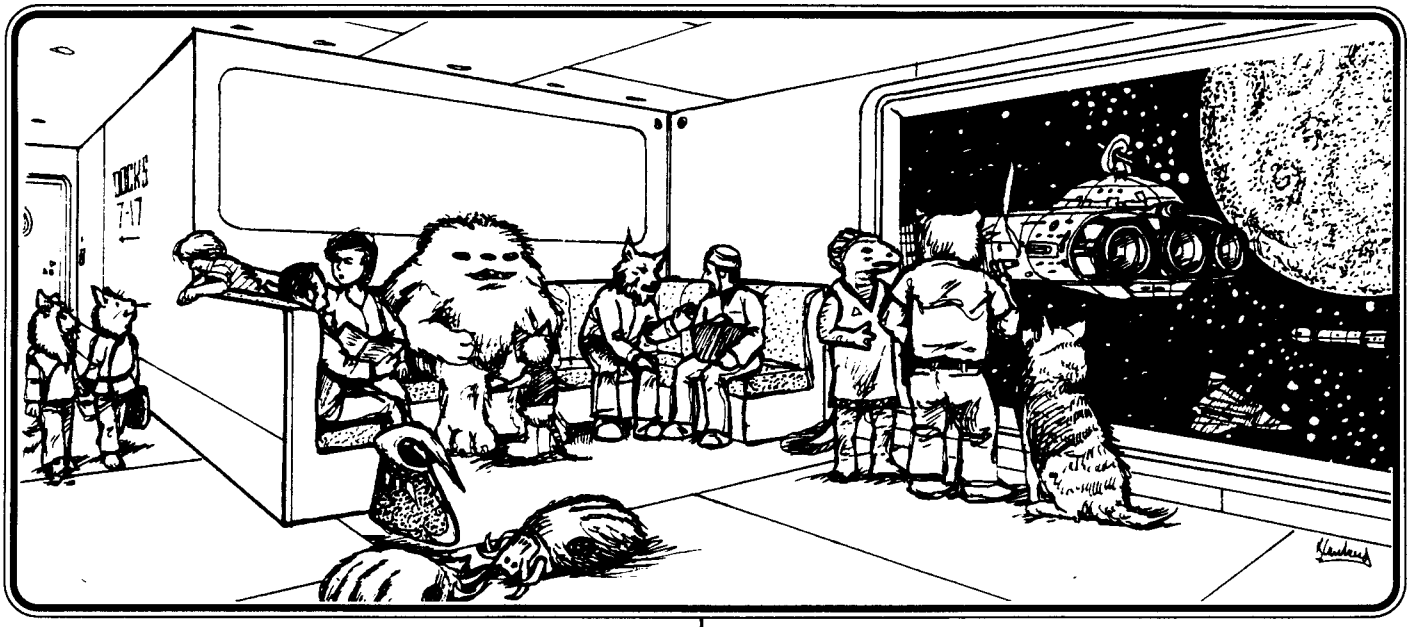
Faster Than Light 2448

The year 2448 is a time of many opposites; a time of wealth and harsh colonial life, of corporate nobility and industrial terrorism. Aliens in many forms are joining man for his ideals while others wait for his failure in hopes of picking the remains.

It is an era on the brink of Interstellar war and the people who are desperately trying to save the worlds of ISCO Space, the people who are behind Enemy Stars.

Welcome to 2448

The conflict is beginning...



STARPORTS

Many of the core worlds and colonies of ISCO space have orbital facilities for incoming starships. These range from a small system beacon to the 2 mile cylinder of Fomalhaut Station and the mile long Alvarez Shipyards.

BEACONS

When systems are explored or colonized a small beacon is boosted into a solar orbit to relay information on the system and its contents. This includes ownership, fueling availability, orbital information on planets and general hazards.

Colony beacons broadcast the same data and a wealth of other data on the colony and its facilities. This may include space traffic lanes, news updates, commercial advertising, trade information, local law, and anything the colonists deem important. A secondary feature to these beacons is Interstellar E mail or a compressed broadcast that the starship receives and stores. This mail continues with the starship and is dumped back to the core worlds.

ORBITAL PORTS

The following is a list of Orbital Ports and what they have available.

FACILITY		PER	FUE	SHU	REP	CAR	TYP
A	No Port	—	—	—	—	—	—
B	Auto Platform	—	A	A	A	A	B/C
C	Manned Platform	A	B	C	B	A	B/C
D	Small Station	B	C	D	B	B	C
E	Medium Station	B	D	B	C	B	C
F	Large Station	C	E	E	D	C	C
G	Small Port	D	E	E	D	C	D
H	Medium Port	E	F	F	D	D	D
I	Starport	F	F	F	D	E	E
J	Full Starport	G	F	F	E	F	F
K	Dockyard	F	F	E	F	E	E

PERSONAL (PER)

A	Under 10
B	0011-0020
C	0021-0050
D	0051-0100
E	0101-0500
F	0501-1000
G	1001-5000
H	5000+

FUEL (FUE)

A	Reserves Only
B	Higher Cost Infrequent Supply
C	Occasional Availability
D	Scheduled Availability
E	Available
F	Available, 24 Hour Service

SHUTTLE SERVICE (SHU)

A	Never
B	Ground Based Only flown on special occasion or for special maintenance.
C	Infrequent Shuttle Runs
D	Frequent Shuttle Runs
E	Constant Shuttle Runs
F	Commercial 24 Hour Service and Rental

REPAIR (REP)

A	None
B	Minor Electrical Engineering
C	Minor Structural Repair
D	Repair, Almost no Fabrication
E	Full Repair/Fabrication. May have some specialized service and parts on hand.
F	Full Construction and Repair.

CARGO (CAR)

A None
B Drop Only, Prepackaged Landers
C Drop Only, Prepackaged Facilities Available for Hire.
D Scheduled Orbital Dropping, Packaging, and Pick Up Facilities.
E Two Way Bulk Canister Service
F Complete Two Way Bulk Canister and Broker Service Available

PORT DESCRIPTION (TYP)

A Private Ownership
B Specialized, Military or Non-Commercial
C Specialized Commercial
D Open Commercial Port, No Frills
E Open Commercial Starport with some Recreational Facilities.
F Complete Open Port, Star Class. Has Business, Lodging, Food, and Fun.

ADDITIONAL PORT DATA

01 Residential Port, Permanent Apartments/Homes
02 Business Offices and Private Docks
03 Warehousing
04 Light Manufacturing
05 Heavy Manufacturing
06 Military Presence
07 Colonizer Staging Facilities
08 Multiple Corporate Ownership
09 Private Corporate Ownership
10 Private Military Ownership

FOMALHAUT

The hub of Human and Alien Commerce is the Star Fomalhaut. The stars main attraction was two near Terrestrial worlds, a rich asteroid belt and three Gas Giants that proved highly usable for fuel skimming. First a manufacturing station, the space manufacturing center grew into a cylindrical giant with an amazing number of facilities. Fomalhaut is classed:

Fomalhaut		PER	FUE	SHU	REP	CAR	TYP
J	Full Starport	H	F	F	F	F	F(1-8)

LIFE IN SPACE

"Yeah, Fomalhaut is my home. I was raised here and so were my parents. Everything you need is here, why live on the ground where da temperature changes and yous get wet and have to fight ground traffic? And rain, an bugs, I hate bugs!"

"Space is where it's at and where I'm gonna stay and raise my family."

"I saw Philadelphia on old Earth once and you can have it. "

Braden Fernwald
Engineer

COLONIES

Colonies are the new homes for mankind and his alien friends who are starting new lives or creating their own particular version of 'The Perfect Society'.

What is found on these worlds is generally created by the devious mind of the GM as aided by these tables on Colonial Life.

There are no prerequisites for the efficiency of this port as relating to the colonial society. As an example, Fomalhaut has the best deep space dockyards this side of Faxn'Chur. The two mile long Alvarez yards and the miles long Fomalhaut Station have become a small moon of goods and services envied by many other systems. The planet the station orbits, New America, has a small Human Amish, Bloxian Kedan, and Human Chinese Traditional population. These basic agrarians maintain a class H Groundport.

Groundports can also be rated as Starports but remember to designate them as such with a (g).

New America		PER	FUE	SHU	REP	CAR	TYP
Hg	Medium Port	E	F	D	E	D	D (3,8)

COLONY PERSONALITY

Across settled space, the colonies, and new worlds on the far frontier are a wealth of highly different colonies. The following is a general table of Colonial Types.

01 NATIVE HOSTILE

These Natives resent your presence on their world even if they make a profit from it. By mutual agreement they are left alone by Port Authority, Visitors, and Workers.

02 PRIVATE HOSTILE

In private Ownership, this world type is a No Trespassing situation for visitors. Persons or groups wealthy to own worlds often back up their no-entry beacon with appropriate force.

03 CORPORATE HOSTILE

These are company run worlds with fenced off groundport facilities. They limit outsider contact with company personal.

04 COLONY HOSTILE

Settling off their home world for political, religious, or social reasons, these people would rather put a shotgun round into your shuttle as give you the time of day. Thinking theirs is the 'One True Way', they go through great pains to separate the outsider Groundport and outside influences from their populations.

05 NATIVE APATHETIC

These natives watch the 'Sky People' and could really care less.

06 PRIVATE APATHETIC

The owner is neutral on attitude if you make a landing and will ignore you until you disturb him, her, or it.

07 CORPORATE APATHETIC

These are Open Worlds controlled by Corporations.

08 COLONY APATHETIC

These are the fun places that make Toledo look like a Corporate Carnival Town. Here the population is too busy harvesting their new Gritch crop to notice the Alien visitors. As long as everybody obeys laws, nobody cares.

09 NATIVE FRIENDLY

Like the Hawaii of the 1800's these places are a joy to visit. Natives are harmless and friendly as they try to sell trinkets, crafts, and services. Mostly they are far smarter than you think.

10 PRIVATE FRIENDLY

Private worlds that do not mind a few guests now and then. Often these are very hospitable and wealthy folk.

11 CORPORATE FRIENDLY

A nice place to stop, rest, and bargain for needed services and goods. They are sometimes in need of cargo transport. These honest business ventures attract hard working and hearty folk who become colonists.

12 COLONY FRIENDLY

True great places to visit. As long as 'Spacers' don't ruin their day, these folks aid and treat travellers with compassion and respect. Mostly they enjoy tourist trade and news from the Core Worlds.

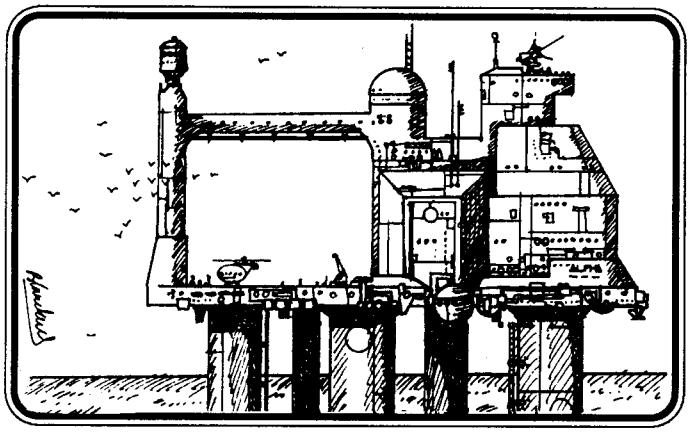
COLONIAL GROWTH

01-50 GROWING
This colony is growing at a good pace.

51-75 STAGNANT
After fast growth, this colony has stabilized and has not progressed or expanded very fast for one reason or another.

76-95 FAILING
Here something has gone wrong and the colony is in economic trouble.

96-00 ABANDONED
Abandoned and often stripped cities and manufactur ing, minimal population if any subsisting, little future.



WORLD CODES

The following is another Key for listing the worlds of ISCO Space. EXAMPLE:

COL	RACE	TYPE	PORT
C'Char	Kymnar	AGR/OPP	J/gI

C'Char Orbital 1	PER	FUE	SHU	REP	CAR	TYP
Full Starport	F	F	F	D	F	D3,4,6
Criss'Na	PER	FUE	SHU	REP	CAR	TYP
Hg Medium Port	E	E	D	E	D	C1-6

C'Char is a long settled Kymnar agricultural colony settled in the first wave of Kymnarn expansion.

WORLD CODES

HWD: HOME WORLD
Origin world for a race.

COL: COLONY
World where population is predominantly one race. May also be a specific special interest group.

OPW: OPEN WORLD
World with no restrictions on landing or facilities use. Often a mixed colony.

CPW: CORPORATE WORLD
Worlds predominantly owned by corporations

PWO: PRIVATE WORLD
Private or group owned worlds.

PORT

OPP: OPEN PORT
Port open to any.

LPT: LIMITED PORT
Port opened to some and general emergency use.

CPT: CLOSED PORT
Limited access port

WHAT'S THERE

AGR: Agricultural
Areas set for agricultural use and harvesting

MAN: MANUFACTURING
Areas of light or heavy manufacturing.

SMC: DEEP SPACE MANUFACTURING
Large deep space centers designed to facilitate heavy or dangerous manufacturing.

MIN: MINING
A basic mining world, generally uninhabited.

DMP: WASTE DUMP
A dump world where radioactive waste and other materials that are not recyclible can be dumped without hazard to populations.

REW: RESEARCH
Basic research stations or Archaeological digs.

RESTRICTED WORLDS

DRE: DANGEROUS RESEARCH
These worlds are unpopulated places where critical and dangerous research happens. This may involve Terraforming, Gene Engineering, or Artifact Inspection.

PLW: POSTED WORLD
A surveyed world destined for a specific purpose.

PRE: PRESERVE
A special area where native or transplanted life is allowed to flourish or survive without interference. May be a preserve for minerals or resources.

TRU: TRUSTEESHIP
These worlds have been contacted and contami nated by outside influences that have disrupted their development. The races on these are carefully guided by special ambassadors and a trusteeship to bring them into modern interstellar society in a short a time as possible.

TER: TERRAFORMING
World under harsh climactic changes.

PRW: PRISON WORLD
A prison area for special offenders.

ICL: INTERSTELLAR COURT OF LAW
Military world or training centers known to the public.

PRO: PROTECTED WORLD
These worlds are protected from contact with out side influences and allowed to develop at their normal pace. They are watched carefully by sociologists.

RES: RESTRICTED, HIGH DANGER
These worlds are the greatest places of danger to visit. A majority of these systems have data buoys that transmit data to incoming ships or relay the presence of an outside contact to semi-permanent observation ships.

REASONS MAY INCLUDE:

A XENOPHOBIA
Races who fear or are hostile to alien contact.

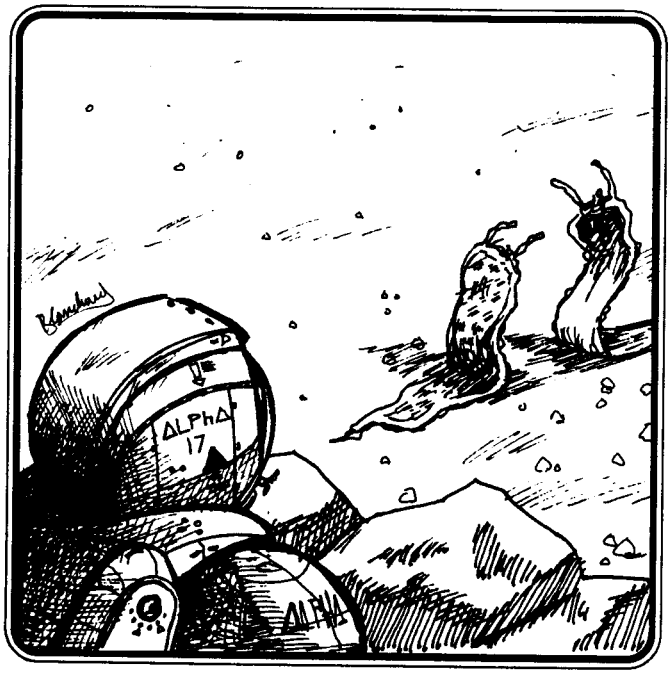
B PRIMITIVE
Low Tech Races that are developing. Outside contact could destroy the culture.

C SOCIOLOGICAL HELL
Situations where a native race is warring against itself or has few social controls.

D UNSTABLE NUCLEAR
Worlds that possess Fission weapons that are targeted at themselves. (See Terran History 1945-2006AD, Kymnarn Renaissance 3416-3510HK)

E ENVIRONMENT/TOXIC
Restricted areas of hostile natural life. May also have an abundant number of hostile and toxic life forms or a toxic atmospheric component. The few of these colonized have since been abandoned.

F MILITARY
Classified for special reasons.



CARGO

In FTL, cargo hauling has become the main concern of the independent freighter. Cargo may be bulk canisters or passengers.

BULK CANNISTERS

All cargo is packaged in universal 10 foot cubes called "Cargo Cans". Depending on the item and general difficulty to transport, an average fare may be 500 to 1000 d's for the average can per 10-20 light year run.

PASSENGERS

Passengers are a variable cargo that may be demanding or working for transport. The average freighter can rent canister sized passenger quarters. These allow 1 passenger a 10 x 10 foot living space and life support for 2 months. This non-luxury haul usually runs 500 to 1000 credits unless the passenger works, or comes to some other arrangement with the ship's owner or captain. Ships may also be rented by large private concerns, companies, universities, or even the military.

BROKERS

Smaller forms of profitable cargo include the delivery of sealed containers of general mail, Universal Package Service (UPS), or documents and securities. By Interstellar Law, all ships, except those exempt by size are required to carry one cargo can of mail to their next port of call if requested by the Port Authority. The first can is free of any transportation cost to promote news and communication. Other cargo may involve data cards of new technology and research.

TYPE	SIZE	GENERAL PAYMENT
Mail	10 x 10 x 10	500+ d's
UPS	10 x 10 x 10	750+ d's
Documents	3 x 3 x 3	500+ d's
Securities	3 x 3 x 3	750+ d's
Data Cards	1 x 3 x 3	100+ d's

BROKERS & CARGO

Another way to make money is the outright purchase and sale of cargo. Determine the cargo and its general value. A licensed agent or broker handles most sales made by the players.

REMEMBER

01 Brokers work for either a flat fee or for a percentage cut of the value of the cargo sold, usually no more than 05% of the profit.
02 A broker will continue to try to sell a cargo as many times as possible. Each selling takes d4 days.
03 Only the GM really knows how honest and capable a broker is.
04 After each failure to sell a cargo, the difficulty rating increases by +5% for that cargo.
05 The players can always turn down an offer.
06 When all else fails the owner of the cargo may try to have the cargo auctioned by a firm that specializes in fast cargo dumping. Auctioneers take a 10% cut of the final sale price, though with a -10% to his success in selling the cargo.

Roll	Rating	Chance Sale	Chance Swindle
01	Awful	10%	50%
02	Bad	20%	40%
03	Poor	30%	30%
04	Below average	40%	20%
05	Average	50%	10%
06	Good	60%	05%
07	Very good	70%	02%
08	Excellent	80%	02%
09	Superb	90%	01%
10	The Best	99%	01%

Specialized Brokers

Specialized brokers add +5% to their chance to sell a cargo, and charge higher fees; x2 the normal flat rate or 7% of the normal percentage cut.

Selling Cargo

Players may try to sell their cargos themselves, if they have the Commercial Brokering skill. To assess their chance to sell a cargo, determine their connection level for that world by rolling 2d10. Treat this number as percentage, it represents whom they know, what they know, who to bribe, who to wine and dine, etc. Add their skill level x5 to their connection level, divide the sum by two;

$$\text{Base Sales Chance} = \frac{(\text{Broker Skill} \times 5) + \text{Connection Level}}{2}$$

Selling the Cargo

To sell a cargo you take the base to sell chance and add it to the percentage difference in the offered price and the going price for that cargo on that world. Subtract the difficulty modifier from this total for the actual sales chance.

$$\text{Actual Sales Chance} = \frac{\text{Base Sales Chance} + \text{\% Difference in price} - \text{Difficulty}}{2}$$

Determining the Going Price

To determine what the current price for a cargo on a world, you need to calculate the current overall price differential for the world. To calculate the differential, the GM derives the differential from the population, type of industry, and self–sufficiency of the world. The more different the industrial base and self–sufficiency rating, the greater the price differential. Other important factors include the item being a necessity, a status symbol, or a curiosity. The GM must consider these possibilities and rate it accordingly.

OPTIONAL VALUE		MULTIPLIER
01-05	Absolutely No Use	x0.25
06-10	Dog on the Market	x0.50
11-25	Low Need	x0.75
26-75	General Use Cargo	x1.00
76-90	General Demand	x1.25
91-95	High Demand	x1.50
96-98	Very High Demand	x1.75
99-00	Frantic Demand	x2.00 +

Ben, Bells, & Quag

The Wapakoneta pulls into orbit above the colony world, Neu Bayern, its cargo holds bulging with a mishmash of cargos. After much conversing with the orbital port authority Ben turns the Com over to Bells and smiles.

"Ja, docking permission given. Your hineinstecken vector is Ah–Gay–Yawt sechshundert drei und fünfzig. Verstehen sie?"

"Uh, I think so," mutters Bells. "What did you say?"

"Set your Translator for German." says Ben.

The Wapakoneta docks with the Neu Bayern Umkreisungen Hafen.

After unloading the cargos that they were paid to deliver, Quagmire decides to sell the cargo they had bought on speculation to the inhabitants of Neu Bayern. Quag's Brokering skill is 4, and the GM rolls a 11% connection level that Quag has for the colony. His base chance to sell is (4 x5 + 11%) ÷ 2 = 15% rounded down. He decides to try to sell the four cans of plush shag carpet that he picked up for $1,831 a can. The current price per can is $2,564 on Neu Bayern. The price percentage difference is (($2,564 - $1,831) ÷ $2,564) ÷ 2 = 14%. The GM determines that the carpet will have no difficulty modifiers, so the total chance to sell the carpet, if they want to break even, is 29%. Ben convinces Quag that they can have a nice profit if they sell the cargo for $2,000 a can. Quag agrees, and his actual chance to sell is now 25%.

The GM rolls a d6 and determines that the sale attempt takes place that day. Rolling a 96, Quag fails to sell the carpet. The next day, at -5% for a new chance of 20%, Quag tries again. A 92 is rolled, and attempt fails again. Two days later, at 15%, Quag finds a dealer who's interested in the deal. A 13 is rolled and the carpet is sold for a total sale price of $8,000, at a $676 profit. The current orbital parking bill is 664 Neu Bayern Marks, which is equal to $800. Total profit is –$124, and Ben questions how "good" the initial deal was. Ben has good reason to question that deal.

The day that Quag went out to sell the carpet, Ben

approaches one of the more reputable brokerage firms of Neu Bayern: Guilderkrantz und Morgenstern Maklers. After getting an appointment to see Johan Krantz, one of the firms best brokers, Ben tells him that he has two cans of miscellaneous program cards that he wants to sell.

"Two cans vorth? Hmm, how many per can?" asks Krantz.

"About 280,000 per can," replied Ben.

"Und vhat price per card looking for you are?" asked Krantz.

"Uh, we paid $250 per lot of ten, it was a clearance sale, so I say about $40 a card." Ben says, "I hope that's not to much."

Krantz emitted a long low whistle, then with a predatory smile, said "$40 a card? Nein, nein das ist keineswegs too much. Let me the manifest see." In the back of Herr Krantz's mind is the thought that 32 Marks a card is not bad at all. The current market price is 80 Marks a card, about $100 ISCO. Herr Krantz's base chance to sell is 70%, with the percentage difference in price is 30%. The GM determines that there is no difficulty with the cargo, so Herr Krantz has a 100% chance to sell the cargo. Two days later he sells it for 17,920,000 Marks, $22,400,000 ISCO. Of which he takes a 10% cut of the gross, 1,792,000 Marks, leaving the adjusted gross total to be $20,160,000, a total profit of $6,160,000 for the crew of the Wapakoneta.

CARGO

When starships reach port, they usually register a flight plan and their availability to haul cargo to their next destination. The local Port Authority usually forwards this information to a Broker or Cargo Network that might offer a ship up to d6 hauling jobs per day. The offer can be for up to d100 cans of cargo, depending on the size of ship.

01 Explosives
02 Prisoners
03 Petroleum Distillates
04 Rare Earths, Radioactive Fuel
05 Gasses, Dangerous

06 Chemicals, Dangerous
07 Weapons, Light
08 Weapons, Heavy
09 Large Vehicles
10 Bulk Plastics

11 Farm Animals (easy or difficult temperaments)
12a Colonists (New Colony)
12b Colonists' Equipment
12c Colonists' Vehicles
13 Medical (EMR) Personnel
14 Research Personnel
15 University Groups

16 Tourists
17 General Passengers
18 Businessmen
19 Corporate or High Officials
20 Entertainers

21 General Laborers
22 Technicians
23 Diplomats
24 Fresh Vegetables
25 Cold Fresh Food

26 Bulk Processed Food
27 Canned Goods
28 Packaged Alcoholic Beverage
29 Beer, Bottled, Tank, Packet, or Freeze-Dried
30 Securities (valuables)

31 Drugs
32 Politicians
33 Fertilizer
34 Animal Feed
35 Specimens (living or dead)

36 Plants (live or dead)
37 Bulk Grain
38 Paper Products
39 Clothing
40 Toys

41 Sporting Goods
42 Food Processing Equipment
43 Communications Equipment
44 Metal Sheeting, Metal Plates
45 Hull Sealant or Plating

46 Computers
47 Books
48 Artifacts, Alien
49 Space Suits
50 Emergency Survival Equipment

51 Medical Supplies
52 Medical Equipment
53 Small Vehicles
54 Starship Components
55 Shuttle Components

56 Engine Components
57 Miscellaneous Electronic Parts
58 Bulk Lumber
59 Electronic Fabrication Equipment
60 Farm Machinery

61 Mining Equipment
62 Undersea Equipment
63 Personal Belongings
64 Bulk Hardware
65 Candy, Luxury Foods

66 Emergency Shelters
67 Home Components
68 Furniture
69 Fusion Generators
70 Fission Generators

71 Replacement Parts
72 Wind Generators
73 Aircraft Components
74 Coffins (empty or full)
75 Simple Tools

76 Paneling, Finished Wood
77 Bulk Plumbing
78 Bulk Wiring
79 Photographic Equipment
80 Orbital Information Beacons

81 Water Purification Equipment
82 Air Filtration Equipment
83 Heavy Appliances
84 Auto Parts
85 Wild Animals, Live

86 Frozen Goods in canisters
87 Textiles
88 Bulk Ores and Minerals
89 Mail
90 Survival canisters

91 Carpeting
92 Entertainment Equipment
93 Office Equipment
94 Research Equipment
95 Robots

96 Hydroponics Equipment
97 Nuclear Fuel or Waste
98 Heating and Cooling Equipment
99 Bulk Documents
00 Troops, Special (ICL) Police

AUCTION SALE

As a last ditch cargo dump you can sell for scrap or try a bulk cargo auction.

RESULT	MARKET	PROFIT
01-10	No Market	-10%
11-25	Bad Market	+00%
26-50	Very Low Demand	+03%
51-75	Low Average	+05%
76-85	Average	+07%
86-95	High Average	+10%
96-97	Very High Demand	+25%
98-99	Critical Demand	+50%
00	Sold Immediately	+75%

CARGO PROBLEMS

Roll a d100 for cargo shipping and the possible problems of cargo mishap.

RESULT	
01-97	No Problem With Cargo
98-99	Cargo Aggravation (Go To Table A)
00	Cargo Mishap (Go To Table B)

A CARGO AGGRAVATION

01 Minor perishable item if food or drugs loses 10% of its value. Minor damage in handling.
02 Same as '01' but with a 25% loss.
03 Difficulty with cargo licensing.
04 Difficulty with living cargo, if any.
05 Vandalism or theft reduces value by 10%
06 Difficulty with passengers or dock crews.
07 Cargo Cans lost or stolen.
08 Wrong Cargo shipped.
09 Port Authority 'red tapes' cargo sale for some reason.
10 Local black market takes an interest in your cargo's type or destination.

B CARGO MISHAP

01 Major perishable item if food or drugs loses 50% of its value. Major damage in handling.
02 Surprise Perishable, reduce its value by d100 + 20%.
03 Cargo Mishap destroys d100% of cargo.
04 License revoked by Port Authority.
05 Port Accident destroys d100% of cargo.
06 Sabotage destroys d100% of cargo.
07 Locals regard cargo as a social blight.
08 Cargo considered contraband and is confiscated by local authorities.
09 Cargo lost or stolen, with a very long insurance battle to follow.
10 Glut on market makes cargo virtually worthless.

THE INTERSTELLAR REVENUE SERVICE

By the 25th century taxes have been lowered to a flat 7% on profit with no exemptions. While simple and easy to pay, the flat tax is ignored by many. For this reason the IRS still exists and with 500 years of experience and no sense of humor, its best to be on its good side. Antagonizing the IRS is paramount to serving Chicken to a Hagonni.

INSURANCE

Cargo can be insured by licensed agents for between 2 and 20 percent of its value. This insurance will net d100 +20% (not to exceed 95%) of a cargo's value, in return after a lengthy informative investigation. Insurance Corporations, by 2448, have made an art of claims collecting being hopelessly snagged by red tape. Settlement time is usually d10 (+1) years +d12 months. The average claims representative is, or is aided by, a Zumwol who has a 19 in Accounting skill, and few social graces.

STOCKS & INVESTMENT

The economics of FTL are simple: Make a few dollars, or d's to keep ahead, keep a little for the future, and invest well.

The starting capital of a character is up to the GM's decision or the players' luck.

Characters or ships can also invest in stock to gain wealth over a period of time. Roll d10 every year. Any amount can be invested. Investments can be programmed to sell, set the profit aside, purchase other stocks, or reinvest.

ROLL		MULTIPLIER
01	DIES	x0.25
02	PLUMMETS	x0.50
03	FALLS	x0.75
04-07	STEADY	x1.07
08	RISING	x1.25
09	FAST RISING	x1.50
10	SKYROCKETING	x2.00

BONDS & SECURITIES

Worlds and Corporations issue bonds for amounts that are less than their face value. After a time these bonds are redeemable for their full value. Most of these times are in ten or 20 year blocks. If cashed early they are worth only their lesser value. Securitues involve certificates or percentages of ownership in businesses or profitablr ventures. These may also denote ownership of objects or amounts of raw materials. These have a set value that may or may not improve with age. These can be issued to an individual or to the Bearer.

BEN, BELLS & QUAG

Ben walks into Quags quarters and blanches. Quag is papering his wall with $100d Bearer Bonds issued by **Asteroid Miners LTD**, a very old but still existing company that is based at the Fomalhaut system. Ben marvels at the hundred or so colorful notes already glued to the bulkhead and the few hundred more on the Trells sleep mat.

Cryo Freezing

Cryogenics is the high-tech science of life preservation and suspension by the use of electromagnetic ultracold.

Discovered in the early 21st century, the process of instantly freezing not only the terminally ill, but the crews of starships as well became necessary for deep space voyages and early FTL travel.

Later, with refinements of travel that let crews abandon hibernation, cryo freezing was to become the most inexpensive way to ship larger numbers of colonists or livestock to the outer colonies.

REMEMBER

01 Cryo storage units can be horizontal cases or vertical tubes.

02 Once activated, only minimal power is necessary for support.

03 Shattering a tube without cycling the contents will kill the occupant as they defrost unless transferred to another tube. Temperature of the occupant while frozen is close to absolute zero.

04 Cryo units will operate for 3d10 + 10 years on internal battery power.

05 Cryo units are fail-safe, and will cycle/defrost the occupant if damaged or if power reaches a critical level.

06 All races have successfully been cryo frozen.

07 Cryo units differ in size and can range in size from single occupant, to industrial sized freezers.

08 A medical data cartridge (See Autodoc, Book 1 Pg 029) reduces chance of Death Shock by d4% when used.

09 At near absolute zero internally, a properly functioning Cryo unit emits a cold bluish light.

CON	RECOVERY TIME	CHANCE OF DEATH
01	d4 +4 Hours	5%
02-04	d4 +2 Hours	2%
05-12	d4 Hours	1%
13-16	1 Hour	-
17-20	d4 x10 Minutes	-
21+	d5 x5 Minutes	-

MAPPING REAL SPACE

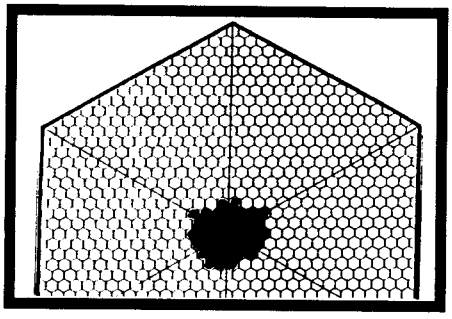
SPEED OF LIGHT	= 186,000	Miles Per Second
LIGHT YEAR	= 5.88	Trillion Miles
GALAXY DIAMETER	= 100,000	Light Years
PRIME HEX	= 961	Light Years
AREA HEX	= 31x31x205	Light Years
SYSTEM HEX	= 1	Light Year

PRIME HEX

The relatively tiny chunk of explored space in the above illustration has been the total area of play for nearly a decade of playtesting as FTL:2448 grew from a few ideas into its present form.

In FTL:2448, a hex system is used to represent space. There are three different scales of hexes used for mapping the stars.

The first, and largest scale of hex is called the PRIME HEX. This represents an area 961 Light Years from side to side. These are used to show the Orion arm of our local area of the galaxy.



Prime Hex

FTL SPACE

This shaded area of a prime hex is the location of our general neighborhood of stars. If we single out the darkened hex in this representation, we find that it is made up of numerous smaller hexes. Each of these hexes represents an area 31 x 31 light years. The enlargement to the side shows the areas of explored space used in FTL:2448.

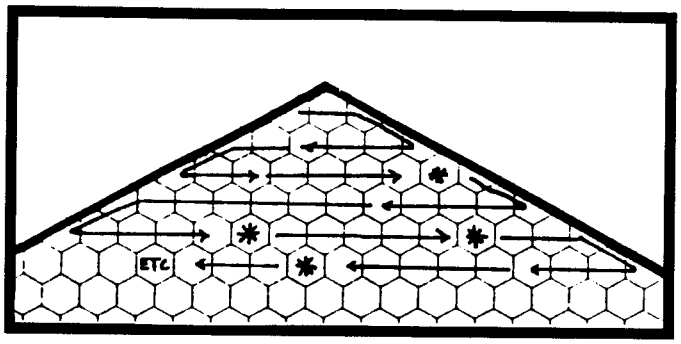
H HOME SPACE	=	The center of human space.
B LONG SETTLED	=	Core Worlds
C COLONIAL SPACE	=	Sparce Colonized areas.
F FRONTIER	=	Semi-explored space.
R HAGU EMPIRE	=	Frontier raids

REMEMBER

1. Before you start, have a few copies of the hex, system and world sheets handy.
2. Be patient; your time will be rewarded with great detail and something for your players to explore.
3. Don't try to map the galaxy.
4. For actual areas, consult the STAR CHARTS portion of this book. (see Also Pg. 224)

PLACING STAR SYSTEMS

Placing star systems in a two-dimensional plane is the first step in mapping a new hex.

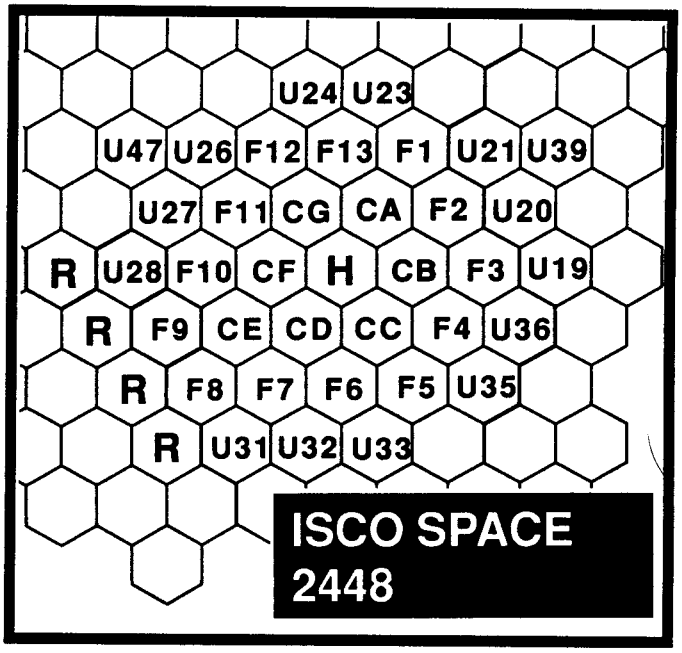


METHOD

Start at the top of an area hex and roll a d100. Take the result of this roll and count across the paper in the motion shown in the next illustration and place a star system in that hex. Roll a d100 again, counting from the system just positioned. Continue this until you have populated the hex with star systems.

OTHER METHODS

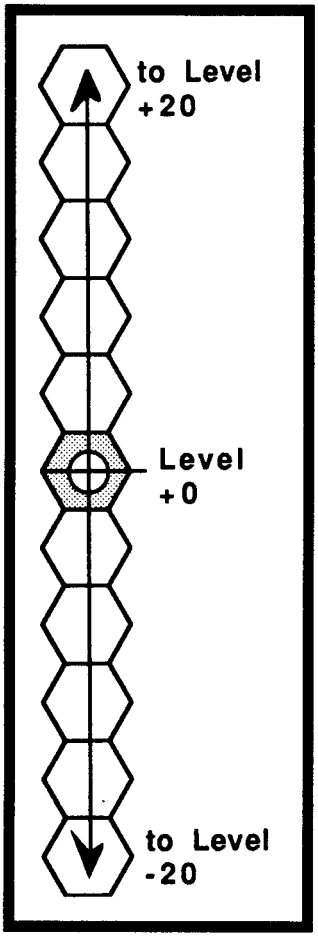
Other methods are simply to choose where you want the stars in relation to each other. Stellar groupings appear to fall into general clusters with 5-10 light years between stars and slightly more between super-clusters. Towards the core of the galaxy stars are packed closer. We do not recommend darts, ink spatters, or birdshot.



DEPTH (z axis)

Now that you have a two-dimensional map of space, you must make it three-dimensional.

Each System hex is 41 light years deep. For game purposes, we will assume that star systems are not less than one light year distant from each other, therefore, there are 41 possible positions for each system.



METHOD

To find the vertical level, roll a d100 for the position of the star system, then roll a d6.

RESULT	
01-03	System is on the Positive Plane
04-06	System is on the Negative Plane

NOTE

If the system is in a vertical position of between (+1) or (-1), roll a d6 and check the chart below.

RESULT

01-03 System moves to zero position (0)
04-06 System stays as designated

NAMES

Have fun naming your stars. Stars listed in the STAR CHARTS section of FTL:2448 are the actual stars with their common names and Gliese number.

EXAMPLE

+16	=	The position of the star
Thaltrom	=	The name of the star
F32	=	The reference number

DESIGNING STAR SYSTEMS

Each of the points on the star map created in the preceding section marks the location of a star system.

A star system will be defined as either a single star with planets or other matter orbiting around it. A system may also be a group of stars close or moderately close together, each with its own system of orbiting masses.

The following information on "Stellar and Planetary Generation" is taken as accurately as possible from available sources. Some astronomical information, if presented 100% factually, would make the game unplayable. For this reason, some of the ranges have been altered to more usable figures.

STAR CHARTS

The Appendix section STAR CHARTS is a 100 light year sphere around Earth. (See Also Pg225)

NUMBER OF STARS

To generate the number of stars in a system hex, roll a d100.

RESULT	NUMBER OF STARS
01-75	Solo 1
76-95	Binary 2
96-98	Trinary 3
99	Cluster 3+d4
00	Special (See STAR SPECIAL Chart)

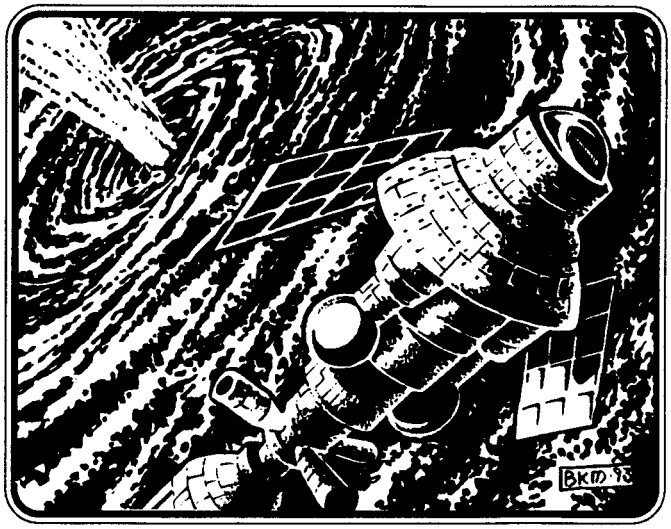
STAR SPECIALS

The following are rare examples that can occur. They add a little spice to the average stellar groups. Roll a d100.

01-20	Old Nova, stellar corpse, no planets.
21-30	Old Nova, burnoff, with planets.
31-40	Old Nova, gas (debris) cloud nebula that extends d4 light years around the system
41-50	Very close binary with the stars exchanging gasses
51-60	Close binary, stars are deformed by their mutual gravitation.
61-70	Dead cold star with planets.
71-80	Cephid A, a variable star with a d10 year fluctuating period of intensity.
81-90	Cephid B, a variable star with a d10 day fluctuating period of intensity.
91-95	Cephid C, a variable star with a d20 hour fluctuating period of intensity.
96-98	Semi-formed planets orbiting star.
99	Proto-Star, star is in formation.
00	GO TO SPECIAL B TABLE

SPECIAL B

01-50	Large nebula, 2 to 12 light years across from a past nova.
51-75	Nova within d100 years +d12 months.
76-90	Unstable Cephid with a variable period of changing intensity.
91-97	Unstable Proto-Star
98	Unstable, high radiation emitting star.
99	Very unstable star
00	Small black hole



STAR SIZE

Roll a d100 for the size of the star.

01-10	Dwarf
11-40	Small
41-85	Medium
86-95	Large
96-98	Giant
99-00	Super Giant

SPECTRAL CLASS

Determine the spectral class of the star by rolling a d100 and indexing the result.

RESULT	COLOR	SPECTRAL	TEMP K
01-02	Dark	N	2,000
03-45	Red	M	3,500
46-55	Orange	K	5,000
56-74	Yellow	G	6,000
75-89	Yellow-White	F	7,000
90-96	White	A	10,000
97-99	Blue-White	B	23,000
00	Blue	O	25,000

GRAVITY & ZONES

Technically, each star exerts a force on all mass throughout the universe.

Realistically however, there is a limited distance from the star within which this force is effective. This distance is often referred to as the star's gravity well. The larger a stellar mass, the larger the pull and therefore, the larger the star's ability to hold planets in orbit. This area of stellar pull is the star's zone of control.

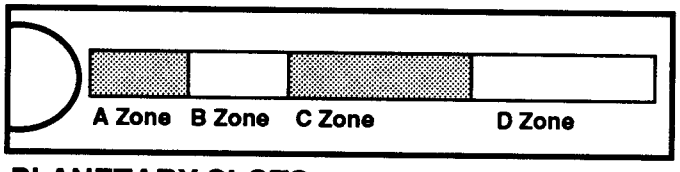
In FTL, we divide this gravity well into four bands or zones.

A CLOSE ZONE
The close hot zone.

B MEDIUM ZONE
The moderate zone where life is most likely.

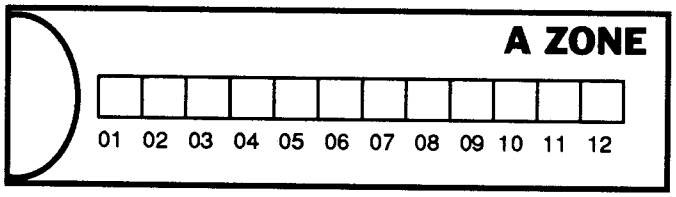
C FAR ZONE
This is the start of the cold lifeless zones.

D EXTREME ZONE
The far cold zones.



PLANETARY SLOTS

These zones are divided into numbers of slots whose numbers differ due to star mass. These slots hold planets and possible system debris. They are also reference points for system travel and time to enter/exit.



SYSTEM SIZE

The following table is an index of system size and number of planetary slots determined by stellar type and mass.

SPECTRAL CLASS	DWA	SMA	MED	LAR	GIA	S'GIA
O	c	d	e	f	g	h
B	c	d	e	f	g	h
A	b	c	d	e	f	g
F	a	b	c	d	e	f
G	a	b	c	d	e	f
K	a	b	c	d	e	f
M	a	a	b	c	d	e
N	a	a	a	b	c	d

SIZE RESULT	TOTAL SLOTS	SLOT TYPES A	B	C	D	NUMBER OF PLANETS
a	06	01	01	02	02	d4 (-1)
b	12	02	02	04	04	d6 (-1)
c	20	04	04	06	06	d10 (-1)
d	24	04	04	08	08	d10 (-1)
e	32	06	06	10	10	d10 (-1)
f	40	08	08	12	12	d12 (-1)
g	60	10	10	20	20	d12 (-1)
h	64	12	12	20	20	d20 (-1)

You now have the general information for the beginnings of system generation. Many of these bits of information will be used at a later time in the text.

All of these slots fall into a range of a type of dice roll. This will be handy for mapping as well as planetary placement. Whenever placing an object randomly, roll the appropriate die to the area you are in.

BINARIES

When placing binaries (as well as multiple stars) remember a few basic rules:

01 Generate stars separately.
02 Determine general location of stars in relation to each other, with the less dense stars orbiting the more dense stars.
03 The more massive (dense) the star, the more planetary slots it has.
04 Each star generates its own zone of control or slots. These may cross, causing areas of Gravitational Overlap as well as other special problems.

MULTIPLE STARS

Roll a d100 for placement of multiple stars. Roll the exact zone slot with the appropriate dice. Start the highest density star as the center of binary star placement. More than two stars are handled in the same way. Stars within three slots of each other surrender the star of lesser mass to orbit the heavier at close range. This will usually cause a condition of deformation of shape and exchanging of gasses.

OTHER STAR PLACEMENT

Roll a d100 for the second star's location in relation to the system. The more massive star is always the center of positioning multiple stars.

STAR PLACEMENT

01-50 d100 x 10 planetary slots from the farthest slot of the primary star's D zone. This distance will effectively eliminates zone overlap and planet gravitational disturbances.
51-75 Placement is in D Zone.
76-88 Placement is in C Zone.
89-94 Placement is in B Zone.
95-00 Placement is in A Zone.

PLANETARY TYPE

Roll a d10 for planetary type. Generally they fall into 2 ranges.

01-05 Planet
06-10 Gas Giant

PLANETARY PLACEMENT

Roll a d10 for planetary placement into zone

TYPE	A	B	C	D
Planet	01-02	03-04	05-07	08-10
Gas Giant	-	-	01-05	06-10

To place planets in zone slots, roll the matching die to the slot size. If you duplicate a roll, move the world over to the next available slot. (01-03 = Right, 04-06 = Left)

True gas giants can only exist in C and D Zones. Do not confuse gas giants with planets that have dense atmospheres.

MULTIPLE SLOT OVERLAP

Roll a d100 for planets and gas giants between close stars in overlapping slots.

PLANET MODIFIER

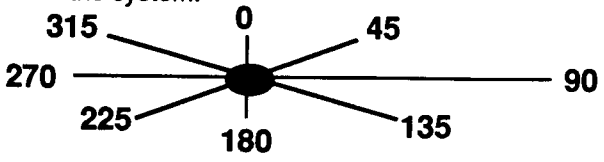
01-50 Planet never formed.
51-95 Planetary breakup gives this slot much large debris and asteroids.
96-00 Planet with a high geological activity rating or a turbulent, unstable gas giant.

OPTIONAL INCLINE

This is an optional detail for binaries, planets and moons. This indicates the inclination of an object to the rotational plane of the system. Roll a d100.

INCLINE

01-95 On plane of system.
96-98 Object is d8 x5 (+05) degrees off the normal plane of the system.
99-00 Object is d8 x5 (+45) degrees off the normal plane of the system.



PLANETS

Roll a d10 for planet or gas giant data. All diameters are given in miles.

	PLANETS DIAMETER		SURFACE GRAVITY	NUMBER MOONS
01	See Special Below			
02	5,500	Small	0.60	d4 (-1)
03	6,000	Small	0.70	d4 (-1)
04	6,500	Small	0.80	d4 (-1)
05	7,000	Medium	0.85	d6 (-1)
06	7,500	Medium	0.90	d6 (-1)
07	8,000	Medium	0.00	d6 (-1)
08	8,500	Large	1.25	d8 (-1)
09	9,000	Large	1.50	d8 (-1)
10	10,000	Large	2.00	d8 (-1)

SPECIAL

Asteroid or small planetoid. Roll a (d6-1)x1000 for the diameter. If a "1" is rolled, then roll a d100 x10 for the diameter.

GAS GIANTS

Roll a d10 for planet or gas giant data. All diameters are given in miles.

	GAS GIANTS DIAMETER		SURFACE GRAVITY	NUMBER MOONS
01	20,000	Small	-	d10 (-1)
02	30,000	Small	-	d10 (-1)
03	40,000	Small	-	d10 (-1)
04	50,000	Medium	-	d10 (-1)
05	60,000	Medium	-	d20 (-1)
06	70,000	Medium	-	d20 (-1)
07	80,000	Medium	-	d20 (-1)
08	90,000	Large	-	d20 (-1)
09	100,000	Large	-	d20 (-1)
10	125,000	Large	-	d20 (-1)

MOONS

For moon size, index planet size and roll a d10. Moon size for planets in life areas may change the outcome of climate generation. It is even possible to have a small habitable moon orbiting a dead or hellish world.

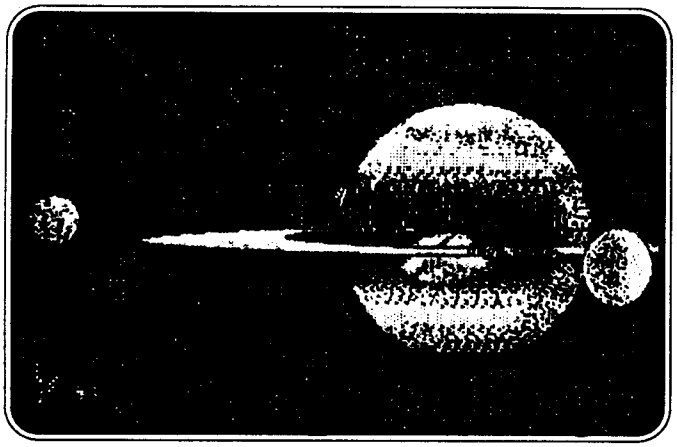
PLANET	SMALL	MEDIUM	LARGE	GIANT
Small	01-04	05-10	-	-
Medium	01-04	05-09	10	-
Large	01-04	05-08	09-10	-
Sm Gas	01-04	05-07	08-09	10
Md Gas	01-04	05-07	08-09	10
Lg Gas	01-03	04-06	07-09	10

MOON DIAMETERS

SMALL	MEDIUM	LARGE	GIANT
d6	d6	d6	d6
x10	x100 + 400	x100 + 1400	x100 + 3000
Miles	Miles	Miles	Miles

MOON COMPOSITION

A or B Zone		C or D Zone	
01	Bombarded Rock	01	Water Ice
02	Mineralized Rock	02	Bombarded Rock
03	Minable Minerals	03	Ammonia Ice
04	Volcanic Rock	04	Sulfur
05	Minable Chemicals	05	Methane
06	Diversified Mix	06	Chemicals



SYSTEM SPECIALS

System specials are the optional debris and oddities you add to star systems. You have d6 rolls to use. Duplicate rolls are not repeated. Roll a d20 for result.

SYSTEM SPECIAL TYPE

01 Gas giant with rings.
02 Planet with rings.
03 d4 Planets with rings.
04 Asteroid belt in A Zone.
05 Asteroid belt in B Zone.
06 Asteroid belt in C Zone.
07 Asteroid belt in D Zone.
08 Dense asteroid belt if you have one.
09 Shattered planet, mostly intact.
10 Asteroids with erratic orbits.
11 d4 gas giants with rings.
12 Geologically active moon orbiting a planet.
13 Geologically active moon orbiting a gas giant.
14 High mineralization, asteroid belt.
15 Masses of cometary fragments
16 Ejected stellar debris, possible hot / radioactive clouds.
17 Very high sunspot activity increases radiation bursts of 4 x 1000 rads per hour. Phase drive untunes d6 points per day in high flare areas.
18 Two moons sharing same orbit.
19 Moon with high chemical composition.
20 Planet with a high or specific chemical composition.

SYSTEM NOTATION

S	=Small Planet	Sg	= Small Gas Giant
M	=Medium Planet	Mg	= Medium Gas Giant
L	=Large Planet	Lg	= Large Gas Giant
A	=Asteroid Belt	M#	= Moon Number
dA	=Dense Asteroids	S#	= System Special #

SYSTEM MAPS

Use copies of System maps to create star systems for exploration or maps of known systems. These maps are designed for general GM and Player use.

THERMALLY HABITABLE PLANETARY SLOTS

By now, you have a star system with planets orbiting the star and system debris.

REMEMBER

01 Index your star's system size
02 Index across to where your planets are set in the gravity well slots.
03 Index down the column to find if the planet is an M (Thermally Habitable) Class World.
04 If not an M, index general type of climate. You can also add mineralization.

WORLD CLASS

We now have a separate habitable climate type for worlds orbiting stars.

Type H

H Burned off world
H2 Very hot, usually no atmosphere
H3 Hot, Usually dense, turbulent high pressure or very little to no atmosphere
H4 Mostly hot, dense or turbulent, with high pressure or very little to no atmosphere

Type M

M Like terrestrial Earth with a +1 roll result modifier on pressure and on the final CLIMATE TYPE roll.
M2 Most like terrestrial Earth
M3 Like terrestrial Earth with a -1 roll result modifier on pressure and on the final CLIMATE TYPE roll.

Type F

F Frozen
F2 Cold, frozen, may have atmosphere.
F3 Usually cold, frozen or a semi-thin atmosphere.
F4 Usually cold, may be seasonally warm to just below freezing temperatures.

WORLD CLIMATE

With many modifiers, climate generation is the second to last step in world generation.

REMEMBER

01 Generate Moon Modifiers for Atmospheric Density
02 Generate Atmospheric Density
03 Generate Zone Modifier
04 Generate Star Type Modifier
05 Add Zone and Star Modifiers together.
06 Roll the indicated dice on the final Temperature and Life table.

SIZE	ZONES																			
a	A01	B01	C01	C02	D01	D02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b	A01	A02	B01	B02	C01	C02	C03	C04	D01	D02	D03	D04	-	-	-	-	-	-	-	-
c	A01	A02	A03	A04	B01	B02	B03	B04	C01	C02	C03	C04	C05	C06	D01	D02	D03	D04	D05	D06
d	A01	A02	A03	A04	B01	B02	B03	B04	C01	C02	C03	C04	C05	C06	C07	C08	D01	D02	D03	D04
e	A01	A02	A03	A04	A05	A06	B01	B02	B03	B04	B05	B06	C01	C02	C03	C04	C05	C06	C07	C08
f	A01	A02	A03	A04	A05	A06	A07	A08	B01	B02	B03	B04	B05	B06	B07	B08	C01	C02	C03	C04
g	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
h	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12	B01	B02	B03	B04	B05	B06	B07	B08
O	H	H	H	H	H2	H2	H2	H3	H3	H3	H4	H4	H4	M1	M2	M3	F4	F4	F3	F3
B	H	H2	H2	H2	H3	H3	H3	H4	H4	H4	M1	M2	M3	F4	F4	F3	F3	F2	F2	F
A	H2	H3	H3	H4	H4	H4	H4	M1	M1	M2	M3	M3	F4	F4	F4	F3	F3	F2	F	F
F	H3	H3	H4	H4	H4	M1	M2	M3	M3	M3	F4	F4	F3	F3	F2	F2	F	F	F	F
G	H4	H4	H4	M1	M2	M3	F4	F4	F3	F3	F2	F2	F	F	F	F	F	F	F	F
K	H4	H4	M1	M2	M3	F4	F4	F3	F3	F2	F	F	F	F	F	F	F	F	F	F
M	H4	M1	M2	M3	F4	F4	F3	F3	F2	F	F	F	F	F	F	F	F	F	F	F
N	M1	M2	M3	F4	F4	F2	F2	F2	F	F	F	F	F	F	F	F	F	F	F	F

ATMOSPHERIC MODIFIERS

Use on Small, Medium and Large Planets. Roll on all modifiers to find a final total.

	NUMBER OF MOONS				
MOON SIZE	0	01-02	03-04	05-09	10+
Small	+1	0	-1	-2	-3
Medium	+1	-1	-2	-2	-4
Large	+1	-2	-3	-4	-5

Larger moons have the useful property of generating conditions where the atmospheric density of a planet is reduced by the moon's gravitational action over a long period of time.

PRESSURE MODIFIER

Index the world size and roll a d10 for an atmospheric pressure modifier.

SMALL WORLDS

RESULT		MODIFIER
01-03	Very Thin	-3
04-06	Thin	-2
07-08	Normal	-1
09	Dense	+0
10	Very Dense	+1

MEDIUM WORLDS

RESULT		MODIFIER
01-02	Very Thin	-2
03-04	Thin	-1
05-06	Normal	+0
07-08	Dense	+1
09-10	Very Dense	+2

ZONE MODIFIER

In any A band = Add +3 to Modify Result
In any B band = Add +0 to Modify Result
In any C band = Add -3 to Modify Result

LARGE WORLDS

RESULT		MODIFIER
01	Very Thin	-1
02	Thin	+0
03-05	Normal	+1
06-08	Dense	+2
09-10	Very Dense	+3

STAR MODIFIER

Index the size and Spectral Class of the star.

	O	B	A	F	G	K	M	N
Dwarf	+1	+0	-1	-2	-3	-4	-5	-6
Small	+2	+1	+0	-1	-2	-3	-4	-5
Medium	+3	+2	+1	+0	-1	-2	-3	-4
Large	+4	+3	+2	+1	+0	-1	-2	-3
Giant	+5	+4	+3	+2	+1	+0	-1	-2
Super Giant	+6	+5	+4	+3	+2	+1	+0	-1

PLANET SIZE

Total all modifiers and index the world size for a final type of dice to roll.

SIZE	DICE TO ROLL
Small	d4 (add Modifiers)
Medium	d6 (add Modifiers)
Large	2d4 (add Modifiers)

CLIMATE RESULT

RESULT	GENERAL CLIMATE	CHANCE LIFE (%)	TEMPERATURE IN DEGREES
-4 or lower	Frozen	0%	-200 or lower
-3,-2	Very Cold	01%	-199 to -100
-1,0	Cold	05%	-099 to -025
01-02	Cool	40%	-50 to +050
03-04	Terran	80%	-25 to +100
05-06	Warm	40%	+50 to +150
07-08	Very Warm	07%	+100 to +200
09-10	Hot	02%	+150 to +250
11-12	Very Hot	01%	+200 to +300
13 or higher	Burning	0%	+250 or higher

Climate Zones

BREATHABILITY

A breathable atmosphere is one of the primary requisites of worlds that are close to terrestrial in general temperature and atmospheric pressure. Roll a d20 for content.

RESULT	CODE	DESCRIPTION
01-04	A	Toxic, Highly Poisonous
05-06	B	Wrong Mixture, Toxic Elements
07-08	C	Wrong Percentages, Must be Filtered and Supplemented for use.
09-10	D	Mostly Breathable (Thin)
11	E	Completely Breathable
12	F	Mostly Breathable (Rich)
13	G	Breathable with Filters
14-15	H	Mildly Toxic
16-19	I	Toxic, Highly Poisonous
20	J	Toxic, Poisonous, Corrosive

LIGHT INTENSITY

The light intensity from a star can have adverse effects on living optical sensors that are not used to higher or lower light intensity. Index the home star's spectrum versus the star in question. When finished roll a d6, add modifier, and index to the Illumination chart below. Use the optional Accuracy Modifier or the Vision Related Modifier when dealing with characters dealing with situations under less or more than optimum light levels.

HOME STAR	ILLUMINATING STAR MODIFIER							
	O	B	A	F	G	K	M	N
O	+0	+0	-1	-1	-2	-2	-3	-3
B	+0	+0	+0	-1	-1	-2	-2	-3
A	+1	+0	+0	+0	-1	-1	-2	-2
F	+1	+1	+0	+0	+0	-1	-1	-2
G	+2	+1	+1	+0	+0	+0	-1	-1
K	+2	+2	+1	+1	+0	+0	+0	-1
M	+3	+2	+2	+1	+1	+0	+0	+0
N	+3	+3	+2	+2	+1	+1	+0	+0

ILLUMINATION		ACCURACY	VISION
-1	Dark	-10	x 0.12
0	Very Dim	-07	x 0.25
01	Dim	-05	x 0.50
02	Dusk	-03	x 0.75
03	Normal Light	+0	x 1.00
04	Slightly Bright	-03	x 0.75
05	Bright	-05	x 0.50
06	Very Bright	-07	x 0.25
07	Painfully Bright	-10	x 0.12
08+	Damagingly Bright	-12	x 0.06

BIO-COMPATIBILITY

Roll a d100 for the bio-compatibility of life forms, whether there are usable foods for your species in the environment.

01-05 **NO COMPATIBILITY / TOXIC**
Nothing remotely resembling food exists here. If anything, it's toxic in the extreme. 98% it's toxic.

06-10 **VERY LITTLE COMPATIBILITY**
A few scattered items may be compatible, but they are few and very far between. 95% it's toxic.

11-25 **LITTLE COMPATIBILITY**
A one in 4 chance of finding something edible that isn't toxic. 75% it's toxic.

26-75 **FAIR COMPATIBILITY**
About half of what you can find edible, will be good for you. Taste is another matter. 50% it's toxic.

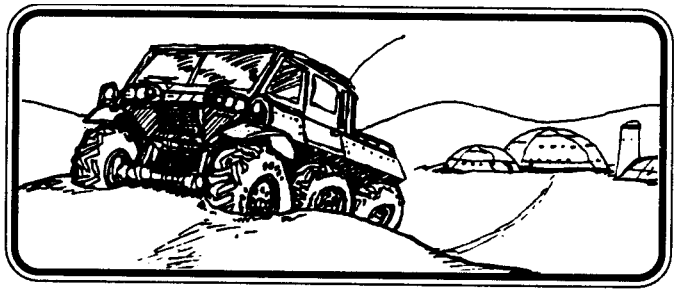
76-95 **HIGH COMPATIBILITY**
Most of what you can find won't kill you. These are highly unusual worlds like Terra. 40% it's toxic.

96-00 **VERY HIGH COMPATIBILITY**
A paradise of a world where very little is toxic. Only 30% of the life forms are without food value.

MINERALS

Roll a d10 for Column, then a d20 for the world's or large asteroid's predominent minerals.

01-05		06-10	
01	Copper	01	Beryl
02	Lead	02	Monazite (thorium)
03	Gold / Silver	03	Samarskite
04	Cinnabar (mercury)	04	Ilmenite (titanium)
05	Hematite (iron)	05	Niccolite (nickel)
06	Stibnite (antimony)	06	Realgar (arsenic)
07	Magnesite (magnesium)	07	Sulfur
08	Cobaltite (cobalt)	08	Graphite
09	Cassiterite (tin)	09	Calcite
10	Sphalerite (zinc)	10	Gypsum
11	Bauxite (aluminum)	11	Halite (salt)
12	Chromite (chromium)	12	Borax
13	Manganese	13	Fluorite
14	Pitchblende (uranium)	14	Barite
15	Wolframite	15	Apatite
16	Scheelite	16	Talc
17	Molybdenite	17	Asbestos
18	Columbite	18	Quartz
19	Amethyst	19	Diamond
20	Sapphire	20	Ruby



THE LAND MASSES

Roll a d100 to generate the planet's appearance.

01-10	UNBROKEN LAND MASSES
11-25	SUPER CONTINENTS
26-75	SEVERAL LARGE CONTINENTS
76-98	CONTINENTS AND ISLANDS
99	SMALL CONTINENTS AND ISLANDS
00	ISLAND CHAINS

THE GEOLOGY

Roll a d100 for the general geology of the world.

01-10 **GEOLOGICAL HELL**
Rich in mountain chains, earthquakes, and high volcanic activity.

11-25 **HIGHLY ACTIVE GEOLOGY**
With mountain chains, volcanoes, and generally commonly active geology.

26-75 **ACTIVE GEOLOGY**
With mountain chains, and varied geology. Has generally rare geologically activity.

76-95 **PASSIVE GEOLOGY**
Geological disturbances are at best uncommon to unknown in many areas.

96-00 **NON ACTIVE GEOLOGY**
This geology is inactive or staggeringly slow.

LIFE

Life almost invariably develops wherever there's a slim chance of generally terrestrial climates. Roll a d100 for alien life and diversity.

01-05 **NOT MUCH**
Other than a few things hobbling out of the seas and some plant growth, there's just not a whole lot here.

06-10 **SPARSE**
Some life, diversified plant life and a few biological surprises, but not many.

11-25 **AVERAGE**
A good diversity of ecology, life forms, plants and food chains.

26-75 **LIVELY**
Lots of life forms in many food chains. A very wide and surprising diversity.

76-95 **FRANTIC**
All sorts of competitive life forms and plants with many forms that are hostile.

96-00 **MANIACAL**
Everything here is competitive, diversified, well developed and generally looking to add you to its daily food requirements.

INTELLIGENT LIFE FORMS

Life is everywhere. Throughout the Fringes worlds have developed sentient life forms who aspired to reach the stars. Forming society and industry, they often disperse into the vastness of interstellar space. Few find the Fringes or the Pathways. Whether seeded or naturally developing, they ferociously cling to life and eventually lock into that long ladder to sentience and civilization.

INTELLIGENCE

01-50 **NONE**
No Intelligent Forms Yet

51-75 **NEAR INTELLIGENCE**
Primitive Forms of Intelligence

76-90 **PRIMITIVES**
True Intelligence, Primitive Culture

91-98 **DEVELOPING CULTURE**
True Intelligence, Go to Culture

99-00 **DEVELOPED CULTURE**
True Intelligence, Multiple Races

OPTIONS

From here you can index the start of the cultural generators at a level for primitives or on the main tables after a check on the species use of energy. You also have the option to create the history of the intelligence by GM or the following tables.

ORIGIN OF INTELLIGENCE

01-25	UPLIFTED RACE Raised to Intelligence by the Tehrmelern.
26-75	OLD RACE ASSISTED Tehrmelern pushed the race to civilization.
76-98	INDEPENDENT DEVELOPMENT Life developed without interference.
99-00	DESIGNER LIFE FORMS

PRIMITIVE LIFE

As your players explore the Stars, they will often run across primitive intelligences in various developmental stages.

01-50 **PRIMITIVE**
These are the primitive life forms who possess a rudimentary intelligence and the basic beginnings of culture. EARTH TYPE: Australopithecus

51-75 **EARLY**
The first 'true' intelligence. Capable of early weapon and stone usage. Often have fire and the beginnings of social structure. EARTH TYPE: Homo Erectus, Neanderthal

76-99 **MODERN**
The species is advanced. May have various races and the beginning of ethnic diversities. EARTH TYPE: Cro-Magnon, Modern Man

00 **SUPERIOR**
A slightly more advanced version of the species, with some improved physical and mental capabilities. These improvements are due both to genetic engineering and normal species development.

CULTURE SHOCK

When meeting primitive cultures, a wide variety of social structures and beliefs will be encountered. This often leads to the phenomenon of culture shock.

Explorers without Anthropological or related skills will find their general state of mind rattled by customs and beliefs that border on the bizarre.

Primitive cultures, on the other hand, will probably see any advanced technology as being magic, or just ignore it completely.

REACTIONS

01-05	Ignore Strangers
06-75	Run in Terror
76-85	Welcome Strange Guests
86-95	Attack on Sight
96-99	Attack if Taboos are Broken
00	Worship as Gods

NUTRITION

01-05	Cannibalistic
06-75	Omnivorous
76-90	Vegetarian
91-95	Carnivorous
96-00	Parasitic

RELIGION

01-05	Agnostic
06-50	Nature
51-75	Polytheistic
76-85	Monotheistic
86-95	Ancestor
96-99	Cult
00	Atheist

FAMILY

01-05	None
06-75	Nuclear
76-85	Extended
86-95	Highly Extended
96-99	Fostering
00	Other

MARRIAGE

01-55	Monogamous
56-85	Polygamous
86-90	Polyandrous
91-96	Clan Marriage
97-99	Line Marriage
00	Other

SOCIETY

Generating a world's society involves the use of a large number of factors that relate to culture, resources and general lifestyle.

MODIFIERS ON A SOCIETY'S DISPERSAL

01-02	Highly Shifting Resources	-03
03-04	Seasonable Shifting Resources	-02
05-08	Stable Resources	n/a
09	Very Stable Resources	+01
10	Near Perfect Stability	+02

MODIFIERS ON PROGRESS (Roll d4 times)

01	Intolerant Religion or Government	-04
02	Long-Term Oppression	-01
03	Restrictive Hierarchy	-01
04	Tight Social Structure	-01
05	Long-Term Violence or Wars	-02
06	Short-Term Violence or Wars	-01
07	Failing Economics	-01
08	Racial Injustice	-01
09	Printing / Open Information	+02
10	Progressive Views	+02

LAWS

01	No Laws, Anarchy	-03
02-03	"Eye-For-An-Eye" Justice	-02
04-05	Law for Serious Social Offenses	-01
06-07	Law for General Social Offenses	+01
08-09	Law for Profit and Social Control	-01
10	Law for a Society's Total Control	-02

WARFARE

01	War is Unknown	-02
02-03	War is Nearly Unknown	-01
04-05	War is Very Rare	+0
06-07	War is Rare	+01
08-09	War is Frequent	+02
10	War is Constant	+01

MOBILITY/URBANIZATION RESULT

01-02	Nomadic
03-04	Rural, Dispersed
05-07	Rural and Sparse Urban Areas
08-09	Urban and Rural Cultures
10	Dense Urban and Rural Cultures

PROGRESS

Roll a d10 and apply your modifiers to find the state of progress of the society.

01	Regressing, Fallen
02	Collapsing
03	Failing
04	Stagnant
05	Borderline Stagnant
06	Developing Very Slowly
07	Developing Slowly
08	Developing
09	Developing Quickly
10	Developing Very Fast

TECHNOLOGY

With these general guidelines the GM is able to easily generate the technological development of any society.

REMEMBER

01	Generate an Energy Use Level by rolling a d100 on the table below.
02	For primitive and non-energy dependent cultures, (50 or less), roll a d100 on the PRIMITIVE CULTURE tables for the technological and social progress. Do not go beyond that point.
03	For higher technology (50 or above), roll a d10 on the HIGH TECH tables for the society's progress.
04	Index power level to the column on the HIGH TECH tables.

ENERGY USE RESULT

01-25	Predominant use of brute force, some limited fire use.
26-50	Use of brute force with high skills in the use of fire.
51-75	Use of steam engines and related technology.
76-80	Use of internal combustion and power by natural chemical sources.
81-85	Early electrical power, circa 1895.
86-90	Generated electricity, circa 1930.
91-95	Nuclear fission for electric or steam generation.
96-97	Commercial fission use. Solar power.
98	Fusion. Commercial solar electric.
99	Commercial fusion, Geomagnetic Taps.
00	Mass to energy / Antimatter use.

LOW ENERGY LEVELS

Energy Level Under 51
Roll a d10 for each category.

STONE USE

01-02	Basic use of stone tools, natural shelters only.
03-05	Rough-shaped stone for foundations.
06-08	Shaped stone for most building.
09	Heavy stone construction and carving.
10	High monolithic and complex stone construction the norm. Stone carved with detail and for art.

FOOD GATHERING

01-02	Gathering and some hunting.
03-04	Hunting and some gathering.
05-08	Subsistence agriculture.
09	Improved agriculture / surplus.
10	Highly diversified and specialized agriculture and farming knowledge.

ANIMAL HUSBANDRY

01-02	None
03-05	Domestication of a small number of species for work and food production.
06-08	Domestication for food production.
09	Improved breeding of a number of species.
10	Diversified breeding for needs and improvement of a species.

CERAMICS

01-02	None
03-05	Fired, early ceramics and pots.
06-08	Ceramics and glazing.
09	Ceramic building materials, glass.
10	Refined glass, high ceramic use.

EARLY METALWORK

01-02	Soft / malleable metals.
03-05	Bronze, early iron and forging.
06-08	High use of iron, casting.
09	Creation of high carbon steel.
10	Creation of low carbon steel.

MEDICINE

01-02	None
03-05	Little effective use.
06-08	Effective use on limited areas by natural means.
09	Natural medicine, early physiology and simple surgical procedures.
10	Effective repair of complex medical problems with simple natural methods.

SOCIAL SCIENCE

01-02	None
03-05	Social science for social necessity.
06-08	Higher authority sets some social control of the population.
09	Use of social science to orient the population.
10	Social controls, custom or law in high use.

HIGHER TECHNOLOGY

High Power Use Technology
Index by Energy Level

ENERGY LEVELS 51-85 Use Column A
ENERGY LEVELS 86-00 Use Column B

SYNTHETICS

A	B	
01-02	01	Simple Alloys.
03-05	02-05	Complex alloys and very early synthetics.
06-10	06-08	Plastics
	09	Special alloys and synthetic fuels are in general use.
	10	Synthetic metals, use of heavy elements. Roll on chemistry with a +4 modifier.

CHEMICAL

A	B	
01-02	01-02	Simple Chemistry
03-07	03-05	Basic Chemistry
08-10	06-08	Use of complex chemistry.
	09	Use of synthetic chemistry and organic chemistry.
	10	Use of complex synthetics and organic chemistry.

MECHANICAL

A	B	
01-02	01-02	Simple use or very basic devices that are mechanical.
03-05	03-04	Complex mechanical devices.
06-10	05-08	Complex mechanical devices and very simple automation in use.
	09	Complex automation, very high use of mechanical devices.
	10	Very complex mechanical devices and high automation.

ELECTRICAL USE

A	B	
01-04	01-02	Knowledge of, but with very little effective use in everyday life.
05-09	03-05	Simple use, as Earth's 1900's.
10	06-08	Common household use in day-to-day life.
	09	Household dependency, very high use for communications.
	10	Travel, communications, every aspect of life.

MEDICINE

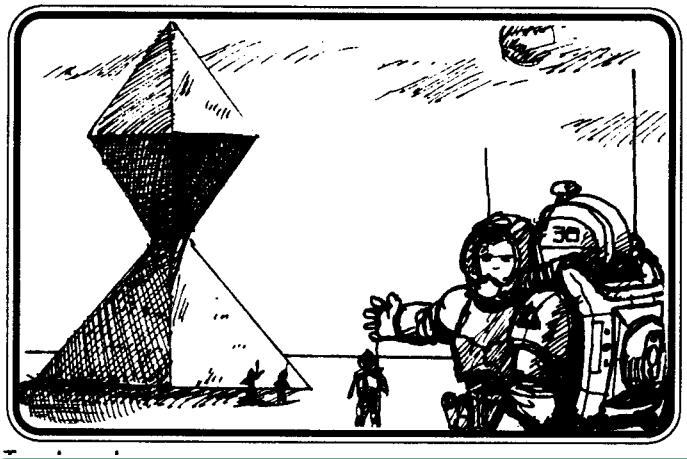
A	B	
01-04	01-02	General medical diagnosis and treatment on most areas.
05-09	03-05	Specialized treatment for many areas, repair, and physical reconstruction.
10	06-08	Synthetic replacement, use of synthetic and tailored drugs in medicine.
	09	Regeneration, Autodoc, and cold sleep technologies.
	10	Use of varied life prolongation methods and effective resuscitation.

COMPUTER TECHNOLOGY

A	B	
01-08	01-02	Bulky mechanical devices of very limited functions.
09	03-06	Bulky semi-electrical devices of limited functions.
10	07	Lightweight devices of limited functions.
	08	Bulky devices of advanced functions.
	09	Light weight devices of data storage and advanced functions.
	10	Micro - Miniaturized computing devices of highly advanced functions.

SOCIAL SCIENCE

A	B	
01-02	01-02	No use of social science.
03-05	03-05	Social control in nominal use.
06-09	06-08	Some social control in use.
10	09	High use of social control.
	10	Knowledge of the deep motivations of a society and control of its operation.



FLIGHT

A	B	
01-04	01-02	General knowledge of the principles but no applied use.
05-09	03-05	Balloon technology, gliders, very early powered flight.
10	06-08	Airplane Technology
	09	Jet Technology
	10	Go to **EARLY SPACE FLIGHT**

EARLY SPACE FLIGHT

A	B	
01-09	01-02	Early Testing
10	03-05	Early Orbital Flights
	06-08	Space Stations
	09	Interplanetary Exploration
	10	System Colonies, go to **STARFLIGHT**

STARFLIGHT

A	B	
STOP	01-02	Slow ships, Multi-Generation
	03-05	Slow ships, years per light-year traveled.
	06-08	Early exploration of the nearest stars with early FTL drives.
	09	Colonization of near stars.
	10	Commercial Starflight.

GM'S NOTES

These guidelines can, with a little work, create countless societies or give an odd flavor to the creation of scenarios.

Remember that these tables are optional for GM use and modified as he or she sees fit.

VANISHED CULTURES

Across ISCO Space are the traces of several cultures that have flourished, headed for the stars, and vanished for mostly unknown reasons.

ARTESEE CULTURE **400,000 BC**

The Southern Edge of ISCO Space has hit the edge of what was once a vast starspanning culture. These few ruins and pictographic ceramics show a wealth of cultural design and feats of technology bordering on the fantastic. Miles high monolithic constructions and spherical spacecraft dot these tiles along with scenes of family life. These lemur like creatures and their constructions are long dust.

MAZBAK/AKITEE GENOSIDE **250,000 BC**

Second most recent of the cultures detected were in the Western edge of ISCO Space. Early Fritzian history tells of a vast humanoid and alien alliance that fought a war of extinction with a horrific race called the Akitee. Legends tell of planet-destroying weapons and the genoside of entire races. Archaeologists have verified a dozen sites likely to have been battle areas and debris found in asteroid belts from no known shipping designs. Some of this debris is extremely dangerous and possibly still active.

TREBOTTL STARFARERS **20,000 BC**

This odd race conquored a dozen systems before suddenly falling into extinction. Sometimes called the Bio-degradable culture, these squat humanoids left little in their wake.

ALIEN ANIMALS

Alien worlds can play endless host to semi-familiar or very different animals.

While outside designs can be different, remember that nature most often takes the easy way out in developing life forms. All forms fill an ecological niche. Hunters, grazers, and scavengers will be universal. Where a form is missing from an ecology, some form will eventually fill the niche and balance the populations.

INTERNAL BODY STRUCTURE

All higher life forms share a general body structure that includes a respiratory, digestive, and circulatory system. All forms must have these general systems to live. While organs can be slightly different in size and structure, they serve the same basic functions and will be damaged or fail in the same general ways.

Use the Human Body Structure Tables FTL Book 1 Page 127 for a generalized guideline.

PHYSICAL STRUCTURE, BONES & TISSUE

Tissue and bone density for larger creatures can also be indexed below. A creature the size of an elephant will have more tissue to slow weapon penetration and a thicker bone structure. Compared to a man, an elephant would have x10 the bone structure at any point. A human femur with a value of 12 points to penetrate would become 120 points for the much larger creature. Work with this if you feel it is necessary but remember it is an optional concept.

DAMAGE CLASS

In the game we generalize damage to structures and life forms with simple point subtraction. While this works for most cases of combat in role playing, there's a gap in dealing with larger life forms that can create excessive damage. The following is an optional guideline for damage multiplication by size of attacker and victim. This can generally be used for damage totals with firearms and physical combat. The GM must manipulate this carefully to avoid player excess.

REMEMBER

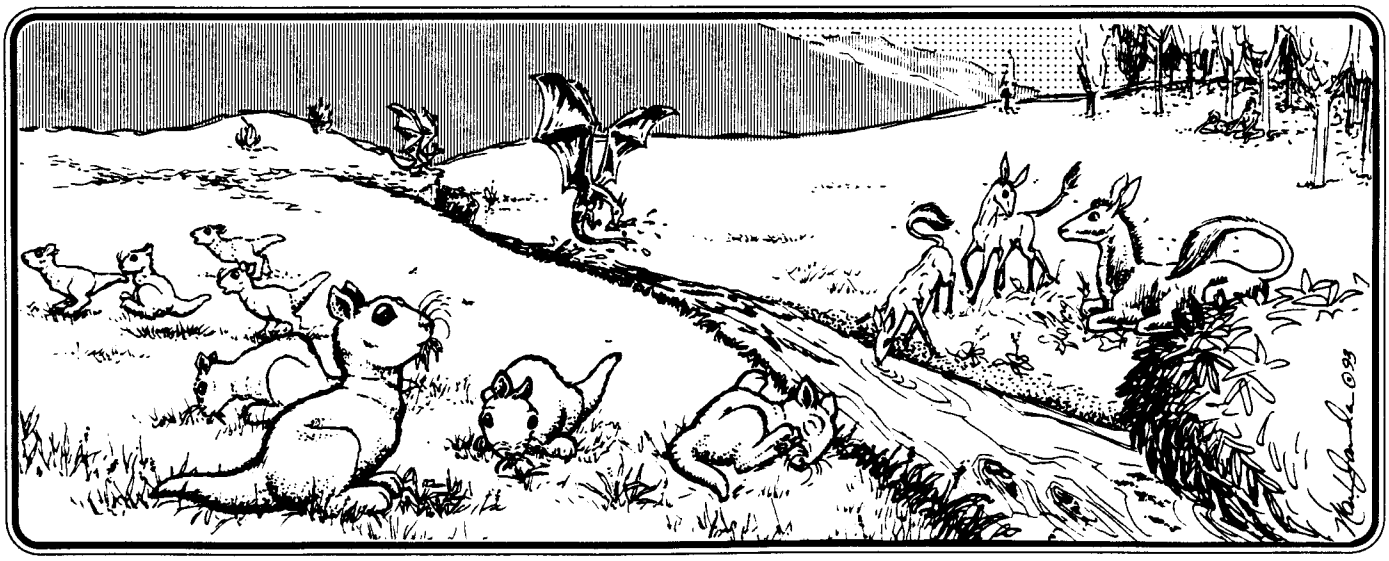
01 Use a Calculator.
02 Play it by common sense.
03 This is an option for realism.

EXAMPLE

A vicious predator, the size of a mouse, makes a heroic, but none too bright attack on an elephant sized grazer. The predator attacks with a BI03, a medium sized bite for its size. It does 4 points of damage. This doesn't punch through the grazer's tough skin and the grazer unwittingly steps on the predator. Considering it a Strength related kick, for its average strength of 50, it does about 18 points of damage. Indexing the size table, that 18 is multiplied by 80 to become 1440 points of damage. The predator becomes an unnoticable splotch on the underside of the grazer's foot.

To a mouse sized predator, even a simple .22 pistol round becomes a 120mm shell in equivilent terms. Work with this system if you feel comfortable with it and feel the need or realism to inflict excessive damage in a critical situation.

ATTACKER MASS/SIZE		A	B	C	D	E	F	G	H	I
A	Ant Sized	x1	x0.50	x0.25	x0.12	x0.06	x0.03	x0.012	x0.006	x0.003
B	Junebug Sized	x2	x1	x0.50	x0.25	x0.12	x0.06	x0.03	x0.012	x0.006
C	Mouse Sized	x10	x2	x1	x0.50	x0.25	x0.12	x0.06	x0.03	x0.012
D	Cat Sized	x20	x10	x2	x1	x0.50	x0.25	x0.12	x0.06	x0.03
E	Medium Dog Sized	x30	x20	x10	x2	x1	x0.50	x0.25	x0.12	x0.06
F	Human Sized	x40	x30	x20	x10	x2	x1	x0.50	x0.25	x0.12
G	Horse Sized	x80	x40	x30	x20	x10	x2	x1	x0.50	x0.25
H	Elephant Sized	x160	x80	x40	x30	x20	x10	x2	x1	x0.50
I	Ultrasaurus Sized	x320	x160	x80	x40	x30	x20	x10	x2	x1



ALIEN DESIGN

The general design of alien life is the decision of the GM or randomly generated with the following tables. Start with a pencil and form the design that nature leans towards on this world. Each step will take you closer to the finished form.

01 Roll number of Body Segments, Head Chance, and the chance for a Tail
02 Roll Symmetry and Body Shape
03 Roll Posture
04 Roll Head Attachment, if any
05 Roll Manipulative Members and Shape
06 Roll Walking Members and Shape
07 Roll Face, Design and Senses
08 Roll Skin Covering and Texture
09 Roll Skin Color and Pattern
10 Roll Defense, Temperament and Niche

BODY SEGMENTS

Your basic structural block is the body segment.

	SEGMENTS	*HEAD CHANCE*	*TAIL CHANCE*
01-10	01	20%	10%
11-20	01	40%	20%
21-40	02	60%	40%
41-50	02	80%	60%
51-70	03	60%	40%
71-80	03	40%	20%
81-90	04	20%	10%
91-95	05	10%	05%
96-98	06	08%	05%
99-00	d6+6	05%	05%

SEGMENTS

01-50	Distinctive
51-98	Fused
99-00	Both

SYMMETRY

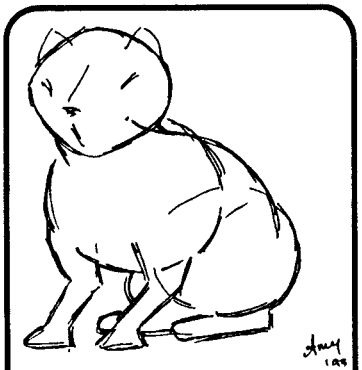
01-90	Bilateral
91-95	Quadrilateral
96-99	Trilateral
00	Non-symmetrical

POSTURE

01-75	Horizontal
76-95	Horizontal and Vertical
96-99	Vertical
00	Vertical and Horizontal

BODY SHAPE

01-10	Rounded
11-20	Barrel Shaped
21-40	Tubular
41-75	Flattened
76-85	Semi-Rounded
86-90	Semi-Flattened
91-95	Two Basic Shapes
96-98	Disproportioned
99	Nonconventional
00	Slightly Variable



Example

Two Fused Body Segments, With Head, No Tail, Horizontal Posture, Bilateral Symmetry, Semi -Flattened Body & Short Neck.

HEAD ATTACHMENT

01-25	Direct
26-85	Short Neck
86-95	Medium Neck
96-99	Long Neck
00	Very Long Neck

MEMBERS PER BODY SEGMENT

01-50	Two Locomotive
51-75	Two Locomotive or Manipulative
76-95	Three Locomotive
96-98	Three Locomotive or Manipulative
99-00	Three or more of any combination

ARM & LEG LENGTH (Roll for Each)

01-70	Short (.25 of body span)
71-85	Medium (.50 of body span)
86-95	Long (.75 of body span)
96-00	Very Long (equal to body span)

MANIPULATIVE MEMBERS

01-25	Short Digits (.25 size of hand span)
26-50	Medium Digits (.50 size of hand span)
51-75	Long Digits (.75 size of hand span)
76-98	Very Long Digits (equal to hand span)
99	Tentacles (2 x d100 percent of body length if the being has no arms. d100 percent of body length if being has arms.)
00	Pincers (two to four in symmetry)

LOCOMOTIVE MEMBERS END IN

01-10	Flat, Stumpy Pads
11-20	Hooves
21-40	Partial Hooves
41-75	Fused Toes
76-85	Non-Manipulative Toes
86-90	Semi-Prehensile Toes
91-95	Prehensile Toes
96-98	Prehensile Toes with Semi-Usable Thumb
99-00	Prehensile Toes with Usable Thumb

FACIAL DESCRIPTION

01-90	Face in centralized area
91-99	Decentralized face
00	Sensors where necessary

FACE STRUCTURE

Mouth	roll a d8 on Table B.
Face	roll a d6 on Table B.
Nose	roll a d10 on Table B.
Eyes*	roll a d10 on Table B.
Ears	roll a d10 on Table B.
Teeth	roll a d6 on Table B.

* d6 in quantity

Modify as you will.

TABLE B

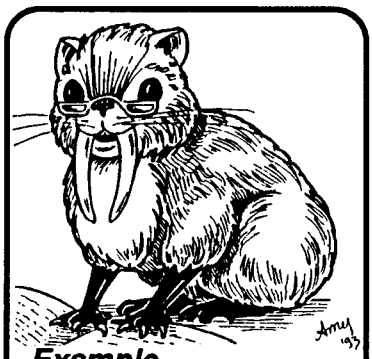
01	Nil
02	Very Small
03	Small
04	Medium
05	Large
06	Very Large
07	Covered Hole
08	Sensory Spot
09	Sensory Stalk
10	Antenna Stalk

SENSORY SPECIALS

01-04	Infrared
05-07	Radar
08-09	Spatial Sense
10	Smell

SKIN TEXTURE

01-10	Velvet
11-20	Smooth
21-30	Rough
31-40	Sandpaper
41-50	Sharp
51-60	Leathery
61-70	Wrinkled
71-85	Warty
86-90	Lumpy
91-98	Knobby
99-00	Two Textures



Example

After filling in more details, the creature continues to grow in structure and believability. This is the basic life-design template for the world.

PROTECTIVE COVERING

01-25	None
26-36	Fur, Thick or Thin
37-50	Hair, Thick or Thin
51-60	Scales
61-70	Feathers
71-80	Bony Plates
81-90	Shell / Carapace
91-95	Spines
96-98	Heavy Plates
99	Roll Twice
00	Roll Three Times

COLOR

01	White	11	Purple
02	Black	12	Gray
03	Pink	13	Gold
04	Tan	14	Silver
05	Brown	15	2 Shades
06	Orange	16	3 Shades
07	Red	17	4 Shades
08	Yellow	18	2 Colors
09	Blue	19	3 Colors
10	Green	20	4 Colors

PATTERN

01	Solid Areas	11	Bright Colors
02	Large Spots	12	Unnatural Colors
03	Small Spots	13	Stripes & Spots
04	Bands	14	Wide Bands
05	Splotches	15	Bands & Splotches
06	Dotted	16	Color Mimic
07	Large Stripes	17	Vegetation Mimic
08	Small Stripes	18	Earth Color Mimic
09	Camouflage	19	Rock Mimic
10	Seasonal Shift	20	Ocean Mimic

MIMICS

Mimics listed here have color and patterns that may match predominent planetary colors.

DEFENSE

01-05	Brains
06-25	Claws
26-50	Bite
51-75	Kick
76-90	Bludgeon
91-95	Trample
96-97	Sting
98	Poison
99	Shock
00	Agility

TEMPER

Roll a d100 twice for the general range of temper of the creature. See Book 1 Pg. 166

FOOD

01-50	Herbivore
51-75	Omnivore
76-98	Carnivore
99-00	Parasitic

LIFE CYCLE

01-50	Diurnal
51-75	Either
76-00	Nocturnal

BIRTH

01-75	Live
76-98	Egg
99-00	Parasitic

NUMBER YOUNG

01-29	1
30-85	d4
86-90	d6
91-95	d4 +1
96-98	d6 +1
99-00	d10 +1

PREFERS

01-10	Dead & Rotting
11-25	Scavenging
26-85	Fresh
86-00	Live

IF A HUNTER

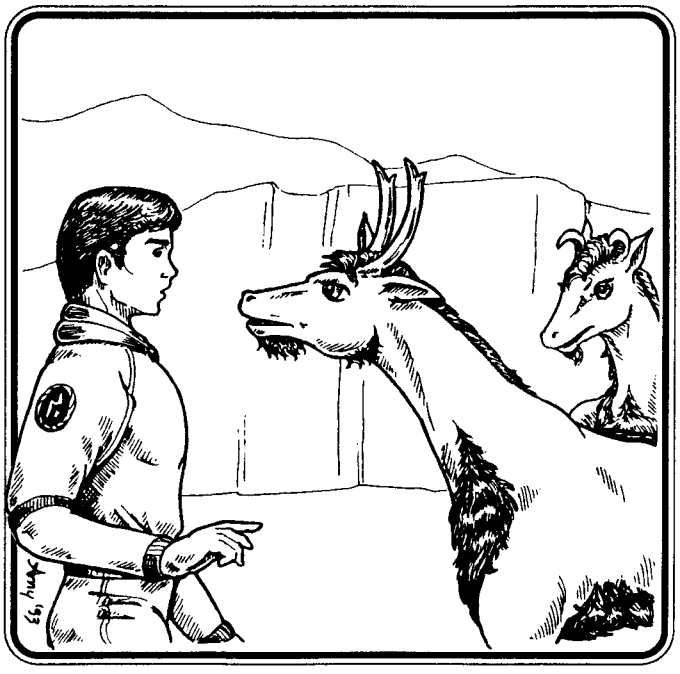
01-25	Poor Hunter
26-50	Good Hunter
51-75	Excellent Hunter
76-00	Crafty Hunter

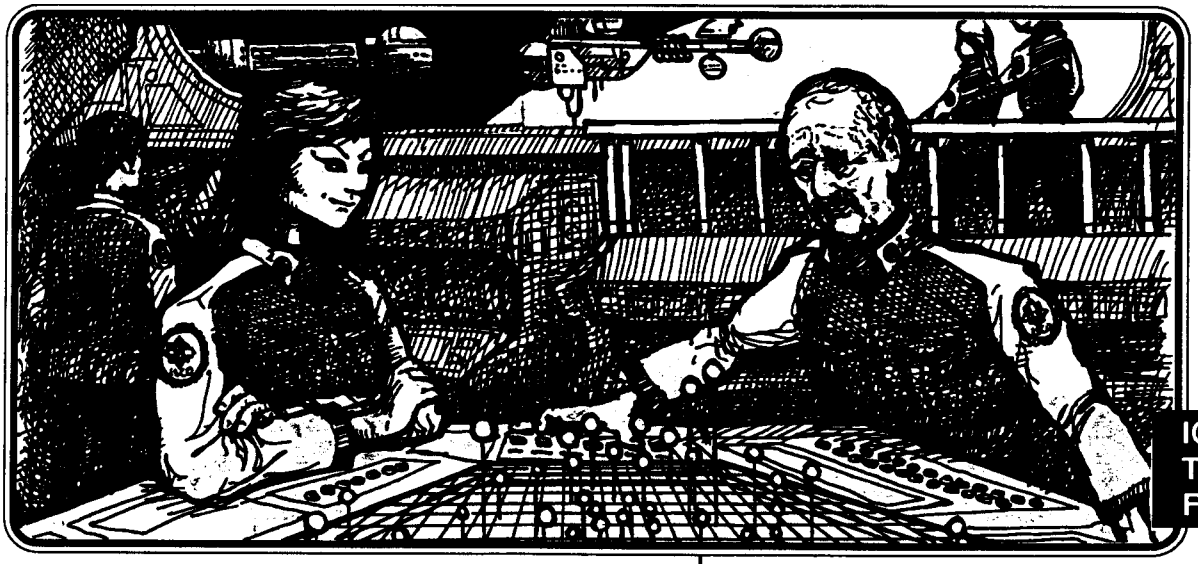
NESTING

01-25	Abandons Young
26-75	Protects Young
76-00	Fierce Protector

ATTITUDE / HUMANS

01-05	Food
06-25	Hostile
26-50	Intolerant
51-75	Sometimes Tolerant
76-98	Tolerant
99-00	Real Friendly





ICL Tracking Fomalhaut

STAR CHARTS

FTL Star Charts is a map of near space with over 2000 actual stars in the proper places.

As a supplement, Star Charts will also give the FTL GM an overview of human and alien colonies out to the frontiers of known space.

OTHER USES

With determination, time and a little work, this data can also be used with any other 'Earth' or Near-Earth' based space games.

HEX SHEET COPIES

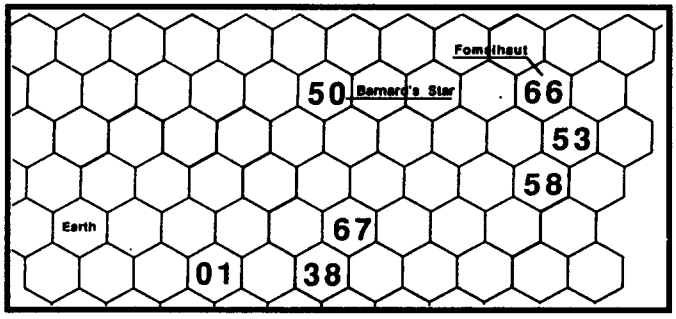
To create a full set of star charts you need copies of the final star chart sheet in the back of this book. It's almost best to have two copies of a hex per map. One to do your general mapping and mistakes on and a second to use when you copy your data into a final chart.

CARTOGRAPHERS NOTES

You can't do this all at once. Do a hex when you feel like it, but don't rush yourself. The final result will be worth the time. Remember that each hex is divided into 5 layers of 41 light years each.

MAP DESIGN

Colored pencils work wonders and you don't need many. Fine point markers are also very good. Provided below is a home hex in final format without color. Numbers and names are indexed to the book. Special names are set next to the star when possible. This is an example:



REMEMBER

01 Add stars across the frontiers where you want them. Remember that this is only a basic map. To keep realism, add a dotted line across "real" space and your FTL space.

02 If you wish to change or add a colony or listed world, feel free to do so. Remember that this is just a basic core of real stars to use in your campaign.

03 When stars overlap simply divide the hex into two listings

04 Full maps are possible with large sheets of hex paper as well as 3-D scale models built of a favorite hex. This is easily done with colored beads and stiff wire.

05 Have fun and use your imagination.

NUMBER OF STARS IN A HEX

The average number of stars in a hex layer is approximately 85. This number may be far larger, but for the sake of GM management, we suggest limiting each hex layer to no more than 95 stars.

READING THE CHARTS

The following is a key to reading your starcharts.

COLONY C			*Layer*	*+2*		
a			*b*			
NUM	***GLIE***	***NAME***	***SP***	***LX***	***LY***	***LZ***
01	**458.1**	**DM-2 3481**	**G4**	**-5**	**-10**	**-13**
c	d	e or j	f	g	h	i

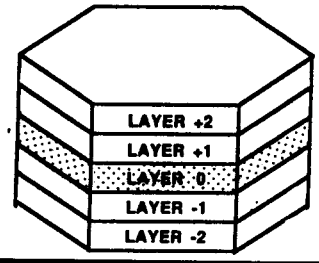
a HEX

This is the location of the following list of stars as indexed by the folowing chart. This represents FTL or human explored space in the 25th Century. This area represents about a hundred light years in any direction from the Earth based center.

b LAYER

This is the layer of the spacial hex as as shown below. Remember, each complete hex has 5 vertical layers of stars.

+2 Layer
+1 Layer
+0 Layer
-1 Layer
-2 Layer



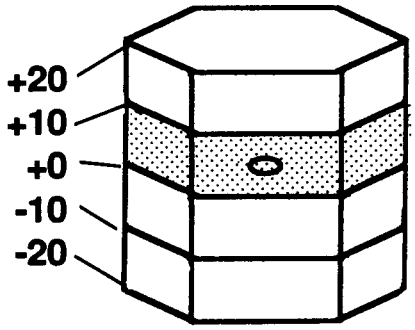
This complete hex slice is 205 light years deep. A 205 light year deep hex is divided into 5 equal slices. Below a Zero (0) slice is shown. This represents a single area map.

HEX DEPTH

A Hex is divided into an area 41 light years deep. Each hex slice is 31 light years across.

Each of these slices hads a depth of 41 light years with a zero point in the center. The Vertical coordinate system uses a positive (+) and negative (-) axis.

SINGLE HEX SHOWING DEPTH -20 to +20



c LOCAL NUMBER

This is the local number of a star in that slice or layer. This limited system of numbering reduces confusion and provides an easy index of actual stars.

d GLIESE NUMBER

Gliese Number is the actual star number from the Catalog of Nearby Stars ©1969 Dr. Wilhelm Gliese and Veroffentlichungen des Astronomischen Rechen-Instituts, Heidelberg

e COMMON DESIGNATION

This is the technical name or number designation of the star.

f SPECTRAL CLASS

The spectral class of the stars range from A to W with a scale of intensity. Double spectral classes note a Cephid or variable star that changes intensity. Some stars are variable but their spectral class is unknown or debated. These are marked with a (?). Each spectral class of a star has 10 subdivisions that range from 0 to 9. Spectral lines or bands also provide data and show differences in a star's composition.

STAR TYPES

This chart is general data on the star type and spectra.

O BLUE GIANT — **30,000+K**
Large mass with a high Luminosity. Ionized Helium prominent, emit strong ultraviolet.

B BLUE WHITE — **11,000 to 30,000 K**
Large mass with high luminosity. Neutral Heliumlines dominate, with Hydrogen increasing.

A WHITE — **7,500 to 11,000 K**
High luminosity with Hydrogen at maximum. Calcium lines Increasing.

F YELLOW WHITE — **6,000 to 7,500 K**
Strong Calcium lines, weak Hydrogen, ionized metal lines increasing.

G YELLOW — **5,000 to 6,000 K**
Prominent metal lines, weak Hydrogen.

K ORANGE — **3,500 to 5,000 K**
Metals dominate, hydrocarbons appear.

M RED — **Cooler to 3,500 K**
Titanium and Vanadium Oxides Prominen. May show bright Hydrogen lines and strong metallic lines. Can sometimes be variable

N DEEP RED — **Cooler to 5,500 K**
Cool Giants, Broad Banded Spectra shows Carbon compounds.

R ORANGE RED
Similar to N with higher temperatures and weak carbon bands.

S RED
Resemble spectral type M with Titanium Oxide spectra bands replaced by Zirconium Oxide. Often has a complex spectra.

W WOLF-RAYET STARS 30,000 K+
Hot blue giants that resemble O Spectral Class and show the broad emission features of an expanding gaseous shell with turbulent atmosphere.

g X COORDINATE

X Scale or the X line position of the star on the local hex grid map.

h Y COORDINATE

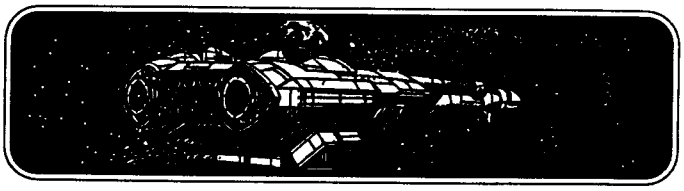
Y Scale or Y line position of the star on the local hex grid map.

i Z COORDINATE

Z Scale or vertical position of the star. This is an imaginary plot point on our two dimensional map that gives depth and dimension.

j STAR NAME

In many cases the name or most popular name of the star has been listed.



DISTANCES

This is a mathematical formula to compute travel distance if you do not have a STAR CHART computer utility. We recommend you use a pocket calculator or use the EZ Chart provided at the end of this section. (See also Pg. 246-247)

REGULUS to TAU CETI

As an example we will travel from Regulus to Tau Ceti

$$X = (X1 + HX1) - (X2 + HX2)$$
a b c d e

a DISTANCE BETWEEN COORDINATES
This is the number needed for the final formula below. This is used for X, Y, and Z Coordinates.

b THE YOU ARE HERE COORDINATE
This is the local coordinate of where you are now.

c THE CENTER COORDINATE OF THE LOCAL HEX
This is the center of the local hex found from the CENTER COORDINATE TABLE

d YOUR DESTINATION LOCAL COORDINATE
The Local Coordinate of where you want to be.

e CENTER CORDINATE OF YOUR DESTINATION
The center coordinate of the local hex found from The CENTER COORDINATE TABLE in the next column.

REMEMBER

01 Calculate each of the following to get a result to use in the final formula.

$X = (X1+HX1) - (X2+HX2)$

$Y = (Y1+HY1) - (Y2+HY2)$

$Z = (Z1+HZ1) - (Z2+HZ2)$

02 The following is the final formula.

$$DISTANCE = \sqrt{X^2 + Y^2 + Z^2}$$

EXAMPLE

REGULUS COLONY E
LAYER +1

LOCAL COORDINATES

X1 = +11
Y1 = -7
Z1 = +18

HEX CENTER COORDINATES

HX1 = -47
HY1 = -31
HZ1 = +42

EXAMPLE

TAU CETI HOME
LAYER +0

LOCAL COORDINATES

X2 = -3
Y2 = 0
Z2 = -11

HEX CENTER COORDINATES

HX2 = 0
HY2 = 0
HZ2 = 0

STEP 1 X= (11 + (-47)) - (-3 + 0)
STEP 2 X= (-36) - (-3)
RESULT X= (-33)

STEP 1 Y = (-7 + (-31)) - (0+0)
STEP 2 Y= (-38) - (0)
RESULT Y= (-38)

STEP 1 Z= (18+42) - (-11 +0)
STEP 2 Z= (60) - (11)
RESULT Z = (71)

$$DISTANCE = \sqrt{X^2 + Y^2 + Z^2}$$

$$DISTANCE = \sqrt{(-33)^2 + (-38)^2 + (71)^2}$$

$$DISTANCE = \sqrt{1089 + 1444 + 5041}$$

$$DISTANCE = \sqrt{7574}$$

RESULT = 87.03 Light Years

CENTER COORDINATES

These are the Center Coordinates for the Local Hexes used for calculating distances between stars in different hexes and levels.

HEX	HX	HY		HX	HY
Home	0	0	Frontier 11	-46	31
Colony A	16	31	Frontier 12	-30	62
Colony B	31	0	Frontier 13	01	62
Colony C	15	-31	UNEX 19	93	0
Colony D	-16	-31	UNEX 20	78	31
Colony E	-47	-31	UNEX 21	63	62
Colony F	-31	0	UNEX 23	17	93
Colony G	-15	31	UNEX 24	-14	93
Frontier 01	32	62	UNEX 26	-61	62
Frontier 02	47	31	UNEX 27	-77	31
Frontier 03	62	0	UNEX 28	-93	0
Frontier 04	46	-31	UNEX 31	-48	-93
Frontier 05	30	-62	UNEX 32	-17	-93
Frontier 06	-01	-62	UNEX 33	14	-93
Frontier 07	-32	-62	UNEX 35	61	-62
Frontier 08	-63	-62	UNEX 36	77	-31
Frontier 09	-78	-31	UNEX 39	93	62
Frontier 10	-62	0	UNEX 47	01	62

Z CENTER COORDINATES

These are the Z Center Coordinates of the center of each layer.

LAYER	HZ
+2	+84
+1	+42
0	0
-1	-42
-2	-84

HOME — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	01	DM-37 15492	M4	3	-1	-14
02a	15a	DM+43 44 A	M1	-5	10	-4
02b	15b	DM+43 44 B	M6	-5	10	-4
03	**17**	**Zeta Tucanae**	**G2**	**9**	**-11**	**-18**
Colony		**Human**	**Bryox**			
04	**19**	**Beta Hydri**	**G1**	**9**	**-13**	**-13**
Colony		**Human**	**Brazilia**			
05	33	DM+4123	K2	-6	10	-19
06	35	Van Maanen 2	G5	-4	6	-11
07a	65a	L 726-8	M5	-2	0	-9
07b	65b	UV Ceti	M5	-2	0	-9
08a	66a	P Eridani	K2	4	-10	-18
08b	66b	DM-56 328	K5	4	-10	-18
09	71	Tau Ceti	G8	-3	0	-11
10	83.1	L 1159-16	M8	-9	6	-11
11a	105a	DM+6 398 A	K3	-15	5	-17
11b	105b	DM+6 398 B	M4	-15	5	-17
12	**139**	**82 Eridani**	**G5**	**-4**	**-11**	**-17**
Colony		**Human**	**Peridot**			
13	144	Epsilon Eridani	K1	-7	-2	-8
14a	166a	Omicron 2 Eridani	K1	-12	-4	-10
14b	166b	DM-7 781 A	A	-12	-4	-10
14c	166c	DM-7 781 B	M4	-12	-4	-10
15a	169.1a	AC+58 25001	M4	-14	9	2
15b	169.1b	AC+58 25002	?	-14	9	2
16	191	DM-45 1841	M0	-3	-9	-7
17	229	DM-21 1377	M1	-12	-13	-6
18a	234a	Ross 614 A	M7	-11	-7	-1
18b	234b	Ross 614 B	M7	-11	-7	-1
19a	244a	Sirius A	A1	-6	-6	-1
19b	244b	Sirius B	A5	-6	-6	-1
20	273	DM+5 1668	M5	-10	-6	2
21a	**280a**	**Procyon A**	**F5**	**-9**	**-6**	**3**
Colony		**Human**	**Frenner I**			
21b	280b	Procyon B	F0	-9	-6	3
22	**293**	**L97-12**	**?**	**3**	**-17**	**-6**
Colony		**Human**	**Rest Stop**			
23a	33a	DM+53 1320	M0	-14	4	13
23b	33b	DM+53 1321	M0	-14	4	13
24	**380**	**DM +50 1725**	**K7**	**-9**	**2**	**12**
Colony		**Human**	**Seridin**			
25	388	DM+20 2465	M4	-7	-6	13
26	393	DM+1 2447	M2	-7	15	18
27	402	Wolf 358	M5	-6	-12	19
28	406	Wolf 359	M8	-2	-4	6
29	408	AC+23 468-46	M3	-7	-6	10
30	411	DM+36 2147	M2	-3	0	7
31a	412a	DM+44 2051	M2	-8	2	16
31b	412b	WX Ursae Majoris	M8	-8	2	16
32	416.1	Beta Crateris	A2	0	-5	4
33	440	L 145-141	M4	7	-14	-1
34	445	AC+79 3888	M4	-8	11	10
35	**447**	**Ross 128**	**M5**	**0**	**-5**	**9**
Colony		**Human**	**Frenner II**			
36a	473a	Wolf 424 A	M5	1	-4	13
36b	473b	Wolf 424 B	M5	1	-4	13
37	477.1	DM+46 1797	K4	-4	5	19
38	526	DM+15 2620	M4	5	-1	15
39	551	Proxima Centauri	M5	3	-3	0
40	555	DM-11 3759	M4	14	-5	14
41	**559a**	**Alpha Centauri A**	**G2**	**3**	**-3**	**0**
Colony	**Human**		**Centauri**			
41a	559b	Alpha Centauri B	K0	3	-3	0
42	**566a**	**Xi Bootis A**	**G8**	**10**	**4**	**19**
Colony	**Human**		**New Chicago**			
42a	566b	Xi Bootis B	K4	10	4	19
43	570a	DM-20 4125	K5	14	-6	10
43a	570b	DM-20 4123	M2	14	-6	10
44	623	AC+48 1595-89	M3	4	16	16
45	628	DM-12 4523	M5	12	1	5
46	661a	DM+45 2505 A	M3	5	16	12
46a	661b	DM+45 2505 B	M3	5	16	12
47	674	DM-46 11540	M4	14	-4	-2
48	682	DM-44 11909	M5	15	-4	-2
49	687	DM+68 946	M3	-2	13	8
50	699	Barnard's Star	M5	5	3	1
51	702a	DM+2 3482 A	K0	14	8	3
51a	702b	DM+2 3482 B	K5	14	8	3
52	725a	DM+59 1915 A	M4	0	11	5
52a	725b	DM+59 1915 B	M5	0	11	5
53	729	AC-24 2833-183	M4	9	2	-2
54	764	Sigma Draconis	K0	-3	17	7
55	768	Altair	A7	11	12	-3
56	**780**	**Delta Pavonis**	**G8**	**14**	**-8**	**-10**
Colony		**Human**	**Remoxo**			
57	820a	61 Cygni A	K5	1	11	-1
57a	820b	61 Cygni B	K7	1	11	-1
58	825	DM-39 14192	M0	9	1	-9
59	832	DM-49 13515	M1	10	-2	-11
60	845	Epsilion Indi	K5	7	-3	-8
61	860a	DM+56 2783	M3	-3	12	0
61a	860b	DO Cephei	M4	-3	12	0
62	866	L 789-6	M7	4	4	-9
63	873	DM+43 4305	M4	-3	16	-4
64	**876**	**DM-15 6290**	**M5**	**5**	**6**	**-13**
Homeworld		**Trell**	**Darnell III**			
65	880	DM+15 4733	M2	1	18	-14
66	**881**	**Fomalhaut**	**A3**	**9**	**3**	**-20**
Colony		**Human**	**America**			
67	887	DM-36 15693	M2	5	0	-11
68	896a	DM+19 5116 A	M4	-2	16	-13
68a	896b	DM+19 5116 B	M6	-2	16	-13
69	905	Ross 248	M6	-3	9	-3
70	908	DM+1 4774	M2	-1	10	-16

HOME — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	410	DM+22 2302	M2	-13	-10	-6
02	414a	DM+31 2240 A	K9	-14	-5	-4
02a	414b	DM+31 2240 B	M2	-14	-5	-4
03	**423a**	**Alula Australis**	**G0**	**-9**	**-2**	**-18**
Colony		**Human**	**New Anglia**			
03a	**423b**	**Alula Australis**	**G0**	**-9**	**-2**	**-18**
Colony		**Human**	**New Desert**			
04	424	DM+66 717	M1	-13	12	-20
05	**427**	**Ross 627**	**F**	**-10**	**-10**	**-5**
Colony		**Human**	**Krishna**			

06	431.2	DM+50 1832	K3	-15	8	-8
07	**434**	**DM+35 2270**	**G8**	**-8**	**-1**	**-13**
Colony		**Human**	**Caladin**			
08	436	DM+27 28217	M3	-7	-4	-10
09	438.1	DM+49 2079	K2	-12	7	-11
10	443.1	DM+27 2055	K3	-10	-6	3
11	**448**	**Denebola**	**A3**	**-5**	**-13**	**0**
Colony		**Human**	**Velt**			
12	**449**	**Zawijah**	**F8**	**0**	**-16**	**-13**
Colony		**Human**	**NeuBayern**			
13	450	DM+36 2219	M1	-9	0	-8
14	451a	DM+38 2285 A	G8	-8	2	-13
14a	451b	DM+38 2285 B	G8	-8	2	-13
15	452.1	Ross 119	M	-2	-13	-9
16	454.3	DM+43 2180	K0	-15	8	10
17	455	L 1405-9	M4	-10	-4	13
18	459.1	C 1	A	-9	8	-17
19	459.2	DM+45 2014	K4	-10	8	-4
20	460	DM+26 2329	F0	-5	-4	13
21	462	DM+42 2296	M0	-11	9	8
22	464	AC +13 1308-25	M2	2	-17	18
23	469	Wolf 414	M5	4	-13	-2
24	471	DM+9 2636	M1	4	-14	2
25	471.1	DM+34 2323	K4	-5	2	1
26	474	DM+34 2333	K0	-7	4	20
27	**475**	**Chara**	**G0**	**-5**	**5**	**-12**
Colony		**Human**	**New Canada**			
28	476	AC+10 95-26	M4	5	-13	3
29	480	Wolf 433	M4	4	-10	-3
30	480.2	DM+34 2342	K4	-2	2	-16
31	481	DM+16 2404	K8	3	-9	3
32	482a	Postvarta A	F0	7	-14	-12
32a	482b	Postvarta B	F0	7	-14	-12
33	**484**	**DM+40 2570**	**G0**	**-8**	**10**	**16**
Colony		**Human**	**Lashaw**			
34	484.1	DM+33 2269	K3	-2	3	-5
35	486	Wolf 437	M4	4	-7	-14
36	488	DM+0 2989	M0	9	-14	-9
37	490a	DM+36 2322	M0	-3	7	16
37a	490b	G 164-31	M4	-3	7	16
38	492	Wolf 457	?	10	-13	-5
39	493.1	Wolf 461	M5	8	-10	-7
40	494	DM+13 2618	M2	7	-8	-3
41	499a	DM+21 2486 A	M0	6	-3	16
41a	499b	DM+21 2486 B	M0	6	-3	16
42	501a	42 A. C. Berenices A	F5	10	-6	20
42a	501b	42 A. C. Berenices B	F5	10	-6	20
43	502	Beta C. Berenices	G0	6	-3	16
44	504	DM+10 2531	G0	11	-8	-1
45	505a	DM+17 2611 A	K2	7	-3	-4
45a	505b	DM+17 2611 B	M2	7	-3	-4
46	507a	DM+35 2436 A	M0	0	6	-9
46a	507b	DM+35 2436 B	M3	0	6	-9
47	508a	DM+48 2108 A	M2	-3	10	-15
47a	508b	DM+48 2108 B	M2	-3	10	-15
48	509a	DM+29 2405 A	M0	4	5	13
48a	509b	DM+29 2405 B	K6	4	5	13
49	**514**	**DM+11 2576**	**M1**	**7**	**-4**	**-17**
Colony		**Human**	**Justice**			
50	516a	AC+18 1204-96 A	M4	12	-3	10
50a	516b	AC+18 1204-96 B	M4	12	-3	10
51	**518**	**Wolf 489**	**K**	**9**	**-5**	**-19**
Homeworld		**Blox**		**Ott**		
52	519	DM+36 2393	M2	2	7	-10
53	521	DM+46 1889	M2	-1	11	-12
54	525	DM+18 2776	M1	9	0	-9
55	527a	Tau Bootis A	F7	15	0	10
55a	527b	Tau Bootis B	M2	15	0	10
56	528a	DM+27 2296 A	K6	7	5	-4
56a	528b	DM+27 2296 B	K6	7	5	-4
57	534	Saak	G0	9	1	-10
58	537a	DM+47 2112 A	M3	0	16	-5
58a	537b	DM+47 2112 B	M3	0	16	-5
59	541	Arcturus	K2	12	3	-8
60	546	DM+30 2512	K8	10	10	-2
61	568a	Ross 52 A	M5	13	9	-11
61a	568b	Ross 52 B	M5	13	9	-11

HOME *Layer +2*

NUM	*GLIE*	*NAME*	*SP*	*LX*	*LY*	*LZ*
01	452.4	DM+29 2228	M0	-14	-6	-14
02	459.3	DM+29 2279	M2	-7	-3	-20
03	**464.1**	**DM+32 2241**	**G6**	**-8**	**1**	**-19**
Homeworld*		**Gosto**	**Neladan IV**			

*Fallen humanoid population with a high degree of mental instability. Highly dangerous and unpredictable. Restricted

04	485	DM+32 2274	M0	-3	3	-16
05	**486.1**	**DM+25 2568**	**G7**	**1**	**-2**	**-18**
Colony		**Human**	**Greenbelt**			
06	499.1	DM+23 2538	M5	7	-2	-11
07	**501.1**	**RS Canum Venaticorum**	**F4**	**-2**	**11**	**-15**
Colony	**Arkol/Human**		**Atlantica**			
08	507.1	AC+33 38922	M2	2	10	-18
09	508.2	DM+35 2439	M0	2	13	-4
10	**518.2a**	**DM+30 2428 A**	**G**	**8**	**10**	**-15**
Colony		**Human**	**New Chad**			
10a	**518.2b**	**DM+30 2428 B**	**G**	**8**	**10**	**-15**
Colony		**Human**	**Zenetta**			

HOME *Layer -1*

NUM	*GLIE*	*NAME*	*SP*	*LX*	*LY*	*LZ*
01	7	DM-27 16	M	8	5	-16
02	9.1	Epsilion Phoenicis	K0	14	-10	-6
03	10	DM-16 17	F6	2	14	-11
04	18	DM-27 108	K3	5	3	-19
05	20	Kappa Phoenicis	A7	13	-11	-13
06	25a	DM-25 225 A	G5	1	3	-3
07	27.2	DM-25 225 B	G5	1	3	-3
08	31	Diphda	K1	0	4	-20
09	32a	DM-42 249 A	K5	7	-9	-1
09a	32b	DM-42 249 B	K5	7	-9	-1
10	**36**	**DM-23 315**	**G7**	**-2**	**4**	**-16**
Colony		**Human**	**Kali**			
11	37	Phi (2) Ceti	F8	-8	12	-8
12	40	DM-23 332	M0	-2	3	-8
13	42	DM-31 325	K3	1	-2	-4
14	46	DM-28 302	M	-1	-1	-5
15	54.1	L 725-32	M5	-4	2	19
16	55	Nu Phoenicis	F8	5	-14	-2
17	56	DM-16 214	K3	-10	5	-6
18	57	DM-42 469	M1	3	-13	-7
19	**59**	**DM-24 658**	**G8**	**-9**	**-3**	**11**
Colony		**Human/Mixed**	**New Hawaii**			
20	60a	DM-30 529 A	K3	-6	-8	-16
20a	60b	DM-30 529 B	K3	-6	-8	-16
21	65.2	DM-47 502	M0	3	-18	-15
22	70	AC +3 2259-31	M2	-15	10	13
23	78	Ross 555	M4	-13	3	7
24	79	DM-23 693	M1	-9	-3	6

25	84	DM-18 359	M3	-9	-1	14
26	84.1a	DM-28 657	K	-13	-11	-17
26a	84.1b	L 583-52	K	-13	-11	-17
27	86	DM-51 532	K0	2	-17	9
28	**86.1**	**DM-28 694**	**G5**	**10**	**-8**	**1**
Colony		**Human/Whurr**	**Fenderwall**			
29	89	M Fornacis	A2	-10	-12	-7
30	91	DM-32 828	M	-6	-7	13
31	95	DM-26 828	G5	-12	-8	-1
32	97	Kappa Fornacis	G1	-13	-7	1
33	**103**	**DM-44 775**	**K7**	**-3**	**-16**	**8**
Colony		**Human**	**Farley**			
34	**117**	**DM-13 544**	**K0**	**-13**	**-3**	**19**
Colony		**Tugan**	**Dwahhjezza**			
35	867a	DM-21 6267	M2	11	9	18
35a	867b	L 717-22	M4	11	9	18
36	**879**	**DM-32 17321**	**K5**	**11**	**3**	**18**
Homeworld		**Lizardines**	**Hansen's World**			
37	884	DM-23 17699	M1	9	7	18
38	897a	DM-17 6768 A	M5	8	13	1
38a	897b	DM-17 6768 B	M5	8	13	1
38b	898	DM-17 6769	K5	8	13	1
39	911	DM-22 6219	M0	7	9	-7
40	**915**	**L 362-81**	**A**	**8**	**-14**	**16**
Colony		**Human**	**Bathurst**			

HOME — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	17.2	DM-27 101	K3	7	4	12
02	17.3	DM-13 60	G2	-2	19	18
03	31.2	DM-19 111	M2	-3	9	19
04	**31.3**	**DM-22 127**	**F2**	**-2**	**7**	**-3**
Colony		**Human**	**Chyanne**			
05	56.1	AC-14 789-106	M	-15	9	19
06	**58**	**DM-28 433**	**G3**	**-8**	**-7**	**-3**
Homeworld*		**Nalani**	**Nogulaa**			

*Close humanoid population with a late twentieth century technology. World is balkanized into 104 feuding states many with low grade nuclear weapons. Restricted

07	62	DM-30 549	K0	-10	-11	0
08	**62.2**	**Ceti Myra**	**G0**	**-11**	**-15**	**-4**
Homeworld		**Falcs/Poda**	**Bayl Eegt**			

COLONY A — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**635a**	**Rutilicus A**	**G0**	**-1**	**-12**	**20**
Colony		**Human**	**Romany**			
01a	635b	Rutilicus B	K0	-1	-12	20
02	638	DM+33 2777	K7	-2	-11	20
03	649	DM+25 3173	M2	3	-11	20
04	655	Ross 863	M3	4	-13	7
05	669a	Ross 868	M4	3	-9	18
05a	669b	Ross 867	M5	3	-9	18
06	686	AC+18 1453-48	M1	1	-15	11
07	694	DM+43 2796	M3	-6	-5	16
08	695a	Mu Herculis A	G5	-2	-12	11
08a	**695b**	**Mu Herculis B**	**M4**	**-2**	**-12**	**11**
Colony		**Human**	**Palestine**			
08b	695c	Mu Herculis C	M4	-2	-12	11
09	**704a**	**DM+30 3128 A**	**F7**	**11**	**10**	**20**
Colony		**Human/Mixed**	**Merk**			
09a	704b	DM+30 3128 B	K5	11	10	20
10	706	DM+38 3095	K2	-3	-2	14
11	709	DM+45 2688	M0	-4	10	20
12	719	DM+51 2402	K6	-9	11	18
13	720a	DM+45 2743	M2	-6	5	15
13a	720b	VB 9	M	-6	5	15
14	721	Vega	A0	-6	-8	9
15	731	AC+16 247-80	M2	11	-1	5
16	**732.1**	**DM+52 2294**	**G8**	**-11**	**9**	**16**
Homeworld		**Vesh**	**Chen Colony**			
17	735	AC+8 142-393	M2	11	-8	2
18	740	DM+5 3993	M2	14	-7	1
19	743.2	DM+25 3719	K2	7	5	7
20	745a	AC+20 1463-148	M2	0	-9	3
20a	745b	AC+20 1463-154	M2	0	-9	3
21	747a	AC+32 54804 A	M5	-4	-7	5
21a	747b	AC+32 54804 B	M5	-4	-7	5
22	748	AC+2 2155-242	M4	10	-11	-2
23	752a	DM+4 4048	M3	-2	-19	-1
23a	752b	VB 10	M5	-2	-19	-1
24	755.1	BPM 94172	A	11	0	0
25	763	DM+4 4157	M1	15	-3	-5
26	766a	Ross 165 A	M4	-1	-2	1
26a	766b	Ross 165 B	M4	-1	-2	1
27	767a	DM+31 3767 A	M1	0	8	3
27a	767b	DM+31 3767 B	M2	0	8	3
28	772	L 997-21	A	10	-9	-9
29	**775**	**DM+2 4076**	**K4**	**14**	**-2**	**-11**
Colony		**Human**	**Grimsel**			
30	784.1	AC+13 1185-145	?	10	6	-9
31	791.2	G 24-16	M6	2	-7	-9
32	794	AC+24 747-102	A	1	10	-7
33	795a	DM+4 4510 A	K5	15	7	-19
33a	795b	DM+4 4510 B	K5	15	7	-19
34	806	AC+44 871-589	M3	-12	7	1
35	813	AC+22 308-605	M3	-1	7	-11
36	815a	AC+39 57322 A	M3	-11	9	-3
36a	815b	AC+39 57322 B	M3	-11	9	-3
37	829	AC+17 534-105	M4	-9	-13	-9
38	831	Wolf 922	M4	-2	-18	-16
39	834a	AC+39 60670 A	M0	-14	11	-7
39a	834b	AC+39 60670 B	M0	-14	11	-7
40	835	DM+27 4120	M0	-8	12	-14
41	841.1	DM+20 5046	K5	-11	-9	-11
42	**842.1**	**DM-5 5674**	**K2**	**-5**	**-16**	**-18**
Homeworld*		**Huk**	***Meradak**			

*Primitive cannibalistic humanoid population. Restricted

43	844	AC=16 734-144	M2	-7	1	-19
44	**848**	**Iota Pegasi**	**F5**	**-11**	**8**	**-18**
Colony		**Human**	**Hope**			

COLONY A — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	554	DM+36 2500	K5	-3	-9	20
02	557	Sigma Bootis	F2	0	-15	12
03	558	DM+34 2541	M0	-1	-9	20
04	561	DM+27 2411	K0	5	-15	16
05	563.1	DM+39 2801	M2	-3	-3	20
06	570.2	AC+31 32985	M2	5	-6	20
07	572	DM+45 2247	M0	-11	-10	-6
08	575a	44 I Bootis A	G1	-12	-10	-8
08a	575b	44 I Bootis B	G2	-12	-10	-8
09	575.1	G 167-15	?	8	-7	20
10	578	DM+25 2873	F5	8	-13	9
11	579	DM+25 2874	K7	2	-18	-4
12	584a	Eta Coronae Borealis A	G2	4	-9	4
12a	584b	Eta Coronae Borealis B	G2	4	-9	4
13	588.1	AC+38	M0	4	5	17
14	591	DM+40 2903	K5	0	1	8

14a	593a	DM+40 2905a	K4	0	1	8
14b	591b	DM+40 2905b	K4	0	1	8
15	596	DM+26 2723 (p)	?	11	-7	5
16	602	Chi Hurculis	F9	-2	3	4
17	606.2	Rho Corinae Borealis	G0	7	0	4
18	607	AC+30 35150	M1	7	-5	-2
19	609	L 1346-53	M4	3	-18	-17
20	609.2	DM+25 3020	G8	15	-3	4
21	611	DM+39 2947	G8	-3	-7	-11
22	612	DM+39 2950	K3	7	11	12
23	614	DM+44 2549	K1	-4	1	-4
24	**615.2a**	**Sigma Coronae Borealis A**	**F8**	**13**	**10**	**11**
Homeworld		**Frendle**	**Wilkison IV**			
24a	**615.2b**	**Sigma Coronae Borealis B**	**G1**	**13**	**10**	**11**
Homeworld		**Dabe**	**Blant**			
24b	615.2c	L 1490-24	K1	13	10	11
25	616.2	DM+55 1823	M1	-13	8	-4
26	618.3	DM+21 2902	G7	7	-13	-14
27	619	DM+44 2695	M0	-1	1	-6
28	625	AC+54 1646-56	M2	-12	3	-9
29	**626.2**	**Ross 640**	**F**	**6**	**5**	**-1**
Colony		**Human/Mixed**	**Aberdeen**			
30	630.1a	LP 101-15	M4	-14	6	-9
30a	630.1b	LP 101-16	M4	-14	6	-9
31	649.1a	DM+47 2415 A	K8	-3	12	-5
31a	649.1b	DM+47 2415 B	K8	-3	12	-5
31b	**649.1c**	**DM+47 2411**	**K8**	**-3**	**12**	**-5**
Colony		**Human/Mixed**	**Morning Star**			
32	651	DM+47 2420	G8	-4	9	-9
33	671	AC+41 726-154	M4	-3	-1	-19
34	672	DM+32 2896	G2	5	0	-17
35	694.2	DM+46 2361	M1	-1	20	-10
36	—	Alphecca	A0	15	-3	16

COLONY A — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	810a	L 856-54 A	M5	12	-12	18
01a	810b	L 856-54 B	M5	12	-12	18
02	812a	Ross 193	M4	15	-1	16
02a	**812b**	**VB 11**	**?**	**15**	**-1**	**16**
03	816	Wolf 906	M3	9	-7	20
04	816	DM+6 4741	K6	10	8	19
05	821	Wolf 918	M3	7	-14	20
06	824	DM+8 4638	K8	7	9	18
07	830	DM-13 5945	M0	14	-6	7
08	**836.5**	**L1363-3**	**?**	**-3**	**17**	**19**
09	836.7	DM+14 4668	G0	1	16	14
10	837	Deneb al Giedi	A6	10	-11	7
11	837.1	L 930-80	B	15	4	-1
12	838.4	G 93-48	A	2	1	12
13	843	L 715-89	M	6	-16	9
14	846	DM+0 4810	K8	-4	-10	20
15	848.3a	Wolf 1328 A	M0	13	6	-10
15a	848.3b	Wolf 1328 B	M0	13	6	-10
16	848.4	DM-8 5818	G9	8	0	-1
17	849	DM-5 5715	M3	-5	-14	20
18	851	AC+17 536-125	M2	-8	5	19
19	851.3	DM-16 6046	G8	13	-5	-8
20	852a	Wolf 1561 A	M4	-3	-15	17
20a	852b	Wolf 1561 B	M5	-3	-15	17
21	859a	DM-17 6521	G2	10	-8	-8
21a	859b	DM-17 6520	G1	10	-8	-8
22	861	Wolf 1037	K6	-2	9	2
23	862.1	DM-7 5797	F8	8	7	-14
24	863	DM+8 4887	M0	-6	7	7
25	864	DM-1 4323	M1	-3	-1	5
26	875	DM-7 5871	M1	-1	-2	-6
27	883	DM-12 6393	M2	0	-5	-10
28	886	DM-4 5804	K4	-5	-1	-5
29	889	DM-23 17748	M0	5	-15	-19
30	880.1	AC+3 2781-116	M0	-8	12	-13
31	890	DM-16 6218	M0	1	-7	-1
32	893.1	L 935-50	A	-8	-10	-4
33	894.2a	DM-14 6448 A	G5	-2	-5	-20
33a	894.2b	DM-14 6448 B	K2	-2	-5	-20
34	894.3	AC-5 1339-58	O	-8	-4	-6
35	894.5	DM-11 6064	K2	-6	-9	-8
36	895.2	G 29-38	A	-15	-6	9
37	899	Wolf 1039	M4	-14	-9	7
38	900	DM+0 5017	M1	-15	-2	-3
39	907.1	DM-13 6464	K8	-10	-10	-19
40	912	DM-6 6318	M	-15	-9	-6

COLONY A — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	893.2a	Psi(1) Aquarii	K0	3	13	-5
01a	893.2b	DM-9 6155 A	K6	3	13	-5
01b	893.2c	DM-9 6155 B	K6	3	13	-5
02	909.1	DM-6 6308	K0	-14	0	16

COLONY A — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	523	DM+39 2675	K8	-14	-8	-2
02	541.2	DM+46 1851	M0	-14	-1	-18

COLONY B — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	581	DM-7 4003	M5	-15	-2	14
02	588	DM-40 9712	M4	-14	-9	4
03	**590**	**L 480-69**	**K**	**4**	**-16**	**10**
Colony		**Dabe**	**Ezett**			
04	592	Ross 802	M5	-1	-4	19
05	595	L 768-119	M5	-5	-5	14
06	618a	DM-37 10765 A	M4	-8	-7	4
06a	618b	DM-37 10765 B	M7	-8	-7	4
07	620	DM-24 12677	M2	13	-6	14
08	622	DM-21 4352	K5	14	-4	15
09	**631**	**DM-1 3220**	**K0**	**-1**	**7**	**17**
Colony		**Dabe**	**Alteen**			
10	**633**	**L 339-19**	**G**	**-2**	**-11**	**0**
Colony		**Human/Mixed**	**Ulander**			
11	643	Wolf 629	M4	-12	4	7
11a	644a	DM-8 4352 A	M4	-12	4	7
11b	644b	DM-8 4352 B	M4	-12	4	7
11c	644c	VB 8	M4	-12	4	7
12	654	DM-4 4226	M3	1	9	13
13	660a	L 989-20 A	GK	4	12	14
13a	660b	L 989-20 B	GK	4	12	14
14	663a	DM-26 12026 A	K1	-13	-1	2
14a	663b	DM-26 12026 B	K1	-13	-1	2
15	664	DM-26 12036	K5	-13	0	2
16	**666a**	**DM-46 11370 A**	**G8**	**-7**	**-8**	**-2**
Colony		**Human/Mixed**	**Nadejda**			
16a	666b	DM-46 11370 B	M0	-7	-8	-2
17	667a	DM-34 11626 A	K3	-8	-3	-1
17a	667b	DM-34 11626 B	K5	-8	-3	-1
17b	667c	DM-34 11626 C	M2	-8	-3	-1
18	668.1	DM-5 4426	G9	6	11	12
19	673	DM+2 3312	K7	-10	10	8

20	676a	DM-51 10924 A	M0	4	-13	-6
20a	676b	DM-51 10924 B	M	4	-13	-6
21	680	DM-48 11837	M0	6	-12	-6
22	688	DM+3 3465	K3	3	18	12
23	691	Mu Arae	G5	3	-12	-7
24	693	L 205-128	M	-14	-8	-5
25	696	DM-6 4663	M2	8	15	8
26	701	DM-3 4233	M2	-10	10	4
27	707	DM-43 12343	K7	12	-8	-9
28	716	DM-18 4986	K3	12	11	-3
29	720.1	DM-28 14765	K1	9	4	-7
30	732a	L 489-58 A	G0	11	-2	-13
30a	732b	L 489-58 B	G0	11	-2	-13
31	739	DM-48 12818	M4	5	-7	-14
32	750a	DM-46 12902 A	K9	11	-6	-18
32a	750b	DM-46 12902 B	K9	11	-6	-18
33	754	L 347-14	M7	-14	-2	-8
34	754.1a	AC-7 342-402	A	-4	15	-5
34a	754.1b	AC-7 342-397	M5	-4	15	-5
35	770	DM-24 15668	K5	8	12	-18
36	**773.5**	**DM-23 15935**	**G7**	**2**	**11**	**-16**
Colony		**Human/Mixed**	**Accra**			
37	783a	DM-26 13940 A	K3	-15	1	-9
37a	783b	DM-26 13940 B	M5	-15	1	-9
38	784	DM-45 13677	M0	-14	-2	-11
39	785	DM-27 14659	K0	-8	6	-13
40	779a	DM-32 16153 A	M4	-8	4	-17
40a	779b	DM-32 16153 B	M4	-8	4	-17
41	799.1	AC-20 76187	A	-6	12	-18
42	803	DM-31 17815	M0	-8	5	-17
43	827	Gamma Pavonis	F8	-13	-11	-18

COLONY B — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	512.1	DM+14 2621	G5	-15	-6	18
02	513	L 1194-26	M5	-15	-8	13
03	522	DM+0 3090	M1	-8	-14	6
04	533	DM+13 2721	M0	-12	-3	10
05	536	DM-1 2892	G8	-10	-3	6
07	540.2	Ross 845	M5	-3	-15	-8
08	541.1	DM-6 3964	G8	1	-13	-1
09	542.2	DM-5 3853	K5	4	-14	4
10	543	Wolf 534	M4	-5	-11	-8
11	544a	DM-4 3665 A	K1	5	-13	7
11a	544b	DM-4 3665 B	M6	5	-13	7
12	545	Ross 848	M5	-9	-10	-15
13	547	DM+1 2920	G1	12	-11	17
14	548a	DM+24 2733 A	M1	-15	9	4
14a	548b	DM+24 2733 B	M2	-15	9	4
15	550.2a	Phi Virginis A	G2	12	-11	17
15a	550.2b	Phi Virginis B	K0	12	-11	17
16	552	DM+16 2658	M3	-12	4	-1
17	553	DM-7 3856	K7	2	-12	-4
18	553.1	AC-12 2306-155	M4	-5	-11	-14
19	532	DM+17 2785	K5	-7	7	5
20	563	AC-12 2322-220	M	7	-12	-3
21	564	DM+24 2786	G2	-13	11	1
22	567	DM+19 2881	K1	-14	8	-7
23	569	DM+16 2708	M0	-15	5	12
24	569.2	AC+18 1310-88	M0	1	13	18
25	571.1	DM-10 4011	M0	13	-10	-2
26	576	DM+6 2986	K5	9	3	10
27	579.1	DM+13 2901	G6	-6	7	-3
28	580a	DM-0 2944 A	K0	5	-1	-5
28a	580b	DM-0 2944 B	K0	5	-1	-5
29	583	DM-4 3873	K6	13	-2	-2
30	585	Ross 508	M6	-12	9	-12
31	586a	DM-8 3981	K5	11	-4	-9
31a	586b	DM-8 3983	K5	11	-4	-9
32	586c	G 151-61	?	11	-4	-9
33	589a	AC+18 1890-112	M4	-12	10	-14
33a	589b	L 1272-21	M6	-12	10	-14
34	598	Lambda Serpentis	G0	-7	7	-17
35	600	DM+11 2874	M0	8	15	0
36	603	Gamma Serpentis	F6	-6	13	-12

COLONY B — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	518.1	DM+8 2735	M0	-7	11	-18
02	535	DM+23 2640	M0	-14	7	-18
03	536.1a	AC+16 799-62 A	M2	4	1	14
03a	536.1b	AC+16 799-62 B	M2	4	1	14
04	550.1	DM+24 2735	M0	0	18	7

COLONY B — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	774a	L 115-21 A	M	1	-18	18
01a	774b	L 115-21 B	M	1	-18	18
02	787	DM-46 13498	K5	15	-5	9
03	791	DM-28 16676	M3	3	9	19
04	796	DM-24 16193	G8	5	14	15
05	798	DM-53 8617	K7	-1	-8	17
06	805	Psi Capricorni	F5	-1	11	18
07	826.2	L 353-143	M	12	-5	-3
08	828a	DM-45 14340	K0	7	-3	2
08a	828b	L 353-9	N	7	-3	2
09	833	DM-51 12998	K2	0	-8	7
10	836	L 714-88	M5	-4	13	9
11	836.3	DM-41 14616	K5	14	0	-10
12	838	DM-47 13928	G2	-2	-5	7
13	838.6	L 355-62	M	-8	-4	13
14	841a	DM-51 13128	M0	-1	-8	-5
14a	841b	L 283-7	A	-1	-8	-5
15	842	DM—60 7821	K	-6	13	11
16	848.1a	DM-51 13182	K7	10	-12	-12
16a	818.1b	L 283-9	M	10	-12	-12
17	849.1	Tau Piscis Austrini	F5	3	8	-8
18	851.2	DM-41 14804	G5	5	-1	-10
19	853a	DM-54 9222 A	G1	-8	-9	10
19a	853b	DM-54 9222 B	G1	-8	-9	10
20	855	DM-57 8545	K	2	-16	-3
21	**857**	**DM-58 8327**	**G4**	**-4**	**-14**	**5**
Colony*		**Human**	**Garson's Green**			

*Abandoned colony due to extremely hostile semi-intelligent life forms. Restricted

22	862	DM-30 19175	K5	-10	7	5
23	868	DM-30 19255	K5	-11	7	3
24	869	DM-32 17191	G8	0	8	-17
25	871a	DM-47 14307 A	G1	1	-8	-12
25a	871b	DM-47 14307 B	M1	1	-18	-12
26	871.1a	L 574-62	M3	-6	6	-7
26a	871.1b	L 574-61	M4	-6	6	-7
27	874	L 501-38	M	0	3	-18
28	886.2	Pi Piscis Austrini	F0	-4	4	-18
29	891	DM-26 16501	KM	-15	9	-3
30	893.3	L 431-25	?	-4	-4	-20
31	894	DM-422 16263	K5	-10	-4	-7
32	902.1	DM-33 16646	K1	-14	3	-17

NUM	GLIE	NAME	SP	LX	LY	LZ
01	885a	DM-26 16420 A	M0	-5	14	18
01a	885b	DM-26 16420 B	M0	-5	14	18
02	895.1	DM-46 14649	M0	-2	-11	16
03	895.3	DM-47 14591	K7	-1	-13	14

COLONY C — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**231**	**Alpha Mensae**	**G5**	**-8**	**-7**	**-14**
Homeworld		**Berian**	**Kashow**			
02	341	DM-59 2351	M1	-10	0	-4
03	367	DM-45 5378	M4	-14	1	3
04	370	DM-42 5678	K5	-14	-2	5
05	375	DM-45 5627	M5	-12	-12	5
06	391	I Carinae	F3	2	-9	-11
07	413.1	DM-23 9765	M	-13	4	17
08	422	L 192-72	M	0	-9	2
09	425a	DM-19 3242 A	M0	-12	5	20
09a	425b	DM-19 3242 B	M	-12	5	20
10	428a	DM-60 3532 A	K7	-1	-2	0
10a	428b	DM-60 3532 B	M0	-1	-2	0
11	431	L 396-7	M	-4	-4	13
12	432a	DM-32 8179	K0	-8	4	14
12a	432b	VB 4	K0	-8	4	14
13	433	DM-31 9113	M2	-7	0	17
14	435	DM-43 7228	K5	-2	-5	12
15	438	DM-51 5974	K0	-5	6	5
16	**442a**	**DM-39 7301**	**G5**	**-4**	**2**	**12**
Colony		**Human**	**Zion**			
16a	442b	VB 5	G5	-4	2	12
17	453	DM-26 8883	K5	-6	6	-18
18	**472**	**DM-68 1095**	**K0**	**10**	**-10**	**-5**
Colony		**Kymnar**	**F'Stans**			
19	477	DM-45 7872	M1	6	-5	12
20	479	DM-51 6859	M3	-1	8	5
21	**501.2**	**DM-37 8437**	**G3**	**5**	**5**	**15**
Homeworld		**Bor'Cha**	**Faxn'Chur**			
22	**506**	**DM-17 3813**	**G6**	**-2**	**16**	**19**
Colony		**Borcha**	**Faxn'Che**			
23	524	L 258-146	K	10	3	5
24	534.1	DM-54 5466	G8	12	1	5
25	542	DM-58 5564	K3	7	8	1
26	624	Zeta Trianguli Australis				
			G0	11	9	-9
27	877	L 49-19	K	-1	16	-17

COLONY C — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	421a	DM-17 3336	M1	-13	-10	-8
01a	421b	DM-17 3337	M1	-13	-10	-8
01b	421c	L 755-50	M5	-13	-10	-8
02	**429.1**	**DM-25 8682**	**G7**	**-7**	**-14**	**-11**
Colony		**Human**	**New France**			
03	443	L 829-26	M	-10	4	-13
04	444a	DM-11 3178 A	K8	-8	-14	10
04a	444b	DM-11 3178 B	K8	-8	-14	10
05	**446**	**DM-29 9337**	**G5**	**-1**	**-16**	**-12**
Colony		**Kymnar**	**M'Rass**			
06	452	I 109-10	M4	-11	7	-10
07	**454**	**DM-9 3413**	**K0**	**-9**	**6**	**-10**
Colony		**Kymnar**	**C'Char**			
08	454.1	AC-1 240-110	M	-10	-4	17
09	455.1	DM-18 3319	M0	1	-19	7
10	455.3	Alkhiba	F2	-1	-6	-11
11	456	AC-0 1514-64	M1	-9	-2	18
12	461	D1 2684	M0	-8	7	7
13	465	Ross 695	M4	-6	12	-20
14	466	DM+8 2599	M0	-10	11	15
15	468	DM-17 3632	M0	4	-9	2
16	471.2	Eta Corvi	F0	4	-8	4
17	489	DM-13 3627	K6	11	-5	9
18	491a	DM-9 3595 A	K0	8	0	10
18a	491b	DM-9 3595 B	K0	8	0	10
19	493	DM-1	M0	6	4	19
20	495	Ross 974	K	-2	15	-5
21	**500**	**DM-21 3660**	**G7**	**15**	**-6**	**0**
Homeworld		**Kymnar**	**Kymnar**			
22	**503.1**	**DM-19 3651**	**G6**	**2**	**10**	**-16**
Homeworld		**Kymnar**	**C'Raff**			
23	506.1	AC-2 683-124	K5	11	6	19
24	511.2	DM-15 3668	K1	13	3	0
25	512a	Ross 486 A	M4	0	-19	8
25a	512b	Ross 486 B	M6	0	-19	8
26	514.1	Ross 476	M6	11	8	5
26a	515	DM-7 3632	A	11	8	5
27	517	DM-7 3642	K5	14	8	8
28	**521.1**	**DM-3 3508**	**K6**	**6**	**16**	**-2**
Colony		**Bor'Cha**	**Winter Wonder**			
29	529	DM-213781	K6	9	11	-15

COLONY C — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	458.1	DM-2 3481	G4	-5	-10	-13
02	488.2	DM-5 3596	K8	11	-7	-12

COLONY C — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	3	DM-68 2378	K5	7	4	1
02	27.1	DM-44 170	M	-3	16	-20
03	29	DM-60 118	G3	5	4	-12
04	31.5	DM-66 38	G3	8	-3	-11
05	43	L 220-80	M	-4	13	-6
06	45	DM-62 39	K7	2	4	-4
07	54	DM-68 47	K	-6	15	-9
08	54.3	DM-65 0	G0	5	-5	-13
09	55.1a	DM-69 51 A	G5	9	-11	-13
09a	55.1b	DM-69 51 B	G5	9	-11	-13
09b	55.3a	Kappa(2) Tucanae	F6	9	-11	-13
09c	55.3b	Kappa(1) Tucanae	F6	9	-11	-13
10	67.1	DM-83 22	G2	9	-9	10
11	81a	Chi Eridani A	G5	-11	8	-5
11a	81b	Chi Eridani B	G5	-11	8	-5
12	81.2	DM-60 379	K2	-4	-1	-8
13	83	Alpha Hydri	F0	-6	5	3
14	83.4a	DM-46 604 A	G0	-15	5	-19
14a	83.4b	DM-46 604 B	G0	-15	5	-19
15	85	L 89-27	M	-3	1	4
16	93	DM-54 487	M	-12	8	3
17	**108**	**Iota Horologii**	**G3**	**-15**	**7**	**1**
Colony		**Human**	**Johanson's World**			
18	114.1a	DM-53 570 A	KM	-14	-10	-19
18a	114.1b	DM-53 570 B	KM	-14	-10	-19
19	118	L 127-97	M	-9	5	11
20	127.1a	CPD-69 117 A	A	-2	-13	-2
20a	127.1b	CPD-69 117 B	A	-2	-13	-2
21	136	Zeta(1) Reticuli	G2	-11	6	14
21a	138	Zeta(2) Reticuli	G1	-11	6	14
22	143	DM-63 110	K5	-9	-3	6
23	**143.2a**	**Kappa Reticuli**	**F5**	**-9**	**-10**	**-2**
Homeworld		**Zumwol**	**Gaccelius**			
23a	143.2b	L 128-37	M	-9	-10	-2
24	154.2	Beta Reticuli	K0	-7	-16	-4
25	167.3	Epsilon Reticuli	K5	-15	-6	7

26	820.1	L 24-52	A	8	5	20
27	865	L 119-21	KM	5	15	14
28	902	DM-73 1672	K3	2	11	16

COLONY C — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**4.2a**	**DM-49 14337 A**	**G1**	**8**	**13**	**16**
Homeworld		**Fritzian**	**Xtichinanct**			
01a	**4.2b**	**DM-49 14337 B**	**G1**	**8**	**13**	**16**
Colony		**Fritzian**	**Xedazan'Sedak**			
02	13	DM-53 36	G2	8	8	17
03	17.1	DM-46 76	M1	3	15	15
04	22.2	DM-53 117	F5	6	6	14
05	24a	DM-49 141	G3	5	7	6
05a	24b	DM-49 138	K0	5	7	6
06	31.1a	Eta Phoenicis A	A0	6	1	19
06a	31.1b	Eta Phoenicis B	A0	6	1	19
07	52.1	DM-51 273	K1	2	-2	-1
08	56.2	L 293-94	K	-6	7	17
09	81.3	DM-52 397	F8	-8	-4	13
10	**-**	**Achernar**	**B5**	**0**	**-8**	**14**
11	**-**	**Ankaa**	**K0**	**1**	**18**	**9**
12	**-**	**Hepidannus**	**K0**	**-4**	**-9**	**3**

COLONY D — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	185a	DM-21 1051 A	M1	0	17	-14
01a	185b	DM-21 1051 B	M1	0	17	-14
02	190	L 737-9	M5	-8	12	-18
03	**214**	**DM-15 1126**	**G5**	**-13**	**7**	**-15**
Colony		**Human**	**Heaven**			
04	216a	Gamma Leporis	F6	-1	13	-11
04a	216b	DM-22 1210	K2	-1	13	-11
05	218	DM-36 2458	M2	1	4	-16
06	236	L 597-31	M	-10	-7	-13
07	237	DM-43 2523	?	0	-18	-20
08	238	L 182-44	M	14	-10	-19
09	240	DM-49 2340	K0	8	-11	-18
10	250a	DM-5 1844 A	K6	-9	12	-1
10a	250b	DM-5 1844 B	M2	-9	12	-1
11	257a	DM-44 3045 A	M4	9	5	-9
11a	257b	DM-44 3045 B	M4	9	5	-9
12	259	DM-25 3913	K0	-8	-6	-7
13	269a	DM-46 3046 A	K2	8	-6	-10
13a	269b	DM-46 3046 B	K2	8	-6	-10
14	283a	L 745-46 A	F	2	12	1
14a	283b	L 745-46 B	M	2	12	1
15	285	YZ Canis Minoris	M4	0	20	5
16	**288a**	**DM-33 4113**	**G0**	**-2**	**-17**	**-4**
Colony		**Human**	**Habberland**			
17	288b	VB 3	M	-3	-17	-4
18	291a	DM-13 2267 A	G1	-13	-6	5
18a	291b	DM-13 2267 B	G1	-13	-6	5
19	292a	DM-34 4036 A	F5	1	-11	-3
19a	292b	DM-34 4036 B	K3	1	-11	-3
20	297	DM-4 2226	M3	-7	7	9
21	300	L 674-15	M	7	14	2
22	**302**	**DM-12 2449**	**G8**	**-7**	**-2**	**9**
Colony		**Human**	**Senasec II**			
23	309	DM-31 6229	K0	4	-8	4
24	314a	DM-22 2345 A	F8	-5	-16	10
24a	314b	DM-22 2345 B	F8	-5	-16	10
25	317	L 675-81	M	5	6	5
26	318	DM-32 5613	A	8	3	3
27	320	DM-38 4789	K1	10	-2	1
28	326a	L 820-19 A	M6	-3	-1	13
28a	326b	L 820-19 **A**	M6	-3	-1	13
29	327	DM-4 2490	G3	-5	3	16
30	329	DM-237884	K3	-1	-14	11
31	334	DM-8 2582	M0	-6	-5	20
32	352a	DM-12 2918 A	M4	5	7	13
32a	352b	DM-12 2918 B	M4	5	7	13
33	355	DM-10 2857	K0	1	-1	19
34	357	L 678-39	K	9	7	10
35	358	DM-40 5404	M	15	-3	5
36	364	DM-32 8646	G0	6	-10	17
37	377	DM-29 8019	M4	12	-10	15
38	381	L-968-22	M0	7	12	19
39	382	DM-3 2870	M2	7	11	19
40	401	DM-18 3019	M	14	3	20

COLONY D — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	328	DM+2 2098	M1	-15	-2	-17
02	347a	Ross 439	M5	-6	-7	-15
02a	347b	G 161-34	?	-6	-7	-15
03	348a	DM-2 2901	F6	-5	-1	-16
03a	348b	DM-2 2902	K0	-5	-1	-1
04	349	DM+6 2182	K3	-4	9	-18
05	361	AC+13 1301-119	M2	-8	11	-11
06	369	DM-11 2741	M2	4	-1	-20
07	371	DM+3 2279	M0	-12	-7	0
08	372	DM-3 3000	M0	0	1	-15
09	378.2	DM+3 2316	M0	-11	-11	7
10	386	L 824-28	M0	7	1	-19
11	388.1	DM+20 2466	F6	-14	9	11
12	390	DM-9 3070	M0	5	-7	-9
13	398	L 1113-55	M4	1	4	-3
14	399	L 897-16	M	10	9	-19
15	403	G 4-42	M4	4	16	-8
16	418	DM+5 2463	K5	6	0	10
17	419	Zosma	A4	0	16	10
18	426a	DM+19 2443	K0	3	14	10
18a	426b	L 755-88	K6	3	14	10
19	429a	DM+3 2502	K0	10	2	8
19a	429b	DM+3 2503	K2	10	2	8
20	430.1	DM+23 2359	M1	2	18	14

COLONY D — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	413	D16 2216	M0	-9	-2	1
02	426.1a	Iota Leonis A	F2	3	-1	-12
02a	426.1b	Iota Leonis B	F2	3	-1	-12
03	425.1	DM+5 2529	K8	12	-2	-19
04	447.1a	D15 2381 A	A7	4	-4	-17
04a	447.1b	D15 2381 B	A7	4	-4	-17

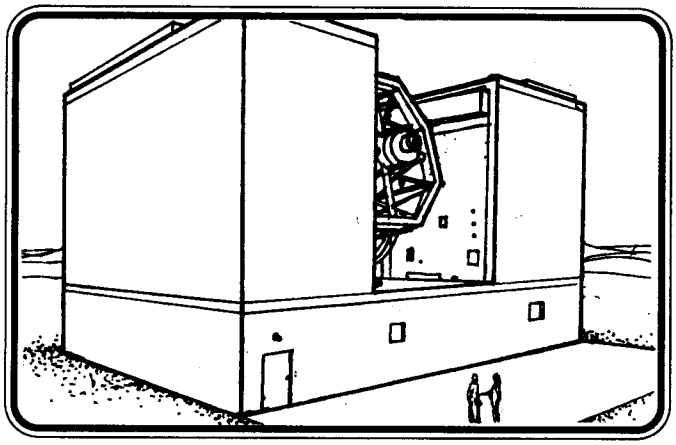
COLONY D — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	101.1	DM-47 765	m	14	8	-3
02	105.2	DM-42 875	M4	9	7	-9
03	118.1a	DM-36 1091	K3	0	4	-19
03a	118.1b	L 442-13	M4	0	4	-19
04	120.1a	DM-25 1169 A	G5	-9	13	-16
04a	120.1b	DM-25 1169 B	G5	-9	13	-16
04b	120.1c	DM-25 1168	G5	-9	13	-16
05	126	DM-46 942	K4	11	8	5
06	127a	Alpha Fornacis A	F8	0	15	3
06a	127b	Alpha Fornacis B	F8	0	15	3
07	130	DM-38 1058	M5	6	11	4
08	131	DM-26 1207	K7	-7	12	-8
09	140.1a	DM-50 1015	K5	11	-3	-5

9a	140.1b	DM-50 1014	K	11	-3	-5
10	145	DM-45 1184	M4	9	9	10
11	146	DM-48 1011	K7	11	9	12
12	149	DM-24 1826	K4	-10	10	-2
13	152	DM-38 1264	K0	1	4	1
14	154.1a	DM-28 1276 A	K5	-15	1	-13
14a	154.1b	DM-28 1276 B	K5	-15	1	-13
15	155	27 Tau(2) Eridani	F3	-12	10	-1
16	155.3	DM-37 1501	K	-4	-2	-6
17	161.2	DM-41 1288	K	-4	-11	-10
18	163	L 229-91	M	12	-4	-5
19	167	DM-53 889	K5	12	2	12
20	167.1	Gamma Doradus	F0	9	-8	2
21	174.1a	Alpha Caeli A	F2	-4	-14	-2
21a	174.1b	Alpha Caeli B	F2	-4	-14	-2
22	176.1	Beta Caeli	F2	-9	-13	-3
23	177	DM-17 954	G1	-12	11	17
24	180	L 736-30	M3	-10	11	19
25	187.1	DM-42 1743	K0	-3	-15	3
26	189	Zeta Doradus	F8	14	-4	15
27	223.3	DM-50 1977	K1	6	-15	14
28	-	Acamar	A3	4	1	-16

COLONY D — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	76	DM-27 605	K1	-3	18	20
02	77	DM-42 638	G4	15	6	8
03	105.1	Lam(2) Fornacis	G5	0	5	13
04	105.3	DM-26 957	G2	-6	14	20
05	132	DM-46 968	G3	4	-17	9



COLONY E — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	204	DM-3 1110	K5	9	12	-16
02	204,2	Wolf 1450	M5	-4	6	-20
03	207.1	V 371 Orionis	M3	3	13	-14
04	221	DM-6 1339	K5	2	4	-15
05	223	DM+2 1085	K3	2	11	-10
06	225	Eta Leporis	F0	-7	12	-3
07	**230**	**DM+10 1050**	**G6**	**-7**	**12**	**-3**
Colony		**Human**	**Berns Blight**			
08	231.1a	DM+5 1168	G0	-7	7	-5
08a	**231.1b**	**G 106-36**	**?**	**-7**	**7**	**-5**
09	231.3	Ross 417	M5	9	4	-8
10	239.1	NuCanis Majoris	K1	9	-13	-12
11	**242**	**Alzirr**	**F5**	**-8**	**10**	**5**
Colony		**Human/Mixed**	**Hope**			
12	251.1	DM+12 1343	M1	-11	7	7
13	261	L 886-6	A	11	1	0
14	263	Ross 54	M5	8	-7	-2
15	266	AC+ 3 2350-326	M0	-3	0	5
16	271a	Wasat A	FO	-2	17	15
16a	271b	Wasat B	K6	-2	17	15
17	276	DM+14 1684	K8	-15	3	19
18	281	DM+2 1729	MO	7	1	10
19	282a	DM-3 2001	K2	14	2	7
19a	282b	DM-3 2002	K5	14	2	7
20	287	DM+2 1766	M0	-4	-7	15
21	292.2	DM-1 1883	G8	-6	-16	17
22	293.1a	DM-0 1866 A	K5	9	-2	13
22a	293.1b	DM-0 1866 B	K5	9	-2	13
23	306	DM-3 2333	F2	8	-11	19

COLONY E — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**292.1**	**DM+191869**	**K6**	**-11**	**7**	**-15**
Colony		**Human**	**Trubonov**			
02	305.1	DM+22 1921	M0	-14	6	-4
03	307	AC+22 588-15	M0	-3	11	-9
04	308.2	AC-1 409-151	K3	4	-14	-17
05	310.1a	DM+7 1997 A	F6	2	-6	-12
05a	**310.1b**	**DM+7 1997 B**	**G5**	**2**	**-6**	**-12**
Homeworld*		**Grathn**	**Zamak**			

*Fallen humanoid population post-nuclear feudal with remaining technology. Restricted

06	315	DM+12 1888	K1	0	-1	-9
07	319a	DM+10 1857 A	M0	11	4	-1
07a	319b	DM+10 1857 B	M0	11	4	-1
07b	319c	G 46-2	M5	11	4	-16
08	323a	DM+8 2131 A	M0	10	0	-13
08a	323b	DM+8 2131 B	M0	10	0	-13
09	330	DM+12 1944	M5	10	4	-11
10	**330.1**	**DM+21 1949**	**K5**	**-10**	**2**	**7**
Colony		**Human**	**Snowbound**			
11	333.2a	Ross 686	M4	4	-10	-5
11a	333.2b	Ross 687	M4	4	-10	-5
12	337a	DM+15 2003 A	K0	14	-8	-10
12a	337b	DM+15 2003 B	K0	14	-8	-10
13	339	DM+5 2143	K5	12	-6	-7
14	**340.2**	**DM+1 2277**	**K0**	**11**	**-13**	**-4**
Colony		**Human**	**Klessig**			
15	343	Ross 83	M2	13	10	-5
16	350a	AC+27 24424	M0	4	15	6
16a	350b	L 1398-24	M	4	15	6
17	351.1	Ross 84	M4	6	7	4
18	**354.1**	**DM+27 1775**	**G9**	**6**	**15**	**4**
Colony		**Human**	**Rubig**			
19	375.2	AC+27 25300	M0	7	14	15
20	-	Regulus A	B8	11	-7	19
20a	-	Regulus B	A0	11	-7	19
21	**-**	**Callisa A**	**G7**	**-12**	**-5**	**-4**
Colony		**Human**	**Witchita**			
22	-	Moellerax	K7	-6	-4	-1

COLONY E — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	244.1	Edgrenisis	A3	1	+9	+9

COLONY E — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	160.2	DM-21 784	M0	9	4	-6
02	167.2	L 590-10	G	14	-1	-4
03	173	DM-11 916	M1	10	12	12
04	177.1	DM-5 1044	G0	-8	8	7
05	186	DM-23 2363	MO	14	-1	11
06	189.1	DM-12 1076	F9	-2	-1	9

07	189.2	DM-4 1056	F5	-10	5	12
08	193	DM-15 978	G6	-4	-7	-6
09	**198**	**DM-18 1051**	**G0**	**13**	**2**	**17**
Colony		**Human**	**Pazevic**			
10	199a	DM-21 1131 A	MO	14	0	15
10a	199b	DM-21 1131 B	MO	14	0	15
11	207.2	DM-23 2865	K3	5	-14	10
12	217.1	Zeta Leporis	A3	-5	-12	15

COLONY E — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	141.2	DM-31 1384	G8	12	-8	5

COLONY F — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	102	L 1305-10	M6	13	10	-13
02	109	AC+25 7918	M4	12	10	-13
03	154	D25 613	K7	-7	10	-16
04	157.2	G 7-17	M	-11	5	-20
05	**160**	**DM+21 587**	**G1**	**-12**	**7**	**-18**
Colony		**Human**	**Nimrud**			
06	162	AC+33 10883	M1	-11	12	-10
07	168.1	Lowne 1	?	-13	3	-17
08	169	DM+21 652	M1	-2	3	-11
09	170	Ross 594	M7	0	10	-3
10	172	D52 857	K8	0	16	2
11	174	DM+20 802	K3	-12	1	-13
12	176	DM+18 683	M2	-1	0	-10
13	**178**	**1 Pi(3) Orionis**	**F6**	**8**	**-5**	**-10**
Colony		**Human**	**Rashid**			
14	179	Wolf 1539	M4	-5	-8	-15
15	182	AC+1 1951-103	M1	-11	-13	-19
16	183	DM-5 1123	K3	7	-11	-14
17	192	AC+19 1165-38	M5	-15	-3	-9
18	**194a**	**Capella A**	**G5**	**-10**	**13**	**3**
Colony		**Human**	**New Norge**			
18a	194b	Capella B	G0	-10	13	3
19	195a	AC+45 217-363 A	M2	-11	13	4
19a	195b	AC+45 217-363 B	M5	-11	13	4
20	200a	DM-3 1061 A	K3	-6	-17	-16
20a	200b	DM-3 1061 B	M2	-6	-17	-16
21	203	Ross 41	M5	4	-7	-7
22	205	DM-3 1123	M1	15	-8	-6
23	206	Ross 42	M4	-13	-12	-10
24	208	DM+11 878	M0	-5	-9	-7
25	211	DM+53 934	K1	-1	13	7
25a	212	DM+53 935	M1	-1	13	7
26	213	AC+12 1800-213	M5	12	-5	-3
27	**222**	**Chi(1) Orionis**	**G0**	**-1**	**-5**	**-2**
Colony		**Human/Mixed**	**New Tokyo**			
28	223.2	LP 658-2	K	15	-10	-5
29	228a	DM+10 1032 A	M3	1	-10	-2
29a	228b	DM+10 1032 B	M3	1	-10	-2
30	231.2	DM+13 1200	K1	-12	-13	-1
31	232	Ross 64	M6	4	-4	2
32	233	DM+18 1214	K3	-7	-9	2
33	239	DM+17 1320	M1	1	-8	3
34	**241**	**DM+24 1357**	**K6**	**-14**	**-8**	**7**
Colony*		**Human**	**Ulander B**			

*Used as a primary ICL Outpost and resupply depot. Spaceport and docking facilities off limits by ICL order.

35	**245**	**Psi(5) Aurigae**	**G0**	**-15**	**6**	**15**
Homeworld*		**Parne**	**Thaltron B**			

*Culturally stagnant and degenerated non-hostile humanoid population. Restricted

36	251	AC+33 25644	M4	12	-1	5
37	268	AC+38 23616	M5	13	0	7
38	272	AC+47 256-150	M2	-6	5	-17
39	275.2a	G 107-69	M5	3	5	14
39a	275.2b	G 107-70	?	3	5	14
40	277a	DM+36 1638	M3	-3	-2	15
40a	277b	Ross 989	M4	-3	-2	15
41	278a	Castor A	A1	-12	-6	18
41a	278b	Castor B	A	-12	-6	18
41b	278c	YY Geminorus	M0	-12	-6	18
42	**286**	**Pollux**	**K0**	**0**	**-7**	**14**
Homeworld*		**Builders**	**Sadler's World**			

*Crab-like population of farmers and city builders under 12 inches in size. No technology, primitive. Restricted

43	289	Wolf 1421	M2	-8	-14	16
44	299	Ross 619	M5	14	-11	8
45	316.1	LP 245-140	?	13	-9	12

COLONY F — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**303**	**Chi Cancri**	**F6**	**-12**	**-12**	**-15**
Colony		**Human**	**Saulnier II**			
02	310	DM+67 552	M1	2	18	-17
03	324a	DM+28 1660	G89	-1	-10	-14
03a	324b	G 47-9	M5	-2	-10	-14
04	331a	Thalita A	A7	-6	6	-9
04a	331b	Thalita B	M1	-6	6	-9
04b	331c	Thalita C	M1	-6	6	-9
05	332a	DM+42 1956 A	F5	-2	0	-12
05a	332b	DM+42 1956 B	F5	-2	0	-12
06	336	D33 1814	M2	-7	-8	-6
07	339.1	G 195-19	?	-2	10	-9
08	340a	DM+29 1882 A	K3	-8	-13	-3
08a	340b	DM+29 1882 B	K3	-8	-13	-3
09	353	DM+36 1970	M2	-1	-4	-6
10	354a	Theta Ursae Majoris A	F6	-6	10	-1
10a	354b	Theta Ursae Majoris B	F6	-6	10	-1
11	356a	D36 1979A	G8	11	-3	-19
11a	356b	D36 1978B	G8	11	-3	-19
12	359	Ross 92	M6	10	-12	-15
13	363	G 195-36	M5	1	12	-8
14	365	DM+43 1953	K5	0	1	-5
15	**368**	**DM+46 1551**	**G1**	**-1**	**5**	**-3**
Colony		**Human**	**Walzak's Wonder**			
16	373	DM+63 869	M1	7	-14	14
17	**376**	**DM+32 1964**	**G4**	**4**	**-7**	**-4**
Colony		**Human**	**Luleav**			
18	378	DM+48 1829	M2	2	6	-4
19	378.1	DM+45 1791	K8	-7	4	8
20	387a	DM+23 2207 A	F3	4	-16	4
20a	387b	DM+23 2207 B	M1	4	-16	4
21	392a	DM+49 1961 A	G1	-4	9	10
21a	**392b**	**DM+49 1961 B**	**G1**	**-4**	**9**	**10**
Colony		**Whurr**	**Whilsst**			
22	394a	DM+56 1458	K7	9	11	-10
22a	394b	DM+56 1459	F8	9	11	-10
23	397	DM+46 1635	K7	6	4	-3
24	398.2	AC+43 447-29	O	3	3	6
25	400a	DM+39 2376 A	M2	13	0	-7
25a	400b	DM+39 2376 B	M2	13	0	-7
26	405	Ross 107	M1	5	15	1
27	407	DM+41 2147	G0	11	1	-2
28	414.1a	AC44 472-15 A	M3	9	5	5
28a	414.1b	AC44 472-15 B	M3	9	5	5
29	417	DM+36 2163	G0	7	-2	17

COLONY F — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	378.3	DM+55 2110	A7	-15	-8	-17
02	433.1	AC+30 27225	A	12	-7	-14
03	433.2a	DM+45 1947A	G0	5	11	-15
03a	433.2b	DM+45 1947B	K2	5	11	-15
04	439	DM+31 2290	K8	13	-5	-14

COLONY F — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	59.2	DM-7 256	G2	15	9	-3
02	64	L 870-2	A	13	10	-4
03	81.1	DM-10 403	G5	6	5	-19
04	**83.2**	**DM+2 311**	**G1**	**-5**	**17**	**-17**
Colony		**Human/Dabe**	**Heinlein**			
05	87	DM+2 348	M3	13	7	15
06	98a	DM+3 339 A	M1	0	9	2
06a	98b	DM+3 339 B	M1	0	9	2
07	105.4a	Epsilon Ceti A	F8	8	-3	0
07a	105.4b	Epsilon Ceti B	F8	8	-3	0
08	105.5	DM+0 444	M0	-9	7	-10
09	106.1a	Alkaffaljidhina A	A2	-14	9	-13
09a	106.1b	Alkaffaljidhina B	F3	-14	9	-13
09b	106.1c	DM+2 418	K5	-14	9	-13
10	**111**	**Tau(1) Eridani**	**F6**	**11**	**-8**	**0**
Colony		**Berian**	**Grunwat**			
11	120	AC+10 22-181	M4	-3	9	10
12	121	Tau(3) Eridani	A4	2	-19	-19
13	121.1	L 730-41	M	7	-11	-2
14	123	D1 543	M0	-5	2	4
15	128a	DM-1 457 A	F8	-9	-1	-3
15a	128b	DM-1 457 B	F8	-9	-1	-3
16	**137**	**Kappa Ceti**	**G5**	**9**	**1**	**20**
Colony		**Human**	**Woppingdrop**			
17	141	DM-5 642	K5	1	-5	8
18	142	DM-20 643	K7	11	-12	9
19	143.1	DM-12 662	M0	-10	-13	-10
20	143.3	G 5-43	M3	-1	5	20
21	147	DM-0 572	F8	-9	-4	5
22	148	DM+3 515	M0	-14	-2	5
23	150	Theemini	K0	12	-6	20
24	151	Wolf 219	?	-8	7	20
25	156	DM-7 699	M0	0	-9	12
26	157a	DM-1 565 A	K5	0	-6	16
26a	157b	DM-1 565 B	M3	0	-6	16

COLONY F — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	57.1a	DM-13 249	K0	14	9	14
01a	57.1b	L 795-25	K6	14	9	14
02	87.1a	DM-3 336 A	F9	-5	10	20
02a	87.1b	DM-3 336 B	G4	-5	10	20
03	88	AC-18 3546	M	7	-4	19
04	91.2a	DM-18 394 A	K4	6	-6	17
04a	91.2b	DM-18 394 B	K4	6	-6	17
05	100a	DM-20465 A	K4	3	-11	12
05a	100b	DM-20465 B	K4	3	-11	12

COLONY G — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	2	DM+44 4548	K2	1	-1	-10
01a	4a	DM+45 4408 A	K6	1	-1	-10
01b	4b	DM+45 4408 B	MO	1	-1	-10
02	**8**	**Chaph**	**F2**	**-8**	**13**	**-3**
Colony		**Whurr**	**Crater**			
03	14	DM+40 45	MO	-4	7	-17
04	22a	DM+66 34 A	M2	-2	-2	3
05	28	DM+39 154	K2	-6	5	-17
06	34a	Eta Cassiopeiae	G0	5	-15	-2
06a	34b	Eta Cassiopeiae	M0	5	-15	-2
07	**41**	**DM+60 124**	**F8**	**-11**	**9**	**-1**
Colony		**Whurr**	**Ovlow**			
08	47	AC+60 3496	M2	-8	3	-1
09	48	AC+71 532	M3	-1	-7	4
10	49	DM+61 196	M2	-2	-6	0
10a	51	Wolf 47	M7	-2	-6	0
11	52	DM+63 137	K7	-11	6	1
12	53a	Mu Cassiopeiae A	G5	1	-11	-3
12a	53b	Mu Cassiopeiae B	G5	1	-11	-3
13	59.3	DM+62 274	K1	-12	4	0
14	63	AC+56 13511	M4	-9	-2	-3
15	**67**	**DM+41 328**	**G2**	**-9**	**-5**	**-12**
Homeworld		**Whurr**	**Vhe Aet**			
16	68	DM+19 279	K1	1	-19	-16
17	69	DM+63 229	K5	-12	3	1
18	75	DM+63 238	K0	-3	-9	1
19	82	AC+58 13565	M4	-11	-1	-1
20	83.3	DM+61 366	K5	-6	-6	0
21	**92**	**Delta Trianguli**	**G0**	**-9**	**-12**	**-14**
Homeworld		**Kendak**	**Harken's Hive**			
22	96	DM+47 612	M1	-8	-11	-7
23	133	AC+79 1584	M2	-6	-5	12
24	226	AC+82 1111	M3	-4	-10	14
25	713	Chi Draconis	F7	10	-9	12
26	742	AC+70 8247	A	8	4	17
27	786	DM+76 785	MO	1	6	16
28	**788**	**DM+66 1281**	**G5**	**7**	**15**	**14**
Colony		**Human**	**Outback**			
29	793	AC+65 6955	M3	11	-7	7
30	807	Eta Cephei	K0	9	13	9
31	809	DM+61 2068	M2	11	-8	5
32	**809**	**DM+61 1916**	**G5**	**6**	**17**	**8**
Colony		**Human**	**Wind Chime**			
33	878	Ross 226	M4	0	12	1
34	892	DM+56 2966	K3	7	-10	-1
35	805	DM+57 2735	M2	1	5	-2
36	**903**	**Alrai**	**K1**	**-8**	**11**	**13**
Homeworld*		**Scombo**	**Morgan's World**			

*Humanoid hunter/gatherers with Bronze-Age technology. Have limited village buildingand bronze. Restricted

37	907	Ross 249	M1	-1	7	-9
38	909a	DM+74 1047 A	K3	-2	-1	8
38a	909b	DM+74 1047 B	M2	-2	-1	8
39	913	DM+45 4378	MO	-5	15	-14

COLONY G — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**290**	**DM+80 238**	**G8**	**-13**	**-2**	**-18**
Colony		**Human/Whurr**	**Randermak**			
02	325a	DM+71 482 A	K5	-8	-14	-20
02a	325b	DM+71 482 B	M0	-8	-14	-20
03	**360**	**A70 4336**	**M3**	**-8**	**-13**	**-17**
03a	**362**	**AC+70 4337**	**M4**	**-8**	**-13**	**-17**
04	366	AC+76 3952	M2	-14	-3	-11
05	396	DM+85 161	K0	-10	3	-15
06	**420a**	**DM+74 456 A**	**K5**	**-7**	**-7**	**-12**
Colony		**Human**	**Rockingham**			
06a	420b	DM+74 456 B	M2	-7	-7	-12
07	441	DM+72 545	M4	-1	-10	-6
08	457	DM+59 1248	M0	-11	-2	20
09	458a	DM+55 1519	M2	1	-17	-4
09a	458b	G 197-50	M0	1	-17	-4

10	459	Megrez	A3	-6	-8	12
11	463	AC+6414332	M4	-1	-10	-6
12	483	DM+52 1650	K0	2	-13	6
13	487	AC+66 3955	M4	5	-16	-19
15	**511.1**	**DM+64 949**	**G6**	**-2**	**4**	**11**
Colony		**Human**	**Bormis**			
15	520a	DM+48 2138 A	M0	10	-8	15
15a	520b	DM+48 2138 B	M0	10	-8	15
16	**529.1**	**DM+62 1318**	**G3**	**4**	**-3**	**0**
Colony		**Human/Mixed**	**New London**			
17	532	DM+50 2030	M0	12	-12	-2
18	533.1	LTT 14056	M1	-2	10	12
19	540	DM+81 465	M1	-5	4	-12
20	549a	Theta Bootis A	F7	13	-7	0
20a	549b	Theta Bootis B	M3	13	-7	0
21	549c	G 200-38	K1	12	-6	0
22	556	DM+52 1719	K3	14	-9	-5
23	580.2	DM+67 876	F8	3	15	6
24	597	AC+76 5308	M4	1	6	-11
25	617a	DM+67 935 A	M0	10	-3	-18
25a	617b	DM+67 935 B	M3	10	-3	-18
26	632.2a	DM+76 614	K5	-2	19	-5
26a	632.2b	AC+76 5655	K5	-2	19	-5
27	648	DM+65 1157	F6	11	13	-8
28	675	D67 1014	K0	10	5	-17
29	684a	DM+61 1678 A	G1	14	10	-15
29a	684b	DM+61 1678 B	M0	14	10	-15
29b	685	AC+61 26806	M1	14	10	-15
30	699.1	LP 9-231	A	-7	16	-12
31	-	Alioth	A0	0	-7	10

COLONY G — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	458.2	DM+49 2126	M2	-5	-13	-18
02a	497a	AC+56 45927 A	M0	-2	-1	-20
02b	497b	AC+56 45927 B	M0	-2	-1	-20
03	498	DM+50 1979	K8	2	-4	-10
04	503.2	DM+57 1425	G1	-5	8	-6
05	509.1	DM+58 1441	M0	-3	8	-11
06	521.2a	DM+51 1859 A	F9	7	1	-12
06a	521.2b	DM+51 1859 B	F9	7	1	-12

COLONY G — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	5	DM+28 4704	K0	1	4	17
2	12	L 1154-29	M5	7	-8	13
03	**16**	**AC+9 2-34**	**M0**	**3**	**4**	**-6**
Colony		**Grex/Mixed**	**Vaudo's Paradise**			
04	23a	DM-4 62 A	F8	7	-12	-6
04a	23b	DM-4 62 B	F8	7	-12	-6
05	26	AC+31 719	M4	-2	-1	19
06	27	D20 85	K0	2	-9	18
07	31.4	DM+1 131	K2	-1	-3	-17
08	34.1	DM+16 76	F8	-11	11	-10
09	39	DM+17 112	K6	-7	2	3
10	44	DM-2 129	K1	3	-15	-1
11	46.1	DM+17 135	G5	-12	7	-5
12	53.1a	DM+22 176 A	K4	-15	7	1
12a	53.1b	DM+22 176 B	M3	-15	7	1
13	73	Wolf 1530	M4	-14	8	5
14	882	DM+19 5036	G4	15	6	16
15	904	Iota Piscium	F7	14	-3	4
16	905.1	G 29-61	M5	15	3	-12
17	905.2a	AC+32 86422	M5	3	9	19
17a	905.2b	AC+32 86401	A	3	9	19
18	910	DM+28 4660	M0	0	17	9
19	914a	DM+26 2734 A	G3	4	-1	19
19a	914b	DM+26 2734 B	G3	4	-1	19

COLONY G — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	16.1	DM-8 38	G5	10	-3	6
02	50	DM-10 216	K5	0	-14	8
03	54.2a	DM-8 216	F5	-3	-16	17
03a	54.2b	DM-8 215	K1	-3	-16	17
04	56.3a	DM-1 167	K1	-10	-9	17
04a	56.3b	G 70-50	M0	-10	-9	17

Frontier 1 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	725.2	DM+20 3926	F6	7	-14	11
02	738a	DM+32 3267 A	G0	-6	-9	14
02a	738b	DM+32 3267 B	G0	-6	-9	14
03	742	DM+22 3579	G9	0	-15	7
04	474.2	DM+33 3339	K6	-4	-1	14
05	751	DM+24 3692	M0	2	-8	7
06	754.2	DM+37 3417	G8	-10	-2	12
07	756	AC+28 53670	M1	-4	-10	7
08	758	DM+32 3411	K0	-9	-10	8
09	761.1	DM+31 3618	G5	-3	1	8
10	762.2	DM+21 3822	G5	7	-3	1
11	765.4a	DM+33 3582 A	K5	-7	2	5
11a	765.4b	DM+33 3582 B	K5	-7	2	5
12	767.1a	DM+33 3587	F5	-7	3	5
12a	767.1b	DM+33 3589	K6	-7	3	5
13	773.2	DM+29 3820	K0	0	11	1
14	775.1	DM+15 4026	G8	9	-3	-10
15	777a	DM+29 3872	G8	-8	-5	-1
15a	777b	G 125-55	M6	-8	-5	-1
16	778	DM+22 3908	K1	-4	-9	-4
17	779	DM+16 4121	G1	-1	-15	-8
18	779.1	DM+25 4085	K3	-4	-5	-3
19	783.2a	DM+15 4074	K1	6	-5	-11
19a	783.2b	G 143-35	M	6	-5	-11
20	791.3	DM+33 3936	K8	-12	6	-4
21	797a	DM+19 4484	G2	-3	-3	-16
21a	797b	L1288-4	M	-3	-3	-16
22	804	DM+19 4499	M1	-9	-14	-13
23	806.1a	Gienah A	K0	-15	6	-7
23a	806.1b	Gienah B	M4	-15	6	-7
24	808.2	DM+28 3900	K5	-15	-6	-10

Frontier 1 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	630	AC+33 45152	M0	3	-12	13
02	636	Eta Herculis	G7	-7	-15	5
03	639	DM-37 2804	K7	-5	-15	4
04	677a	DM+29 3029 A	M0	5	-13	-6
04a	**677b**	**DM+29 3029 B**	**M0**	**5**	**-13**	**-6**
Colony*		**Human/Mixed**	**Kimsey's World**			

*One of the few outpost colonies where Dabes comprise most of the population.

05	679	DM+34 2989	G5	-2	-13	-7
06	700.2	DM+26 3151	K0	2	-18	-19
07	708.4	DM+45 2684	G0	-13	-2	-12
08	722.1	DM+42 3123	K0	-6	14	-11
09	725.1	DM+43 3058	K0	-14	-2	-19

Frontier 1 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	612.1	DM+35 2774	M0	0	-16	-20

Frontier 1 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	821.1	L 1289-229	M	-7	-7	17
02	822a	Delta Equulei A	F8	-6	-15	15
02a	822b	Delta Equulei B	F8	-6	-15	15
03	825.3	DM-0 4195	K6	5	-15	3
04	828.1	AC+3 2561-36	M1	1	-12	4
05	828.4	DM+9 4821	K0	-7	-12	11
06	838.1a	DM+5 4874	K3	-4	-8	-2
06a	838.1b	G 93-41	?	-4	-8	-2
07	838.2	DM+8 4788	K1	-4	-17	-1

Frontier 1 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	878.1a	DM-8 5980	G6	-6	-12	-3
01a	878.1b	G 156-64	AF	-6	-13	-3

Frontier 2 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	678a	DM-0 3300 A	G8	8	-8	19
01a	678b	DM-0 3300 B	G8	8	-8	19
02	697.1	AC+3 251200	M0	1	-3	14
03	699.2	Zeta Serpentis	F3	13	-5	11
04	**703**	**DM+15 3364**	**G6**	**-15**	**-2**	**13**
Homeworld*		**Grex**	**Kirl Seban**			
*Hostile botanical environment. Restricted						
05	705	DM+15 3367	K2	-5	7	17
06	708	DM+18 3606	M1	-14	3	14
07	708.2	DM+13 3578	M0	0	11	16
08	708.3	L 1064-75	M5	-5	-6	7
09	710	DM-1 3474	M1	-7	-10	5
10	711	Eta Serpentis	K0	10	-2	6
11	712	Ross 136	M4	-6	-2	8
12	715	DM-1 3500	K5	6	-2	4
13	718	DM+22 3406	K4	-15	9	13
14	723	Wolf 1466	M0	-1	-12	-2
15	724	DM-13 5069	M	9	-11	-4
16	726	DM-3 4380	M0	-6	-8	-1
17	727	DM+10 3665	K4	-6	6	5
18	728	DM+17 3729	M1	-12	8	8
19	730	AC+3 2528-176	M2	-7	-2	1
20	734a	DM+10 3724 A	M0	-5	9	4
20a	734b	DM+10 3724 **A**	M0	-5	9	4
21	736	DM+4 3911	K0	7	10	1
22	741	L 850-62	M5	-5	-14	-7
23	**746**	**DM+16 3752**	**G4**	**-11**	**11**	**4**
Colony*		**Grex**	**Salcana**			
*Grex mining colony.						
24	747.1	Ross 727	K	15	-6	-12
25	748.2a	DM+1 3942 A	M0	9	12	-5
25a	748.2b	DM+1 3942 B	M0	9	12	-5
26	756.2	DM+7 4052	K5	-14	0	-3
27	757	DM-22 13916	K4	5	-16	-16
28	759	DM+11 3833	G8	-10	9	-2
29	760	Delta Aquilae	F0	-11	-1	-5
30	761.2	DM+0 4241	M1	7	11	-11
31	768.1a	Onicron Aquilae A	F8	-7	15	-9
31a	768.1b	Onicron Aquilae B	M4	-7	15	-9
32	**771a**	**Alshain A**	**G8**	**-15**	**2**	**-9**
Colony*		**Grex**	**Grallahan**			
*One of the few colonies that is within a binary star system.						
32a	771b	Alshain B	M3	-15	2	-9
33	773	DM-12 5594	M1	-2	-6	-19
34	784.2a	L 1142-88	M5	-5	16	-9
34a	784.2b	G 24-9	?	-5	16	-9

Frontier 2 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	596.2	Unukalhai	K2	-1	-19	5
02	611.3	L 1130-30	M3	-2	-14	0
03	615.1a	DM+13 3091 A	K0	-1	-8	4
03a	615.1b	DM+13 3091 B	K1	-1	-8	4
04	626	DM+7 3180	K8	-4	-13	-8
05	627a	DM+18 3182 A	K2	-8	-4	-2
05a	627b	DM+18 3182 B	K2	-8	-4	-2
06	632.1	DM+31 2875	K6	-13	12	7
07	632.3	AC+5 125-20 A	?	9	-9	-4
08	640	DM+19 3174	K5	1	6	1
09	641	DM+0 3593	G8	-3	-16	-18
10	642	AC+12 1155-87	M1	5	0	-4
11	647	AC+13 804-98	M0	0	-1	-7
12	653	DM-4 4225	K5	6	-16	-20
13	354.1	DM+0 3629	F8	12	-8	-13
14	654.2	DM+15 3108	K0	-8	-3	-13
15	681	Rasalhague	A5	-6	-2	-20
16	686.1a	DM+23 3151 A	M0	-6	13	-12
16a	686.1b	DM+23 3151 B	M0	-6	13	-12
17	692.1	DM+21 3198	K0	-1	16	-11
18	697	DM+21 3245	K5	-2	-17	-15
19	698	DM+18 3497	K8	-1	13	-17

Frontier 2 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	573	DM+16 2722	K8	-3	-16	-7
02	587.1	AC+26 37070	M0	-5	-4	-3

Frontier 2 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	770.1	Omega Sagittarii	G5	0	-19	18
02	773.1	DM-15 5516	A2	5	-5	18
03	773.3	DM-10 5238	G0	11	5	17
04	781.3	L 710-30	A	0	-13	16
05	782	DM-20 5833	M0	-4	-13	18
06	788.2	L 926-16	K	2	6	15
07	792.1a	DM-10 5432 A	G3	2	4	10
07a	792.1b	DM-10 5432 B	G3	2	4	10
08	800a	DM-19 5899 A	M2	-11	-12	15
08a	800b	DM-19 5899 B	M2	-11	-12	15
09	801	DM-21 5811	M0	2	-9	5
10	808.3	DM-12 5854	G1	1	4	3
11	811	DM-26 15344	F8	7	-12	-4
12	811.1	AC-11 2439-179	M4	-8	-1	10
13	816.2a	Eta Capricorni A	A3	-2	-7	1
13a	816.2b	Eta Capricorni B	A3	-2	-7	1
14	817	Ross 769	M3	-7	-6	5
15	819a	DM-14 5936 A	K1	-14	-8	12
15a	819b	DM-14 5936 B	M0	-14	-8	12
16	825.4a	DM-26 15541 A	G5	-6	-15	0
16a	825.4b	DM-26 15541 B	G6	-6	-15	0
17	826.1	DM-20 6185	K6	-9	-9	3
18	828.2	AC-7 388-38	M0	-13	4	3
19	836.4	Ross 206	M2	-9	4	-8
20	838.5	Mu Caproicorni	F0	-7	5	-15

Frontier 2 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	836.1	DM-27 15550	G4	9	-9	-17
02	863.2	Upsilon Aquarii	F3	-15	-7	18
03	867.1a	DM-13 6235 A	G9	-14	11	3
03a	867.1b	DM-13 6235 B	G9	-14	11	3

03b	867.1c	G 156-35	?	-14	11	3

Frontier 3 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	610	DM-20 4399	K2	-15	-6	20
02	439.1	Wei	K2	-7	-11	6
03	641.1	DM-20 4572	G3	-8	0	14
04	645	L481-31	M1	-7	-12	4
05	650	DM-13 4528	G3	-10	7	16
06	652	DM-28 12769	G8	-3	-5	-8
07	654.3	DM-41 11285	K5	-5	-15	-1
08	684.1a	Sabik A	A2	2	8	16
08a	684.1b	Sabik B	A2	2	8	16
09	657	Eta Scorpii	F0	-6-	16	-2
10	665.1	DM-24 13297	G3	5	1	9
11	668a	DM-10 4471 A	M0	-6	12	15
11a	668b	DM-10 4471 B	M0	-6	12	15
12	670a	Xi Ophiuchi A	F2	-8	3	8
12a	670b	Xi Ophiuchi B	K3	-8	3	8
13	672.1	L 557-68	M	4	-6	2
14	673.1	DM-24 13337	A9	6	2	7
15	683.2a	DM-37 11734 A	G8	-1	-9	-4
15a	683.2b	DM-37 11734 B	G8	-1	-9	-4
16	690.1	L 774-22	G	-5	10	7
17	692	DM-21 4712	F5	-5	6	4
18	695.1	DM-33 12475	G8	2	-5	-3
19	402.1	DM-36 12214	G5	-7	-4	-7
20	710.1	Kaus Meridionalis	K2	13	4	-9
21	713.1	Kaus Borealis	K2	11	10	-8
22	722	DM-21 5081	G4	-14	11	-6
23	733	DM-22 13408	K4	-6	13	-11
24	743.1a	Gamma Coronae Australis A	F8	-9	0	-18
24a	743.1b	Gamma Coronae Australis B	F8	-9	0	-18

Frontier 3 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	579.2a	DM-15 4042	K0	-5	-16	1
01a	579.2b	DM-15 4041	K2	-5	-16	1
02	579.3	DM-0 2941	K0	-15	-1	-10
03	585.1	DM+3 3032	M0	-13	6	8
04	593.1	DM-23 12458	K4	-2	-15	-13
05	596.1a	Psi Serpentis A	G5	-10	9	6
05a	596.1b	Psi Serpentis B	G5	-10	9	6
06	606	DM-7 4156	M0	-14	2	11
07	616	DM-7 4242	G1	-15	4	-15
08	518.1	AC-4 2788-82	M2	-5	9	-7
09	621	DM-13 4418	K3	-1	2	-14
10	629.1	DM-12 4542	M0	0	4	-14
11	660.1	AC-5 4400	K	-2	18	-19

Frontier 3 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	563.3	DM+7 2850	K2	-12	2	-10

Frontier 3 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	744	DM-37 13049	G5	8	-1	17
02	747.3	DM-47 12773	K7	-7	-9	18
03	755	DM-35 13422	G5	4	4	16
04	773.4	DM-34 14082	F8	1	8	7
05	7773.6	DM-50 12780	K5	-12	-10	10
06	776.2	L 349-18	M	-3	-6	5
07	781.1a	L565-62	M	-7	10	10
07a	781.1b	L565-63	M	-7	10	10
08	788.3	Kappa(1) Stagittarii	A0	-2	-1	0
09	790	DM-30 17597	G5	-14	10	9
10	794.1	Alpha Indi	K2	2	-8	-8
11	808.1	Iota Microscopii	F1	-3	-3	-7
12	812.1	DM-44 14214	G0	-5	-3	-8
13	825.2	DM-43 14464	G5	-10	-2	-10
14	563.2a	DM-25 10553 A	M	10	3	-5
14a	563.2b	DM-25 10553 B	M	10	3	-5
15	563.4	DM-15 3965	F5	-4	16	-6
15a	564.1	DM-15 3966	A3	-4	16	-6
16	565	DM-23 11940	K5	-8	13	-16
17	579.4	DM-24 11928	G4	13	9	-8
18	-	Mankent	K0	-8	-2	-19
19	-	Zubenelgenubi	A3	1	14	-2
20	-	Zitwobiel	M0	-3	-9	11

Frontier 3 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	847.1	DM-45 14576	K2	-14	-6	19
02	848.2	Alnair	B5	-15	-8	20

Frontier 4 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	531	DM-50 8092	K1	-13	-5	9
02	539	Theta Centauri	K0	-12	2	20
03	540.3	DM-44 9181	G4	3	-13	18
04	550.3	DM-45 9206	K5	-2	-10	6
05	552.1	L 260-93	K5	-2	-10	-6
06	560a	Alpha Circini A	F0	-7	-9	-4
06a	560b	Alpha Circini B	K5	-7	-9	-4
07	570.1	DM-48 9494	G5	-1	-3	9
08	571	DM-43 9510	K7	13	-9	16
09	582	Nu (2) Lupi	G2	-4	4	6
10	594	DM-44 10310	F5	5	4	9
11	599a	DM -37 10500 A	G6	-6	14	10
11a	599b	DM -37 10500 B	A	-6	14	10
12	599.1	DM-50 9903	K	-4	5	-4
13	601	Beta Trianguli Australis	F2	-15	7	-4
14	604	DM-42 10934	K5	0	10	7
15	611.1	DM-70 1375	G8	6	-16	-18
16	613	DM-56 6221	K3	-7	6	-3
17	615	DM-57 6303	K0	-4	5	-4
18	616.1a	DM-53 6537 A	G5	12	-2	-3
18a	616.1b	DM-53 6537 B	G5	12	-2	-3
19	618.4	L 338-152	M3	14	3	1
20	620.1	DM-38 10983	G5	1	15	6
21	620.2	AC-46 99-386	M	10	6	2
22	626.1	Gamma Apodis	K0	-11	-7	-19
23	629	DM-38 11019	K1	7	14	6
24	629.3	L 338-106	K	11	5	-1
25	634	DM-43 11010	M3	8	12	2
26	637	L 74-113	M	-12	1	-15
27	638.1	DM-47 11068	K0	8	10	-2
28	639.2	AC-64 N301-65	G	4	-4	-14
29	646a	DM-39 1094 A	K5	2	19	2
29a	646b	DM-39 1094 B	K5	2	19	2
30	656	DM-60 6576	K0	1	4	-12
31	714	DM-58 7076	K	-6	14	-16
32	737a	DM-56 7546 A	K5	-1	15	-20
32a	737b	DM-56 7546 B	K7	-1	15	-20

Frontier 4 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	503.3	DM-19 3653	K1	-8	-13	-13
02	508.1	Iota Centauri	A2	-9	-13	-13

03	508.3	AC-13 2264-197	K7	-13	-3	12
04	510	DM-27 9225	M	-14	-4	-9
05	524.1	DM-3 3527	M2	-14	10	15
06	525.1	DM-32 9603	F2	-5	-9	-10
07	530	DM-23 11329	G5	-11	2	-8
08	532.1	DM-34 9223	K1	-1	-11	-11
09	538.1	Pi Hydrae	K2	11	-12	6
10	539.2	DM-30 11195	M	0	-5	-9
11	540.1	DM-26 10158	K3	3	-4	-3
12	542.1a	DM-25 10271 A	F4	5	-3	-2
12a	542.1b	DM-25 10271 B	F4	5	-3	-2
13	545.1	DM-39 8857	K3	7	-12	-17

Frontier 4 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	705.1	Iota Pavonis	G3	6	3	20
02	724.2	DM-77 938	G2	1	-14	9
03	747.4	DM-56 7638	K5	6	13	15
04	756.1	DM-66 2307	K5	4	2	10
05	762	L 160-102	M	-2	9	14
06	776	DM-67 2385	G2	-1	4	8
07	788.1	DM-58 7734	M	3	12	5
08	794.2	Phi(2) Pavonis	F8	-1	11	4
09	808	L 46-163	M	-15	-1	13
10	818.1a	DM-73 1547 A	G3	-2	-6	0
10a	818.1b	DM-73 1547 B	G3	-2	-6	0
10b	818.1c	DM-73 1547 C	G3	-2	-6	0
11	825.1	DM-61 6571	G5	-1	9	-3
12	827.1	DM-56 8316	K3	9	11	-15
13	835.1	Nu Octanis	K0	-9	-6	4
14	836.9a	DM-58 8156 A	K7	-8	14	-1
14a	836.9b	DM-58 8156 B	K7	-8	14	-1
15	847a	AC-71 462-64	M	-6	-2	-5
15a	847b	L118-272	M	-6	-2	-5
16	855.1a	Nu Indi A	G0	-6	-7	-6
16a	855.1b	Nu Indi B	G0	-6	-7	-6

Frontier 4 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	9a	DM-54 20 A	G4	-5	-8	-16
01a	9b	DM-54 20 B	G4	-5	-8	-16
02	863.3	DM-55 9122	G5	6	7	5
03	900.1	DM-57 14628	G8	-6	12	-14

Frontier 5 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	339.2	Beta Carinae	A1	-14	5	-15
02	404.1	DM-58 3625	K0	-6	-12	1
03	412.1	DM-61 2934	G5	-8	6	-2
04	429.3	DM-50 6060	F6	-9	4	10
05	**429.4**	**DM-56 3980**	**K4**	**-6**	**2**	**5**
Outpost*		**Human**	**Sager**			
*One of the few ICL Outposts in the Frontier.						
06	437	DM-74 632	G1	9	-10	-19
07	752.5a	DM-55 4298 A	G5	5	-13	9
07a	752.5b	DM-55 4298 B	G5	5	-13	9
08	455.2	Eta Crucis	F0	0	7	-2
09	456.1a	DM-45 7681	K3	-7	14	15
09a	456.1b	L 326-41	M	-7	14	15
10	467a	L 68-28	KM	-3	17	-8
10a	467b	L 68-27	M	-3	17	-8
11	470	Gacrux	M3	3	6	6
12	478	L 38-15	M	1	13	-14
13	496.1	DM-51 7244	K9	7	9	12
14	503	DM-58 4940	F8	3	16	4
15	539.1	DM-74 865	G1	14	6	-16

Frontier 5 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	452.2a	DM-37 7539 A	F8	1	-20	-2
01a	452.2b	DM-37 7539 B	F8	1	-20	-2
02	454.2a	DM-33 8130 A	G0	-7	3	-9
02a	454.2b	DM-33 8130 B	G0	-7	3	-9
03	480.1	L 399-68	M4	3	7	-19
04	488.1	DM-39 7893	A7	1	15	-18
05	496a	DM-19 3429 A	F8	7	12	15
05a	496b	DM-19 3429 B	F8	7	12	15

Frontier 5 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	469.1	DM-2 3528	G8	-1	-8	4
02	469.2a	DM-12 3647 A	F8	-7	14	-20
02a	469.2b	DM-12 3647 B	F8	-7	14	-20

Frontier 5 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	110	DM-67 142	F8	-14	9	-18
02	305	Alpha Chamaeleontis	F6	-9	4	16
03	345	DM-80 328	FG	-7	14	-20
04	385	DM-84 102	?	-4	16	18
05	606.1a	DM-83 102	K0	12	8	12
05a	606.1b	L 20-30	KM	12	8	12

Frontier 5 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	97.1	Delta Hydri	A3	-7	2	15

Frontier 6 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**260**	**DM-61 1535**	**K0**	**2**	**12**	**-20**
Colony		**Human**	**Lubork VI**			
02	264	DM-43 2904	K5	-14	9	-16
02a	264.1a	DM-43 2906	G3	-14	9	-16
02b	264.1b	DM-43 2906	K0	-14	9	-16
03	268.1	I Puppis	F0	-13	-5	-20
04	**275**	**DM-51 2507**	**G5**	**-6**	**0**	**-18**
Homeworld*		**Granezii**	**Kallon**			
*Humanoid culture in an early technological renaissance. Just beginning to explore their eco-sphere and learning about flight.						
05	284	DM-44 3675	G5	-11	5	-11
06	291.1	DM-49 3115	K2	-6	-6	-14
07	294a	DM-59 1773	G2	4	11	-14
07a	294b	DM-59 1774 A	K	4	11	-14
07b	294c	DM-59 1774 B	K	4	11	-14
08	296	DM-39 3869	K7	-15	0	-6
09	297.1	B Carinae	F5	6	6	-15
10	**304**	**DM-39 4247**	**G6**	**-14**	**-4**	**-2**
Homeworld		**Barlow**	**Integrity**			
11	308.3	DM-49 3617	M	-2	2	-7
12	312	DM-39 4574	G4	-12	-9	1
13	319.1a	DM-42 4528	K0	-8	-4	-1
13a	319.1b	L 387-60	M1	-8	-4	-1
14	321.1	DM-42 4569	G5	-8	-4	0
15	321.2	DM-42 4577	G5	-9	-15	0
16	321.3a	Delta Velorum A	A0	3	-3	-8
16a	321.3b	Delta Velorum B	A0	3	-3	-8
16b	321.3c	Delta Velorum C	A0	3	-3	-8
16c	321.3d	Delta Velorum D	A0	3	-3	-8
17	333	L 316-62	M3	-1	18	-1
18	333.1	DM-58 2377	F4	9	-5	-10
19	333.3	Alpha Volantis	A5	15	0	-15

20	336.2a	DM-44 5200A	K0	-2	-10	2
21	351a	Psi Velorum A	F2	-2	-10	2
21A	351b	Psi Velorum B	F2	-2	12	7
22	368.1a	DM-52 3377 A	K1	10	-10	1
22a	368.1b	DM-52 3377 B	K1	10	-10	1
23	374	DM-40 5628	K4	2	-14	15
24	375.1	CFS 7007	?	9	-8	5
25	379.1a	DM-35 6194 A	F9	1	-3	19
25a	379.1b	DM-35 6194 B	F9	1	-3	19
26	389a	L 190-266	M	15	10	-2
26a	389b	L 190-266	M	15	10	-2
27	397.2	DM-53 3569	F6	15	3	4
28	404	DM-43 6619	F8	12	8	13

Frontier 6 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	366.1a	Theta Antliae A	F7	-10	-1	-19
01a	366.1b	Theta Antliae B	F7	-10	-1	-19
02	383	DM-17 3088	M0	-9	14	-13
03	385.1	DM-32 7158	G1	-1	-1	-19
04	398.1	DM-11 2981	F8	-10	5	5
05	403.1	DM-19 3125	F6	0	7	-3
06	409	AC-17 31766	?	1	16	-5
07	412.2	DM-29 8875	G2	10	-3	-7
08	412.3	DM-27 7881	K5	8	4	-8
09	415	DM-10 3216	M0	-2	12	9
10	416	DM-14 3277	M0	1	18	-2
11	423.1	DM-4 3049	G8	-3	18	14
12	429.2	AC-9 1823-108	M	2	18	9

Frontier 6 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	162.1	DM-64 143	G3	8	8	-7
02	162.2	DM-59 788	M0	2	15	-4
03	175a	DM-59 893 A	G5	0	4	-7
03a	175b	DM-59 893 B	G5	0	4	-7
04	176.3	DM-50 1492	K0	-10	13	-2
05	181.1	L 131-6	M	2	8	0
06	186.1	DM-56 1071	G5	-5	2	-5
07	187	Eta(1) Pictoris	F5	-12	10	0
08	200.1	L 233-30	K	-8	3	-1
09	204.1	DM-60 1169	G5	0	3	2
10	217.2	DM-70 340	K0	-10	10	10
12	224.1	DM-63 218	K3	4	1	5
13	248	Alpha Pictoris	A5	3	11	18
14	249.1	DM-46 2073	F5	-15	-1	18
15	253	DM-55 1603	G7	-5	-14	11
16	268.2	DM-63 295	K5	5	6	10

Frontier 7 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	243	DM-27 3248	G2	-6	4	-16
02	245.1	DM-31 3640	F6	-4	-4	-20
03	255a	DM-35 3233 A	F8	0	-10	-20
03a	255b	DM-35 3233 B	F8	0	-10	-20
04	279	DM-21 2007	F5	2	15	-1
05	293.2	DM-25 5342	K4	3	4	2
06	296.1	DM-29 5555	G4	4	-5	2
07	297.2a	DM-13 2420	F7	-8	5	13
08	301a	DM-13 2439 A	M0	0	17	11
08a	301b	DM-13 2439 B	M0	0	17	11

Frontier 7 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	316	DM-5 2603	M0	-4	16	-19
02	340.3	DM-5 2778	K8	-1	10	-6
03	344a	DM-5 2802 A	G2	3	14	-8
03a	344b	DM-5 2802 B	G2	3	14	-8
04	346	DM-8 2689	M0	7	15	-12
06	389.1	DM-9 3063	K8	15	0	9

Frontier 7 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	—	Alphard	K4	-7	-10	5

Frontier 8 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	256	DM-12 1724	K8	12	11	-6
02	267	DM-9 1858	K8	1	3	-1
03	268.5	AC-13 1069-363	K5	15	8	1
04	**—**	**ISCO GC 1540**	**G3**	**-8**	**-10**	**2**
Homeworld		**Uranzi**	**Cadrial**			
05	—	ISCO GC 2677	M0	3	-4	5
06	**—**	**ISCO GC 1221**	**G0**	**-10**	**-4**	**-11**
Colony		**Uranzi**	**Dakreen**			
07	—	ISCO GC 1227	K7	4	9	-12
08	—	ISCO GC 1228	M2	-4	11	2
09	**—**	**ISCO GC 1555**	**G4**	**-13**	**5**	**-2**
Colony		**Uranzi**	**Chueen**			

Frontier 8 — Layer -1

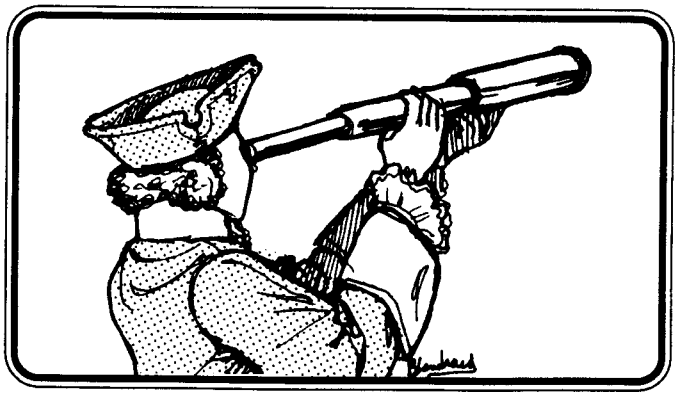
NUM	GLIE	NAME	SP	LX	LY	LZ
01	223.1	DM-9 1261	M0	-14	8	12

Frontier 8 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	168.3a	DM-26 1642 A	F2	11	12	14
01a	168.3b	DM-26 1642 B	F2	11	12	14
01b	168.3c	DM-26 1642 C	F2	11	12	14

Frontier 9 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**224**	**DM+13 1036**	**G0**	**8**	**13**	**-7**
Homeworld		**Paebak**	**Bendara**			
02	—	Alhena	A0	-9	5	7
03	**—**	**ISCO GC 1102**	**G5**	**4**	**-9**	**-1**
Colony		**Paebak**	**Irskan**			
04	—	ISCO GC 1187	K6	-11	-4	9
05	—	ISCO GC 1199	M3	-2	18	-10
06	**—**	**ISCO GC 1222**	**G4**	**10**	**3**	**3**
Colony		**Paebak**	**Tansot**			
07	—	ISCO GC 1322	K0	16	-7	12
08	**—**	**ISCO GC 1116**	**F9**	**0**	**9**	**4**
Colony		**Paebak**	**Ooplu**			
09	—	ISCO 1411 A	F4	6	-7	-10
09a	—	ISCO 1412 B	F4	6	-7	-10
13	—	ISCO 1313	K3	9	-13	-16
14	**—**	**ISCO 1277**	**G3**	**1**	**5**	**-10**



Colony **Paebak** **Gaplan**

Frontier 9 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	295.1	DM+14 1802	K5	9	-5	-11

Frontier 10 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	157.1	Wolf 1322	M4	8	12	-20
02	168.2	Lowne 2	?	10	3	-20
03	171.2a	DM+26 730	K5	10	7	-13
03a	171.2b	G 39-27	?	10	7	-13
04	176.2	DM+27 688	K3	-5	8	-14
05	182.1	DM+14 804	G5	-3	-7	-20
06	188a	DM+18 779 A	G4	7	-4	-12
06a	188b	DM+18 779 B	G4	7	-4	-12
07	197	Lambda Aurigae	G0	14	10	1
08	201	DM+17 917	K5	11	-6	-9
08a	202	DM+17 920	F8	11	-6	-9
09	207	AC+29 13493	K7	1	2	-2
10	217	DM+37 1312	K1	9	7	4
11	220	AC+24 147-263	M2	10	-4	-1
12	226.1	Ross 60	M5	-4	-5	2
13	226.3	DM+35 1334	G0	-10	4	9
14	227	DM+15 1065	K0	7	-14	-3
15	229.1	Ross 63	?	0	-10	2
16	249	DM+47 1355	K6	14	9	17
18	252	DM+25 1496	G0	1	-11	13
19	254	DM+30 1367 A	K6	10	-5	-14
20	262	DM+29 1441	G4	8	-7	15
21	265a	DM+27 1311 A	M0	0	-10	17
21a	265b	DM+27 1311 B	M0	0	-10	17
22	270	DM+33 1505	M2	7	-5	20

Frontier 10 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	257.1	DM+48 1469	K3	-3	13	-15
02	268.3	DM+27 1348	M0	-5	-13	-20
03	273.1	DM+32 1561	K8	6	-7	-19
03a	274a	Rho Geminorum A	F0	6	-7	-19
03b	274b	Rho Geminorum B	F0	6	-7	-19
04	295	DM+29 1664	G8	13	-11	-15
05	301.1	DM+31 1781	K4	3	-12	-4
06	307.1	DM+46 1398	G4	6	5	-1
07	308a	AC+36 28826 A	M0	11	-7	-6
07a	308b	AC+36 28826 B	M0	11	-7	-6
08	318.1	Wolf 321	M4	9	4	1
09	321	DM+42 1922	K3	9	0	1
10	334.2	DM+34 1949	G0	10	-10	7
11	336.1	AC+47 2368-79	M0	13	6	5
12	343.1	DM+40 2208	K8	12	-3	11

Frontier 10 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	135	DM-3 534	G2	11	-4	-15
02	147.1	DM-3 592	F9	2	-10	-16
03	150.1a	DM+16 502	M2	0	9	5
03a	150.1b	AC+17 449-111	M1	0	9	5
04	155.1	AC+2 2282-51	M1	15	-4	4
05	159	DM-0 632	F6	15	-9	5
06	159.1	LB 1240	A	2	12	19
07	165.2	DM+2 665	K4	8	-9	6
08	171.1a	Aldebaran A	K5	-1	-1	18
08a	171.1b	Aldebaran B	M2	-1	-1	18
09	173.1a	DM+9 621	K5	-9	-9	10
09a	173.1b	G 83-29	?	-9	-9	10

Frontier 10 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	—	Mira	M5	8	11	-5

Frontier 11 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	61	50 Upsilon Andromedae	F8	12	6	-19
02	**65.1**	**DM+45 404**	**G4**	**5**	**15**	**-18**
Homeworld*		**Nyrn**	**Tebble**			
Socially stagnant humanoid population. Restricted						
03	90	DM+67 191	K2	9	12	6
04	91.3	G 134-22	?	-2	11	-20
05	92.2	L 1592-1	M4	-5	14	-19
06	97.2	DM+55 486	K0	10	6	-1
07	101	Ross 21	M5	11	2	-2
08	107a	Theta Persei A	F7	14	-5	-7
08a	107b	Theta Persei B	M2	14	-5	-7
09	116	DM+33 529	M0	7	-8	-19
10	119a	AC+55 19224	M1	6	3	-3
10a	119b	AC+55 19225	M3	6	3	-3
11	122	AC+75 1146	M0	6	16	17
12	124	Iota Persei	G4	15	-9	-5
13	125	AC+45 133-65	M2	10	-8	-8
14	130.1a	AC+57 22428	M2	-8	13	-1
14a	130.1b	AC+57 22429	M2	-8	13	-1
15	134	DM+37 748	M1	8	-11	-12
16	150.2	DM+45 805	K0	-12	0	-8
17	153a	DM+68 278	K5	0	10	12
18	156.1a	AC+53 2250-45 A	M1	-11	4	0
18a	156.1b	AC+53 2250-45 B	M1	-11	4	0
19	156.2	DM+75 154	K4	3	14	20
20	158	DM+34 796	K1	-12	-11	-14
21	161	DM+69 238	K2	1	9	14
22	164	Ross 28	M5	3	-7	1
23	165a	Ross 29 A	M5	0	-7	0
23a	165b	Ross 29 B	M5	0	-7	0
24	165.1	DM+58 724	K0	-7	4	6
25	172.1	DM+45 969	G8	-11	-8	-1
26	181	DM+49 1280	M2	6	-15	3
27	184	DM+52 911	M0	2	-15	12
28	187.2a	DM+51 1024	F0	-15	-5	8
29	215	DM+62 780	M0	11	-11	12
30	247	DM+60 1003	M0	5	-12	19

Frontier 11 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	196	DM+79 169	F6	7	10	-17
02	226.2	AC+67 1894	K8	-13	8	-14
03	240.1	DM+79 212	F8	2	13	-10
04	258	AC+68 2911	M5	3	-3	-16
05	275.1	AC+68 3124	M0	-2	0	-10
06	277.1	DM+63 14097	M0	-7	-5	-8
07	285.1	DM+70 474	G5	-6	5	-5
08	296.2	DM+70 497	F8	-4	3	-3
09	308.1	AC+62 18836	M0	-6	-6	0
10	311	Pi(1) Ursae Majoris	G0	10	-11	-11
11	322	DM+66 582	M0	11	-10	-11
12	334.1	DM+73 447	K5	5	4	-2
13	35a	Sigma(2) Ursae Majoris A	F7	5	-4	-2
13a	35b	Sigma(2) Ursae Majoris B	F7	5	-4	-2
14	337.1	DM+62 1058	F9	-2	-7	5
15	338.1a	DM+77 361 A	K5	-1	15	4
15a	338.1b	DM+77 361 B	K5	-1	15	4

16	341.1	DM+81 297	K5	11	8	-7
17	342	DM+76 351	K5	9	4	-5
18	355.1	DM+70 565	G4	2	3	4
19	379a	DM+75 403 A	K6	10	5	-2
19a	379b	DM+75 403 B	K6	10	5	-2
20	383.1	DM+53 1395	M0	1	-16	18
21	397.1	DM+57 1274	M0	6	-10	15
22	406.1	DM+70 639	M0	14	-1	15
24	431.1a	DM+61 1246 A	F6	13	-2	19
24a	431.1b	DM+61 1246 B	F6	13	-2	19

Frontier 11 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	421.1a	DM+53 1480 A	F2	7	-10	-9
01a	421.1b	DM+53 1480 B	F2	7	-10	-9
02	—	Merak	A0	8	-9	-20
03	—	Phecda	A0	13	-4	-4

Frontier 11 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	55.2	AC+25 4674	K5	10	12	-2
02	58.2	DM+20 226	K2	12	4	0
03	72	DM+198 282	G4	15	-5	-6
04	74	DM+11 231	K8	4	0	-17
05	78.1	Rasalmoyhallah	F6	4	6	7
06	80	Sheratan	A5	15	-7	9
07	82.1	DM+32 360	G7	1	9	10
08	84.3	Hamal	K2	5	-2	4
09	85.1	Ross 17	M3	-4	10	11
10	94	Ross 19	M4	4	1	17
11	99a	DM+31 434 A	M0	-14	10	5
11a	99b	DM+31 434 B	M0	-14	10	5
12	99.1	DM+29 423	G0	-3	1	9
13	100.1	AC+5 19-98	A	1	-17	-14
14	104	AC+19 1154-111	M2	7	-12	9
15	105.6	DM+39 610	F9	-7	6	20
16	106	DM+18 339 K4	4	-12	7	
17	112	DM+25 449	K2	-2	-6	9
18	112.1	DM+11 383	K8	-4	-15	-7
19	113	DM+26 465	K1	1	-8	13
20	113.1	DM+30 448	G9	-9	0	11
21	114	DM+15 395	K6	4	-16	6
22	118.2a	DM+26 484 A	K2	-8	-5	9
22a	118.2b	DM+26 484 B	M0	-8	-5	9
23	118.2c	L 1378-26	M	-9	2	18
24	120.2	DM+26 503	G6	-2	-10	13
25	129	Wolf 134	K3	-2	-17	13
26	140a	AC+23 368-59a	M0	-3	-16	15
26a	140b	AC+23 368-59b	M0	-3	-16	15
26	140c	L 1307-14	M	-3	-16	15
27	141.1	DM+28 532	G5	-10	-10	16

Frontier 11 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
1	91.1a	DM+5 307 A	K8	-9	-8	10
1a	91.1b	DM+5 307 B	K8	-9	-8	10

Frontier 12 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	4.1a	DM+57 2865 A	G4	-1	-2	-5
01a	4.1b	DM+57 2865 B	G8	-1	-2	-5
02	11a	LTT 10070 A	M6	3	-14	6
02a	11b	LTT 10070 B	M6	3	-14	6
03	21	AC+69 173	M0	2	-16	7
04	38	AC+57 5559	M2	2	-18	-4
05	50.1	DM+58 155	K2	-5	-10	-4
06	56.5	DM+75 58	K0	-5	-11	15
07	58.1	Ruchbah	A5	-9	-10	-3
08	59.1	DM+68 113	G6	-11	-7	8
09	828.5	AC+73 8031	A	7	4	20
10	842.2	AC+75 8347	M0	6	-4	18
11	851.4	DM+24 4357	G5	15	4	1
12	854	DM+67 1424	K6	9	-1	11
13	871.2	DM+49 3937	K0	14	5	-9
14	891.1	DM+48 3964	F0	10	5	-13
15	894.1	DM+45 4188	M1	11	1	-16
16	894.4	DM+43 4445	K1	13	-4	-17
17	895.4	DM+58 2605	K0	6	-4	-2

Frontier 12 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	56.4	DM+79 38	K8	-9	-5	-19
02	392.1	DM+83 297	F2	-12	-8	4
03	479.1	DM+80 389	G2	-6	-8	9
04	534.2	AC+79 4347	M0	1	-11	-4
05	611.2	DM+81 541	K0	5	-8	-2
06	632	DM+80 519	G3	3	1	3
07	635.1	DM+79 511	G9	8	-7	-3
08	654.4	DM+88105	K0	-2	-11	-9
09	748.1	DM+76 71	F2	8	6	-7
10	765.2	DM+76 750	K0	9	2	-11
11	836.2	AC+82 3818	A	1	-5	-14

Frontier 12 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	6	DM+35 8	F5	1	6	6
02	22.1	AC+41 19-173	M0	-11	12	9
03	29.1	DM+34 106	M0	-5	-3	5
04	30	DM+33 99	K5	3	-17	12
05	42.1	DM+23 125	G5	1	-19	-1
06	52.2	Ross 322	M4	-4	-16	10
07	53.3	Mirach	M0	-15	-3	3
08	53.4	DM+41 219	F8	-6	-13	18
09	906	AC+36 64438	M0	12	-8	15
10	908.1	DM+29 5007	K8	13	-7	7
11	—	Alpheratz	B9	1	8	-8

Frontier 12 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	53.2	DM+16 120	K6	-11	-11	16

Frontier 13 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	762.1	DM+58 1929	K1	-1	-10	17
02	765a	Theta Cygni A	F4	6	-6	14
02a	765b	Theta Cygni B	F4	6	-6	14
03	765.1a	DM+50 2847	G2	7	5	16
03a	765.1b	DM+50 2848	G5	7	5	16
04	765.2	DM+57 2057	F8	-1	8	20
05	781	AC+55 50103	M3	0	-8	11
06	786.1	AC+42 849-367	M0	12	8	5
07	792	Ross 188	M6	9	-14	0
08	793.1	DM+41 3799	G9	9	1	1
09	802	Wolf 1084	M5	-3	-18	6
10	816.1a	DM+45 3371 A	K2	2	1	-1
10a	816.1b	DM+45 3371 B	K2	2	1	-1
11	822.1a	Tau Cygni A	F0	7	2	-8
11a	822.1b	Tau Cygni B	F0	7	2	-8
11b	822.1c	L 1577-19	M3	7	2	-8
12	822.2	DM+24 4357	G5	15	-7	-16
13	826	Alderamin	A7	-11	-13	8
14	828.3	Ross 198	A	-7	-6	3

15	836.8	DM+40 4631	K6	0	2	-10
16	838.3a	DM+41 4291 A	G5	-2	8	-11
16a	838.3b	DM+41 4291 B	G5	-2	8	-11
17	839	AC+41 915-440	M2	-2	9	-12
18	850	DM+35 4725	K0	-1	1	-18
19	886.1a	DM+41 4665 A	A0	-14	-3	-17
19a	886.1b	DM+41 4665 B	A0	-14	-3	-17

Frontier 13 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	605	AC+59 43819	M0	-2	-16	5
02	608	DM+62 1446	M0	-5	-4	14
03	609.1	Theta Draconis	F8	-1	-11	9
04	618.2	AC+52 2523-133	M0	8	-12	8
05	624.1a	Aldibain A	G8	-3	-8	5
05a	624.1b	Aldibane B	K2	-3	-8	5
06	637.1	DM+68 883	K1	-11	-6	2
07	652.1	DM+64 1170	G5	-5	-14	-6
08	659a	DM+54 1861	K8	6	-9	-2
08a	659b	DM+54 1862	K8	6	-9	-2
09	689	DM+71 850	K8	-13	-8	-7
10	690a	DM+71 851 A	M0	-12	-9	-8
10a	690b	DM+71 851 B	M0	-12	-9	-8
11	694.1a	Psi Draconis	F5	-14	-4	-5
11a	694.1b	DM+72 805	F8	-14	-4	-5
12	705.2	Wolf 1409	K5	-5	-1	-8
13	708.1	DM+64 1252	F5	-5	-1	-8

Frontier 13 — Layer +2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	569.1	DM+54 1716	K1	-12	-19	-20

Frontier 13 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	836.6a	Mu(1) Cygni	F6	10	4	19
01a	836.6b	Mu(2) Cygni	F3	10	4	19
02	840	DM+31 4574	K0	5	5	20
03	651.1	DM+30 4633	M0	2	3	17
04	851.5	AC+27 66379	M0	4	2	13
05	852.1	MWC 412-76	?	11	-12	7
06	856a	AC+31 68884 A	M0	-1	2	17
06a	856b	AC+31 68884 B	M0	-1	2	17
07	857.1a	DM+21 4747 A	K7	5	-8	11
07a	857.1b	DM+21 4747 B	K7	5	-8	11
08	872a	Xi Pegasi A	F6	7	-11	-3
08a	872b	Xi Pegasi B	M1	7	-11	-3
09	875.1	AC+31 70565	M3	-6	-10	17
10	893.4	AC+19 1079-115	M0	-5	-9	-1
11	904.1a	DM+19 5135 A	K2	-12	-7	-5
11a	904.1b	DM+ 19 5135 B	K2	-12	-7	-5

Frontier 13 — Layer -2

NUM	GLIE	NAME	SP	LX	LY	LZ
01	901	Wold 1040	M5	1	-9	2
02	—	Markab	A0	1	14	17

UNEXPLORED SPACE

The final stars listed in this section are the few known examples of the farthest catalogued stars. From this point the GM of FTL must create his or her own star maps.

Unexplored 19 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	769	L 349-68	M4	-13	-12	-6

Unexplored 20 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	700.1a	Tau Ophiuchi A	F3	-10	-6	9
01a	700.1b	Tau Ophiuchi B	F3	-10	-6	9
01b	700.1c	Tau Ophiuchi C	F3	-10	-6	9
02	702.2	DM+4 3589	G2	-13	-7	-2
03	717	DM-11 4672	M0	-13	-7	-2
04	764.1a	DM-10 5130 A	K2	-14	4	-19
04a	764.1b	DM-10 5130 B	K5	-14	4	-19

Unexplored 20 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	634.1	DM-2 4230	G2	-4	-13	-2

Unexplored 20 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	749	DM-24 15161	F8	-2	-13	19
02	764.2	DM-14 5479	F6	-15	-2	20
03	781.2	DM-14 5652	K8	-7	7	6
04	791.1a	Rho Capricorni A	F2	-13	2	0
04a	791.1b	Rho Capricorni B	F2	-13	2	0

Unexplored 21 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	**761a**	**DM+12 3917 A**	**K8**	**-14**	**-7**	**-3**
Homeworld		**Sandrol**	**Baarad IV**			
01a	761b	DM+12 3917 B	K8	-14	-7	-3
02	**—**	**EGC 21 9214**	**F7**	**10**	**-9**	**2**
Colony		**Sandrol**	**Stottz**			
03	—	EGC 21 9490	M0	-10	14	-2
04	**—**	**EGC 21 9495**	**K3**	**2**	**12**	**13**
Homeworld		**Ezergee**	**Ezer VI**			
05	—	EGC 21 9493	G2	15	-12	3

Unexplored 21 — Layer +1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	358	DM+24 3137	K0	-8	-5	-9
02	**—**	**IGC 21 3210**	**M2**	**3**	**-9**	**-14**
Colony		**Zm**	**Gnorbfakk**			
03	—	IGC 21 3214	F8	-2	-9	-0
04	**—**	**IGC 21 3217**	**G2**	**-4**	**6**	**1**
Colony		**Ezergee**	**Bringlefim**			
05	—	Loraine 44	F3	-8	-6	-9
06	—	EGC 21 3220	M3	-12	-14	-14
07	**—**	**EGC 21 3225**	**F1**	**-12**	**4**	**-15**
Colony		**Ezergee**	**Zermnem**			
08	—	EGC 21 3227	M0	-7	-11	-14
09	—	EGC 21 3228	K9	3	8	-12
10	**—**	**EGC 21 3230**	**F7**	**-10**	**-9**	**-16**
Colony		**Markantse**	**Schieeb**			

Unexplored 21 — Layer -1

NUM	GLIE	NAME	SP	LX	LY	LZ
01	—	EGC 21 3389	K1	-7	-4	-8
02	**—**	**EGC 21 3390**	**F9**	**-4**	**-4**	**9**
Colony		**Markantse**	**Cibar**			
03	—	EGC 21 3894	M0	-11	-17	-10
04	**—**	**EGC 21 3896**	**M4**	**-4**	**11**	**14**
Colony		**Markantse**	**Rephnivar**			
05	—	EGC 21 2898	G3	-1	-17	-8
06	**—**	**EGC 21 2900**	**F7**	**-6**	**-8**	**0**
Homeworld		**Markantse**	**Debuwlf III**			

Unexplored 23 — Layer +0

NUM	GLIE	NAME	SP	LX	LY	LZ
01	794.3	DM+38 4172	G2	-2	-19	-2

Unexplored 24

NUM	GLIE	NAME
01	863.1a	DM+53 2911 A
01a	863.1b	DM+53 2911 B
01b	863.1c	DM+53 2911 C
02	—	Delta Bimanae

Layer +0

SP	LX	LY	LZ
M0	-5	-12	-5
M0	-5	-12	-5
M0	-5	-12	-5
K7	4	5	11

Unexplored 24

NUM	GLIE	NAME
01	870	DM+42 4471
02	888a	AC+42 968-215 A
02a	888b	AC+42 968-215 B

Layer -1

SP	LX	LY	LZ
K8	-2	8	16
M0	-3	-17	18
M0	-3	-17	18

Unexplored 26

NUM	GLIE	NAME
01	92.1	DM+55 570
02	155.2	DM+60 762

Layer +0

SP	LX	LY	LZ
K0	8	-8	-6
K0	2	-18	7

Unexplored 26

NUM	GLIE	NAME
01	84.2	AC+44 B7-262

Layer -1

SP	LX	LY	LZ
M0	4	-8	19

Unexplored 27

NUM	GLIE	NAME
01	160.1a	DM+37 878 A
01a	160.1b	DM+37 878 B
01b	161.1	DM+37 882
02	168	DM+47 977
03	171	DM+55 900
04	—	Menkalinan

Layer +0

SP	LX	LY	LZ
K2	10	-7	-13
K2	10	-7	-13
F7	10	-7	-13
K8	7	2	-1
K2	9	6	7
A0	-6	-13	16

Unexplored 27

NUM	GLIE	NAME
01	235a	DM+52 1088 A
01a	235ba	DM+52 1088 B

Layer +1

SP	LX	LY	LZ
M0	-7	-5	-12
M0	-7	-5	-12

Unexplored 28

NUM	GLIE	NAME
01	170.1	DM+15 637

Layer -1

SP	LX	LY	LZ
A6	9	-1	8

Unexplored 28

NUM	GLIE	NAME
01	138.1a	DM+8 496
01a	138.1b	G 79-30

Layer -2

SP	LX	LY	LZ
G2	0	11	6
?	0	11	6

Unexplored 31

NUM	GLIE	NAME
01	306.1	DM-29 6145

Layer +0

SP	LX	LY	LZ
G4	14	0	8

Unexplored 31

NUM	GLIE	NAME
01	313	DM-12 2618

Layer +1

SP	LX	LY	LZ
K8	-2	13	-13

Unexplored 32

NUM	GLIE	NAME
01	298	L 242-66

Layer +0

SP	LX	LY	LZ
M	14	11	-15

Unexplored 32

NUM	GLIE	NAME
01	388.2	DM-14 3092

Layer +2

SP	LX	LY	LZ
F8	-3	3	-19

Unexplored 32

NUM	GLIE	NAME
01	—	Canopus

Layer -1

SP	LX	LY	LZ
F0	4	5	-1

Unexplored 33

NUM	GLIE	NAME
01	384a	DM-46 5923 A
01a	384b	DM-46 5923 B

Layer +0

SP	LX	LY	LZ
G8	-4	13	10
G8	-4	13	10

Unexplored 33

NUM	GLIE	NAME
01	379.2	DM-36 6180

Layer +1

SP	LX	LY	LZ
G3	-14	10	18

Unexplored 33

NUM	GLIE	NAME
01	—	Miaplacidus

Layer -1

SP	LX	LY	LZ
A1	9	13	20

Unexplored 35

NUM	GLIE	NAME
01	550	DM-51 8206
02	558.1	DM-67 1618
03	574	DM-45 9610
04	580.1	Beta Circini

Layer +0

SP	LX	LY	LZ
G5	11	-4	14
F8	-10	7	-9
K5	2	19	14
A3	1	12	-2

Unexplored 35

NUM	GLIE	NAME
01	511	DM-23

Layer +1

SP	LX	LY	LZ
K0	-8	5	20

Unexplored 35

NUM	GLIE	NAME
01	665a	DM-69 1635 A
01a	665b	DM-69 1635 B
02	667.1	DM-75 967
03	—	Atria

Layer -1

SP	LX	LY	LZ
G2	12	5	10
G2	12	5	10
G2	-2	8	10
K2	1	13	19

Unexplored 36

NUM	GLIE	NAME
01	582.1a	DM-47 9926 A
01a	582.1b	DM-47 9926 B
02	587	DM-49 9653
03	662a	DM-38 11686 A
03a	662b	DM-38 11686 B
04	683	Pi Arae
05	683.1	DM-42 12320
06	686.2	Lambda Arae
07	698.1	DM-51 11279

Layer +0

SP	LX	LY	LZ
G5	-1	-17	12
G5	-1	-17	12
G5	-9	-13	8
G3	-3	16	0
G3	-3	16	0
A7	3	-2	-18
G5	-7	15	-7
F4	-11	-9	-12
K0	-13	-12	-16

Unexplored 36

NUM	GLIE	NAME
01	561.1a	DM-24 11661 A
01a	561.1b	DM-24 11661 B

Layer +1

SP	LX	LY	LZ
F1	-1	-7	9
F9	-1	-7	9

Unexplored 39

NUM	GLIE	NAME
01	740.1	DM-0 3631
02	—	**IGC 39 2212**
Homeworld		**Zm**

Layer +0

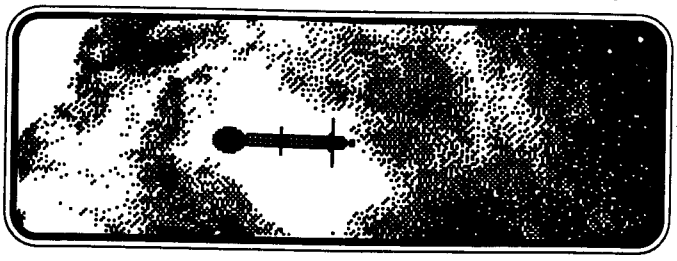
SP	LX	LY	LZ
G5	-12	-7	-5
K7	**-10**	**-10**	**3**
Zoopl			

Unexplored 47

NUM	GLIE	NAME
01	—	Agol

Layer -1

SP	LX	LY	LZ
B8	9	-12	15



QUICK NAVIGATION

This table is a 'quick' navigation helper for travel. This will only work if travel is within the same hex and layer.

RESULTS

Use of this table will yield **approximate** Whole Number distance between the stars. This system is not perfectly accurate, but the results are generally acceptable for FTL game use and fuel-use computations.

EASY USE

To use this system, count the number of hexes that separate your current location and your destination, then index that number against the difference in their "Z" coordinates.

REMEMBER

01 Start at your starship's present location and count the number of hexes to your destination.

02 Find that number on the top row of the chart under **MAP DISTANCE**.

03 Count the "Z" difference between the star that is your current location and the star that is your destination.

04 Find the **Z DIFFERENCE** column on the chart (left side). Index down to your "Z" difference.

05 Index across the chart (to the right) to stop under the column of your **MAP DISTANCE** number.

06 The two columns meet at the number that is your travel distance in light years.

07 Make the GM do the calculation next time.

MAP DISTANCE

Z Difference	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
01	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
02	02	03	04	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
03	03	04	04	05	06	07	08	09	09	10	11	12	13	14	15	16	17	18	19	20
04	04	04	05	06	06	07	08	09	10	11	12	13	14	15	16	16	17	18	19	20
05	05	05	06	06	07	08	09	09	10	11	12	13	14	15	16	17	18	19	20	21
06	06	06	07	07	08	08	09	10	11	12	13	13	14	15	16	17	18	19	20	21
07	07	07	08	08	09	09	10	11	11	12	13	14	15	16	17	17	18	19	20	21
08	08	08	09	09	09	10	11	11	12	13	14	14	15	16	17	18	19	20	21	22
09	09	09	09	10	10	11	11	12	13	13	14	15	16	17	17	18	19	20	21	22
10	10	10	10	11	11	12	12	13	13	14	15	16	16	17	18	19	20	21	21	22
11	11	11	11	12	12	13	13	14	14	15	16	16	17	18	19	19	20	21	22	23
12	12	12	12	13	13	13	14	14	15	16	16	17	18	18	19	20	21	22	22	23
13	13	13	13	14	14	14	15	15	16	16	17	18	18	19	20	21	21	22	23	24
14	14	14	14	15	15	15	16	16	17	17	18	18	19	20	21	21	22	23	24	24
15	15	15	15	16	16	16	17	17	17	18	19	19	20	21	21	22	23	23	24	25
16	16	16	16	16	17	17	17	18	18	19	19	20	21	21	22	23	23	24	25	26
17	17	17	17	17	18	18	18	19	19	20	20	21	21	22	23	23	24	25	25	26
18	18	18	18	18	19	19	19	20	20	21	21	22	22	23	23	24	25	25	26	27
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20	20	20	20	20	21	21	21	22	22	22	23	23	24	24	25	26	26	27	28	28
21	21	21	21	21	22	22	22	23	23	23	24	24	24	25	26	26	27	28	28	29
22	22	22	22	22	23	23	23	24	24	24	25	25	25	26	26	27	28	28	29	30
23	23	23	23	23	24	24	24	25	25	25	26	26	26	27	27	28	28	29	30	30
24	24	24	24	24	25	25	25	26	26	26	27	27	27	28	28	29	29	30	30	31
25	25	25	25	25	25	26	26	26	27	27	27	28	28	29	29	30	30	31	31	32
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30	30	30	30	30	30	31	31	31	32	32	32	33	33	34	34	35	35	36	36	37
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32	32	32	32	32	32	33	33	33	33	34	34	34	35	35	35	36	36	37	37	38
33	33	33	33	33	33	34	34	34	34	35	35	35	36	36	36	37	37	38	38	39
34	34	34	34	34	34	35	35	35	35	36	36	36	37	37	37	38	38	39	39	40
35	35	35	35	35	35	35	36	36	36	36	37	37	37	38	38	38	39	39	40	40
36	36	36	36	36	36	36	37	37	37	37	38	38	38	39	39	39	40	40	41	41
37	37	37	37	37	37	37	38	38	38	38	39	39	39	40	40	40	41	41	42	42
38	38	38	38	38	38	38	39	39	39	39	40	40	40	41	41	41	42	42	43	43
39	39	39	39	39	39	39	39	40	40	40	40	41	41	41	42	42	42	43	43	44
40	40	40	40	40	40	40	40	41	41	41	41	41	42	42	42	43	43	44	44	45
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20

EXAMPLE

On your first 'easy' trip out, you decide to travel from the Fomalhaut Shipyards to Earth. You look on the Core Map of FTL:2448 (FTL 2448 Book 2 Utility Section) and count the hexes between Earth and Fomalhaut.

Since Earth is 10 hexes from Fomalhaut, your MAP DISTANCE, therefore, is 10. Fomalhaut is also 20 light years lower than Earth in the hex, so the Z DIFFERENCE is 20.

Indexing the 10 from the MAP DISTANCE and the 20 from Z DIFFERENCE, you end up finding that the easy chart shows that Fomalhaut is 22 light years from Earth.

The actual distance is 22.1 light years, so you can see how this chart is useful for quick distance computations.

While not absolutely accurate, its close and works within the framework of the game.

MAP DISTANCE

Z Difference	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
01	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
02	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
03	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
04	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
05	22	23	24	25	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
06	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
07	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	39	40
08	23	24	25	26	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
09	23	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38	39	40	41
10	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40	41
11	24	25	26	27	27	28	29	30	31	32	33	34	35	36	37	38	39	40	40	41
12	24	25	26	27	28	29	30	31	32	33	34	35	36	37	37	38	39	40	41	41
13	24	25	26	27	28	29	30	31	32	33	34	35	36	37	37	38	39	40	41	42
14	25	26	27	28	29	30	31	32	33	34	34	35	36	37	38	39	40	41	41	42
15	26	26	27	28	29	30	31	32	33	34	35	35	36	37	38	39	40	41	42	43
16	26	27	28	29	30	31	32	33	34	35	35	36	37	38	38	39	40	41	42	43
17	27	28	28	29	30	31	32	33	34	35	36	36	37	38	39	40	41	42	42	43
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20	29	30	30	31	32	33	34	35	36	37	37	38	39	40	40	41	42	43	44	45
21	30	30	31	32	33	33	34	35	36	37	37	38	39	40	41	42	43	43	44	45
22	30	31	32	33	33	34	35	36	36	37	38	39	40	40	41	42	43	44	45	46
23	31	32	33	33	34	35	35	36	37	38	39	39	40	41	42	43	44	44	45	46
24	32	33	33	34	35	35	36	37	38	38	39	40	41	42	42	43	44	45	46	47
25	33	33	34	35	35	36	37	38	38	39	40	41	41	42	43	44	45	45	46	47
26	33	34	35	35	36	37	37	38	39	40	40	41	42	43	44	44	45	46	47	48
27	34	35	35	36	37	37	38	39	40	40	41	42	43	43	44	45	46	47	47	48
28	35	36	36	37	38	38	39	40	40	41	42	43	43	44	45	46	46	47	48	49
29	36	36	37	38	38	39	40	40	41	42	42	43	44	45	45	46	47	48	49	49
30	37	37	38	38	39	40	40	41	42	42	43	44	45	45	46	47	48	48	49	50
31	37	38	39	39	40	40	41	42	42	43	44	45	45	46	47	48	48	49	50	51
32	38	39	39	40	41	41	42	43	43	44	45	45	46	47	47	48	49	50	50	51
33	39	40	40	41	41	42	43	43	44	45	45	46	47	47	48	49	50	50	51	52
34	40	40	41	42	42	43	43	44	45	45	46	47	47	48	49	50	50	51	52	52
35	41	41	42	42	43	44	44	45	45	46	47	47	48	49	49	50	51	52	52	53
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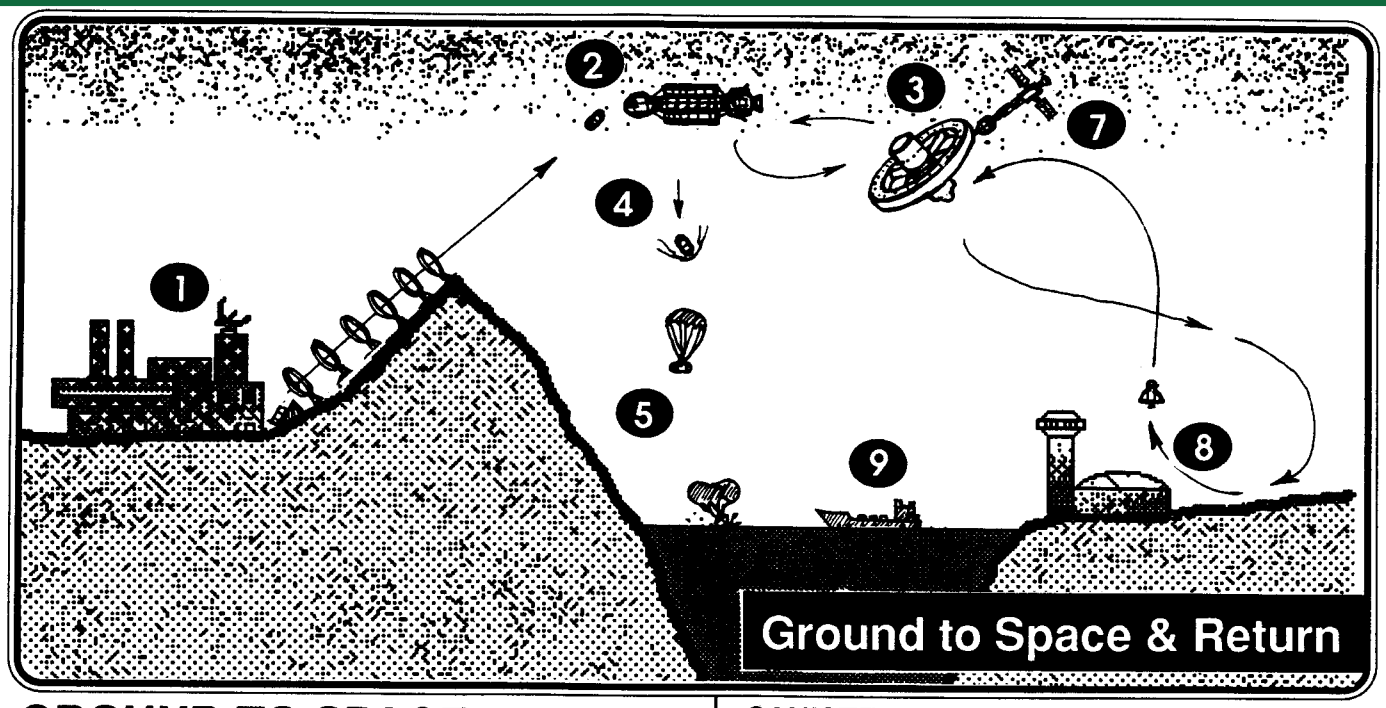
37	43	43	44	44	45	45	46	46	47	48	48	49	50	50	51	52	52	53	54	54
38	43	44	44	45	45	46	47	47	48	48	49	50	50	51	52	52	53	54	54	55
39	44	45	45	46	46	47	47	48	49	49	50	50	51	52	52	53	54	54	55	56
40	45	46	46	47	47	48	48	49	49	50	51	51	52	52	53	54	54	55	56	57
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40



GROUND TO SPACE

Cargo handling is a snap on the majority of developed worlds. Most cargo is loaded into 10x10x10 cans and shot into orbit iby Mass Driver built up the side of a mountain.

Canisters are caught in low orbit by specialized ships and transported to higher orbital staions for redistribution. Returning cargo canister is an even simpler process of dumping the canisters back in to the worlds gravity well where it reenters the atmosphere. Before landing, the re-entry capsule deploys a parachute or parasail for a smooth water or very rough land based landing.

Unfortunately this easy, high acceleration system is not usable for passengers or fragile equipoment, for this reason, shuttles are still a neccesitiy.

ORBITAL ACCESS KEY

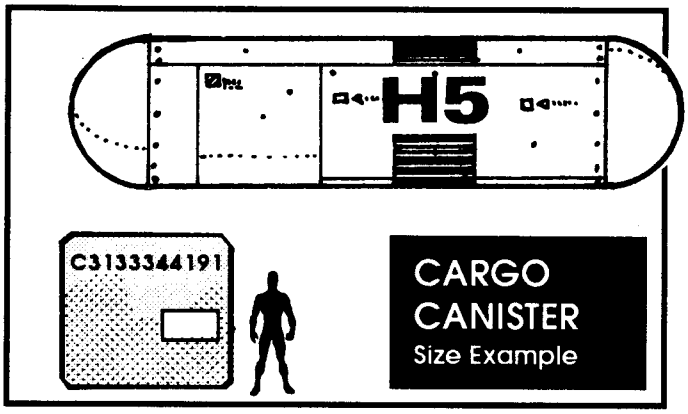
01 Factory/Accelerator
02 Canister Catch Ship
03 Orbital Port
04 Canister Return
05 Ocean Chute Recoverey
06 Return to Factory/ Dstribution Point
07 Starship or System Ship
08 Shuttle Traffic/Ground to Space

SHUTTLE DATA KEY

LFT = Lift Type
ENG= Engine Type
LAN = Landing Method
RET = Orbital Return
FUL = Fuel Units
CAR= Cargo Area
POW= Power Source
SPC = Special Equipment
PAS = Passengers
SIZ = Lenght x Width x Height

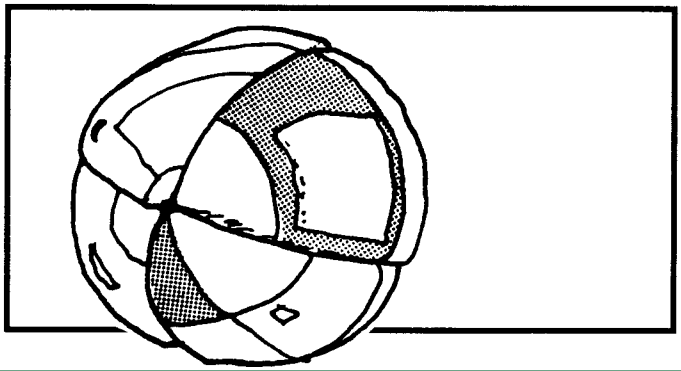
CANISTER

LFT:	By Accelerator	CAR:	3 10x10x10 Canister
ENG:	None	POW:	Battery
LAN:	Water/rough	SPC:	Retrieval Beacon
RET:	Vehicle/acl	PAS:	No
FUL:	None	SIZ:	L:40 W:12 H:12



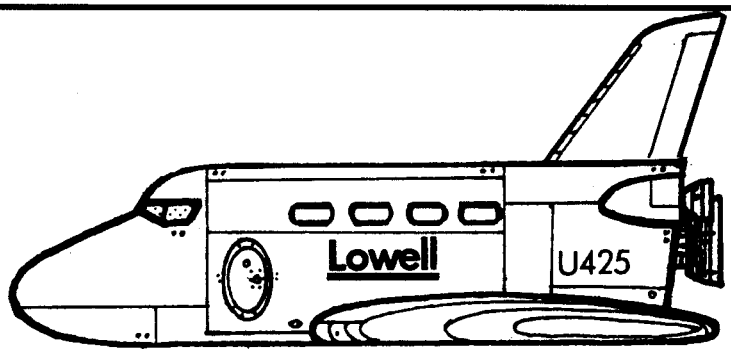
RESCUE BALL

LFT:	Parasail	CAR:	600 lbs
ENG:	No	POW:	Battery
LAN:	Any	SPC:	Survival Pack
RET:	Ship	PAS:	Variable
FUL:	None	SIZ:	L:4 W:4 H:4



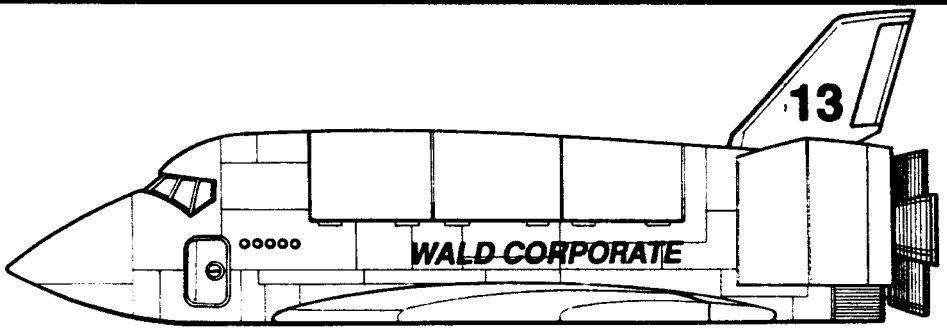
LIGHT SHUTTLE

LFT: Wings/VTOL
ENG: Fusion
LAN: Runway
RET: Internal
FUL: 500
CAR: 6 (10x10x10)
POW: Fusion/Electric
SPC: Fully equiped
PAS: 1-12
SIZ: L:67 W:15 H:14



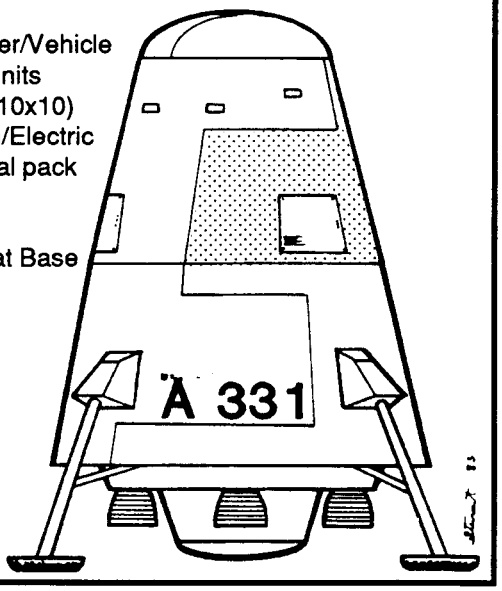
HEAVY SHUTTLE

LFT: Wings/VTOL
ENG: Fusion
LAN: Runway
RET: Internal
FUL: 900s units
CAR: 20 (10x10x10)
POW: Fusion
SPC: Fully equiped
PAS: 1-30
SIZ: L:95 W:19 H:20



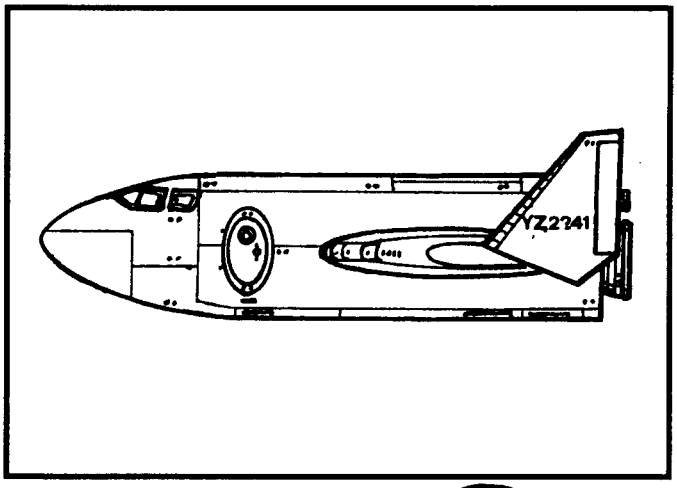
LANDER

LFT: Internal
ENG: Chemical
LAN: Clear
RET: Canister/Vehicle
FUL: 400s units
CAR: 4 (10x10x10)
POW: Fusion/Electric
SPC: Survival pack
PAS: 1-20
SIZ: L:46
W:35 at Base
H:40



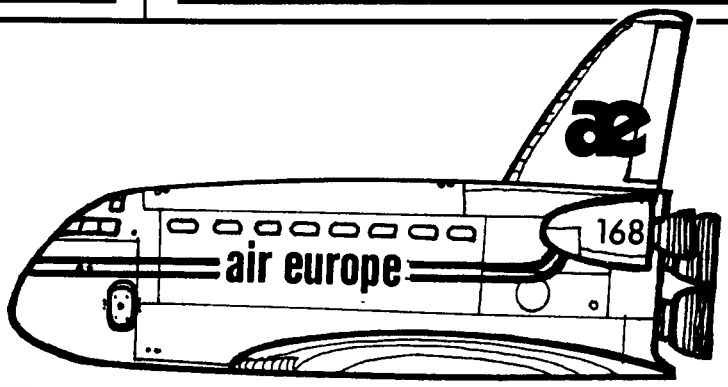
ULTRALIGHT SHUTTLE

LFT: Wings/VTOL
ENG: Fusion
LAN: Runway
RET: Internal
FUL: 500s units
SIZ: L:95 W:19 H:20
CAR: 10 Square feet
POW: Fusion
SPC: None
PAS: 1-2



CARGO SHUTTLE

LFT: VTOL/Jets & N'Grav
ENG: Fusion
LAN: Water
RET: Internal
FUL: 500s units
CAR: 40 (10x10x10)
POW: Fusion/Electric
SPC: Survival pack
PAS: 1-100
SIZ: L:75 W:50 H: 27



FUEL USE

In FTL fuel use is the simple point system of expenditure and cost by use and maneuver.

Before using the section see the star ship fuel use information.

USING VTOL

	GRAVITY					
LOAD	**0.50**	**0.75**	**1.00**	**1.25**	**1.75**	**2.00**
Empty	025	037	050	075	100	150
Light	050	075	100	150	200	300
Medium	075	100	150	200	300	400
Heavy	100	150	200	300	400	500
Overload	150	200	300	400	500	600

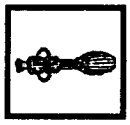
GLIDE DOWN

	GRAVITY					
LOAD	**0.50**	**0.75**	**1.00**	**1.25**	**1.75**	**2.00**
Empty	001	002	003	004	005	006
Light	002	003	004	005	006	008
Medium	003	004	005	006	008	010
Heavy	004	005	006	008	010	012
Overload	005	006	008	010	012	014

SUB-ORBITAL FLIGHTS

	GRAVITY					
LOAD	**0.50**	**0.75**	**1.00**	**1.25**	**1.75**	**2.00**
Empty	030	050	075	100	150	200
Light	050	075	100	150	200	250
Medium	075	100	150	200	250	300
Heavy	100	150	200	250	300	400
Overload	150	200	250	300	400	500

ORBITAL FLIGHTS



GRAVITY					
0.50	0.75	1.00	1.25	1.75	2.00
Per Orbital Level					
002	003	005	007	009	011

REMEMBER

The suborbital fuel use listed is the runway use only, this does not include the launch cost of VTOL (verticle takeoff and landing). The cost of any VTOL use is half the cost of the vtol launch to orbit cost.

Any runway use of shuttles cuts launch to orbit cost by twenty five percent. Simply multiply the fuel use by 0.75.

Most shuttle flights to planet take thirty minutes plus 6d6 minutes of travel time. Shuttles also enter space on the lowest edge of the decaying orbit tables.

SHUTTLE MISHAP

Unfortunately shuttles can crash. Addd the modifiers and roll a d100 for the result. On a crash situation roll a second d100 for the result and survival chances of the characters.

Ben Bells & Quag

Out of the Autodoc, Quagmire is healthy and bright, keen on continuing the exploration of his starship. In the shuttle access bay he finds the key to the shuttle, under a brandy bottle as Quagmire begins to bring the ships light shuttle to prelaunch status Ben turns off the main power from the starships bridge. Ben is learning.

SPEED MODIFIER

Very Slow	-10
Slow	+0
Medium	+10
Fast	+20
Very Fast	+40

ANGLE MODIFIER

15 degrees	-10
30 degrees	+10
45 degrees	+20
60 degress	+40
75 degrees	+60

TERRAIN MODIFIERS

Runway	-10	Water	+10
Flat Area	+0	Light Wooded	+10
Hills	+20	Dense Wooded	+30
Rocky	+40	Cratered	+20
Mountainous	+60	Buildings	+40
Swamp	+0	Local Traffic	+20

SHUTTLE/AIRCRAFT MISHAP

Reduce the final modifier two points for every level of shuttle piloting the character has. A co-pilot may add half of his skill modifier in the same fashion.

AIR MISHAP

01-05	Perfect Textbook Landing
06-50	Standard Landing
51-98	Rough Landing (See Crash #01)
99-00	Crash

RESULT OF CRASH

Add the same modifiers to the result of a d100 roll. Index the result.

01-10	Rough landing shakes everything loose with a 60% chnce of damaging fragile items. Maintenance is d100 hours to next flight.
11-20	Bellies in. Rips off wheels/landing gear, heat shielding, VTOL surfaces damaged. Mainteneance is 4xd100 hours.
21-40	Shuttle takes near maximum underside structural damage. Total loss of heat shielding, wing damage, and VTOL damage. Repair time d4+2 months if in a repair facility.
41-75	Partial breakup, hull splits, control bridge destroyed. Crew takes 75mph vehicle passenger impact damage. See Also FTL Page 119 Book 1.
76-85	Complete breakup crew takes a 100mph vehicle impact damage.
86-95	Breakup and scattering crew takes a 150mph Vehicle Impact Damage.
96-99	Complete breakup and scattering creww takes 200mph Vehicle Impact with a 40% being caught in a 6xd100 blast and 50% of being caught in a 10d10 fireball.
00	Splattered across the country side with the crew taking 300 mph impact with a 75% chance of taking 10xd100 blast and 85% chance 10d10 fireball.

REMEMBER

01	This crash table is designed only for critical landings.
02	Shuttles can also be rated much the way phase drives are rated. This allows players to improve shuttle operation conditions.
03	Rating failure is a GM assigned difficulty repair task.
04	Hide the keys next time.

TRAVELING FTL

After the 2100's, space travel became a way of life for massive populations that wanted to try to settle on a new world.

Starship cost and styling was kept to a minimum in favor of a light lattice design of construction that could not withstand the gravity of even light worlds. These early cargo frames and light freighters soon became the standard for space travel.

As the technology changed, closed shell designs of ultralight, ultrastrong materials came into general use.

REMEMBER

Before you read this section, get to know the System Generation and Space section of this book. Be familiar with the idea of planetary slots and general system size.

PHASE SPACE

Phase space is a point between our universe and another universe where the laws of time and distance are different. This discovery of 'distance-compressed space' led to the quick development of a simple drive system that could propel a starship into this area between universes. This cut travel time remarkably. From the first moderately successful application of this drive, the stars were opened to human exploration and colonization.

Phase space is a black void with blue stars to the front of the ship and red stars behind.

NOTES ON PHASE SPACE

01 Objects that leave the ship's generated phase field return to normal space as energy.

02 Phase fields, when collapsed, in most circumstances have the residual energy to drop a starship into normal space without damage.

03 Phase fields that cross other phase fields will quickly unbalance each other and cause the phase field with the lowest Operating or Phase Percentage to have a Phase Failure. The surviving drive will suffer 4d10 points of untuning.

04 Phase drives require tuning to improve the operating or 'Phase Percentage.' A ships drive will always untune with use.

05 Phase drives are mostly large, bulky cannister-shaped devices containing the equipment and masses of spun copper wire necessary to open holes in phase space.

06 Travel through phase space has no ill effects on crew, unless a phase failure occurs.

07 More efficient drives have a faster per-light-year travel time.

08 There have been no reported sightings of any other ships while a ship is in phase space. Each ship literally enters a universe to itself, guided by the ship's Phase Computer.

09 There is no combat or communication possible while in phase space. Communication between ISCO worlds is possible only via messages sent on a starship, or by use of an automated phase drone.

10 Engaging phase drives while in a planetary or stellar gravity well could result in massive damage not only to your ship, but to you as well. For each planetary slot remaining between your ship's current position and the last 'D' Zone, subtract 1 point from your phase drive's Operating Percentage, and roll a d100 on table DRIVE FAILURE RESULTS B (This dice roll is mandatory if you have engaged phase drive while in proximity to a gravity well).

PHASE FAILURE

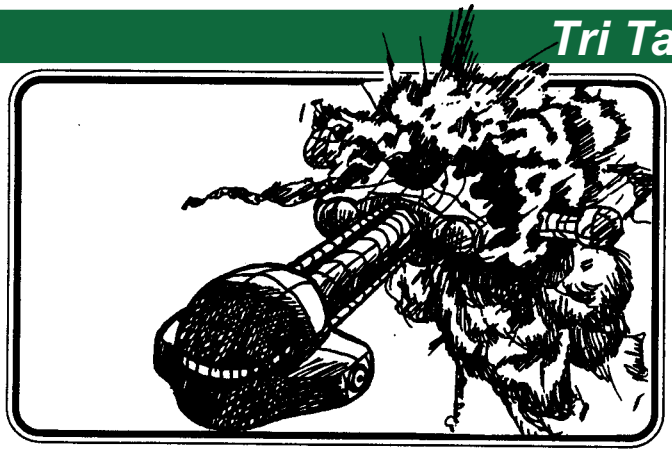
Every phase drive has an operating percentage for success. Each time the drive is used, the percentage (or under) must be rolled on a d100 for successful use of the drive. If the number rolled is greater than the Operating Percentage, a phase drive failure has occurred.

CLASS A *DRIVE FAILURE*

01-80	Computer shuts down.
81-90	Computer shuts down, and circuit breakers open which causes a d6 minute delay.
91-93	Computer shuts down, and circuit breakers are blown. Repairs will take d4 hours.
94-96	Phase Coils damaged or HB conduits damaged. Repairs will take d10 hours.
97-98	Phase Linkage damage, Computer needs repro gramming. Repairs will take 2d10 hours.
99-00	Serious Problem. Roll a d100 on table SERIOUS DRIVE FAILURE

CLASS B *SERIOUS DRIVE FAILURE*

01-30	Ship has tendency to become lost, heading to an incorrect star system. Crew will not know failure has occurred until they drop out of phase space, having traveled in a random direction.
31-59	Same as above, but crew suffers 5d10 WBD and a 2% chance of Death Shock upon exiting Phase Space. Phase drive untunes d100 points.
60-80	Linkage to phase drive fuses, Repairs will take 2d100 hours if parts and tools are available.
81-90	Primary and Secondary Linkages to the phase computer fuse. Repairs will take 2d100 hours.
91-93	Phase Coil suffers structural damage that will take 3d x100 hours to repair. Computer also requires systems check.
94-96	Phase Coils fused. Must be rebuilt with new components. Repairs will take 8d100 hours.
97-98	Phase Generator and computer destroyed. Must be rebuilt or replaced. Repairs will take 2d1000 hours.
99-00	Critical Problem. Roll a d100 on table CRITICAL DRIVE FAILURE



CLASS C *CRITICAL DRIVE FAILURE*

01-80 Same as B(97), with phase sickness (equivalency of a d100 point wound shock and stun)

81-90 Entire phase system totaled, ship jumps in a random direction to the nearest star, along with the effects of C(01).

91-98 Same as C(81), with automatic fusion engine failure.

99 Ship breaks up into large pieces as fusion engines detonate and unbalanced fields rip the ship apart.

00 As C(99), with the ship literally detonating into small pieces.

DRIVE DATA KEY

OUT ZONE

The phase point where the ship can phase with minimal 1 point untuning.

TRAVEL TIME

The time it takes the FTL drive to cross a light year.

DRIVE PROBLEMS AND EFFECTS

The problems with that drive type during use. Most happen during the process of a Class B phase failure.

A Untune rapidly, d10 per use.

B Crew suffers biological shock effects of the drive during phase failure. Crew takes an equivalency of a d100 point wound shock and stun if the critical effects reach the "B Table".

C Tendencey toward failure. Every 5th use adds a 20% chance to the phase failure percentage.

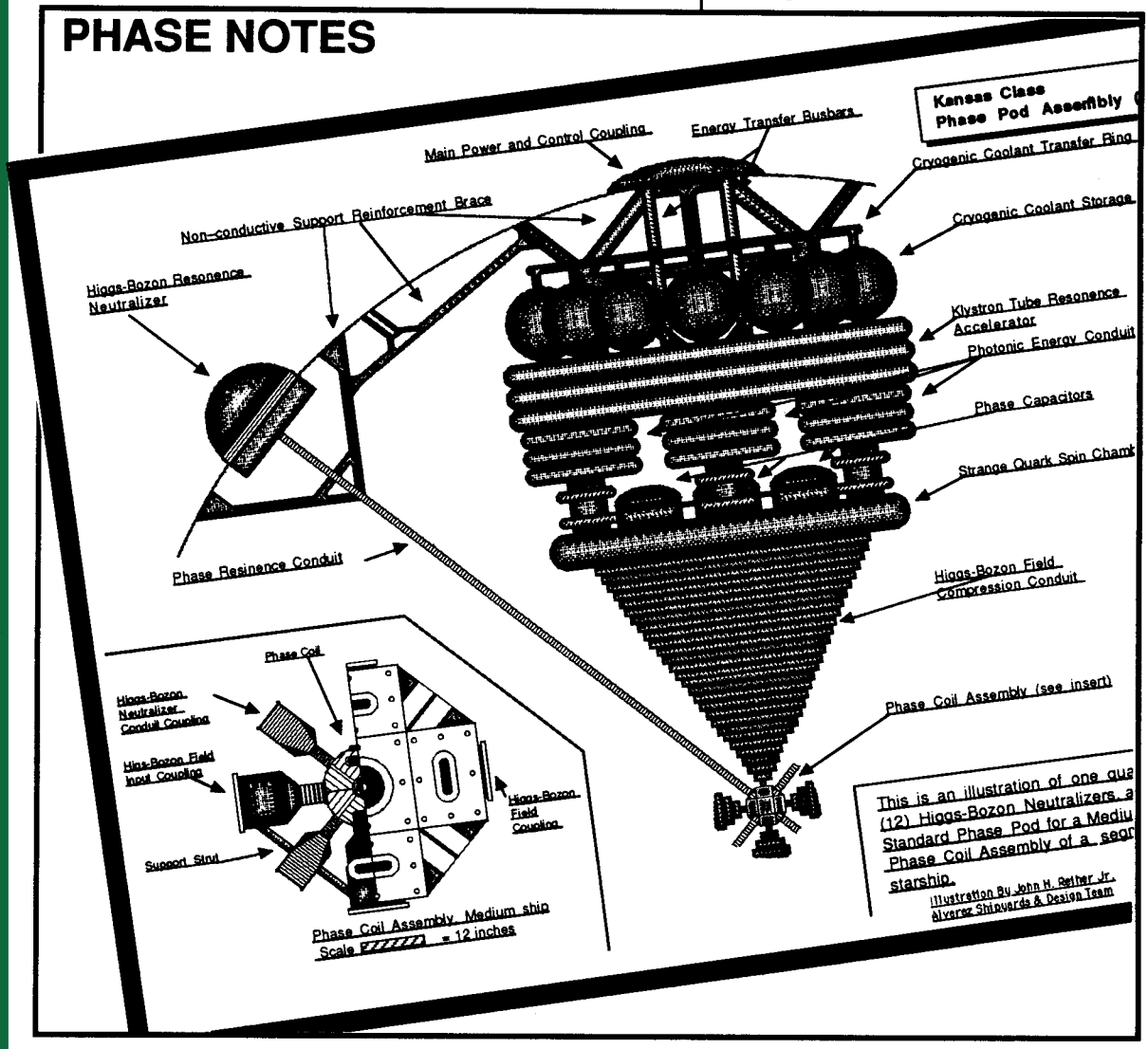
D General tendency (50%) toward bad star system entry navigation. Add d100 hours per system entry time.

E Tendency toward misdirected navigation. Crew does not know the failure has occured until they drop out of phase space, having traveled in a random direction. Use the "INDIRECT FIRE" table's information for their general direction. This has a 5% chance per use.

F Tendency to failure and dropping out of phase space with the effects of B, reduced to a (.50%) x d100 wound shock equivalency.

G Tendency to cause electronin hardware to malfunction during phase failure. Highly sensitive electronic hardware and software suffer a d100% chance of malfunction until repaired.

PHASE NOTES



H Tendency for ship to become lost with the effects of D, E and B, with a wound shock equivalency of 5d10 and its DS effects.

DRIVE TUNING

All drives start new with a running or tuned percentage of 99%. This number is the percentage of proper drive use, or phase, to travel FTL. Drives untune in gravity wells and close to stars when used. The average ship must travel to an outer zone, C or D, to avoid major untuning. Phase drive engineers can fine-tune a drive at a rate of d4 points per 24 hours work with a success roll under their skill level. Drives cannot be tuned while running.

FTL DRIVES

Most FTL drives are built on the same general designs with high variations in technological refinements. Old drives are often removed and rebuilt with more efficient or sophisticated parts. All drive units come in balanced pairs or multiples of two to ensure safety in the event of failure during FTL / PHASE travel.

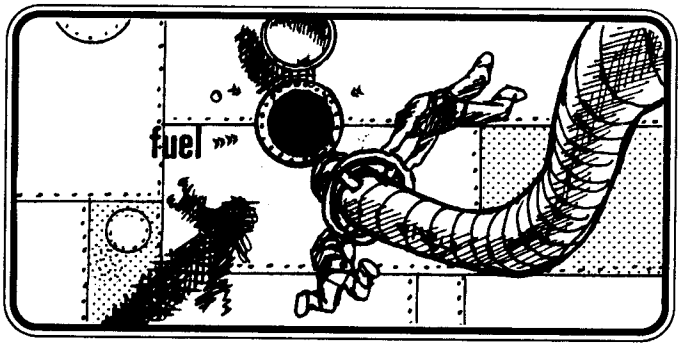
FTL DRIVES		OUT ZONE	TRAVEL TIME	DRIVE PROB
a	Brazilian HL Phase	D	BC	ABCD
HERBERT / LASHAW PHASE SERIES				
b	Phase 1	D	CD	BDE
c	Phase 2	D	E	BDEH
d	Phase 3	D	F	ABDF
e	Phase 4	D	F	BD-H
f	Standard a	D	G	G
g	Standard b	C/D	H	EFG
h	Standard c	D	I	--
hb	Niblock RPD	C	J*	--
i	Standard d	D	H	A
v	Standard e	D	I	--
yb	Standard f	CD	J	A
yc	ICL K Drive	D	K	A
j	Nordholm Quantum-Jump	ABCD	T*	AEGH
k	Kitch-Grice Quantum-Jump	AB	S*	AEGH
l	Bor'Cha K Drive	D	B-G	ACDEF
m	Kymnar GCTM Drive	D	B-E	EFG
n	Vesh Thermoflux	A	C*b	ABH
o	Fritzian Sunjammer	A	O*c	--
	Krelvin Sunsailer	B	N*c	--
p	Sandrol Drive	D	C	ABH
q	Whurr Blink Drive	ABCD	S*d	ABH
r	Hagu Jump Drive	D	H	CD
rb	Hagu Standard	CD	I	
s	Paebak Phase Drive	C	H	AD
t	Old Grexian Drive	D	F	AB
w	"Thump" Drive	A	T*c	A

* Banned from any use.
*b Uncommon in use, not generally found in human or alien vessels.
*c Technology beyond humanity and its allies.
*d Impossible to remove without killing the living ship.

Travel Time

The following chart is the index of travel time per light year.

A	85 days	L	06 hours
B	62 days	M	03 hours
C	31 days	N	01 hour
D	20 days	O	30 minutes
E	10 days	P	15 minutes
F	06 days	Q	07 minutes
G	04 days	R	03 minutes
H	02 days	S	02 minutes
I	24 hours	T	01 minute
j	18 hours	U	Instant Jump
K	12 hours		



Fuel

Fuel for ships, shuttles, and vehicles are simple units according to size of vehicle. This size determines price. Regardless of the type of ship used, fuel consumption, in units, remains the same. Fuel type may boost the efficiency of fuel use in the form of extra equivalency of fuel capacity. Unfortunately Deuterium and Tritium are classed as Dirty Fuels, Radiation Emitters. Generally they are used away from space stations or to power Fusion generators in eco-spheres.

FUEL TYPE	MULTIPLY FUEL EFF	MULTIPLY COST BY
Common Water	x1.00	x1.00
Deuterium	x1.25	x1.25
Tritium	x1.50	x1.50

FUEL EQUIVALENCIES

Gigantic Ship Unit (GS)	=	10.00	Medium Units
Large Ship Unit (LS)	=	04.00	Medium Units
Medium Ship Unit (MS)	=	01.00	Medium Unit
Small Ship Unit (SS)	=	00.50	Medium Unit
Shuttle Unit (s)	=	00.25	Medium Unit
Truck, Vehicle Unit (v)	=	00.25	Shuttle Unit

COSTS

Gigantic Unit	1280 d's
Large Unit	0320 d's
Medium Unit	0032 d's
Small Unit	0016 d's
Shuttle Unit	0008 d's

ENGINE FAILURE

Whenever you move your ship, keep track of any fuel use. Multiple engines do not use additional fuel, though the loss of a single engine, of a pair, increases the fuel use and engine wear by (x2). With normal fuel use and a damaged second engine, in-system travel time is doubled.

ENGINE NUMBER	FUEL MULTIPLIER	WEAR MULTIPLIER	TIME MULTIPLIER
1 of 2	x 2.00	x 2.00	x 2.00
2 of 3	x 1.50	x 1.50	x 1.50
1 of 3	x 3.00	x 3.00	x 3.00
3 of 4	x 1.25	x 1.25	x 1.25
2 of 4	x 2.00	x 2.00	x 2.00
1 of 4	x 4.00	x 4.00	x 4.00

NAVIGATION & FUEL

Use navigation and system map grids from the System Map to determine the random planet placement when entering a system.

01 Determine random ship entry point in the D Zone, and navigate from there.
02 Special and Bad Navigation may include an extra d100 hours to travel to the edge of the (in) zone, or your target at the exact far side of the sun.

TRAVEL

From a ship's fuel (TNK) capacity, deduct fuel units when a ship:

	FUEL COST
Travel Through Phase Space (per light year)	05
Travel Across Planetary Slot (1 hour per slot)	05
Engine Warming / Testing / Starting	02
Fuel Line Leak Reduces Reserves by	d20%
Fuel Tank Leak Reduces Reserves by	d100%

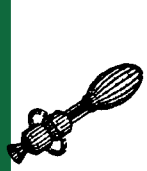
ORBITAL INSERTION/BREAK

General parking costs. See Also Orbitals on Pg.255

WORLD SIZE	INSERTION OR BREAK
Small	10 + d10 fuel units
Medium	20 + d10 fuel units
Large	30 + d10 fuel units
Small Gas Giant	40 + d10 fuel units
Medium Gas Giant	50 + d10 fuel units
Large Gas Giant	60 + d10 fuel units

TURNING STARSHIPS

A	Slow Turn	01 unit
B	Medium Turn	05 units
C	Fast, Panic Turn	10 units


TURN 45
1 Unit


TURN 90
2 Units


TURN 145
4 Units


TURN 180
8 Units

IN / OUT SYSTEM PROCEDURE

01 Ship systems return control as ship drops out of phase on the farthest slot of the D zone. Plot special fuel use if any.
02 Plot course to destination, determine fuel use, add special fuel use. At this point the ship automatically accelerates to the mid-course flip, where it turns and begins to decelerate towards target.
03 Determine world size and orbital costs for orbital insertion. Check Orbital Stability From Orbit table, and plot fuel to correct orbit. Drop cargo, dock,or whatever. The Shuttles operate on the same principle.
04 Change ship's orbital level and plot fuel use. Plot fuel use to an orbit. Go to other, in system, destinations repeating steps 1-3 or accelerate out of system at half the in-system cost.
05 At phase point the phase computer takes control of the ship and its engines. Roll a d100 under phase tuning for easy transition to phase space. Under computer control for days or months, the starship travels FTL using 5 fuel units per light year.

DOCKING	TIME	FUEL	MISHAP%
Station Docking	1.00 hour	05	01%
Standard Exit	0.75 hour	10	n/a
Hurried Exit	0.50 hour	07	03%
Illegal Exit	0.25 hour	04	10%

FUSION FAILURE

Like phase generators, the starship or shuttle's main fusion engines are operation rated. The failure to roll under this rating percentage gives the result of a fusion failure.

01-75 Fusion engine system shuts down, restart in d10 minutes.
76-90 Main engine bus bars open for reset, reset d6 + d10 minutes.
91-95 Engine bus bars slag, replace in 6d10 minutes.
96-98 Electronic controls damaged, repair in 2d10 hours.
99-00 Go to Critical Fusion Failure Table.

CRITICAL FUSION FAILURE

01-50 Fusion computer control destroyed, repair unit in d6 days.
51-75 Engines suffer minor structural damage, d6+4 days to repair.
76-90 Engines suffer partial meltdown, d6 months repair.
91-95 Engines slag. Core must be replaced. Engine area suffers radiation contamination of (d100 x 100) x.25 rads per hour until cleaned.
96-99 Same as 91 but with explosion of d100 x 50 points damage.
00 Same as 91 but with a d100 x 100 point detonation of engines.

ENGINE ABUSE

The time required to travel out of system can be cut by factors of 35% by increasing fuel use and engine wear. The average ship leaving a system in 39 hours can cut its exit time to 20 hours by tripling its fuel consumption. Unfortunately, this also lowers the next engine operation roll.

REMEMBER

01 Fusion engines can be rated together or separately, if in a cluster.

02 Like phase, Engine Operation can be improved by a character with skills and a little time. One engine or phase retuning attempt is allowed per one day's com pleted work.

FUEL ECONOMY

Use the following table for accelerated or slower travel.

FUEL ECONOMY

TIME REDUCTION		**UNTUNING**	**FUEL USE**
75%	Normal Time	d10 +6 pts.	x 4.0
50%	Normal Time	d10 +2 pts.	x 3.0
25%	Normal Time	d6 pts.	x 2.0
	Normal Time	1 point	x 1.0
2x	Normal Time	0.50 pt.	x .75
4x	Normal Time	0.25 pt.	x .50
10x	Normal Time	0.10 pt.	x .25

ENGINE DAMAGE

When a starship's engines take damage, use the following easy system for exact location and results of damage.

01-50 NO MAJOR DAMAGE
General leaks and hazards that take d10 hours to repair. Each additional hit adds 2d10 hours of repair.

51-75 CONTAINMENT DESTABILIZES
Engine shuts down due to computer safeguards and requires 4d10 hours repair time to restart. Engine also detunes 2d10 points.

76-77 CONTROL CIRCUITS DAMAGED
Operations must be shifted to alternate manual operations; Bridge, Engineering; Aft Steering; Secondary Bridge, etc...

78-79 CONTAINMENT PRESSURE LOST
Fusion failure due to pressure loss.

80-81 LUBRICANT LEAK
Pumps damaged and failure in coolant or fuel system. Engine shuts down.

82-84 INTERCOOLER LEAK
Cold coolant splashes across deck. See (#85) but without burn damage. Engine shuts down or slags in d10 minutes.

85-86 COOLANT LEAK
Engine begins to overheat and will slag in 15 minutes unless shut down. There is a 20% chance of control damage as (#76) above. Can burn exposed skin with 4d10 Whole Body Damage per action.

87-90 FUEL LEAK
Fuel leaks in Engineering must be vented to prevent explosive ignition and ancillary damage to control circuits.

91-92 CONTAINMENT FRACTURES
Magnetics fail to damp plasma, fusion core plasma splashes across Engineering to burn with d10 x1000 points of damage. Engine and related equipment slagged.

93-95 ENTRAPMENT FAILS
Radiation dampers fail. Engine releases d10 x 100 rads into the area each hour until it is cleaned.

96-98 ENGINE ARCS
Blast of electricity arcs from engine to strike equipment and personnel with 10,000 amps of charge. Arc has a 10% chance of striking an object per 10 actions.

99 FUEL IGNITES EXPLOSIVELY
Fuel lines pre-heater and pressurized containment explode. Fuel storage lines and tanks rupture and vent but do not detonate.

00 ENGINE DETONATES
Uncontrolled nuclear fusion causes the engine compartment to vaporize along with associated equipment, fuel, crew and superstructure. Heavily damages remaining portions of ship. Has a 50% chance of having a 7 minute build-up period before the final detonation.

ORBITS

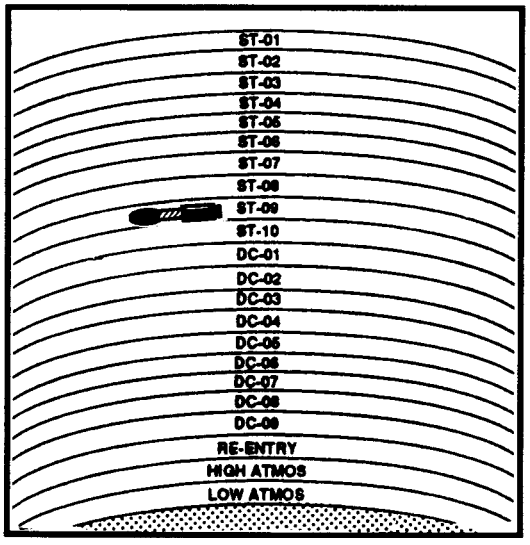
Starships park in a Stable or Unstable orbit. This is always found by rolling a d6 when not using a computer. On the result of a 1,2, or 3 the orbit is Decaying. On a 4,5, or 6 result, the orbit is considered Stable. Then roll a d10 for the level of orbit within the chart. Fuel costs for changing orbit is 5 pts of fuel.

STABLE ORBIT

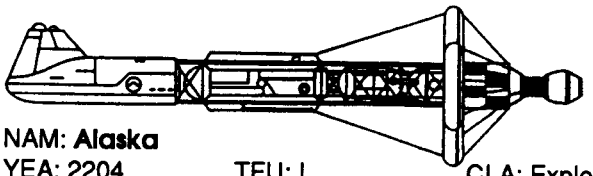
01 Stable, Decrease 1 level in 1000 years.
02 Stable, Decrease 1 level in 100 years.
03 Stable, Decrease 1 level in 50 years.
04 Stable, Decrease 1 level in 25 years.
05 Stable, Decrease 1 level in 05 years.
06 Stable, Decrease 1 level in 01 year.
07 Stable, Decrease 1 level in 06 months.
08 Stable, Decrease 1 level in 01 month.
09 Stable, Decrease 1 level in 13 days.
10 Stable, Decrease 1 level in 02 days.

DECAYING ORBIT

01 Decaying, Decrease 1 level in 12 hours.
02 Decaying, Decrease 1 level in 06 hours.
03 Decaying, Decrease 1 level in 03 hours.
04 Decaying, Decrease 1 level in 1.5 hours.
05 Decaying, Decrease 1 level in 01 hour.
06 Decaying, Decrease 1 level in 30 minutes.
07 Decaying, Decrease 1 level in 15 minutes.
08 Decaying, Decrease 1 level in 07 minutes.
09 Decaying, Decrease 1 level in 03 minutes.
10 BEGIN RE-ENTRY



STARSHIPS



NAM: **Alaska**
YEA: 2204 TFU: L CLA: Explorer
CON: 65 TNK: 1990 CRW: 47
LEN: 1007 ENG: 1 Gi PSN: 153
SPC: cfgjl PHA: rst CRG: 1406

Unconventional in design, the Alaska class was the freighter workhorse after the era of close exploration. A competitor to the relatively inexpensive Homesteader, it had a grace that carried over to many other designs for the next 200 years.

GM NOTES ON STARSHIPS

Starships are many and varied in design. If players do not design their own, use any of the following general types. how they are able to acquire their ship is the GM's decision. how they maintain and use something as expensive and rare as their starship is the players' decision.

REMEMBER

01 Keep good records of ship fuel, costs, and repairs. This leads to taking better care and a realization of their finite money when costs arise.

02 Do not hand them starships on a silver platter. Make them work for a less-than-great ship, and develop a wreck into something they can be proud of.

03 Port Authorities begin to wonder why a freighter bristles with weapons. Limit use of such ship's weapons unless they are ICL or a branch of system police.

04 Don't forget fuel costs, facility use, licensing, port in spection, docking fees, and other nuisance charges that add realism.

05 Older ship's equipment will fatigue and require replacement at a higher rate.

SHIP DATA KEY

Each FTL ship will be listed by a number of statistics and its historical performance, usage, and quirks.

NAM: Name of the ship. This may be a class name, or popular name, where the ship only received a number designation.

YEA: Year of construction of the first ship in this class.

CON: Number constructed before the design was discontinued, or number constructed to-date.

LEN: Length of the ship in feet.

TFU: Type of fuel by size designation.

TNK: Tankage of the ship's fuel tanks, the number of fuel units that it can carry. This number does not include 'strap-on', or 'drop tanks' that are commonly used for extended or deep space travel.

ENG: Fusion engine size and quantity

PHA: Phase or FTL drive type. This is listed by the original drive followed by the drive used later, if the ship design saw a long service life and was refitted with newer engines.

CLA: General class of the ship, its use and design purpose. Many ship designs, while created for specific use, later served a totally different use. One example is the Ontario Class, which began as a scout, but was expanded into freighter, passenger, and police uses as well.

CRW: General ships crew for the design. Not necessarily the number needed, due to ship automation that can allow a single individual to operate a ship.

PSN: Passengers carried by the ship. This may be auxil iary crew, special personnel, or general passengers.

CRG: Cargo capacity in 10x10x10 foot 'Cargo Can equivlencies.

SPC: Special facts about the ship from the next table.

SHIP SPECIALS KEY

A ARCHAIC DESIGN
Not in general use, a museum piece, or few existing that have not been scrapped.

B UNCOMMON DESIGN
Older design uncommon in general use by 2448. Often very hard to find parts for or heavily modified for general use.

C COMMON DESIGN
Common 'yard' produced design in use for a long time. Often these are modular units that see parts used in a wide range of other close designs.

D PRIVATE DESIGN MODIFICATIONS
Ships that see private ownership and heavy design changes at the whim of the owner. These are often the 'Company Jet' or a 'Junk' built ship.

E CHRONIC MAINTENANCE PROBLEMS
These tend to have slightly higher drive or equipment failure rates due to the age, wear, or the shoddy mass production techniques.

F RELIABILITY
Like (E), but with more reliable equipment and production. Often these are sepecially certified and have a d100% increase in cost for parts and labor to keep certification.

G EXTERNAL PHASE OR FTL GENERATORS
Ships with external phase systems.

H INTERPHASE FTL GENERATORS
Ships with internal phase systems.

I DIFFICULT MANEUVERING
Design has difficulty in close, precise docking maneuvers. This adds a -5% on any general skill rolls needed. Often these are older ships that send stardock crews running for cover.

J EASY OPERATION
Ship design and computers very easy to control. Adds a +5% on any general maneuvering skill rolls

K OLDER BUT COMMON
Many still in use in one form or another.

L EXTERNAL COOLING
External cooling ring or fins.

M INTERNAL COOLING
Internal (Intercoolers) for cooling.

N AUTOMATED CARGO
Uses automated 'Cargo Can' system

Y LOST DESIGN
No existing models remain intact.

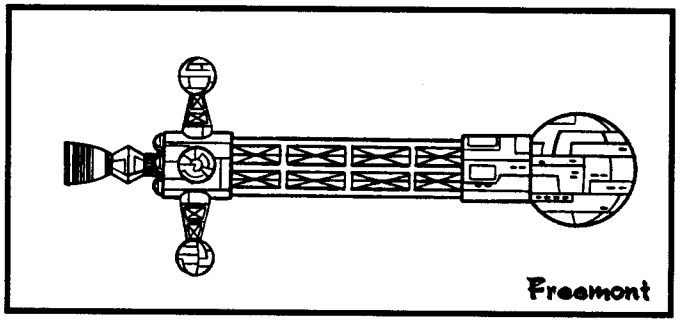
Yb ALIEN OR UNIQUE DESIGN
Single design known to exist.

Z POLICE SHIP
Also used as a police ship or warship.

NAM: **Brazilia**

YEA:	2050	TFU:	L	CLA:	Freighter
CON:	56	TNK:	2200	CRW:	31
LEN:	643'	ENG:	1 Gi	PSN:	990
SPC:	agjl	PHA:	a	CRG:	550

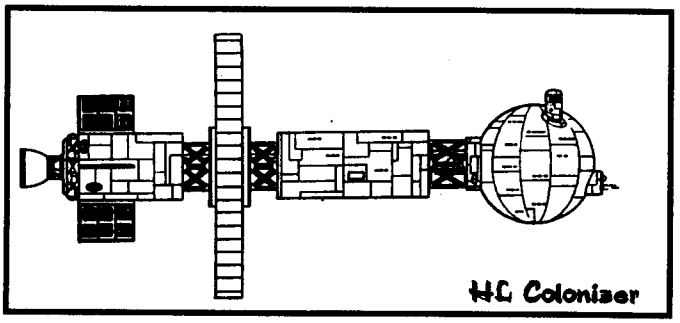
Omoxomo's mass-produced freighters were the first real system and deep space freighters. Used by the BCS in a last-ditch effort, they became the first fleet of interstellar colonizers that left Earth. Many were cannibilized for parts and material after landfall.



NAM: **Homesteader/Conastoga**

YEA:	2068	TFU:	G	CLA:	Freighter
CON:	36	TNK:	2400	CRW:	240
LEN:	1486'	ENG:	4 Lg	PSN:	387/4700
SPC:	cgjl	PHA:	b-e	CRG:	2500

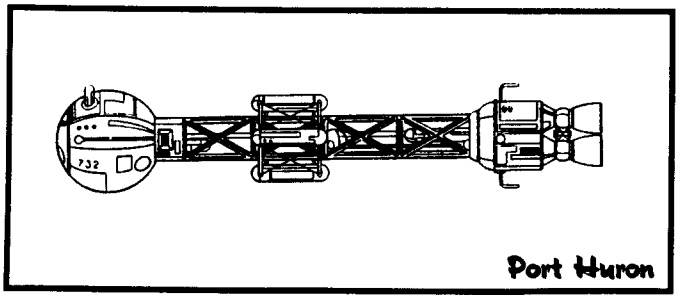
This gigantic freighter design became the truck to the stars for mankind. Orbital yards begin mass production of these Freighter/Colonizers. Across Earth, private organizations and corporations with enough capital began to fund production of starships for a wide variety of reasons.

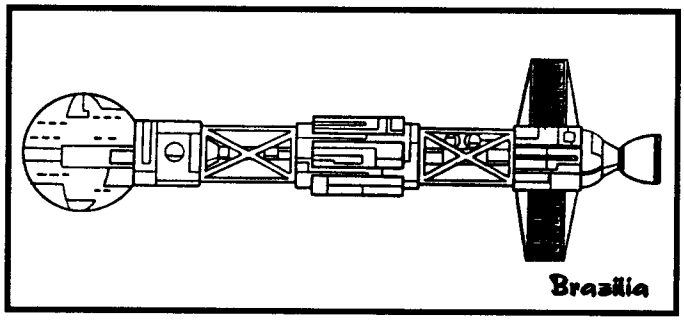


NAM: **Kansas A**

YEA:	2070	TFU:	L	CLA:	Any
CON:	13/b96+	TNK:	1790	CRW:	48
LEN:	1003'	ENG:	2 Lg	PSN:	36/2400
SPC:	agcifjlz	PHA:	cde+	CRG:	1370

The Chrysler Star Yards provided mankind with the first "Model T" of space exploration and colonization for a fraction of the cost of the larger ships. In modified design, the Kansas (round front hull) and Kansas b (ovoid front hull) have served for over 400 years of general and varied use.

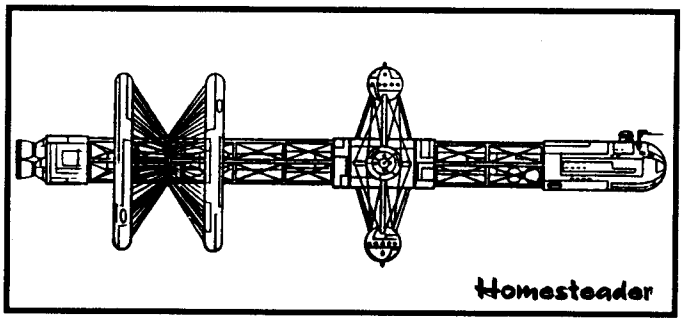




NAM: **Freemont**

YEA:	2051	TFU:	M	CLA:	Any
CON:	29	TNK:	1100	CRW:	29
LEN:	485'	ENG:	1 Lg	PSN:	11/470
SPC:	aeghm	PHA:	b-e	CRG:	220

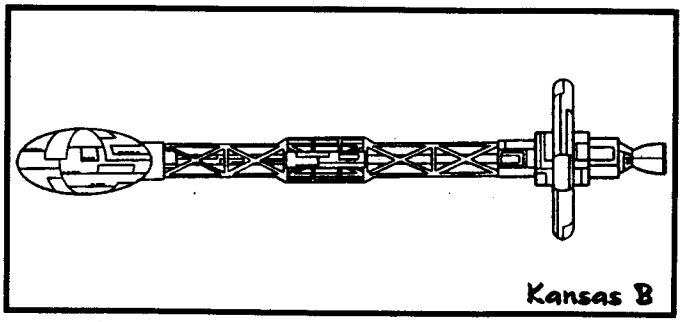
Early answer to the Brazilian Freighter, the Freemont became the first explorer and general use ship for United Earth. Over a 10 year period, 29 were produced and launched to explore near space. Of that number more than half suffered catastrophic phase drive problems.



NAM: **H L Colonizer**

YEA:	2070	TFU:	L	CLA:	Any
CON:	37	TNK:	2900	CRW:	110
LEN:	1040'	ENG:	2 Gi	PSN:	40/4200
SPC:	acdgil	PHA:	bcd	CRG:	2560

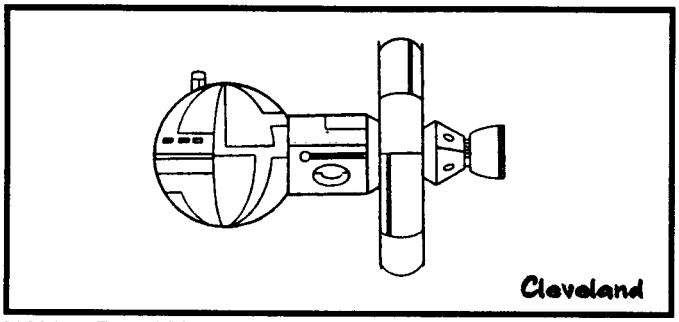
These huge phase freighters were the last of the mass-produced giants of the early FTL years. Often purchased by the new colonial administration to take a never ending stream of mankind to the near stars. The HL/Ford Yards design proved one of the more reliable.



NAM: **Port Huron**

YEA:	2095	TFU:	M	CLA:	Freighter
CON:	415	TNK:	990	CRW:	18
LEN:	218'	ENG:	2 Md	PSN:	4
SPC:	cfgl	PHA:	bcd	CRG:	150

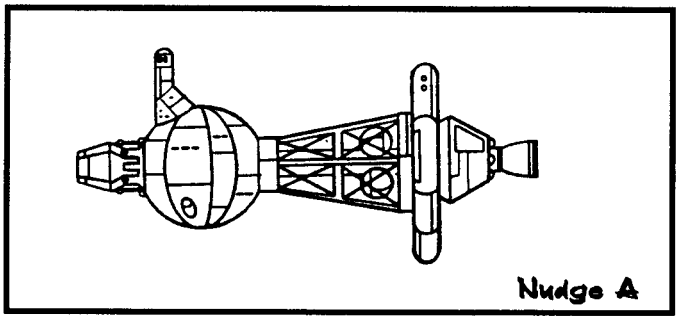
First of the faithful "Slag Mules" used for system mining and construction. Many of these small vehicles have survived into the 25th century as privately owned starships. Still used as training vessels by the ICL.



NAM: **Faxn'Chok**

YEA:	2119	TFU:	L	CLA:	Freighter
CON:	10	TNK:	1560	CRW:	104
LEN:	1026'	ENG:	2 Lg	PSN:	51/490
SPC:	afhil	PHA:	b-e	CRG:	9400

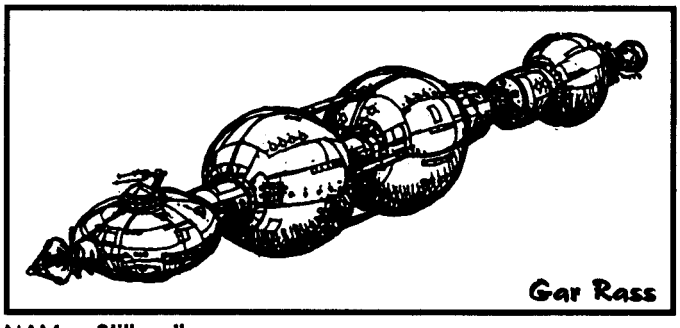
Bor'Cha explorer/freighter design that was involved in first contact with mankind. Like mankind, the Bor'Cha had just leapt into space and were exploring the neighborhood for prospective colonies. Nearly all of these starships saw long use and were retired to museums. Last of the true Bor'Cha designs.



NAM: **Ob'Che**

YEA:	2135	TFU:	L	CLA:	Any
CON:	14	TNK:	2500	CRW:	59
LEN:	811'	ENG:	3 Lg	PSN:	11/540
SPC:	aefhgl	PHA:	cde	CRG:	340

Already influenced by Human design, the Ob'Che or "Mixed Ship" fused human and alien technology to create an engineering nightmare that performed outstandingly. Its 3 GE Rhino 87000 Engines were mounted within a single exhaust cone. Front antenna arrays were later replaced.



NAM: **Stillwell**

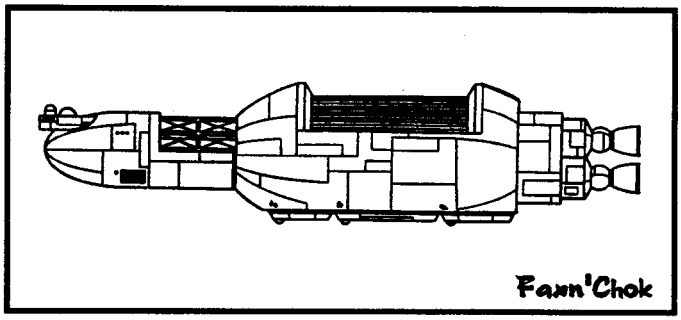
YEA:	2300	TFU:	M	CLA:	Tanker
CON:	159	TNK:	1200	CRW:	34
LEN:	780'	ENG:	2 Md	PSN:	26
SPC:	chkl	PHA:	f-i	CRG:	226,000 u

First real tanker to see general service after the first generation ships and freighters. Later this tanker class was refitted with cargo frames and more efficient phase drives. Carried fuel tankage listed is in medium fuel units.

NAM: **Cleveland**

YEA:	2144	TFU:	M	CLA:	Freighter
CON:	510	TNK:	1850	CRW:	26
LEN:	420'	ENG:	2Md	PSN:	11/570
SPC:	cdfhlk	PHA:	def	CRG:	680

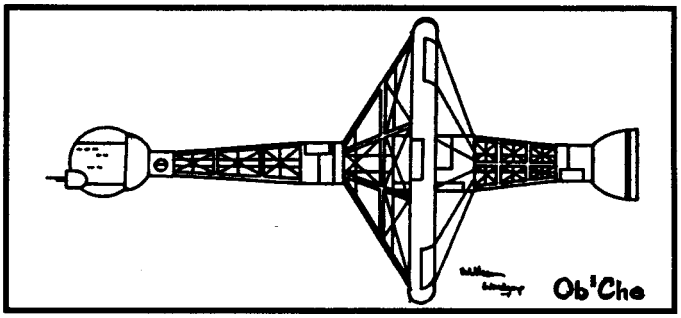
Pocket explorer and cargo ship still in common use in the 25th century. Used by early "Star Corporations" in large numbers and later highly modified for use that ranged from private to police work. The Cleveland led to the development of the highly successful Ontario Class of starship.



NAM: **Nudge A**

YEA:	2205	TFU:	M	CLA:	Tug
CON:	404	TNK:	1600	CRW:	12
LEN:	304'	ENG:	1 Md	PSN:	4
SPC:	cfgjl	PHA:	ef	CRG:	95

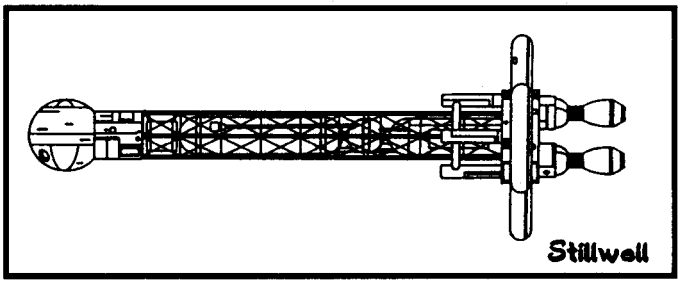
Used as tugs and small haulers. The Nudge A became common across the colonies and home worlds wherever there was long term or large scale space construction. Equipped with special racks, the quantity of cargo carried is raised to 490. Loads and unloads through the nose. Note the elevated Bridge area.

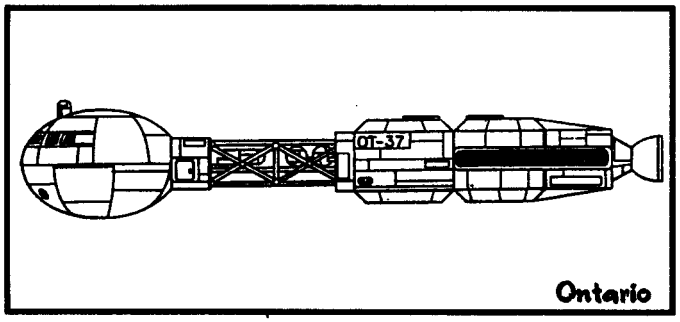


NAM: **Gar Rass**

YEA:	2140	TFU:	M	CLA:	Any
CON:	23	TNK:	1000	CRW:	42
LEN:	390'	ENG:	1 Md	PSN:	210
SPC:	achmyz	PHA:	m	CRG:	79

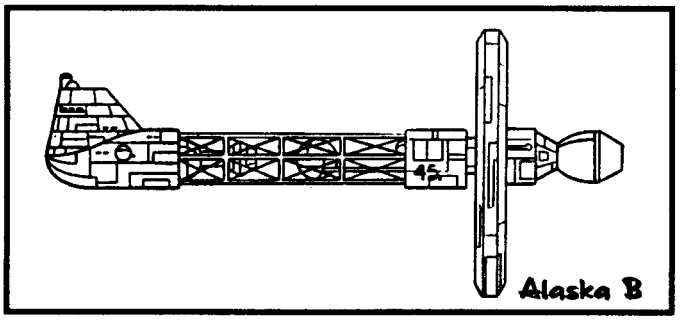
First and last of the general design of the Kymnar "A" starships obliterated by the Celestar Corporate. These brave little cans with vacuum tube technology carved out three colonies in 10 years. Kymnar designs used an interchangable front command platform and engineering module. Ships core varied to function.





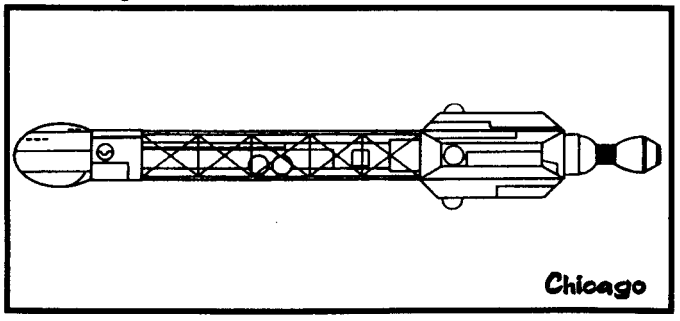
NAM: **Nudge B**
YEA: 2345 TFU: S CLA: Scout
CON: 390+ TNK: 880 CRW: 5
LEN: 114' ENG: 1 Sm PSN: 1
SPC: cdfhjmz PHA: ghiv CRG: 17

This micro-freighter design proved useful in many small scale applications. Classified as a small packet ship the Nudge B is used extensivly by the ICL and many medical services. The Nudge later became a scout used for 'first-in' system exploration and scouting the frontier.



NAM: **Hunley III**
YEA: 2375 TFU: M CLA: Any
CON: 179 TNK: 1470 CRW: 10
LEN: 640' ENG: 2 Md PSN: 29/160
SPC: cdehm PHA: hiv CRG: 1000

These bulky designs were the first of a design revolution in starship manufacturing techniques that saw a return to larger ships with good economic efficiency. Compact and built as a space-going truck, these ships became popular with engineering firms and smaller freight haulers.

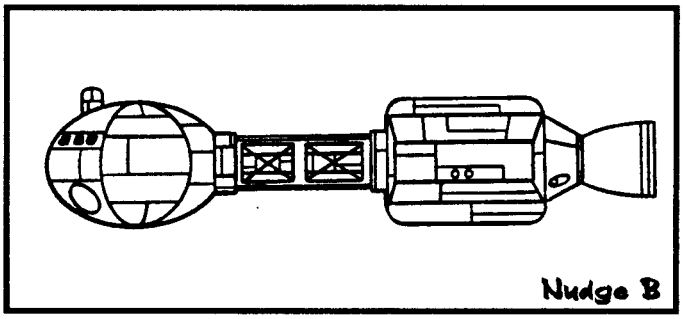


NAM: **Africa**
YEA: 2390 TFU: M CLA: Any
CON: 443 TNK: 3120 CRW: 27
LEN: 360' ENG: 1 Md PSN: 20/160
SPC: cehjmn PHA: hiv CRG: 770

Small freighter design with oversize phase drives for towing larger ships. Many became small company delivery ships and corporate freight liners. Many are modified with cargo racks and external carrier containers.

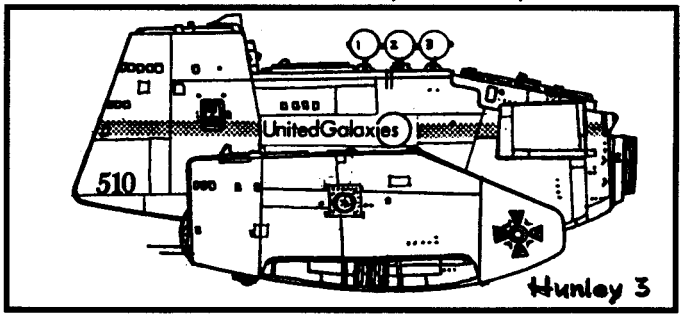
NAM: **Ontario**
YEA: 2330 TFU: M CLA: Any
CON: 1890+ TNK: 1647 CRW: 11
LEN: 283' ENG: 2 Md PSN: 20/180
SPC: cdfhjmnz PHA: ghiv CRG: 80

This "pocket starship" has earned an outstanding reputation for engineering, use, and economy in all fields. At first slow to catch on, it became the lifeblood of quick transport to the colonies and the perfect scout. Still in production, these ships are modified continuously. Popular with ICL forces and corporations.



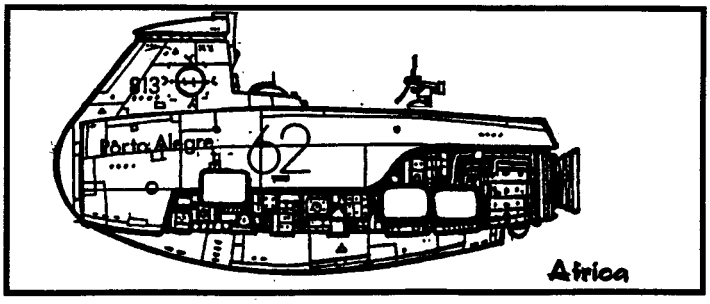
NAM: **Alaska B**
YEA: 2330 TFU: M CLA: Freighter
CON: 240 TNK: 2260 CRW: 16
LEN: 340' ENG: 1 Md PSN: 44/180
SPC: cdfhjln PHA: cde+ CRG: 75

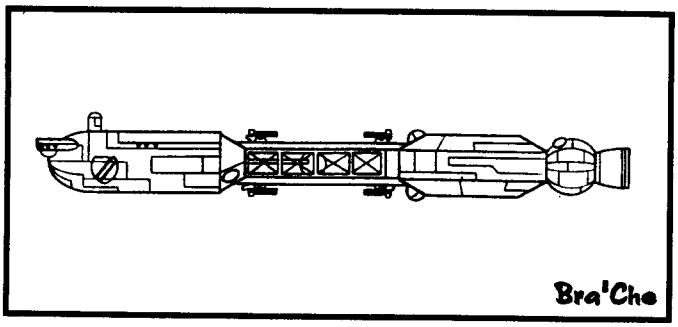
Another "pocket" design based on the old Alaska Ross Thomas design. One of the only ships that used a cooling ring that doubled as a phase drive antenna array. While successful, this design was slowly converted to intercoolers over the next century. Often the choice of the ultra rich for a personal ship.



NAM: **Chicago**
YEA: 2390 TFU: L CLA: Any
CON: 360 TNK: 2344 CRW: 39
LEN: 1218' ENG: 1 Gi PSN: 564
SPC: cdfgimnz PHA: hiv CRG: 2130

Incorporation of open and/or closed hull designs gave the Chicago Class an edge on hauling cargo or passengers with simple refitting. This design proved very successful and is still in production at a number of star yards. Most are named for cities.

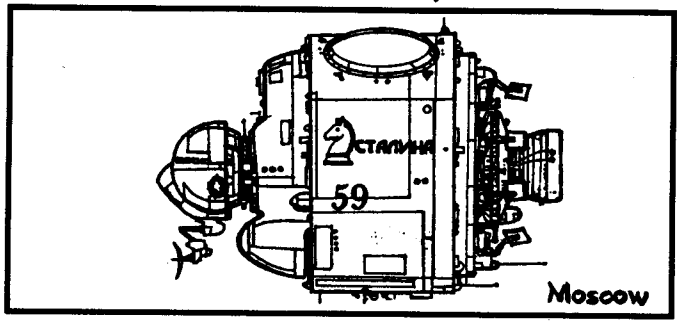




NAM: **Norge**

YEA:	2391	TFU:	M	CLA:	Any
CON:	210	TNK:	1610	CRW:	41
LEN:	535'	ENG:	1 MD	PSN:	112/890
SPC:	cdfhjmn	PHA:	hiv	CRG:	1290

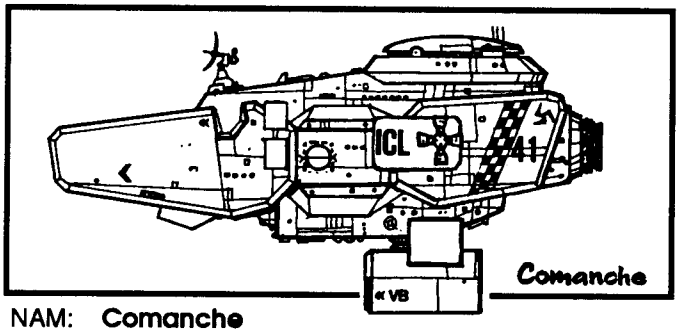
First ship from the Alvarez Yards off the giant Fomalhaut Star Port, this odd ship used the latest technologies and soon proved Alvarez was the leader of space construction and high-tech engineering. Designed for the Scandia Corporate of Earth and Seridin, it has become a well liked 'heavy-hauler'.



Canton/Allen Orbital Station

YEA:	2400	TFU:	L	CLA:	Port
CON:	15+	TNK:	94000	CRW:	912
LEN:	3416'	ENG:	1 LG	PSN:	3200
SPC:	cid	PHA:	n/a	CRG:	1,750,000

Towed in modular sections and assembled, the Alvarez Port became such a success that it was licensed or purchased by most worlds that could afford a real port. With 24 ship bays and 46 shuttle/office bays, as well as shore leave facilities, it has become a status symbol for corporations.



NAM: **Comanche**

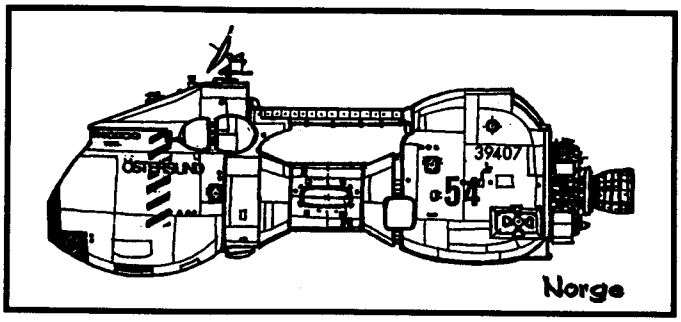
YEA:	2425	TFU:	M	CLA:	Police
CON:	29	TNK:	1940	CRW:	59
LEN:	610'	ENG:	2 MD	PSN:	290+
SPC:	z	PHA:	jv	CRG:	900

Judges, jury, marshall, and ICL Marines are the cargo of this heavily armored warship that prowls the frontier and settled space. The Interstellar Court of Law eliminates most interstellar crime and helps settle disputes that could damage two centuries of peace. ICL ship designs are not privately owned.

NAM: **Bha'Che**

YEA:	2390	TFU:	L	CLA:	Any
CON:	41	TNK:	1140	CRW:	57
LEN:	760'	ENG:	1 LG	PSN:	110
SPC:	cdz	PHA:	hiv	CRG:	1260

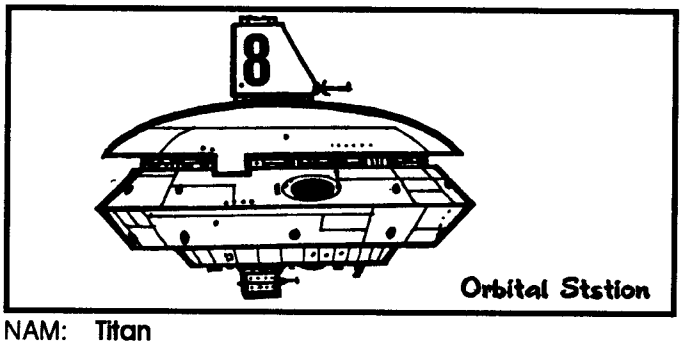
Already outdated while still in production at the Bor'Cha star yards at Faxn'Chur, this design saw little use until purchased by the ICL. Converted to military and police use, they are only seen during emergencies. It is believed the ICL has chosen this design to be a heavy weapons platform in the event of war.



NAM: **Moscow**

YEA:	2398	TFU:	L	CLA:	Freighter
CON:	59	TNK:	1940	CRW:	11
LEN:	670'	ENG:	1 Lg	PSN:	43/990
SPC:	ehikmn	PHA:	hiv	CRG:	25,000

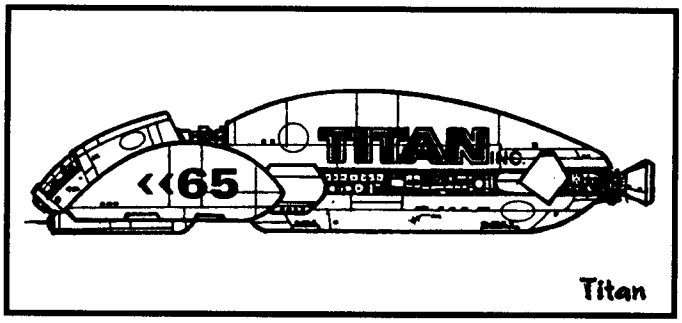
Called "The ugliest damn thing" Earth ever produced, the Moscow Class was a workhorse freighter known for its inability to use most port facilities. Ease of maintainance and the Moscow's high standard of engineering have made their crews fiercely loyal to the almost underserved 'barge' reputation.

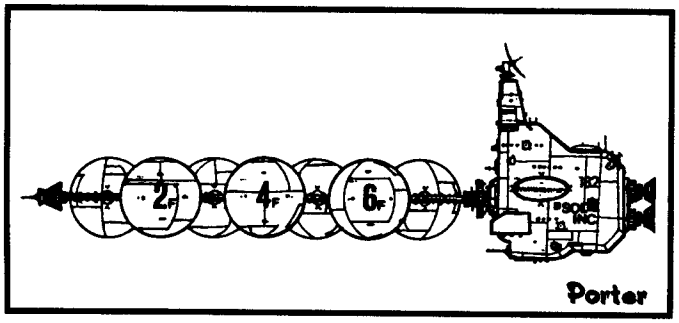


NAM: **Titan**

YEA:	2430	TFU:	M	CLA:	Freighter
CON:	560	TNK:	1196	CRW:	6
LEN:	270'	ENG:	2 Md	PSN:	2/490
SPC:	cehjmn	PHA:	hiv	CRG:	120

By any other name, the Titan Class is a small common star-going truck that often will take the brunt of small cargo hauling. Many of these ships are becoming independent haulers hated by the trade unions and corporates.

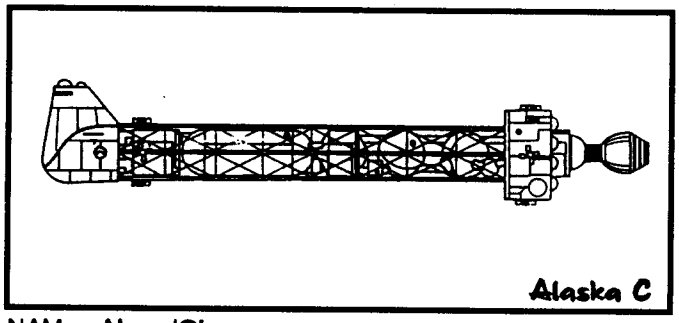




NAM: **Centauris**

YEA:	2412	TFU:	L	CLA:	Freighter
CON:	170	TNK:	2109	CRW:	48
LEN:	790'	ENG:	4 Lg	PSN:	155/3400
SPC:	chimn	PHA:	hi	CRG:	4000

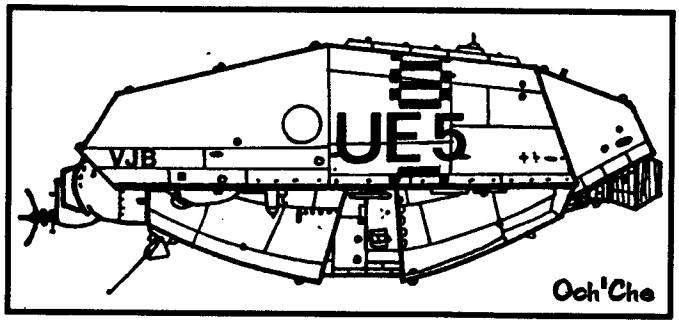
Largest of the industrial ore carriers, the Centauris occasionally have been used for inexpensive colonization. Shown is the basic core ship without the 6 Cargo Racks that surround the core of the ship. These cylinders can be used to create space stations and automated fuel dumps on the frontier.



NAM: **Akron'Che**

YEA:	2435	TFU:	M	CLA:	Freighter
CON:	499	TNK:	1840	CRW:	5
LEN:	310'	ENG:	1 Md	PSN:	5
SPC:	cfhjmn	PHA:	iv	CRG:	96

Popular modular hauler from the Earth/Faxn'Chr Yards. Built to compete with the Titan Class Freighter, this small starship is now one of the most common signts in ISCO space. Highly modified for small company and university use.



NAM: **Guam**

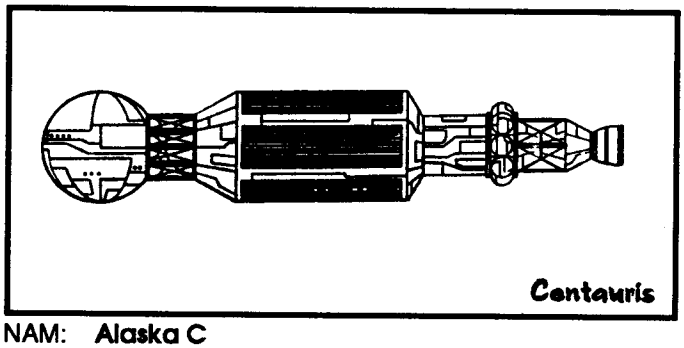
YEA:	2448	TFU:	L	CLA:	Any
CON:	320	TNK:	4834	CRW:	441
LEN:	1090'	ENG:	3 Lg	PSN:	250/11000
SPC:	chmnz	PHA:	i	CRG:	2000

Starship used by ISCO and a large number of private agencies. Often the Guam is used as a medical (EMS) ship that assists the larger hospital ships. Additional Guams have become property of the ICL and some corporates.

NAM: **Porter**

YEA:	2418	TFU:	M	CLA:	S-Tanker
CON:	15	TNK:	1905	CRW:	91
LEN:	1400'	ENG:	4 Md	PSN:	26
SPC:	chimn	PHA:	hi	CRG:	230

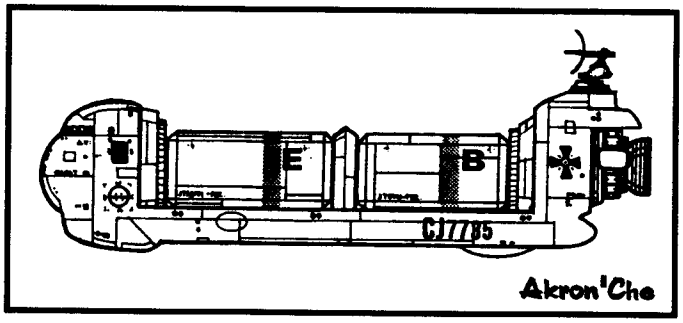
The Porter class was the beginning of a new series of modular/mulit-purpose designs with high economy and outstanding hauling capability. Shown with seven detachable tanks, each can hold 3.5 million medium units of fuel units of fuel.



NAM: **Alaska C**

YEA:	2410	TFU:	L	CLA:	Tanker
CON:	46	TNK:	44000	CRW:	31
LEN:	1234'	ENG:	2 Gi	PSN:	81
SPC:	cdfhjkmn	PHA:	hi	CRG:	1290

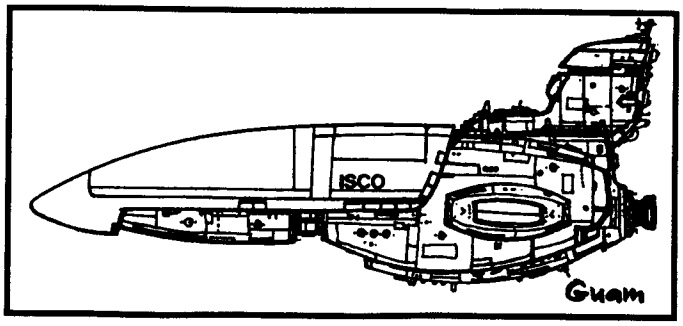
Privately licensed and built, the Ross Thomas Alaska C was a private venture to monopolize fuel hauling and distribution that failed. While the venture failed, the ship design was a success and the design was refitted for cargo and passenger service. The Alaska C holds one tank of 7.5 million medium fuel units.

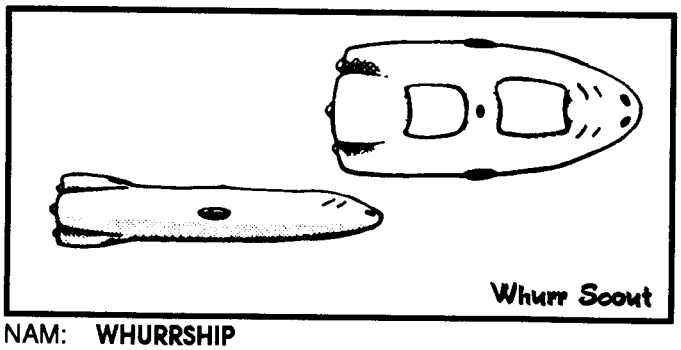


NAM: **Och'Che**

YEA:	2440	TFU:	L	CLA:	Freighter
CON:	4	TNK:	3240	CRW:	317
LEN:	1007'	ENG:	4 Lg	PSN:	990/18000
SPC:	chimnz	PHA:	i	CRG:	25000

Special built, the largest cargo hauler in operation. This Bor'Cha built ship is used for mass transport of goods or passengers in emergency situations. More are under construction.

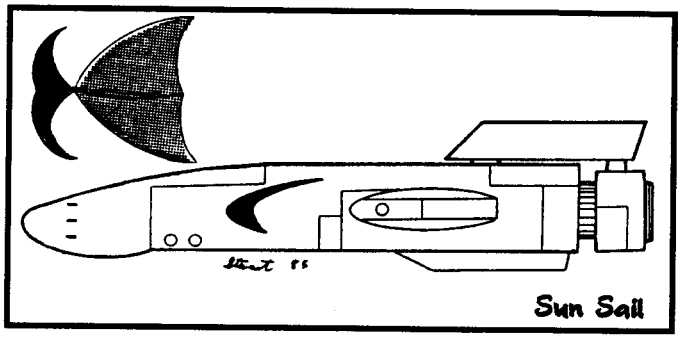



Whurr Scout

NAM: **WHURRSHIP**

YEA:	2445	TFU:	Carbon	CLA:	Freighter
CON:	800	TNK:	n/a	CRW:	56
LEN:	290'	ENG:	Living	PSN:	150/4200
SPC:	-	PHA:	q	CRG:	112

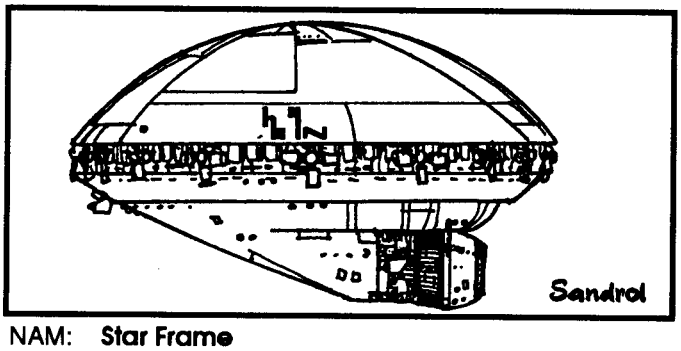
The common Whurr Freighter breed is now being seen across ISCO space as trade and commerce widens with this species. In freighters, humans only have head room in storage bays. These vessels are highly intelligent and protective.


Sun Sail

NAM: **Vesh Scout**

YEA:	n/a	TFU:	?	CLA:	Scout
CON:	n/a	TNK:	?	CRW:	150+
LEN:	490'	ENG:	?	PSN:	0
SPC:	-	PHA:	n	CRG:	0

The starship shown, crew deceased, was found to be little more than a shaped mass of dense concrete and a molecularly collapsed metal plating. Other Vesh have called it an unarmed small shuttle. A half dozen of these wrecked vehicles have fallen into ISCO space from somewhere else.


Sandrol

NAM: **Star Frame**

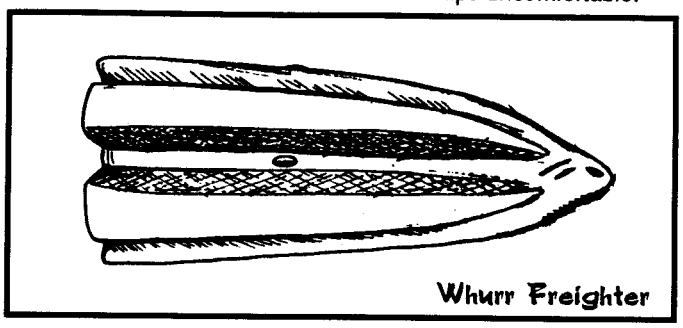
YEA:	n/a	TFU:	M	CLA:	Any
CON:	n/a	TNK:	1240	CRW:	6
LEN:	540'	ENG:	2 Md	PSN:	6
SPC:	-	PHA:	s	CRG:	3000

The Paebakian ship is a simple cargo frame with an FTL drive attached. Two saucer-shaped landers with Antigrav/O-Phase units allow these 37-foot craft to fly and maneuver into an atmosphere or in space within gravity wells.

NAM: **WHURRSHIP SCOUT**

YEA:	2445	TFU:	Carbon	CLA:	Explorer
CON:	1400	TNK:	n/a	CRW:	24
LEN:	68'	ENG:	Living	PSN:	6
SPC:	-	PHA:	q	CRG:	1

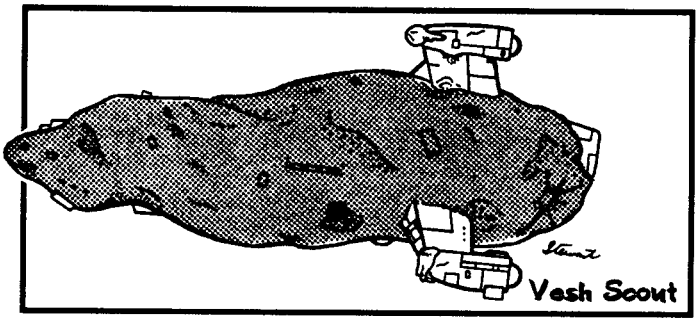
Living starships are a rare but impressive sight as Whurr Merchants sell their plastics in many ports. Unlike other ships, the Whurr ship can make short spacial jumps and land in an atmosphere. Shown here is a scout. Passenger size refers to 6 humans or 25 Whurr. Humans and Psis find Whurships uncomfortable.


Whurr Freighter

NAM: **SUN SAIL**

YEA:	n/a	TFU:	n/a	CLA:	Private
CON:	n/a	TNK:	n/a	CRW:	6
LEN:	185'	ENG:	n/a	PSN:	2
SPC:	-	PHA:	o	CRG:	4

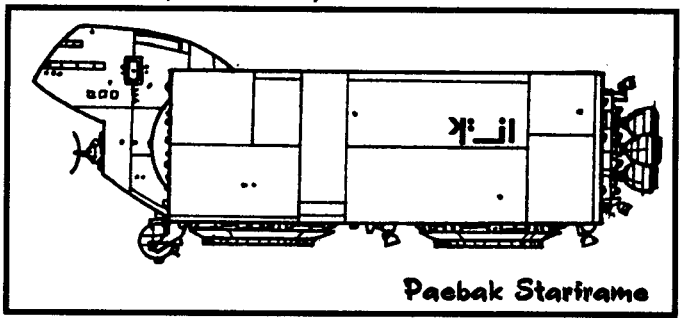
Used by Fritzian and Krelvin, the Sun Sail is a sleek ship bathed in force that converts interstellar hydrogen to fuel. Only a very rare human has ever seen the inside of one of these starships. Interiors are described as a mass of crystal and chrome.

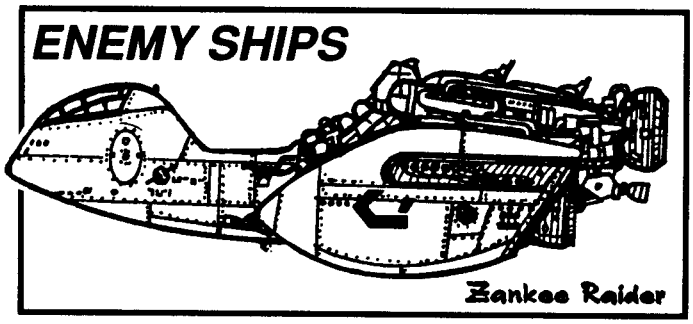

Vesh Scout

NAM: **Sandrol**

YEA:	n/a	TFU:	L	CLA:	Scout
CON:	n/a	TNK:	890	CRW:	5
LEN:	74'	ENG:	1 Lg	PSN:	4
SPC:	-	PHA:	p	CRG:	6

The miracle of Sandrol ships is that they can exit the dense gravity and pressure hells they come from. The technology of building or growing these ships is now lost and signs point to these artifacts being ancient, possibly salvage from an early empire that crossed ISCO space 200,000 years before.

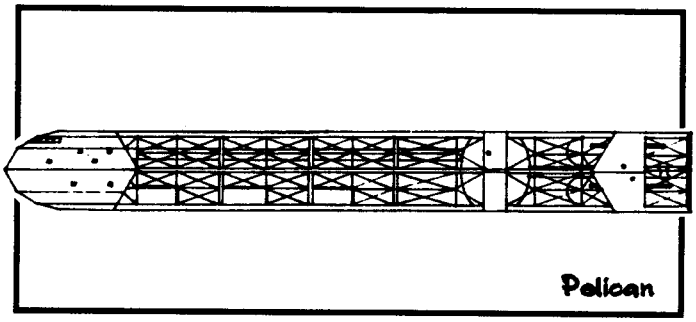

Paebak Starframe



NAM: **Peregrine**

YEA:	n/a	TFU:	L	CLA:	Any
CON:	n/a	TNK:	1200?	CRW:	50+
LEN:	580'	ENG:	2 Lg	PSN:	200+
SPC:	--	PHA:	r	CRG:	1000+?

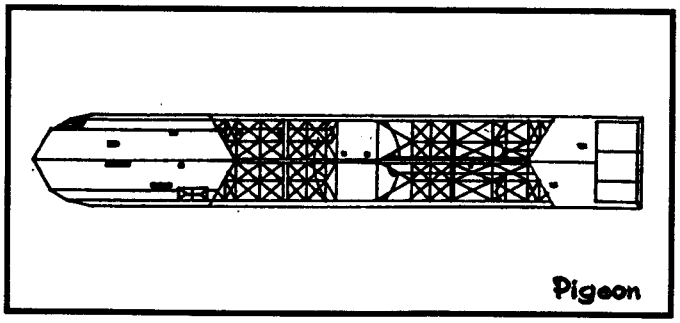
Unknown by its real name, the ICL has assigned names to identify Hagu vessels seen on the far Frontier. Obviously warships, there has been little communication to identify their true purpose. All Hagonni ships are modular and share design features.



NAM: **Parakeet**

YEA:	n/a	TFU:	L	CLA:	Support?
CON:	n/a	TNK:	1400?	CRW:	50+
LEN:	510'	ENG:	2 Lg	PSN:	100+
SPC:	--	PHA:	r	CRG:	500?

General design of support ship used for during Zankee raiding operations. This may be a command ship or a smaller warship. Armaments are unknown though sightings have shown missile platforms.



NAM: **Piper**

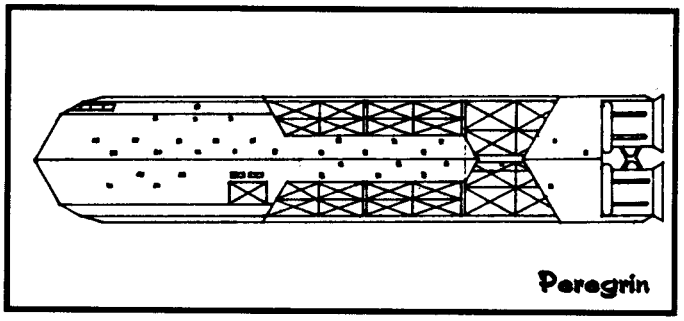
YEA:	n/a	TFU:	M	CLA:	Scout
CON:	n/a	TNK:	1000?	CRW:	10+
LEN:	290'	ENG:	2Md	PSN:	20+
SPC:	--	PHA:	r	CRG:	5+

Another small Hagonni ship is the Piper. This vessel is little more than a pocket freighter or weapons platform. Generally this design has been sighted only in groups of 3 and ICL experts believe it a PT or patrol craft.

NAM: **Zankee-Raider**

YEA:	n/a	TFU:	S	CLA:	Fighter
CON:	n/a	TNK:	500	CRW:	2
LEN:	59'	ENG:	1 Sm	PSN:	4
SPC:	--	PHA:	n/a	CRG:	1

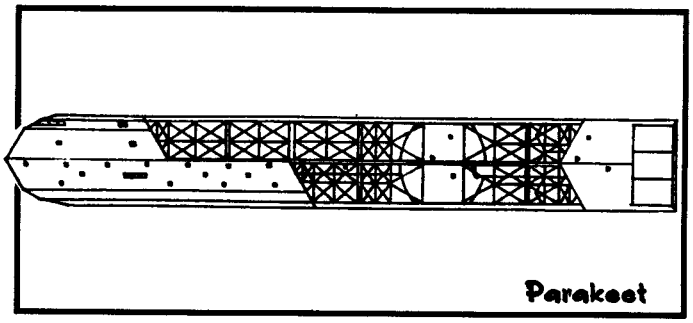
Starship-launched fighter and raider craft seen on the Frontier during Zankee raids of the far colonies. These fast ships have both lasers and missiles. It is assumed a carrier class of ships exists to carry an estimated 100 of these atmospheric and near space craft. Never phase equipped.



NAM: **Pelican**

YEA:	n/a	TFU:	L	CLA:	Freighter
CON:	n/a	TNK:	2000?	CRW:	100+
LEN:	795'	ENG:	4 Lg	PSN:	1000+
SPC:	--	PHA:	r	CRG:	2000?

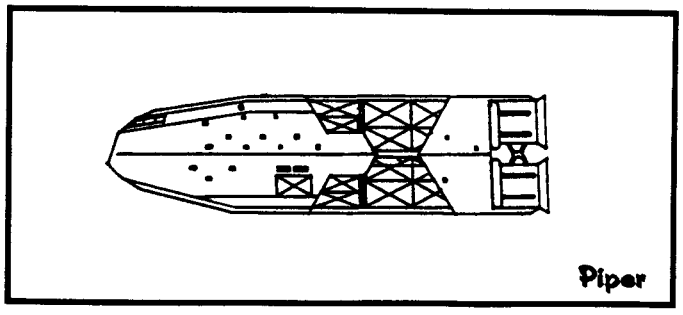
General designs show mass-produced modular designs refitted for specific purposes. This basic design seems to be a freighter due to size and large cargo bay doors. Lengths of this design vary to 1300 feet in length.

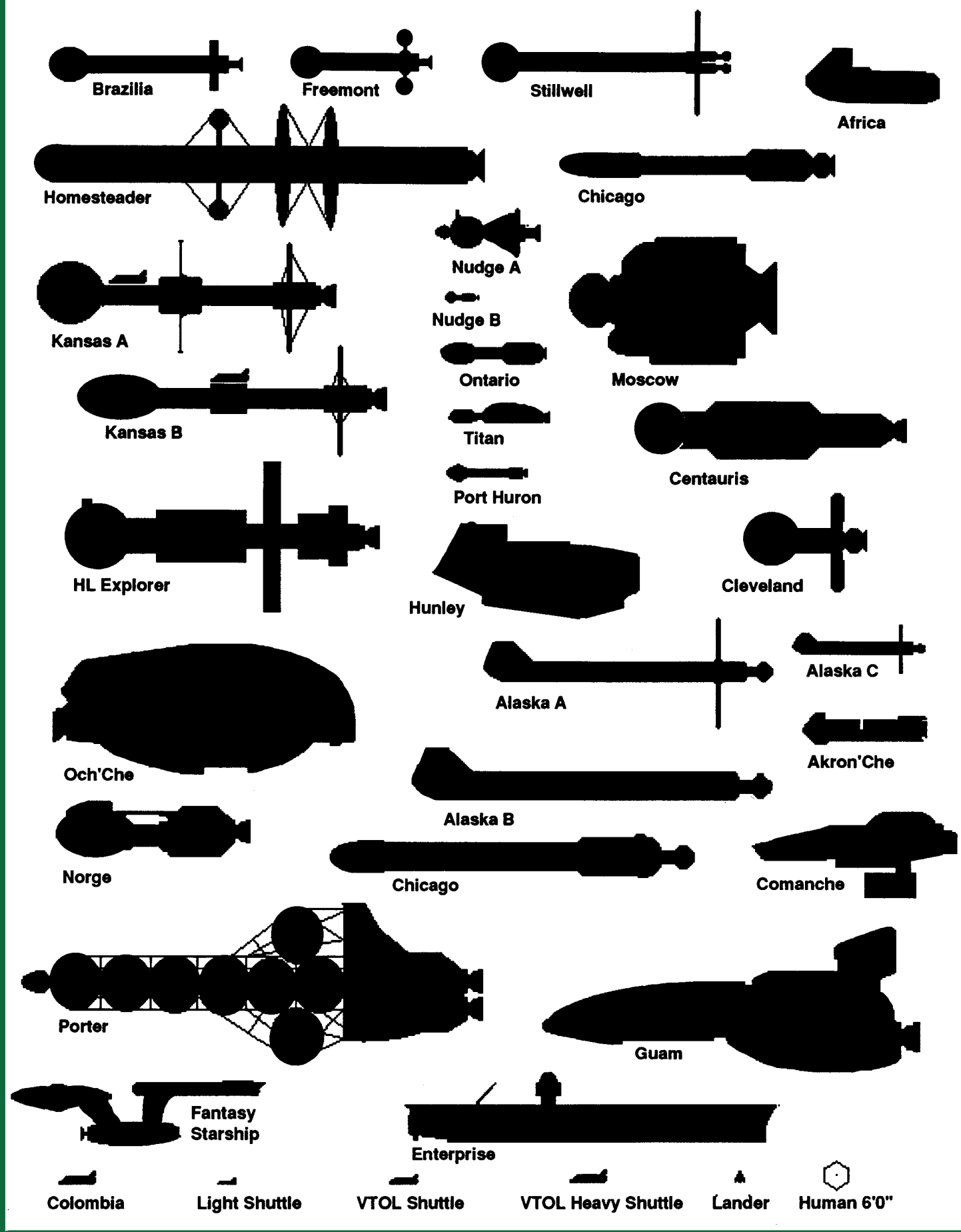


NAM: **Pigeon**

YEA:	n/a	TFU:	M	CLA:	Scout
CON:	n/a	TNK:	1000	CRW:	25+
LEN:	310'	ENG:	2 Md	PSN:	20+
SPC:	--	PHA:	r	CRG:	50+

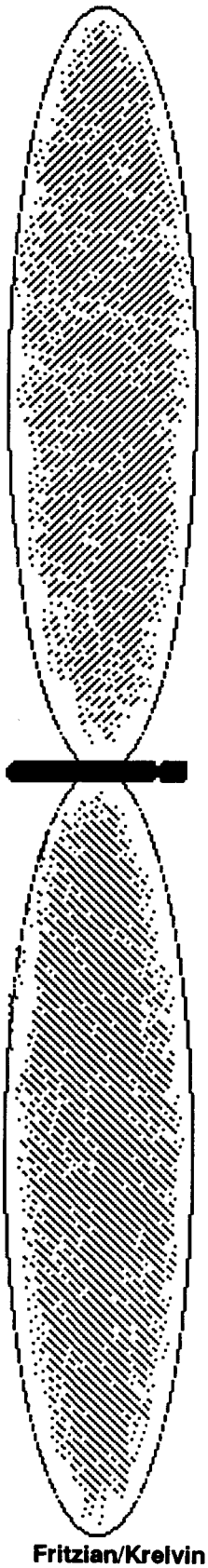
Smallest of the Hagu starships sighted, the Pigeon has infiltrated the edges of FTL space on what has been assumed to be recon missions. These are small, fast and vastly over-powered ships that show unusual antenna arrays.

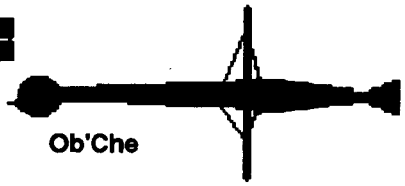


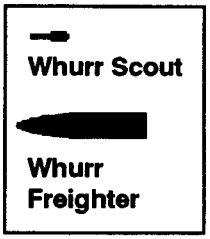

Brazilia
Freemont
Stillwell
Africa
Homesteader
Chicago
Nudge A
Nudge B
Kansas A
Ontario
Moscow
Kansas B
Titan
Centauris
Port Huron
HL Explorer
Hunley
Cleveland
Alaska C
Alaska A
Och'Che
Akron'Che
Alaska B
Norge
Chicago
Comanche
Porter
Guam
Fantasy
Starship
Enterprise
Colombia
Light Shuttle
VTOL Shuttle
VTOL Heavy Shuttle
Lander
Human 6'0"

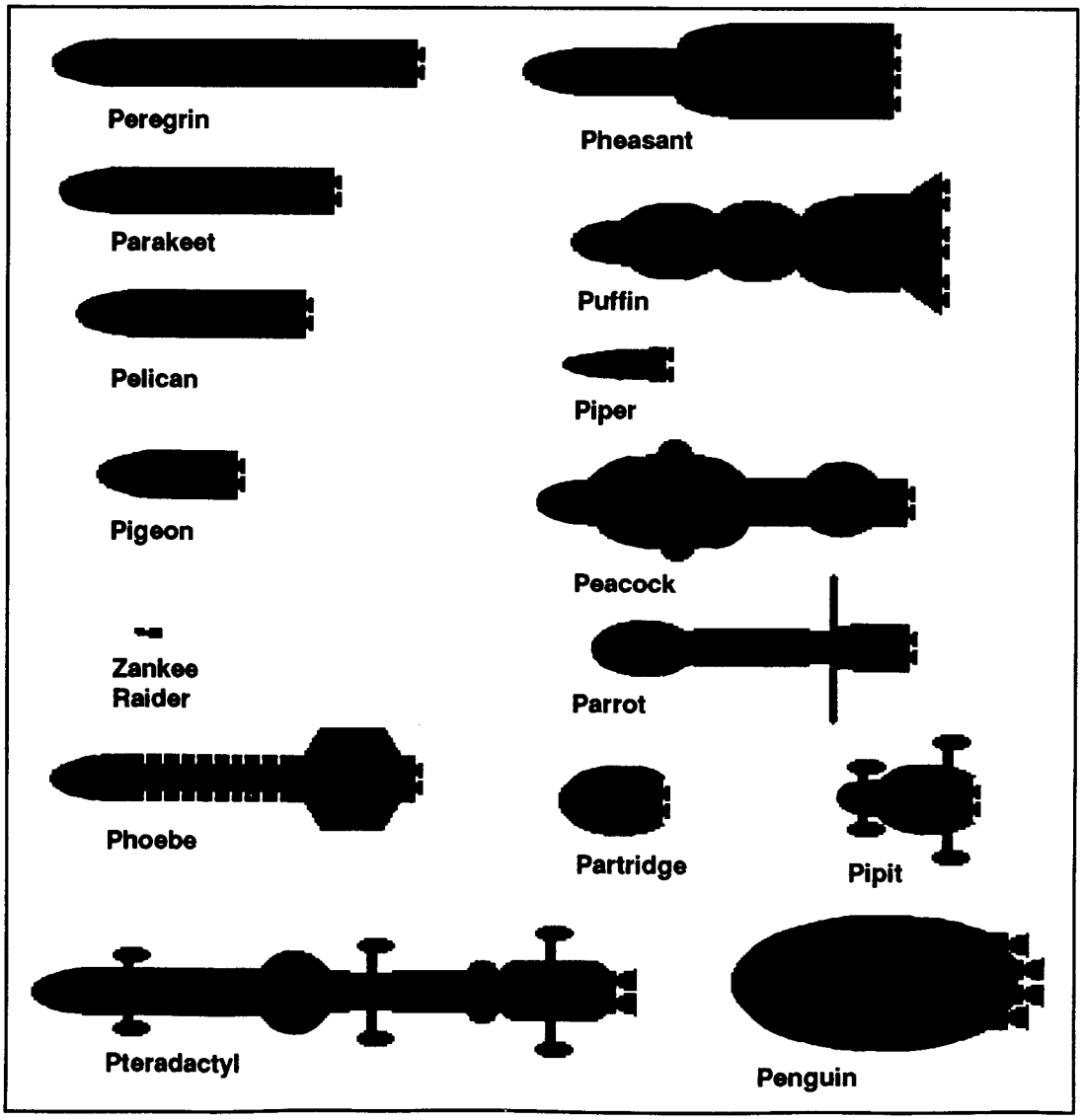
SHIP RECOGNITION GUIDE

Human and Alien Designs Historical to Present









SCANNERS

On entering star systems, a ship's sensors can accumulate information on items in the system. Linked to the computer, this system plots orbits and navigation.

SCAN	TYPES	RANGE
01	Optical Reflection	A-H
02	Radiation	A-G
03	Motion	A-G
04	Mass/Solar Wind Displacement	A-H
05	Gravity	A-H
06	Magnetic/Radio	A-H
07	Infrared/Ultraviolet	A-G
08	Phase Burn (Residual from Phase Usage)	A-F

DISTANCES IN SPACE (MILES)

A	Very Close		less than	0.5
B	Close	0.5	to	1.0
C	Short	01	to	10
D	Medium	10	to	100
E	Long	100	to	1000
F	Very Long	1000	to	100,000
G	Extreme	100,000	to	1,000,000
H	System	1,000,000	to	3,000,000,000
I	System +	3,000,000,000+		

SIZE OF OBJECT

Very Small (VSM)		under	200 feet
Small (SMA)	200 feet	to	1000 feet
Medium (MED)	1000 feet	to	02 miles
Large (LAR)	02 miles	to	10 miles
Very Large (VLG)	10 miles	to	100 miles
Gigantic (GIA)	100 miles	to	1000 miles
Planetary (PLA)	1000 miles	to	20,000 miles
Gas Giants (GAS)	20,000 miles	to	200,000 miles

Larger than 200,000 miles is hard to miss.

OPTIONAL MODIFIERS

Add these possible modifiers.

SEARCH MODIFIERS	MODIFIER
Specific Search for Known Object	+05%
Specific Search for Unknown Object	-10%
High System Junk	-20%

SYSTEM SCANS	MODIFIER
Computer Planetary Prediction	+25%
Computer Memory Card / System Map	+70%

SCAN SUCCESS

This is the percentage chance of success on a d100, per hour of scan.

DISTANCE	VSM	SMA	MED	LAR	VLG	GIA	PLA	GAS
Very Close	75	95	99	99	99	99	99	99
Close	55	75	95	99	99	99	99	99
Short	35	55	75	95	99	99	99	99
Medium	15	35	55	75	95	99	99	99
Long	05	15	35	55	75	95	99	99
Very Long	02	05	15	35	55	75	95	99
Extreme	01	02	05	15	35	55	75	95
System	-	01	02	05	15	35	55	75
System +	-	-	01	02	05	15	35	55

WEAPONS FIRING

This table is also used for the percent chance to hit another ship with weapons fire from projectiles, missiles and lasers.

ASSIST	MODIFIERS
Computer Weapons Lock-On	n/c
Mass Driver Projectiles	-15%
Dumb Missiles (fired projectiles)	-10%
Smart Missiles	+10%
Intelligent Missiles	+15%
Cruise Missiles	+35%
Ship's Laser	+40%

REMEMBER

01 You must first scan and lock on a target before you fire at it.

02 Use the same Scan Tables as a percent chance 'to hit' with modifiers.

SENSORS

Ships sensors are a 10x10x10 area that operate much like the computers in design. Each sensor type has a programming disk and a sensor array unit.

Each of these units also has a counterpart available in the form of an Electronic Countermeasure Card that will fool a scan up to the rating percentage of the disk. Each level percentage of rating, from 1 to 100 has a base cost of 1000 d's. Therefore, a disk with a 50% rating would have a value of 50,000 d's.

Also available are Electronic Counter-Countermeasure Disks which require additional sensor arrays and transmitters.

COUNTER MEASURES

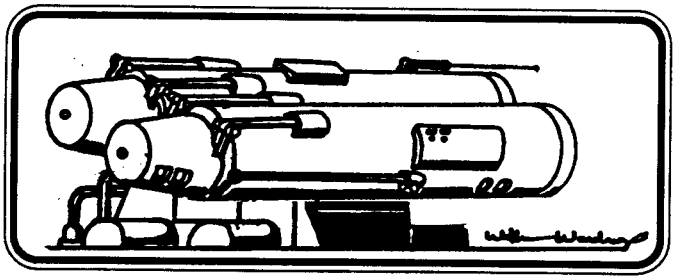
COURSE HANGE	Time Required	Chance of Evasion	Fuel Use
Minor	2 hours	05%	10
Major	1 hour	10%	20
Hard	30 minutes	20%	30
Radical	15 minutes	40%	40

HIDING	Time Required	Chance of Evasion	Fuel Use
Behind Asteroid	50%	20%	
Behind Moon	75%	-	
Behind Planet	90%	-	

SHIPS WEAPONS

The vast distances in space make ship-to-ship combat a rarity except when ships are in planetary orbit or just breaking orbit.

Once beyond this orbital point, it is useless to throw away weapons in the hopes of crippling a starship. As a ship accelerates out of system, the warm-up and pre-phase effects isolate a starship from all but radio and laser.



STANDARD LASER

A heavy, fluid-cooled, computer-controlled weapon that burns for up to d10x1000 points of damage and x0.50 the damage of the blast inside the ship if the target's hull is penetrated and the compartment at the site of the penetration is pressurized.

Effective Limit: Very Long Range (25,000 mi.)
Overheat Cutoff: 3% per firing
ROF: 1 shot per minute.

REPEATING TWIN PULSE LASER

A substantial improvement on its predecessor, this weapon allows increased firing capability without the complications arising from overheating. This computer-controlled weapon burns for up to d10x1000 points of damage, plus an additional 50% of internal damage if a pressurized compartment is penetrated.

Effective Limit: Very Long Range (25,000 mi.)
Overheat Cutoff: .25% per firing (check every 4 shots)
ROF: 4 shots per minute.

BEAM WEAPONS

The electron or partical beam is at best a moderately effective weapon. Suffering from accuracy problems stemming from use in gravity wells, this beam of charged particles hits with a -15% modifier.

Partical beams have the same general damage as lasers but with the added effect of disrupting electronics as well as software in the general area of the hit. Roll a d% for electronic disruption in important equipment.

Gamma Emitting variations of this system cause 50% laser equivalency damage, but also add d4x(d100x10) radiation exposure that lasts for d10 minutes as the beam hits.

Effective Limit: Long Range (20,000 mi.)
Overheat Cutoff: 7% per firing
ROF: 1 shot per minute.

CANISTERS

Canisters are computer launched drums of varied complexity and use. Once free of the ship, a canister is controlled by the ship's computer and sensors. A small chemical engine activates to stabilize course and send the canister in the direction of the target. The canister will then detonate, sending a small amount of high-velocity debris to strike the target. The debris (d20 pieces) will strike the target doing 4x (1000xd100) points of damage per piece.

A second version uses finer material, which travels at the same velocity and will strike any targets or exposed personnel at x.25 damage.

A third version detonates close to the launching ship, showering the area with laser reflective flakes that reduce laser fire damage by d100 percent per canister. This effect lasts 5 minutes per detonation and disipates at 5% effectiveness per minute.

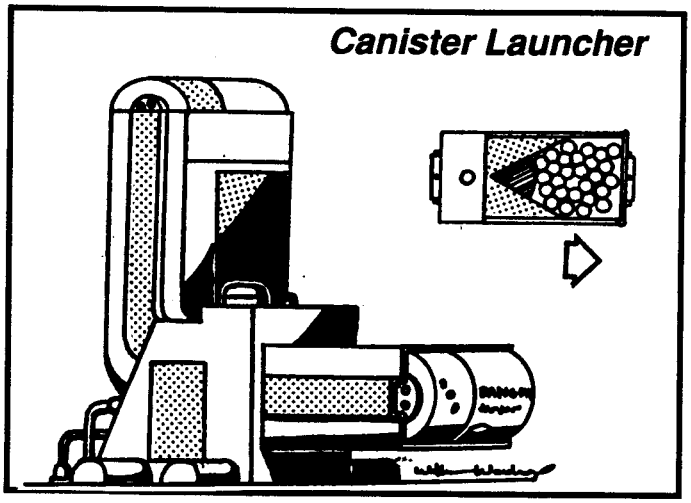
Effective Range of Shrapnel Extreme (200,000 mi.)
Effective Range of Laser Reflection Close (1000 ft.)

MISSILES

Missiles are computer or manually launched, self-propelled projectiles armed with explosives or nuclear weapons.

DUMB MISSILES

These are the cluster (d20) rockets that are launched from the ship by the computer or by visual aid in emergencies. These rockets each have a solid propellant charge and a warhead. They lack guidance and cannot be controlled once they leave the ship. Each warhead does damage that ranges from 1000-10,000 points.



SMART MISSILES

Launched in groups of d4, these limited guided missiles have their own navigation equipment and a single or double sensor type. They can travel farther than dumb missiles and have a limited ability to correct course. Damage from smart missiles ranges from 1000 to 15,000 points. These missiles can also carry a one-kiloton nuclear warhead.

GM'S NOTES

01 A 1 Kiloton warhead is equivalent to 1000 TONS of TNT. Cross-indexing the Explosives section in book 1, TNT does 200 points of damage per unit (or pound), there fore, a 1 Kiloton warhead would do 400,000,000 points of damage.

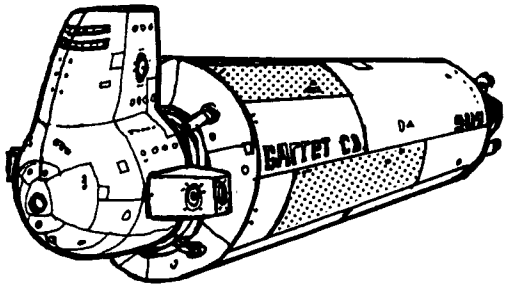
INTELLIGENT & CRUISE MISSILES

These single missiles have special navigation equipment and 4 sensor/anti-sensor slots for guidance and targeting. A full mini-ship to itself, these missiles can do 5000 to 25,000 points of damage or carry a nuclear warhead.

TYPE	RANGE		SPEED (MPH)
Dumb	Long	1000 mi.	3,000
Smart	Very Long	200,000 mi.	15,000
Intelligent	Very Long	250,000 mi.	20,000
Cruise	Extreme	500,000	25,000

TIME TO TARGET

Weapon	VCL	CLO	SHO	MED	LON	VLO	EXT	SYS	SY+
Laser	1a	1a	1a	1a	1a	-	-	-	-
Particle	1a	1a	1a	1a	2a	-	-	-	-
Canister	6a	7a	8a	13a	25a	-	-	-	-
Dumb Missile	5a	7a	15a	23a	30a	-	-	-	-
Smart Missile	3a	5a	13a	19a	24a	7m	-	-	-
Intelligent Missile	3a	4a	11a	16a	20a	5m	10m	-	-
Cruise Missile	2a	3a	9a	13a	17a	3m	6m	-	-



DAMAGE

Index the total damage taken by a weapons systems for detailed damage. Index the code letter for accumulated damage.

MON: Mounting
MAI: Main Body
MOB: Mobility
POW: Power
HOU: Housing
ELC: Electronic Links to Computer or Bridge
COJ: Cooling Jacket

DAMAGE TAKEN	0001-500	0501-1000	1001-2000	2001-3000	3001-5000	4001-5000
MON	A	A	B	B	C	D
HOU	A	B	B	C	D	E
MAI	A	B	C	D	E	F
ELC	B	C	D	E	F	X
MOB	A	B	C	D	E	F
POW	B	C	D	E	X	X
COJ	C	D	E	X	X	X

DAMAGE KEY

A Minor structural damage to unit.
B Structural damage to unit requires 4d10 +10 minutes to repair or a -20% chance to hit a target.
C Major damage to unit requires 4d10hours to repair or unit has a -30% chance to hit the target. Lasers and power systems overheat with a 20% chance of automatic cutoff.
D Severe damage to unit requires 4d10 days repair or unit fires with a -50% of hitting a target. Laser and power systems suffer overheating with 40% chance of automatic cutoff.
E Extensive damage causes automatic shutoff of unit. Repair time is 4d10 days.
F Unit destroyed. Missiles/explosives have a 40% chance of detonating and adding their damage to the area.
X Unit is completely destroyed, 80% chance of explosives detonating.

BLAST

Holes blown in the side of a ship effects one square foot of hull per thousand points of damage. A shaped charge damages hulls at half the rated explosive rate and will push the blast inside the hull with shrapnel effects.

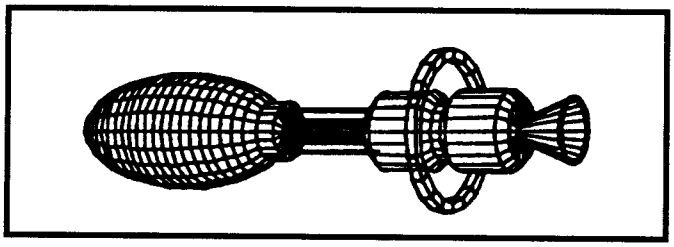
EXPLOSIVE DECOMPRESSION

Hull damage continues like other explosive damage only when the compartment behind the damage is pressurized. In cases where the compartment is not pressurized, the damage is in the form of shrapnel moving at the speed of the blast damage.

RADIATION PROTECTION

Most ship hulls and glass shield against the threat of radiation exposure

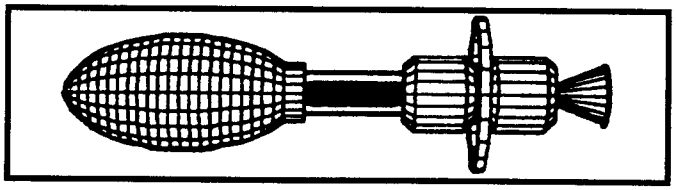
TYPE	SHIELD PER HOUR
Vac Suit, Light	00100 rads
Vac Suit, Heavy	02500 rads
Heavy Rad Suit	07500 rads
Ship Hull	15000 rads
Ship Armor (per inch)	02000 rads
Rad Ablative Layer	01000 rads
Rad Entrapment Field	98% Incoming Radiation



HIT LOCATION

To find the hit location on a ship struck by missile or laser, determine range of target from attacker. This tells you if the shot hit where planned or was a random hit. Smart or intelligent missiles are pre-programmed for a specific location or guided. Remember, these ranges are indexed from page 268, not the firearms ranges.

DISTANCE TO TARGET	HIT AREA
Very Close	Attacker's Choice
Close	50% Attacker's Choice
Short	15% Attacker's Choice
Medium+	Random



X AXIS (Horizontal)

To hit a random area, imagine an outline of an 'X,Y' co-ordinate system over the angle of your target ship as in the illustration. Chart the center of the ship as zero, and the edges at 100%. This is for all four of the ship's edges. Roll a d6 for a positive or negative axis. Then roll a d100 for X Axis location on ship.

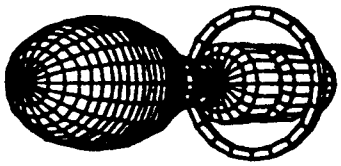
RESULT

01-03 Ship hit on negative side of axis.
04-06 Ship hit on positive side of axis.

Y AXIS (Vertical)

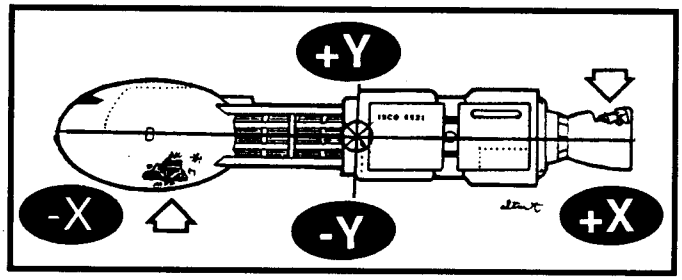
Repeat with the Y Axis (vertical) using the center X Axis you just found as the new 'zero' point for finding the Y Axis. With general deck plans and a little imagination, the results can be quite realistic. Remember to chart hull values and damage from the blast.

Example: Ship at Angle



EXAMPLE

The example ship shown was calculated from a side hit by two missiles. The bow hit is a (-X, 60%, -Y, 55%). The stern engine cone hit is a (+X, 94%, +Y, 70%. Other illustrations show general examples of ship positioning. Imagine the X,Y, % grid over these for the general idea of a 'To-Hit' location chart.



GENERAL DAMAGE

The following are generalized hit charts for starships and shuttles if phase drive sections are ignored.

01-05	Shuttle or Pod Bay
06-50	General Structural Damage
51-75	Cargo Areas
76-85	Phase (FTL) Generators
86-95	Engineering area / Engines / Cones
96-98	General Crew Areas
99	Bridge
00	Special Roll a d100 below.

01-50 MAJOR FUEL LOSS d100%
Fuel vents into space or inside ship.

51-75 SEVERE STRUCTURAL DAMAGE
This can cause excessive strain if ship is placed through violent maneuvers. May completely destroy cargo or shuttle.

76-85 ENGINE DESTROYED
See detailed engine table page 255 or eliminate.

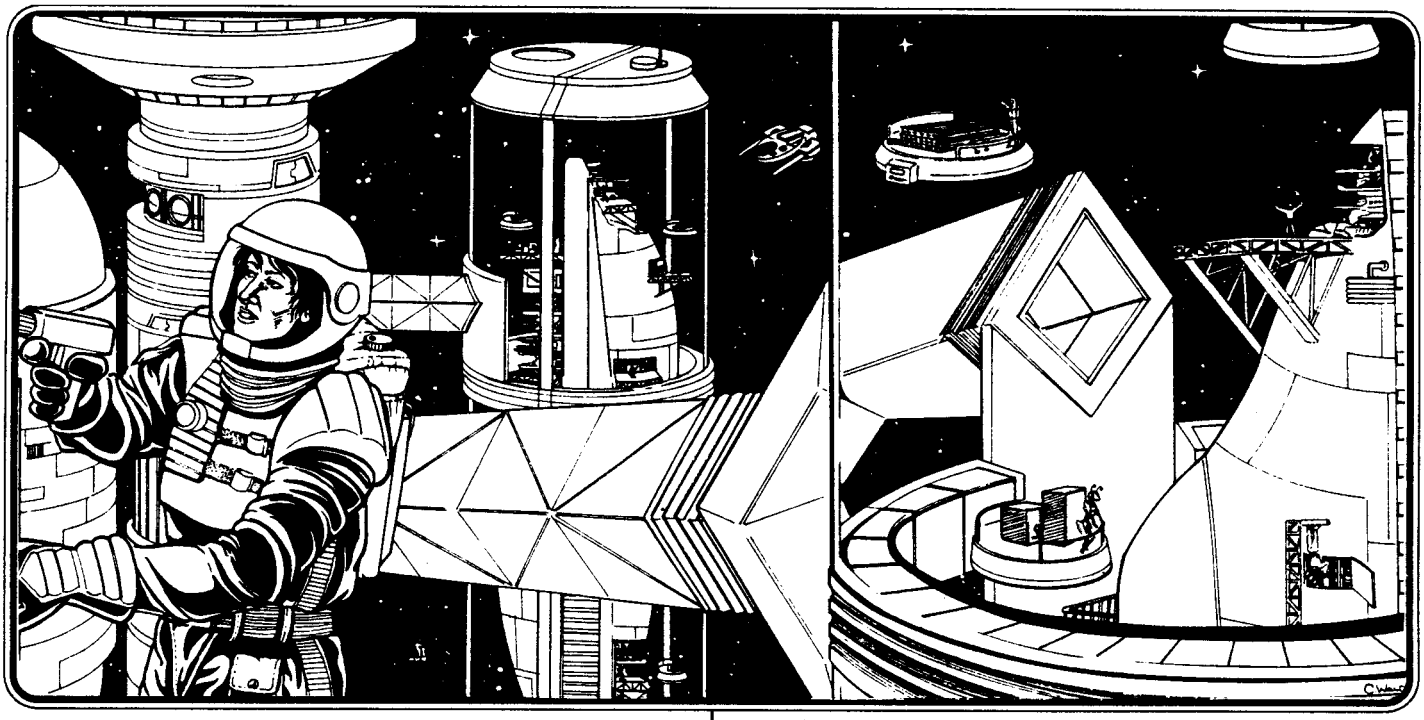
86-90 DESTROYS FTL CAPABILITY
Reduces phase drive tuning percentage to 20% (1-20%) or critically damages generator.

91-95 PERSONNEL
Crew suffers severe injury or deaths in the area hit. Roll above for area of hit and index FTL Book 1 Page 163 for the Fast Kill Table. Use this general table for characters caught in the area.

96-98 POWER
Knocks out d100% of the ships main power reactors or batteries.

99 BRIDGE DESTROYED
See #91 for personnel loss. Move main control to auxillary or engineering bridge if any exist.

00 FUEL DUMPS
Ship looses fuel and motive power.



SHIP BUILDER

Eventually, your characters will get to the point where they are simply tired of their old starship or they have damaged it so badly that it would be more cost effective to redesign it.

Players are encouraged to design their own starships under the GM's watchful eye. While many ship designs are listed, there is no specific blueprint for design, purpose, or structures. Ships can have any general shape as long as they are for non-atmospheric use. Players can build from scratch or simply add to their commercially built ships.

BUILDING

Start shipbuilding with a Starship Architect and a lot of cash. Across ISCO space there are many large and small shipbuilding firms or yards, each with its specialties. Also, remember the skill level of the architect may influence costs, as a skilled architect will know how to reduce costs, and an inexperienced or flamboyant architect will provide you with the design of a starship that would make a Moscow class look dignified.

REMEMBER

01 Imagine your ship design in three dimensions.
02 Rough design all, most, or a small section of your ship. Price the components and use the multiplier when purchasing items that aren't in 'NEW' condition.
03 Use time and add-ons to increase the ships price due to those annoying little things that happen during construction. These include fixtures and specialized parts.
04 Remember--It's usually a UNION shipyard.
05 Remind players that they can add extra equipment and finishing touches later, as they can be afforded.
06 While most of a ships systems can be purchased as modular, Engines, Cabins, and Specialized Systems can be modified by the owner.
07 Don't forget the normal certification procedures of numerous ISCO Official Inspections Teams of the Phase Generators as well as the Engines.

SHIPBUILDING MODIFIERS

This is an example what a small fusion engine would cost indexed by the condition of the engine. (ETP = Engine Tuning Percentage.)

	MODIFIER
SPECIALLY DESIGNED	x4.00

A small fusion engine designed and balanced specifically for your ship. ETP 100

PRISTINE CONDITION	x2.00

Commercial "Top-of-the-Line" fusion engine still in the factory packaged crate. ETP 100

AVERAGE OFF THE SHELF	x1.00

Average priced fusion engine still in the factory packaged crate. ETP 100

GOOD CONDITION	x0.75

A used but refurbished engine in working condition. Reset to near facrory specs. ETP 100

FAIR CONDITION	x0.50

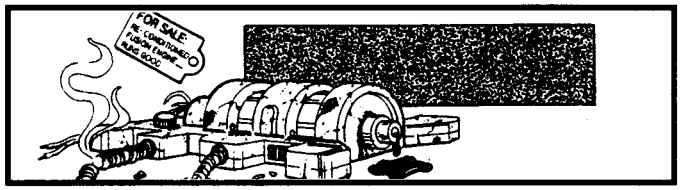
A well -used engine with a lot of wear. ETP 90 at best

POOR CONDITION	x0.25

A very well used engine with a lot of lightyears. Needs work and the loving care of a good engineer. ETP less than 50

JUNK	x0.12

An over-the-limit engine with numerous coolant leaks and burned out regulators. Fusion balance may be shot as well. ETP no better than 25.



STARSHIP ARCHITECTS

These are the folks who help you design, repair, and build your starship.

Deep Space Explorer Designer

Designs starships for exploring the outer fringes of known space. These designers create small ships that require little if any crew.

Interstellar Cargo Transport Designer

Starships that transverse the numerous star systems are designed by these individuals. With cargo transport being a major function of ISCO, the need for improvements on existing starship designs is in constant demand.

Intersteller Passenger Transport Designer

Another major industry is the transport of beings to virtually every corner of ISCO space. As with transports, constant improvements are always in demand.

In-System Cargo Transport Designer

Short-run transport vessels that do not require phase drives as they do not ever leave the star system are a constant demand by systems that have more than one habitable planet, or with numerous mining colonies or space stations. Usually hired by mining or chemical divisions of ISCO to upgrade their in-system fleets.

In-System Passenger Transport Designer

A moderate demand for these designers is evident, as many of the older 'workhorse' interstellar ships have been converted into passenger transports in their latter years of service due to the expense of newer ships as well as the expense of refitting the ships with the newer phase drives.

Atmospheric Planetary Craft Designer

These craft usually transport cargo and passengers from the planetary surface to one or more docking or space stations in orbit. The demand for upgrades on this type of craft depends largely on the volume of goods to be transferred.

Single-Shot Colonization Craft Designer

Sometimes, people get the urge to move. Colonization Operations branch of ISCO is usually always there to provide support and assist colonists with placement to new planets. When enough colonists wish to relocate, they are transferred. This type of ship design has pretty much become a standard.

Warship Designer

The constant and ever-increasing need for ships to patrol the Hagonni border has caused a great need for these designers. Warship designs are not commonly available to private citizens.

Multitaskship Designer

Changes in economies and needs of shipping have lead to the creation of this universal class of starship. Smaller and faster, these design are becoming more common as time goes on.

ARCHITECTS SKILL LEVEL

Roll on the following table to find out the Starship Architect's level of experience and their cost modifier. Players hire an Architect but only the GM decides if the designers level of skill is higher or lower than he or she seems. Price of an Architect is variable, from $2000-$25,000 d's

SKILL OF ARCHITECT		ARCHITECT COST	STARSHIP COST
01-02	Genius	x8.00	x 0.50
03-06	Well-Respected	x4.00	x 0.60
07-12	Extremely High	x2.00	x 0.70
13-20	High	x1.50	x 0.80
21-35	Above Average	x1.25	x 0.90
36-65	Average	x1.00	x 1.00
66-80	Below Average	x0.90	x 1.25
81-88	Fair	x0.80	x 1.50
89-94	Poor	x0.70	x 2.00
95-98	Very Poor	x0.60	x 4.00
99-00	Awful	x0.50	x 8.00

SHIPYARD COSTS

Shipyard costs are variable. You can spend 10 to 200 d's a day to use a building frame or bay. The most expensive yards, (500-1000 d's a day) use huge pressurized cylinders for ease or shirt-sleeve assembly and welding.

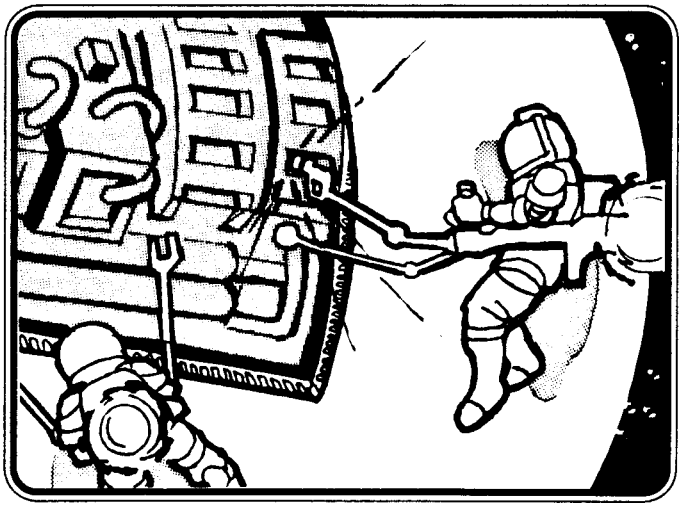
INSPECTORS

Inspectors from the Union, Port, or Licensing Commissions are ever present to make sure a ship is constructed to specification or law. These inspection take hours and cost hundreds of d's to complete as well as the paperwork.

While many feel their jobs are the law, a few can be bribed to speed ease of construction or shortcuts.

TIME OF CONSTRUCTION

Time of construction is d6+4 hours for each 20x20x20 foot basic frame section. This also requires a MINIMUM of 6 Construction Engineers and a Foreman working on each section. An assembly in a pressurized Star Dock reduces this time by half. Assembly by Union workers adds 25% to the build time. Construction in open space also adds an additional d100 d's per 1000 spent due to general loss and damage during construction.



COST OVER-RUNS

The main problems of shipbuilding come from the cost over-runs caused by rising prices, labor, and the occasional industrial accident. For each week (5 standard days) of construction, roll on the Accident/Loss & Costs Table Below:

ACCIDENT/LOSS & COSTS

These problems are prevalent in all phases of construction and just happen by circumstance or carelessness.

01-75 NOTHING
A quiet week. No major incidents.

76-85 WORKER ACCIDENT
Suit puncture or malfunction creates a critical, though medically minor incident. d4x 100 d's to repair, no time lost.

86-97 MINOR STRUCTURAL DAMAGE
Ship is damaged in a minor construction accident. d4x1000 d's to repair the damage.

98-99 MAJOR DAMAGE
Critical situation develops as the ship under construction suffers a critical accident that causes d100 x1000 d's in damage. There is a 20% chance that this major damage causes a major accident

00 MAJOR ACCIDENT
Accident causes d100 x1000 d's in damage with a 25% chance of death or critical injury to d4 workers.

COST OVERRUNS AND LABOR

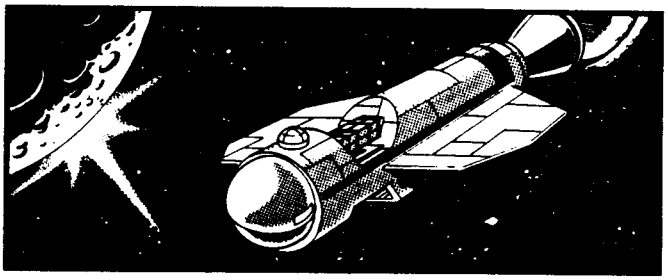
The economics and prices of building a starship are ever changing. So are the attitudes of the people who build them. The next table covers price increases and labor difficulties.

01-75 NO PROBLEMS
A quiet week. Everything is progressing normally.

76-85 COST OVERRUNS
Increasing prices and labor costs have added d10 x1000 d's to the general cost of building for the week.

86-97 LABOR PROBLEMS
Workers (Union & Non-Union) are unhappy for one reason or another. Add d10 x1000 d's.

98-00 CRITICAL PROBLEMS
Critical situation develops and a labor strike ensues. All work stops for 2d10 days with a 50% chance of solving the problem at the end of that time. If no resolution to the labor problem is found, add another 2d10 days. If other labor is brought in, double the cost of accidents and overruns. If there are no labor problems, there are critical parts problems and cost overruns that add d10 x10000 d's to the general cost of building for the week.

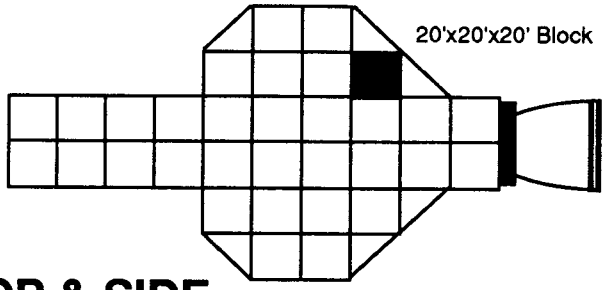


OUTLINE

This is the general outline of the starship we will design. The first graphic is is a rough sketch. This is the general design the characters decided to build to create a versatile *'Freighter* 'design.The next design is a same ship blocked into 20x20x20 ft. cubes.

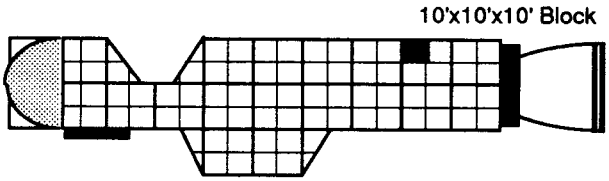
The cube is the basic building block design. Each of these blocks holds 8 10'x10'x10' cubes of space.

The next graphic shows rounded edges. Streamlining the edges is optional with a starship designed for non-atmospheric flight.

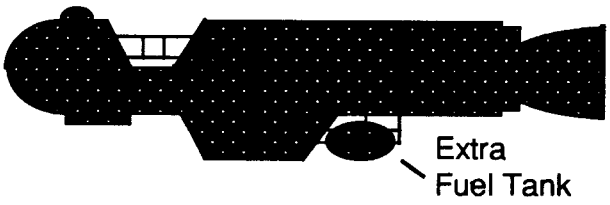


TOP & SIDE

These views show a more refined ship design.



The next view shows the ship with more finalizing touches, framework, and observation dome.



REMEMBER

01 Use graph paper and a few color pencils.
02 Take your time and map the decks logically.
03 Work up your design and include the specialized areas you want and necessary systems.
04 Take your time.
05 Don't forget the Bathrooms.
06 Don't upset the engineers working on the project.
07 Pay the bank loan on time.

PARTS COSTS

To simplify matters we will list the average price of the component. Modify this price with the condition table on page 270.

CONDITION

AV = Average Price

COST		
d	=	Tens of Dollars
h	=	Hundreds of d's
t	=	Thousands of d's
m	=	Millions of d's

COMMON TERMS

These are a few of the common terms used in the design of starships.

01 HARD POINT

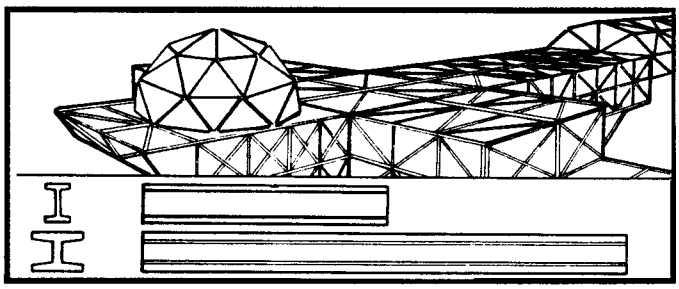
A Hard Point is simply a place of layered armor and weaponry. These can be any 10x10 spot on a ship. Hard Points can be obvious or concealed so that it blends in with the hull. Weaponry can be obvious or concealed. Something as simple as a cargo cannister can be used for a weapons launch platform.

02 ARMOR

Armor comes in any design that slows or lessens damage points done to the hull. The most sophisticated armor blends into a ships hull tiles with little or no trace. Less sophisticated armor is simply scrap hull armor and other hard material attached to the hull to form a damage barrier. Reactive Armor is a specialized material that detonates outward to lessen inward forces.

03 COMMON SHIP TERMS

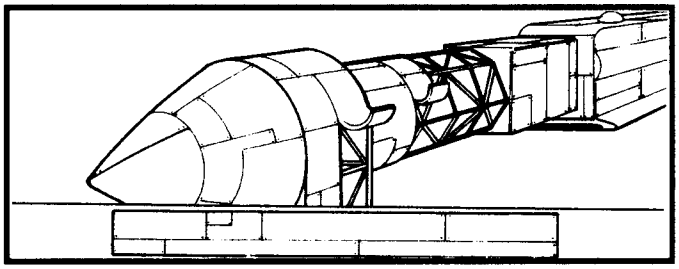
01 BOW: Front, Stem or Forecastle of ship.
02 STERN: Rear or aft part of ship.
03 BRIDGE: Main Control Center
04 PORT: Left side of ship.
05 STARBOARD: Right side of ship.
06 DECK: Flooring
07 BULKHEAD: Wall
08 OVERHEAD: Ceiling
09 HEAD: Bathroom
10 HOLD: Larger Cargo Spaces
11 QUARTERDECK: Main ship Entry Area
12 HATCHES: Doorways
13 SCUTTLES: Emergency hatch between decks.
14 GALLEY: Kitchen or food preparation area.
15 MESS DECK: Actual kitchen and dining area.
16 HOTHOUSE: Hydroponics Farm
17 DUMP: Recycling and Waste Management
18 BRAIN: Computer Center
19 CRAWLWAYS: Spaces Between Decks
20 GEAR LOCKER: Equipment Storage
21 SUIT LOCKER: Space/Emergency Suit Storage
22 BAY: Large Storage Area
23 BRIG: High Security Area and Lockup
24 MRTU: Mobile RoboticTechnical Units
25 SICKBAY: General Medical Bay
26 ENGINEERING: Engineering Bays
27 GANTRYWAY: Main Port Entry Corridor to Ship
28 ARMORY: Weapon Storge
29 MAGAZINE: Ammunition Storage



BEAMS

Beams are your basic structural building block. These are the structure of your design. Material of beams range from steel to ultralight and strong alloys that are costly.

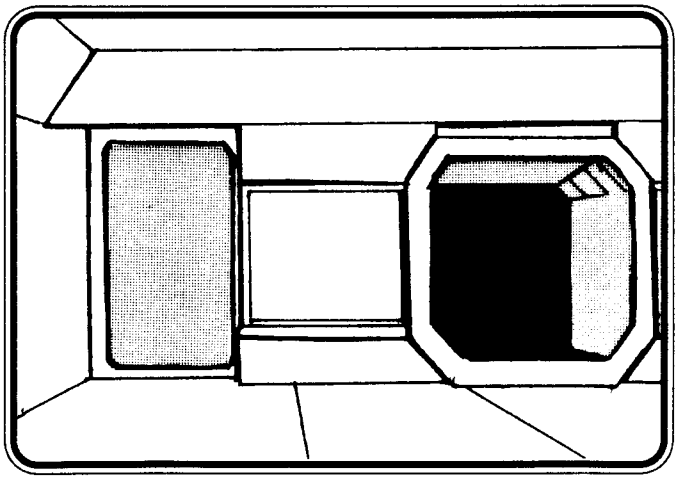
BASIC BEAMS	AV
STEEL BEAMS 10 ft.	02h
ALUMINUM BEAMS 10 ft.	01h
ALLOY BEAMS 10 ft	04h
STEEL BEAMS 20 ft.	04h
ALUMINUM BEAMS 20 ft.	02h
ALLOY BEAMS 20 ft	05h

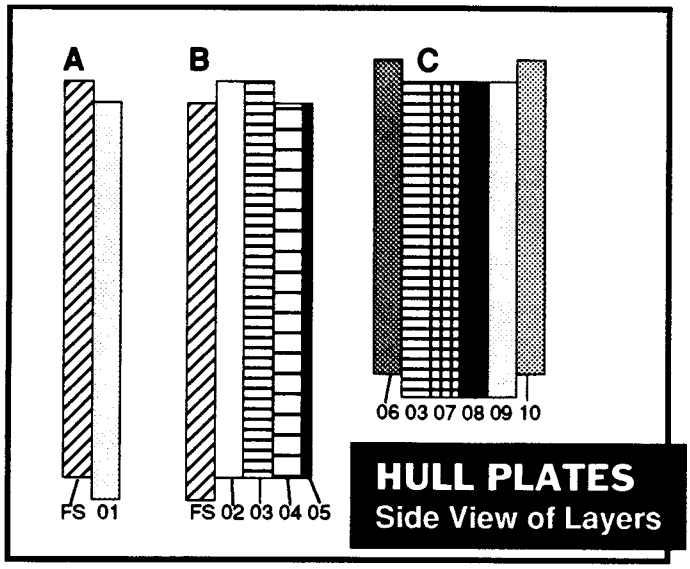


PLATES

The hull of a starship can either be pre-fabricated sections or simple plates that are welded to beams. All types listed are in 10x10 x (.25 in.) sections. In cases where prefab hull is purchased, the interior plate is aluminum. Plate type A,B,C,D, and E are varied in thickness from a few inches to several feet.

BASIC PLATES	AV
STEEL PLATE	02h
ALUMINUM PLATE	03h
ALLOY/TITANIUM PLATE	04h
PLASTIC PLATE	01h
COMPOSITE CARBON PLATE	04h





PREFAB HULL PLATES

A OPTIONAL ARMOR LAYER

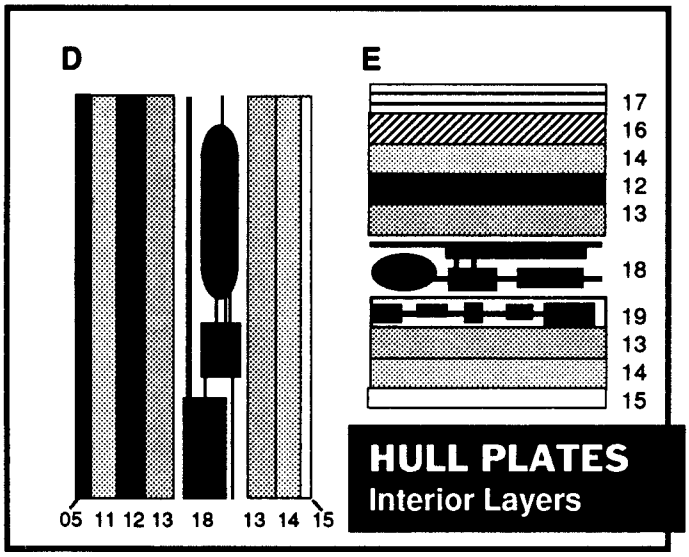
FS	Finished Surface	
01	Alloy Armor	AV
COST PER 10x10 PLATE		06t

B CERAMIC HULL TILE LAYER

FS	Finished Surface	
02	Ceramic Shield	
03	Energy Ablative Layer	
04	Secondary Rad Shield Layer	
05	Vac Glue Layer	AV
COST PER 10x10 PLATE		03t

C STANDARD HULL LAYER

06	Standard Hull Alloy	
03	Ablative Layer	
07	Shock Absorbing Layer	
08	Self Sealing Layer A	
09	Self Sealing Layer B	
10	Light Hull Alloy Plate	AV
COST PER 10x10 PLATE		01t



D INTERIOR HULL LAYER

05	Vac Glue Layer to Hull	
	Eliminate glue if an Interior Bulkhead	
10	Light Hull Alloy Plate	
13	Fiber Insulation Bats	
12	Heating/Cooling Layer	
18	Wiring/Plumbing/Ducts Etc.	
	Space also has braces for pipes/foam insulation.	
13	Fiber Insulation Bats	
14	Alloy Thin Plate Layer	
15	Interior Plastic Panel.	AV
COST PER 10x10 PLATE		07h

E DECKS

17	Carpet/Padding, Tile	
16	Wood, Composite	
14	Alloy Thinplate Layer	
12	Heating/Cooling Layer	
13	Fiber Insulation Bats	
VARIABLE BETWEEN DECK CRAWLSPACE		
18	Wiring/Plumbing/Ducts Etc.	
19	Grav Plate (Eliminate for Non/Grav Areas)	
13	Fiber Insulation Bats	
14	Alloy Thin Plate Layer	
15	Interior Plastic Panel	AV
COST PER 10x10 Plate		02t

PLATE THICKNESS		INCHES
A	OPTIONAL ARMOR LAYER	03
B	CERAMIC HULL TILE LAYER	06
C	STANDARD HULL LAYER	18
D	INTERIOR BULKHEAD LAYER	08
E	DECKS	24

RELATIVE HULL PROTECTION*	LVI	HVI	BLA
A Standard Ceramic Shield Hull Tile	900	300	3000
B Optional Armor Tile (Per Layer)	600	300	2000
C Standard Exterior Hull	300	100	1000
D Internal Bulkheads	300	100	1000
E Decking	450	150	1500

* See FTL 2448 Book 1 Blast Damage Pg 109, 138 & 160

PIPES

Plastic and metal pipes are the universal method of protecting electrical lines, fiber optic cable bundles, as well as the tranport of gas and fluids. Most light duty engineering only requires the use of plastic. Heavy duty applications such as fuel lines and various gas lines require pressurized transport at extreme temperatures, and therefore Steel, or even Alloy pipes may be used. DIA is diameter in inches. Cost Per 20 linear feet.

DIA	Plastic	Alumin	Steel	Alloy
00.50	005d	008d	006d	012d
01.00	010d	016d	010d	020d
02.00	015d	022d	015d	030d
03.00	020d	064d	020d	060d
06.00	030d	020d	040d	100d
12.00	050d	024d	060d	150d
24.00	100d	030d	110d	225d
36.00	150d	040d	200d	350d

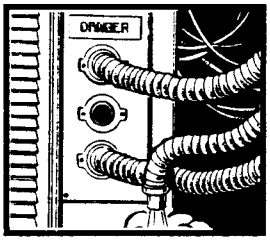
COMPONENTS	AV
PUMP STATION	05t
PUMP CONTROLLER SERVO	05h
PUMP CONTROLLER AI	01h
PIPE HEATERS (20 ft.)	80d
PIPE INSULATION (20 ft.)	20d
PIPE SENSORS (by type)	02h
AUTO /MANUAL CUTOFFS	30d
AUTO /MANUAL REGULATORS	03h

Pipe Fittings

Price individual fittings at half the price of the pipe.

HIGH PRESSURE HOSE Per Linear Foot

DIA	Plastic	Flexalloy
00.50	005d	0012d
01.00	010d	0020d
02.00	015d	0030d
03.00	020d	0060d
06.00	030d	0100d
12.00	050d	0150d



DUCTS

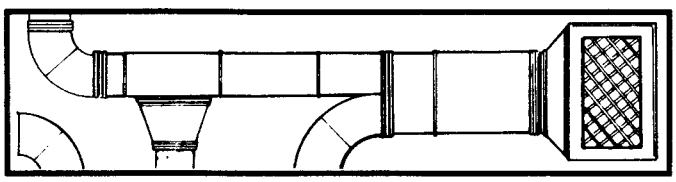
Plastic and metal ducts are the other universal method of protecting electrical lines, moving atmosphere, or collecting dust. Most light duty engineering uses plastic. Heavy duty applications include steel and alloy for fuel and pressurized transport at extreme temperatures. Height of ducts can be 2,3,4,6,12,24, or 36 inches. Widths are 12, 24, & 36 Inches. Cost per 20 linear feet.

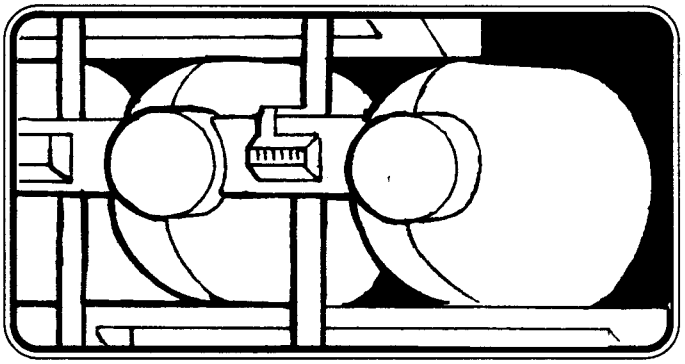
DIA	Plastic	Alumin	Steel	Alloy
00.50	005d	008d	006d	012d
01.00	010d	016d	010d	020d
02.00	015d	022d	015d	030d
03.00	020d	064d	020d	060d
06.00	030d	020d	040d	100d
12.00	050d	024d	060d	150d
24.00	100d	030d	110d	225d
36.00	150d	040d	200d	350d

COMPONENTS	AV
CIRCULATION STATION	03t
VENT CONTROLLER SERVO	05h
VENT CONTROLLER AI	01h
VENT HEATERS (20 ft.)	80d
VENT INSULATION (20 ft.)	20d
VENT SENSORS (by type)	02h
VENT AUTO/MANUAL CUTOFFS	30d
VENT AUTO/MAN REGULATORS	03h
FILTER MATERIAL (5x5 sheet)	20d
VENT COVER GRID	50d
DUCT TAPE	06d

Duct Fittings

Price individual fittings at half the price of the duct.





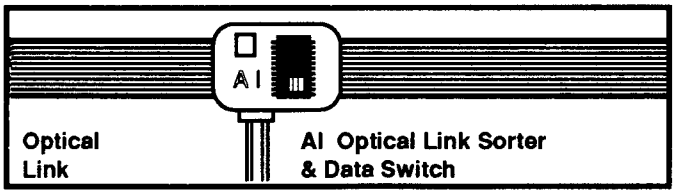
TANKS	AV
MICRO (10gal.)	25d
SMALL (50g)	01h
MEDIUM (500g)	08h
LARGE (5000g)	03t
GIGANTIC (50,000g)	20t
TANK HEATERS (per 2000g)	02h
BIN (4x4 feet)	01h
BIN (10x10 feet)	02h
BETWEEN DECK TANK (200g)	05h
STARSHIP FUEL TANKS	
SMALL SHIP (500 units)	0050t
MEDIUM (500 units)	0075t
LARGE (500 units)	0100t
GIGANTIC (500 units)	0200t
SHUTTLE TANK (500 units)	0010t

WIRES

Fiber Optic Data Cable has replaced most hard wiring for data transmission. Where higher voltages are present, simple copper cable is still in demand. Where lower voltages are neded, conductive plastic wire is used. For applications where cable is needed that is larger than 2 inches in diameter, solid insulated copper rod is used. Cost is per 100 feet.

OPTIC COMPUTER DATA CABLE	AV
050 STRAND UNIVERSAL	40d
100 STRAND UNIVERSAL	85d

OPTIC COMPUTER FITTINGS	AV
OPTICAL LINK	20d
OPTICAL AI DATA LINK SORTER	90d



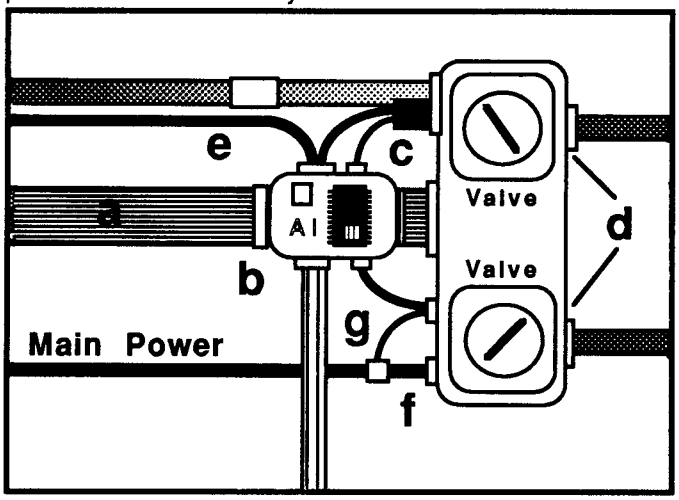
COPPER CABLE	AV
COPPER CABLE (0.12 dia. x250ft.)	035d
COPPER CABLE (0.25 dia. x250ft.)	065d
COPPER CABLE (0.50 dia. x250ft.)	120d
COPPER CABLE (0.75 dia. x250ft.)	180d
COPPER CABLE (1.00 dia. x250ft.)	230d
COPPER CABLE (2.00 dia. x250ft.)	004h
COPPER ROD (2.00 dia. x20ft.)	040d
COPPER ROD (3.00 dia. x20ft.)	060d
COPPER ROD (4.00 dia. x20ft.)	85dd

CONDUCTIVE PLASTIC CABLE	AV
PLASTIC CABLE (0.12 dia.x 250ft.)	20d
PLASTIC CABLE (0.25 dia.x 250ft.)	40d
PLASTIC CABLE (0.50 dia.x 250ft.)	60d
PLASTIC CABLE (0.75 dia.x 250ft.)	80d
PLASTIC CABLE (1.00 dia.x 250ft.)	95d
CONDUCTIVE GLUE (quart)	25d

COMPONENTS	AV
JUNCTION BOX	01h
ELECT SWITCH SERVO	05h
ELECT CONTROLLER AI	01h
FUSE STATION	90d
SPRAY INSULATION(spray can)	05d
ELECTRICAL SENSORS	02h
AUTO /MANUAL CUTOFFS	30d
AUTO /MANUAL REGULATORS	03h
VOLTAGE REGULATORS	01t
TRANSFORMERS	03t
WEAPONS CAPACITORS	07t
CONDUCTIVE PAINT (pint)	30d
VOLT METER/COMP	02h

Electrical Fittings

Price individual fittings vary and are on par with the prices of the 20th Century.

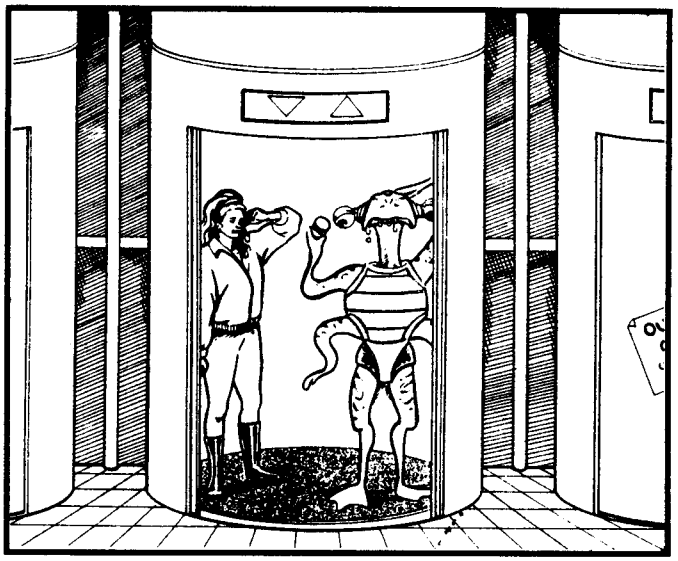


EXAMPLE

This is an average fuel pump controller. A Fiber Optic Data (a) cable leads in to the Controller AI (b). The AI monitors sensors (c) and valves (d), alerting the ships main computer when maintainence is needed or something falls out of operational parameters. A separate power line (e) hooks to the AI and the Controller Servo(f), as well as the sensors(g).

EXPLOSIVE BOLTS (Price by size, 1d to 50d)

Explosive Bolts are used to attach large cargo items to the external hull of your ship. The main benefit of Explosive Bolts is that the cargo can be jettisoned at any time simply by pushing a button, which causes the bolt that holds the cargo to the ship to be destroyed. Uses for Explosive Bolts include: External Fuel Tank Pods, Drop Shipment Cargoes, Starship Towing, etc. All explosive bolts connect to a power line and an optic cable to an AI controller Chip and detonator.



ELEVATORS	AV
CARGO ELEVATOR (24' Sq.)	50t
CARGO ELEVATOR (12' Sq.)	25t
INTERIOR ELEVATOR (6" Sq.)	10t
MINI ELEVATOR (3' Sq.)	06t
TRANSPORT CAR (6' Dia.)	25t

High speed horizontal transport system sed with Transport Tube, Holds 4 Passengers.

COMPONENTS	AV
INTERIOR ELEVATOR DOORS	05t
EXTERIOR ELEVATOR DOORS	08t
ELEVATOR TRACK (20')	01h
CARGO ELEVATOR TRACK (20')	02h
TRANSPORT TUBE (7' Dia. x20')	03t
ELEVATOR CONTROLLER AI	01h
ELEVATOR MOTORS	03t

AIRLOCKS

The difference between an escape hatch and an airlock is the airlock can be re-used where the escape hatch is a one one time use. The average airlock has a complex pumping station attached to remove or replace atmosphere from the lock. Average cycle time is a minute to 30 minutes in larger locks.

AIRLOCKS	AV
AIRLOCK DOOR EXT. 03'	02t
AIRLOCK DOOR EXT. 08'	05t
AIRLOCK DOOR EXT. 12'	14t
AIRLOCK DOOR EXT. 20'	40t
This design of doors are sliding.	
CLAMSHELL AIRLOCK 03'	02t
CLAMSHELL AIRLOCK 08'	04t
CLAMSHELL AIRLOCK 12"	12t
CLAMSHELL AIRLOCK 20"	35
This design of doors opens outward.	
SHUTTLE AIRLOCK	50t
SHUTTLE CLAMSHELL	40t
AIRLOCK PUMPS	06t
AIRLOCK CONTROLLERS	03t
AIRLOCK SENSORS & AI	01h

EXTENDABLE AIRLOCK	50t

Extends the airlock 30 feet from the ship without adding to space taken by the main airlock. Seals to the other ship by a spray sealer that requires a replacement drum (100d's) every 100 uses.

DECONTAMINATION UNIT	07t

Decontaminates with liquid spray and UV Light. 4 minutes.

HATCH & DOOR	**AV**
HATCH (Doorway)	01t
ESCAPE HATCH 02x02	03h
ESCAPE HATCH 03x03	04h
ESCAPE HATCH 04x04	05h
ESCAPE HATCH 05x05	06h
ESCAPE HATCH 06x06	07h
ESCAPE HATCH 08x08	08h
ESCAPE HATCH 10x20	02t
ESCAPE HATCH 20x20	04t
SCUTTLE 3' Diameter	03h
SCUTTLE 5' Diameter	05h
AUTODOOR CONTROLLER	01h
DOOR CONTROLLER AI	50d

PODS	**AV**
ESCAPE POD	75t

Life Support for 16 weeks for 4 passengers.

WORK POD	25t
TRANSPORT POD	30t

Can tow up to 10 cargo cans.

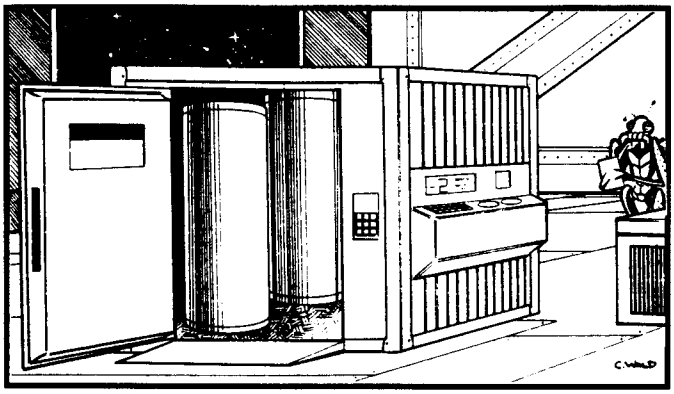
EXTERIOR SPIDER BOT	16t

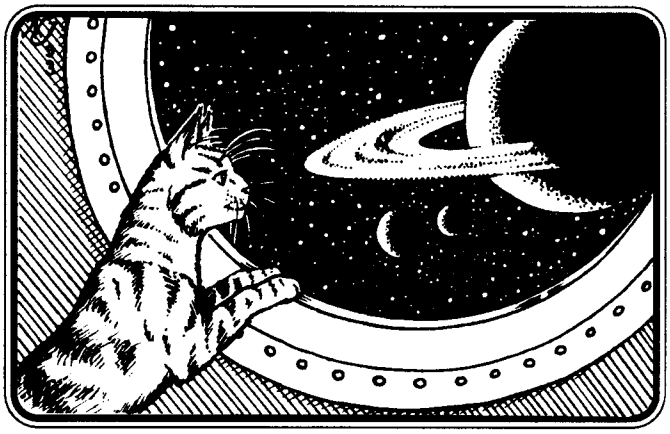
A 5' robotic spider used for hull maintainence. Has a computer AI link to the ship. Can weld, patch, and replace small components. Used as a remote camera.

SATELLITES	**AV**
MAPPING AI	10t
BEACON AI	20t
COMMUNICATION AI	15t
PHASE RELAY	75t

A 10' torpedo shaped missile that is used as a one-shot distress relay. Programmed to accelerate and phase back to ISCO space where it transmits data.

CARGO	**AV**
CARGO CANISTER 10' Sq.	10t
COLD LOADS MODULE	02t
WARM LOADS MODULE	02t
SENSOR PACK	01t
CANISTER TRACK (20" Magnetic)	05h
CARGO AI COMPUTER & LINK	10t





PORTS AND BAY WINDOWS

Most intelligent life forms find a view of space exciting. For this reason clear windows are still used. Either round or square, they are made of a glass/diamond composite for strength and durability.

	AV
WINDOW PORT (1")	01h
WINDOW PORT (2")	02h
WINDOW PORT (6")	04h
WINDOW PORT (10")	01t
WINDOW PORT (20")	03t
OBSERVATION BLISTER (2")	04h
OBSERVATION BLISTER (6")	01t
OBSERVATION BLISTER 10")	03t
AUTO PORT SHUTTERS	01h
PORT SHUTTER SERVO & AI	01h

COM & SECURITY	**AV**
INTERIOR COMM STATIONS	01h
INTERIOR COMPUTER LINKS	01h

Small computer terminals linked to main system.

REMOTE CAMERAS	05h

Optical/Sound

SENSOR ADD ONS	01h

Per Filter or sensor type. (See also Ship Sensors Pg 266)

MOVING CAMERA	02t

Optical/Sound

CAMERA TRACK	01h

20 feet for moving camera

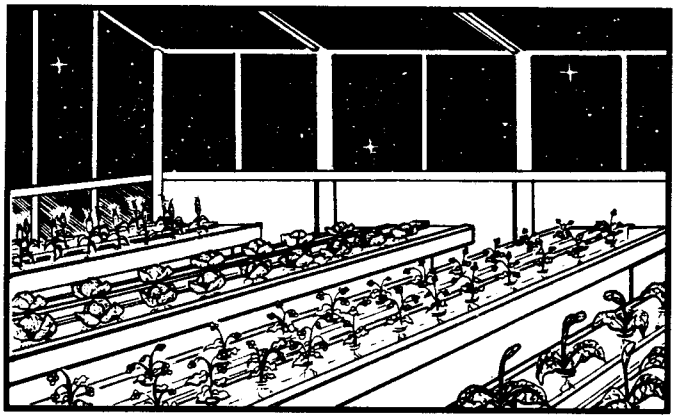
INTRUDER CONTROL AI	01h
AUTOHOUND	15t
INTRUDER CONTROL STATION	05t

INTERIOR	**AV**
CEILING LIGHT STRIPS	20d
RECESSED LIGHTING	50d
LIGHTING AI	50d
INTERIOR ROOM DIVIDER PANELS	01h
GLASS PANELS	02h
CABIN DOORS	01h
AUTOMATIC DOORS	02h
CARPET(10x10)	01h
PLUSH CARPET(10x10)	02h
FLOORINGALMOST VINYL (10x10)	01h
TILE (10x10)	01h
SYNTH-WOOD FLOORING (10x10)	02h

	AV
DECORATIVE LIGHTING	90d
BED	02h
BATH	05h
SAUNA	01t
SUN SIMULATOR	02h
SHELVING	40d
RACKS	02h
HOT TUB	02t
SHOWER	04h
BATH TUB	03h
TOILET	01h

MAINTANANCE	**AV**
CLEANING BOTS	02t
DUSTBUGS	04h
MAINTAINENCE BOTS	05t
SHIPS LAUNDRY	05t

MAIN SYSTEMS	**AV**
COMPUTER MAIN CPU	90t
COMPUTER DATABANK	75t
PHASE COMPUTER CPU	95t
PHASE NAV COMPUTER	95t
PHASE PLOTTING COMP	95t
FUSION ENGINE COMP	85t
LINKAGE TO ENGINE	10t
LINK BETWEEN COMPUTER	10t
LINK TO POWER	20t
ENGINE PHASE INTERLINK	10t



ENVIRONMENTAL SYS	**AV**
AIR SCRUBBERS (Per 100 crew)	05t
AIR TANKS (Between Deck)	05t
ENVIRONMENTAL CONTROL	40t
FUEL FILTERING	10t
FUEL SYNTHESIS	30t
HEAT/COLD GRIDS (10x10 Grid)	04h
HUMIDIFIER (Per 4 20x20 Blocks)	02t
AMINO PURIFIERS	05d
DEHUMIDIFIER	02t
HYDROPONICS (Hardware)	40t
PAPER RECYCLERS	40t
SPECIALTY ATMOS REG	50t
SOLID WASTE RECYCLERS	30t
WASTE WATER SCRUBBERS	20t
WASTE RECYCLING	60t

ENGINEERING SHOPS

METAL	**AV**
SMELTERS	50t
PURIFIERS	65t
MILLING STATION	30t
FABRICATION TANK	30t
MACHINES	50t
TREATING	25t
BARSTOCK	20t
SUPPLY	20t
PARTS	50t
ELECTRICAL	
FABRICATORS	75t
TEST EQUIPMENT	20t
CHIP FABRICATION	95t
FABRICATION TANK	30t
SUPPLY	20t
PARTS	40t
PLASTIC	
FABRICATORS	40t
MOLDERS	20t
FABRICATION TANK	20t
STOCK	10t
SUPPLY	20t
PARTS	30t
WOOD/PLASTIC	
FABRICATION TOOLS	25t
PLASTIC PELLETS & STOCK	10t

OTHER STOCKS	**AV**
CHEMICAL	20t
FOOD CONCENTRATES	20t
PAPER GOODS	05t
BIO/MEDICAL	25t

MEDICAL BAY	**AV**
AUTODOC	02m
FREEZING TUBES	
-BULK	20t
-INDIVIDUAL	08t
MEDICAL SCANNERS	20t
BIO MONITOR BED	25t
BIO/MEDICAL LAB	75t
OPERATING THEATRE	50t
MEDICAL COMPUTER	40t
MEDICAL SYNTHISIZER	85t
MEDICAL ANALYZERS	65t
MEDICAL SUPPLY	20t

KITCHEN	**AV**
PREPAK MICROWAVE MEAL	02d
AUTO KITCHEN	30t
AUTO KITCHEN SYNTH	10t

Synthesizes most foods in d10 minutes. Taste is another matter. Requires a Food Comp for multi racial synthesis of protein and taste. Kitchen Computer links to the ships medical computer to provide optimum health maintainence.

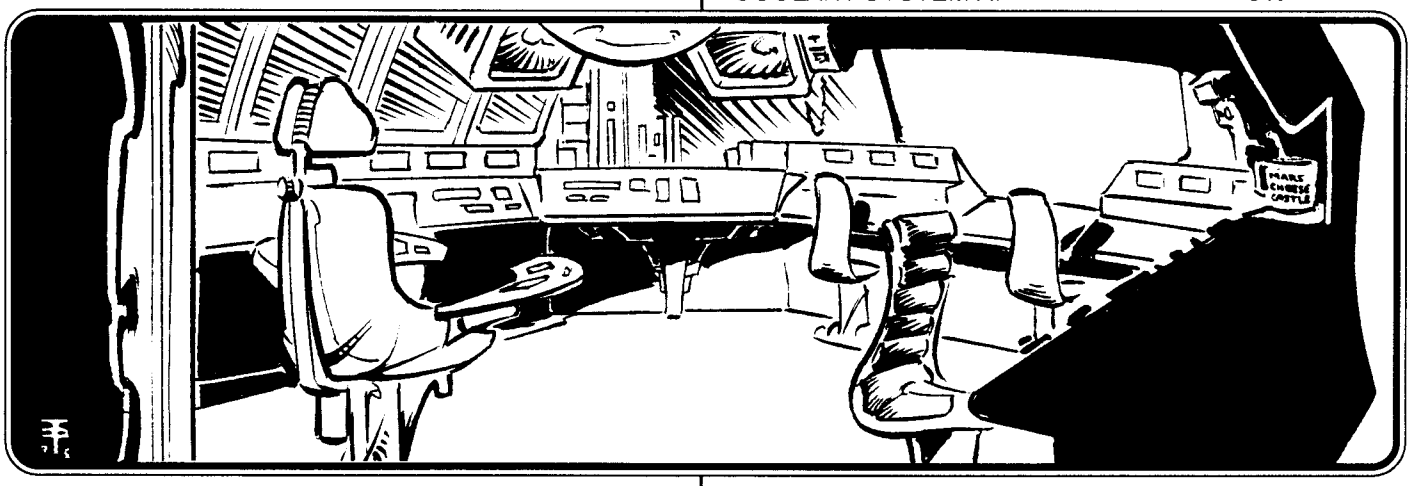
SHIPS MESS AREA	10t

Tables, Benches, Plates, Kitchenware, etc

HOT BEVERAGE MAKER	01t
DISHWASHER	09h

AUTO BREWERY	10t
Makes alcoholic beverages and mixed drinks.	
FREEZER (Walk in 10x10 unit)	05t
REFRIGERATOR (Walk in 10x10 unit)	05t
FOOD PROCESSORS	01t
For mixing, cutting, mashing and other processing.	
AUTO COFFEE SYSTEM	02h
STOVE	01t
MICROWAVE	01t
FUME HOOD, INDUSTRIAL	04h
CONDIMENTS & MISC	01t
DISPOSAL	02h
KITCHEN COMPUTER AI	05t

COOLING SYSTEMS	**AV**
COOLANT PURIFIERS	05t
COOLANT RADIATORS	05t
INTERCOOLERS, Small Ship	10t
INTERCOOLERS, Medium Ship	40t
INTERCOOLERS, Large Ship	80t
INTERCOOLERS, Gigantic Ship	01m
EXTERNAL COOLING FINS	15t
EXTERNAL COOLING RING	75t
EXTERNAL COOLING TOWER	01m
COOLANT PUMPS	20t
COOLANT CONTROLLER	03t
COOLANT SYSTEM AI	01t



BRIDGE	**AV**
CAPTAINS CHAIR	05t
HELM STATION	15t
NAVIGATOR STATION	05t
ENGINEERING STATION	05t
PHASE NAVIGATION	05t
PHASE ENGINEERING	05t
COMPUTER	05t
LIFE SUPPORT	05t
DAMAGE CONTROL	05t
EXECUTIVE CONTROL	05t
COMMUNICATIONS	05t
SENSORS	05t
WEAPONS	05t
AUXILIARY STATION	05t

FUEL SYSTEMS

SHUTTLE FUELING HOOKUP	05t
Robotic and automatic fueling system to keep shuttles fueled.	
SHUTTLE PLATFORM	10t
External hookup to hold and secure shuttle. Generally has an airlock attached to the shuttle's underside.	
SHIPS REFUELING PORT	10t
Robotic and automatic fueling system to keep starship fueled.	
FUEL DRONE	90t

Robotic shuttle that can skim the atmospheric water from gas giants or some worlds. These delta shaped craft are 60 feet in length and capable of skimming d100 units of fuel per run. Close runs take d10+10 hours. Some drones are designed to land and siphon water. These larger designs resemble Landers and can haul d100 units of fuel back to an orbiting ship. These are often launched in clusters.

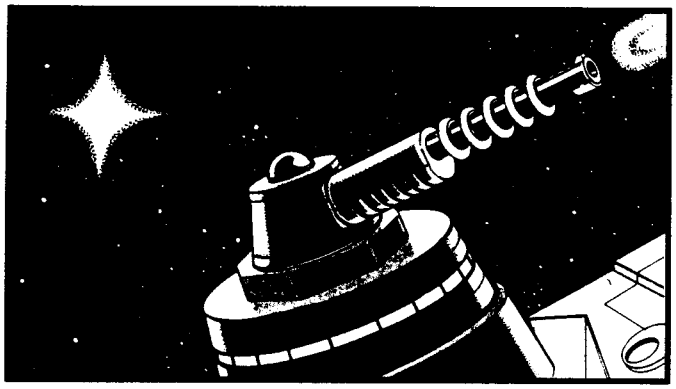
RAD CONTROL SYS	**AV**
RAD ENTRAPMENT FIELD	40t
RADIATION SCRUBBER	50t
RAD COLLECTOR	25t
RAD SHIELD CANISTER	05t

PHASE SYSTEMS	**AV**
PHASE GENERATOR I	01m
PHASE GENERATOR II	02m
PHASE GENERATOR III	03m
PHASE GENERATOR IV	04m
PHASE STANDARD a	05m
PHASE STANDARD b	10m
PHASE STANDARD c	15m
PHASE STANDARD d	35m
PHASE STANDARD e	55m
PHASE STANDARD f	75m

SENSORS	**AN**
OPTICAL REFLECTION	10t
RADIATION/PARTICLE	10t
MOTION	15t
MASS/SOLAR WIND	20t
GRAVITY	35t
MAGNETIC/RADIO	10t
INFRARED/ULTRAVIOLET	10t
PHASE PARTICLE	50t
IDENT BEACON	05t
COM/SENSOR HARDWARE ARAY	20t
Links up to 10 sensors to computers	
COM/SENSOR ANTENNA	05d

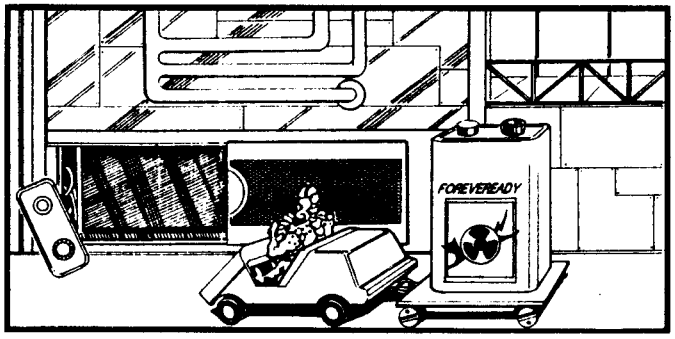
SENSORS	AV
HI-GAIN ANTENNA	30t
COMMUNICATIONS LASER	20t
MICROWAVE PULSE EMITTER	15t
SHIPS BLACK BOX	29t

Records ship functions and communication. Shielded to withstand orbital re-entry if ejected or thrown clear of a damaged ship.



WEAPONS SYSTEMS	AV
TURRET RING & HARDWARE	10t
TURRET MOTION SERVOS	25t
TURRET SENSORS	10t
TURRET BLISTER	20t
GUNNERS CHAIR	15t
CANISTER RACK	10t
CANISTER LAUNCHER & COMP AI	30t
CANISTER LOADER	20t
EXPLOSIVE CANISTER	05t
CHAFF CANNISTER	03t
SHOT CANNISTER	03t
MINING LASER	50t
COMBAT LASER	95t
TWIN PULSE COMBAT LASER	95t
PARTICLE BEAM WEAPON	95t
PARTICLE BEAM HOUSING	20t
RAIL GUN	30t
MISSILE LAUNCHER STATION	70t
06 SMART MISSILE TUBES	80t
24 DUMB MISSILE TUBES	30t

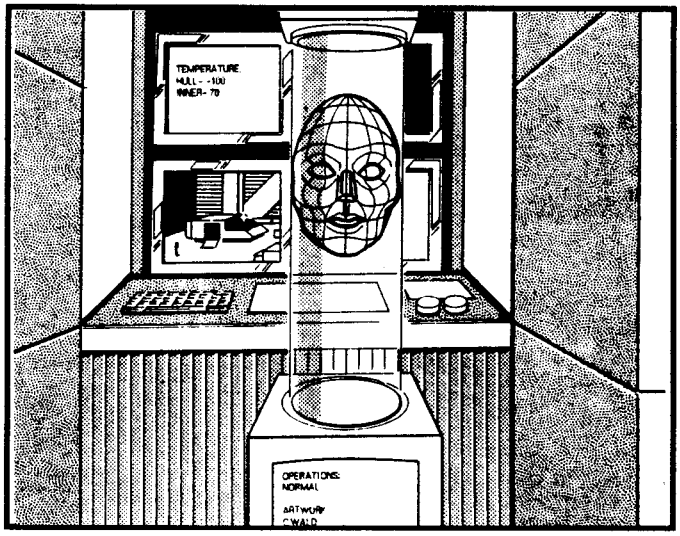
POWER SYSTEMS	AV
NUCLEAR BATTERIES	10t
BATTERIES	01t
NUCLEAR REACTOR	01m
PORTABLE NUKE BATTERY	04t
FUSION ELECTRIC PLANT	01m
PORTA FUSION PACK	20t



ENGINES	AV
FUSION ENGINE Shuttle	01m
FUSION ENGINE Small Ship	02m
FUSION ENGINE Medium Ship	05m
FUSION ENGINE Large Ship	08m
FUSION ENGINE Gigantic Ship	10m
NUCLEAR ENGINE Small Ship	01m
NUCLEAR ENGINE Medium Ship	02m
NUCLEAR ENGINE Large Ship	05m

EXHAUST CONES	AV
EXHAUST CONE Shuttle	02t
EXHAUST CONE Small Ship	06t
EXHAUST CONE Medium Ship	08t
EXHAUST CONE Large Ship	10t
EXHAUST CONE Gigantic Ship	20t

VERNIERS	AV
VERNIER JET Shuttle	01t
VERNIER JET Small Ship	02t
VERNIER JET Medium Ship	04t
VERNIER JET Large Ship	08t
VERNIER JET Gigantic Ship	15t



SHIPS COMPUTER

Your main computer is the heart of your starship, the core of operations and the subroutine that monitor and regulate the complex systems of star flight. Branching to smaller operational and monitoring computers, data is evaluated and relayed to the main system.

COMPUTER AI

By 2448 most main frame computers have a sophisticated AI interface to make computer use as simple as talking to another person. Complex personality programs are created to a single or multiple 'Computer Crew'.

These personalities are extremely valuable to a starship, having taken years to create in most cases. Costs for an effective personality can approach 50,000 d's. Personalities always carry a PR rating of 1 to 1000 for their ability to avoid hostile virus takeover.

Ben, Bells, & Quag

As Ben powered up the bridge of the Wapakoneta he called on the ships AI to report to the main screen. Eight faces formed on the screen to identify themselves.

	NAME	OPERATION	RATING
01	Clara	Ships Computer	570
02	Max	Main Engineering Systems	490
03	Sparks	Communication	340
04	Magellen	Phase Engineering & Navigation	440
05	Boris	Fusion Engineering	510
06	Velma	Ships Stores, Trade, and Library	310
07	Harry	Ship Security, Emergency	204
08	Bork	Virus Pirate Program?	603

Unlike the other personalities, the last winked at Ben and refused to identify itself. "Aarrr," it sneered, "I be your computer, and that's all ye need to know."

With a cold chill Ben realized the computer had a Virus AI, a pirate program serving an unknown purpose.

VIRUS PERSONALITY

The hackers and computer terrorists of 2448 have created Virus Personalities for the infestation of computers and the collection of data. Some of these self preserving algorithms have become so sophisticated that they have gone beyond their makers and transfer themselves across communication and data lines. If a Virus Personality over rums a ships main system it resides until attacked by a Virus Hunter Killer AI.

VIRUS HUNTER KILLERS

A Virus Hunter Killer attacks another AI Personality. Every minute of combat a d100 is rolled and subtracted from each of the AI's rating. When one reaches 0 it is replaced by an invader or has defended itself.

SHIP PESTS

As mankind and his alien friends headed for the stars, many of his traditional companions followed. These included the dog, cat, and unfortunately, less desirable, like the Norway rat, cockroach, and numerous insect pests. These pests, with many others from alien worlds have become a minor nuisance for a space-going society.

These are a sample of possible problems for a starship. Some are easy to dispose of, some require professional assistance to avoid major destruction of cargo and ship systems.

ANTS **(Iridomyrmex humilis)**

Ants have been seeded on many worlds along with bees. Some have infested starships in rare cases where organics and consumables have been stored carelessly.

TERRA ROACH **(Periplaneta sinenis)**

Roaches have traveled with man since the beginning of the space program. These opportunistic pests live anywhere and eat many organics.

VAC FLIES **(Drosophila vaccis melanogaster)**

An unusual mutation that has created an armored fly that can lock its chitinous body plates and survive vacuum for up to 10 hours. Vac Flies feed and reproduce on garbage.

FUZZERBEES **(Bombylius plasticus major)**

These bee like pests feed on plastics and petroleum based synthetics. Nests appear as a large plastic cube where thousands converge. They secrete a plastic dissolving solvent from their stinger that is painful but non toxic to all races but Whurr.

FLEAS **(Ctenecophalides terra)**

Fleas of one type or another plague all fur-bearing races. As one defense is found, they develop an immunity.

SPIDERS **(Araneus terra)**

Not as much a pest as an annoyance, spiders creep into anything to spin webs or hunt for prey.

FURFOOTS **(Dipodomys psionis)**

These fuzzy rat like pests have the Psionic talent of Teleportation. Limited to a foot in teleport range, they can easily breach walls and tanks. A single 5 inch Furfoot will create a nest of bright and shiny objects, often components, buttons, and jewelry. Generally they are shy and smart. Mis-teleports often land them inside machinery where their bodies clog the works.

COPPER SHROOMS **(Laetiporus coppereus)**

This fruiting fungus feeds on copper and copper alloys. Generally conducting, it mimics wire for a limited time before branching and creating short circuits. One infestation preserved and now on display at the Mars Air & Space Museum found 30 pounds of fungus mimicking a 220 volt power run for 25 feet.

TERRA RATS **(Rattus noregicus)**

Rats have spread across most of ISCO space. These smart pests hide in cargo or infest crawlways between decks where they chew insulation and search for food. Many starships have a cat or a Cat Bot for the tracking and disposal of rats.

RAT MUTANTS **(Rattus mutanis beta)**

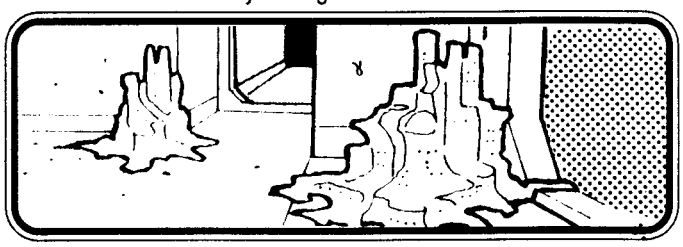
Recent to ISCO space are a new type of rat, a cat sized mutant that thinks and uses tools. These primitive lifeforms are hostile and cunning, having been known to kill an engineer in a cramped space.

VESH RATS **(Rattus horribilis vesh)**

This alien rat-like form has quietly spread across ISCO space. First appearing as a grub, the Vesh Rat metamorphoses into a mouse like form. Literally an eating machine, it grows to small dog size as it consumes any organics in its path. The excrement it leaves contains 100-500 more grubs. These pests are hard to kill and will take off an arm if cornered.

ARMY ROACHES **(Periplaneta broyoxa)**

Strangest of the pests found on starships are the Briox Army Roaches. These marvels of survival build small cities in the odd corner of unused storage areas or between decks. Army Roaches scavenge protein and dirt for fungus farming. When a Roach colony reaches it's maximum size a fraction fragments and creates a new colony. If the colonies compete for resources, they mobilize to exterminate each other, hence the name Army Roach Damaging a roach city can result in a massed attack against a human or alien. Some Natural History centers keep a Roach Colony behind glass as an exhibit of rudimentary intelligence.



SHIP DESIGN

The Ontario Class Starship is the 'Model T' of a new era of small space vehicles with multiple functions. Built as modular units in Earth's Canadian Sector, it soon became a design that was licensed on every world that mass produced starships.

ONTARIO CLASS

The following is a general hull design for an Ontario. Remember, not all starships have their bridge in a vulnerable position. Most center the main control area in the center of the ship, where it is most protected.

SHIP REGISTRATION CODE

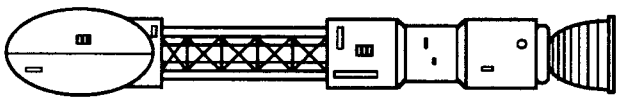
Index the first letter for the ownership type and the last two letters for the use of the ship. The ship (ISF 0013 Ventura) would be an "Independent Freighter", chronologically, the 13th ship produced of her particular design class, which in this case would be a "Kansas" Class. Brackets around a letter code indicate the ship is from an official ISCO or ICL agency. The following list indicates each particular ship type:

I Independent
P Private
C Corporate
( ) Official

SF	Freighter	OS	Orbital Station
PC	Passenger Ship	OD	Orbital Dockyards
TU	Tug	UV	University
MC	Medical Ship	WD	Waste Disposal
TA	Tanker	PF	System Police Force
HS	Hospital Ship	SL	Salvage
CO	Colonizer	PL	Luxury Liner
RF	Refinery	EX	Explorer
OH	Orbital Habitat		

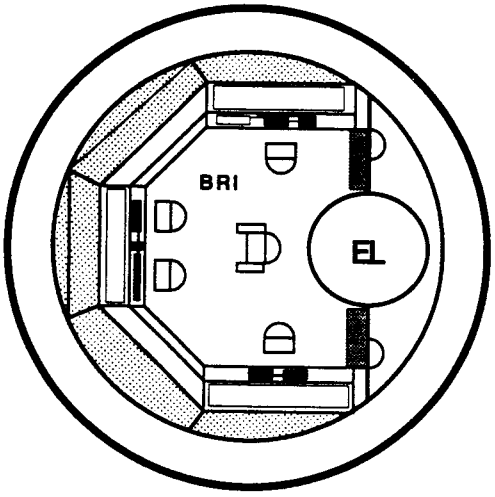
(ICL)	Interstellar Court of Law
(ISCO)	Interstellar Scientific Co-Op
(ISN)	ISCO Space Navy
(ICW)	Interstellar Corporate Watch
(FUB)	Federation Universal Banker
(DSS)	Deep Space Survey

ONTARIO CLASS
Side Exterior View



NAM:	**Ontario**				
YEA:	2330	TFU:	M	CLA:	Any
CON:	1890+	TNK:	16470	CRW:	11
LEN:	283'	ENG:	2 Md	PSN:	20/180
SPC:	cdfhjmnz			CRG:	80

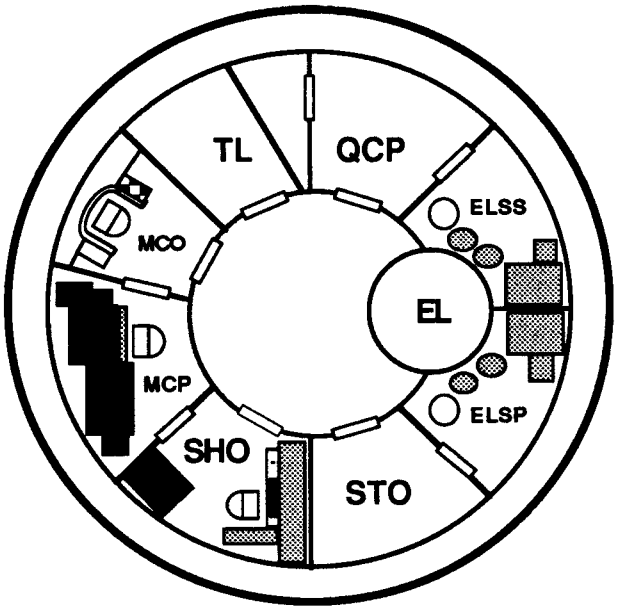
This "pocket starship" has earned an outstanding reputation for engineering, use, and economy in all fields. At first slow to catch on, it became the lifeblood of quick transport to the colonies and the perfect scout. Still in production, these ships are modified continuously. Popular with ICL forces and corporations.



BRIDGE ***LEVEL 1***

Level 1 is the main Bridge Level. Smallest of the ships areas, it is manned by up to 5 individuals. Main flight, docking and operations control are handled by the consoles in front of the Captains Chair. To the sides are twin Ship's Systems panels that can serve as any command, engineering, or weapons station. From his position the captain can use his own smaller panels, in the chair's arms to take command of any of the stations.

BRI Bridge EL Elevator



MAIN SYSTEMS ***LEVEL 2***

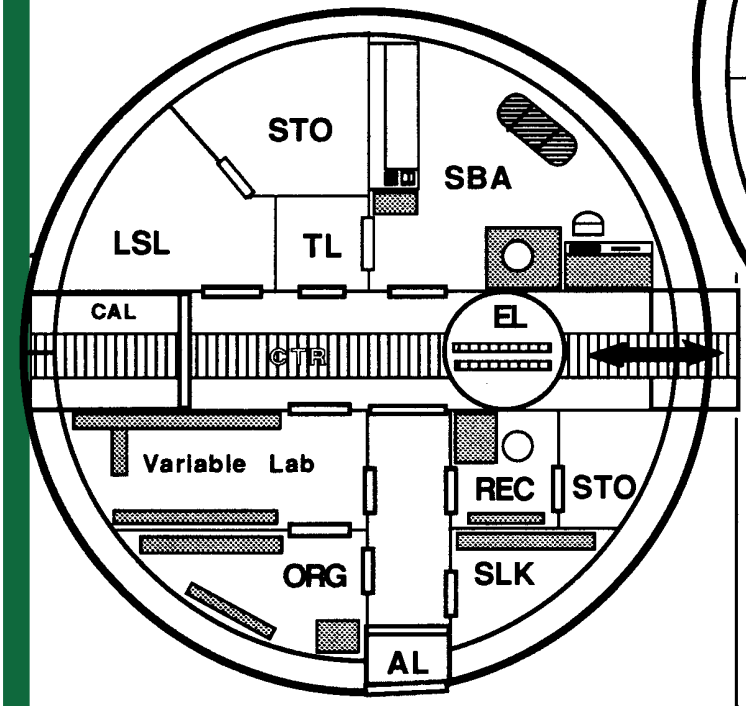
These small offices are the primary brains of the entire Ontario Class Starship.

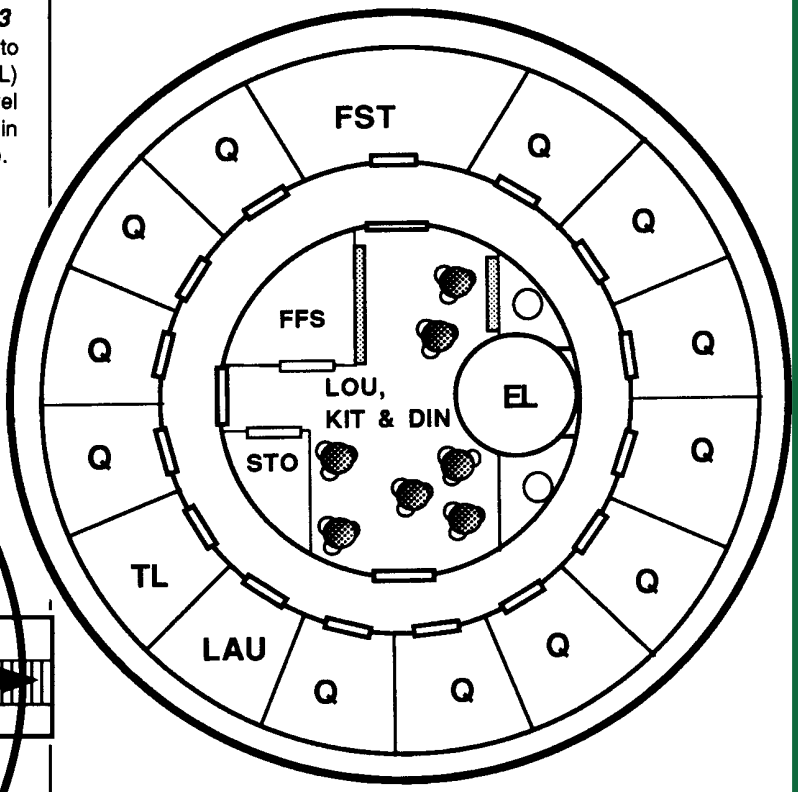
MCP	Main Computer & Programming Station
MCO	Main Computer Operations
SHO	Ships Operations & Records
ELSS	Emergency Life Support Starboard
ELSP	Emergency Life Support Port
EL	Elevator
QCP	Captains Quarters
STO	Storage
TL	Toilet

CARGO & SCIENCES *LEVEL 3*

Cargo is loaded through the nose of the ship and shuttled to the frame by moving tracks. During this process the elevator (EL) is locked on deck 4. From this point the elevator can tavel horizontally to the rear of the ship. Generally two elevators are in operation at any time with a third on reserve in the center frame.

LSL	Life Science Lab	CAL	Cargo Airlock
SBA	Sick Bay w/Autodoc	REC	Waste Recycling
EL	Elevator	SLK	Space Suit Locker
ORG	Organic Fabrication	TL	Toilet
AL	Airlock	STO	Storage





LABS

This level also contains the ships main labs for Organic Fabrication and Analysis and the Life Sciences Lab. Next to these labs is the modest Sick Bay with its Autodoc and a Secondary Medical Computer.

VARIABLE LAB

The Variable Lab can be outfitted for anything from Mining Analysis to Hydroponics. Most starships accumulate a range of special equipment that winds up here.

Across the hall is the Main Vac Suit Locker for the crew's personal suits and small EVA equipment.

RECYCLING

The Recycling room is an automated grinder and sorter for ships garbage. Called the 'Ships Goat', it processes wastes and sends it back to engineering for final processing.

CREW *LEVEL 4*

Most of deck 4 is devoted to crew rooms and general living. The central hub serves as lounge, meeting room, and kitchen. The kitchen contains heat, microwave and food processing equipment as well as the advanced Auto Chef food Synthesizer.

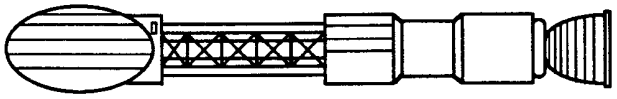
FOOD SYNTHESIS

The food synthesizer produces protein and carbohydrates in an amazing range of shape, texture, and taste. Computerized menu's helpin food selection. Advanced users can experiment with programming their own food choices or fin tuning their choices. Another feature of the unit links the the medical computer to provide a 'healthy or special diet for those with special needs.

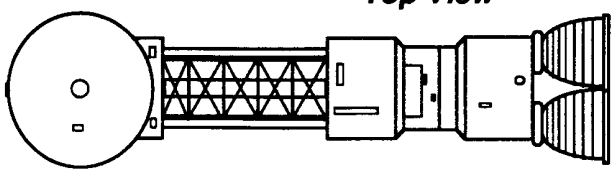
Quarters are designed for 2 individuals or can be fitted for 4 bunk style beds. Each room has 2 desks, chairs, storage lockers, and computer access. Rooms are decorated or personalized by their owners

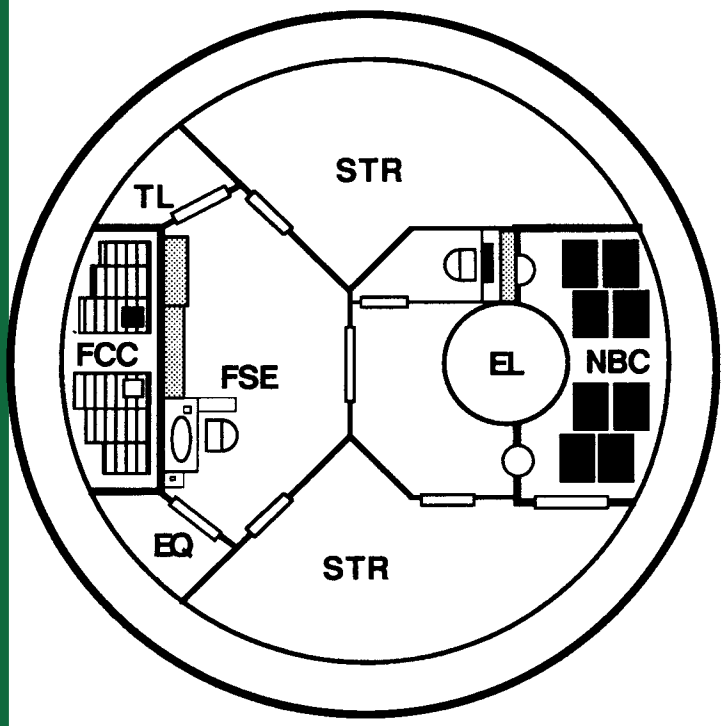
EL	Elevator	DIN	Dining Area
STO	Storage	Q	Quarters
FFS	Food Fabricator	FST	Frozen Food Stores
LOU	Lounge	LAU	Laundry
KIT	Kitchen	TL	Bathroom/Showers
FST	Frozen or Fresh Food Stores		

ONTARIO CLASS
Side Deck View



ONTARIO CLASS
Top View





SENSORS & BATTERY — *LEVEL 5*

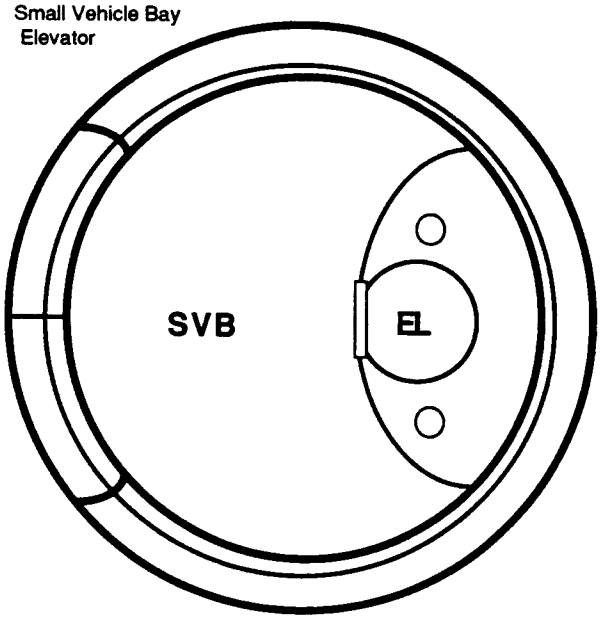
This area is the ships emergency power supply andship's sensors. The large storage areas can be adapted to lab use or quarters.

FCC	Forward Sensor Array
FSE	Forward Sensor and Weapons Station
TL	Toilet
EL	Elevator
NBC	Nuclear Battery Compartment
EQ	Equipment & Replacements
STR	Equipment and Technical Storage

EVA PODS — *LEVEL 6*

Deck 6 is the internal hanger bay. This bay is lined with work pods and EVA equipment. The entire bay can be de-pressurized for Pod launch.

SVB	Small Vehicle Bay
EL	Elevator



ENGINEERING — *LEVEL 1*

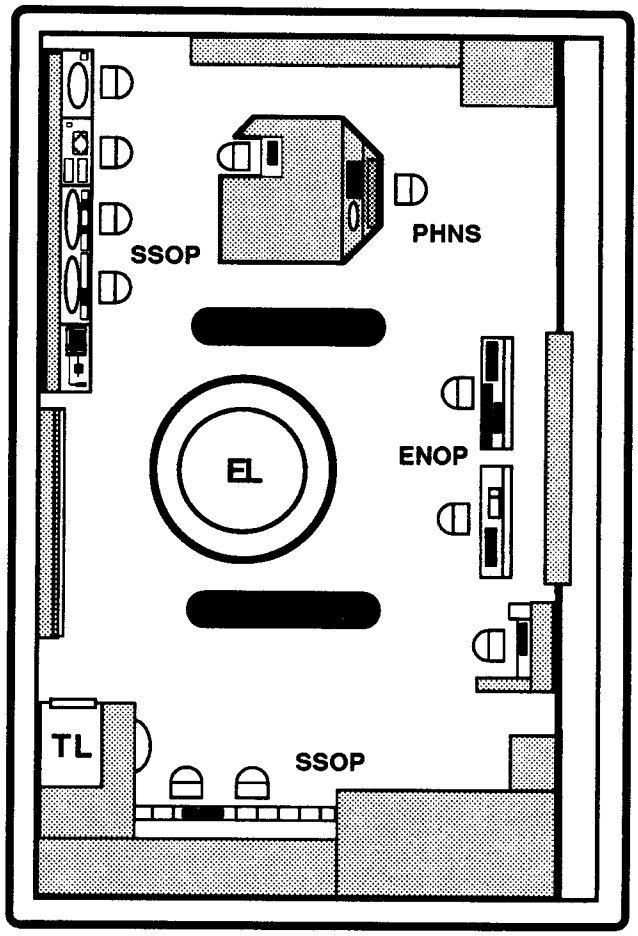
The front levels of engineering deal with ship systems, life support and fabrication labs. The two thirds of the rest of the ship is the space that holds the engines, phase drive and twin fusion reactors. The area can be viewed from the wall screen behind the ENOP consoles or accessed from Engineering level 2.

The ENOP station can also serve as a backup bridge if the main bridge needs additional monitoring or in a cases where the main bridge is damaged. The Backup Bridge functions are always secondary to the main bridge without Command Codes.

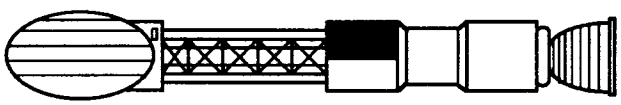
Shaded areas on the walls of the Engineering Bridge are monitoring system and computer sub-systems.

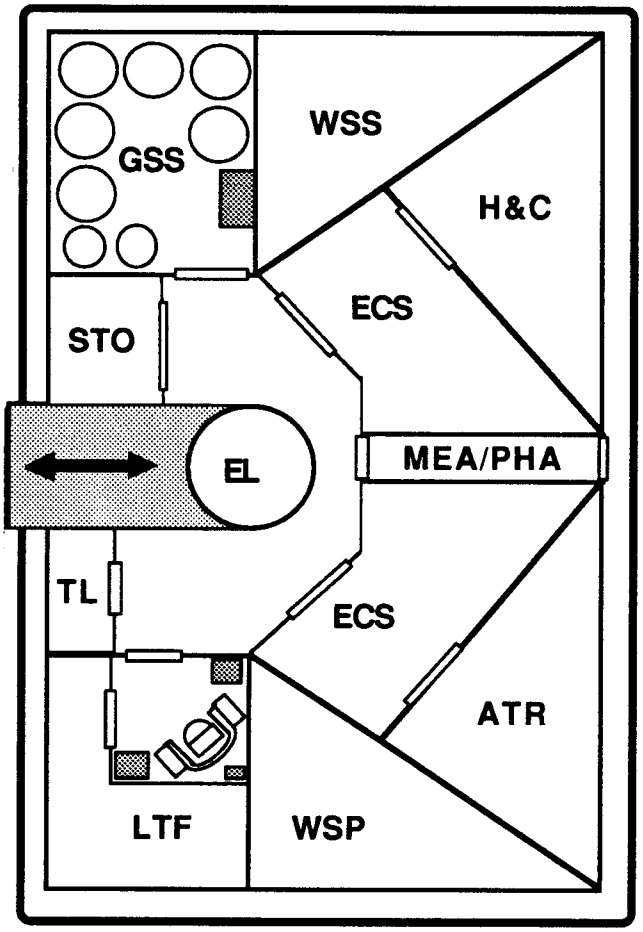
The lower ship diagram shows the main Engineering work areas shaded in black

EL	Elevator
SSOP	Ship Systems & Operations
PHNS	Phase and Phase Navigation Systems
ENOP	Engineering Operations
TL	Toilet



ONTARIO CLASS
Engineering Decks





ENGINEERING ***LEVEL 2***

The second deck of engineering is devoted to storage for critical components and spare parts. Also stored here are bulk plastics, metals, and chemicals as well as non specialized supply.

This deck houses the ships gas storage space for rare or unusual gasses used for everything from breathing mix to welding.

The elevator system links this level to the front of the ship.

The Liquid Tank Fabricator is the delicate system that can grow components by use of a computer cad system and laser.

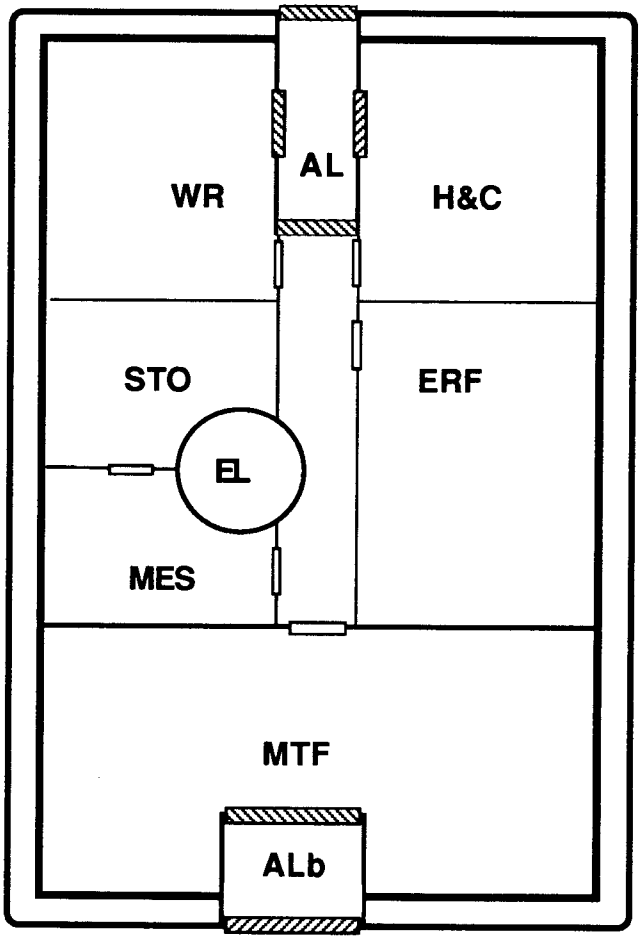
MTF	Main Technical Fabrication
STO	Storage
GSS	Gas Storage
ECS	Engineering Component Stores
WSS	Water Storage Starboard
WSP	Water Storage Port
LTF	Liquid Tank Fabricator
H&C	Heating and Cooling
ATR	Air Transfer & Recovery
MEA/PHA	Access to Engines/Phase

ONTARIO CLASS
Fuel Spaces

ENGINEERING ***LEVEL 3***

The main construction and repair level for the starship. Here are the fabricating machines and high tech devices that smelt, shape, and refine to the hundred thousandth of an inch. Here are also the bulk chemical processors and plastic casters. Most fabricators are linked to the ships main computer.

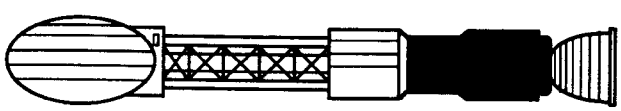
AL	Airlock
EL	Elevator
WR	Waste Recovery & Air Scrubbers
STO	Storage
MTF	Main Technical Fabrication
ALb	Secondary Airlock
ERF	Electronic Repair & Fabrication
MES	Main Electronics Storage

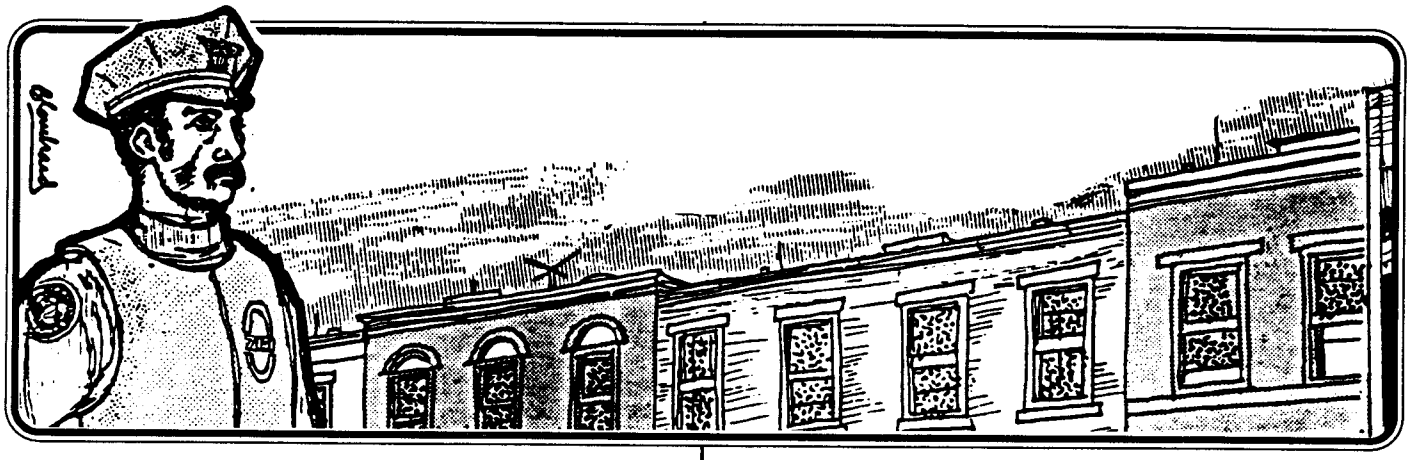


ENGINEERING ***LEVEL 4***

This deck is entirely a maze of piping and the Fuel Bunkers along with tanks for atmosphere. Accessed by the elevator or through the Main Engine Compartment

ONTARIO CLASS
Engine/Phase & Fusion





"Sometimes my people look up, but only to wipe the sweat from their brows. Tomorrow's fields wait and their hungry children cry in the night, I will give them the stars."

- Francisco Omoxomo

THE PROMISE OF SPACE

Although he never achieved planetfall with his flagship, the last of Earth's great dictators did indeed give mankind the stars. Omoxomo would have been proud of his people and the colonies established by the Brazilian Fleet within the next three centuries. The colonists flourished on worlds where each new day brought new challenge and new delights. It was nothing like the Earth they had left behind.

EARTH

On Earth itself, nothing really changed. A new, universal government united the planet, creating bright new cities to replace the decaying remnants of the 20-21st centuries economic upheavels.

They cut and molded, changing the face of the Earth forever, yet the general attitudes and structure of Earth's societies remained the same. Only stringent ecological management and the promice of space gave mankind's homeworld a second chance.

Most of the new metroplexes of 2448 are dispersed across wide, natural areas with efficient mass-transit, ecologically safe industry, and high-tech underground shopping centers. Homes are mostly in the form of high-rise apartment structures or condominiums. The majority of the largest of the old mega-cities remain, partly due to nostalgia, and partly because of the people who continue to cling to them.

"The Human of the early 21st Century would see very little difference in the street life of cities like New York, Detroit, San Francisco or London. Life hustles along at its own pace as people live, love and die to the tune of the city. Small businesses flourish anywhere a yen or a few dollars can be made. Wholesalers and retailers hawk their wares as children tag across the alleys and jump over the litter of centuries. There are still 'city people' who have never been more than ten blocks from their birthplace. Winos and Dabes look for a warm place to sleep on cold winter nights as gangs prowl their turf. I wouldn't trade it for a ride to a colony."

- John Smith, New York, NY, 2439

"Even from the clean air of the cities, you can look up and see the lights of Earth's Star Stations and the occasional pulse of a blue fusion torch as freighters head back to the colonies. But what about those souls who fell through the economic net of living FTL?"

- Jacob Kuhl

"They must come out of the cities on their own. We can't lead them where they don't want to go."

- Henderson Putnam

SOCIAL PROBLEMS

In spite of the world governments' best efforts, densly inhabited inner cities and high-tech slums continue to exist on Earth as well as a few alien worlds, places where a spacer dare not venture without numerous friends or a charged blaster.

Attempts were made though, at encouraging the economically deprived to seek their fortunes beyond the skies. On colony worlds, urban designers created new cities that co-existed with their unique alien ecologies while achieving an architectural grace and beauty unseen on old Earth. The growing Mega-Corporations of Earth, Mars, and the Belts began to push outward to help develop these newfound worlds.

Most of the city dwellers laughed.

COP 2448

In spite of humanity's best efforts there is still crime in the twenty fourth century. Cop 2448 takes you to the darker sections of FTL space, the back alleys and tough sections that most avoid.

Augmented History

1990 Debate on the reality of PSI remaining on the scientific fringe because of a lack of concrete evidence.

1995 Major US cities are proclaimed "safe" by the media but are in reality armed camps because of the crime rate. As the citizens are brutalized, politicians cut police forces to the minimum and tie their hands with legalities that hinder any deterrence of crime.

1996 American and Russians continue research into military applications of Remote Viewing and other PSI talents. Gun control acts create an open season on the victims of crime. Registered guns used for protections are removed from the hands of those least likely to use them for crime.

1997 Economic hardship create civil chaos.

1998 Lawless Years create a new respect for the use of firearms as the legal system collapses.

2000 A drug is discovered that augments psionic talents to scientifically measurable levels. Strong doses of the drug are proven disasterously fatal.

2001 Because of the the "Lawless Years," most citizens posses firearms or explosives to protect themselves. Large vigilante groups, Guardian Angels, and the common man patrol the neighborhood fortresses.

2011 PSI RNA–4 is banned because of serious mutogenic properties that show up in the offspring of test subjects.

2052 As Brazil goes to Alpha Centuari, many cities are still armed camps patrolled by vigilantes and ICO military.

2063 The rush to the star colonies is on as the poor, uneducated, and social dregs of society are forgotten. The fight for Survial Wages and Meal Cards becomes a monthly rite of the elderly and unemployed.

2175 As giant star factories are created, the old cities continue to crumble. The sea cities offer a better life and land populations continue to dwindle.

2200 Aliens settle across the Earth, brining new problems, crimes, and legal hassles for police who are mostly understaffed.

2206 ISCO Earth launches a century–long program of renovation for major cities across the planet Earth, including the creation of 5 new starports. The old building and monuments are saved whenever possible, landmarks restored, and the scars of accute urban blight erased. City people fight every inch of the way.

2259 Universal "computer" registration of Earth's population is met with refusual and later by violence. Legal systems bog down as Bloxians follow law and procedures to the letter.

2275 A ten year legal conference is called to create a universal law system for man and other intelligences on Earth.

2300 New drugs, violence, illegal aliens, and crime have now reached epidemic proportions unseen in the cities since the late twentieth century. The Special Police (SP) units are born in the ruins of major cities. The units are very successful in the direct removal of crime.

2310 First SAPS or Special Assignment Police Service is created from private and retired police to aid regular police.

2330 Gangs are on the rise. The first gangs join the police agencies as Gang Cops to help control their friends for a price.

2357 Androids revolt against their masters in the Andriod Riots. Several thousand androids demanded freedom from their servitude. Most androids were either recalled or "put down" by the military. Many more went to ground and blended into society.

2370 Morwitz Scott ruling bans registration and monitoring of Psionics, calling it a violation of thier basic freedom. The gangs are under some control now as the threat of prison colonies on Ulander becomes an established fact.

2406 Rogue Psionics become a social time bomb as illegal PSI drugs are imported from off world and dangerous PSI's are free to roam until they cross the edge.

2414 Atlanta Massacre leaves 212 dead as a Pyrokinetic goes on a rampage.

2416 Morwitz Scott decision on Psionic Power overruled by the World Court as SAPS units begin the hunt for Rogue and Sick Psionics.

EARTH 2448

I was born in the slums of SanJose, a city in the Mid California sector of North America. Once a high tech center in the 20-21st centuries, it fell into ruin and now has the 'patched splendor' look of the 2300's. AT 10 my folks moved to the massive Bos/Wash Mega-City with its half mile high buildings, parks and the easy pace of a Middle Class Lifestyle.

Across from our apartment I could see the old Inner Harbor of Baltimore, its grey apartment blocks and slums.

When I asked my mother why people lived there she said "Remember that hey have the freedom to work and live where they choose, and the ability to work their way to any economic ststus they choose."

I often wonder.

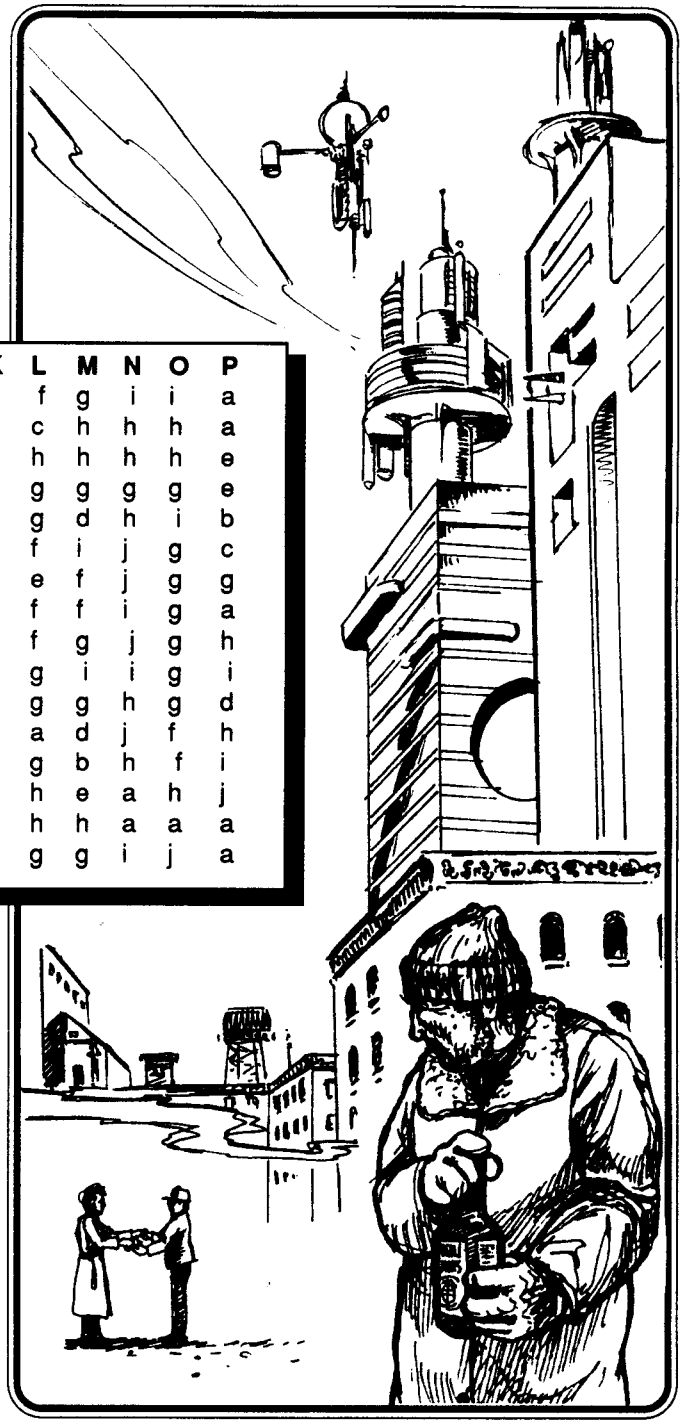
Boris Bartah'Kah
Baltimore, MD
US Sector

ON THE STREETS

In Cop 2448 you can be any of several types of characters. These are on the side of law, survival–oriented criminals or gangs. While many work together, others will fight or run on sight.

a	Work Together	f	Mistrust
b	Sometimes Together	g	Dislike
c	Rarely Together	h	Hate
d	Disdain Working With	i	Fear
e	Do Not Work Together	j	Stark Terror

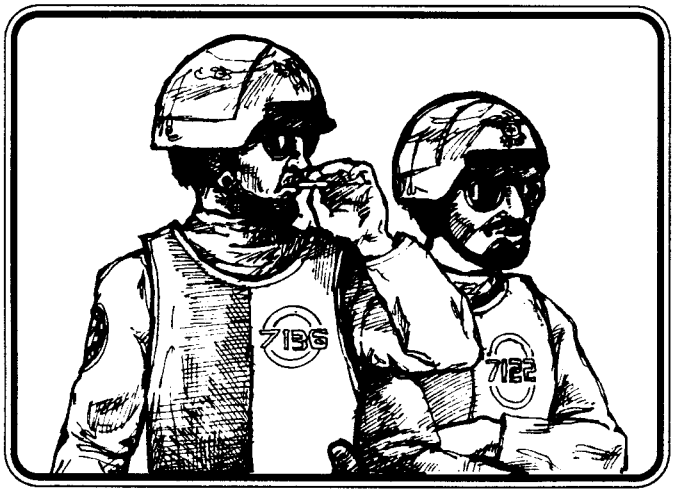
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A	**Police**	a	a	a	d	c	d	e	b	f	g	g	f	g	i	i	a
B	**Detectives**	b	a	d	g	d	b	f	b	f	h	g	c	h	h	h	a
C	**Walkers**	a	a	a	h	h	h	h	h	h	h	h	h	h	h	h	e
D	**SP Units**	d	d	d	a	e	e	g	g	g	g	g	g	g	g	g	e
E	**SAPS Units**	d	c	e	e	c	b	b	f	c	c	h	g	d	h	i	b
F	**Gangs Cops**	f	d	h	i	c	e	d	g	f	g	g	f	i	j	g	c
G	**Gangs**	g	g	i	j	f	h	e	g	b	f	g	e	f	j	g	g
H	**Aliens**	a	a	c	f	f	f	g	a	f	f	f	f	f	i	g	a
I	**Hoods**	d	d	i	j	f	g	h	f	b	a	g	f	g	j	g	h
J	**Bosses**	g	h	h	i	g	g	d	f	d	b	f	g	i	i	g	i
K	**Siders**	c	e	g	h	b	c	g	f	g	h	a	g	g	h	g	d
L	**PSI's**	a	a	d	g	c	e	e	b	g	h	i	a	d	j	f	h
M	**Rogue PSI's**	i	i	i	j	h	d	g	c	f	b	g	g	b	h	f	i
N	**Sick PSI's**	i	i	i	i	j	h	h	f	g	i	i	h	e	a	h	j
O	**Edgers**	h	h	i	j	h	h	h	h	h	h	h	h	h	a	a	a
P	**C'Techs**	a	a	d	e	a	b	f	b	g	g	g	g	g	i	j	a



POLICE

Cops are the troopers of the law. Ranking somewhere between saint and devil with the general populace, they attempt to serve and control society to the best of their ability. Average police duty has stayed the same during 500 years of counseling the public, protecting, purveying minor justice, and passing out civil infraction chits.

STR: +1 Police Training
DEX: +1 Police Training
AGL: +1 Police Training
ACC: +1 General Bonus
WIS: +2 In Street Matters
ARM: +35 Battle Dress



DETECTIVES

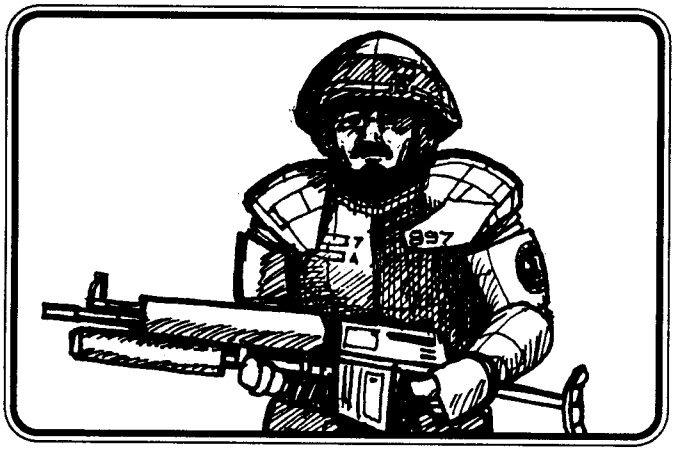
Working in the field, the Detective is the police specialist that works undercover or with the street cop. Detectives travel into circles where uniformed police are unable to go, working against criminals and organized crime.

Often they are limited by the departmental policy of their area and the laws designed to aid the criminal's rights.

STR: +0
DEX: +1 Constant Use
AGL: +2 On the Street Training
ACC: +2 General Street Bonus
WIS: +3 In Street Matters
ARM: Ballistic Cloth + Ves

SP's

SP's are Special Police Units developed from tactical police units that have become a strike force in armor. Licensed to eliminate as they see fit, these rarely–called units are avoided at all costs by the underworld. It is often said: "When the SP's show in powered armor, people die." See SP Suits



WALKERS

Walkers are criminals sentenced for such heinous crimes that they are mind–wiped and after a four year medical treatment, emerge as mindless hulks. They are controlled by police with communication implants. Used for crowd control and high risk situation, they are feared by the general populace and aliens. In 10% of Walkers some residual personality or loyalty develops.

STR: +16 Augmented by Drugs & Conditioning
DEX: –05 Loss of Hand/Eye Coordination
AGL: +4 Augmented by Drugs
INT: Effectively 0, almost total loss of mental use
ACC: –03 In Motion, Average ACC (7)
ARM: +35 Plastic Battle Blues
WIS: -08 Usually have a 1 or 2 in the extreme with a 20+ word vocabulary they can understand most of the time. Words may be Arm, Kill, Capture, Shoot, Leg, Follo, Break, Walk, Yes, Turn, Lift, Right, Left, No, Run, Eat, Restroom, Help, Stay, Sit, Bad, Food, etc.

GANG COPS

Gang Cops are the occasional street gang that turns "legal" and becomes a loose–knit police service specializing in the deterrence of small crime in "their" city areas. While hated and considered renegade by other gangs, they provide some aid to the police. Gangs of this type often have a local police remote station or vehicle at their call.

AGL: +2 You have to be fast on the street.
WIS: +6 On Street Related Matters
SKL: 1 Street skill at a level of d4 +4 and a second at d4+2 .

C'TECHS

At the call of the official police units are the C'Techs or Criminal Technicians who cover police science. Quick and efficient in their work with computers and high–tech evidence gathering, they are often the single factor in finding evidence to convict a criminal. C'Techs will often have a Postcog PSI attached to their units

WIS: +4 Relating to criminology
SKL: Any specialty skills from the police service page
ARM: Usually none or Ballistic Vest (16)

S.A.P.S.

SAPS are members of the special Assignment Police Service who assist police much as the private detective did in the twentieth century.

These hard individuals remove the special threats to the city's populace. Often a SAPS unit will border on the criminal in their methods as they work to remove PSIs, aliens, and criminals who are above the law. Looking down–trodden like the people they mix with, they are both hated and respected. Sometimes the SAPS cop is lightly altered or Augmented bionically. See Augmentation

STR: +1 Usually Very Fit
DEX: +1 Dextrous to Survive Street Life
AGL: +1 Fast to Survive Street Life
ACC: +4 Training for Survival
WIS: +6 Relating to Street Matters
SKL: d6 Special street skills chart at a level of d4 +2

GANGS

Street Gangs are often found defending their turf, or city area from other gangs. Banding together for protection and profit, under the leadership of an individual, they often commit minor crimes for hoods.

The gang usually chooses a distinctive style of "colors" or distinctive clothing to separate themselves from other gangs. See gangs resources and organization.

Same statistic and skill bonus as gang cops.

HOODS

Hoods are the small–time, established punks and criminals that disrupt the system. These can range from minor drug dealers to loan sharks and con men. Usually they press gangs to aid them for a profit percentage of the spoils. They are mostly the henchmen or crime specialists for Crime Bosses.

Crime specialists are technicians who work directly in the development of material for criminal purposes. These misguided individuals are simply working for high bucks with little concern to the effects on society. Many are chemical engineers working with 'Designer' drugs.

BOSSES

Better known as Organized Crime, the Mafia, or the Costa Nostra, these crime bosses stay above the low life of the city and profit from hoods and victims of crime. Hard to catch and even harder to convict, many are known to operate almost above the law that protects them.

These individuals are the primary concern of ISCO and the ICL when their criminal empires span a number of worlds and threaten interstellar security.

ROGUE PSIs

Rogue PSIs are the rare users of psionic ability that refuse testing and registration of their power.

Often minor criminals, a full 5% of them will eventually become psychological wrecks, unbalanced and dangerous to themselves and to society. They are normal PSIs until the shift.

SICK PSI's

Sick PSIs are those individuals who have taken PSI–enhancing drugs with success and then, or later, crossed the sanity line to become extremely dangerous or homicidal. See Dangerous PSI Talents in book 1.

SIDERS

Siders are vigilante assistants used by the law and underworld alike. They are often specialists in fixing problems and people for a high price. They are highly street–wise and dangerous with special weapons they use.

EDGERS

Edgers are the strangest of the gangs. More a movement or psychological aberration of high–tech society, they have no respect for private property of life. Often in rags, these roving gangs are avoided. Called a church, they are immune from prosecution until they commit a felony.

Edgers will often cluster around a Sick Psionic and use the disturbed individual for their own needs. Many edgers are Nu Punks or a disturbing new form of social life called Jack Heads.

Jack Heads are abusive users of Virtual Reality computer games and would play rather than eat. Cash for 'Net Use' is their only objective.

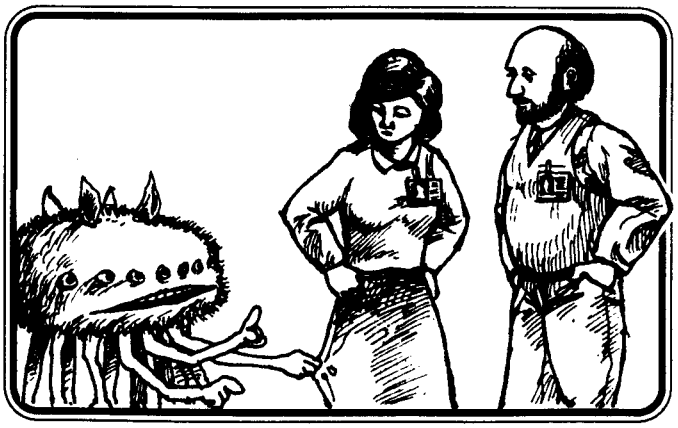
PEOPLE

Caught in the middle of all this are the common people who just want to live their lives and hope for a better future for themselves and their children. Varied in temperament, they can be a serious force to be reckoned with until the SP's arrive.

OTHER PEOPLE

Over the last century Earth has become home to a large number of alien races. Most of these have adapted to human life and culture.

In the inner cities many of these Aliens have become 'just more people' in the great Terrestrial melting pot. Treat them like people for temperament, strengths, and faults.



ACADEMY TRAINING

Police Academy Training is far different from the special training that is given to the interstellar peace keepers of FTL space.

If a character is new, start here. If a character has previous experience, consult the GM before making changes.

ACTION	APPLY TO POLICE ACADEMY	
		LEVEL
REQUISITE	Criminal Law	3
	Police Science	2
	Sociology	3
	Psychology	2
	Law Enforcement	3

Basic Training	06 Months
Select Area of Specialty	06 Months
Leave	01 Month
Advanced Training	01 Year

CHOOSE ONE

(a) Standard Assignment	03 Years
(b) City Assignment	02 Years

ADDITIONAL SKILLS

At the end of your first assignment your skills now have the following levels as a minimum. For each new assignment of 2 to 3 years, gain d10 more skill points until retirement, a return to civilian life, or SAPS work.

POL = Police SPL = Special Police C'T = Technician

	POL	SPL	C'T
Aquatics	1	2	3
Atmospherics	1	1	2
Alien Physiology	4	2	1
Blade Fighting	4	2	1
Communications	3	2	3
Camouflage	2	3	2
Criminal Law	5	3	2
Criminology	5	2	7
Chemistry	3	1	5
Crude Weapons	4	2	3
Demolition	3	6	2
Emergency Medical	6	2	3
Infiltration	2	1	1
Lifesaving	5	1	2
Planetary/Civil Law	5	3	2
Martial Art	6	2	1
Sociology	5	2	2
Psychology	6	3	2
Police Science	4	2	7
Powered Armor	1	6	2
Rifle, Assault & Laser	3	5	1
Robotics	2	2	4
Swimming	2	1	2
Target Shooting	4	6	2
City Survival	6	1	2
Special Weapons and Tactics (SWAT)	3	6	1
Combat Driving	4	1	1
Light Military Weapons	1	5	1
Vac Suit	–	1	1
Special Training Skills (general occupation)	4	4	4

STREET SKILLS

As a cop you automatically gain special skills and street–related skills for your daily survival. Choose 4 as a cop and gain 2 more per 10 years as a detective or criminal investigator

Street Psychology

The psychology or understanding of the minds that create street society, their reasoning, dreams, and style of life.

Gang Psychology

The study of the minds of the social phenomena of gangs and gang culture. It also allows interaction with gangs. If a character was or is a gang member this skill starts at a +5 skill level.

Street Sociology

The complete social picture of life on the street; integrating sociology and psychology.

Street People

Knowledge of the people of the street. These are the actual individuals who make up the community. This non–permanent knowledge of an area loses 1 point of skill per year automatically. It must be improved as time passes and people change.

City Geography

The general knowledge of the back streets of the city, its architectural layout and the odd places that the inhabitants know about. This aids cops and gangs as they travel, hide, and fight.

Drug Culture

Knowledge of drug use, pushers, and drug runners of the city.

Civil Disturbance Psychology (SDP)

A majority of common problems for police revolve on small civil incidents of minor difficulties between individuals. These civil or family fights are broken up before they can escalate into violence.

GANG SKILLS

As a gang member, you grew up in the city or adapted at an early age to the rigors of life in the slums.

Humans start their age at 14 and follow the general skill development. By age 16 gain 10 + d10 of the skills below. At age 18 a character automatically gains the remainder of the the listed skills at listed levels. For every 4 years in jail, reduce the level of all by 1 point. You may trade two skills below for a roll on the bonus chart with a maximum of 6 tries.

REMEMBER

01 For a bonus roll on a single skill it always costs two skills from the automatically gained skills chart.

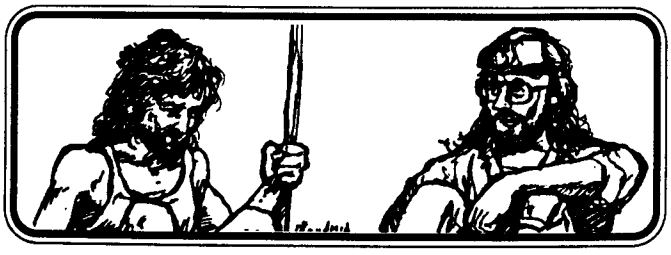
02 Gang'er is slang for Gang Member. Loner is slang for an individual without gang ties.

	Loner	Gang'er
Blade Fighting	3	4
Street Lingo (language)	5	7
Evasion / Running	7	5
Climbing / Acrobatics	3	2
Contact w/ Criminals	2	3
Contact w/ Police	2	3
Camouflage / Hiding	3	2
Criminal Law	1	2
Crude / Homemade Weapons	3	4
Emergency Medical	1	3
Infiltration	1	2
Martial Art	1	3
Target Shooting	2	3
City Survival	6	5
Combat Driving	1	1
Gang Protocol	1	5

BONUS CHART

01–50 EXTRA–LEGAL SKILL BONUS
Take an Extra–Legal Skill without a cost penalty. A 20% chance of being caught and spending a year doing time. See Extra Legal Skills FTL Book 1.

51–75 CRIME TALENT BONUS
Gain an Extra–Legal Skill at a d4 +2 bonus. A 30% chance of being caught and spending d4 years in jail.



76–85 BRUSH WITH LAW
Gain a +2 on any Extra–Legal Skill and spend a year in reform school.

86–95 CRIMINAL ASSOCIATES
Gain friends and d4 minor favors from the local crime bosses. A 45% chance they remember you later as a friend. A 20% chance the association lands you up the river for d4 years.

96–98 TOUGH
Gain quiet prestige as a tough in your gang or be respected as an individual by local gangs. Whatever you did gains you the 35% chance of spending d4 +1 years behind bars, after which you can enjoy your reputation.

99–00 CRAZY
Nobody would attempt to stop you or your gang without use of superior firepower. Gain 6 points to use on any skill design. Automatically boost the respect or rating of your gang d10 points. The police are undoubtably looking for you. You automatically gain a few years of age because of past records and d4 years in jail.

STREET SKILLS

Being born and raised in the inner cities of Earth breeds special skills and adaptation for survival. While cops gain one set of skills, gangs learn these. Choose d4 of these skills and start their levels at d4.

Street Combat

From improvised weapons use, to outright brawling, this general cover–all skill gives a +5% per every three levels.

Running & Evasion

The combat ability to quickly move through congested back areas to avoid capture. May involve hiding or knowledge of back streets and safe places of temporary refuge.

Fencing & Pawning

The art of getting your money's worth when trying to sell old, shabby, or stolen goods. Adds +5% on chance to sell, per three levels of skill the player has.

Street Sense

The general sense of knowing the rhythm of the street. This may involve feelings of good or bad sitiuations brewing, a near police raid, or a feeling of something in the air.

Improvised Weapons

Creation and effective use of quickly produced weapons. This is often used under conditions of the stress of the moment.

Gang Leadership

Skill that keeps a gang intact and centers the leadership on an individual with the highest score. This may not actually be the leader but the person the gang will follow under adverse situations.

Friend

A special and powerful friend you can count on.

Fast Talk

The ability to quickly talk one's way out of adverse situations. For use, roll under the character's chance of success on a d100, and over the victim's WIS (wisdom) on a d20.

Drug Knowledge

Knowledge of street drugs, their values, and their sources.

Chutzpah

The brazenness and just plain fool–hardiness to get out of close combat and argumentative situations not healthy for the character.

Ambush

The skill of hiding in ambush to gain a free initiative of combat, a surprise (full) combat action before actual combat begins.

GANG DESIGN

Roll a d100 on Table A for the number of members in a gang then on the second (B) table for mix.

A	MEMBERS	B	MIX
01–50	05 + d6 Members	01–50	90% Male
51–75	10 + d6 Members	51–75	70% Male
76–85	15 + d6 Members	76–85	#01 + Aliens
86–90	20 + d6 Members	86–95	#51 + Aliens
91–95	25 + d6 Members	96–99	50% Male
96–98	30 + d10 Members	00	#96 + Aliens
99–00	50 + d10 Members		

REMEMBER

01 After 50 members each additional 10 members create a +5% chance per month of a police "forced" break up of the gang.

02 By the year 2448, Bor'Cha, Dabe, Trell, Blox, Skay, and Kymnar are sharing the inner cities with humanity.

03 A gang will always have a Turf or area of control. This may range from a city block to many blocks.

04 Gangs carry Colors, a symbol or style of clothing unique to themselves.

TEMPER

Temper is the gang's temperment in day to day action. Respect may have many meanings, from free passage through another's territory to the gang's ability to gain information or help from the other "friendly" gangs.

		Temperment	Respect
01–02	Pure Violence	02	+25
03–05	Highly Violent	10	+15
06–50	Dangerous	25	+10
51–75	Touchy	35	+05
76–85	Variable	50	+0
86–95	Mostly Easy Going	65	-10
96–98	Easy Going	75	-20
99–00	Mellow	85	-40

GANG RATING

A gang starts with a gang rating or pecking order. This number signifies status of the gang in relation with other gangs. A lesser gang that aids a higher gang, gains a point of respect and an automatic challenge to out rank any gang with the same rating. A gang challenge where the higher loses, puts them in the place of the lower. A higher gang that loses to a lower gang, (over a 5 point rating difference) drops d6 points to jockey for a new position slightly down the hierarchy ladder. A police break–up of the gang or the loss of its complete leadership, reduces its rank d20 points.

PTF = Problems with local Turf or Small Gang Squabbles. Gang Cooperation
LRF = Problems created by Local Residents
PWC = Passage Without Challenge.
PRM = Police Raid Modifier (5%) monthly average.

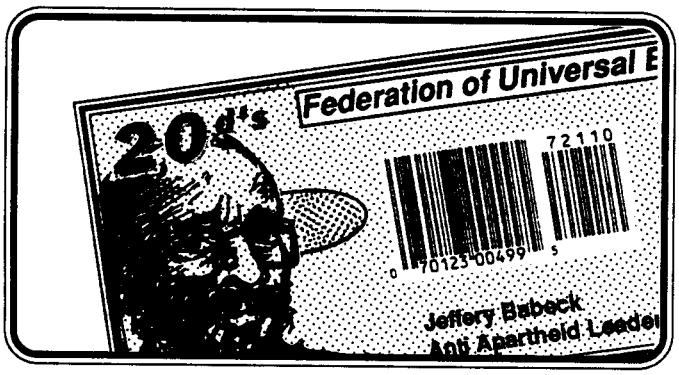
Gang Rating	PTF	LRF	PWC	PRM
Less 0	0%	05%	99%	–05%
01–05	03%	10%	98%	+0%
06–10	07%	20%	96%	+02%
11–30	10%	30%	85%	+03%
31–45	20%	45%	75%	+05%
46–55	30%	60%	65%	+07%
56–75	40%	75%	55%	+10%
76–85	50%	90%	45%	+15%
86–95	60%	98%	35%	+20%
96–97	70%	98%	25%	+25%
98–99	80%	98%	10%	+30%
00	90%	98%	05%	+35%
00+	95%	98%	02%	+40%

Weapons

01–50 Homebuilt Weapons and Blades
51–75 Homebuilt Weapons (35% misfire) + Blades
76–85 Old Firearm (10% misfire) + any of the Homebuilt
86–95 New Firearm + Any Homebuilt Weapons
96–98 Old Laser (20% misfire) + any of the above Homebuilt
99 Homemade Explosive (plastique)
00 High–Tech Military Weapon

Vehicle

01–50 No Vehicle
51–75 Old Junked, Wheeled or Air Cushion Car with a 25% efficiency, no Insuraunce.
76–85 Old Vehicle, Licensed
86–95 Stolen Vehicle
96–98 Stolen Vehicle, False Insurance and Registration
99 Hover or Mag–Repel Vehicle (stolen)
00 Hover or Mag–Repel Vehicle, Licensed



Money

Roll for each gang member's employment and then their general weekly income if they are employed.

01–85 Unemployed (See Sources #01)
86–90 Subsidized (See Sources #51)
91–95 Working, go to Sources with a –10 modifier.
96–00 Working, roll a d100 below.

Sources

01–50 Survival Check 20 d's
51–75 Welfare Work Check 50 d's
76–85 General Unregistered Worker Check per 40 hours of labor 100 d's
86–95 Registered Work per 30 hour work week 250 d's
96–98 Skilled Work per 30 hour work week 500 d's
99–00 Highly Skilled Work per 30 hour work week 900 d's

Turf

01–50 Single Building Area
51–75 Single Crumbling High–Tech Building
76–85 Block Area of d20 +5 Buildings
86–95 High–Tech Building Area d20 +20 Buildings
96–98 2d20 Old Condos
99 Old High–Tech Office Block*
00 d4 +2 Block Areas

* High–Tech offices are generally the unsafe high–rises with 10 + d20 stories. Buildings in blocks can range from 20th century to the modular blocks of the 22nd century. Many, if not most, of these are inhabited by shops and the general community.

Enemies

01–50 General Enemies (d4)
51–75 One Enemy with a Higher Rating
76–85 As #75 with d4 Lesser Enemies
86–95 As #75 with 2d4 Lesser Enemies
96–98 Bosses of Hoods with d4 other gangs.
99 Gang is disliked by other gangs with d10 other serious Enemies.
00 Gang is outlawed by police and hunted.

Colors

Style of a gang's operation is the choice of the players. Every gang has a special style or wearing apperel that sets them apart from other gangs. This is called a gang's colors.

Neighborhood Opinions

The neighborhood turf has a direct effect on a gang's existence. While many gangs have no good points, a few are helpful to their area and supported by their block environs. Roll a d100 for what the neighborhood thinks about the gang.

OPINIONS		Chance To Aid	Chance To Hinder
01–50	Despise Intensely	02%	90%
51–75	Despise	04%	75%
76–85	Dislike	08%	50%
86–90	Ignore	15%	30%
91–95	Neutral	50%	10%
96–98	Support	78%	05%
99–00	Genuinely Support	95%	03%

DRUGS

Illegal Drugs are still a high profit industry that supports criminals and their Mafia bosses. Much inner–city crime is related to drugs in one form or another.

DRUG WARS

Drug wars are a common occurance in the inner city. While smaller hoods try to gain power and money the larger eliminate them or use them to eliminate competition in their areas. These battles may grow increasingly bloody in time as more and more hoods are drawn in to fight battles for drug lords and "revenge" past battles.

DRUG LABS

Hidden away in quiet back alleys are the high–tech, home–built labs that process and prepare raw material. These highly illegal labs are the key processing centers for drugs. Often these labs are extremely well equipped and specialized to a single form of drug processing.

PUSHERS

Junkies are still junkies in 2448. With high–tech help they sell the common and uncommon illegal drugs. Many are hopeless addicts who sell to support their own drug dependancy.

The small time pusher sells directly, the Bigger Operators go to elaborate ends to protect themselves by employing high technology or people who will take the risk of being caught.

TYPES OF DRUGS

As time passed, more harmful drugs found their way to the street market. While many of these had pleasant mind–bending effects, their continued use created a new series of nightmares for the World Police Narcotics Division. Listed here are many of the semipopular drugs.

DRUG EFFECT KEY

A Barbituate or Downer
B Amphetamine or Upper
C Psychedelic or Mind Bender
D PSI Upper or CY'Upper
E PSI Blocker or CY'Downer
F Pain Killer
G Anti–Aging

a Addictive Physical
b Addictive Psychological

CALDONOMINE R806

Type: D
Cost: 4000 d's
Possession: 7 Offense

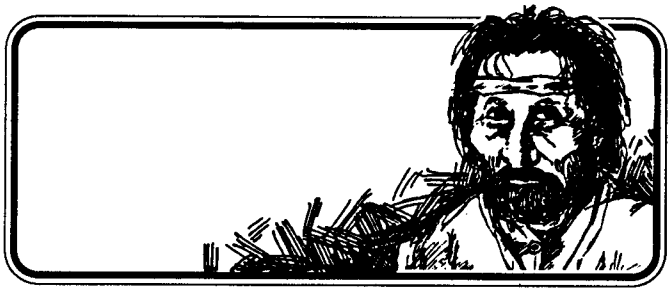
A PSI enhancer that has a 5% chance of bringing a PSI talent to the surface. Re–roll PSI chance per dose taken. If it fails to kindle PSI, roll on the effects table below. PSI's who take CAL gain a temporary boost of 2d10 points of WKP until expended. Races: Most Mammalian / Blox / Dabe.

01–45 No serious effects.
46–50 All skills and statistics are reduced by d6 points each. Victim falls into a coma for d6 days.
51–75 Victim becomes homicidal for d10 days after a d6 coma like sleep.
76–85 Victim's heart fails.
86–95 Victim's heart fails in d10 days.
96–98 Victim gains one PSI ability with the defect of being a vampiric PSI that drains CON points by touch to gain any needed WKP reserves. See Sick Psionics.
99 As #46 with four rolls to attempt to gain PSI ability.
00 Victim spontaneously combusts in d10 hours. Burns with 6d10 force.

CALDONOMINE 614

Type: E
Cost: 2 d's
Possession: 2 Offense

A PSI depressant that effectively blocks the use of PSI for 20 +d4 hours. Used to treat unwanted PSI or sick PSI's to keep the ability in check. Carried in darts by SAPS and police units. Often called POP by PSI's who say their ability goes pop like a balloon as the drug takes effect in d20 seconds.



PROTRIPTYLINE HYDROCHLORIDES

Type: Bb
Cost: 0.40 y
Possession: 3 Offense

A street common hyper–upper used to fight depression. In larger doses it is called a "Puppy Upper" and causes a 50% reduction of AGL, DEX, DOD, and THR. Reduces WIZ by 75%. Races: Most Mammalian, when doses for Dabes are taken by humans, it can be fatal.

BENZODIAZEPINES

Type: Ab
Cost: 0.30 y
Possession: 2 Offense

A street common muscle relaxant used as a sleep aid. In larger dosed these can cause coma and death. Races: Most Mammalian types.

PROPOXYPHENE HYDROCHLORIDES

Type: Fab
Cost: 0.30 y
Possession: 2 Offense

A prescription pain killer that finds its way to the street. Many variations of this exist and doses can range from a simple light pain killer to a complete pain deadener used by gangs before fights. It can cause a lack of concentration and a 25% physical statistic loss in larger doses Races: Most Mammalian.

CATALIN INDERAXIS

Type: Cb
Cost: 2d's
Possession: 1 Offense

A common weed on Hansen's World, "Cats" turned out to be a mind bender in humans and human-like races. Mixed with food, smoked or chewed, it has d4 hours of colorful effect that incapacitate the user. Unlike other drugs of this type that are taxed but legal, this drug has spectacular effects and a 20% chance of relapsing the user at a random time within d4 months of its use. Races Human/Bor'ch/Dabe highly toxic to Bloxians.

BORMALAN EXTRACT C

Type: Da
Cost: 10d's
Possession: 6 Offense

Skagbo is a dangerous and highly addictive drug. The user must take increasingly larger doses every d6 weeks or suffer excruciating pain. The medical removal of this drug is almost as bad as the addiction. It is the 25th century's equivalent of Heroin. Double the cost of the habit, (larger dose) every d6 weeks. In capsule, powder, or liquid ampule for injection. Races: Human/Kymnar/Berian/Bor'cha

KERTALIN

Type: Gb
Cost: 4 d's
Possession: 4 Offense

An inexpensive alternative to anti aging treatments by Auto-Doc systems. This alien import slows aging by a factor of 50% though it progressively destroys neural tissue at a rate of (d6) skill points lost per year of Kertalin use. When all skills reach 0, WIZ and INT begin reducing at a rate of d4 points per year until the victim vegetates. Races: Most Humanoids.

DRUGGIES

The detention of drug suspects can be a problem especially when dealing with users.

Roll a d100 on the table below for the personality and action of the victim. Temper this table with the drug used.

01-50 BLASTED
With no difficulty, this individual can hardly realize what's happening and often takes two people to re move.

51-75 PEACEFUL
Realizing he, she, or it's now being busted, no fight is attempted, though they may look for a quick hiding place or escape route.

76-80 ARGUMENTATIVE
This individual will argue his general condition for d20 minutes before being forcibly removed.

81-85 FIGHTER
Such individuals will fight and create problems until detained or cuffed to a solid object.

86-90 JACK RABBIT
This drug abuser will bolt and panic run to escape, often creating serious problems for the police and by standers as they scramble through old buildings, across roofs, or into congested roads.

91-95 VIOLENT FIGHTER
These are the hard individuals who have little to lose as they they attempt to use any available weapon to help escape police.

96-98 CRAZIES
Meek like a lamb, they turn violent or jackrabbit at a lull or at the first opportunity.

99-00 SPECIAL
Alien, PSI, or Special Prisoner that may have have an important influence in the community or is a wanted criminal. Roll again under #99.

DRUNKS

Common to mankind and most other Alien species is the consumption of alcohol or similar controlled substances to relax or augment social occasions.

Unfortunately, this social phenomena can get way out of hand. Roll a d100 for general type of alcohol related civil disturbance.

01-50 WILD PARTY
Young or old having a good time at the expense of the local peace and quiet.

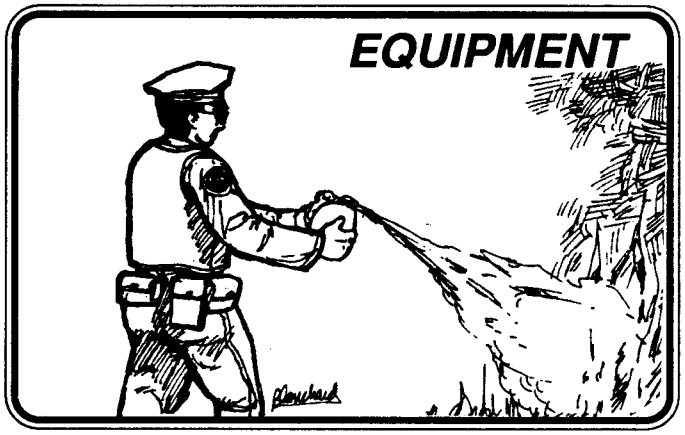
51-75 CIVIL DISTURBANCE
Family quarrel often intensified by use of alcohol. Roll for Temperament (FTL Book 1), of the parties involved.

76-85 GENERAL DRUNK(S) AND DISORDERLY
A small number creating minor social problems and an infraction or two. May be creative or destructive.

86-95 RAMPAGING VIOLENT DRUNK
Often an alcoholic or individual with a grudge, these are violent and dangerous, especially with vehicles and weapons.

96-98 WINO
Occasionally coming from the dark back alleys, the wino panhandles or pilfers for the next bottle. Often harmless, a wino can sometimes become temperamental and violent.

99-00 VICTIM DRUNK
With too much to drink, this victim has ended up on the wrong end of town. Most have been robbed, stripped, or beaten.

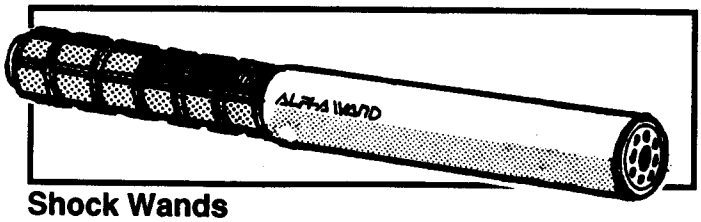


Cop Animals

Cop Animals are specially bred police companions that aid in unusual situations. Dogs have gained a low level of intelligence that help trainers easily track felons, drugs, or scented articles of clothing. Dog breeds of this type are generally hounds.

Cats in very rare instances, have become mildly telepathic. These special animals work with a police Psionic to watch criminal operations from "cat's eyes". These cats have a bounty set by the underworld of $5000 d's per each one eliminated. Most cats of this type are generally difficult to deal with and contrary.

COST: 25,000 d's STREET VALUE: 30,000 d's
WTE: Varied SEVERITY: 6 to Kill



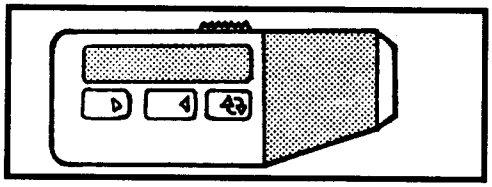
Shock Wands

Shock Wands were a police invention during a short period of gun control in the 2200's. Looking like a baton or simple night stick, it is actually an adjustable electric prod that delivers a heavy shock tuned to disrupt human nervous systems. Use of the wand will paralyze a limb struck for d4 hours per point of the six settings. Use against an unprotected head guarantees a knockout.

Roll under .25 of your constitution score to be grazed and ignore the effect of the wand.

If hit in the central area of the chest with a Shock Wand there is a 10% chance it stops the heart's action.

COST: n/a STREET VALUE: 1000 d's
WTE: 5.0 SEVERITY: 2

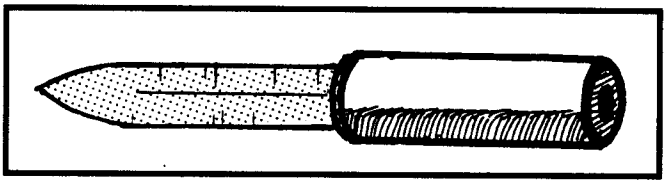


Picks

Digital Lock Picks are an handy invention able to open low tech locks in 3d10 seconds and safe/ combination locks in d4 minutes.

Used by police and criminals, their sale and possession is outlawed without license.

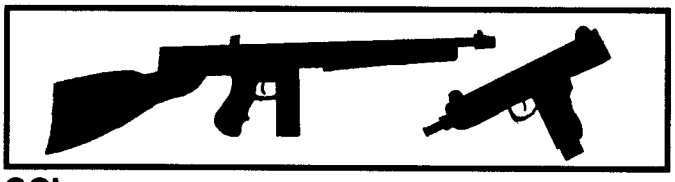
COST: n/a STREET VALUE: 5600 d's
WTE: .75 SEVERITY: 3



Shock Knives

Shock Knives were the Kymnarian Commando weapons that found their way to the cities. A simple combat knife, it has a rechargeable capacitor built into the blade that allows the wielder to impart a d10 amp shock into the victim on a one time basis.

COST: n/a STREET VALUE: 800 d's
WTE: 2.0 SEVERITY: 4



OG's

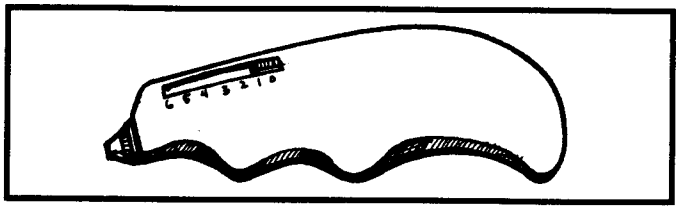
OG's are any firearm weapon over a century old. Often more dangerous that useful, these "Saturday Night Specials" are used by the criminal element when better weapons are lacking.

COST: n/a STREET VALUE: 50+ d's
WTE: 1.0-5.0 SEVERITY: 4

Bottles

Bottles are the common name for the simple Molotov Cocktail. With flammable liquid, a rag, and a disposable lighter, they can burn a 10 x 10 foot area and cause 4d10 points of flame.

COST: 2 d's STREET VALUE: 2 d's
WTE: 1.3 Severity: 3



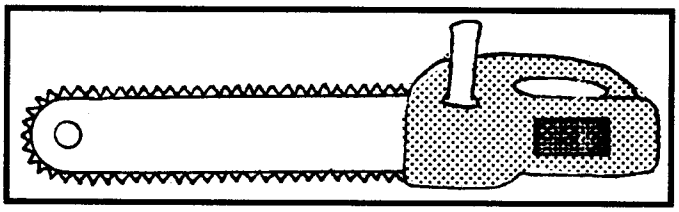
Gassers

Gassers are a civilian deterrent to crime better used by the criminal to incapacitate the victim with a blast of sleep/ vomit/BX/BN/BZ/CS or other noxious substance. Small and concealable, many carry one.

Claws

Claws were a martial arts weapon and an alien dueling weapon that allows the user to climb sheer surfaces or attack with the use of four sharp blades per hand. As the hand is formed into a fist the four-inch razor-sharp blades open for use. These need special skill for general or combat use.

COST: 1200 d's STREET VALUE: 250 d's
WTE: 0.50 SEVERITY: 4



Tools

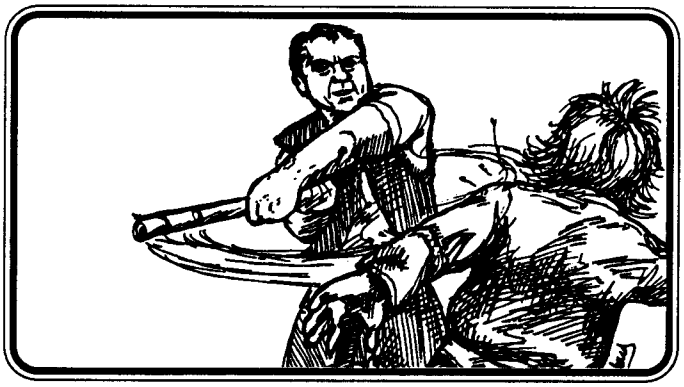
Rippers are common tools used in woodwork that are adapted to fighting. See the common crowbar in the Blades section in FTLBook 1 Pg 106..

COST: 10 d's STREET VALUE: Low
WTE: . 05 SEVERITY: 1

Hooks

Hooks are weapons like the ripper with the dual purpose of being a grappling hook to get over walls in a hurry. Most police carry smaller versions of these in their belt kits.

COST: n/a STREET VALUE: 20 d's
WTE: 1.0 SEVERITY: 0



POLICE BLUES

Police Blues are the simple armor worn by all cops on a beat in the inner city. While providing all-weather protection, they are also equipped for utility and combat.

EQUIPMENT

Police Utility Packs are a compact belt packed with equipment for general and special use.

Location Transmitter

Alerts sub-stations to the location and health of the officer. This is often a wrist band or a disk glued to the skin over the heart.

Hand Comp

A compact device used for the issue of tickets, communication, and data requests. It can also record and be used as a listening device as well as a video transmitter or a camera. Can be suspended on a line pack and remote controlled from up to 500 ft.

Grapple

A fold out grappling hook that clips on the line for scaling buildings.

Tape Cuffs

A roll of polymer tape that binds and is nearly impossible to remove without solvent.

Grenades

An easy access pack of quarter sized pellets that shatter upon contact with a hard surface. Varied in content by the owner's whim or needs. Example: (4 Flash, 4 Smoke, 4 Noise, 4 Tear Gas)

Blast Pack

Plastique and 6 small timed or fused detonators. Can do up to 220 points of blast if used in its entirety. Also contains an everflame match and 10 feet of fuse.

Antidote

A 4 dose pack of antidote for poison or a drug overdose that is 60% effective in holding deathshock for 2d20 minutes, depending on severity of overdose.

Extinguisher

Mini chemical extinguisher that can put out d10 points of burn for 10 uses.

Knife

A ICL belt knife with 24 blades and tools in tempered metal. Also has a solar charged flashlight good for 7 hours of use.

Spare AMO & Clips

Used for re-loadable weapon

Side Arm

Variable

Personal Pack

Variable/Card Meter/Whistle/etc.

Breather

A small plastic filter mask that unfolds to protect from smoke or gas if a helmet is not being used.

SAPS

Many police retire out of active service after a time in the cities. A majority of these individuals go off-world to the far colonies or to the low-crime high-tech cities that dot the seas.

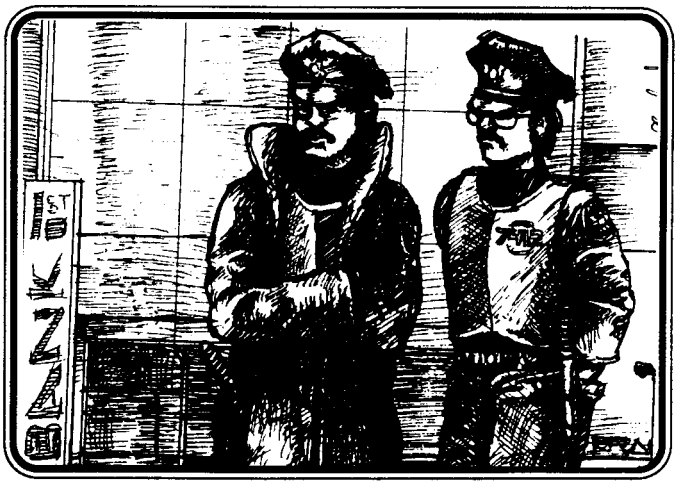
Some say the bright chrome of FTL society wears thin after they have a taste of the harsh day to day survival of city life. A few of these eventually return to the inner cities to become independent assistants to the police. These units are S.A.P.S. or Special Assignment Police Service.

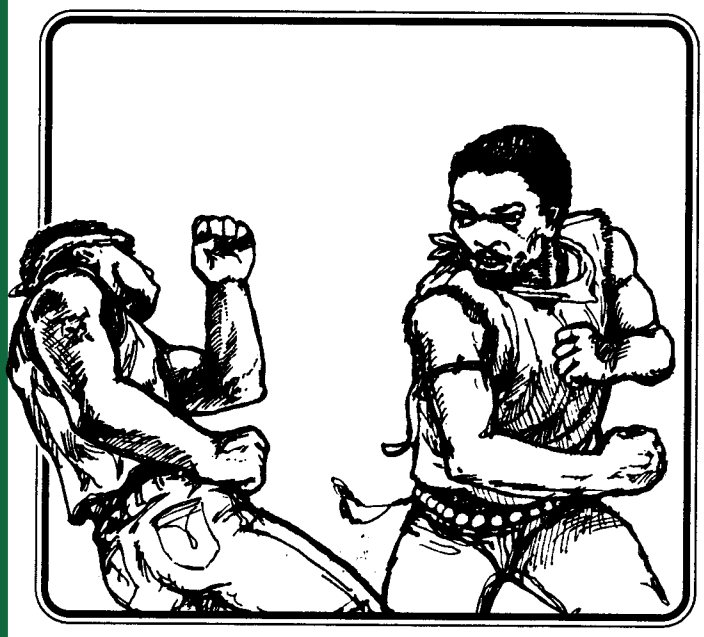
UNDERCOVER

SAPS are able to travel in circles where a police blue uniform would be a death sentence to the wearer. SAPS methods of crime solving and prevention are often not by the book and involve mightly unusual methods.

DETECTIVES

SAPS units are an outgrowth of the private detectives of the twentieth century. Often quiet loners, they inhabit dingy second floor offices in archaic buildings. These licensed vigilantes hunt criminals, bail jumpers, and other hazards for reward d's offered by the authorities. They solve civilian's personal problems for a fee or their own reasons.





Gangs & SAPS

Gangs have a high tolerance for SAPS, many respect and assist them for favors or a small price. Often a SAPS that helps police can have an influence on a gang arrest or knows someone on the force who owes him or her a favor. Many SAPS have helped to sponsor gang members into special programs that eventually lead them into a better life, colonization, police support work, or the academy.

SAPS Weapons

The standard weapons preferred by many SAPS are the EXCELL pistol or the HK SAPS.

The SAPS pistol, originally the "Kruger Mk1", is a devastating handgun licensed only to police or SAPS.

PISTOL	**Semi-Auto**						**"HK SAPS"**
ROF 1 or 2	AMO FPTX	**PB**	**VS**	**SH**	**ME**	**LO**	**EX**
ROL A	CYC n/a	+3	+4	+5	+6	+6	+4
CAP 12+1	WTE 2.7	EFFECTIVE				EX+	
CIR 2300	MIS 1%d	9d				8d	
HSM +6	KDM +8	SPC (dgh)					

The common weapon used by the police and SAPS units for nearly a century. Has built-in laser sight, night scope, and a mini-grenade launcher. Used with AP and explosive rounds. Use 40mm grenade data at x.25 effectiveness for mini-grenades. This same feature allows the launching of stun bullets or drug darts for victim incapacitation. (*.46 Magnum*) (launcher rounds (*.56 SAPS*))

PISTOL	**Semi-Auto**						**"EXCELL 7"**
ROF 1 to 3	AMO FGHPTWX	**PB**	**VS**	**SH**	**ME**	**LO**	**EX**
ROL A	CYC n/a	+4	+3	+5	+5	+5	+4
CAP 20+1	WTE 1.9	EFFECTIVE				EX+	
CIR 2410	MIS 1%d	7d				6d	
HSM +7	KDM +4	SPC (egp)					

The Excell pistol is a smaller, lighter weapon than the SAPS pistol with the same general features of a laser sight, night scope, and image intensifier. The Ex 7 has an AMO selector switch to change AMO types. Each of the four select position has 5 rounds of different types of AMO. (*.40 EXCELL*)

Special SAPS Equipment

While SAPS can use standard police belt equipment, many design their own special hardware and weapons.

TAILORS

Nestled in back alleys and hidden spots are small shops that specialize in design work for Cop and Criminal alike. Called tailors, these 25th century gunsmiths carry a wide stock of crime deterrent gadgets, knives, and tools for a price. They may also offer a design and alteration service to have hardware modified to your character's exact specifications. While appearing as kindly old folk, these shops are fortresses guarded by the latest high-tech methods that deter all smart criminals from robbing them.

COSTS

Prices for modifications are the general choice of the GM with these guidelines.

SIMPLE MODIFICATION	d4	hundred
COMPLEX MODIFICATION	d20	hundreds
SCRATCHBUILT WEAPON	d4	thousand
SPECIAL HIGH-TECH WEAPON	d10	thousand
TAILORED BODY ARMOR	d6	thousand
BUGS/TAPS/DE-BUG EQUIPMENT	d20	hundreds
GADGETS/HOLSTERS/ ETC.	Variable	

SAPS Profile

There were fifteen of them in that back alley surrounding me. The leader stepped forward. You could tell by the police ID badges stuck on his hat. With five of those trophies, he ranked as one of the deadliest in the city.

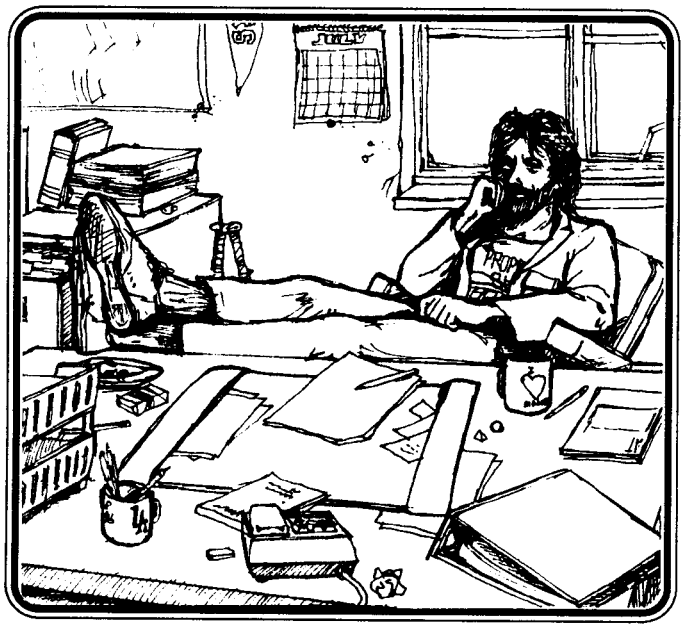
"Your badge, Cop!", he said smiling.

I knew he was the civilian and cop killer we'd been hunting for the last three months.

Too late, he realized my hand was in my pocket where I carried my antique .38 S&W Bodyguard.

As I shot him between the eyes the gang melted back into the darkness.

John Smith NY, NY



John Smith

He was born in 2408 in Chicago and raised in the streets when his family's business failed. Afraid to pull up roots and migrate to the colonies, his mother waited for her husband's return from the frontier. Her wait spanned the rest of her natural life.

Chicago

Growing up in the slums of Cicero was easy. You were either fast, resourceful, or a victim. John learned that early. School was what one made of it, Education was free for the masses through holo-vision or fortress–like secondary schools. Some of John's friends attended while others considered school a joke until they found themselves economically locked into the basic subsistence system of universal welfare.

Gangs

As the Curb Lords were dispersed again and again by the police, John was adopted by an older police patrolman. Adoption was in the form of continual harassment and annoyance until John realized the cop saw something in him that would lead him to better his life.

Into The Academy

In 2371 John Smith applied to the Chicago Police Academy and began three years of training. John Smith was then transferred to Manhattan Island in New York, the second most populated and oldest mega-city on Earth. Manhattan was historically preserved over the centuries, and escaped wars, long trends of de-centralization, and renovation that changed the face of the world.

Resignation

Two years after he achieved detective rank, he resigned and became a private detective/SAPS, Special Assignment Police Service Agent and began his long service to the city.

Nobody asked him why.

SCENARIO

OVER THE WALL

Detroit 2448

It's evening in the walled city of New Detroit. From the old ruined towers of the Renaissance Demolition Project you can see the gold towers of the Troy mega complex 12 miles away. You can also see the ruins of the Ambassador Bridge and the rotting high-tech tenements and old malls. The new Cobo Police Complex stands out in its lit glass and ceramic as the ever running People Movers silently glide above and below the city.

In the west the night is lit by fusion flames and shuttles at the Metro Detroit Starport Facility.

The Wall

In the 1980's, new freeway construction pushed the city lines back to 10 Mile road. The first wall was built to keep down noise and create a barrier to on-foot traffic from the decaying neighborhoods closer in to the city. The economic neglect and economic hardship of later post-Twentieth Century years led to a continuous re-enforcement of the wall and a further sealing of the inner city from its high-tech suburbs.

The Inner City

Every two or three generations historic preservation fever took hold of the ruling government or corporation and the existing structures were preserved todecay again.

Location

While patterned after Detroit, Michigan, this adventure can happen in any large city.

For this reason, consult a local map and create your city area accordingly.

In this COP: 2448 scenario mapping the city and locations are not as important as group-interaction and the challenge of the hunt/run across the city. A general block area map or detailed city map with general knowledge of the back streets and alleys will help but the GM is recommended to set his or her own group's pace.

Mood

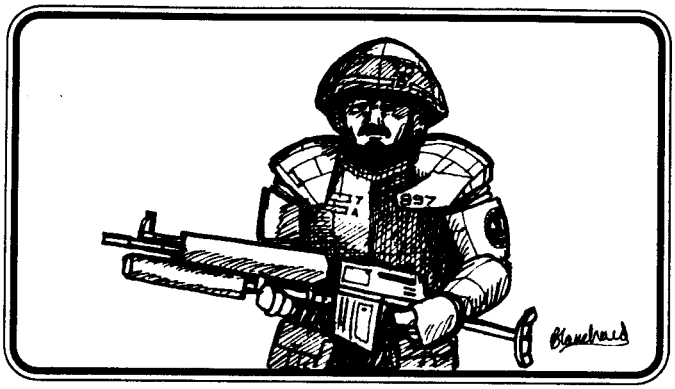
Over the Wall is meant to encourage not hopelessness within the ghetto, but rather a strong interrelationship between the "gang" characters fighting the system and a crass disregard for the lofty star travelling, high-tech society that has let its inner cities and society deteriorate. The same goes for the Cop group as they hunt, not to kill, but solve problems and save lives.

Bystanders

Bystanders and businesses you design for this scenario should also display the charm of the inner city with a touch of that high-tech society just beyond the wall. Remember, the core of the city is a less than affluent zone where crime is high, security tight, and status is measured in toughness.

As Police

You're city detectives hunting a gang in hostile territory. This gang is known and has a slightly poor reputation. The gang leader is wanted for robbery of potentially dangerous, alien bio toxins. Your group has been assigned to bring them and the bio-toxin cylinder in before SAPS units are called.



SPECIAL POLICE POWER ARMOR SUITS (SPPAS)

Power Armor:	Mkl
Codename:	Atlas
Strength:	Up to 2,400 lbs. of lifting capability
Combat Strenth:	50
Agility:	-05
Dexterity:	-06

ARMOR VALUE

Helmet:	60	Chest Plate:	70	Boots:	80
Visor:	30	Back Plate:	60	Gloves:	50
Joints:	60	Backpack:	80+	Legs:	60
Arms:	60	**Auxiliary Power Pack (AAP):**			**40**

EQUIPMENT/OPERATING PARAMETERS

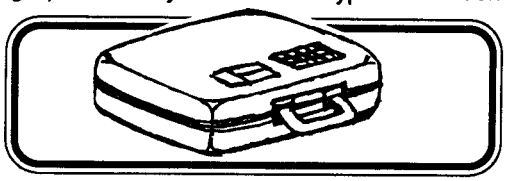
SIGHT:	IR Vision Enhancement
SOUND:	x1.5 Sound Enhancement
COMM:	Two-way Communication Gear
ENVIRON:	-60 to +475 degrees
WATER:	Up to 175 ft.
NBC:	Total NBC containment, suit is hermetically sealed, can operate in total vacuum.
AIR SUPPLY:	150 Hours
OPERATING:	72 +d4 hours. Add +24 hours per Auxiliary power pack, (APP)
WEIGHT:	Operator's weight + 1,245 lbs. +10 lbs. per AAP.

As A Gang

As a gang you're on the run from four other gangs and the local police who want you for something. You know it's important and they've called SAPS for the hunt. There is little recourse but to make for the wall and a place in the Troy Mega Complex where you can sell the security sealed briefcase Tad stole before he was taken by the High Risers gang and killed for sport.

The Case

The small briefcase is made of an almost indestructible plastic material. It is self-powered, with an internal cooling though only opening would show this fact. It is triple security locked with a fingerprint lock system and a keypad built flush into the top.



Contents

The content is a small nuclear battery that powers a coolant jacket for a gold cylinder. The cylinder, if broken, is a pint of a gray mold-like substance that smells of burned rubber. The case is valued at 4000 d's in resale value. The gray mold is a bacterial slurry set for processing an anti-leporosy drug to be used on a mutant leprosy strain that has just surfaced in the Central African Corporate States. This material is toxic if contacted and has a chance of causing a dangerous form of leprosy that attacks the central nervous system in 35% of humans contacted and in 5% Bor'Cha.

CAC LEPORSY 312		Transmission:	1/7/8
Chance:	35%/05%	Duration:	d 20 years
Symptoms:	B11,B12,C9	Critical:	4d10 days
(bacteria)	E4,F4	Weakness:	06

Starting in d20 hours, this infection will kill or become dormant to destroy the nervous system of the victim in d100 weeks. Symptoms intensify every d20 hours. Affects 35% of Humans and 5% of Bor'Cha who experience milder initial symptoms. Can only be transmitted while in the dormant stage.

Objective

In this scenario the object of the police player is to capture the gang and recover the case while being side tracked by general calls and complaints. Violence should be avoided or toned down whenever possible. The recovery of the case is of primary concern. A 142 hour limit on the nuclear battery will trigger a destruct sequence if the case is not recovered or punctured. The resulting fire will incinerate the case in a 2000 point slow burn.

What the gang does not know is that the tracer planted in the case is malfunctioning and only active for a few seconds each 60 minutes.

Gang Objective

The gang's objective is to gain the best advantage in trade for the case while staying alive.

Whether this be for d's or other material is the player option. If they return the case to the authorities, an offer will be made to them to become Gang Cops and receive payment for preventing the disaster of this case being opened and the disease released. Only specialists in electronics and security can penetrate the cases damaged AI and preservation programming. Given a little time and a few hours, the case will talk to its owners and insist on its safety. Damaged as it is, it has only a basic memory that it belongs to a lab in the North.

Random Events

These are random city events for the gang or police units chasing them.

Temper these happenings with imagination to create smaller side scenarios that add spice to the game.

01-05 ATTACKED BY GANG
A force of d20 gang members attack the players with home-made weapons. They will run if they realize they are out-gunned. There is a 5% chance the attackers will be well-armed with a laser, projectile weapon, or gasser.

06-10 HARASSED BY GANG
A gang/kids will harass or snipe with rocks, garbage, debris, and plasti-bottles until they are driven off or a deal is reached that profits them. There is a 5% chance this will turn into an attack if the invading gang rating is lower or the players are obviously police.

11-50 INNER-CITY UNREST
General problems with people or shop owners who do not trust the players. This may take the form of misdirected information or outright hostility. On the street this may involve drunks, street people, or social militants.

51-75 MINOR DISTRACTION
This takes the form of any of a number of happenings where a gang can make a few d's or your police are forced to intervene into domestic or minor crime problems.

76-85 MAJOR DISTRACTIONS
Like #51 with the situation becoming far more complex or critical than the players suspected when they began to deal with the minor distraction.

86-90 MAJOR CRIME
Players stumble across a major crime in progress and must avoid or stop the crime as quickly as possible.

91-95 PLAYERS HELPED
An unexpected source helps the players to gain time or information. This may also be a friendly gang or Gang Cops.

96-98 GANGWAR
Players cross a gang war or disputed turf and find themselves wrapped up in a local power struggle regardless of their situation.

99 PATH CROSS
Players cross the path of a Crime Boss or Hood and create problems. Police may cross detectives, SAPS, or SP units on other missions.

00 CONFRONTATION
A direct sighting of the hunter or hunted. Roll a d100 second initiative for who spots the other first. This is generally within 3d100 feet.

Enemies

Sworn enemies of your gang are the High Risers gang that inhabit the ruins of a slim office tower a few blocks from the city's core.

The Tower

Though the police have little evidence to go on, the neighborhood around the tower gives the Risers a wide berth and has branded them crazies and murderers. With only time until SP's remove them from the rotting tower, they enjoy life on the top three floors and know every crack of the building. A general outline of the floor design is below.

Ambush

There is a 50% chance the gang with the case or police who just gained ownership of the case will encounter these maniacs and have the case taken away due to superior numbers or persistence. The object of the scenario then changes focus to take the tower and secure the case before Billy and his 26 Riser brothers can deactivate and open it.

Calling for assistance will probably get the gang wiped out and the case destroyed. Making a deal with the gang who stole it in the first place will give them the chance to get even and add manpower to create a good diversion. Making the gang realize the police are not "out to get them" can be beneficial in the future.

High Risers

The High Risers are outright crazies. With no regard for life that crosses into the tower, they will attempt to capture a victim for later torture and disposal.

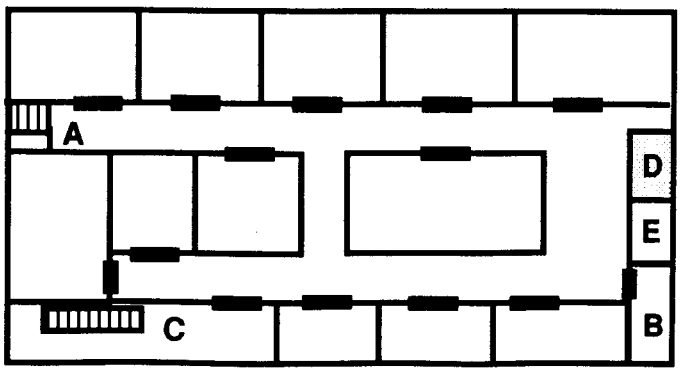
If police really knew, or suspected what was really happening in the block, SP's would have dismantled them a year before when the gang moved in and began its quiet reign of terror.

Billy

Leader of the gang is a strange individual known as Happy Billy. With filed teeth and a clown's face, he came out of nowhere to lead the gang and inspire an almost cult-like devotion. Once a minor chemist, Billy's gang produces synthetic mind-bending drugs for sale to other gangs. Billy has continually used these drugs over the years and turned into a paranoid schizophrenic who goes from laughter to murder in a split second. He lets the gang have knives. He carries a .357 Magnum and an electro-shock blade. He loves traps and keeps prisoners in the storage area, One is chained to a large weight next to an open elevator shaft. A favorite trick of the gang is to drop out through the rotting suspended ceilings as victims pass.

Building Key

A Stairwell
B Rest Room
C Storage
D To Roof
D Open Elevator Shaft
E Working Elevator



SCENARIO 2

ANDY AT MIDTOWN MIKE'S

New York City

Mike was his usual boisterous self, loud and smiling through his bright syntha-namel bridgework, as he slid beers and zaltz down the bar to the thirsty patrons.

Mike Mithell

STR:	15	INT:	12	THR:	14	HPT:	67
CON:	12	WIS:	14	DOD:	13	PSI:	n/a
DEX:	12	LCK:	10	ACC:	15	HEI:	6'2"
AGL:	12	CRZ:	14	AGE:	51	WTE:	240

SPC: Has an old Brazilian laser under his apron.

Staff

Working with Mike is Bazl Drok, an old, graying, Bloxian who bartends and cleans. While Bazl has no weapons, he is highly accurate with darts or heavy beer steins.

Brazl Drok

STR:	06	INT:	13	THR:	13	HPT:	44
CON:	10	WIS:	13	DOD:	10	PSI:	n/a
DEX:	18	LCK:	04	ACC:	16	HEI:	4'1"
AGL:	12	CRZ:	14	AGE:	59	WTE:	077

SPC Carries a pack of special darts laced with a short-term but fast acting, sleep inducing drug. Time to effectiveness of the drug is 1 action per 100 lbs. of body mass.

History

Mike's has been open since the year 1946 and only closed for local legal holidays and a few months during the Lawless Years of the 1990's. Its patrons have included the rich and famous, explorers of space, legendary theoretician John Lashaw, aliens, and a few certified crazies.

Mike's collection of liquor is second only to the fine restaurants of Newer LA and New Kyoto. It doesn't matter that the bar can only hold 50 people at a time and half of those are generally neighborhood locals.

You're A Cop

You're a cop, off duty, sitting at Mike's watching the spacers and hustlers rub elbows on a warm September night. Not too far from you are one or two of your friends from the force engaged in a good poker game (Mike allows only two games at a time). You notice the second game has an unusual player.

Poker Faced

The man is tall and broad shouldered, with a look that you suspect spells something odd. His eyes never depart from his cards as he rakes a few hundred d's in from the players who are rapidly becoming fewer. Nervous and edgy, he continues to play. At one point he stops to sip a beer and smiles at the other card players.

Accident

The clincher comes when the barmaid, a live human female, trips over something's tail and brings a tray of steins crashing down over the unsuspecting head of the odd poker player. With lightning fast reflexes he blasts the falling tray, beer, and Synorg into a hundred shreds of glass and rainbow bright foam with his bare arm.

The patrons jump back, wet, some lacerated with glass splinters. The laughter that almost starts ends abruptly as someone shouts "Andy", a name, a swear word, not heard for a decade.

The stranger's arm is lacerated in a large V shaped wedge from wrist nearly to elbow. Thin orange blood flows slowly as the horrified patrons see the gleam of plasti-steel reinforcement netting.

The building thunders as the patrons all head for the doors at the same time. Many find the stained glass front window even easier as all but about a dozen exit.

ANDROID

SIZ:	6'2"	STR:	29	CON:	28	HPT:	94
WTE:	240	DEX:	14	WIS:	14	THR:	19
LSP:	300+	AGL:	26	INT:	10	DOD:	19
ENV:	0-12-F	ACC:	17	CRZ:	09	PSI:	no

Most Bone	2M	Skull	2M
Joints	1M	Skin	Normal
Tissue	+1	Internal Mesh	.50M
		Death Shock	-20% Any

Lightning

This has happened so fast that before you realize it the Android has produced a laser, as if by magic, and is pointing it at the barmaid. "Hostage" he says quietly. "I also have a fragmentation grenade."

The grenade verifies this from his coat pocket. "I am a fragmentation grenade, Bentra Model MF9c with limited voice interface at your command sir!"

It's going to be a hell of a night.

REMEMBER

01 This is a bio-construct designed to be far tougher, far stronger and far faster than a normal human being.

02 Androids, due to design fault, are often homicidal if pressured emotionally.

03 Androids are nearly as smart as people and have now learned to be clever, hiding as long as they have in a high-tech society. They also know and live with the absolute knowledge that many are still under a death sentence regardless if they participated in the bloody Android riots of the 24th century.

04 This one is armed, cornered, and upset.

05 You and your friends are part of the 13 hostages still within the bar, counting Mike, who just put the closed sign on the door.

Mike's

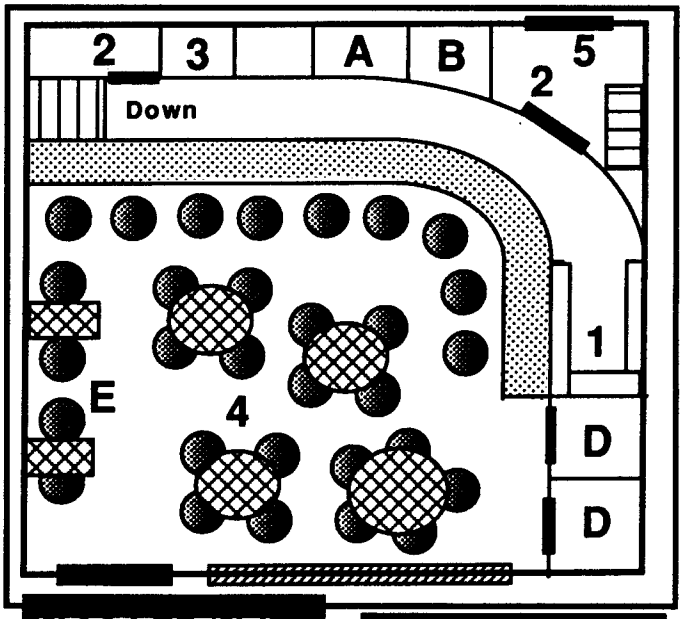
The structure of Midtown Mike's is a simple open bar with connecting areas. The basement is stacked to capacity with crates as is the "rat maze" and office upstairs. The third floor is Mike's apartment, not shown.

a Auto Washer/Dispenser	1 Kitchen
b Auto Brewery	2 Storage Room
c Bar Room	3 Lift Up/Down
d Bathrooms	4 Entry
e Side Booths	5 Back Entry/Alley

Rat Maze

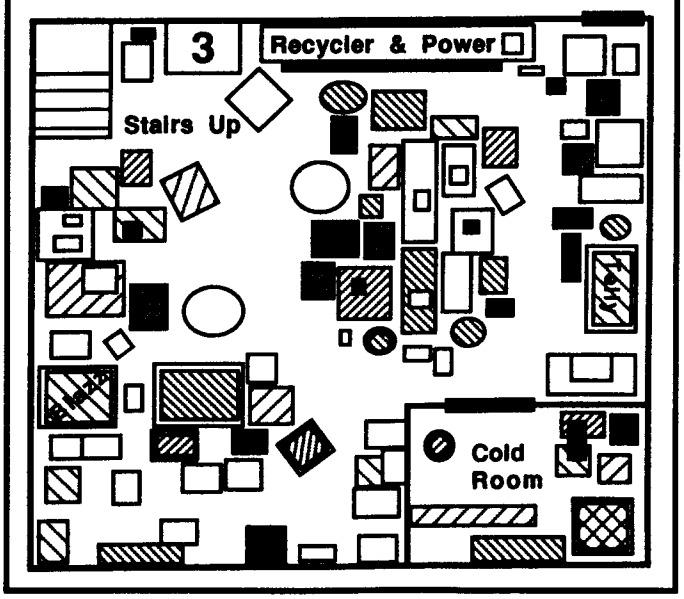
This is the basement layout of Mike's.

What he doesn't often say is that he's a well known distributor of fine wine and liquors. All is stored on the first level and basement. Over 40% of the stock is also flammable.



UPPER LEVEL

LOWER LEVEL



HITTING A LIQUOR CASE WITH A LASER

01-50	BOTTLES BREAK (d4)
51-75	BOTTLES EXPLODE (d6)
76-85	CASE BEGINS TO BURN
86-98	CASE ON FIRE
99-00	CASE EXPLODES WITH (5d10 BURN DAMAGE)

Escape

During hostage negotiations Mike confides to you the quiet fact that there is an old tunnel behind the NE corner of the building. It connect to an abandoned branch of the subway system deep beneath the streets. It is one possible way out for the patrons.

Objective

As a cop your objective is to get the civilians out of the building without harm coming to them. Your second job is to protect the property, Mike's Bar, from damage if possible. Third is the capture or disposal of a potentially dangerous threat to society if he is indeed a threat.

This is made difficult by the fact that you and your friends are prisoners. The Andy will line the last patrons up against the bar and search them for weapons. As you lose yours you realize Mike's laser is hidden behind the bar near the cash register.

Outside

This hostage drama will draw out if the GM lets it. The building will be surrounded and the SP's brought in to be unleashed at the death of the patrons. A high-tech SWAT team will plan for several hours and attempt to talk the Andy out for a clear shot.

Reasons

The android, in reality, is a nearly harmless "BlackJack Dealer" that has been on the streets for nearly two decades. With no friends, he moves down the back alleys to survive by playing poker when he needs money for food and sundries. He really doesn't want to kill but he's trapped and without hope.

He often mutters "just want to go!!!"

End

The fate of the Android is a moral dilemma not easily solved. As a leftover of the Android Riots, and a seeing his Model type was classed as extremely dangerous, the players must solve the problem. Technically releasing him is a crime punishable by prison. To kill him is the easiest solution. To release him, if he hasn't been forced to kill, may only prolong the problem or give him a chance to find a better time to live where he will be accepted. It 's your decision.

POLICE CALL RANDOMIZER

This general randomizer is used to create crime for the cop on the beat. For Day or Night use, roll a d100 every 20 minutes while on the beat. This can also be used to simulate an 8 hour shift. The average call takes 2d4 minutes to respond to. Time spent on a call is the players decision as long as they finalize the call and attempt to correct the problem.

Any misdemeanors or felonies that involve prisoners, lengthy reports, serious crime, or waiting for special units to arrive take longer. Multiple possibility events are the GM's decision. (See also Police Codes on Pg. 314)

01-25 GENERAL QUIET ON PATROL

01-75	Quiet, Roll again in d10 minutes.
76-80	Quiet, Roll again in 2d10 minutes.
81-85	Quiet, Roll again in 3d10 minutes.
86-90	Call, Generate 1
91-97	Multiple Call, Generate 2
98-00	Something Unusual or Crime Spotted

26-75 LOCAL ORDINANCE / MINOR HAPPENING

01-10	Civil Disturbance
11-25	Suspicion/ Prowler
26-50	Vehicle Ordinance/Accident
51-60	City Ordinance / Drunks
61-75	Minor Fire / Nuisance Call
76-85	Transport Minor Injury or Sickness
86-99	Civil I Ordinance
00	Compounded by a second roll.

76-95	**MISDEMEANOR / PROBLEM**	
	01-25	Drug / Liquor Laws
	26-40	Traffic Violation
	41-50	Serious Accident / Injury 70% Vehicle / 30% Industrial
	51-70	Specific City Laws
	71-75	Immigration Laws
	76-85	Civil Violations
	86-90	Minor Assault, Nuisance Call
	91-98	Minor Vandalism / Crazy Robot
	99-00	Misdemeanor / Involves Felony
96-98	**FELONY / SERIOUS PROBLEM**	
	01	Arson or Major Fire
	02	Immigration Laws
	03-10	Robbery
	11-40	Burglary
	41-50	Larceny / Nuisance Call
	51-65	Disorderly Conduct / Gang Fight
	66-80	Vehicle Theft / Spotted
	81-84	Stolen Property
	85-90	Drug Laws / Liquor Laws
	91-92	Vandalism / In Progress
	93-95	Domestic Assault / Gangwar
	96	Gambling
	97	Forgery
	98	Weapons
	99	Sex Related
	00	Felony /Leads to Major Felony
99-00	**MAJOR FELONY / CRITICAL SITUATION**	
	01-50	Assault / Murderous Gangwar
	51-75	Robbery or Hostages
	76-90	Murder or Accidental Deaths
	91-95	Kidnapping or Industrial Deaths
	96-97	Sex Related / Nuisance Call
	98	PSI Related
	99	Terrorism
	00	Compounded Major Felony

NUISANCE CALLS

The common nuisance call is the bane of the policeman's existence. From the lonely crackpot to the nosy neighbor, these people clog the communication lines with suspicion of minor household problems to the imaginary witnessing of Interstellar Felony. The GM should be creative and have fun. On rare occasion a nuisance call may actually be a serious warning of a developing criminal situation.

01-50	COMPLAINTANTS (d 4)
51-75	SMALL GROUP* (d10))
76-85	MEDIUM GROUP* (2d20)
86-95	LARGE GROUP* (d100 +50)
96	TWO GROUPS
97	DISORGANIZED CRIMINALS
98	LOCAL CRIME BOSSES
99	ORGANIZED CRIME
00	INTERSTELLAR ORGINIZED CRIME

*May be Gang related.

ORGANIZED CRIME

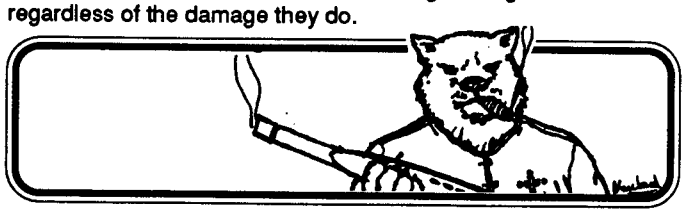
By the 2300's Earth's organized crime has moved into space and joined with its allies on many alien worlds. Bloxians, Kymnar, Dabe, and Bor'cha all shared the social problem of similar criminal elements. To fight this, the Interstellar Court of Law, (ICL) was formed.

This multi - world police arm of Interstellar Scientific Co-Op (ISCO) became a full military force that continues to fight interstellar crime.

INTERSTELLAR TERRORISM

In 2448 there are still groups of people and aliens who, for political, ethnic, or territorial reasons are waging a private war against the establishment. These terrorists hope, through the use of fear, to sway or change government policy. Terrorism and the killing of innocent civillians is dealt with harshly on all civilized worlds. Crime(c) Terror (t)

CRIMINAL AGENCY	**World**
Mafia (c)	**Earth**
Earth's traditional organized crime families	
Black Hand Hand Hand Hand (c)	**Ott**
The Bloxian theft and drug syndicate.	
Ogo'Fa (c)	**Faxn'Chur**
Borcha drug and crime cartel.	
New Red Liberation (t)	**Earth**
A mixed bag of communists who think they can do better than ISCO and local Sector Governments.	
Back to Basics (t)	**Anywhere**
Eco Terrorists who want to eliminate starflight and go back to nature regardless of the damage they do.	



BYSTANDERS

Often, bystanders can be as much hassle to a law enforcement officer as a criminal. For the general temperament of bystanders, roll on this fast table or see Temperaments in FTL Book 1.

01-50	REFUSE TO GET INVOLVED
51-75	WILL HELP IF COAXED
76-85	WILL HELP
86-95	WILL EAGERLY HELP
96-98	WILL EAGERLY CONFUSE BY HELPING
99-00	CONFUSE THE SITUATION COMPLETELY

PAWNING

Pawning stolen items is an art. With a computer and information linked society it has become nearly impossible to sell most stolen goods without being detected.

Most stolen items are hacked into basic components or sold to the people of the inner cities for a fraction of their value. Some areas have the traditional pawn shop that takes such items. Disposable luxury items, food, and other non-traceables are now stolen more often. Roll first for attempted sale of the item, then for the seller's one time offer for the item from that shop.

01-50	Thrown out of shop
51-75	Asks for ownership or data on the item's origin, roll again in 2d10 minutes.
76-95	Makes an offer.
96-98	Makes an offer on the item and begins checking the police computer link for stolen items.
99	Summons police secretly.
00	This is a police monitored Sting Operation recording evidence of you trying to pass stolen goods.

VALUE

Think you're going to get big bucks for that stolen item? The pawn broker has to make a profit too!

01-50	0.25 of what you expected
51-75	0.50 of what you expected
76-90	0.75 of what you expected
91-97	What you expected
98-99	1.25 of what you expected.
00	1.50 of what you expected.

PAYMENT

01-90	Pays in plastic d's
91-95	Asks for ID
96-98	Mails you a Check Chit
99	Asks for Your Credit Meter
00	Calls the Police Anyway

THEFT

Shoplifting continues to be a crime in 2448 as multitudes of shoppers purchase consumer goods in open-air malls and from small shops.

Size		**MODIFIER**
Ultra Small	1"x1"x1" Less	-06
Very Small	2"x2"x2" Less	-04
Small	6"x 6"x6" Less	-02
Medium	12"x12"x12"Less	+0
Large	24"x24"x24" Less	+02
Very Large	36"x36"x36" Less	+04
Soft Object (foldable, clothing)		+0
Soft Object (worn under or replacement)		+01

Value			**MODIFIER**
Cheap	Under	0.50 d	-04
Inexpensive	Under	2.50 d's	-03
Moderate	Under	10.00 d's	+0
Expensive	Under	50.00 d's	+02
Very Expensive	Under	200.00 d's	+04
Precious	Over	500.00 d's	+06

Physical Security	**MODIFIER**
Item Secured to Counter	+02
Item Behind Small Protected Barrier	+01
Item Loose, Large Quantity	-01

Theft Method	**MODIFIER**
Quick Grab, Pocketed, Slip Out	-01
Quick Grab, Pocketed, Fast Out	+0
Quick Grab, Pocketed, Run Out	+01
Shoplift, Slip Out	+01
Shoplift, Fast Out	+01
Distraction of Store Personnel	+01

COMMON SENSE

Remember to temper this table with the objects size and be realistic about how well an object will be protected or guarded.

Who's Watching	**MODIFIER**
Store Personnel	+0
Store Security (if any)	+01
Specially Trained Store Security	+02
Undercover Police	+03
Robotic Security Camera	+02
Hidden Camera w/ Store Security	+02
Hidden Camera w Robotic Security	+03
Merchandise Anti-Theft Micro-Sensors	+05

CHANCE FOR THEFT

Add all modifiers the GM thinks are relevant and roll a d10 . Add the modifier to the d10 for a final result.

RESULT OF ATTEMPT	
0	Item Stolen without Notice
01-02	25% Chance Suspected
03-04	45% Chance Suspected, 05% Spotted
05-07	65% Chance Suspected, 10% Spotted
08-10	85% Chance Suspected, 30% Spotted
11+	Spotted, Caught in the Act

DETECTION OF THEFT

If suspected, the store will follow until there is reason enough to call the police or detain. If spotted, the call to higher authorities is made.

SPOTTED or SILENT ALARMS

01-50 Approached by robot or store personnel to remove merchandise and detain for police or store security.
51-75 Police are notified locally and will arrive in d10+4 minutes.
76-85 Security system traps suspect in store or prevents exit from store until the police arrive.
86-90 Robotic unit attempts to detain the suspect by reason, humane method, or mild force.
91-95 Suspect is tagged by sensor planted in merchandise and followed by police or store security until they decide to apprehend.
96-00 Merchandise Al Sensor blares an alarm signal or yells for help as it is being stolen.

BOTS & POLICE

By 2448 robotics has reached an ultra-fine degree of perfection and easy programming. The average high school graduate is able to interact with and program a simple robot with memory cartridges or adaptable programs. These household items are almost as much a necessity as the can opener or toaster of the 20th century.

Robot Crime

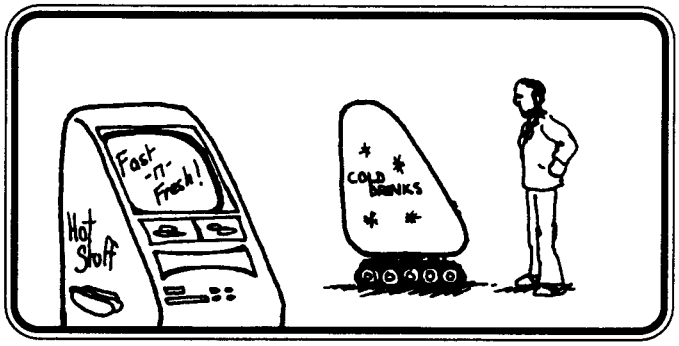
With tens to hundreds of 100 terrabyte chips in a simple household machine, sub programs can be hidden easily. Manufacturers knew this and so did society' s criminal element. The age of robotic crime had begun.

Examples of such activity were the rug sweepers that unlocked doors on command, very expensive household serv-bots that mailed valuables to criminals, and vehicles that developed problems until taken to a specific "licensed" dealership.

While many of these crimes fell under the aspects of corporate espionage, programmed favoritism, and crass dishonesty, a new and ominous trend began to wind through upper class society and importers of Bots.

Assassins

These robots and humanoids are harmless machines until a criminal or mentally deranged programmer gives them the ability injure or kill. At this point they must be removed from service. It was no suprise to police agencies when crazies began to quietly substitute killer program cartridges to activate at random times and turn a harmless cleaning Bot into a nightmarish assassin.



City Robots

Problems like these are more prevalent in the posh suburbs than in the inner cities where a stray or expensive Bot is immediately dismantled and sold by gangs or the general criminal element. The only robots immune to such thievery are the city or industrial sales robots that roam the better streets.

Merch O'Bots

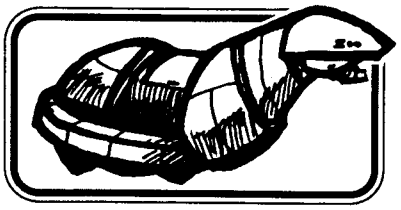
Merch O'Bots are a robotic sales unit much like the concept of the vending machine. These mobile vehicles are packed with instant hot meals, refreshments, alcohol, and small consumer items waiting to be sold. Activated by a yell or a whistle, these rolling markets stop for customers and hawk their wares on bright screens! The Merch O'Bot takes credit cards, chits, cash, or credit meters for payment. They are well armored and directly linked to alarms that call police units.

Missing Andys

Now highly illegal and banned are the old experimental androids produced in the 2350's as a cheap work force. Until civil and moral codes stopped their production, these near-humans were the servants of mankind. Android units have twice the strength and physical statistics of a normal person with a layer of mesh ballistic armor over delicate areas and organs. Androids are often nearly perfect male or female specimens with a life span estimated at 300 years. They have an average intelligence of 9 and general skills. Andys also have a single starting (W,T, or M) skill that starts at a level of d10+10.

"Andy's" as they are called, are still feared because of the Android Riots of 2357 where several thousand demanded freedom and then went on a merciless rampage. Recalled and "put down", a large number vanished into the inner cities and have adapted. Often they have little love in their hearts for their masters who put too much of themselves into their android creations.

Some specific models of Androids are still on the wanted list for murder and instigation of the riots. Only a few of these were ever vicious killers.



GUARD DOGS

One of the deterrents to crime that strikes a note of fear in any burglar or thief is the sound of whispering air from the hover fan of the AutoHound.

These mechanical dog-bots are the latest device designed to deter crime by quickly incapacitating or destroying the assailant.

Autohounds

The average Autohound is the size of a medium dog. A series of programming cards with variable programs allows the hound to move, chase, and even surmount obstacles and ambush. From the mouth a variety of weapons can be arrayed. The Autohound has laser / infrared tracking or any combination of sensors wanted by the owner. Each has a base accuracy of 12 with a range of 125 ft.

Better models are programmed to respond to a password or even talk to the victim until identity can be verified and the appropriate action taken.

Models can also have treads or wheels in place of hover units.

MARK IV AUTO HOUND **"BAKKUS"**

SUPPLY: Brazilia Colony	CHARGE: 210 hours
LENGTH: 32"	MAX SPEED: 50 mph
WIDTH: 16"	HEIGHT: 32"
ARMOR BODY: 53	WEAPONS: Any 4

WEAPON	ROF	AMO	DAMAGE
Laser	2a	025 Shots	2d10+4 Burn
.45 Caseless	4a	090 Shots	3(d8+2)
357 Caseless	6a	130 Shots	4(d8+2)
.50 Caseless	3a	080 Shots	11(d8+3)
DARTS & SPECIALS			
Drug*	1a	20 Shots	d4 (any drug)
Death	la	20 Shots	d4 (poison)
Taser / Shock	la	40 Shots	75% Stun d10m
Stun Bag	la	10 Shots	d10 stun
Tracer Dart	la	112 Shots	d4 +2 burn
AP Shell	la	15 Shots	210 points
Grenade HE	la	15 Shots	Varied*2
Grenade AP	la	15 Shots	Varied*2
Grenade Gas	la	10 Shots	Varied*3
Glue Net	1a	10 Shots	
Bite BI04	la	n/a	d4

*1 See Darts in FTL Book 1 Pg. 151
*2 See 40mm or 20mm Rounds in FTL Book 1 Pg. 157
*3 See Gas Grenades in FTL Book 1 Pg. 160

SPECIAL AI FUNCTIONS

The Autohound can be coupled with a AI computer system to simulate intelligence and be programmed by voice and secondary computer command. These units are highly effective in their ability to anticipate criminal action and quickly learn.

Critical Damage

Use this chart for heavy damage to Autohounds from firearms, impact, or blast.

01-50 SHUTS DOWN

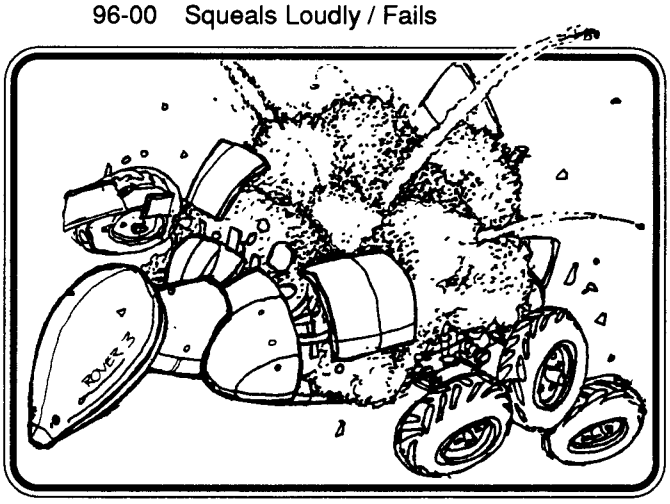
51-75 MOTION
- 01-50 Hover Fails
- 51-75 Spins
- 76-85 Out of Control
- 86-95 Speed Becomes Erratic
- 96-00 Internal Motor Detonation, Flops Over

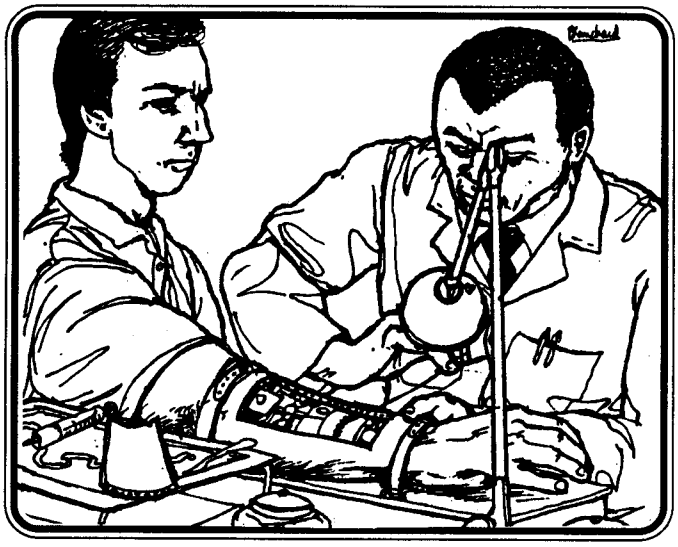
76-85 POWER
- 01-50 Fails
- 51-75 Fails, Begins to Burn
- 76-95 Fails, Burns at 2dlO Damage
- 96-00 Fails, Unit explodes at 2d10 Blast +dl0 Burn Damage.

86-95 COMPUTER
- 01-50 Fails
- 51-75 Sensors Fail
- 76-95 Logic System Fails, Begins a Random Chain of Actions.
  - 01 Move
  - 02 Scan, Fire
  - 03 Hover In Place
  - 04 Move and Turn
  - 05 Stop and Spin
  - 06 Move at High Speed
  - 07 Fetch
  - 08 Follow
  - 09 Play Dead
  - 10 Ambush
- 96-00 Attacks Random Object in Sight.

96-98 WEAPON SYSTEM
- 0l-50 Inoperable
- 51-75 Jammed 2dl0 Actions
- 76-85 Jammed, 40% Chance of Detonation if the rounds are Caseless. (2d10)
- 86-95 Jammed, 60% Chance of Detonation if the rounds are Caseless. (2d10)
- 96-00 Weapon / Head Unit Explodes like a Fragmentation Grenade if explosive or caseless.

99-00 RADIO / CAMERA / SOUND
- 01-95 Fails
- 96-00 Squeals Loudly / Fails





AUGMENTATION

Augmentation is a process of implanting robotic or bionic material into a human to give them heightened senses and abilities. It is illegal to be medically augmented on Earth and any who have augmentation are required to be licensed!

BODY SYSTEMS	STAT +	COST
Strength	+10 to +25	$75000 d's
Agility	+10 to +15	$65000 d's
Robotic Eye	x3, IR,UV	$80000 d's
Robotic Ear	x10	$75000 d's
Robotic Heart		$20000 d's
Robotic Kidney or Liver		$75000 d's
Robotic Stomach, Lung, Pancreas		$30000 d's
Brain Jack (Pleasure Center)		$10000 d's
Brain Jack (VR Game)		$05000 d's

BODY ARMOR	EQUIV	COST
Internal Mesh	*	$80000 d's
Eyes	**	$07000 d's
Tissue Armor	***	$75000 d's
Arms/Legs	0.50m	$40000 d's
Joints	l.00m	$50000 d's
Head/Skull	2.00m	$90000 d's
Chest	1.00m	$40000 d's
Bones	2.00m	$90000 d's

1m Armor equivalency of (2) inches of metal (m) plate.

* Internal layer of mesh that the skin will grow around equivalent to a layer of hard leather.

** Equivalency of a clear layer of thin ballistic plastic.

*** For every point of muscle tissue add a second point of toughness. A layer of tissue rated at *** (3) becomes the equivalency of ****** (6). This adds a x1.25 bonus to the character's weight.

CLONES

While the legalities of cloning were discussed for centuries, the first real clones were not created until the 2200's.

The alpha clones were created for surgical replacement part-banks for those unable to take auto-doc regeneration treatment. These "force grown" clones were mindless.

Forced Growth

Force growth of clones reduces growth from a normal 20 year development to a single year. While ultra-high-speed learning can give them a complete education and programmed memories in 17 months, the resulting individual has a (90%) chance of becoming a dangerous psychotic. True reasons for illegal forced growth of clones was for medical transplants and replacement parts for the ultra rich.

Law and Clones

By 2399 the implications of human cloning were a legal morass that was simply resolved by declaring clones to be the legal brothers or sisters of the original. Because cloning could not create memories or experience, all clones were separate individuals that shared looks of the original donor and a 98% chance of a common talent if raised under a similar social and educational atmosphere.

Industrial Clones

Industrial cloning has became a fantastic new source of protein as specialized robotic units were able to direct clone masses of animal and plant tissue for consumption. Many starships carry a clone 'beef' tank or the ever popular 'Bio Mass Beer' alge tank.

Cloned Returns

With other developments, the Mastodon and many extinct birds, mammals, and dinosaurs were returned to Earth and other worlds. Some of these creatures were released back into the environment or set into preserves. Some were turned into pets or strictly forbidden to release into the ecology.

Alien Animals

Alien animal imports began as soon as man returned from the first missions to the stars. These animals were for research, zoo display and pleasure. In time, many of these harmless pets escaped and proved to be highly destructive pests.

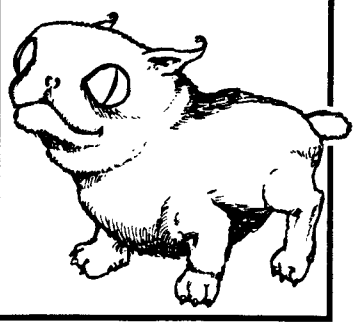
Alien Predators

Looks were often deceiving as small cute creatures suddenly changed, matured, or metamorphosed into temperamentally different creatures that killed their owners.

Every year a few of these illegal pets escape and must be eliminated quickly before they can reproduce or adapt to their new environment.

WARNING

At Maturity Ozzeron's 'Bug Dog' developes fangs and poison sacks. Antiserum is manditory in 4 hours or the victim has a 90% chance of death. Cytolysins A2245-C

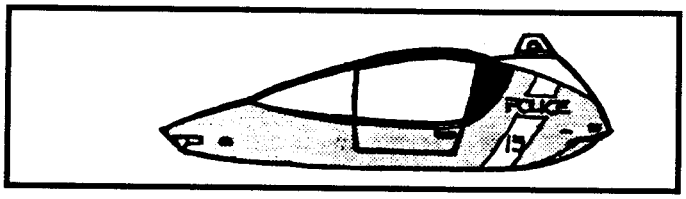


VEHICLES

Police Cars are compact hover or ground vehicles used in the cities for emergency work and patrol. Unfortunately these light vehicles are also susceptible to concentrated attack or damage from heavier weapons.

POLICE CRUISER **"FNGN Mercury 9000"**

LENGTH:	148"	TANKAGE:	12	***ARMOR:***	
WIDTH:	70"	MPU:	45	Body:	28
HEIGHT:	45"	RANGE:	540 mi.	Bottom:	28
CREW:	02	SPEED:	110 mph.	Window:	31
WEIGHT: 1100 lbs		PASSENGERS: 02			



Utility Truck

Cousin to the Police Car is the armored Paddy Wagon. With near military armament and tracks, it is a formidable weapon for crowd control or S.W.A.T. use. These vehicles are modified for prisoner or police transport, cargo truck, or as a mobile command post.

UTILITY TRUCK **"Advent 90b"**

LENGTH:	233"	TANKAGE:	24	***ARMOR:***	
WIDTH:	92"	MPU:	65	Body:	97
HEIGHT:	68"	RANGE:	1560 mi.	Bottom:	87
CREW:	01	SPEED:	60 mph.	Window:	55
WEIGHT: 3700 lbs.		PASSENGERS: 14			

While mass transit has abolished the use of the private vehicle, many still choose to maintain and operate over four centuries of different, as well as alien, designs. Many old vehicles are adapted to higher technology by expensive mechanics and illegal "Gas Stations" where they are improved well above the Vehicle Maximum Code for city use.

Street Legal

The Vehicle Maximum Code is a simple set of parameters that a vehicle cannot exceed in performance. Below are the statistics for a car before and after illegal adaptation. A MPU term is miles per vehicle fuel unit.

HOVER CAR **"CV C'VET 442"**

LENGTH:	177"	Tankage:	05	***ARMOR:***	
WIDTH:	68"	MPU:	70	Body	04
HEIGHT:	48"	RANGE:	350 mi.	Bottom	12
CREW:	01	SPEED:	25 mph.	Window	10
WEIGHT: 1100 lbs.		PASSENGERS: 03			

This vehicle is "Street Legal" with a max speed of 25 mph. and low fuel tankage. It has a broadcast ID number that is transmitted from its safety computer on request.

HOVER CAR (MODIFIED) **"CV C'VET 442"**

LENGTH:	177"	Tankage:	50	***ARMOR:***	
WIDTH:	68"	MPU:	35	Body	35
HEIGHT:	48"	RANGE:	1750 mi.	Bottom	57
CREW:	02	SPEED:	110 mph	Window	10
WEIGHT: 1700 lbs.		PASSENGERS: 02			

This vehicle may also house a front, side, or rear laser, no ID numbers, laser reflec paint, sensor-busters, and a host of lesser items for extra-legal or owner use.

CAR THEFT

Car theft is still a problem in the 25th century with Chop Shops specializing in parts and illegal service. These shops go so far as to carry fuel for the outlawed gasoline-burning, high-performance engines of the 20th century.

Any chance of stealing a car is indexed from the vehicle's protection. Use skills to reduce alarm Chance to Trigger, (CTT). Theft time is 10 minutes divided by the skill level of the vehicle thief. CTD is the chance to disarm the device without use of skills.

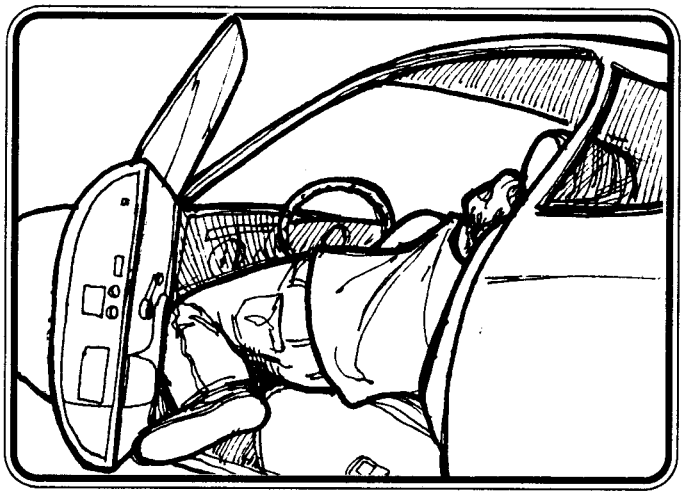
ALARMS		CTT	CTD	RESULT
01	No Alarm	n/a		
02	Bell / Horn System	20%	70%	ab
03	Beeper to Owner	40%	50%	ab
04	Auto-Dialer (Police)	50%	40%	abc
05	Ignition Interlock	n/a	65%	ab
06	Computer AI *1	75%	20%	abcd
07	Vehicle AI *2	95%	05%	abcde
08	Shocks / Stuns	85%	15%	bc
09	Locks Thief In	75%	05%	bc
10	Stun or Gas Release	70%	55%	bc

*1 Computer aware vehicles request an access code for use if the driver does not meet voice/weight requirements. Activates any result in 2d20 seconds. Cost can range from $1000-$5000 d's

*2 The Vehicle Aware system is a robotic unit that monitors and makes decisions. If it realizes it is being removed without access codes, it will act to incapacitate or deliver the auto thief to the local authorities even if it has to take him or her there itself. This system is also a traffic aware chauffeur by voice command. Costs can average $3000-10000 d's to install.

CAR THEFT ALARM TYPES

a. Alerts passerby or the owner if in range of the blaring sound.
b. Alerts owner by simple transmitter.
c. Alerts Police Automatically
d. Uses one system to defend itself.
e. Uses any and all systems available to it to defend from theft or intrusion



POLICE CODES

The following are actual police codes used for fast, field communication. Link these with codes listed in the nest column.

10- 01 STANDBY FOR or BE ON LOOKOUT
10- 02 NEGATIVE
10- 08 AFFIRMATIVE
10- 04 OK
10- 05 VIOLATION
10- 06 STANDBY
10- 07 OUT OF SERVICE
10- 08 IN SERVICE
10- 09 REPEAT
10- 10 MINOR DETAIL IN STATION
10- 11 MEET SUPERVISOR AT...
10- 12 BACK UP
10- 13 WEATHER UPDATE
10- 14 ESCORT
10- 15 PRISONER IN CUSTODY
10- 16 PICK UP OFFICER AT
10- 17 PICK UP EQUIPMENT / PROPERTY AT...
10- 18 AREA CHECK
10- 19 RETURN TO STATION
10- 20 LOCATION
10- 21 CALL BY PHONE
10- 23 ARRIVED AT SCENE
10- 24 LUNCH
10- 25 DISREGARD
10- 26 ESTIMATED TIME OF ARRIVAL
10- 27 REQUEST PERMIT INFORMATION
10- 28 REQUEST REGISTRATION
10- 29 CHECK FOR WANTED
10- 30 WANTED: MISDEMEANOR (minor crime)
10- 31 WANTED: FELONY (major crime)
10- 32 SPECIAL UNITS NEEDED NUMBER &TYPE
10- 33 HELP --ASSISTANCE NEEDED
10- 36 TIME CHECK
10- 40 HOMICIDE
10- 41 RAPE
10- 42 ROBBERY: ARMED
10- 43 ROBBERY: UNARMED
10- 44 BREAKING AND ENTERING
10- 45 LARCENY
10- 46 STOLEN VEHICLE
10- 47 ASSAULT: SERIOUS
10- 48 ASSAULT: SIMPLE
10- 49 PROWLER
10- 50 PROPERTY DAMAGE ACCIDENT (minor vehicle accident)
10- 51 PERSONAL INJURY ACCIDENT (as 10-50 with injuries)
10- 52 FATAL ACCIDENT
10- 53 SUICIDE
10- 54 ATTEMPTED SUICIDE / OVERDOSE
10- 55 DRIVING UNDER THE INFLUENCE
10- 56 SUDDEN DEATH
10- 57 SICK OR INJURED
10- 58 WRECKER NEEDED
10- 59 AMBULANCE NEEDED
10- 60 LIFE SUPPORT OR EMR UNIT NEEDED (Emergency Medicine and Rescue)
10- 61 ALARM: HOLDUP
10- 62 ALARM: BURGLAR
10- 63 MALICIOUS DESTRUCTION OF PROPERTY
10- 64 SUSPICIOUS VEHICLE
10- 65 SUSPICIOUS PERSON
10- 66 BREAKING AND ENTERING VEHICLE
10- 67 FAMILY/ DOMESTIC TROUBLE
10- 68 CITIZEN NEEDING ASSISTANCE
10- 69 BANK DETAIL (escort)
10- 70 MISCELLANEOUS COMPLAINT
10- 71 SHOPLIFTER
20- 01 MALFUNCTIONING ROBOT
20- 03 DANGEROUS MALFUNCTIONING ROBOT
20- 07 GANG AT...
20- 10 ALIEN(s)
20- 11 ALIEN ANIMAL(s)
20- 12 INTOXICATED ALIEN
20- 15 IMMIGRATION DATA LINK REQUESTED
20- 16 REQUEST TRANSLATION LINK
20- 17 REQUEST CODE CLEARANCE
20- 18 REQUEST DIRECT COMPUTER LINK
20- 19 REQUEST HARD COPY
20- 20 HARD COPY RECEIVED
20- 30 PROTECTIVE SUITS NECESSARY
20- 32 RADIATION/BIO HAZARD
20- 40 CUT POWER GRID TO BLOCK...
20- 50 GO TO SECURE/SCRAMBLED FREQUENCY

Response Code

Codes are the general speed used to answer a call. This may involve lights, siren, or computer auto-pilot interrupt. Characters are reminded that they are responsible for their tactical driver as they answer calls.

Code 1

HURRY - NO LIGHT OR SIREN

Used for minor runs such as, "domestic trouble, prowler, or auto accident".

Code 2

RUSH - USE LIGHTS ONLY

Used for runs such as "alarms, B&E's robberies" where a loud siren might warn suspect of police response.

Code 3

RUSH - USE LIGHT AND SIREN

Used for runs such as "robberies, B&E's, injury , sickness, injury accidents, serious assaults". It is suggested the officer responding to such calls switch to CODE 2 within a reasonable distance from the scene if necessary.

Code 4

RUSH - USE AUTO/COMPUTER INTERRUPT

Like CODE 3, with the activation automatic system that re-routes auto-piloted vehicles clear of the approaching "police" vehicles. This also signals manually operated vehicles to clear a path when police are limited to the use of non-hover vehicles.

Code 5

RUSH - OVERDRIVE/INTERRUPT

Like CODE 4 with a police hover vehicle authorized to overdrive traffic, literally travel over traffic, to reach the scene. This limited flight often creates mass confusion as the Computer/Interrupt slows and stops all local traffic until the police/emergency vehicle passes.

SEVERITY OF CRIME

Severity for crime has changed little from the laws of the 20th century to the World Court of Earth's 25th century.

REMEMBER

01 Anyone charged with a crime has the right to a court appointed attorney.

02 All criminals have the option of fast sentencing if they admit guilt or are entitled to a fair trial by computer, judge, and jury of 20.

CRIME	SEVERITY
Manslaughter	10
Manslaughter (2nd degree)	09
Manslaughter (3rd degree)	08
Negligent Homicide	07
Conspiracy (Murder)	03-07
Assault with Intent to Kill	08
Assault	07
Assault (2nd degree)	06
Assault (3rd degree)	05
Brawling	04
Aggravated Assault	03
Reckless Endangerment of Life	04-06
Kidnapping	09
Kidnapping (2nd degree)	08
Coercion (forcing under threat)	07
Sex Related	03-09
DESTRUCTION OF PROPERTY	
Arson	08
Arson (2nd degree)	07
Arson (3rd degree)	06
Unlawful Demolition	04-10
Vandalism	05-07
Vandalism (2nd degree)	03-05
CIVIL DISTURBANCE	
Riot	07
Inciting to Riot	06
Harassment .	03-06
Unlawful Assembly	04
Disorderly	02
Public Intoxication	01
Intoxicated / Disorderly	03
Trespass	01-05
Tampering	02-05
Mischief	01-03
Criminal Trespass	04-08
Criminal Tampering	05-10
Criminal Mischief	04-07
THEFT	
Burglary	06
Burglary (2nd degree)	05
Robbery	07
Armed Robbery	08
Larceny (minor)	02
Larceny	04
Grand Larceny	06
Unlawful Use Credit Card or Meter	04
Possession of Stolen Property	05
Possession (2nd Degree)	04
Forgery	05
Forgery (2nd degree)	04
Forgery (3rd degree)	03
ARREST	
Resisting Arrest	02
Hindering Arrest	03
Official Agency Obstruction	03
Harboring a Fugitive	03
DRUGS	
Possession Controlled Substance	07-10
Possession Substance (2nd degree)	06-08
Possession Substance (3rd degree)	04-07
Possession Substance (4th degree)	02-04
Possession Substance (5th degree)	01-03
Sale Controlled Substance	06
Sale Controlled Substance (2nd degree)	05
Sale Controlled Substance (3rd degree)	04
WEAPONS	
Unregistered Projectile Weapon	03
Unregistered Laser	04
Possession Unregistered Explosives	06
Possession Military Weapons	05
Unregistered Military Antiques	04
Possession Military Gasses/Bio-Toxins	08
Possession Nuclear Detonators	10
Possession Kiloton Range Weapons	10
Possession Exotic/Lethal Weapons	06
OTHER	
Public Racism	01
Immigration / Customs Violation	01
Possession Unregistered Alien Animals	05
Importation Controlled Life / Substances	08
Tax Evasion	02
Computer Tampering / Hacking	02-07
Unlawful Group Membership	01
CIVIL INFRACTIONS	
Traffic	01-02
Property Ordinance	01
Social Ordinance	01
Health Ordinance	01-02

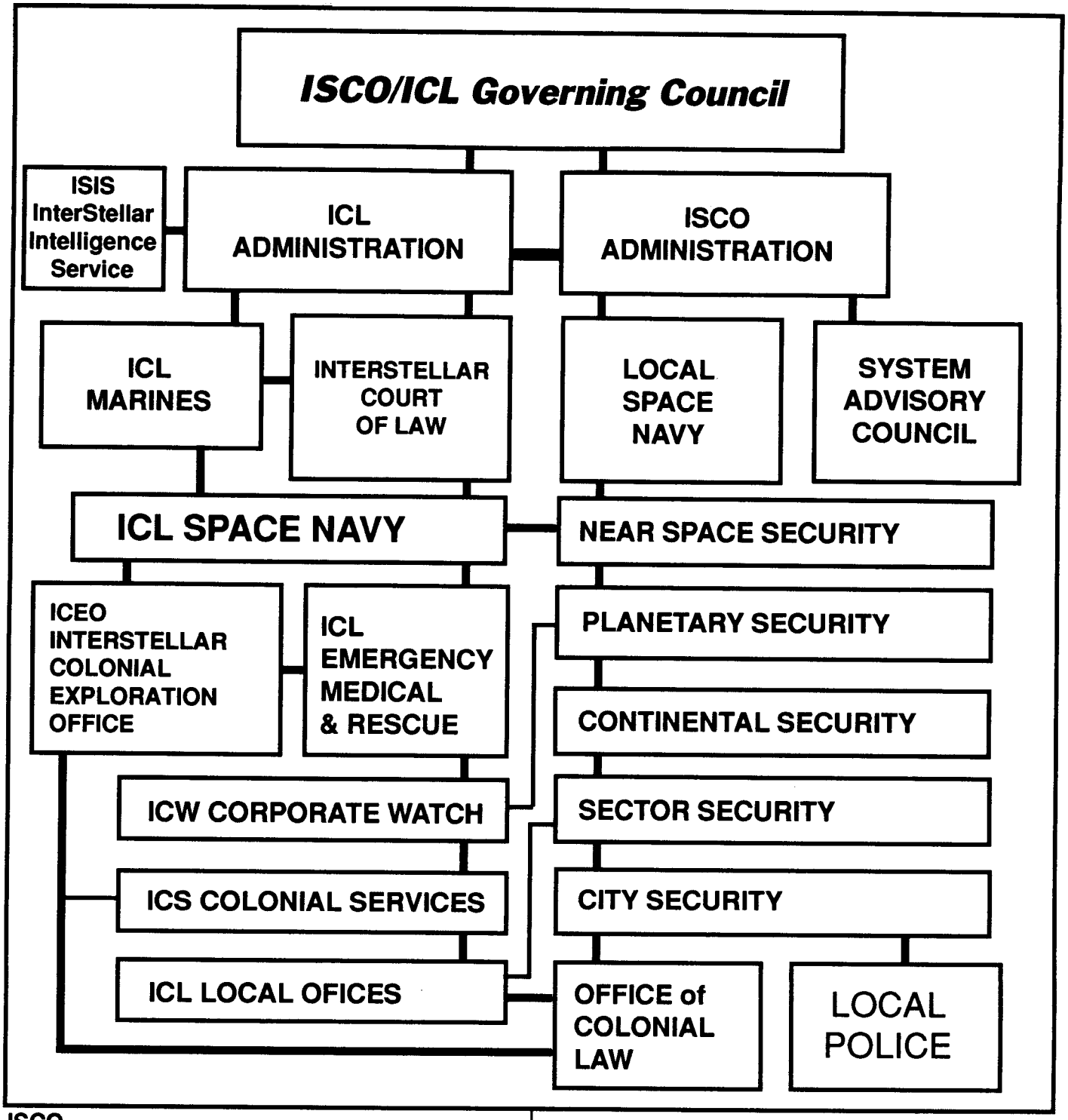
PUNISHMENT

Punishment for crime is generally equal to 2 years of confinement / rehabilitation for each point of severity. This is only used for crimes with severity over 5 and is modified by the judge. Any lesser crimes are lowered in time and punishment severity. Many are reduced to community service or job training. Punishment for major crime that has taken life can include:

01	Euthanasia (death)	04	Prison Planet
02	Donation to Body Banks	05	Brain Wipe
03	Life in Prison	06	Implant

IMPLANTS & BRAIN WIPES

Implants prevent violent or criminal action and control emotion by pain. This has a 50% suicide rate per d4 years of survival and a 1% chance of complete failure per year. A Brain Wipe removes memory and allows a new personality to take root and grow. Brainwiped individuals have a 10% chance of their old personality or memories returning after 5 years.



ISCO

ISCO has grown much since its inception as the ICO on Earth. The Interstellar Court of Law was founded on the need for a single legal system to span the myriad worlds and cultures.

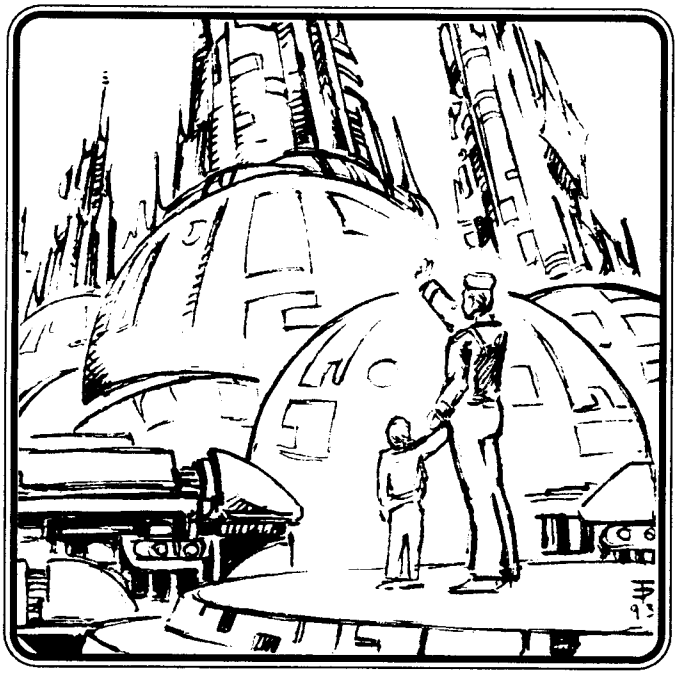
Joining ISCO

Admission to ISCO is not automatic nor required. There are several worlds within ISCO space which are independant of it and don't subscribe to the code of law of the ICL. Any world can petition for entry into ISCO, and its petition will be considered by the ISCO Ruling Council. If accepted, the world is put on a ten year probationary status under the auspices of the ICL Colonial Service.

NEW COLONIES

Newly founded colonies are automatically under the supervision of the ICLCS unless otherwise requested.

The ICL main responsibility is maintain the safety and security of all ISCO member worlds while not infringing on their inalienable rights and local customs and laws. Sometimes these two responsibilities are at odds with each othe and create serious judicial problem for the world and the ICL.



SPACE NAVY

Welcome to Earth! As a newly recruited member of the Space Navy, you, along with every other recruit, begin your career at the Space Training Center (STC), at the historic Great Lakes North American Training Facility, located about 40 miles north of the Chicago SpacePort.

IN-PROCESSING

Your initial introduction into the Space Navy will take approximately twenty weeks—135 days, to be exact. In this short period of time, you will be shown the basics of how not to get yourself killed in the harsh environment of space, become familiar with starship operations, firefighting, NBC (nuclear, biological, and chemical) defense, weapons and ordnance, ship maintenance, as well as hundreds of other duties. You'll learn customs, ceremonies, and the various routines of the Space Navy, as well as a wide variety of skills that you will find useful throughout your career. You'll also get plenty of physical activity. We guarantee it.

Basic Training

Space Navy Basic Training lasts nearly 5 months. In that time, recruits receive their uniforms, ID & credit cards, and lots of training. Each training company consists of 48 recruits who are trained by a Company Commander, or CC. The CC is responsible for ensuring that each recruit receives the necessary training that they will need to survive once they get to the fleet. While not as harsh as the historic CC's of the Marine Corps of the mid-to-late twentieth century, Space Navy CC's are selected for their leadership qualities and their ability to inspire young recruits to give forth their best effort and instill a genuine desire to accomplish their goals.

Once you have finished your initial basic training, you may be eligible for advanced, or specialized training. 97.1% of all Space Navy Personnel receive some form of advanced training at some point throughout their careers. Roll on the following table to find which school you are sent to:

TRAINING AREAS

Choose one or roll a d100 for where your aptitude tests place you.

01-03 PHASE DRIVE TECHNICIAN
Melbourne, Australia

04-05 STARSHIP NAVIGATION
Milan, Italy

06 SPACE TRAFFIC CONTROLLER
La Roda, Spain

07-09 FUSION DRIVE TECHNICIAN
New Mojave, UT

10 SCOUT/EXPLORATION CORPS
Geneva, Switzerland

11-12 CARGO HANDLING SPECIALIST
- **01-75 Light Cargo School**
  Narvik, Norway
- **76-00 Vac Cargo School**
  Collinsport, Luna

13-14 SPACE CONSTRUCTION
- **01-75 Assemblyman**
  Cocoa Beach, FL
- **76-00 Fabricator**
  Cocoa Beach, FL

15 CRYPTOLOGIC TECHNICIAN
Langley, VA

16-20 DATA SYSTEMS TECHNICIAN
Leningrad, Russian Sector

21-26 MEDICAL SCHOOL
- **01-03 Dental Technician**
  Tapachula, Guatemala
- **04-10 Hospital Corpsman**
  San Diego, CA
- **11-50 Emergency Medical Trauma**
  San Diego, CA
- **51-75 Specialized Medicine**
  Rochester, MN
- **76-85 CryoTube Technician**
  Nagoya, Japan
- **86-00 Auto Doc Technician**
  Kagoshima, Japan

27 CONTROL SYSTEMS TECHNICIAN
- **01-30 Internal Starship Controls**
  Topeka, KS
- **31-60 External Starship Controls**
  Atlanta GA
- **61-00 Life Support Systems**
  Beijing, Free China Sector

28-29 ELECTRONICS TECHNICIAN
Orlando, FL

30-33 ELECTRONICS WARFARE
01-20 Seattle, WA
21-00 Lisbon, Portugal

34-40 FIRE CONTROL TECHNICIAN
Great Lakes, IL

41-43 FLIGHT SCHOOL
San Diego, CA

44-45 GUNNERY SCHOOL
Great Lakes, IL

46-49 HULL MAINTENANCE TECH
Grissom Base, Luna

50 FIREFIGHTING & DAMAGE CONTROL
Biloxi, MS

51 HYDRAULIC SYSTEMS
Manilla, Phillipines

52-53 INTELLIGENCE SPECIALIST
Langley, VA

54-60 ICL MARINES
Camp Pendleton, CA

61 LEGALMAN
Sudbury, Canada Sector

62-63 MACHINERY REPAIRMAN
East Pointe, MI

64-69 MESS SPECIALIST
New Paris, France

70-72 MISSILE TECHNICIAN
Great Lakes, IL

73 OPTICALMAN
Frankfurt, Germany

74-79 OPERATIONS SPECIALIST
01-60 Houston, TX
61-00 Alma City, Mars

80 ISL/SPACE NAVY PUBLICATIONS
Pueblo, CO

81-82 POSTAL CLERK
01-10 Royal Oak/Troy Metroplex, MI
11-00 New Washington, DC

83-86 PERSONNELMAN
Byrd City, Antarctica Habitat

87-92 HELMSMAN
Gargarin City, Mars

93-95 COMMUNICATIONS TECHNICIAN
Adak, AK

96 STOREKEEPER
Manchester, England

97-00 YEOMAN
Kanpur, India

Time in Training

Once assigned to your school, you will receive an additional 20 to 60 weeks of advanced training, which will automatically give you a base skill level of 5 in your field of specialty. Additional skill levels are gained normally.

REMEMBER

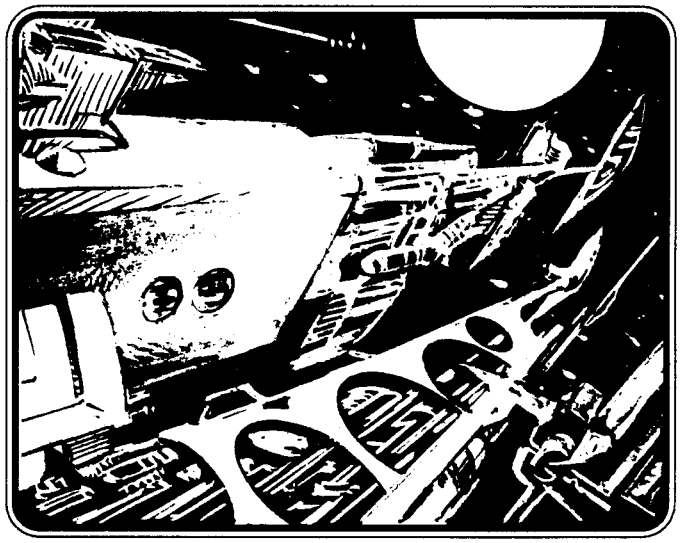
01 Keep in mind that these are ENLISTED ranks, and that these personnel, when assigned to ships will be watched over by higher-ranking personnel to ensure that they are capable of doing their job competently.

02 Washing out of a school is common for a few. Roll a d100 with a 3% chance of washing out. If you fail, you are assigned a second school.

CROSS TRAINING

On some occasions, personnel are allowed to cross-train to other specialties. Normally, you may roll on this table once per year. Roll below for results:

01-20 No further training.
21-35 School has 36 month backlog in waiting students. You may roll again after 3 years.
36-50 School has 18 month backlog in waiting students. You may roll again after 18 months.
51-75 Accepted to school, but classes are delayed for d10 months due to overcrowded classes.
76-90 Accepted to school, but classes are delayed for d4 months due to overcrowded classes.
91-00 Accepted to school, no delays.



ASSIGNMENT

Once you have finished your training, you will be assigned to one of the many ICL Space Navy's starships. Your duties will range from standard shipboard watches, to actual repair work on various ship's systems. You will become intimately familiar with the operation and procedures of shipboard life, and should soon be up for a promotion.

SPACE NAVY

Percival (Percy) B. Forberg, Fire Controlman Third Class ICL 0322 Chandler

As I reported onboard the ICL Fast Attack Patrol Ship "Chandler", I suddenly realized that shipboard life wasn't as I had envisioned it. I was of the opinion that my life would somehow mirror the adventurous footage that prevailed on the Tri V InfoMercials. You know—nonstop action-packed adventure? I must say that after my initial training at the Great Lakes Training Center, and the subsequent training at the Fire Control School, learning virtually all aspects of starship weapons control firing systems, I thought that I was ready for the 'adventure' that awaited me."

CONDITION OF READINESS

Shipboard life consists of numerous events, and they vary depending upon what mission the ship is currently conducting, and what condition of readiness the ship is at. Below is a listing of conditions of readiness.

Condition 4

In port, or normal underway condition. Generally, there are anywhere from 3 to 5 watch sections, each whom distribute the workload equally.

Condition 3

Cautious maneuvering in unknown or hostile space. Generally, there are 3 watch sections, each who put in 8-hour shifts.

Condition 2

Dangerous maneuvering in hostile space. This condition is set as either a stand-down from Condition 1, or when attack is highly possible. There are 2 watch sections, each who put in alternating 4 or 6-hour shifts.

Condition 1 *GENERAL QUARTERS*

This condition requires all personnel to man their battle stations. This condition of readiness is only used during combat maneuvers, or wartime activities. General wartime cruising is done under Condition 2.

CREW MEMBERS

There are numerous individuals that are required to operate a starship efficiently, and their jobs vary. Below is a listing of the major branches of jobs.

SHIP'S COMMANDER

They're at the top, and they know it. The Commander of the ship, (Called "Captain", regardless of their actual rank) is often a mellow individual, not prone to screaming fits of temper. That's a job that's left for the Executive Officer. The Ship's Commander makes the broad policies for the ship, and handles major disciplinary actions. Mostly, he's a nice guy who has seen it all.

EXECUTIVE OFFICER

Not quite the Captain, but not by much. The XO is generally the 'voice of the Captain', and generally is the one who informs the crew of the Captain's policy and desires.

OFFICERS

Officers are a mixed lot of Department Heads and Division Officers, with a small assortment of administrative types thrown in, just to complicate matters. Generally, Officers are either extremely intelligent, or extremely stupid, with hardly any 'middle ground'. Just *hope* that your Division Officer is competent...

WARRANT OFFICERS

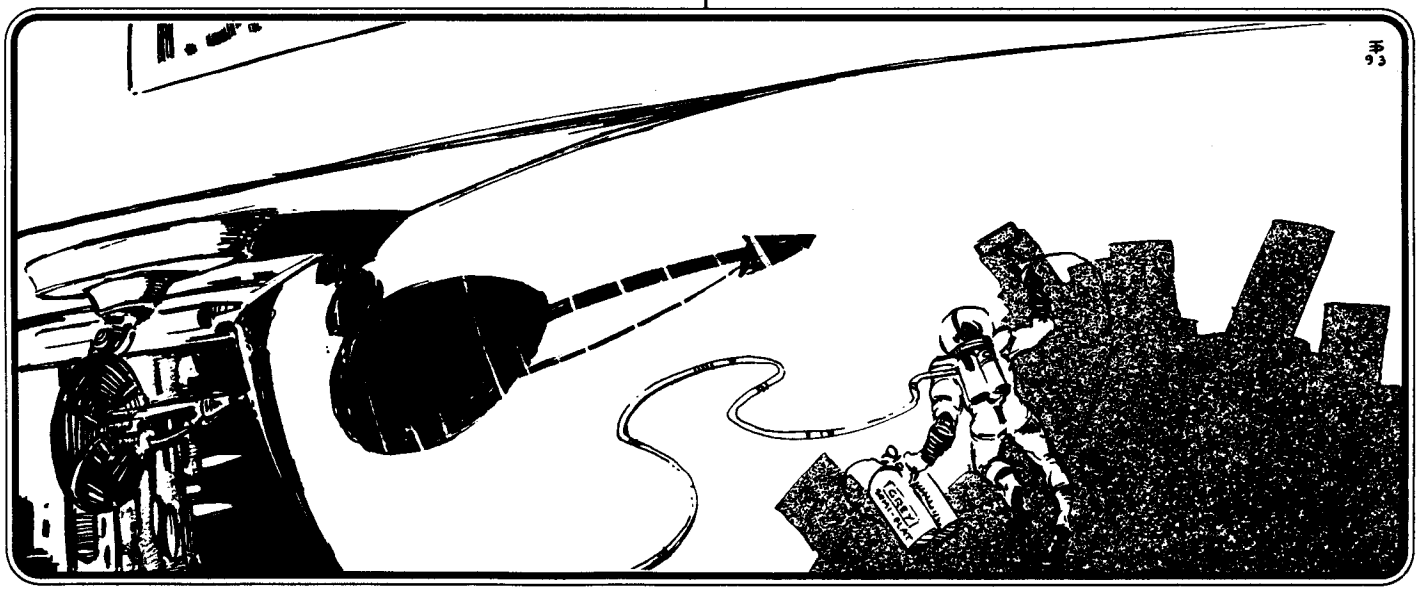
These are the career enlisted personnel who have greatly surpassed their peers, and have become a kind of Semi-Officer. They generally make good Officers, since they know firsthand the plight of the enlisted personnel. They are generally much more respected than normal Officers, due to their advancement through the enlisted ranks to attain their rank. When they reach CWO4, they have the option of 'advancing' to Ensign, and may advance as high as O-5 (Commander).

CHIEFS

Chief Petty Officers are the career enlisted personnel who mainly enjoy their pay as they sit around in the Chief's Mess (a.k.a. The Goat Locker), and drink coffee. The Chief is understanding and tolerant of the enlisted personnel's foibles until the higher-ups in the Chain of Command start complaining. Chiefs actually run the ship whether the Officers know it or not, and encourage a high degree of efficiency.

PETTY OFFICERS

These are the highly trained specialists who operate and repair the machinery and equipment necessary to keep the ship operational. They range from the senior Petty Officers who are looking forward to becoming a Chief, to the junior Petty Officers who do most of the work and wonder why.



NON RATES

These are the young and enthusiastic who believed the Tri V infomercials, and joined the Space Navy to "See the Universe", and instead, found themselves trapped in a dead-end job, light years from home, doing something they hate. They can usually be found busily chipping paint, scrubbing decks, or painting. On planet/shore leave, you can generally find them at the bar.

ICL MARINES

On every ship is a small contingent of ICL Marines. The Marine of the 2400's comprises the backbone if the ICL Enforcement Division as well as the general military. The ICL Marines also assist with critical rescue work and civil emergencies. An average small ship will have about a dozen marines assigned to various security, cryptological, and defense duties. If well fed, and treated with respect, the generally do not destroy crewmembers who stray into their quarters...

SPACE NAVY RANKS

The following is a list of ICL Space Navy ranks:

OFFICERS

O-9	Fleet Admiral (in wartime only)
O-9	Admiral
O-8	Vice-Admiral
O-7	Rear Admiral
O-6	Captain
O-5	Commander
O-4	Lieutenant Commander
O-3	Lieutanant
O-2	Lieutenant Junior Grade
O-1	Ensign
CAD	Cadet (no actual rank)

WARRANT OFFICERS

W-4	Chief Warrant Officer (CWO4)
W-3	Chief Warrant Officer (CWO3)
W-2	Chief Warrant Officer (CWO2)
W-1	Chief Warrant Officer (CWO1)

ENLISTED

E-9	Master Chief Petty Officer
E-8	Senior Chief Petty Officer
E-7	Chief Petty Officer
E-6	Petty Officer First Class
E-5	Petty Officer Second Class
E-4	Petty Officer Third Class
E-3	Spaceman, Starman, Fireman, Corpsman, Constructionman (SpaceBees)
E-2	Any E-3 Apprentice
E-1	Recruit

CREW REQUIREMENTS FOR SHIPS

The following is a listing of the ship crew requirements for the various size ships. (Keep in mind that these are general figures, and the actual staffing requirements may differ depending on the type of ship, and mission.

	SM	MD	LG	XL
O-9	-	-	-	-
O-8	-	-	-	01
O-7	-	-	-	01
O-6	-	01	01	04
O-5	01	02	04	06
O-4	01	04	04	10
O-3	01	06	08	12
O-2	02	08	10	16
O-1	02	10	15	25
CAD	-	-	-	-
W-4	-	-	-	04
W-3	-	-	01	04
W-2	-	-	01	04
W-1	-	-	01	04
E-9	-	01	01	02
E-8	01	02	02	02
E-7	02	04	08	12
E-6	04	08	16	24
E-5	08	16	32	48
E-4	12	24	48	72
E-3 & Below	36	72	144	216

STARSHIP ORGANIZATION

Every starship operates under the authority of an officer ordered to command that ship by the Interstellar Court of Law (ICL). No matter what their rank, they are called "Captain". In the event the Captain is absent, or is killed, his duties are assumed by the next highest ranking line officer in the chain of command—usually the Executive Officer (XO). Though the actual absolute responsibility for the safety, well-being, and efficiency of the crew assigned to the ship is the sole burden of the Captain, in reality, they delegate the duties of the ship to the XO, Department Heads, and the Officer of the Deck (OOD), and finally, the crew.

The Executive Officer, often called "The Exec", "Number One", "First Officer", or "XO", is the officer next in rank to the captain. They are responsible for all matters relating to the personnel, routine, and discipline of the ship. All orders issued by the XO have the same force and effect as though issued by the CO. The XO, by virtue of this position, is senior to all staff officers on board.

OFFICERS: LINE VS. STAFF

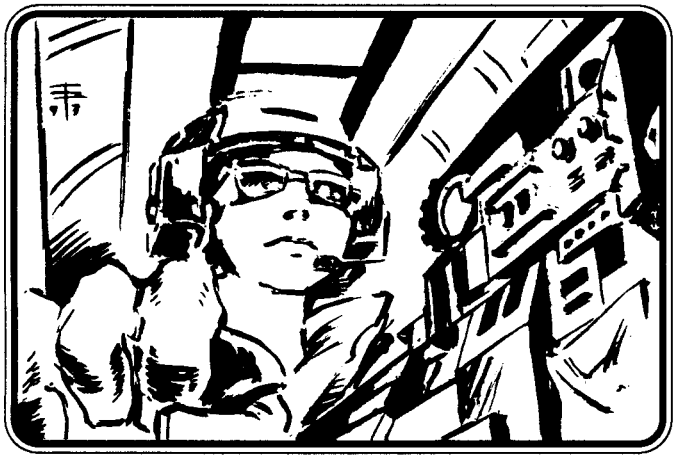
There are two basic types of officers in the Space Navy. Line officers are those who are directly in the chain of command insofar as shipboard combat operations are concerned.

Staff officers are those who are in non-combatant fields, such as: Supply, Medical, Dental, Legal, & Research.

DEPARTMENTS

There are four basic types of departments onboard any starship. Command, Support, Special, and Marine.

COMMAND DEPARTMENTS



COMMUNICATIONS

In units with a communications department, the head of this department is the Communications Officer. This individual is responsible for visual and electronic exterior communications and for administering internal communications systems. In units without a communications department, the Communications Officer reports directly to the Operations Officer. Assistants may include a radio operator, signal officer, communications security system custodian, cryptosecurity officer, and a message center officer.

DECK

On ships having a deck department, the first lieutenant is the head of that department. This individual's responsibilities include the supervision, direrction and use of the equipment associated with the general maintenance and upkeep of the ship, and aboard ships without a weapons department, to provide weapons support in the event of armed conflict.

ENGINEERING

This department, headed by the engineering officer, is responsible for operating and maintaining the ship's machinery, damage and casualty control, repair of hull, power lighting, water systems, life support systems, and external airtight fittings. The Chief Engineer may have assistants for maneuvering propulsion, reactor control, damage control, phase control, electrical officer, fire marshall, and a technical assistant for nuclear, biological and chemical (NBC) defense.

EXECUTIVE

This department is headed by the Executive Officer, and includes personnel assigned to work in the captain's office, executive officer's office, chaplain's office, print ship, security office, training, office, legal office, and hospital corps (when no medical officer is assigned), and an indoctrination department, which familiarizes newly reported personnel with shipboard routines.

NAVIGATION

This department, headed by the navigator, is responsible for plotting the ship's intended course, and the care and maintenance of navigational equipment.

OPERATIONS

Headed by the operations officer, this department is responsible for collecting, evaluating, and disseminating tactical and operational information.

REACTOR

The reactor officer heads this department. This officer is responsible for the operation and maintenance of the shipboard Reactor and Fusion plants and their associated auxiliaries. Assistants to the reactor officer may include a reactor control assistant, and a reactor mechanical assistant.

PHASE

The phase officer is directly responsible for the operation and maintenance of the ship's phase drive. Assistants to the phase officer may include a phase control assistant, a phase mechanic, and a phase induction specialist.

WEAPONS

The weapons officer supervises and directs the use of ordnance. The weapons department, of all the shipboard departments, is the most complicated and often the largest.

Assistants may include a fire control officer, weapons tracking officer, laser specialist, missile officer, nuclear weapons officer, integrated battery officer, and a ordnance field officer.

These crews have special clearance and training to ensure efficiency in this critical area.

SUPPORT DEPARTMENTS

This department (also called staff) includes dental, medical and supply.

DENTAL

The dental officer is responsible for preventing and controlling dental diseases and supervising dental hygiene. Assistant dental officers are sometimes assigned to larger ships.

MEDICAL

The head of this department must be an officer of the Medical Corps, and is responsible for maintaining the health of personnel, conducting medical inspections, and keeping the CO informed of hygiene and sanitation conditions.

SUPPLY

The supply officer heads this department, which is responsible for the procurement, the stowage, and iissue of all stores and equipment. The supply officer pays the bills—as well as the wages of the crew. They are also responsible for supervising and operating the general and wardroom messes, the ship's laundry service and store, as well as the sale and issue of clothing. On larger ships, the supply officer may have assistants for disbursing, food service, ship's store and wardroom messes.

SPECIAL DEPARTMENTS

DEEP SPACE SURVEILLANCE

Headed up by the intelligence officer, this department is responsible for coordinating all incoming data from the frontier, as well as keeping an eye out for Space Pirates.

ORDNANCE REPAIR

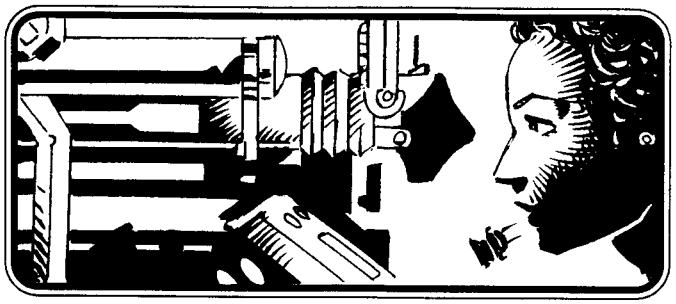
The ordnance repair officer is responsible for the repair of faulty munitions, normally misfired missiles. The ORS works in conjunction with Explosive Ordnance Disposal (EOD) teams, and is responsible for ensuring the safe handling of munitions.

REPAIR

The repair officer is generally responsible for maintaining the tools necessary to conduct whatever repairs become necessary on the ship.

RESEARCH OPERATIONS

The research officer is responsible for the operation, maintenance and security of research, special-purpose communications, and associated equipment.



MARINE DEPARTMENTS

The commanding officer of the Marine detachment, though not a department head, is in charge of matters pertaining strictly to the ICL Marines. Generally assigned as a division officer in the weapons department. A marine detachment generally consists of between 12 and 48 ICL Marines, with larger detachments aboard larger ships. Responsibilities include comprising a ship's landing party, security of the ship, providing weapons assistance, operating the ship's brig, and general security watchstanding duties.

SHIPBOARD LIFE

A starship always has someone on watch at all times. Even when a ship is docked, and is receiving power from a spaceport or docking facility, it is necessary to maintain a watch for communications, security, and safety. Those who are assigned to monitor these vital areas are called 'watchstanders'.

UNDERWAY WATCH

There are 7 key watch assignments for a starship that is underway.

COMMAND DUTY OFFICER (CDO)

This individual is empowered by the captain to advise, supervise and direct the OOD in matters concerning the general operation and safety of the ship.

OFFICER OF THE DECK (OOD)

The OOD is in charge, and is responsible to the CO for the safe and proper operation of the ship. This includes navigation, maneuvering, communications, reports, and all other miscellaneous duties.

JUNIOR OFFICER OF THE DECK (JOOD)

Main assistant to the OOD. Anyone making reports to the OOD, generally makes them through the JOOD or JOOW.

JUNIOR OFFICER OF THE WATCH (JOOW)

This officer is usually one who is training for qualification as the OOD.

CIC WATCH OFFICER

Supervises the operation of the Combat Information Center (or appropriate bridge station) during complex tactical operations.

ENGINEERING OFFICER OF THE WATCH (EOOW)

This is the officer or petty officer on watch, who has been designated by the chief engineer to take charge of the engineering department.

DAMAGE CONTROL WATCH OFFICER

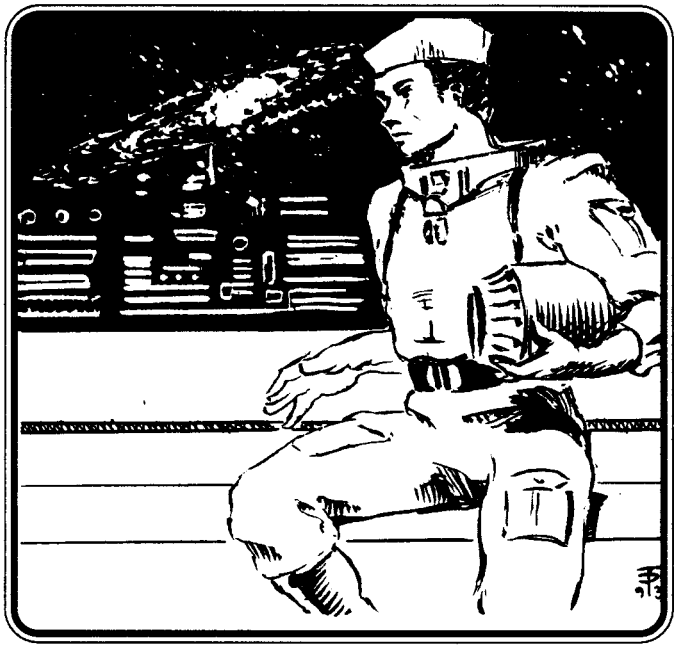
The DC officer is responsible for keeping a close eye upon the various ship's systems that may require prompt emergency repair, such as the ship's hull, life support, and other such systems.

IN-PORT WATCHES

In port, most underway watches are eliminated, except for the CDO, OOD, and communications, security, and fire watches.

WATCHSTANDERS

A ship can never be left unattended. The ship's engines must constantly be monitored to ensure they are operating at their optimum level as well as in a safe manner, the ship's weapons must be guarded, and the ship's sensor arrays must be constantly monitored.



PROMOTIONS

After a period of time, you will be eligible for promotion, if your supervisors deem that you are doing your job to the best of your ability, and by the results of your advancement exams.

REMEMBER

01 This is a 3 part process of evaluation, A written exam and an oral exam.

01 Roll on the evaluation table once every year. Make a note of your evaluation score..

02 Average the evaluation rolls by adding all evaluatons since your last promotion together, and dividing by the number of years since your last promotion.

03 Take the average evaluation number, 0.0 to 4.0 and multiply it by 10. This is your EVAL RATING.

EVALUATION

01 **0.0**
Somewhere along the line, you've managed to really upset someone higher in the chain of command, and now they've got you where they want you. You are recommended for immediate discharge for the good of the service, under the provisions of a 'General Discharge'.

02-03 **0.5**
The Captain doesn't like you, and neither do the rest of the crew. Your work is lousy at best, and you greatly hinder the work efforts of the entire crew.

04-06 **1.0**
Your work is so bad that you've been given "make work" assignments so you don't screw anything up.

07-10 **1.5**
Your work isn't done on time, and someone has to check over your work for accuracy.

11-15 **2.0**
Your work is fair, but there's a lot you need to do.

16-20 **2.5**
Your work is adequate, but you don't put forth the effort that you need to.

21-40 **3.0**
You do good work, but not the best you could be doing and the Space Navy knows it.

41-85 **3.5**
You're great at your job, could be better, but you get the job done right. Your Division Officer feels that there's room for improvement.

86-00 **4.0**
You do your job better than anyone on your ship, and almost everyone likes you.

SPACE NAVY ADVANCEMENT EXAMS

These are two tests, one oral, one written, that, when combined with the score of a player's evaluations help determine if they are promoted or not.

01 For every skill level in your primary naval skill add +1 to your 'test' d100 roll.

02 Add the following Learning Modifier.

INTELLIGENCE			*MODIFIER*
0	-	04	-20
05	-	08	-10
09	-	12	+0
13	-	16	+10
17	-	19	+20
20+			+25

03 Add Stress Modifiers(See also FTL Book 1 Pg. 22)

04 Add both test scores (including modifiers), your TIME-IN-RATE BONUS and your EVAL RATING to get your final PROMOTION SCORE.

TIME-IN-RATE

In order to be promoted, you will have to spend a minimum amount of time at your present rank. This length of time varies depending upon your rank. You will also receive 5 bonus advancement points for each year of experience you have in at your current rank once you become eligible for promotion. The following table shows the minimum amount of time required in each rank before becoming eligible for promotion.

E-1 Recruit	1 year
E-2 Apprentice	1 year
E-3 Spaceman	1 year
E-4 Third Class Petty Officer	2 years
E-5 Second Class Petty Officer	3 years
E-6 First Class Petty Officer	3 years
E-7 Chief Petty Officer	3 years*
E-8 Senior Chief Petty Officer	3 years*
E-9 Master Chief Petty Officer	3 years**

*May advance to CWO1
**May advance to CWO2

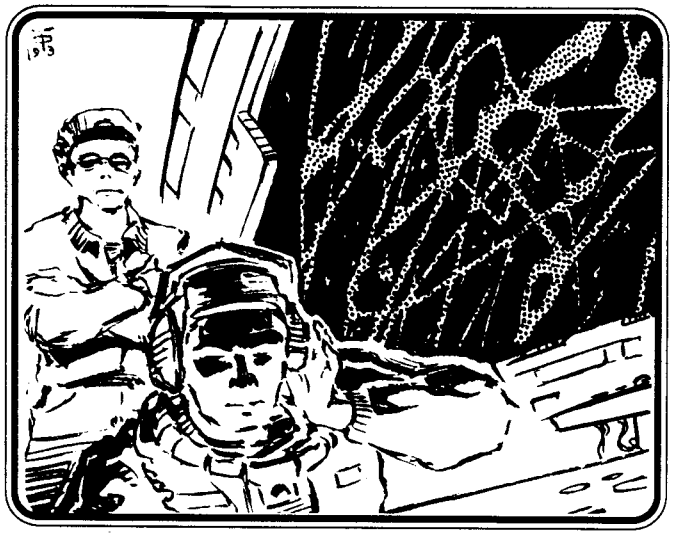
CWO1 Chief Warrant Officer 1	2 years
CWO2 Chief Warrant Officer 2	2 years
CWO3 Chief Warrant Officer 3	2 years
CWO4 Chief Warrant Officer 4	2 years*

*May advance to Ensign

O-1 Ensign	2 years
O-2 Lieutanant JG	2 years
O-3 Lieutanant	3 years
O-4 Lieutanant Commander	3 years
O-5 Commander	4 years
O-6 Captain	4 years
O-7 Rear Admiral	4 years
O-8 Vice Admiral	4 years

PROMOTION TABLE

70 +	Promoted to the next highest rank.
30-69	Recommended for advancement, but didn't quite make it this time.
29 or less	Failed to get promoted.



NOTES ON PROMOTION

01 After failing 4 times in the attempt for a promotion, an officer generally resigns or retires.

02 Most officers come out of Officer Canditate School as an Ensign after 4 years. Requirements for entering officers school are an INT of 16. Chance of attending is flat 10% on a d100 or a 20% if the applicant is from a Naval family with officers.

ENLISTED MONTHLY BASIC PAY

This is the pay scale for Naval personnel. The B2 in the YEARS column is less than two years in the Space Navy

YEARS	B2	02	03	04	06	08	10
E-9	-	-	-	-	-	-	950
E-8	-	-	-	-	-	-	750
E-7	-	-	-	-	-	450	500
E-6	-	-	-	400	425	450	475
E-5	300	325	350	375	400	400	400
E-4	275	300	325	350	350	350	350
E-3	250	250	250	250	250	250	250
E-2	225	225	225	225	225	225	225
E-1	200	200	200	200	200	200	200

YEARS	12	14	16	18	20	22	26
E-9	1250	1500	1750	2000	2250	2500	3000
E-8	1000	1250	1500	1750	2000	2300	2600
E-7	0650	0800	0950	1100	1400	1700	2000
E-6	0600	0700	0800	0900	1000	1200	1400
E-5	0500	0575	0650	0725	0800	0875	0950
E-4	0350	0400	0450	0500	0550	0600	0650
E-3	0250	0250	0250	0250	0250	0250	0250
E-2	0225	0225	0225	0225	0225	0225	0225
E-1	0200	0200	0200	0200	0200	0200	0200

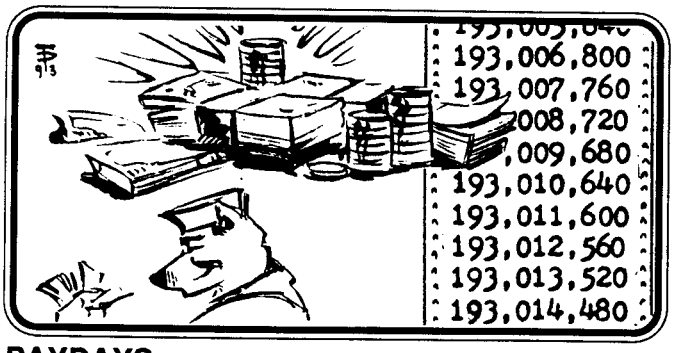
WARRANT OFFICER MONTHLY PAY

CWO1	2000	regardless of time
CWO2	2500	regardless of time
CWO3	3000	regardless of time
CWO4	3500	regardless of time

OFFICER MONTHLY BASIC PAY

YEARS	B2	02	03	04	06	08	10
O-9	-	-	-	-	-	-	-
O-8	-	-	-	-	-	-	-
O-7	-	-	-	-	-	-	-
O-6	-	-	-	-	-	2800	3300
O-5	-	-	-	-	2000	2300	2600
O-4	-	-	-	1500	1700	1900	2100
O-3	-	1000	1100	1250	1450	1600	1750
O-2	0800	0900	1000	1100	1200	1300	1400
O-1	0750	0800	0850	0900	0950	1000	1050

YEARS	12	14	16	18	20	22	26
O-9	5000	5500	6000	6500	7000	7500	8000
O-8	5000	5500	6000	6500	7000	7500	8000
O-7	4500	5000	5500	6000	6500	7000	7500
O-6	3800	4300	4800	5300	5800	6300	6800
O-5	2900	3200	3500	3800	4100	4400	4700
O-4	2300	2500	2700	2900	3100	3300	3500
O-3	1900	2050	2200	2350	2500	2650	2800
O-2	1500	1600	1700	1800	1900	2000	2100
O-1	1100	1150	1200	1250	1300	1350	1400



PAYDAYS

Paydays are held on the first and fifteenth of every month, and each crewmember receives 1/2 their pay at that time.

TAXES

Space Navy personnel are exempt from paying Planetary Taxes, but still must pay the flat 07% ISCO Wage Contribution (TAX, by any other name).

HAZARDOUS DUTY PAY

All personnel are also eligible for Hazardous Duty Pay if they are in a combat zone, or conducting operations along the Hagoni border. Hazardous Duty Pay is equal to 15% of your base pay, and is NOT subject to any taxation.

ENLISTMENT PERIODS

Originally, you sign up for either a 4 or 6 year term, depending upon what field you enter. Technical fields, such as electronics, phase technician, fusion technician, etc... require a 6 year enlistment. Non-Technical fields, such as yeoman, legalman, etc...only require a 4 year enlistment. At the end of this period of time, you may opt to re-enlist if your evaluations have been at least fairly good. If you have rolled an evaluation lower than a 2.0, then you may not re-enlist. Also, if you have not been promoted in 4 consecutive attempts, you will be discharged.

TYPES OF DISCHARGES

HONORABLE

This is the normal type of discharge that personnel recieve. To recieve an Honorable Discharge, you must have not have recieved an evaluation lower than a 2.0 in your career.

GENERAL

This is usually given 'Under Honorable Conditions" and is used in the case of ineptitude and unsuitability. This type of discharge goes to those whose conduct and performance, though technically satisfactory, has not been good enough to recieve an Honorable Discharge.

OTHER

These are the Undesirable Discharge (UD), Bad Conduct Discharge (BCD), and Dishonorable Discharge (DD), and are used only in the worst cases for misconduct or breach of security. In general, a BCD may be only given by approved sentence of a general or special courts-martial, and the DD only by approved sentence of a general courts-martial (GCM).

REASONS FOR DISCHARGE

There are 13 formal reasons for discharge:

A Expiration of Enlistment
This is used when an enlisted personnel no longer wishes to be in the Space Navy, and has fulfilled the agreed-upon enlistment time that they originally agreed to. Enlistments can be extended by the ICL during war or interstellar emergency.

B Fulfillment of Service Obligation
This discharge is given to regular Space Navy enlisteds on completion of their service obligaiton. This is usually a retirement discharge.

C Disability
Given to personnel unable to carry out their duties due to mental or physical disability.

D Convenience of the Government
Used normally during demobilization after a war, acceptance of a commission by an enlisted person, or for parenthood or pregnancy.

E Dependency
Often called "Hardship" discharges, these are used when an enlisted person must leave, due to undue and genuine hardships at home.

F Minority
All Space Navy Personnel must be equivalent in age to an 18-year old human. If they lie about their age to enter, and it is later found out, a Minority Discharge may be used.

G Misconduct
Given to deserters who have not returned to military jurisdiction, to personnel convicted by civil authorities, and to those who have made fraudulent enlistments.

H In Absentia
Deserters absent longer than 18 months can be discharged in absentia. These are given to individuals who have fled for whatever unknown reasons to Hagoni space, and have claimed asylum. Deserters who have committed more serious offenses are not given in absenta discharges, due to the continual pending charges against them.

I Security
Given to personnel generally considered security risks.

J Sentence of Courts-Martial
Used when a courts-martial finds that the individual is no longer suitable for service.

K Unsuitability
Given for ineptitude, alcoholism, apathy, financial irresponsibility, as well as numerous behavior disorders.

L Drugs
Given to an identified drug user, identified by either a medical screening, or by personal admission.

M Good of the Service
Generally an option instead of a courts-martial, this type of discharge is usually under "other-than-honorable' condi-

tions, and they are still subject to any disciplinary proceedings if they apply.

RETIREMENT

After 20 years of service, you are eligible for retirement. If you wish, you may put in as many as 30 years. The more time you put in, the more your retirement pension will be once you finally do retire. Below is a listing of the percentage of your base pay that you can expect to collect once you retire:

Years	20	22	24	26	28	30
	10%	15%	20%	25%	30%	50%

SPACE MARINES

We won't kid you—the training's tough. In fact, only 28% of those who begin training become Space Marines.

Not only will your body be tested to it's limits, but your mind as well. In short, you will most likely wish that you had never undergone such rigorous training, once you start, but if you finish, we guarantee you'll be proud of your achievement. After all, 72% of those who tried to become Space Marines FAILED.

MINIMUM STATISTICS

To undergo training in the Space Marines, you must have the following minimum statistics:

STR:	14	AGL:	12
CON:	14	INT:	13
DEX:	12	ACC:	14

MARINE TRAINING

You begin before the sun even rises, at 0400 hours, you get up, and begin physical training. This lasts until 0700, when you get breakfast. After breakfast, you'll spend 2 hours in class, learning about virtually everything from starship navigation to xenological edible lifeforms. At 1000 hours you'll go to weapons familiarization classes, and learn all aspects of nearly every weapon ever invented. At 1300 hours, you'll have lunch, and then more classes. Dinner is at 1800 hours, and you'll have a couple of hours to unwind before lights out at 2100 hours. This hectic non-stop routine lasts nearly 26 weeks on Earth, and then another 13 weeks on board Space Station One in Earth Orbit, before you will be assigned to a combat batalion. A lucky 2% will be chosen to become Starborne Rangers, a special and elite core trained for 20 weeks at the Waco Texas Ranger School on Terra and another 10 weeks advanced training on Kymnar.

TRAINING RESULT

For Space Marine Players, roll d100

01-72	Failed Training for one reason or another
73-98	Passed Training
99-00	Chosen to become a Starborne Ranger

OBJECTIVES

There are a number of missions that the Space Navy is called upon to perform. In the next column is a listing of a few of those missions. These can be overlapping or changed at a moments notice.

FRONTIER PATROL

Your ship is assigned to patrol a certain patrol grid along the Hagoni border. Generally, Hagoni ships will also be patrolling this area, and tension runs high as the unpredictability of the Hagoni intent is evident.

PLANET INTERDICTION

Sometimes, it is necessary to prevent ships from leaving the surfact of a planet, or to prevent them from arriving, especially when dealing with Hagoni or pirates.

EXPLORATION

Sent out beyond the frontier, your mission is to seek out whatever life you can find, or simply to map uncharted areas.

ESCORT

When ISCO makes large shipments, they like to make sure that they aren't stolen by Star Pirates. This mission involves making sure the cargo ships arrive safely.

COVERT OPERATIONS

It's no secret that the Hagoni aren't the peaceful race that we had hoped for. Therefore, it is necessary to infiltrate their infrastructure to overthrow their evil empire. Primarily, this type of operation involves the Enemy Stars program, and the delivery of their personnel to selected planets.

EMERGENCY MEDICAL RESCUE

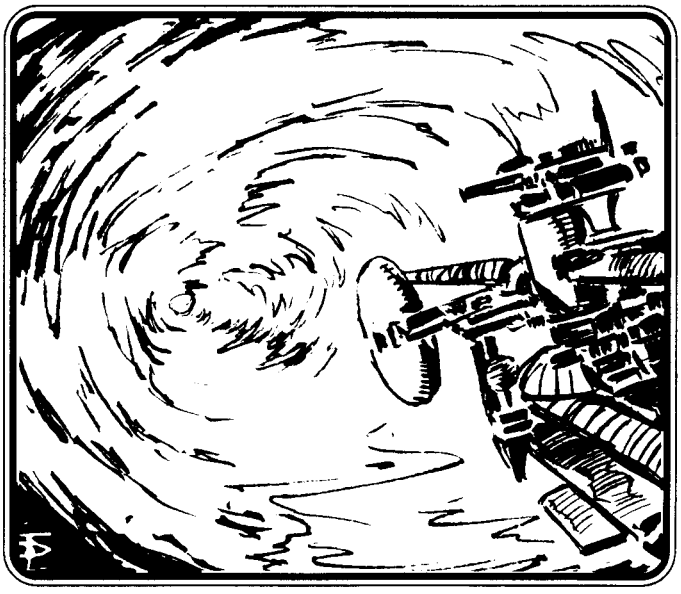
Whether on a planetary surface, or in space, the Space Navy is always ready to render assistance when needed.

COLONIST SUPPORT

Colonists lead a rough life, trying to eke out a relatively happy life while constantly battling the fact that they don't have much in the line of supplies to work with. Space Navy ships are usually welcome, as the colonists get a chance to catch up on old news, and receive mail.

DEEP SPACE SURVEILLANCE

Similar to Frontier Patrol, this type of operation involves travel well beyond the Frontier, into unexplored space, keeping an eye on what the Hagoni are up to in other sectors.



LAW ENFORCEMENT OPERATIONS

Hunting down Star Pirates, and enforcing the directives of the ICL is the main objective of this type of mission. Usually done in conjunction with ICL Marines, and often transporting an ICL Judge as an officiator.

TRANSPORT

Due to the faster FTL capabilities of most Space Navy starships, they are sometimes called upon for transport of goods if the need is great enough.

SALVAGE OPERATIONS

The Star Pirate threat is real. Sometimes, the Star Pirates get outgunned, and the Space Navy is called in to clean up the shipping lanes, to ensure that they are once again safe.

MINE SWEEPING

The Hagoni (or other unscrupulous individuals) occasionally drop mines along the frontier, or send them toward ISCO space. The main objective of this type of mission is to capture the mine so that it can be disassembled and studied.

SPECIAL ELECTRONICS OPERATIONS

This type of mission involves electronic counter-measures and electronic counter-counter-measures to gain information on the Hagoni capabilites.

TRAINING

This type of mission will involve simulating various occurrences that could arise while onboard a starship. Each starship must undergo a rigorous test procedure that takes approximately 60 days before being assigned to any frontier or deep space operatons.

RESEARCH

The main objective of this mission is to conduct in-depth studies of various stellar, planetary, lunar, and numerous other phenomena.

PERSONALITIES IN THE NAVY

The following list gives a general outline for random encounters of personnel players will come into contact while serving on a ship in the Space Navy. Roll d100.

01-05 DIRTBAG
This person you want to avoid, as they have virtually no personal hygiene habits, and tend to walk around with a cloud of filth and a quite unpleasant odor emanating from their body.

06-10 SHORT TIMER
This person hasn't much time left in their enlistment, and wants you to know it. They tend to be friendly, but irritating.

11-15 A.J. SQUARED AWAY
This person's uniform is so immaculate, they could pass inspection at any given moment. Usually gets 4.0's on evals, too. No matter how good you look, he makes you appear to have crawled through a bilge.

16-20 WORK CENTER SUPERVISOR (Your Boss)
Well, he's been looking for you to do some work that he doesn't want to do. You're the low man on the totem pole, so you get stuck with the job.

21-25 LOST DIVISION OFFICER
One of the new officers on board, lost, as usual.

26-30 YOUR DIVISION OFFICER
He's been looking for you so he can critique your work. Generally, he has no idea of exactly what your job entails, so you can bluff him easily.

31-35 YOUR CHIEF
He's just talked to the Division Officer, and wants to talk to you about why you told the Division Officer that the system is broken, and requires a stereo Tri-V CD player to make it work.

36-40 A MYSTERIOUS PERSON
You see someone you don't recognize.

41-45 THE CAPTAIN
The Captain is on his way to VERY IMPORTANT business. Probably has to go to the head. Salute, and get out of the way.

46-50 A FRIEND
One of the crew you are friends with is loafing off. You stop and spend a few minutes talking about what's on the Tri-V, and then finally go back to whatever it was that you were doing.

51-55 AN ENEMY
As you pass each other, he says that your breath could kill a Zankee. "That's all right," you reply, "your father WAS a Zankee." You exchange evil glances and go about your business.

56-60 EXECUTIVE OFFICER
On his way to yet another wardroom meeting. He greets you and asks how you're doing. You feel better about your job.

61-65 SOMEONE FROM SUPPLY
The supply department sure is busy. It's truly amazing that so many people can do so little with so much, and that you still haven't got the parts you ordered 8 months ago.

66-75 SNIPES
Your basic engineering types. Be happy if they don't initiate you into their 'organization' by the various devious forms of hazing prevalent in the Space Navy.

76-80 TWIJITS
Your basic electronic types. Generally, these personnel are responsible for the upkeep of the electronics on board the ship. Just pray they don't get the urge to pull a practical joke on you.

81-85 POSTAL CLERK
The Interstellar Postal Service is much slower than their 20th century Terran counterpart, but the mail still does manage to finally get to its destination. Too bad you didn't get any mail.

86-90 CHIEF COOK
His idea of cuisine is a bucket of beans and some wieners, with cold, greasy French Fries on the side. Looks like we're having his favorite for dinner...again. Often keeps real egg shells in a drawer to add to the powdered eggs, just to keep you wondering.

91-95 A PAEBAK LIZARD
It runs up to you, snaps the donut out of your hand, and takes off in a flash.. Relax...there's a Paebak engineer somewhere close.

96-00 PASSENGERS
You quickly realize that a hand grenade is rolling towards you. What do you do? Run? Jump on it? As your panic reaches a crescendo, you hear the snickering laughter of a Krelvin. Your VIP passenger was only having fun.

SPACE NAVY

Percival (Percy) B. Forberg, Fire Controlman Third Class ICL 0322 Chandler

Finishing third in my class of 70, and with only 38 of us actually graduating, I was able to pretty much choose my assignment from among those that were available. I could have gone to a number of ships that generally conducted routine shipping escort duty, but I wanted more of an adventure, so I chose the "Chandler", a ship notorious for her numerous 'incidents' involving Hagoni warships.

Waiting for nearly a week at the Fomalhaut StarPort, I anxiously watched through the viewport as the Chandler docked. I remember the feeling of awe I had as I watched the gigantic ship silently and gracefully dock with the StarPort. Grabbing what few personal belongings I had, I made my way down the gantryway to the main airlock of the Chandler. A group of ICL Marines guarded the entrance of the ship with pulse laser rifles, and looked to be quite a formidable barrier to unwanted entry.

I quickly identified myself, and presented my orders, and within a few minutes, a large walking cat was telling me that his name was Lieutanant Walls (Which I later found out was short for "He who causes the Captain to climb the walls"), that he was my Division Officer, that he welcomed me onboard the Chandler, and hoped I enjoyed my tour of duty, and how the ship greatly needed a weapons tech. and if my work wasn't satisfactory, he would have me for lunch. I believed him.

He showed me to the work area, the Bridge, and finally showed me my sleeping area. I wasn't impressed. Imagine, if you will, a room stacked with bunk beds three high, with just enough room between these stacked bunks to fit two humans comfortably. Now imagine 81 people living in this area. NOW, imagine that not all 81 of the crew sharing this area are human. Imagine this and add in the smell of 81 unwashed bodies and the general social problems of having numerous lifeforms living in such close proximity, and you have a very small idea of the living conditions on board the Chandler.

The Chandler got underway, and the only thing we knew was that we were headed toward the frontier, since we'd gotten word that the Hagoni were raiding one of the outpost colonies, and we were the ship designated to thwart those feathered liars in their plans.

The first few weeks on board the Chandler were a jumbled confusion of trying to figure out exactly where things were, and where I was supposed to fit in. Not too much pressure was put on me to actually do a job, and I think that's due to the fact that everyone is pretty disoriented when they report on board a ship for the first time. I can sympathize with the old Earth Navy's lack of elevators on board their ships. The Elevator (or Lift, as it is more popularly known) at least provides a point of reference for whatever deck you may be on.

The horror stories that circulated about the Hagoni didn't do much to boost my spirits, since by the end of the week, I honestly believed that the Hagoni were not only cannibalistic, but that they bred captured humans for the sole purpose of eating their young.

After the first few weeks, I was finally getting used to shipboard life. That's when they pulled the proverbial rug out from under me. Being one of the newly reported personnel on board, I was required to work in the mess decks for a six-month period of time. This duty, known as being a "Mess Crank" dates back nearly a thousand years. Basically, as a 'Crank', I would assist with the preparation of the food, stand behind the serving line, and dole out food to the crew, clean up the mess decks after meals, and then start the whole process over the next day. If I was lucky, I might get a few hours off on a weekend, but not usually.

As we arrived at the outpost colony, we found ourselves in the midst of what appeared to be a massive Hagoni pull-out. There were literally hundreds of Hagoni ships that were phasing out of the area. We waited until most of them had phased before we finally approached the planet. What we saw wasn't pretty. What was once a colonist world of thousands of individuals, was now a planet of vast smoldering ruins. No life forms could be detected on the planet. This was turning out to be a harsh lesson in reality for me, as I contemplated the fates of nearly 1500 colonists who were now either dead or prisoners of the Hagoni.

After Mess Cranking, I finally was able to begin work in the field that I had trained for. I was assigned to the weapons division, and given menial tasks, such as cleaning air filters, or running the Daily System Operational Tests (DSOT). I also was put on the Watch Bill, which basically means that I was given a time slot in which I had to walk around the ship and enforce security. With the sheer volume of 'special' weapons (I can neither confirm, nor deny the presence of nuclear weapons onboard the Chandler), I was authorized to use deadly force in order to protect the ship, and/or her crew. I was given a lot of training, and had to pass numerous oral exams in order to become qualified to stand these watches. I also had to become Damage Control (DC) qualified as well, which basically means that I know where the damage control equipment is, and how to use it in case of a fire, hull breach, loss of electricity, or life support, and how to eject the nuclear core in case of emergency, as well as First Aid procedures. It's not comprehensive, but it's just enough to get you by.

So here I am, on security watch. After working from 0800 to 1830 yesterday, I finally managed to get some sleep after dinner before my watch. It's currently 0315, and I'm on watch until 0345 (The watch gets relieved at 15 minutes before the hour). Then, I can get another couple of hours of sleep before I have to be at roll call at 0800. Then comes the glorious fun of stripping and waxing the decks in our workspace for the Captain's stupid inspection. Then, after the inspection, we've got to repair the primary projectile cannons—they jammed during yesterday'd DSOT and Lt. Meow (my name for Lt. Walls) and Chief Derben had spent many long hours isolating the problem, which was a faulty induction coil near the primary accelerator, which resulted in nearly zero acceleration of the projectile—anyway, now that the problem was found, they wanted ME to fix it. Great. That was probably going to take all day, and then, to top it off, I've got the midwatch again tonight. If it wasn't for all these useless watches, and inspections we have all the time, we might actually get some real work done.

There was nothing that I hadn't seen in my 10 years of prior service to ISCO, and the 6 that I had served in the ICL on this ship. Nothing, that is, until we landed on a planet near the border of Hagu space known only as "Graaak".

The technological level of the inhabitants of Graaak was pretty primitive. We were invited by the representatives of Graaak, who called themselves the Hoonoo, to tour their planet, and that their merchants were anxiously awaiting the opportunity to do business with us. We didn't have much of value on board the ship, but the Captain must have wanted to check out the 'recreational facilities', so we were pretty much guaranteed at least a week of minimal duty, and maximum liberty.

Being the ship's Weapons Officer, I was naturally selected as one of the first 24 crewmembers who would shuttle down to the planet.

The trip down was about as close to a ride to hell as I could have imagined. The turbulence was incredible! Our small shuttlecraft was tossed about like a leaf in a tornado. Finally, after nearly 40 minutes we finally broke through the atmospheric barrier, and had our first look at the planet 'Graaak'. Lush, thick vegetation seemed to be the prevalent plant life. The planet was a swamp. We were directed to land at their 'SpacePort', a morass of tangled weeds which, I must say, did manage to support the weight of our shuttle, despite its frail appearance. I wasn't sure what to expect as we prepared to exit the shuttle, but I surely wasn't prepared for the wave of 122º heat and the wall of humidity that slammed into me as the hatch was opened. This place was an oven! Attempting to deal with the oppressive heat was one thing.

What greeted us as we walked off the shuttle was another: The area looked like a town out of the 'Old West' of the late 19th century, and for as far as we could see, there were Frogs. Yes, Frogs. No, not the little ones, you see on Earth. These Frogs were at least five feet tall (and maybe four feet wide). On their heads, they wore large conical pointed hats made of woven reeds.

We endured the sweltering heat and swamp stench throughout the ceremonial greetings of music and food as best we could, and finally were free to pursue our own individual interests on the planet. I, along with Lt. "Taks", a Kymnar, decided to wander around town and check things out.

We wandered the streets, looking at what the merchants had for sale or trade, which, to tell you the truth, was pretty dismal. There were baskets made of reeds, and other useless sculptures made out of some form of rotting vegetation. Some of them even tried selling us 'bug-on-a-stick', one of the Graaakian Delicacies. We politely declined. Throughout it all, the 'Frogs' treated at us as if WE were long-lost family. It was quite unsettling.

After nearly an hour, our communicators beeped, and we were informed to return to the shuttle at once. We quickly made our way back through the busy streets to the shuttlecraft. As I entered, I noticed that the Captain didn't look happy.

"Gentlemen," he began, "we've got a problem."

"What kind of problem, Sir?" Ensign Jagenston asked.

"Well," the Captain continued "it appears that the Graaak haven't called us here to trade, after all, and that this isn't their first contact with ISCO."

"Really? So who else have they contacted and what do they want,?" Lt. Taks inquired.

"Well, it seems that one Borford Laguinda was here nearly two years ago, and made quite an impression on these primitive lifeforms, related to them how earth towns should look like, of which the end result is the 'port town' that we have landed in, in an attempt by the Froggies to make us feel more welcome—"

"You mean 'Boo-Boo Laguinda?" I interrupted.

"The same." answered the captain. "And now, the Froggies want our help. Well, it seems that our little Froggie friends have come across the Hagu as well, and have been quite successful in liberating some equipment from them. The Hagu have thus far sent two Zankee Pukes to attempt to retrieve the equipment. "Mr. Laguinda had apparently deemed it appropriate to supply these creatures with the latest in high-tech weaponry including laser rifles, and pulse cannons, and they have pretty much mopped up the Zankee Retrieval Squads sent to get their equipment back.

"What's a Zankee Puke?" asked Ensign Jagenston.

"Everything it eats!" Commented Chief Saulnier, which was followed by a round of uproarious laughter.

"Actually," the Captain continued "a Zankee Puke is equivalent to 288 Zankees—"

"That's TWO GROSS!" Chief Saulnier interjected, and even managed to get a smile from the Captain.

The Captain continued, "—anyway, if the Hagu are sending in over 600 Zankees to attempt to retrieve this stuff, it's a good bet that it's pretty important to them.

"So what do the Froggies want for it?" I asked.

"They'll accept a ton of Syntha Choco Ration Bars as an equal trade. Either way, we can't lose."

"Sounds good." Said Chief Saulnier. "What's the catch? There's something you're not telling us?"

"Well, there's another little problem that the ship just informed me of. We've just picked up two Pterodactyl-Class Hagu Assault Carriers and over a dozen Peregrine-Class Hagu transports entering this system. Our ship is so outgunned, it just isn't funny, we don't have time to get back to the ship and I've given the order to break orbit. The Chandler is going to be dropping us two weapons, two supply, and a medical pod. It will return at such time when it is safe. Gentlemen, it looks as if we're in for a ground war...

Percival (Percy) B. Forberg
Fire Controlman Third Class
ICL 0322 Chandler

Hoonoo

Home World: **Graaak**
Colonies: -

BIOLOGY:

SIZ:	5ft.
GRA:	.91
LSP:	50/135
SEX:	2
GES:	50
BIR:	8
ENV:	55-130
SLP:	15w9s
SML:	C
VIS:	B
TAS:	H
TOU:	C
HEA:	E
VOI:	Croaking Bass

PSYCHOLOGY:

TMP:	85
MOT:	41

PERSONALITY AND VIEWS

ISCO:	Foreign Aid
ICL:	Good Troops
Family:	Somewhat Important
Work:	Gets Food
Play:	With Young
Wealth:	Lots of Food
Justice:	A Necessity
Honor:	Important
Humanity:	Buddies
Politics:	Leaders
Red Tape:	Just Do the Job
Space:	Up There
Warfare:	Hagonni Caused It!

SOCIETY

CON:	2448
JOI:	2448
HRS:	1900
QHR:	B
ATE:	-
SPC:	-
STF:	-
REL:	F1

LANGUAGE

Goomoo	62%
Goblath	15%
Other	23%

SKILL TENDENCIES:
Marsh Engineering, Fabrication, Land Management, Medicine, Farming

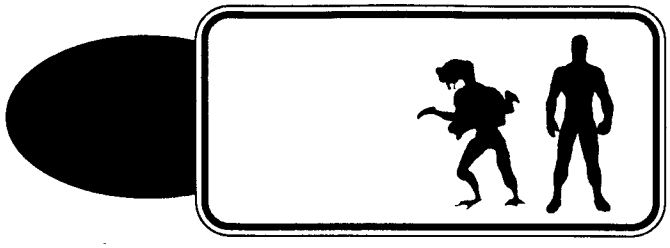
GOOD TRAITS:
Agile, Protective, Friendly, Curious, Good Workers

BAD TRAITS:
Slow, Drip, Lack of Education, Primitive, Make Rumbling Sounds, Belch, Croak, Slap their Sides, Eat Bugs

USUALLY SAYING:
Belcoome Hoomoon, Guide?Beer? Smooke Stix? Amoo?

NAMING:
Names are mostly nicknames for those who speak other languages. Boobl Boortook, Boollon Gookoo

SIZE COMPARISON



The Hoonoo were a complete surprise to ISCO when they contacted a survey ship and requested assistance and foreign aid to help their backward planet.

Some years before the legendary Star Pirate Boo Boo Laguinda had made planetfall and achieved peaceful contact with this humanoid frog-like race. From Laguinda and the trade items left, the Hoonoo had gained a good, if twisted idea of what a Starport Town should be. This they built and waited for the next visitors.

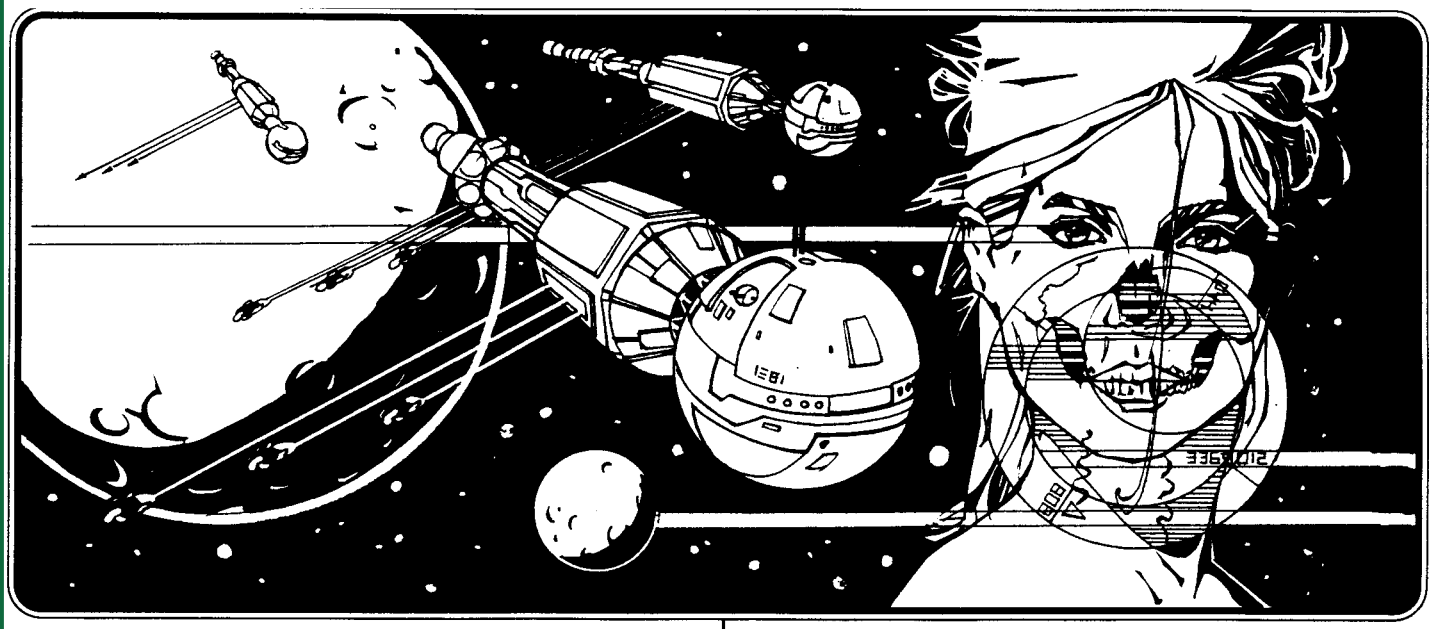
Their next visitors were the Hagonni. The Hagonni failed to enjoy the starport and destroyed it. They re-built their Starport and again waited for ISCO.

Most valued in Hoonoo society are the storytellers who keep a running record of their history and tradition. These swamp dwellers are outstanding guerilla fighters when it comes to disposing of unwelcome guests.

The ICL believes that they are in for a groundwar to save the 'Froggies' as they have become close friends.

STATISTICS MODIFICATIONS

STR	CON	DEX	AGL
-03	+06	-02	+04
WIZ	ADA	ATU	STB
-04	+0	-05	+0



FRONTIER 2448

So you're tired of life in the inner cities of Earth, and have decided that the thrill and adventure of the pioneer life is exactly what you want. You apply to the Earth Colonist Placement Service, and after a lengthy testing process, finally are approved to become a settler of the frontier, and as you board the shuttle that will take you to a new life you realize that you are a colonist heading for the final frontier in 2448. First you have to find a colonizing corporate.

COLONIZING CORPS

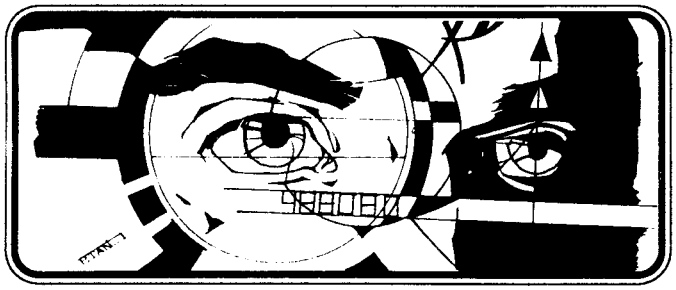
01-10 Poor
11-90 Average
91-00 Outstanding

OUTSTANDING

These corporations are outstanding. They train you for the world you have chosen and provide the supplies and jobs necessary to create a stable new world. They continually provide support, and genuinely have an interest in the colonist's happiness with their new home, and take extraordinary measures to ensure that the safety and morale of their colonists remains intact.

QUALIFICATIONS

Many psychological, health and genetic tests are necessary for you to qualify for life on a colony world. Your skills play an important part in your final qualification as well as the lengthy testing involved. This corporation pays you an outstanding salary in return for your work on their colony world.



AVERAGE

These are the workhorse corporates taking mankind and his allies to the stars. While the accomodations along the way to your new home aren't all that comfortable, you have a pretty good chance of survival. This company is interested in you as a colonist, and expects you to put forth an effort to make the colony work.

QUALIFICATIONS

A few health and educational tests place you with prospective shoppers for population. Your job will be related to your skills. You are paid a minimal wage and provided with supplies. They pay your way and the ride to your new world is in limited dormatories or renovated cargo bays on starships. Cryo freezing is optional.

POOR

These fly-by-night corporates dump colonists in an unprepared environment without skills and often short on supplies. They will place you on one of their worlds as a worker. You end up buying from company stores and becoming indebted to the company as long as they have a need for you. There is little escape from these working hellholes that make inner-cities look like paradise by comparrison. Cryo-freezing is mandatory.

QUALIFICATIONS

If you're breathing you are heading for the stars. Expect to be frozen in a cheap cryo tube for the duration of the slow trip to your new home, and your life savings to vanish. Don't expect much support from the company at your new home, and be surprised if you ever hear from them again.

PERSONAL ITEMS

Each colonizer is allowed a 10x10x10 cargo canister for personal equipment. These cans are loaded into free landers and dropped to the surface. With a radio beacon in each, and a flight controller AI they are landed within d10 miles of the colonial drop site. Landers have a 5% chance of falling d100+100 miles from the main site.

WORLD CLASS

Assume, most of the time the world to be colonized is at least minimally habitable, with at least a near-breathable atmosphere. Use planetary tables to create an environment.

SPECIAL NOTES

01 A d1000 is a simple d100 with an extra roll of a d10 to create a 4 digit number.

POPULATION

01-50 A Few Dozen (d100 + 10)
51-90 A Few Hundred (d100 x 4 +100)
91-98 A Few Thousand (d1000 x d4)
99 A Few Hundred Thousand (d1000 x d1000)
00 A Few Million (d1000 x d1000 x d10)

RACIAL MIX

01-90 Mixed Human/Alien
91-95 Mostly a Single Racial Type
96-97 Specific Religious Group
98 As 90 With Criminals
99 As 90 With Religious Fanatics
00 As 90 With Cultural Fanatics

COLONIAL GROWTH

01-05 FAILURE

Colonization is a holding action waiting for complete collapse. Open guerrilla warfare is prevalent, as each colonist pretty much fends for himself.

06-10 FAILING

Colony is having serious problems. Morale is low, and civil unrest and violence is on the rise.

11-50 WORKING

Colonists have a real hard job ahead, but are assured that their descendants will inherit a free and stable world.

51-75 GROWING

Colony is growing slowly and will become an effective member of ISCO within a century.

76-85 CYCLIC GROWTH

Colony seems to go through phases of fantastic growth and then incredible loss. The losses aren't completely devastating, and the growth phase makes it at least moderately worthwhile to remain here.

86-95 RAPIDLY GROWING

Colony is quickly growing and will become an effective member of ISCO within a few decades

96-00 EXPLODING

This colony is growing at a fantastic rate, and should be ready for integration into the ISCO within a decade at most.

WORK

01-50 Mining
51-95 Farming
96-98 Manufacturing
99-00 Terraforming

PROBLEMS

General problems can range from natural forces to incensed life forms.

01-25 Weather
26-50 Geology (Active)
51-95 Hostile Life Forms
- 01-05 Plants
- 06-50 Animals
- 51-75 Smart Animals
- 76-95 Very Smart Animals
- 96-00 Combination of All of Above

96-98 Other Corporations
99-00 Hagonni (Western Edge) or Star Pirates

STATE OF COLONY ON ARRIVAL

01-50 SETTLEMENT

A few buildings and a runway. A lot of dumped crates and material.

51-75 TOWN

A small town with some private residences. A few businesses.

76-85 SMALL CITY

Small city reminiscent of western towns of Earth's 1840's. Complete with business, residential and industrial.

86-95 CITY AND SECONDARY TOWNS

Similar to Earth's residential and industrial zones of the mid 20th Century.

96-98 SMALL MODERN CITY

A well-designed, functional, small modern city.

99-00 LARGE MODERN CITY

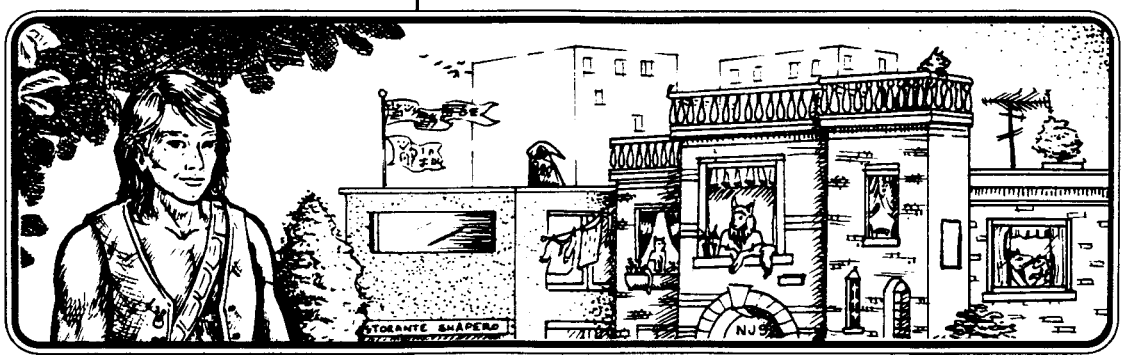
Large modern city and suburbs.

GOVERNMENT

01-50 CORPORATION CHARTER
51-75 COUNCIL
76-85 DEMOCRACY
86-90 HEIRARCHY
91-95 BENEVOLENT DICTATOR
96-98 MILITARISTIC LEADER
99 UNPOPULAR OVERLORD
00 CHARISMATIC LEADER

EXPECT RESUPPLY

01-50	Weekly	91-95	Semi-Annually
51-75	Bi-Monthly	96-98	Yearly
76-85	Monthly	99	Irregular Intervals
86-90	Quarterly	00	Never



ISCO POLICY ON COLONIZATION

Theoretically, anybody can colonize a planet. In the 22nd century it was quite the norm for entire sections of a planet's population to buy or rent homesteader starships for the express purpose of finding their own planet to do with what they wish. Today, several of the more established worlds such as Neu Bayern, Fomalhaut, and Peridot can trace their lineage back to those brave individuals willing to give up their Tri-V and Barcca Relaxo-Loungers in order to carve out a new settlement. But not everything was wine and roses.

For every early colony that managed to succeed, others failed or had fallen into instability within a generation. Many people just didn't think about the huge task they were taking upon themselves when they packed up their belongings and struck out for the frontier.

When the interstellar government of the day noticed the ongoing problem, their first reaction was to totally ban all non-government colonization attempts, ignoring the vast public outcry and the accusations of totalitarianism.

By 2448 gone are the days where you could just hop on a ship and start a new life away from everyone else. The 24th century frontier requires expertise and colonial 'purpose' that must be regulated.

COLONIZATION 2448

Today ISCO has again considered loosening the rules in order to allow human expansion and to fulfill those adventurer's dreams of a new life. Along with relaxing rules, they have imposed several conditions that must first be met before any person or group of people can start a new colony.

Condition 1

A suitable number of colonists must be willing to join the new colony in order to assure a stable genetic base for future population expansion. This must be 6000 within 10 years.

Condition 2

An appropriate number of experts to provide the technological expertise needed in order to maintain the colony's short-term survival must be included in the colonization party.

Condition 3

A recognizable form of government in any sort of structure must be planned out in advance in order to facilitate interaction with nearby worlds and interstellar society in general.

Leadership

This states that before anybody can go, they must choose or have in place someone who can speak for the entire planet. This can be a president, an imperial senate, a malevolent dictator, or even a troupe of mimes; ISCO doesn't care, as long as somebody answers when they come calling.

Ideally, the speaker or speakers for the colony should be the ones leading the colonists in their efforts; in practice, ICL investigators have found many colonies break up into several arguing factions that claim themselves as the rightful rulers. Unspoken ISCO policy is to play each world by ear, with a lot of discretion left up to the visiting administrator.

FAILURE OF CONDITIONS

If any two of the three conditions are not met, the colony will remain in ISCO receivership until it does and will have only a nominal say in their own rule. This means that the colony will be little more than a yes-man to ISCO in all interstellar matters until they can prove that they can make it on their own (and will play by the letter of the law).

ISCO SUPPORT OF NEW COLONIES

While most people run off to settle on a new world to escape from society at large, most find that they would have a much easier time surviving and flourishing with ISCO help than without. The organization really does want new colonies to succeed, and to this extent will assist in the formative years of the colony's existence. This assistance takes several forms.

Law Enforcement

Each fully registered colony is assigned one ICL judge and three marines to maintain the peace and to enforce ISCO law. This does not mean that the colony administrators have a bunch of ICL yes-men at their beck and call, nor does it mean that if the colony manages to upset ISCO that the legal officers have the jurisdiction to reduce it to rubble. The judge and marines are only on planet to make sure that the colonists don't get into trouble (with either the local fauna, infighting amongst the colonists, or threats from without.)

Support

A newly formed colony receives limited technical support and supplies to facilitate growth. The general rule of thumb that ISCO uses to determine who gets what depends on the distance the new colony is from the more established worlds; the more distant from established worlds and the farther from the popularly traveled space lanes it is, the more they initially get by way of supplies and tools. Another factor that determines what a colony gets are the local conditions of the target planet. (A colony founded on a planet with Earth-like conditions and peaceful fauna will get much less support than a colony founded on a barren rock with an ammonia atmosphere and psychotic life forms made of living silica.)

CONTACT WITH ISCO

Every six months or so an ICL Commanche or an Ontario Police Ship bearing a full compliment (12 to 200) Starborne Rangers slingshots through the system to monitor

and update the Colonial Beacons telemetry and outgoing mail. If warranted the ship can do a routine orbital insert to monitor planet and to make sure that there are no problems. Note that this visit is not an intimidation trip; the rangers arrive only to make sure that there are no large-scale problems (such as a pirate attack, civil war, or hostile natives) plaguing the colony. Fledgling colonies generally welcome this electronic mail drop of news, technology, and general information.

COLONIAL AUDIT

After roughly five years the ISCO conducts an audit of the colony. If it finds that the special conditions have been met and there have been no large-scale problems, the organization will usually grant the right of self-rule to the colony.

It is very rare for a colony that follows all the rules and flourishes to be turned down.

THE EXCEPTION TO THE RULE:

CORPORATE COLONIES

As with most things in ISCO space, when it comes to the star-spanning corporations the rules go right out the porthole. Colonies created and maintained by a corporation do not receive the same level of law enforcement, support or contact as do those founded by civilians, but at the same time they still need to meet the conditions for colonization.

The founding corporation is in charge of all aspects of the colony, from government, to personnel, to the level of support. Many corporate colony worlds were formed with a specific purpose in mind, one that the corporation would rather not see made public. As a result, there is next to no contact with a corporate colony world unless one has been granted permission from the owning corporation.

Usually the only ICL presence on the planet is in the form of one ICL judge, three marines, and an Interstellar Corporate Watch office. Their job is to make sure that the ISCO has some say in the growth of the corporate colony, but in reality most are near powerless to fight a larger, corrupt corporation. Many consider assignment to a corporate colony a dead-end career move or punishment for some dereliction of duty.

ISCO POLICY ON ESTABLISHED COLONIES

While the rules for creating a new colony are enforced to the utmost by ISCO and the ICL, worlds that have established themselves as self-sufficient and independent find that the reverse is almost true; they suffer from a lack of attention. However, this is not always bad.

FEDERATING WITH ISCO

There is nothing that states that a new world has to join ISCO; if desired, the residents of that world can choose to chart their own path through the cosmos. But while they enjoy the freedom granted by the lack of a big brother looking over their collective shoulders, they have to deal with the problem of a complete lack of ISCO support.

Once a planet declares its independence, all ICL troops and judges on the world leave, all ISCO administration and support ceases, and the planet is on its own. They are at the whim of the elements, unforeseen threats, and star pirates, who see this new world as easy pickings without the risk of an encounter with the ICL.

Surprisingly, the same is almost true for those colonies that wish to join ISCO as a full member planet. There always seems to be a backlog of new troops in the ICL (and those available are spread pretty thin), so in most cases the troops that were on hand when the colony was establishing itself are all that are going to be around for a while. Additionally, once a colony is seen as self sufficient, all financial and technical support from ISCO ceases, and while the paperwork is drastically reduced, the equipment "free ride" is over.

As a final insult to injury, most administrators tend to forget that there are small independent colonies out there; unless the inhabitants of the new world can gain attention, they are often passed over in favor of the more established planets when it comes to matters of financial importance.

ISCO MEMBERSHIP

Colonies that gain independence can formally Federate with ISCO. This simply means the ICL watch personnel stay and the world pays a minimal tax to help support an ICL sponsored Orbital Station and Starport.

For this support ISCO continues to monitor the world and provides Medical/Military support in times of crisis.

COLONIAL EXAMPLES

The following are three examples of colonies that are located in ISCO space. In addition to specific details about the physical conditions on the planet, a small amount of background material is provided. Additional information is provided about the available starport.

Walzak's Wonder

(Private, Neutral)

"I'm sorry, sir, the government offices are closed for the day. It is Our Lord Hector's Mother's Sister's Third Grandson, Twice Removed, Day of Advancement, or as the civilians like to call it, the Day of Manhood. In fact, the only businesses that are open today are the bars."

Hector Julio Finstein was one of the founders of Knight's Shield Armaments, an arms corporation marketing an extremely popular line of spacecraft defenses. On his 60th

birthday he sold his company to Hashimi Arms Limited for an enormous sum of money, and bought a small world with no intrinsic value. He moved his family there and set himself up as King Hector I, with his planet open for colonization to anyone who is willing to abide by his quirky set of laws.

The primary population of Hector's World are humans of every racial type, although a large Bor'Cha and Kymnar presence can be found in the southern regions. The government is a hereditary monarchy, with King Hector I acting as a benevolent absolute ruler.

Trubonov (Corporate Colony)

Trubonov is a private world owned and operated by the Majestic Corporation, one of the premier makers of starship plating and phase drives in ISCO space, with a smaller division devoted entirely to medical concerns. Unfortunately, this world is where all the medical failures end up.

Surface conditions are so intolerable that the personnel on planet must spend their entire time inside reinforced bunkers to protect themselves from the weather and temperature. Rumor has it that the corporation uses Trubonovt as a dumping ground for failed genetic experiments (and for employees who are too dangerous to corporate interests to live.)

The small population of Trubonov is entirely human, all of which are employees of the Majestic Corporation. Diana Ghant is the governor of the planet, ruling as a dictator with an iron fist. The ICL presence on the planet, Phillip Cleary, is an aging ICL judge with an uninteresting if not boring record reaching all the way back to the rediscovery of the Grexians.

Lamaia VI (Colony, Friendly)

"The Pixilated Kymnar Bar & Grill? Sure, just go down Founders Avenue and take a left at Dogleg Road, you can't miss it! And be sure to say hi to Betsy for me!"

"Tell 'er the news just came in and we got Colony Status, not on the starmap, but by God we're a colony!

Lamaia VI was discovered in the late 24th century and was promptly settled by humans fleeing from a highly repressive government on New Chad. Over the years the planet offered a safe haven for those fleeing either conflict or persecution, earning Lamaia VI the nickname "Sanctuary." The latest influx of refugees are those humans and newly discovered races fleeing the encroaching Hagu Sphere of Prosperity.

The population is a mix of just about every type of creature to be found in ISCO space, with the exception of the Fritzian, colder races, and the Sandrol. The government is a full democracy, with each resident getting one vote in matters of planetary interest. Professor Binflix, the Krelvin vice-president, is at present holding the reigns of power until the duly elected Kendak ruler, Bob Dopolopolus 16 and Friends, can decide which of his mobile units is going to sit in the presidential chair.

SPECIAL EVENTS

The following table is a general events listing for colonial life. Use it once every two months. The GM is encouraged to use this with a Ship's landfall to complicate scenarios.

01-50 NO EVENTS
Life as usual.

51-75 ACCIDENT
- 01-75 Minor Accident.
- 76-85 Major Accident (d4) injured.
- 86-95 Critical Accident d4) killed.
- 96-00 Critical Accident (d4+4 killed)

76-85 NATURAL EVENT
- 01-75 Inclement/Harsh Weather
- 76-85 Hostile Life Form
- 86-95 Earthquake
- 96-00 Volcanism

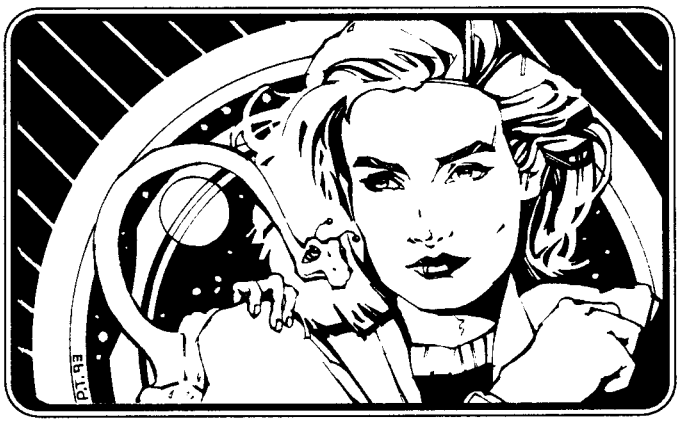
86-90 SOCIAL EVENT
- 01-50 New Colonist Shipment (d100)
- 51-75 Leadership Change
- 76-85 Political Problems
- 86-95 Open Political Conflict
- 96-00 Civil War

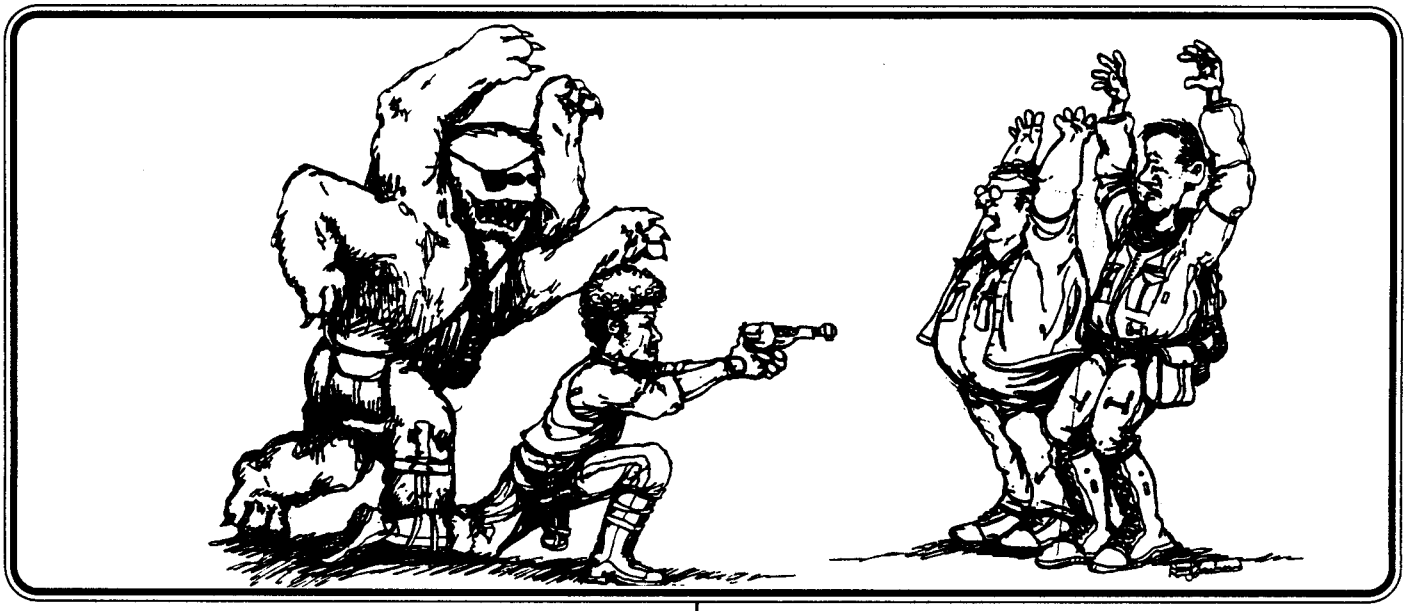
91-95 DISCOVERY
- 01-75 Minerals
- 76-85 Life Forms
- 86-95 Geological Feature
- 96-99 Artifacts
- 00 Higher Tech, Alien Artifacts

96-97 UNSCHEDULED SHIP
- 01-75 Freighter
- 76-85 ICL Police Ship
- 86-95 Corporate Ship
- 96-00 Colonial Supply

98-99 SUPPLY PROBLEM
- 01-75 Minor Breakdown
- 76-85 Major Breakdown
- 86-95 Critical Breakdown
- 96-00 Terminal Breakdown

00 RAIDERS
- 01-75 Pirates
- 76-95 Scavengers
- 96-00 Hagonni (Western Edge)
- Omreth (North Eastern Edge)
- Dogo (Northern Edge)





STAR PIRATES

> "I seriously doubt there can ever be piracy in space."
> ***Fredrick Redhawk***
> ***Director, ISCO, June 12, 2427***

BIO OF A STAR PIRATE

He was born Borford Borman Laguinda on the planet Earth in 2418. After a fairly uneventful childhood, Borford decided to attend the ICL Academy, and become an officer in the Space Navy.

Excelling in his classes, as well as having a natural talent for mischief, Borford, nonetheless, had a lot of promise as a young officer, and distinguished himself early in his career by gaining renown as a maverick who somehow managed to survive missions, regardless of the odds, and an individual who got the job done regardless of the risks involved.

He quickly moved up the ranks, and soon became the youngest First Officer in the history of the Space Navy. On a mission to assist a disabled freighter, the Ship's Execuative Officer, Philip Clarke, and Borford Laguinda countermanded the Captain's order to not render aid, since the disabled freighter's engines were in the process of loosing containment, and an explosion was imminent, and Borford finally ended the Captain's refusal to rescue the crew by landing a right cross across the Captain's jaw.

The thankful crew was rescued, and subsequently, in the year 2440, Borford gained notoriety by becoming the first individual to be expelled from from the Space Navy. Boo Boo, as he had been nicknamed, adamantly expressed his innocence and utter disgust with the ICL in their decision, but the ICL refused to reconsider.

LIFE OUTSIDE THE SERVICE

Gaining a job as a common company laborer in the giant Fomalhaut Shipyards, Borford gained a low level job in the salvage field, as well as the friendship of a Dabe called "Chuckles".

Laguinda's Attitude

Boo Boo's general outlook on life steadily deteriorated with time, as he grew more and more sullen over the ending of his career in the Space Navy. By 2446, he had attained the position of Inspector for 'Scrap Star Salvage and Mining'. His work included the inspection of starships to be dismantled and heavy mining equipment returned from the frontier.

Accident of Fate

A fantastic prize came to Scrap Star in the form of an old Brazilian freighter, lost and abandoned more than two centuries before. With minor repairs and a jury-rigged Phase Drive, the company had brought this nearly perfectly functioning antique to Fomalhaut and was refueling it before its transfer trip to the Alvarez yards As Boo Boo toured the heavy weapons pod, he flipped a power switch to the ships nuclear batteries. To his amazement, he watched out the viewport, as a high explosive canister launched from the pod, only to impact a neighboring docking bay with horrifying results.

"You got'm good, Bozzz!" said the Dabe, as Boo Boo realized the bay belonged to the ICL Port Authority.

Laguinda made the only possible decision at this point. Few would believe his actions were an accident after his verbal attacks against the ICL.

He quickly realigned the pod on the two ICL Police Cruisers and fired two more canisters. As the remains of the ships blew into space, Boo Boo was running to the bridge of the Brazilian freighter in the hope that he could pilot this old heap with little help.

Flight to the Frontier

With the rumble of the ships primary engines at full burn, he ripped free from the docking gantry and began his run to the frontier of explored space.

Boo Boo had left 4 dead, 113 wounded as well as the destruction of two docking facilities.

The ICL was not amused as Laguinda quietly vanished into Phase Space.

"What we do now?" Asked Chuckles as Boo Boo frantically checked out the ship's systems.

"We go into business..." Said Boo Boo, as a huge grin worked its way across his face, "We get rich..."

Chuckles the Dabe

He was called Mergwrep At of the family clan Derigodow Lof Enwett. The pronunciation of the rest of his ancestral name was almost as impossible as understanding his motivations. This was nothing new for the Terrans as well as the other races who had close contact with the race called 'Dabe'. Instead, he was called "Chuckles" in honor of his odd laughter and horrific sense of what constituted a joke. He wasn't bright as far as Dabes go, but he did possess a spark of loyalty and respect for his human friend "Boo Boo" Laguinda. In truth, this was as much of a family that Chuckles could claim since he left his homeworld years ago.

Beldrok the Blox

Bloxians are prone to paranoia. Beldrok was no exception when he was involved in three shuttle accidents within six months. Some fragile link in his otherwise orderly mind snapped.

Now an outstanding engineer, he will absolutely refuse to ride in a shuttle unless unconscious or drugged senseless. Screaming "Shuttles burn! Shuttles burn!", he has stayed on with Laguinda, knowing he can safely stay in the ship for the rest of his life as long as he takes care of the engines and the Phase Drive.

Scarred and graying, he carries a small CO2 or dry powder fire extinguisher with him at all times. Beldrok needs serious psychological counseling and will become dangerous if provoked, especially with fire.

PIRACY IN SPACE

Piracy has long been called the third oldest occupation of human kind. Earth's 18th century saw the golden age of piracy on the high seas and the damage it did to commerce. Given time, high seas piracy gained the wrath of merchant andilnsurance agencies, bankers and government. It was crushed by concerted effort.

Star Pirates

The 25th century is little different, though piracy is now more a sophisticated art preying on commerce where law enforcement is measured in light years.

Methods

The basic star pirate of 2448 is out to make a profit from theft whether it be limited or on the grand scale. A pirate can be specialized in stealing anything from technological data to entire starships. Pirates can also be dumb enough to steal toxic waste to a group of politicians on holiday.

PIRATE CHARACTERISTICS

Piracy breeds two psychologically distinct types of pirate characters.

SMART PIRATES

The first is the smart pirate, the pirate with a plan and the crew to help him or her.

Boo Boo Laguinda is one of these. Laguinda is known for starship theft, primarily cargo and weapons. In a small march of years he has taken 4 freighters and raided 3 arms shipments worth tens of billions of d's.

Boo Boo takes the time to scout his conquests and move in with speed and grace. By the time a Corporate realizes their cargo is gone, Boo Boo is long out of the system.

SCAVENGERS

The second character of pirate is the scavenger. These consciousless individuals are daring and take anything they can. They have no plan for the future as they hit shipping and colonies. The scavenger captain is mostly not fit to lead his ill skilled crew. The average scavenger is eventually caught and more often then not, destroyed in space by the ICL or local Planetary Police.

Tyronne Graybeard is an example of a less than smart pirate. His final exploit to tackle and take an ICL Comanche is the material of legend and a few laughs at the bar.

OPERATIONAL AREA

Most pirates have an operational area, an area they frequent. Somewhere in this area is a base of operations, a planetary or special area where they supply, store, or run a slave colony to manufacture goods that they sell on open worlds. Hardest to find are between-system locations where starships never travel.

At first it was thought the use of Phase or FTL drive would always point in the direction of a pirates next destination. This did prove true until more sophisticated prates found an easy solution.

TRACKING PIRATES

It became apparent, early on, that when a ship reoriented itself for Phase the direction traveled was clearly defined by a wave of particle emission. This was an easy way to track where a ships next destination was going to be.

The cure for this was simple. A ship Phased in a random or different direction and dropped back into real space within a light year. From this point the ships Nav Computer takes a few hours to recalibrate its position and Phase in the direction the crew really wanted it to travel in. With no way to track this second emission, hidden in the immense distances between systems, the destination was free of detection.

> I close my eyes
> Only for a moment and my starships gone
> All my dreams
> Fly before my eyes at high velocity
>
> ***Johnny Roe***
> ***Pirates in the Wind™***
> ***© 2446 New Motown Records***

BASE OF OPERATIONS

Pirates, if they are smart, have a resource base, an area to call home where they can repair or modify a ship and have a secure place to relax between forays back to settled space.

01-50 ASTEROID

Ever popular are asteroids in empty systems. These huge hunks of rock can be tunneled and turned into virtual fortresses.

51-75 SMALL PLANET

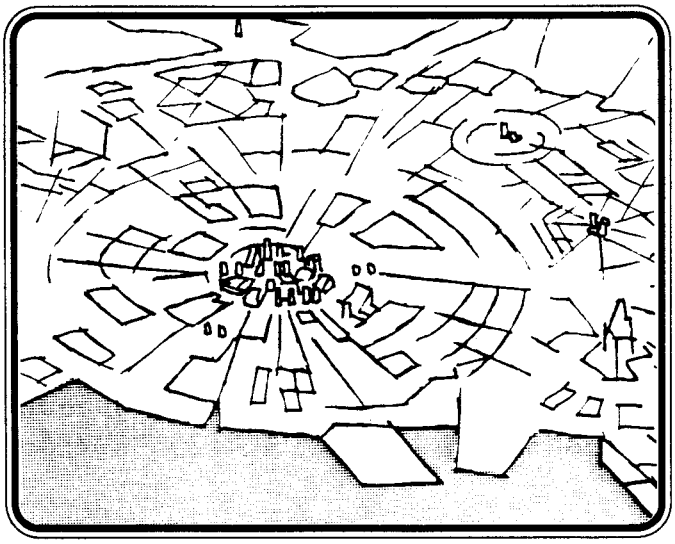
Less likely are small planets with little atmosphere or use. Underground bases can be created but this is a long term project that most don't consider.

76-85 ICE LOCKED PLANET

Ice locked planets are almost as popular as long as they have a marginally breathable atmosphere.

86-90 ABANDONED SITE

Scattered about ISCO space are abandoned space manufacturing platforms and industrial sites that are ready made cover.



91-95 ICE ASTEROID

A great prize to a pirate is a cometary fragment in a stable orbit or an ice asteroid. These types of space debris can be easily reshaped and cracked for oxygen and water.

96-98 TERRESTRIAL WORLD

Untouched Terrestrial worlds are a real prize for a pirate crew. Used as a port for R&R and colony site, it is a perfect dumping ground for personnel, material and slave labor.

99-00 BETWEEN SYSTEM

Rarest of the locations are small planetoids or asteroids found between in the areas between systems. These islands are impossible to detect from in system sources.

TEMPERAMENT

The general temperament of a star pirate is variable. Depending on the situation, it can range from the gentlemanly to the murdering psychotic.

01-05 CORDIAL

This pirate is a gentleman, a rare individual who is basically a courteous thief with a conscious who will defend himself but could do without violence.

06-50 AVERAGE

Your average pirate has a job to do and will accomplish it in the easiest way. This temperament will not go out of its way to harm innocents.

51-75 HARSH

This group can be harsh but fair. They take what they can and leave. Violence against them is met with violence and they will teach a lesson, often in the blood of their victims. They spare women and children.

76-95 UGLY

The attitude of this pirate group is to take everything and leave. They will often take colonists and enslave them on pirate colonies if they are in the mood. Action against them is met with extreme violence.

96-00 NASTY

Scavengers to the max, these barbarians sell prisoners to slavery or dump them in protein vats. They scavenge and strip colonies, leaving few survivors, if any. If a colony resists, they are known to use low level neutron devices.

Boo Boo & Crew

Hizzar the Kymnar tapped the screen readout and smiled only the way a Kymnar could.

"Rrefueling Platforrm Captain!" he growled, "And a Fat Titan Class Frreighterr. We take the carrgo and destrroy the platforrm?"

Laguinda pondered a moment and checked a readout on his hand comp. "Lets refuel the ship, take the cargo and leave both. If you blow the platform, you can't use it another time. Cargo is insured and the Titan is more trouble than we need. Arrr Mr Hizzar, sound the alarm and get the crew ready."

Little could Boo Boo know that the freighter's primary crew was a traveling circus, and that the elephant he was about to steal, an intelligent bio-construct. This was his first mistake.

DISPOSAL OF LOOT

Pirates are in the business for two reasons. The first is adventure and getting rich. The adventure part of this reasoning generally gets them killed early on in their career.

The second is simply getting rich and retiring early, either to a farm on a colonial world, a cushy political position, or just buying a flashy condo in a Metroplex..

With either reason the key is getting rich by being able to dispose of what they steal.

CREDIT METERS

With the advent of non-tamper credit meters the likelihood of stealing securities in large quantities has dropped to near zero. While small coins and billsl is still common, it is near impossible to steal enough to justify the theft on a large scale.

In 2448 the most valuable assets are precious metals, art, bearer bonds, luxury items, and starship components.

Most pirates have a small group of identities with associated credit meters tucked away for their own use. This facilitates the laundering of credit and difficulty to trace credit to credit transfer.

SELLING COMPONENTS

Selling ship components is a skill that nets a fraction of a components value from an unscrupulous broker in junk, or even a colony that needs costly machinery and will pay a percentage of the value. The broker may pay up to x0.25 of the price of an item where a colony will pay up to x0.75 of its in-box value. Selling whole starships is almost impossible due to ship regulation and the mass of paperwork necessary to operate them legally. A far better use of a captured starship is to create a pirate fleet to hit multiple targets.

CREW

The crew that operates under a star pirate is of maximum importance. A pirate succeeds or fails by the quality and obedience of his crew. Harsh captains will create a disgruntled crew who will democratically toss him out the airlock with his supporters. Too weak a captain warrants the same 'walk the plank' punishment.

CREWS VIEW OF THE CAPTAIN

Every captain has a rating of loyalty he inspires with his crew. This rating goes from negative twenty to positive twenty. At +20 the crew will follow their captain without question to the very gates of hell. At -20 he's an airlock accident waiting to happen. A captain's rating initially starts at zero and climbs or lowers at his exploits and the GM's decision.

CREW QUALITY

The crew of a pirate joins for any of a number of reasons from potential wealth to running from the law and Credit Corporates. Rate their efforts between Negative 20 and Positive 20. This modifier is used by the GM to modify ship operations where overall skill roles are needed.

01-05 SCUM & VILLAINY

This crew couldn't operate a starship under any circumstances. Either too dumb or too violent to actually work to maintain a ship, they are best left alone and fed regularly.

06-15 BAD

This group of villainy does a little work but would rather maintain the ships Bio-Mass Beer™ dispenser. They are thieves and care little about the future.

16-50 GOOD

This crew kind of knows what they are doing but bungles without close supervision. This is new to them as most were not spacers.

51-75 VERY GOOD

This is a good crew that knows its job but could be better in skill. While nothing ever goes off without a hitch, it still goes off.

76-00 OUTSTANDING

Efficient and smart, this group knows what they are doing and why. They plan ahead and often have surprises up their sheave.

PUNISHMENT

In space, the punishments used by Pirates are hard and simple. Outright murder by blade , projectile or laser is common but other methods are common.

PROTEIN RECYCLING

Rarest and most grizzly of punishments is the dumping of live victims into the grinders of the waste/protein/amino recycler. Most human pirate crews find eating such recycled material is disgusting and will refuse to do so.

WALK THE PLANK

This archaic term is now the disposal of a victim by ejection out an airlock. Usually this is done in phase, and without the inexpensive vac suit. In most cases the individual is stripped and bound with plastic ties. Accompanied in the airlock with a suited individual, the lock is drained and the asphyxiated victim shoved out.

LASHING

The common whip is a hated punishment that effectively deters the disobeying of orders.

KEELHAUL

This creative punishment gives the victim a chance for survival however remote. A winch in the airlock extends a cable that circles width of the ship and ends back at the airlock. The victim, in a cheap emergency vac suit, is tied to the end of the cable. As the winch spins, the victim is catapulted out of the ship and bounced around the circumfrence of the hull to land back in the airlock. There is a 50% chance the suit punctures and a 65% the victim breaks d4 random bones. Keelhauling takes d10 +4 minutes to complete.

SLAVERY & DUMPING

Less lethal punishment includes being dumped on a Terrestrial type world with minimal supplies or transport to a slave colony for work.

RANSOM

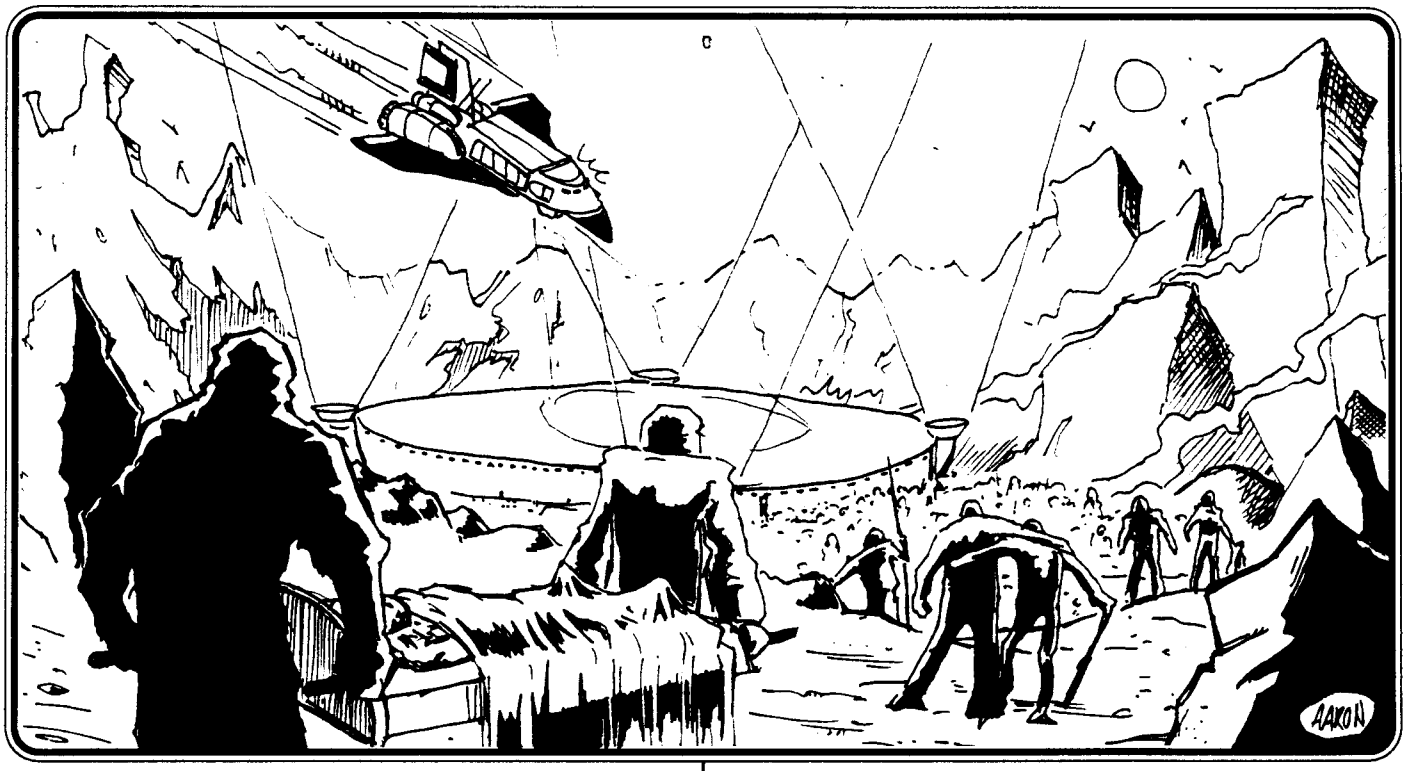
Harder and less common is the ransoming of an important prisoner for negotiable securities. In this situation honor of the pirate is most important in dealing with Corporations and Legal Offices. For this a pirate will meet with officials at a prearranged spot and collect securities. On exit of the system, coordinates for pickup of the victim or a survival pod is dumped with the victim safe and unharmed.

SWASHBUCKLERS AND MERCINARIES

Another new worry for the ICL is the spread of smugglers, soldiers of fortune and mercinaries. smugglers and Individual SOFs are quickly becoming an annoyance to the ICL. The new merc of 2448 is another matter. These paramilitary groups are a high tech fighting force willing to work for anyone if the price is right. Many of these new groups have become System Police for corporations and colonies.

Murph's Marauders

"Hi There! The Name's Murph—you know, *of Murph's Marauders*? I haven't seen you on my ship befo- whaddya mean you've never heard of *Murph's Marauders*? Yes. MY ship, as in *I* own it. No, I'm not kidding. I own this ship. Really. What kind of question is *that*?, of course legally. Look, you wouldn't think that I would say I owned an Ontario Class Starship if I didn't would you? I found it! Hey now, that's not fair--you don't even know me! What do you mean, *WHERE DID I FIND IT*? What are you, *an ICL Inquest*? Look. Possession is nine tenths of the law anyway, so what does it matter? Of course I didn't kill them. I don't know—some outpost colony. Hey lighten up, would'ja?—It's not like I went out and killed anyone! They'll survive...for awhile, anyway. Hey—why aren't *you* at your station? Whaddya mean you're not part of my crew? Well, then just who the devil *ARE* you, anyway? Really? You're kidding, right? You mean to tell me that you're the daughter of...? OH...you mean THAT Fleet Admiral Gresham? Oh boy... Um... well then, um, you wouldn't happen to be interested in a *business proposition*, would you?"



EMR 2448

As the sentient races of ISCO space expand into wild and uncivilized areas where unexpected events are the norm, the need for quality medical care increased. That's where the dedicated members of the EMR Corps come in.

WHAT IS THE EMR CORPS?

Created in the early 25th century by ISCO, the Emergency Medicine and Rescue Corps is a branch of the government answerable to the ISCO Health & Sentient Services Department. Its personnel are charged with the health and well-being of the sentient creatures who inhabit the frontier worlds and who frequently lack quality medical care.

A MEDICAL HISTORY

The following is an ISCO timeline that is medical-intensive. It details advances in medicine and explains the events that ultimately led to the creation of the EMR Corps.

DATE EVENT

1985 First gene altering for industrial use meets with opposition due to ignorance.

1990 New and mutant diseases push medical technology ahead at an unexpected pace due to necessity.

1993 Due to social apathy many diseases thought to be eliminated for decades experience a resurgence in many industrialized nations. Illness in the Third World reaches epidemic proportions as volunteer doctors are buried under a flood of patients and political red tape.

1995 Genetic mapping has allowed for the discovery of the causes for many hereditary diseases. Unfortunately, cures for such diseases are still decades away from completion due to business not wanting to risk, liability, and insurance causes.

2007 Due to the collapse of most third-world societies, deadly diseases run unchecked through most areas of the world. Many medical personnel in the industrialized nations find themselves giving care at gunpoint as medical insurance rates have become prohibitively expensive.

2010 Lawless Years end as the ICO comes into being. Medical personnel hard at work stamping out the remaining plagues gripping the world.

2015 Universal Medical Care (UMC) establishes free hospitals and returns to the Hippocratic Oath.

2025 First primitive Auto-Doc systems help doctors diagnose and treat illness and trauma. At first these machines are only able to provide general first aid, repair of small abrasions, treatment of minor burns and insect bites, and dispensation of non-prescription drugs. Even though the Auto-Doc is capable of these minor medical procedures, most hospitals refuse to use them unless the machine is supervised by trained medical personnel. People are highly suspicious of these "robot doctors."

2040 First experiments of simple Cryonics (cold sleep) are a success and plans are made for many uses of the new technology. Boom era for space medicine.

2053 First human starflights have crews cryo frozen to prevent "phase" sickness, a bi-product of the more primitive forms of FTL travel.

2066 Advances in Auto-Doc technology allows them to act as computerized medical assistants to trained medical personnel and can independently perform blood analysis, repair deep cuts, stitching, administer antibiotics, provide dispensation of dietary products, and overall health improvement.

2075 Advances in geriatric medicine gives the average human a lifespan of 210 years. First human clones successfully created under laboratory conditions.

2090 Cloning experiments halted as human rights organizations question the morality of life created for artificial purposes when it is discovered that several wealthy people have had clones created for the express purpose of providing replacement organs for their failing ones.

2098 Auto-Docs now capable of major assistance to trained medical personnel, poison antidotes, body chemistry analysis and correction, bone repair, blood replacement, and resuscitation of very recent (ten minutes or less) cardiac arrest victims.

2107 Genetic engineering reaches the stage where only specific organs can be grown under laboratory conditions. Human rights organizations lift their objections to cloning and research continues.

2128 Human/Bor'Cha contact trades medical knowledge and technology that improves both races.

2130 Auto-Docs now capable of analgesic treatments, full medical analysis without the intervention of trained medical personnel, and correction of chemical and toxicological problems.

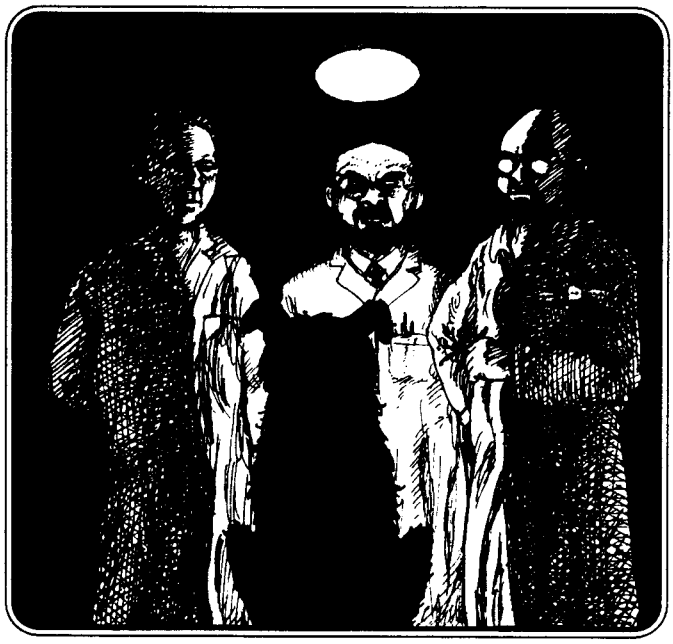
2173 Auto-Docs now capable of tissue repair of muscles and minor surgery that includes grafting.

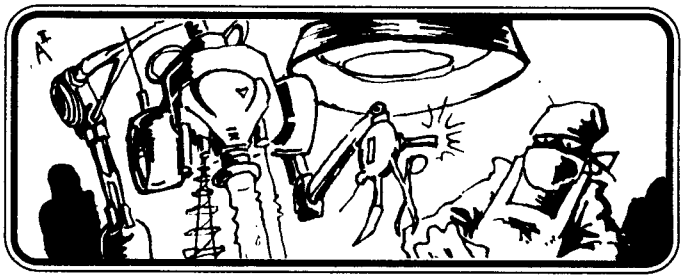
2190 The Sentience Creation Project begins in secret. Several medical organizations conduct experiments in the hopes of raising semi-sentient life to ISCO levels. The mainstay of this project are apes and cetacea along with two terrestrial species already possessing a rudimentary intelligence.

2268 Auto-Docs now capable of cosmetic surgery, the repair of features, and the correction of physical defects in living patients.

2270 Sentience created in apes and cetacea. ISCO scientists start to raise the consciousness of the populations of both races.

2285 Snowfrost Plague on Seredin kills 80% of the Human, Bor'Cha and Blox population, while strangely not touching the Kymnar or Arkol population. The cure is discovered, and this discovery leads to a medical renaissance across settled space.





2290 Majority of ape and cetacea population reaches human levels of intelligence through gene alteration. A backlash of public protest prevents any other species from being altered as the two new terrestrial races find their niche in society and space.

2320 First "Human" androids created.

2321 Auto-Docs now capable of major repair of internal organs, transplants, re-attachment of limbs, the limited resuscitation of the dead, and major restructuring of body systems.

2330 Grexian scout returns home after the meeting with ISCO. Their return cargo also contains a slow acting flu-like virus that will destroy their culture and worlds.

2340 More and more alien races bring their own particular health maladies to other worlds. While most are harmless, a few bridge the racial gap and create some hellish medical problems.

2350 Androids created for special jobs begin to question their places in society and eventually riot. Humanoid androids are declared illegal to produce and the still existing Androids that can be found are liquidated over the very vocal protests of the sentient rights organizations.

2367 Auto-Docs now capable of simple speed healing of the body in order to facilitate regeneration.

2370 Rediscovery of the Grexians. ISCO medical personnel flock to Kirl Seban to provide aid and comfort to the remaining population. Research into the disease reveals that it is possible that the virus was genetically engineered to wipe out the Grexian race, but no culprit is found.

2389 Auto-Docs now capable of complex reconstructive surgery, complete regeneration of internal organs, nerve reattachment and low-level regeneration, and complex transplant or replacement surgery.

2400 Formation of the EMR Corps to help the far frontier worlds with their medical problems.

2410 Auto-Docs now capable of complete regeneration of all major and minor body parts that are indistinguishable from the originals. The exception to this is in the case of brain tissue, which causes a loss of all memory when regenerated. Also, the first "Star Hospitals" at eight strategic points across settled space are opened for business. Virtually cities in space, they begin to provide highly specialized care for complex medical and genetic problems.

2446 A select few Auto-Docs are being created which can provide complex genetic engineering in the form of system improvements or can replace defective genes in individuals before birth.

2448 Today. Uranzi refugees flood settled space telling of biological warfare on the part of the Hagu. ISCO medical personnel start gearing up for possible sentient created plagues to sweep through settled space.

"They are the largest bunch of dedicated doctors, nurses and pilots that have answered my prayers for a solution to the problem of quality medical care on the frontier."

Art Addison Wong

THE PERSONNEL OF EMR

That quote, from the head of the ISCO Health & Sentient Services department, essentially sums up the public perception of the EMR Corps. But, as in most cases in the 25th Century, the reality is far more bizarre.

The sentients who make up the EMR Corps are highly intelligent and capable people who suffer from one glaring problem; most of them are starry-eyed adventurers. In their view a comfortable job under stable and frequently unchanging conditions would be tantamount to death. The personnel of the Corps are those people who feel the thrill of skirting the edge of destruction while aiding their fellow sentients. While most of their colleagues are hard at work in safe hospitals on the civilized worlds, the Corps actually goes out looking for trouble.

But it is a mistake to think that the people who make up the EMR teams are loose cannons. The personnel actually tend to be more fanatical about the sanctity of sentient life than their planet- or base-bound counterparts. An EMR Corpsman will attempt to save a life in danger, no matter what the cost to their own.

THE TEAMS

The average EMR Corps unit will consist of between ten and fifteen sentients, each assigned to a specific post. Note that while there is usually only one sentient per post, most team members are cross-trained in the other's specialties in case of injury or the loss of a crewman.

ADMINISTRATION

The administration section of an EMR team will be based on the population of the system that the team is serving in, the number of other EMR teams in the same system or nearby, and the number of personnel under their command. Note that while in the case of rescue and medical operations that the respective section chief is in charge, the chief administrator takes care of all the day to day operations of the team as well as filling the role of liaison between the planetary/system governments and the team. The personnel in the administration branch are:

CHIEF ADMINISTRATOR

The Chief Administrator procures supplies for the entire team, acts as a liaison between the team and local officials, and generally is in command. The post of CA is one of the toughest to qualify for because one of the requisites for the position is that the sentient can operate in just about any other position on the team. Technically, the Chief Administrator is also the captain of the ship the team uses, but intelligent CAs usually defer this post to the pilot, except in the case of diplomatic situations or when that sentient is busy.

ADMINISTRATIVE PERSONNEL

The number of Administrative Personnel varies from system to system and from team to team, but a good rule of thumb is to have one sentient per 10,000 inhabitants of a system and per five team members. The job of the Administrative Personnel is to assist the CA in his job and to act as a buffer between him and the rank and file.

MEDICAL

The medical section of an EMR team is fairly constant in all teams. These are:

CHIEF MEDICAL OFFICER

The CMO is a medical "jack-of-all-trades," capable of assisting in any sort of medical situation. Note that while these sentients are well versed in just about every medical specialty there is, this is not to say that this position is little more than a glorified medical assistant. The CMO is in charge of all medical operations and has straight access to the Chief Administrator. This position is usually filled by an older and wiser doctor who has managed to shake off the thrill of 'Frontier Medicine' and taking risks.

SPECIALISTS

Specialists in the EMR teams are varied, the number and actual specialties depending on the local conditions and the major race of the population of the system that the team is based in. For example, if the team was based in a system that is primarily populated by Arkol who live in domed cities

under a methane atmosphere, the team would have (at least) sentients who specialize in Arkol physiology and the problems that arise due to methane exposure. A mainstay of every team is one sentient who specializes in vaccuum exposure. These specialists answer to the CMO and, to a lesser extent, the Chief Administrator, while conversely being able to draft any other team member for any help they might need.

MEDICAL ASSISTANTS

There is one Medical Assistant per CMO and Specialist in the team. Frequently these posts are filled by those sentients who are fresh out of medical school and find the excitement of the EMR Corps preferable to pulling sixteen hour shifts in a massive hospital somewhere. While not as well versed in the generalities as the CMO or in the specifics as the Specialists, the MAs are able to hold their own in most situations with a modicum of assistance. Frequently those who serve as MAs go on to become Specialists or CMOs in other teams.

RESCUE

The rescue section of the EMR Corps is made up of those sentients crazy enough to risk their own lives in an attempt to save those in need. The personnel in rescue are the toughest in the entire Corps. The section is:

CHIEF RESCUE OFFICER

The CRO is frequently (but not always) a veteran of the ICL Marines. Their job is to direct the rest of the team in their

job. They are only answerable to the Chief Administrator in the team but they rely on the advice of the CMO and plans their rescues accordingly.

STRUCTURAL ENGINEER

Every team has a Structural Engineer as part of the crew who is assigned to the rescue section and whose job it is to find ways to gain entry to areas where the team services are needed, to make sure that those areas are not any danger to team members as they go about their business, and to assist the CRO in any way possible. This is one of the few team members who is not cross-trained in any other specialty due to the specific knowledge he or she must have for their job.

RESCUE PERSONNEL

The most flashy and daring of the EMR Corps are the Rescue Personnel. These sentients are always the ones who make the evening news in the footage of the disasters and the ISCO wide tri-v series FOMAULHAUT EMR, tend to concentrate on these personnel at the expense of the other team members. In a way it's understandable; rescue personnel have the hardest job of all, that of retrieving victims from dangerous situations while at the same time making sure that both their teammates and themselves are kept safe. Trained in just about every environmental condition that can be encountered including spaceborne operations, the Rescue Personnel are physically fit, intelligent, and just about the most capable sentients in settled space.

Tragically, the Rescue Personnel have the highest mortality rate of any other team position. They are answerable only to the CRO, but most take the advice of their teammates.

SHIPS SERVICES

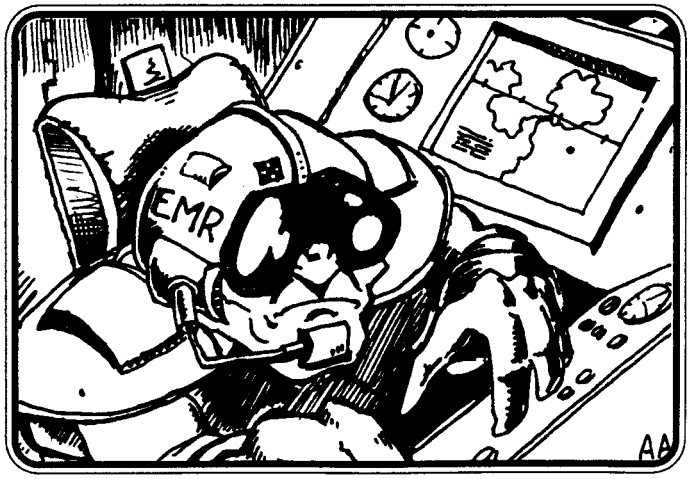
While being the most unglamorous section of the entire team, at the same time this section is the most indispensable, for without them the rest of the team can't get where they need to be and are essentially useless. The ships services section is in charge of the ambulance ship that the team uses and all are among the best trained shipboard personnel to be found in settled space (and their pay reflects this when compared to other sentients in similar lines of work.) The personnel who make up this section are:

PILOTS

The pilot gets the team to where they want to go. Taking his orders from the Chief Administrator, the pilot is usually the most unstable of the team. Their job is to fly the medical ship and to conduct maneuvers to assist the rescue personnel in their job. Usually (but not always) the pilot acts as First Officer of the ship.

JOB RELATED STRESS

Due to the stress this position generates, all EMR pilots and rescue personnel receive free psychological counseling between missions and, as a requirement of the job, are forced to show up for the sessions under the threat of being grounded. Medical ships generally have a number of pilots and shuttle pilots.

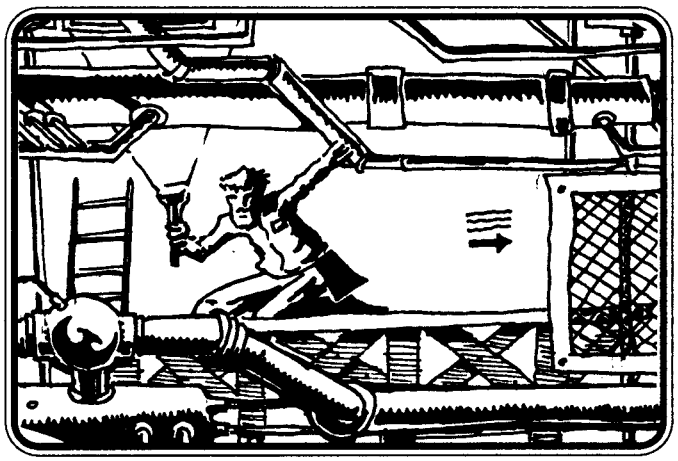


ENGINEERS

The Engineer makes sure that the ship is capable of getting the team where they want to go. Among the best ship engineers in settled space, the EMR Engineer can usually be found in the engine room of the ambulance ship, making sure everything is going okay.

GUNNERY

In a few very rare cases ambulance ships have been known to come under fire. It is because of this that the ISCO Health & Sentient Services has received permission to arm some of their ambulances with light anti-ship armaments. The EMR Gunner has one of the most hated jobs in the Corps; to harm people who are trying to stop the team in its job of saving lives. This position is usually filled by veterans of the ICL who (to a sentient, in actuality) are all highly religious.



SHIP PSYCHIATRIST

Many ships now contain a Psychological Counselor to help patient and physician. The job of the ship's 'Shrink' is one of guidance and watch to ensure the smooth operation of the medical team.

GENERAL SPECIALISTS

While the previous jobs listed are the primary personnel of an EMR ship, the following may also be in residence.

SURGEON	NURSES
INTERNIST	SCAN TECHNOLOGIST
DIAGNOSTICIAN	AUTO-DOC SPECIALIST
PHARMACIST	BIO-CHEMICAL ENGINEER

THE SHIPS

The EMR Corps patrol their assigned area in specialized starships that are state of the art in settled space. (In fact, the only other official group in settled space that has access to technology similar to the Corps are the ICL Rapid Response Teams.)

Their ships are invaluable to the completion of their missions, but a major drawback is the high maintenance cost. When searching for a ship type for use by the Corps teams, ISCO finally settled on the concept of a rebuild of standard styles of ship.

They began by utilization of Ontario-class ship hulls, in effect eliminating the available cargo space, while reworking the remaining space into hospital facilities and medical labs. The original crew section remains virtually the same with the center of the ship becoming its hub of activity.

No expense was spared on the medical labs, where most of the systems were directly adapted from their counterparts in the Space Navy. The ship was designed with modular systems so that a medical team can, with a little work, modify their hospital area in any way they desire for ease of use in commonly occurring situations or for specific conditions of environment the team faces.

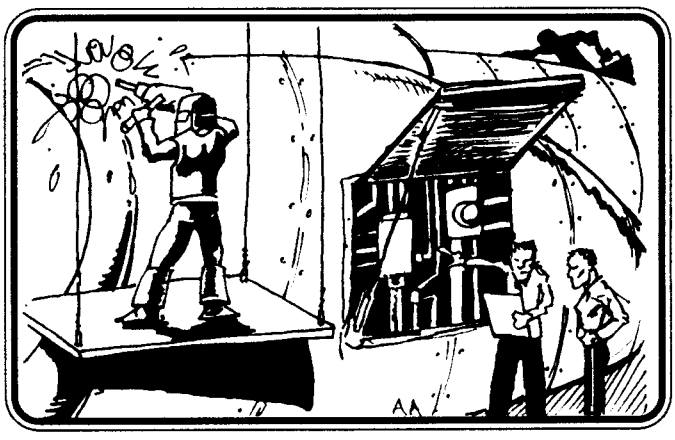
On the bridge is (usually) a full communications suite featuring a ship to ship monitoring system, full navigation and helm, and controls for the (infrequent, for those teams assigned to a specific stellar system) interstellar trips.

THE ENGINES

For all of its high-tech toys, an EMR ship is little more than an expensive freighter with specialized phase engines installed in the ship. Not common knowledge in settled space and virtually unavailable to private citizens, the advanced YC Phase Drive is state of the art in ISCO space.

This new "super phase" engine is based off the old Herbert/Lashaw Phase Series of engines, but with new modifications by the theoretical space geniuses Grafsst Iron Wrench and Sterk. This unlikely team of a Kymnar and a Frendle have managed to modify the old system to make it capable of phase jumping within a light gravity well and, perhaps the new engines most important attribute, to "micro-phase" within a solar system. While it is still impossible to phase from inside a planetary atmosphere or near a heavy gravity well, it is now possible to go from middle stellar orbit.

Unfortunately, there are a few drawbacks to the new system. First, the new drive is a nightmare to keep tuned (one ships engineer must have no other job than to keep the drives tuned during transit or the ship untunes at the rate of d20% per use.) Additionally the crew must replace key components of the drive every two to three thousand hours or risk failure (if the components are not replaced the ship has a 10% cumulative chance per use past three phases of one roll on DRIVE FAILURE RESULTS B in the PHASE FAILURE section, see page 251, FTL Book 2.) Finally, only a handful of engineers are quite sure how this new drive works. Any attempt at explanation by the two geniuses has resulted in completely baffled ISCO scientists, who insist that the drive should not be able to function at all with the specific modifications that the two scientists have made to it.



SHIP TYPES

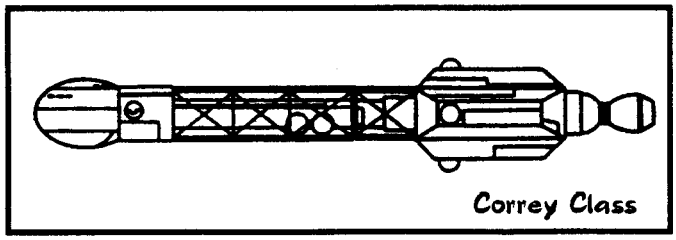
The following are some of the special types of EMR ships. Note that the design of these ships tend to vary from system to system and from team to team, so that only generalities about each ship can be described.

NAM:	**Pasteur**				
YEA:	2401	TFU:	M	CLA:	EMR
CON	44	TNK:	2000	CRW:	17
LEN	383'	ENG:	2 Md	PSN:	40
SPC	cdfhjmnz	PHA:	yb or yc	CRG:	8

The "workhorse" of the EMR Corps, this moderately modified Ontario Class was the prototype for all EMR ships to follow. Most of the cargo space has been converted into a temporary medical center for treatment of victims. The crew of seventeen includes 7 ship and rescue personnel and 10 medical personnel.

NAM:	**Curie**				
YEA:	2405	TFU:	G	CLA:	EMR
CON:	06	TNK:	2344	CRW:	105
LEN:	1218'	ENG:	1 Gi	PSN:	1003
SPC:	cdfgimnz	PHA:	yc	CRG:	200

The first variation of the Chicago-class ship proposed was the Curie-class, specifically designed to assist in evacuation and large scale disasters on the frontier or at deep space stations.

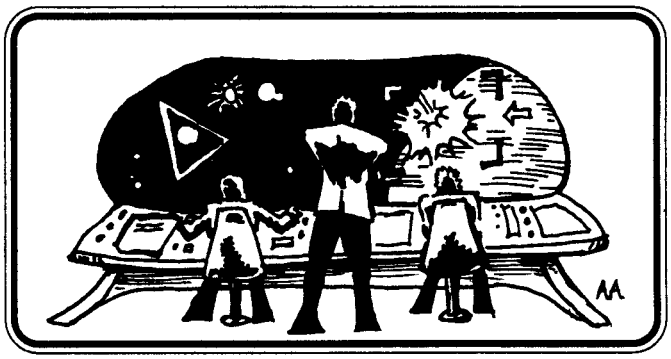


NAM:	**Correy**				
YEA:	2435	TFU:	G	CLA:	EMR
CON:	04	TNK:	2344	CRW:	325
LEN:	1218'	ENG:	1 Gi	PSN:	510
SPC:	cdfgimnz	PHA:	yb	CRG:	603

On the heels of the Curie-class came the Correy class, named after the discoverer of the cure for the Snowfrost Plague. Designed to be a space-going research center to combat virulent diseases, the teams using these ships seldom have a set post but instead are sent to those systems where they are needed most.

NAM:	**Kirril**				
YEA:	2440	TFU:	G	CLA:	EMR
CON:	02	TNK:	2344	CRW:	86
LEN:	1218'	ENG:	1 Gi	PSN:	2800
SPC:	cdfgimnz	PHA:	yc	CRG:	250

Kirril Broken-Fang was a member of the Kymnar resistance under that races occupation by Celestar. It was said that Kirril was one of the few Kymnar freedom fighters who never refused to aid an enemy in need, even at the risk of his own life. In honor of his memory the modified Chicago class ship that was designed for Rescue/Evac operations was named after him. This ship is less specialized than the other EMR style ships as it is essentially little more than one huge transport for those in need.



PLAYING EMR

A variation of FTL can be for the players to design characters who operate as part of or an entire EMR team. The rules for this kind of play are simple and only require a few restrictions.

CHARACTER DESIGN

There must be specific members of a team in existence, either as Player Characters or as NPCs. The posts that must be filled are:

POSITION	REQUIREMENTS
Pilot	Starship Navigation
	Starship Pilot
	Shuttle Pilot
Starship Engineer	Phase Engineering/Drive Tech
	Fusion Drive Engineering
	Phase Engineering
	Computer
Chief Administrator	Starship Management
	Starship Command
Chief Med Officer	Medical Specialist or GP
	Administration
	Emergency Medicine
Medical Specialists	Any Specialized Skill
	Emergency Medicine
Chief Rescue Officer	Structural Engineering
	Emergency Medicine
	Hostile Environments
	Vac Suit Use
	Zero Grav Training
Structural Engineer	Structural Engineering
	Mechanical Engineering

Other than the above skill requirements, players design characters using the standard rules found in FTL Book 1. NPCs, while often taking enormous amounts of time and effort from the GM, round out the team and provide interesting persons for the PCs to interact with.

CROSS TRAINING

An added step in the character creation proccess is the addition of an EMR Training Period. Lasting for one year, the characters (with the exception of the Structural Engineer, see the above rules for specifics) their choice of two of the following skills to reflect "cross-training"; Starship Navigation, Phase Engineering/Drive Tech, Fusion Drive Engineering, Phase Computer, Emergency Interstellar Medicine, Vac Suit Use, and Zero Grav Training. The starting level for these skills is a d4.

SCENARIO TYPES

Just as an EMR adventure or campaign requires specialized PCs, the same can be said for scenarios. The following are just a few ideas for adventures using the EMR Corps.

SHIP IN DISTRESS

The PC team must respond to a shuttle that has managed to get itself in a life threatening situation. This can be a fusion engine explosion, a crash landing on a hostile world, or even a collision between two ships. For a more difficult scenario, the ship in trouble can be an interstellar transport carrying colonists or passengers.

DISEASE

The PC team must respond to a request for aid from a planet that is experiencing an outbreak of some virulent disease. This can be a severe flu or hepatitis epidemic to the horror of a planetary incidence of a mutant virus or bio weapon loose upon an unsuspecting population. A variant of this scenario is the inclusion of hostile forces who don't want the disease cured.

NATURAL/UNNATURAL DISASTER

The PC team has to rush to the aid of people who have been caught in some sort of violent experience. These range from earthquakes, hurricanes, floods, and other natural disasters to the more life threatening occurrences of a shuttle or starship accident at an orbital satellite, massive structural failure of a building in a modern city, or even a nuclear accident.

CIVIL WAR/INTERSTELLAR WAR

The PC team is caught up in some sort of armed conflict that adds to the problems that their specific jobs create. In the case of a civil war the PCs are accused of favoritism by one side or the other, or must choose to work with the lesser of two evils. An interstellar conflict is even more of a threat as it not only threatens the PCs with bodily harm, but also threatens their transport. (An especially nasty scenario would include the PCs ship being damaged in space while they are busy elsewhere.)

MEDICAL FRAUD/MALPRACTICE

Even the nicest of PCs is sure to generate some enemies somewhere. The PCs are either accused of or uncover some evidence of medical fraud, be it the bilking of insurance for false claims, the illegal distribution of drugs, or even failing to resuscitate somebody for illicit reasons. A nastier version of this is to be accused of malpractice or even genocide. Either way, the PCs must prove either guilt or innocence.

CAMPAIGN THEMES

The following are a few short ideas added to spice up an EMR campaign. These range from the amusing and harmless to the deadly serious.

THE HYPOCHONDRIAC

The PC team is constantly contacted by a sentient in their patrol area who constantly complains of horrific symptoms, and is usually convinced that they have contracted some virulent plague. According to their oath, the PCs must go to his aid, but every time they arrive they find nothing wrong.

THE DISBELIEVERS

These people believe that nothing they do can harm them, even though what they are doing can be potentially life threatening. A good example of this is a bunch of bored rich kids who decide that they can conduct space-to-surface combat drops better than the ICL Starborne Rangers can, and tell the PC team to mind their own business.

BLOOD FEUD

For reasons unknown, a sentient becomes convinced that the PC team is responsible for the death of a loved one, and swears a vendetta against the team. This can range from the amusing but annoying, such as graffiti on the ship and being hit with rotten eggs, to the deadly serious, such as armed assault against the PCs.

TERRORISM

The area that the PCs operate in becomes the victim of civil unrest, and the PCs themselves become the targets of a terrorist organization, who will stop at nothing to make sure the PCs shuffle off their mortal coil. A variant of this is that the terrorist group grows tired of the PC teams interference in their affairs and wants them out of the way permanently.

AUDIT

The team come under the scrutiny of somebody at the ISCO Health & Sentient Services branch, and a simple misunderstanding explodes into a full-out witch hunt with the PCs as the persecuted. For those GMs willing to give their players a shock, someone accuses the team of murder.

THAT OLDE TIME RELIGION

The team must deal with primitive or cult like religions to help a small population of natives or colonists. The local Priest/Witch Doctor causes no end of trouble for the doctors. This can also involve the hiding of information or semi effective natural cures.

FIRST CONTACT

Rare cases have forced a medical team to make contact with new races that need help. While this is against ISCO policy, it has happened especially in cases of rescue of a damaged spacecraft.

EQUIPMENT

EMR equipment is the latest produced for Bio-Medical research across ISCO space. All EMR starships are equipped with four or more top of the line Auto-Doc systems. (See Auto-Doc and Doctors Bag, FTL:2448 Book 1 Pg 29-31)

Equipment for rescue work is also state of the art, whether it be pinpoint laser cutters or powered jacks. If they need something they don't have in inventory they can fabricate it from existing stock onboard ship.

MEDICAL PERSONALITIES

Life on an EMR ship on the frontier is often an experience. Human or Alien, this is often the first chance for medical students to experience space and learn tolerance for alien custom and eccentricity.

SCUT PUPPIES

Scut Puppies are the helpers and students assigned to the frontier for learning and assistance. They have signed 4 years of medical school bills away by pledging service to the EMR Corps. Some of these are also Space Navy personnel being trained for the medical field.

INTERNS

Just out of medical school, these are the wide eyed and young medical professionals who have come to the frontier for two years to finalize their training. Shortly, they realize where they are, and what they have to do. Understanding dawns that they are stuck and have to make the best of life where a good pizza is 30 light years away.

NURSES

Nurses really run most of the medical services of a ship and they know it. Generally cheerful after the first cup of coffee, they assist personnel and care for the sick and wounded. Nurses are rarely fazed by anything doctors or patients do.

DOCTORS

General Practioners are the mainstay of the EMR Corps. These Jack O' Trade physicians stay with a single ship and do a lot of the general colonial medical upkeep and the bulk health care duty when visiting colonies. Generally they are good natured and get along with other medical personnel and the ships crew.

SPECIALISTS

These doctors know their field and will constantly tell you about it. From Surgery to Proctology, they make the crew of an EMR ship interesting as they transfer on and off as needed.

OLD DOCTORS

Many things improve in time, the personality of a doctor long on the Frontier is not one of them. He or she's seen everything from radiation poisoning to glow in the dark intestinal parasites. The majesty of the frontier is gone and now its a long and lonely job. Grumpy at their best, the older doctor has little patience with younger medical practicioners until they have proven their dedication. After this point the Scut Puppies are taken under his wing and trained.

FRONTIER NOTES

"I came to the Frontier 20 years ago to help expand the frontier and help settlers.

Discovered what the term 'Country Doctor' meant real fast. Sure we had a few big cases, the Elmston Parasites and the rescue of the 'Korast'Ra', when we were off Bormis, but its been mostly boring routine.

All in all the work gets you down but a single patient saved and a smile of thanks makes the long hours worth it.

Even delivered a pod of Durf for a Trell family once, and they named three of their own young after me. Sheesh."

Ingrid Crawford MD

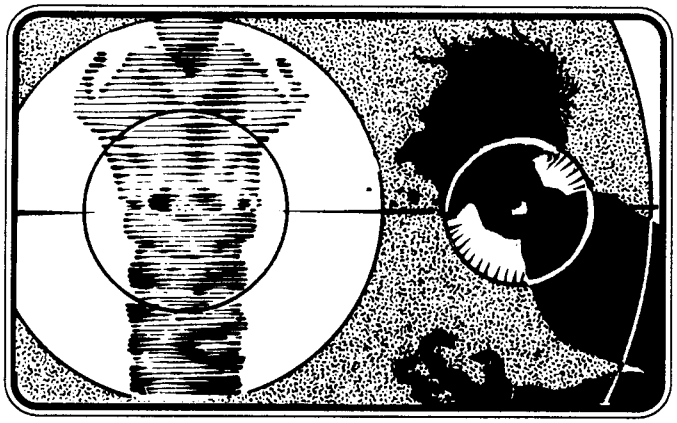
SHIP CREW

The average EMR ships crew is a collection of very bright engineers and technicians who also have come to the Frontier for high adventure.

While they get along with medical they can occasionally cause friction out of sheer boredom. When the situation warrants, the ships crew are trusted friends and will risk their lives to protect medical personnel.

MEDICAL DIFFICULTY

This is a list of medical problems and ideas for EMR teams on the frontier of settled space. The next guide is for GM and players, a comprehensive guide to rescue and treatment. Remember that all of these are generalizations and vary slightly with alien species.



CHOKING

History
Swelling of larynx; diseases of larynx. Foreign bodies aspirated into the larynx.
Symptoms & Color
Patient very apprehensive. Color is darker than norm.
Pulse
Rapid, due to exertion.
Breathing
Very rapid, or patient may gasp occasionally.
Muscles
May be voluntarily contracted.
Pupils
Dilated
Complications
Pneumonia; sinusitis; complete obstruction of the bronchi; lung abscess.
Treatment
Manual removal of foreign object or encourage coughing by slap on back, or Heimlich Maneuver. Tracheotomy may be required.

DROWINING

History
Body discovered in water (such as a fuel tank)
Symptoms & Color
Patient is unconscious. Color is gray and changing to blue (cyanosis).
Pulse
If perceptible, rapid and shallow.
Breathing
If respirations are present, patient may gasp occasionally or very irregularly.
Muscles
Relaxed, and body is very limp.
Pupils
May be dilated
Complications
Fracture of neck; heart failure; suffocation; shock, and collapse.
Treatment
Artificial respiration; CPR if needed; oxygen; treat for shock; heart stimulus.

GAS POISONING

History
Victim rescued from area with escaping gas.
Pathology
Changes in blood chemistry which leads to a lack of red blood cells, respiratory paralysis, followed by death.
Symptoms & Color
Patient unconscious, color is typically bright red or blue, in the case of carbon monoxide.
Pulse
Rapid and irregular.
Breathing
Usually slow, but may be rapid and shallow soon after exposure to the gas.
Muscles
Relaxed and limp.
Pupils
Varies with the type of gas.
Complications
Respiratory failure and depletion of oxygen supply in the blood.
Treatment
Artificial respiration, oxygen, and treat for shock.

STRANGULATION & HANGING

History
Patient found during or after the act. Very definite signs of violence.
Pathology
Fracture of cervical vertebrae; suffocation.
Symptoms & Color
If living, patient may be unconscious, or in a state of desperation. Patient will be cyanotic (blue) if death occurred sometime previous to discovery.
Pulse
May be perceptible or absent.
Breathing
No respirations if dead, if alive, respirations will be very rapid or patient may gasp occasionally.
Muscles
May be voluntarily contracted.
Pupils
Dilated—Unequal if there is cerebral injury.
Complications
Fracture of neck; suffocation; contusions (bruises) on neck.
Treatment
Release pull of strangulation device by placing chair under or lifting patient's feet and removing device. Oxygen therapy; artificial respiration; treat for shock; treat for fractures.

ACID & ALKALI POISONING

History
Accidental or intentional poisoning.
Symptoms & Color
Skin is clammy, blue and pale.
Pupils
Dilated. Eyes sunken and staring.
Muscles
Tense. Patient usually in convulsions.
Pulse
Rapid, feeble pulse.
Breathing
Shallow, rapid, labored and irregular.

Reflexes
Increased.
Complications
Corrosion of mucous membranes; stomach ulcers; gastritis; jaundice.
Treatment
Acids: Milk of magnesia, egg albumin, lime water, no chalk or alkaline carbonate. *Alkalis:* Neutralize with acetic acid (vinegar). In both cases a careful washing out of the stomach is recommended.

ELECTRIC SHOCK

History
Victim found after coming into contact with live wire.
Symptoms & Color
Skin is pale, cold and clammy.
Pupils
May be unequal.
Muscles
Tense to rigid.
Pulse
Weak and difficult to detect.
Breathing
Respirations cease suddenly.
Reflexes
Deep tendon reflexes are usually increased.
Complications:
Low voltage effects heart action, makes resuscitation difficult. *High voltage* effects the respiratory center in the brain and patient may be resuscitated.
Treatment
Carefully release patient from current. CPR followed by electrical defibrillation, if required. If heart fails to resume contraction, use of an external cardiac pacemaker is suggested. Each moment of delay in treatment increases the chances of death. Treat external burns.

BLEEDING

History
Trauma damage to circulitory system causing bright red spurting or welling bleeding.
Symptoms & Color
Skin shows pallor, which progresses to a yellow or greenish tinge depending on species.
Pupils
Dilated.
Muscles
Relaxed.
Pulse
Rapid, becoming thready.
Breathing
Shallow, rapid, 'air hunger' is evident.
Reflexes
Diminished.
Complications
Shock, lack of red blood cells (anemia), heart failure, death.
Treatment
Direct pressure and/or tourniquet. Keep patient quiet, treat for shock; transfusion or blood substitute if necessary. Cauterize or seal damaged vessels.

CONCUSSION

History
Head injury caused by fall or blow to the head.
Symptoms & Color
Skin pale, cold and clammy. Varies with degree of concussion.
Pupils
Dilated. Varies with degree of concussion.
Muscles
May be spasmodic.
Pulse
Pulse rate usually shows a slight increase, but may be weak and rapid.
Breathing
Deep.
Reflexes
Deep tendon reflexes may be increased.
Complications
Shock in severe cases; paralysis of limbs.
Treatment
Bedrest, keep patient flat and warm.

DRUNKENNESS

History
Victim is unable to cope with the amount of intoxicants taken.
Symptoms & Color
Color varies. Face may be flushed; skin is moist, relaxed and cool.
Pupils
Usually dilated, but equal.
Muscles
Relaxed. Body and limbs are limp.
Pulse
Strong and slow.
Breathing
Slow, deep, and usually accompanied with "Cheyne-Stokes" type of breathing. (a common and bizarre breathing pattern characterized by a period of apnea lasting 10 to 60 seconds, followed by gradually increasing respirations.)
Reflexes
Involuntary reflexes usually increased.
Complications
Pneumonia, and in some cases, death.
Treatment
Keep patient warm. If conscious, give emetic and gastric lavage (gentle washing of interior of stomach). Give hot coffee or aromatic spirits of ammonia.

FREEZING

History
Exposure to intense cold, or prolonged exposure to cold.
Symptoms & Color
Frostbite: Skin is cold, pale and blanched. Frozen: Skin is livid and later turns blue, then turns to purplish or greenish black.
Pupils
Dilated.
Muscles
Tense and becoming very rigid.
Pulse
Rapid and weak.
Breathing
Slower and deeper. Patient falls into very deep slumber.
Reflexes
Not discernible.
Complications
Pneumonia; certain damage due to mechanical destruction of the cells, and gangrene of the part previously frozen.
Treatment
Gradual warming of the parts; slight massage of the extremities for better circulation; evaluation of parts; treatment of dry gangrene.

HEAT EXHAUSTION

History
Victim overcome by degree of heat and loss of sodium chloride through perspiration.
Symptoms & Color
Skin may be pale and cool. Temperature is usually normal.
Pupils
Moderately contracted.
Muscles
Tense, with muscle cramps.
Pulse
Rapid and may become weak.
Breathing
Shallow, with rigidity of the chest muscles.
Reflexes
Increased.
Complications
Shock.
Treatment
Treat for shock; keep body warm. Give salt by mouth and I.V.

HEAT STROKE

History
Exposure to intense degree, or prolonged exposure to high temperatures from environment.
Symptoms & Color
Skin is flushed and hot when touched. Body temperature may be 106°F or higher.
Pupils
Dilated.
Muscles
Relaxed.
Pulse
Rapid and weak.
Breathing
Either shallow and gasping, or deep and slow, depending on the patient.
Reflexes
Increased.
Complications
Suppressed sweating for prolonged period. Paralysis of heart, collapse, death.
Treatment
Place patient in cool area. Cold application to head and body. Rub with ice or alcohol. Fan body during procedure to increase rate of cooling. Wrap in cold, wet sheet, continue to lower body temp. No stimulants or sedatives unless required to treat convulsions.

GUNSHOT WOUNDS

History
Accident in care of a gun, or victim of deliberate gunfire.
Pathology
Wound of single outer puncture site with deep injury consisting of twisting and tearing of tissue.
Pupils
Dilated. Varies with degree of concussion.
Muscles
May be spasmodic.
Pulse
Pulse rate usually shows a slight increase, but may be weak and rapid.
Breathing
Deep.
Reflexes
Deep tendon reflexes may be increased.
Complications
Shock in severe cases; paralysis of limbs.
Treatment
Bedrest, keep patient flat and warm.

LASER WOUNDS

History
Accident in care of a laser, or victim of deliberate laser fire.
Pathology
Wound of single outer puncture site accompanied with burn, with deep injury without blood loss, due to the cauterization of surrounding tissue.
Pupils
Dilated. Varies with degree of concussion.
Muscles
May be spasmodic.
Pulse
Pulse rate usually shows a slight increase, but may be weak and rapid.
Breathing
Deep.
Reflexes
Deep tendon reflexes may be increased.
Complications:
Shock in severe cases; paralysis of limbs.
Treatment
Bedrest, keep patient flat and warm.

MASER WOUNDS

History
Accidental exposure or victim of deliberate maser weapon fire.
Pathology
Damage consists of little to no external damage, with the possibility of slight redness to the tissue in the case of brief exposure, or charred flesh in the case of prolonged exposure. Most damage will be internal, as the maser weapon literally cooks the target from the inside out, due to the high levels of RF energy.
Pupils
May be dilated, depending on exposure.
Muscles
May be relaxed or rigid, depending on exposure.
Pulse
Pulse rate usually shows a slight increase, but may be weak and rapid.
Breathing
Deep and labored.
Reflexes
Deep tendon reflexes may be increased.
Complications
Shock in severe cases; paralysis of limbs, nervous system and burn damage.
Treatment:
Treat for shock, burns, internal systemic disruption.

RADIATION

History:
Exposure to a radioactive source.
Pathology
Damage consists of slight nausea in mild cases of exposure, to violent nausea, hair loss, fatigue, diarrhea, sunburn symptoms (see pg. 111 of FTL:2448 Book 1)
Pupils
Normal.
Muscles
Generally relaxed due to the overall fatigue.
Pulse
Pulse rate usually shows a slight increase, may be weak and rapid.
Breathing
Light and shallow.
Reflexes
Deep tendon reflexes may be increased.
Complications
Open oozing wounds in severe cases, shutdown of autonomic functions at extreme high doses.
Treatment
Treat for shock, burns, internal systemic disruption. Get patient to an Auto-Doc as soon as possible.

VAC EXPOSURE

History
Sudden exposure to vaccum.
Pathology
Suffocation, damage to mucus membranes, rupture of capillaries .
Symptoms & Color
If living, patient may be unconscious, or in a state of extreme chest pain. Patient will be cyanotic (blue) if death occurred sometime previous to discovery.
Pulse
May be perceptible or absent.
Breathing
No respirations if dead, if alive, respirations will be very rapid or patient may gasp occasionally.
Muscles
May be voluntarily contracted.
Pupils
Dilated—Unequal if there is cerebral injury.
Complications
Damage to lung tissue, suffocation, pnemonia, bleeding from eyes, sinus, ears.
Treatment
Oxygen therapy; artificial respiration; treat for shock; treat hemorage and possible cold exposure.

NUTRITIONAL PROBLEMS

Regardless of where mankind and his allies settles, there is always the chance of physiological problems from native foods that have missing minerals and amino acids. Imported crops and food animals may also suffer from deficiencies that must be identified and corrected.

ALLERGIES

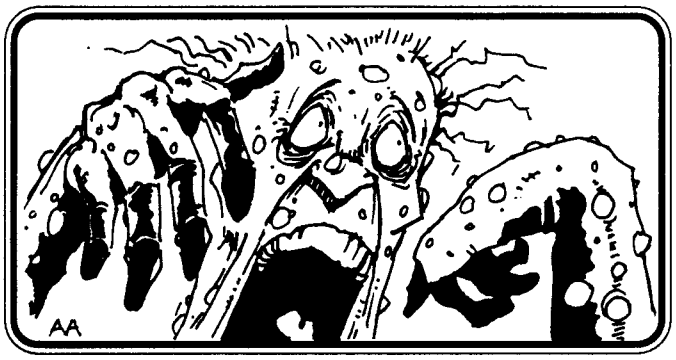
A common problem with developing new food resources on other planets is the subtle differences in chemical balances and compounds that may cause adverse reactions in some individuals. A large amount of testing is required to ensure that large numbers of individuals aren't allergic to the newly-developed food sources. (See page 100 of FTL:2448 Book 1)

PARASITES

Another problem with developing new food sources is the fact that different planets have different biological compositions. These include parasitic life forms that may or may not be harmful, based upon the GM's discretion and whims.

DISEASE

Another problem with contacting new races and planets is the inherent viruses and bacteria that cause numerous forms of disease. Common diseases may mutate or combine with alien microbiological forms to create entirely new problems. Alien life may be effected by common terrestrial disease though the likelyhood is very small. See also FTL:2448 Book 1 pg. 121)



RESCUE OPERATIONS

The following chart gives possible rescue operations:

DAMAGED SHIPS

Most rescue operations in space involve damaged starships or In-Port Accidents.

Crippled Ship Returning

Incoming reports indicate that a wounded ship is slowly returning. Initial indications are that heavy losses have been experienced and that they have many wounded. They request immediate medical assistance.

Terrorist Bomb Explodes

A terrorist faction has placed a bomb on board a starship. Fortunately, the ship had left the StarDocks 45 minutes earlier, or losses would have been incredible. As it stands, numerous casualties are reported, and there are hundreds wounded on the crippled starship.

Sabotaged Engines

The main core of the fusion engines of a departing starship have detonated. Most of the engineering crew is dead, and radiation levels are high from ruptured Nuclear Batteries. Survivors still on the ship as well as in escape pods have varied injuries from psychological shock to physical damage from a badly handled rescue attempt. Primary mission is to help the trapped engineers and rescue the ships survivors. A second explosive device will be found on the bridge just when things become stablized.

Unidentified Pathogen

A long-lost scout ship returns to ISCO space. No communications by ISCO are answered, and a ship is sent to investigate. Upon arrival, the unidentified ship opens fire with an automated single missile salvo on the ISCO ship. No further weapons fire will ensue. Upon further investigation, the ship can be boarded, and medical support crews will discover the crew dead of an undiscovered pathogen. Investigation of the ship shows the crew became psychologically unbalanced and killed each other. If exposed to the ship's atmosphere the investigative team will begin to show signs of confusion and fever. After 16 hours, the disease will become fully active. Anyone who returns to the ship will cause the other ship to become infected as well. ISCO HQ will demand periodical reports, and under no circumstances will either ship be allowed to dock with the Starport if evidence of contamination is suspected. A character with a Xenobiology, Xenopathology, or Xenogenetics skill of 4 or more will be able to discover the cause is a fungus infection that lives in the mucus membranes and takes root in the lungs. While in itself mostly benign, it produces an Organo Phosphate that triggers rage and agression. A character with any medical skill will be able to develop a toxin for the fungus in 6d10 hours. Tranquilizers have a stabilizing effect but cut skill level use. (See also FTL: 2448 Book 1 Pg. 021-022).

Life Support Failure

The primary processing unit of a passenger liner's life support unit has shut down. The secondary processors kick in while the crew attempt to repair the problem. After d6 hours, the secondary processors shut down, then the tertiary processors, as well as all of the back-up units. Crew members must be wearing VacSuits, or oxygen depravation symptoms will occur within 60 minutes, as the oxygen levels rapidly deplete. There is a 10% chance that the VacSuits will not be in working order, and a 90% chance that there will not be enough VacSuits for the entire crew and passengers Passengers will immediately panic and fight with the crew over the remaining suits and create multiple injuries. Characters with higher levels of electronic diagnosis and repair will, after 2d10 minutes of examination, note a design flaw in the processor chips that caused the problem. Replacing the chips should resolve the problem, otherwise, rescue teams will be necessary to evacuate/aid the crew.

Space Debris Collision

A rapidly moving meteor or large chunk of high tech debris rips through the main crew area of a large freighter. Explosive decompression of the ship ensues, and loss of life is evident. Survivors remain on the crippled ship and are in need of rescue, as well as medical attention from numerous injuries sustained as the ship decompressed.

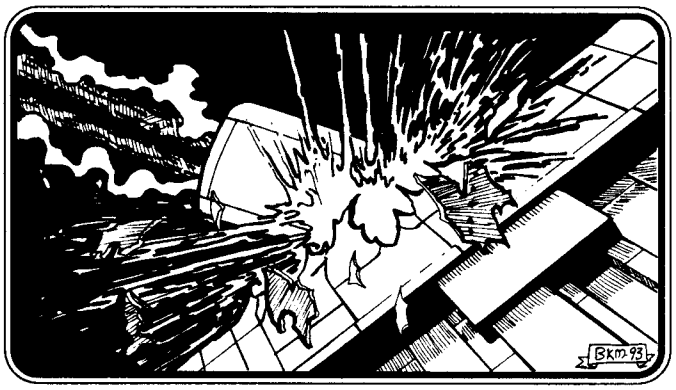
Space Pirate Attack

It's not too often that Space Pirates get up enough nerve to attack an ISCO ship, but sometimes the risk of being caught is put aside when compared to the quick profits that pirates are able to turn by stripping another ship of its cargo. For the most part, Space Pirates aren't known for their violence against the victim ship's crew, and they are usually put in escape pods, and sent toward the nearest known inhabited area, but sometimes things get messy when crews don't wish for their cargoes to be 'liberated', and numerous casualties can ensue.

Hagu Attack

With the increasing number of Hagu ships detected on the Frontier, minor skirmishes are fast becoming a regular occurrence. With little regard for life, and no desire to capture prisoners, nor their ships, most Hagu attacks are strictly ones of violence and devastation. On a rare occasion, a crippled ship limps back to settled space, with what's left of its badly

injured crew to report the incredible savagery of the Hagu and their Zankee counterparts.



DOCK COLLISION

Collisions at spaceports are terrifing occurances where multiple forms and degrees of trauma are possible.

Misalignment by SpaceTug

While docking, miscommunication with the Port Authority and the Space Tugs result in a starship ripping through the docking lounge. Explosive decompression of not only the Starport docking lounge, but of the starship generally ensues.

Thrust Problems

While docking, the vernier thrusters suddenly start firing erratically, and sporadically. Loss of control results in minor collision with docking facilities. Casualties and injuries may ensue depending upon the speed of the ship prior to collision.

Sensor/Weapons Malfunction

As an *ICL Comanche* class warship gets to within 5000 yards of the Starport, all sensors suddenly go off-line providing no information to the crew. As the sensors go off-line, a salvo of three missiles launches from the ship, one of them streaking toward a departing colonist transport, and the other two slamming into the Starport. Massive casualties ensue. After the weapons are launched, the sensors come back online, and no further problems ensue.

Out of Control

A returning starship enters the system, and is tumbling and spinning in an erratic pattern. Not only is the ship spinning along its longitudinal axis, but is tumbling in space as well. The crew is still alive, but the engines have shut down, and there is no power. Life support is minimal. Transportation of medical personnel to this ship should prove to be extremely dangerous and difficult.

Main Thruster Cutoff Failure

A *Moscow* class freighter begins their final docking sequence and is preparing to dock. Suddenly, their main engines pulse at full thrust, and all efforts to shut them off are futile. The resulting multiple impact with the Starport causes numerous injuries.

Phase Accident

Phase Pods on a Starship detonate and the ship heads for deep space at less than light speed. Catch the ship and rescue the survivors from the stress twisted remains.

ORBITAL DISASTER

Some disasters take place in unstable orbits where time is the main concern for rescue workers who must remove victims before a ship makes reentry the hard way.

Nuclear Detonation in Atmosphere

A misfired weapon streaks toward the planetary surface, and is damaged by a Planetary Defense Satellites. The damaged warhead then detonates, causing an electromagnetic pulse that will devastate any electronics within 25 miles, as well as spreading a radioactive cloud in the upper atmosphere that will eventually cause radioactive fallout upon the planetary surface.

Two Colonist Transports Collide

While maneuvering to leave the starport, a Colonist Transport collides with another shortly after a complete system shutdown. Casualties run high on both ships as one, spinning, slips into a decaying orbit.

Terrorist Bomb

Terrorists plant a pocket nuclear explosive device onboard a Space Station or large planetary city. The blast and subsequent effects vaporize a hundred foot area and create blast and burn effects as well as a varied radiation hazard of 100 to 1000 rads in different spots.

Large Meteor Problem

A large meteor is in a decaying orbit. It's 300 foot diameter will strike with a kiloton or more of force on an inhabited world. Engineering teams have set charges to shatter it but a premature detonation has trapped and injured a half dozen and crippled their Orbital Tug.

Crippled Shuttle Re-Entering Atmosphere

The crew of a crippled shuttle request immediate assistance as their shuttle is rapidly losing their orbit, and will soon begin re-entering the planet's atmosphere. With the cargo doors locked in the open position, they are doomed unless they can be rescued. Matters are complicated by 4 human passengers and one female Bor'Cha who is pregnant and now in labor.

Colonial Sickness

With no rhyme or reason, colonists are getting sick The hospital is filling and the colonies doctor is stressed to the max. Half the patients have a single fact in common, Lucky Jack's Starport Beer Hall. Check that local bar and the special 2 for a 'd Beefy Bean & Durf Burritos. They harbor a bacteria native to the Trell that causes accute cramps and diarrhea in humans. Compound this with a secondary infection with close symptoms being transmitted by fleas on a small and harmless native rodentoid that's now in its migratory season.

Hagu Suicide Strike

As the border conflict escalates, one of the tactics of the Hagu is to drop a small, one-seat assault vehicle deep within ISCO space to attempt to wreak havoc upon any ship or starbase they encounter. Most are equipped with a cluster of 12 dumb missiles with HE warheads. Most of these ships end up as derelicts or self destructing as they have Zankee operators, but sometimes...the Zankee get lucky.

INTRODUCTION

It began as an idea and a desperate gamble.

The end of the first half of the 25th century was the best of times for mankind and their alien allies. It was also the beginning of a violent storm that would plunge all of ISCO space into a bitter struggle with a corrupt alien empire that spanned over 10,000 worlds.

> "Our initial contact with the Hagu has been quite positive. I can assure you that there will be no end to the peace and prosperity we have had in the last two centuries."
>
> ***Henderson Putnam***
> ***Director ISCO***
> ***StarCom InfoNet Release April 1, 2450***

The optimism of the initial contact with the Hagu soon faded as reports of raids on frontier colonies filtered back to 'civilized' space. It soon became apparant that the Hagu weren't the peaceful race that they had originally portrayed themselves to be. While no ICL patrol ships could actually catch the Hagu in the act of raiding the frontier colonies, the Colonists began to report violent raids, wanton destruction of industrial and residential areas, and the wholesale enslavement of captured colonists by the Hagu. ISCO's original assessment that the Hagu would be another allied race that would soon become a welcome addition was proven to be a dangerously optimistic dream as the deadly reality of exactly what the Hagu were began to sink in. The Hagu, of course denied any involvement in any of the frontier raids, and continued their dialog of peace with ISCO, while the raids continued.

Address to the ISCO Governing Council and Planetary Advisory Council. October 14, 2450

> "So, I was wrong. Due to the unbelievably immense size of the 'Hagonni Sphere of Prosperity', we need a plan both subtle and effective. In essence, gentlemen, we are going to have to play the same game they are. While we earnestly talk peace to those lying bastards, we're going to kick them in their feathered posteriors. We may not be able to defeat them in an all-out conflict, but we can sure as hell be a thorn in their side.
>
> This project, called 'Enemy Stars' has already received the unanimous approval of all advisory councils and preliminary missions have begun even as we talk.
>
> ***Henderson Putnam***
> ***Director ISCO***

> "The'rre gonna be rrreal sorrry, that is, if therrre arrre any surrvivorrs."
>
> ***Fistaak Headripper***
> ***Captain of the Kymnar Warship 'Qre-Tarr'***
> ***November 2, 2450***

BEHIND THE LINES

In Enemy Stars players will become covert commandos operating behind alien enemy lines, helping the oppressed populations fight their alien overlords. You will become the secret thorn in the side of the Hagoni Empire as you blend into the native population. Your term of service is a year. It will most likely be the longest year of your life. You are now behind ENEMY STARS.

START OF THE HAGONI CONFLICT

The raids can be dated as far back as 2439, but they were generally attributed to the various star pirates that continually travelled the frontier. ISCO knew there were signs of life in the areas that were attacked most often. 'Ghost Ships' had been spotted by an overwhelming number of colonies on the edge of charted space, and surveillance drones continually picked up a large volume of unintelligible

communications as well as the telltale particle bursts of FTL drives that were not too different from ISCO designs. What wasn't realized, was that ISCO had edged into the boundries of the 'Hagoni Sphere of Prosperity', a huge section of space settled by a very war-prone militaristic race.

THE NATURE OF THE ENEMY

'Settled' could easily be called a misnomer as a majority of the worlds in the Hagonni sphere were actually 'under the thumb' of the Hagu, and turned into virtual slave worlds devoted to the prosperity and furtherance of the Hagoni Empire. While no single government could control such a vast empire, Clan/Houses were assigned by the ruling core government to manage these worlds and continue the transfer of material goods back into the center of Hagoni worlds.

This system of management became so deeply rooted in Hagonni society that orders from the core, or Egg would be followed without question. If a world was designated to produce left boots for Zankee, they would produce no matter the hardship or failure of logic.

HAGONNI INCURSION

The Hagonni have a small set of rules for planetary occupation. These are the following.

01 Replace Existing Order
02 Dispose of Dissenters
03 Freeze technology or regress it to a managable level.
04 Let the native population do the dirty work.
05 Use Propaganda.

WORLD EXAMPLE: KARTAMA

The Kartama humanoids had a long and violent history over 12,000 years. Kingdom after kingdom rose, flourished and fell until a single warlord united the 67 territories and created an effective Council of Lords. For the next century technology blossomed with the invention of the printing press and a stablized language and alphabet. Their general levels of technical expertice had reached an Earth equivilency of 1290.

The Hagonni found their green and semi primitive world appealing and started by decimating the City of Lords and ending the Council's effectiveness. After re-polarizing old feuds, they installed their own advisors at every kingdom to assist the Kartam. The current Lords of Kartam are powerless puppets of their alien masters.

Now with printing presses smashed and Hagonni factories strip mining tracks of rich Bauxite, the population works to build Hagonni components. Fear of their neighboring kingdoms spurs them on as they believe they are working to better protect themselves.

Hagonni estates now dot the landscape as Kartama becomes a garden spot for the Empire. Dirt roads link all cities and Zankee Troops patrol border checkpoints. Primitive ground vehicles have been imported, open bed trucks, as well as steam powered rail lines.

A century of rule have seen the Hagonni masters grow fat and lazy. The second Hagonni generation on Kartama is complacent and sure in their rule, enjoying their stolen prosperity and scheming over petty politics.

They are targeted by the Enemy Stars Forces.

PURPOSE OF THE PROGRAM

The purpose of the Enemy Stars program is simple: You will be assigned to a team of covert infiltrators, sent to one of the Hagoni-controlled worlds, and have a year to cause as much dissent, rebellion and discord, and at the same time damage the Hagonni infrastructure.

Equipment will be covert and state of the art in all respects.

ADDITIONAL TRAINING

After your Space Navy training (and also perhaps ICL Marine training) and a year on the frontier, you have been chosen to be trained for the ICL Enemy Stars program.

REMEMBER

The Enemy Stars program offers a 400% Hazard Pay bonus to those personnel who volunteer to join this program.

While the ICL directly supports these covert missions, they will not generally support an all-out conflict with the Hagu, due to the fear of a collective retribution by the Hagonni Empire. Their hope is to help rot an already corrupt empire and prevent it from causing an all-out conflict due to its own internal problems.

COVERT ACTION

The first problem with the program was creation of the covert operative on an alien world where the sentient could be radically different in physical structure.

SKIN SUITS

The first offer of assistance to the ICL was by a Krelvin physician. Dr. Payne's creation was the skin suit, a living organism that covered the user and simulated the appearance of a native of the target planet. The suit extended into and through the digestive system of the users body to filter toxins from food.

The suit can heal as a natural organism but 95 points of Whole Body Damage will disrupt and kill it. While this is ideal for humanoids, it doesn't cover the other than humanoid races in the Hagonni Sphere.

SKIN SUIT DATA

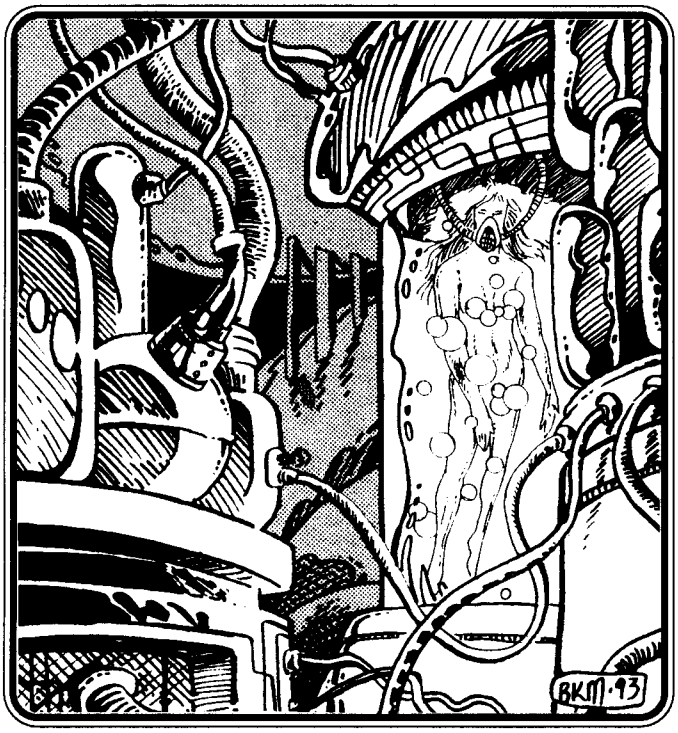
Creation of a skin suit is a two week procedure as the operative is placed in a Krelvin Autodoc System. He or she sleeps while the suit is grown over their body. One of the most spectacular pieces of this process is the neural/vocal implant for language assimilation.

LANGUAGE

Before skin suits are created an ICL stealth ship does a short incursion of the target world to map and capture a single native for tissue analysis and language study.

This is done over a period of days with Krelvin equipment. Atterward the native, confused but healthy, is either given the choice to help ISCO and the Enemy Stars program or mind-wiped of the incident.

Operatives are implanted with a Small Neural Mass that gives them the ability to speak the language like a native by simply turning the SNM to an ON mode by simply tapping a spot on the temple.



BODY SUITS

The second development of the Krelvin was the Body Suit for use with non-humanoids or hard to duplicate physical types. These completly cloned alien bodies are grown to maturity, a process that takes nearly 6 months. In an amazing surgical procedure, the human or alien brain is transplanted to the new form and the old body put into cryo storage until the operatives return.

Drawbacks to the program was the slow rate of growth of the clone body. The ICL currently has 40 of these Krelvin built chambers and the hope of setting up another 60.

Secondary drawbacks are the months of time needed to allow the user to physically adjust to the new body and sharpen their reflexes. A full 5% of the volunteers have had accute psychological adjustment problems necessitating restoration to their original bodies.

Many operatives for the ES program preferred this method to fool close examination by the Hagonni and easily fit into native populations. Many alien races in ISCO space found the physical change to close-humanoid a once in a lifetime chance to perceive the physical forms of other reace and even exist for a year or more as an alien.

SKILLS

Before the Enemy Stars Program you should already have a set of skills that include higher education and military catagories. Operatives will be trained in the use of their equipment and high tech covert tools. More specialized skills or new military related skills will start out with a level of d4

NEW SKILLS

Camouflage
Infiltration
Propaganda
Document Design
Stealth
Traps
Hagonni Psychology & Tactics
Zankee Psychology & Tactics

EQUIPMENT

A small pack of equipment is dropped with operatives. Major stocks of material and specialized equipment are dropped separeately in AI flown landers that choose a water landing. This concealment gives the operative a chance to recover supplies later with the use of beacon locaters.

WEAPONS

Weapons are standard ICL issue with builtin AI systems for scope and special function.

BULK EXPLOSIVES

Dropped with weapons are blocks of standar plastique (See also FTL Book 1 pg 160)

STANDARD

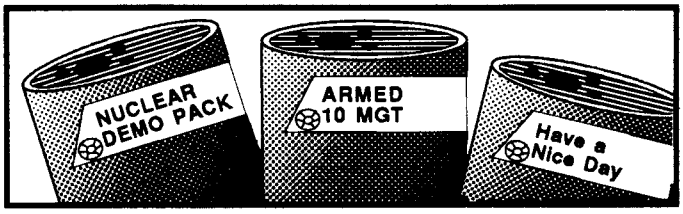
Standard explosives include any ICL ordinance has well as captured Hagonni explosives.

SPECIAL

Special Explosives may include micro charges, explosive film, or even explosive pea gravel. All is the decision of the GM on availability in the drop kits.

NUCLEAR DEMO

Every team is issued a Nuclear 6-Pack. Each of theses canisters has a sophisticated AI system for easy use. These devices are powerful but generally clean warheads. While the ICL frowns on planetary use, and injuring the native population, their ease of placement and size make them the ultimate surprise packages for Hagonni stations and shipping.



All functions of the cans are voice operated by trained users. The AI contains a set of recognition codes usable by officers of the drop teams.

From a ground or shoulder position the package may be launched like a smart missile up to 10 miles in a single one-time use. Height of detonation can be adjusted. The pocket Nuke can be detonated from a sub Kiloton range to 1 megaton. The entire pack of 6 can be linked to create a 10 megaton detonation

COMPUTER

This Terrabyte Pack is another AI System fully programmed for work with the designer and fabricator. Special functions include a sophisticated set of Military AI personalities. Personna include Tactics Instructors, Hackers, Intelligence Personnel, and Engineers. Functions include television and radio monitoring and transmission, linking to other computers and basic learning and gathering subroutines.

DESIGNER

A high-tech fabricator for documents, currency, and paper goods.

FABRICATOR

The micro wet or tank fabricator is the mainstay of covert operations. When hooked to a portable computer, it can fabricate small components and parts. The process is simple. The liquid medium contains the minerals in suspension and computer controlled laser and magnetic fields build, or rather grow the item molecularly layer by layer. From a simple key to a capacitor, much is possible.

SIMPLE COMPONENT	d4+1	Hour
COMPLEX COMPONENT	d4+4	Hours

WEAPONS

The most important part of a covert action is damage done to the enemy whiile inciting the population to revolt. With ICL weapons available, many teams raid for Hagonni material and equipment.

ASSAULT RIFLE 'ICL 12/4800"

ROF	1to3	AMO	FGH	**PB**	**VS**	**SH**	**ME**	**LO**	**EX**
ROL	A	CYC	25a	-1	+0	+1	+2	+3	+1
CAP	300	WTE	13.0	**EFFECTIVE**				**EX+**	
CIR	2447	MIS	1%f		10d			8d	
HSM	+4	KDM	+1	SPC (idjn)					

High Tech AI descendent of a bull-pup assault rifles. The 12/48 is easy to handle and has a scope built into the handle. Uses caseless depleted uranium ammunition as a standard round as well as explosive or fabricated rounds. Can be used for assault or sniper operations. (*12mm*)

ASSAULT BLASTER 'Daytona 334"

ROF	1	AMO	CHRG	**PB**	**VS**	**SH**	**ME**	**LO**	**EX**
ROL	A	CYC	n/a	-1	+2	+4	+2	+0	-2
CAP	500	WTE	7.0	**EFFECTIVE**				**EX+**	
CIR	2447	MIS	1%		15d			8d	
HSM	+1	KDM	+5	SPC					

Blaster rifle designed by Fritzians for the ES program. Light and easy to conceal, it fires a bolt of explosive energy. CHRG denotes its ability to be recharged by any electrical system with high amperage. CHRG time is 4 hours and produces 500 uses.

ICL M96 COMBAT KNIFE

LENGTH	14"
HILT	5.5"
WTE	Medium
SHARPNESS	Razor

STB	**IMP**	**CUT**	**SLA**	**CHO**
d8	d10	d8	d8	d6

Remember
See Blade Damage Book 1 pg. 106

KNIFE FUNCTIONS

A SELF SHARPENING

The blade is a self sharpening alloy with a Rockwell hardness of 5600.

B VARIABILITY REFLECTIVITY CONTROL

The entire knife has a variable reflectivity control that can change its color from brilliant gold to black. A second function allows it to chameleon colors it is placed on including patterns or camoflage

C SHOCK CHARGE

A ten ampere shock charge usable twice until recharged. Used in water the blade can double as a fish stunner that shocks a 20' square area. Blade can be used as a beverage warmer.

D LASER

Built in laser fire starter that does d4 points of burn. Functions for 100 uses until recharged.

E FLASHLIGHT

Use as a flashlight for 6 hours. Can be used as an ultrabright signal beacon for 10 minutes. Can be used as a flashbulb for 50 uses.

F WHISTLE LOCATOR

If lost or in the dark a sharp whistle or voice command will cause it to beep or emit a tiny pulse of light.

G AUTOMATIC LOCKPICK

Linked to its built in AI is a limited lockpick function for key type, electronic or combination locks. Use of the extendible lock pick has a 75% chance of success. Combination and electronic locks are opened by sensor or visual display of combination.

H EXTENDIBLE GRINDER

Small superhard grinding wheel built into the hilt of the knife. It rotates to become a cutting edge. Cuts most materials up to a depth of a half inch.

I POWER DRIVER

Built in power driver in the hilt with 2 hours continuous use. Has a collection of bits and a quarter inch drill.

I HARDNESS GUAGE

Tip of the knife can be used as a hardness guage. Read the knives LCD screen.

K VOM

Fully operable voltage tester and resistance guage.

L COMPUTER

Built in AI 10 terrabyte system with a 1" x 2" display. Holds data for Survival, Medical, and Engineering skills at a level of 15. WIll display Pressure, Time, Temperature, Gyro Stabilizer, Charge, Direction, Radiation, Motion and other functions on command.

M SELF DESTRUCT

The knife will destruct with 400 points of blast if unattended for 100 hours or if it falls into Hagonni or Zankee hands. It can function as a grenade in an emergency. The detonation can be programmed for fragmentation, clean blast, or shaped charge. The shaped charge does 600 points of damage concentrated into a 4 inch area.

HEADING INTO HAGONNI SPACE

Operatives are shipped to Hagonni space in cryo sleep by use of stealth ships. A few hours before the ICL vessel slingshots through the target world's high atmosphere, the passengers are awakened and placed in drop pods.

On signal, the computer AI pods drop from the ship to re-enter the atmosphere and scatter across a thousand square miles of terrain. In the higher atmosphere the pod fragments and drops an individual into freefall.

In low atmosphere, a Parasail chute deploys and the individual and his equipment are on their own for landing.

After landing, the chute biodegrades quickly and the operative begins his or her linkup with the rest of the team. After reassembly of the team, the work begins.

TARGETS OF OPPORTUNITY

Target objectives for ICL Resistance attacks have varying garrisons assigned to them. The garrisoning troops will almost always be stationed at or adjacent to the facility. Other troops may be present by GM's decision.

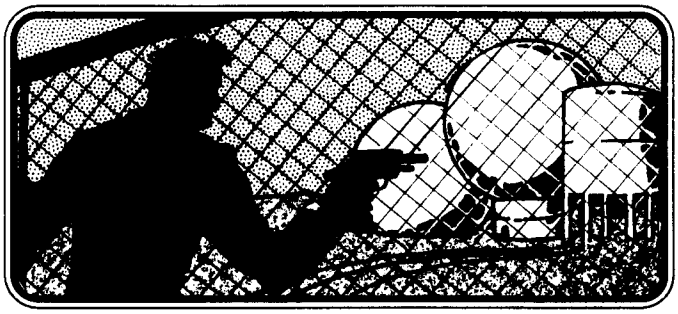
MRR = Motorized Group
TNK = Hover Tank Unit
ENG = Engineers
WOR = Workers
AZC = Armored Zankee Combat Group

A SQUAD
MRR: 7 Zankee
1 Hagonni Low Officer
1 Truck
VARIANTS
TNK: 1 Hover Tank with Crew of 3
Tank: Light Laser or HE Launcher
WOR: 14 General Workers + APC or Truck
3 Zankee, 2 Trucks
1 Hagonni Low Officer
AZC: 7 Zankee with 1 APC
2 Hagonni Junior Officers
ENG: 1 if needed

B PLATOON
MRR: 3 Squads (21 Zankee +1 Zankee Sergents)
1 Hagonni Junior Officer
3 Trucks
VARIANTS
TNK: 3 Tanks + Platoon Leader
Tank: Light Laser or HE Launcher
WOR: 35 Workers +3 Supervisors
AZC: 21 Zankee with 2 APC
2 Hagonni Junior Officers
ENG: 3 if needed

C COMPANY
MRR: 3 Platoons (63 Zankee +2 Zankee Sergents)
4 Hagonni Junior Officers + Mid Grade Officer
Mobile HQ with Supply Truck
6 Trucks or 3 APC
VARIANTS
TNK: 9 Tanks + 3 Platoon Leaders
WOR: 144 Workers + 7 Supervisors
AZC: 3 Platoons (63 Zankee+ HQ with 3 Heavy Laser
ENG: 7 if needed

D BATTALION
MRR: 3 Companies + HQ
MRR: 3 Platoons (189 Zankee +6 Zankee Sergents)
6 Hagonni Junior Officers + Mid Grade Officer
Mobile HQ with 3 Supply Trucks
20 Trucks or 10 APC
VARIANTS
TNK: 27 Tanks + 3 Platoon leaders + Tank Commander
WOR: 288 Workers +10 Supervisors +10 Truck
AZC: Zankee Pyuke (288 Zankee+ HQ with 6 Heavy Laser
6 Hagonni Specialists 6 Junior Officers 1 Senior Officer
01-50 Special #1 : d4 Attack Copter w/Missiles
51-00 Special #2 : 2 Heavy Troop Carriers w/Mortar
ENG: 14+ if needed



	MRR	TNK	WOR	AZC	ENG
Refineries	2b	1a	2c	-	3c
Energy Plants	1b	2c	2b	3c	3c
Shipyards	1b	-	2d	2b	1d
Small Factory	2a	2a	1b	1a	1a
Medium Factory	1b	1b	2b	1a	1b
Large Factory	2b	2b	2c	1b	1c
Industrial Park	1c	3b	3d	2b	2d
Universities	2b	1b	1d	1b	1d
Prisons	1c	-	-	1c	-
Gulag	1c	1b	-	1c	-
Detention Center	2b	2b	1c	2c	-
Worker Camp	2b	1b	1b	1b	-
Prison Farm	1c	1a	1b	1a	-
Small Fuel Storage	2a	1a	1a	-	1a
Medium Fuel Storage	1b	1a	1b	1a	2a
Large Fuel Storage	2b	1b	1c	1b	2b
Small AMO Storage	2b	2b	1a	3b	1a
Medium AMO Storage	2c	2c	1b	1c	1a
Large AMO Storage	2d	2d	1c	2c	1b
Food Storage	1b	1a	2a	1a	-
Component Storage	2b	2a	1b	2a	1a
Civilian Airport	2b	1b	2c	1b	1c
Military Starrport	3d	3d	3d	5d	3d
Military Outpost	5d	2d	2d	5d	1c
Military Base	12d	10d	3d	24d	6d
City Checkpoint	1a	1a	-	-	-
Rural Checkpoint	1a	-	-	-	-
Highway Checkpoint	2a	1a	-	1a	-
Small Training Area	1d	1d	1d	1d	1b
Large Training Area	3d	3d	2d	3d	1c
Rural HQ	1b	2a	-	2a	-
Village HQ	2b	1b	-	1b	-
City HQ	1c	2b	-	2b	-
Major City HQ	1d	1c	1b	1c	-
Supply Caravan	2b	2b	-	1b	-
VIP Caravan	1b	1b	-	1c	-
Train Depot	2b	1a	1a	2a	2b
Train Yard	1b	1a	-	1a	2a

HIT & RUN TACTICS

The average resistance fighter or 'partisan' does not attack large Hagonni occupation units without reason or a good plan. Most are content to hit smaller units and convoys in rural areas where there is time to escape or loot the enemy for supplies and ammunition. In addition, with a localized population, the ICL operatives are more likely to be assisted by locals or even link with native resistance fighters.

SUPPORT

A small town is likely to support resistance fighters until the Hagonni begin to take retribution on the town. While big cities are less close, the rebel can find anonymity in large crowds or in the sprawling commercial areas.

ESCAPE ROUTES

Rebels will always have rendezvous points and camps where caches of supplies are stored for future use. Best locations are in the country where there can be caves and tunnels to ensure escape. Sewers and storm drains provide the same type of escape route under favorable weather conditions.

CHECKPOINTS

A preoccupation of invading forces is the military checkpoint. Located almost anywhere outside most cities and towns, these rest stops provide amusement for ES operatives and no end of aggravation for the civilian worker and traveler.

A	FAST CHECK	TIME	SPOT FRAUD
01-50	Passed	10s	02%
51-75	Checked	01m	10%
76-85	Checked	04m	20%
86-95	Detained (see B)	15m	25%
96-98	Detained (see B)	30m	25%
99	Detained (see B)	01h	30%
00	Arrested (see C)	-	-

B	CLOSE CHECK	TIME	SPOT FRAUD
01-50	Close Questioning	01h	40%
51-75	Searched	05m	-
76-85	Minor Interrogation	30m	50%
86-95	Major Interrogation	01h	60%
96-99	Call to Superiors	10m	-
00	Arrested (See C and superiors called.)		

CALL TO SUPERIORS

01-50	Don't want to bother, (suspect freed)
51-75	Re-Check of papers as B 01-50
76-85	Re-Check of papers as B 76-85
86-95	Re-Check of papers as B 86-95
96-98	Elite or higher called.
99-00	Hagonni Internal Security called.

C	GENERAL ARREST
01-50	Released in d4 days.
51-75	Released in d4 +4 days.
76-85	Sent to Hagonni Detention Camp. Released in d4 weeks.
86-95	Sent to Local Prison. Released in d4 +4 weeks.
96-98	Sent to Work Camp. Released in d4 months.
99	Sent to Gulag Released in d4 +4 months.
00	Shot to avoid the embarrassment of false arrest.

REMEMBER

These arrest tables are for the innocent. Any detection of a serious fraud in identification or general papers, if any, will automatically attract higher officers and a criminal sentence when convicted.

GUARD TYPES

Remember too, the difference in guard type will modify chances of slipping a fake travel pass or ID past a sentry.

GUARDS	DETECT FRAUD
Zankee Trooper	-20%
Zankee Sergeant	-10%
Hagonni Soldier	-05%
Hagonni Officers	+05%
Haginni Elite Officers	+10%
Hagonni Internal Security	+15%
Hagonni Security Tech	+20%
Trusted' Civilians	+05% *

* Civilians can be pro or anti-Hagonni to the benefit (+5%) or bereavement (-5%) of those with counterfeit identification.

FORGERY

A characters skill levels in forgery or operation of the Doccument designer are beneficial in the creation of a pass or paper. The drawback is you have to have a pass to scan into the system before you can create more. Without this high tech marvel start with a +0% modifier for general quality of the pass and add +5% per skill level of forgery, calligraphy, technical illustration, or related skill. Add a +20% if an example of the paper can be copied and a +40% if the forger is in a situation where he or she has access to high - tech copy or publishing equipment. Use of an extra-legal known for forgery adds a +10% on any ID creation. This is the base chance a bogus paper will pass unnoticed.

EXPERIENCE

Players gain experience for the general disposal of Hagonni troops and the rescue of innocent civilians. GM's may award special bonuses for well executed plans and smooth operation.

ACTION	EXP POINTS
Killing Zankee Troops	0100
Killing Zankee Sergeant	0200
Killing Hagonni Troops	0075
Killing Hagonni Officers	0400
Killing Hagonni Superior Officers	0650
Extracting Needed Information	0500
Making Fools out of Hagonni	0600
Disrupting Hagonni Communication	0400
Getting Hagonni Officers in Trouble	0650
Inciting Zankees to Kill Officers	0500
Capturing Same	x2
Destroying Light Vehicles	0500
Destroying Heavy Vehicles or Tanks	0850
Destroying Aircraft	0900
Disrupting Military Operations	0250
Rescuing Hostages	1000
Setting Up Other Partisans	1000
Smuggling Supplies and Weapons	0500
Destroying Spacecraft	2000
Destroying Space Station	5000

HAGONNI RESPONSE

As soon as the resistance strikes a target the Hagonni military is alerted and responds with troops and equipment. The time of this response is varied depending on location of the attack and the personality of the Hagonni officers in charge. Initial preparation is 10 +d6 minutes. In general, the occupation forces can arrive in 5 +3d10 minutes. This can be modified by the GM to suit the situation.

Forces that arrive are usually Zankee units with a smattering of other types that are common to the area.

REPRISAL

Response to resistance actions can be swift and adverse. As the Hagonni refuse to admit they are under assault far behind enemy lines. The news of the damage would affect morale and their political positions on the captive worlds. Commanders, fearing reprisal from higher commanders will often cover up the incidents. Roll a d100 for the open reprisal result of successful attacks on Hagonni positions.

01-50	No Reprisal
51-75	People are arrested and released.
76-85	People are arrested, a few sent to prison as an example of supporting the resistance whether they did or not.
86-97	Food supplies are cut and people are offered rewards to collaborate.
98	At least d10+2 people are held to be shot unless rebels surrender.
99	At least 5d10 are held as well as #86.
00	At least d100 +10 are held as well as #86.

FATE OF PRISONERS

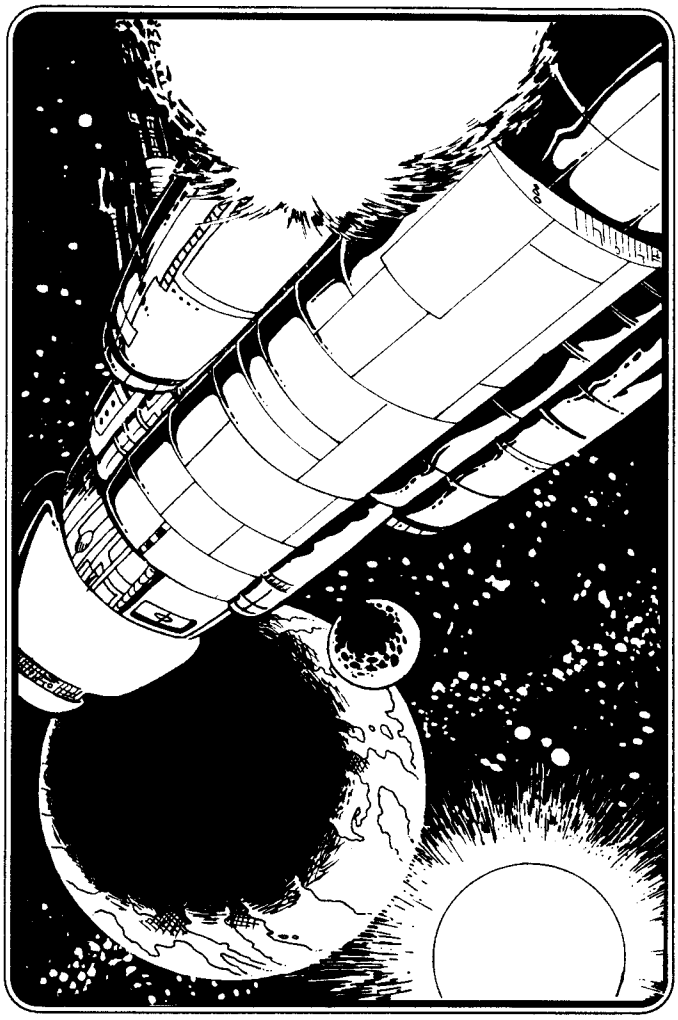
01-50	Prisoners released.
51-75	Prisoners sent to relocation camps.
76-89	The prisoners released after 10% are shot.
90-00	At least d100% of prisoners are shot.

ZANKEE TROOPERS

Zankee troops are the backbone of the Hagu Empire. An old proverb taught to Hagonni military states, "If you have to do it, use a Zankee."

Most Zankee are perfectly suited for the military, having the general intelligence of a brick except for matters relating to their skill as a soldier. These brutes take orders literally and have no second thoughts about murder, pillage, and eventually advancing to the rank of Sergeant.

One surprising aspect of the Zankee thought structure is their concept of Military Honor and Command. Hagonni commanders understand this and are often brutal to their troops and kill them as examples. Zankee troops respect this command structure, often challenging to the death a Zankee Sargeant who has shown cowardice or grown too old to fight.



STEALTH SHIPS

These small craft are virtually undetectable. They are transported by virtually any of ISCO's current starships, except, of course the Moscow Class Freighter, which must undergo extensive re-fitting in order to transport these craft due to design incompatabilities. They can transport a crew of 24, and when launched, travel toward a pre-programmed target. Utilizing pressurized Hydrogen as a propulsion system, these ships leave no discernible 'trail' to denote their passage. Built with the newest silicon-plastic stealth alloys, these ships are undetectable by any known means of deep space or planetary detection, other than visual sighting.

INCOMING PROCEDURE

On more densely populated or higher tech worlds the ICL utilizes ships with the fastest FTL drive systems. These vessels are one-shot devices, completely automated and set to wake its passengers only after drive and phase stresses drop to zero. As the ship enters the atmosphere of the target world, the ship literally disintegrates and "Drop Pods" are released. These Drop Pods are capable of transporting one person through the atmospheric barrier of the planet, upon where the Pod releases it's contents, to drop to the planet via parasail. The pod is a cryo-chamber that wakens its occupant at re-entry. Once on the planet surface, the team regroups and heads toward their objectives.

THE CHILDREN OF BRYCINON

Forty five years before the advent of the Hagonni, the Orban of Brycinon enjoyed a progressive civilization with a technology that neared a terran twentieth century equivalency.

It was a time of high exploration. Years of research and an aggressive space program had placed a large station in orbit and a colony on their cold third planet. A star drive had been tested and their first starship was ready to open the vast reaches of space to the Orban people.

The Orbans cheered as they watched the Crown Prince and 240 crewmen board the 'Light of Brycinon'. The ship left the safety of thier solar system in search of the unknown. The Orbans waited for its return. A year later two more ships had been sent out and by this time, the 'Light of Brycinon' was long overdue. Finally, four years after the 'Light of Brycinon's departure, every news net on Orban reported the sighting of the fusion torch of a starship heading home. As it neared, the Orbans could see that it was the second overdue ship, the 'Hope of Brycinon'.

RETURN

The purple carpets rolled out, and flag bearers stood alongside the carpet, their flags held high, as the population waited. The ship's shuttle landed gracefully at the makeshift starport. The collective population of the world held their breath and watched as the hatch to the shuttle opened.

The Orbans stood in shock as they saw what emerged from their ship. It was the Hagonni.

FRIENDSHIP

As they arrived at the Main building of the starport a silence fell, and then the announcement came:

> **"We are the Hagonni."**
> **"Your World and People have been chosen for the Glorious Entry into the Hagonni Sphere of Prosperity. You will work with us to help spread the Sphere across the Galaxy."**

The Orbans smelled a rat and said "No thanks" as poli tely as they could, as was their way, and then with stern determination as the the Hagonni insisted. The Orbans still refused. The finding of their starship 'Abandoned' bothered the Orban greatly. In a week a Hagonni task force arrived.

The people of Bricinon began to protest and ordered the Hagonni to leave their star system. The Hagonni responded in turn with the nuclear annihilation of Keisonna, one of the great educational and art cities. The Hagonni immediately blamed the Orbans for the disaster, saying that a Hagonni shuttle was destroyed by the Orban Government, and that their corrupt social system was run by criminals, that it must be eliminated in the name of the workers of Brycinon.

CAPITULATION & RAGE

The Orban people knew otherwise, they liked their system of government and vowed that it would never fall into corrupt hands as it had in the far past. The Orbans had been struck a hard blow to their social structure. They considered their young to be their future and they sat dumbstruck as the Hagonni murdered 650,000 individuals in the blink of an eye with the destuction of Keisonna. Rather than risk more destruction, they began a resentful cooperation with the Hagu to join the 'Hagonni Sphere of Prosparity'.

UNDER THE HAGONNI

The technology of Brycinon was retarded by nearly a half century. The Hagonni, forbidding home computers, copiers, data transmission, and most of the higher-tech electronic conveniences, completely control Vid transmission and created a 3-channel barrage of propaganda on local, regional, and world level. As 'treats' to the population, they show Politically Correct films and occasionally allow the King and Queen to be seen in highly controlled, staged settings.

HAGONNI LAW

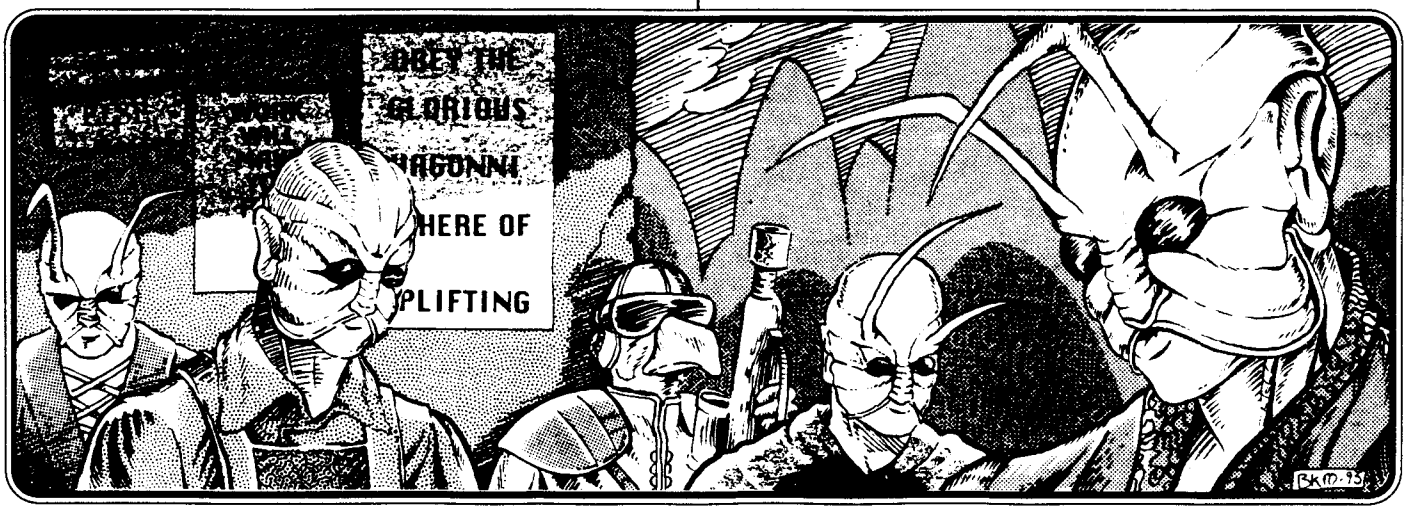
Under Hagonni law there are three possible reactions to offenses: Community Service, Beating, or Death.

The law of the Hagonni is simple:

Obey the Hagonni, or else.

OFFENDING THE HAGONNI

Disobeying the Hagonni or other minor civil infractions earn the offender a checkmark and three months of community service. A second checkmark, and the offender is turned



over to the Zankee Community Ethics Brigade, and literally beaten to within an inch of their life, THEN, the offender is given six months of community service. A third checkmark gets the offender another beating by the Zankee Community Ethics Brigade, and a harsh work sentence of a year or more. With more than three checkmarks accumulated, the offender is simply executed. Every 2 years of good behavior gains a deletion of a checkmark.

ZANKEE PEACEKEEPERS

Generally, a city is allowed to function from sunup to sundown, and then a curfew comes into effect. After sundown, Zankee Truck Patrols roam the streets. Each patrol consists of a Junior Hagonni Officer and a Zankee Sergeant with 6 Zankee Troopers.

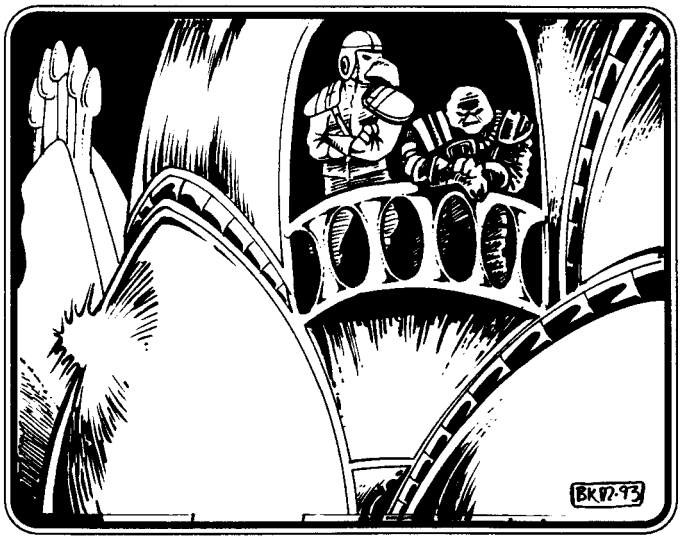
Any citizen found in the streets at night are required to have a Night Pass. If they don't have a pass, they are arrested, or beaten into oblivion by the Zankee Troopers if the Junior Officer doesn't want to do the paperwork. They also conduct household raids for subversive material including manuscripts, books, high tech equipment and weapons. Often the Zankee squads are quite overzealous and have become 'Judge, Jury and Executioner' on the spot. The Hagonni generally turn a blind eye to this.

POLITICS

Brycinon had a long feudal period that eventually created 32 Noble Households. Each Household gained a vote and elected a Royal Family. Over the centuries the Royals were guided by the council of 32 who kept their word to help each other and ensure the continuation of the Royal Family. With their extended family system, the Noble Households would adopt young from the commoners and ensure their genetic ties would always be able to be traced back to the people.

DISPOSAL OF NOBILITY

With the arrival of the Hagonni, the 32 Households were scattered to the four winds and eventually the Nobles were tracked down and either imprisoned or executed. The Hagonni called the Nobles 'Social Parasites on the People', filling the airwaves with propaganda and branding them as terrorists. Only the Royal Family was spared, kept under house arrest by the Hagonni Planetary Governor.



SACRIFICE

As Brycinon came under the claw of the Hagonni, they were informed they must sacrifice for the good of the 'Sphere of Prosperity'. Little by little the freedom and technology was frittered away to a point where the Hagoni were absolute masters.

THE UNDERGROUND

Due to the protective nature of the Orban, especially of their children, few wanted to 'upset the apple cart' and fight back. The Hagonni realized this early on in their takeover, and used it as a wedge to help keep the angry and smoldering population at bay.

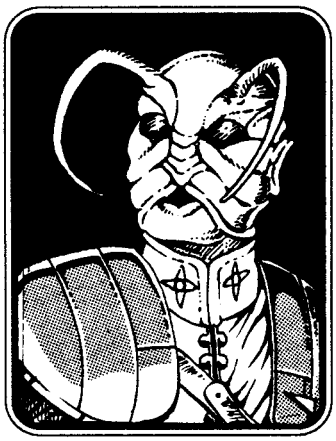
Over the years a small underground has arisen to fight back in quiet ways. Most involve simple industrial sabotage that cannot be traced. Other radical factions are hitting the Hagonni with captured weapons. These incidents are hushed up by the Haganni, and generally not reported.

"Yes, yes, we are glorious flagbearers of interstellar cooperation and hope.

The Hagonni are looking out for the best interests of the people here. They will help us march the long road across this galaxy, across oppression, and together we will have prosperity.

Nobody willstop us on our quest!"

General Vreen
Bricinon Liberation
Commander



ORBAN SOCIETY

Before the Hagonni takeover, the Orban were a happy people, confident and peaceful.

One Orban tradition was to give a business card to someone you were being introduced to. Inviting someone to lunch was a tradition of business, to get to know them and their company. Dinner with the family was almost sacred, a time of talking and socializing with children and close friends. Flowers were given to everyone for any reason, along with potted plants.

THE WORKERS OF BRICINON

The workplace was built with pride, and 7 hour workdays with an hour lunch were the norm. Employers helped their employees, taking them in as if they were their own children to be watched and protected.

Health care was free to the citizens, and Orban physicians were required to be certified by a board of their fellow physicians annually to keep their license, Only a limited number of licenses were granted, and those that were licensed were considered the best in their field, given a relatively large salary by the government for their services.

Those not certified became assistants, or went back to school, to educate themselves further. All physicians were required to take what would equate on Earth to the Hippocratic Oath. Educators and scientists were as respected as doctors.

SOCIAL POLITICS

Socially the 6 racial or ethnic groups that made up the Orban population were considered equal.

LEGAL SYSTEMS

Criminals in the society were re-educated. Repeat offenders were sent to an island community until they reformed. Violent criminals were imprisoned on large estates in the hope of eventually helping them, or allowing them to take their own lives in the shame of their crimes.

ENTER THE ICL

Brycinon has been targeted for direct ICL action and the dropping of 100 operatives to help ferment revolution. Nearly a hundred light years into Hagonni space, it is a critical center for Hagonni Phase Drive Crystals. These crystals are difficult to produce and shape, needing a year of fine tuning by skilled craftsmen. The production rate for Bricinon is 500 crystals a year and the Hagonni who commands and ensures the yearly shipment gains special privilege and reward for his services as well as a lavish estate.

DROP NIGHT

Set and secure in their rulership, there was little warning that Hagonni Orbital Defenses would be buzzed by an unidentified ship that seemingly exploded in the planetary atmosphere.

Commander Vreen, suspicious of the incident begins a full run of propaganda to the population that claims a decisive invasion had been repulsed by the heroic Hagonni. Forces of the decadent 'Hooman Izko' Empire and their slave worlds have been destroyed.

OPERATIVES LANDING

The first few hours of landing are critical to ICL operatives. They must equip and find a hiding spot or blend into a populated area. From their landing spots, they triangulate and link up until the team is complete.

At this point the Enemy Stars program takes effect. This may be either damage to the Hagonni or a specific objective. In the case of Brycinon, the objective is to slow or destroy drive crystal production, to steal the crystal production if possible, or destroy it in transit to the Inner Hagonni Sphere. Secondary instructions are to make contact with Brycinon resistance and start an armed revolt against the Hagonni.

The only communication between operatives on Brycinon is inter team. The 6 teams will not communicate unless it is a critical emergency. During the year on the world all communication with the ICL will be severed.

Characters have a year to accomplish their goal before being picked up by a T-Series Stealth ship.

GM NOTES

As characters work towards their goals, run them through fast paced adventure and a continuous string of problems that may include:

01 DAMAGE TO THE DROP SHIP

The drop ship is hit by a Hagonni satellite and severely damaged. The wreckage tells the Hagonni that they have visitors.

02 CAPTURE

In some way a team member has been captured by the Hagonni locals. Not knowing what they have, they unwittingly give the other operatives 48 hours to rescue their teammate.

03 SIMPLE ARREST

For some civil infraction a character is assigned to a chain gang garbage detail under the Zankee.

"Work hard for Sergernt Kargak, you live and get food. Good place to sleep near furnace, Haul much garbage, work, work!

Move cans, load on truck, faster, you fall down I hit, no food, behind quota, give to troopers for sport.

Say..what you find? Tastee bit? Give now!

Kargak
Garbage Martial

04 FRIENDS

Rescuing an old man being beaten gives the players a friend, Kanal Bliraaaga Lleme IXX one of the Lords of Brycinon who is hiding and has a contact to the rebellion.

05 ALIENS

Long suspected by the ICL is that the Hagonni are involved in a major conflict on their Western border. Other races may have been taken to Bricinon for imprisonment or be working under the Hagonni thumb. Some may be friendly to the operatives but the risk always exists that the alien race is allied with the enemy.

06 PRISONERS

Gaining information from Hagonni officers can aid operatives and speed their mission. As the Hagonni is generally a devout coward, they tend to 'spill the beans' at the slightest use of an ICL Combat Knife. Near the end of a mission, it's always worth a pay bonus to bring back a high ranking Hagonni or two for questioning.

07 INFILTRATION

An operative is noticed by the Hagonni and made into an errand runner. Little do the officers of the enemy realize they have an agent in their midst. While this separates a member from his team, the information gained can be valuable. Any communication with his or her team must be a covert process.

08 DESERTERS

An interesting possibility are enemy deserters who wish to leave the military life behind or fight against the policy of the Hagonni Empire. Reasons for this can stem from religion to personal disillusionment with the military. If trustable they can be extremely important. Invariably these are always Hagonni because Zankee are far too dumb to realize their life isn't what it could be.

09 REBELS

By accident the team crossed the path of rebels bent on damaging the Hagonni regardless of the jeopardy they put themselves in.

10 NPC CHARACTERS

Friend or foe the NPC characters are the core of the game. Develop the friends of the agents as well as their enemies. An NPC can also be other ICL operatives from destroyed teams.

IMPLANT OPTION

Remember that most agents have micro-communications gear controlled by AI. All have the option of communication implants behind the ear. These can also become a beacon for location within 1000 feet of range. They are switched on or off by touch and have a range of 4 miles.

IISCO:

InterStellar Intelligence Service (ISIS) Covert Operations

The InterStellar Intelligence Service was first conceived as an adjunct to the ICO Space Navy soon after contact with the Hagonni, and became an independent arm of ISCO in 2438. It was ISIS Stealth ships that delivered the ISCO Marines and Kymnarian Rangers to the Bezwat Colony in the final days of the Colonies existence. ISIS was later absorbed into the ICL in 2448, and their early work on stealth ships was expanded upon by a somewhat paranoid ICL high command.

Since then, ISIS Covert Operations has been involved in the accumulation of information, both internal and external to ISCO Space, and the delivery of agents to unfriendly worlds and places through their small, but potent fleet of stealth starships.

ISISCO "Daily Operations"

The main ISISCO Stealth Port is unknown to the general public, and to most of the crews who have served on the ships. Which is understandable as the various ports are located near brown dwarfs or, in the case of ISISCO Nemesis Base, in the deep space between stars.

Activity on the ports consists of crews rotating off a two year mission going on a six month leave, or ones who are just going on a two year mission. Shipyard crews are few, and the majority are shipped to the ports in anticipation of the arrival of a ship.

All personnel who serve and work on the Stealth vessels are volunteers who've met the rigorous requirements and background checks on them, and, for the crews of the Stealth ships remain unattached maritally. The long separation period that a mission covers, has proven hard on relationships outside of the service, and inside the service as well.

This is not a severe hardship as it might seem to some. The average crewmember will spend only six months of the two year mission awake. The remainder of the time, he is in cryosleep, ready to be awakened at a moments notice.

Stealth ships are equipped with the latest Phase Drives, so their time in Phase Space is kept to a minimum, and their time on station is at a maximum. Each vessel is sent to patrol a world, seeking out illicit or enemy starships, and report their position. While they are equipped with formidable weaponry, a Stealth ship's primary task is to accumulate data and information, and report such to the appropriate naval authorities and to ISISCO Data Operations.

While on station, the Stealth crew maintains a listening post, tracking incoming and outgoing ships, monitoring ship to ship, ship to world, world to world communications. Their are four "watches" of monitors, one on duty for six months, while the other three are in cryo-sleep, awaiting their watches. The engineering crew is defrosted once a month to check the engines and other equipment, or when a major problem has occurred. The command staff is rotated every three months, alternating between the captain and his command staff, and the first officer and his command staff. Every mission out, the membership of the two command staffs are mixed to prevent cliques and other problems from forming.

The officers of a Stealth vessel go through an even more rigorous selection process and training than do their crews. They have a level of independence unheard of since the time of sail before the invention of radio.

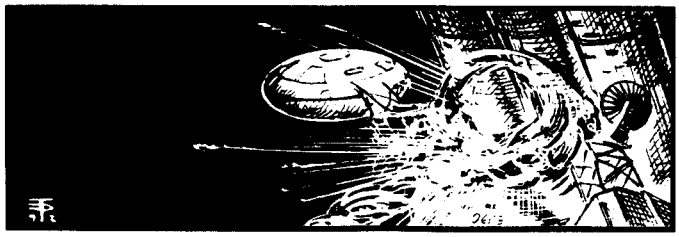
Each commander controls an arsenal that could lay waste to a small continent, so major controls and obstacles are placed in the way of his going rogue. To fire weapons, the first officer must also be awake and functional, and agree to fire weapons. Both staffs are needed to man and run the weapon systems of the vessel.

ISISCO T SERIES SHIPS

The mainstay of the monitoring ships is the Arecebo class Deep Space Communication Interception Ship. It boasts four large radio dishes that give it the ability to "hear" even the faintest transmission.

Next in line are the T–series Stealth ships, T–1 through T–7. These are the armored fist of the Stealth fleet. Unnamed except for the occasional crew nickname, the T–series has a long pedigree. The first of these is the old reliable T–1 class. This ship set the design for future fighting Stealth vessels. It is a one hundred foot globe made of a plasti/ceramic composite, blown like a glass ball, and shaped with nitrogen jets in zero-G. The hull is proof against most asteroidal collisions, and impacts from kinetic energy weapons. The surface is covered with radar, light, and EMR absorbant ceramics. The ship is kept cool by a large "heat well" of Liquid Nitrogen, which siphons off the heat of the ship, keeping its surface at a warm 15° Kelvin. When in full stealth mode, the T–1 has a sensor cross–section of five feet, and the temperature of a warm asteroid. Also, the T–1, like all its predecessors, operates with its grav plates off, the interior in zero–G. Only when under power, does the grav field come on, providing the inertial dampening that a high speed vessel requires.

The T–1 houses a fairly sophisticated sensor array, that is deployed outside of the ship when on station, and is armed with four missile tubes that launch their contents by compressed gas. Later modifications to the series changed this to a standard electromagnetic catapult system. The drive on the T–1 is an oversized Herschel and Wright Fusion drive, giving it one and a half the speed of a similar size ship.



The T–2 is similar in size to the T–1, one hundred and twenty feet in diameter, similar equipment, but has a very different drive. It has a mass driver for a drive, and the extra volume of the T–2 is used to hold the drive mass. The T–2's mission was to invest itself into an enemy system, and get as close to the home world as possible and target major industries for a possible sneak attack in the case of war. The original plans called for the entire crew to be in cryo–sleep until a set period of time when they would be defrosted to attack the world. The major complaint to this strategy was what if the world peacefully enters ISCO or is conquered by ISCO, then the ship would be firing on a ISCO world instead of an enemy's. The mission profile changed to the now familiar two year mission. The T–2 class ship would stay in orbit near the world until its mission time was up, or when a message drone broadcasting the attack codes appeared in system. ISISCO will not say which worlds had a silent T–2 watchdog or who still does.

The T–3 series is an oddity in the T–series. It is a pure attack vessel, designed to infiltrate enemy space and deliver devastating attacks on enemy industrial operations. It is capable of three times the normal speed of conventional space vessels, and deploys the very latest in "drop and forget" weapons. It is two hundred feet in diameter, equipped with six missile tubes, and four trashcan dumpers, the nickname of canister round deployers, to inhibit pursuit by unfriendlies. It is also the only stealth vessel that has an active sensor system, for close in navigation, maneuvers, and weapons targeting. It is also the first to use the new radar/white light hologram surface coating that mimics a small, tumbling asteroid. Except at close ranges, the image is wholly convincing, and has fooled more than one sensor operator over the years.

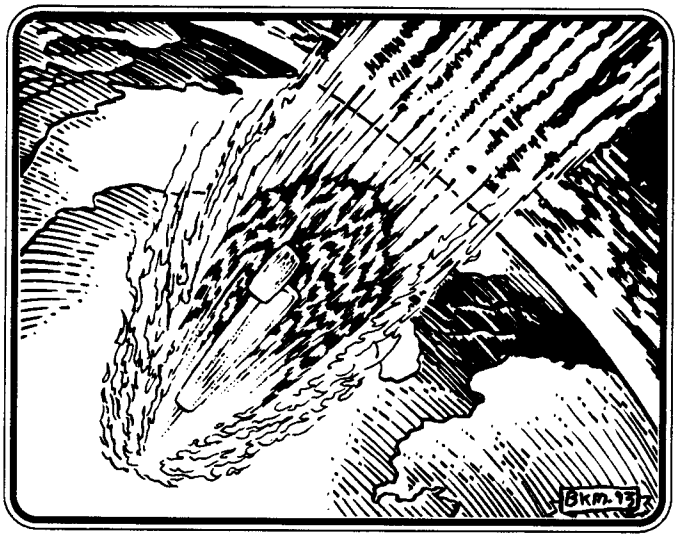
The T–4 series is the second largest vessel class of the Stealth fleet. Five hundred feet in diameter, the T–4 carries the smaller Dropship and Drop Pods that are used in covert operations on the surface of worlds. The T–4 is the workhorse ship in the Enemy Stars program, ferrying in agents and picking up the survivors at the end of their missions. It is equipped with only four missile tubes, as the remainder of the space is taken up by the various Drop Vessels.(See Dropships) It is also equipped with a dual drive. When in friendly space, it uses its fusion drive, when in enemy space, its massdriver propels it through space. The mass driver can also double as a weapon in emergencies.

Next in line is the T–5, larger than the T–2. Two hundred feet in diameter, it is quickly replacing the T–2 in its role of system watchdog, though not of enemy systems. The T–5 is the only stealth ship who's duty is to protect the major worlds of ISCO space. Armed with 5 missile tubes, the T–5 has the ability to lurk along the major system entry points and silently trail after arriving ships. Earth system has over twenty T–5's at one time patroling the space lanes, keeping an eye out for unfriendly vessels. The T–5 series is the only Stealth vessel that the ISIS will admit to even have deployed in service. A T–5 has even been seen, albeit at a long distance, when one had to dock with the ICL port on Alverez station. The only picture gotten of its visit, was a thermal image taken of the T5–0914 on approach to the ICL docks. All four of its radiator panels where deployed, dumping excess heat from the damaged ship.

The T–6 is the smallest of the fleet, it being a fast message boat, equipped with the dangerous Nordholm Quantum Jump drive, and a oversized Writcle–He' Che turbine fusion drive. It can push 75% the speed of light, five times the speed of normal vessels. It is totally unarmed, relying on its speed to outrace its foes. The ship is usually attached to ICL Navy fleets on maneuvers and is used to send messages back and forth between the fleet and Navy headquarters. The ship is sixty feet in diameter, has a crew of four, and is mainly fuel tank and drives. The crew cabin is also the entire lifesystem, it has been described as a Phase boat or shuttle.

The T–7 is only known to the general public as an projected ship design for the future. There are four of these behemoths. One thousand feet in diameter, the T–7 is a major weapons platform, designed to destroy worlds. It has the largest fusion drive ever built by man, and is equipped with the latest in ISCO high technology. Despite having twenty fast cycling missile tubes, it is not very good at ship to ship combat, and is usually escorted by two to three T–5's. Each missile is rated in the megatons, with a few gigaton

monsters for cracking the crust of worlds. Construction of a fifth and sixth T–7 is in process, in hopes that the threat of such vessels of destruction will deter Hagonni belligerence.



DROPSHIPS

Part and parcel of the Enemy Stars program is the ability to drop agents onto alien and enemy worlds and to be able to pick them up again at the end of their term of service. Dropships of various types have been designed since the first years of the ISCO Navy and Marines. Most were unsuitable to the Enemy Stars program, as they used various forms of high energy braking that cause the Dropships to leave behind a telltale plasma trail that would bring the attention of the local authorities.

SURFBOARD

Several designs where put forward and tested. Most could be tracked by eyesight, others by the radio noise their descent created. After many tests, two systems where chosen for finally testing: the Surfboard and the HiveDive.
Surfboard: A fairly simple system for delivering the agents. Each agent would be encased in an ablative ceramic foam wedge, with small thrusting controls and aerodynamic guidance systems. It burns off most of its atmospheric energy entering the upper atmosphere, were the plasma trail is lost in the planetary radiation belts. Slowed down sufficiently, the pilot guides the craft to a landing in a secure area, the craft destroyed by chemical reactions.

Well received by most, it was criticized for the level of training required by the passengers of the Surfboard to operate the craft. Also it has no ability to do major course corrections, and would scatter the team over a large area.

HIVEDIVE

Even more simple than Surfboard, HiveDive consists of several interlocking cells, mounted on a large ceramic plate, designed to burn off quickly on atmospheric entry, reducing speed and plasma trail in a few seconds. After the plate burns off, the cells spread out, forming a large open structure glider. This is then guided by the team leader to the landing site and destroyed after coming to rest.

Liked because it allowed the team to arrive in a group, disliked because it presents a very large target for ground forces. Both designs were combined to form BeeHive.

BEEHIVE

BeeHive is a group of Surfboards attached together with struts made to burn off in seconds after entry into the atmosphere. Once in the denser air, the now separated Surfboards fly to their rendezvous point, and chemical destruction. It is inserted into a braking orbit, to bleed off as much velocity as possible, and it is equipped with a solid fuel braking rocket, pointing forward through the cluster, to help slow the BeeHive down to a minimum entry speed.

RETURN SHIPS

Getting the agents on the world is easy, the hard part would be in getting them off. There is no easy way to lift a man into orbit or near orbit, without a working, modern spaceship. The BeeHive could deliver the agents onto another world's soil, but to get off, another ship would be needed as the agents could not take the chance of having their ship being found. The main advantage over the Dropship in this case, is the fact the agents will be on the world working to get themselves off, and helping to cover the tracks of the recovery ship. The ship design to pluck agents off a enemy world was the Opus. The Opus is a rigid skeleton, lighter than air airship/spaceship. It floats to the surface, at incredibly slow speeds as the atmosphere is not its best element. The Opus is superb in space, as the hydrogen gas used in its gas cells, double as its fuel when in space, though more conventional fuel tankage exists on board.

Of the conventionial dropships, ISIS uses three different models. Conventional dropships are used on low tech worlds where strange lights in the sky are not enemy ships, but omens.

GALLANT

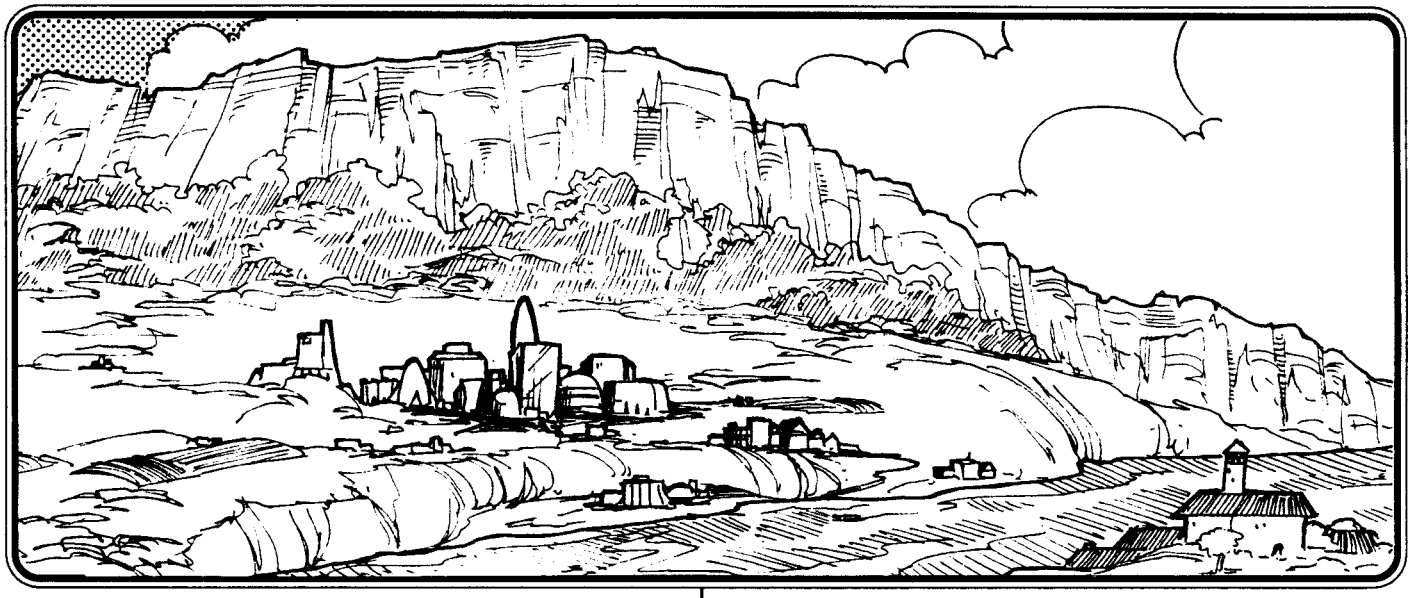
The Gallant class is a standard slow approach Dropship. It has a modified wedge structure, and enters the atmosphere at about Mach 10 to 15. It is covered with a ceramic alloy that adds strength and heat protection to the Gallant. The ship can carry up to one hundred troops, or thirty troops with vehicles. It is capable of both VTOL and STOL flight modes, and can land in very rugged territory.

ROAD RUNNER

The Roadrunner class is a fast approach craft, it never lands, but instead drops its cargo over the target area. It enters the upper atmosphere at Mach 20, slows to 200 mph at drop height, then screams away at Mach 15 after depositing its passengers. It is sleeker than the Gallant or Hughes, which subsequently means that it can hold only forty troops or twenty troops with vehicles. It uses a high energy ramjet to power its flight in the atmosphere, switching to a fusion drive in space.

HUGHES

The Hughes is the largest Dropship in the ISIS inventory. Capable of transporting one thousand troops and their vehicles, it is a globular ship, and enters the atmosphere on a plume of fusion plasma. The Hughes is designed to double as a base of operations once grounded, so it has more then the normal allotment of communication gear and tactical computers. ISIS has only two of these behemoths, and is looking at a third for future operations.



ANYWHERE BUT SPACE

An FTL:2448 Starter Scenario

Anywhere But Space is a starter scenario to start a group of adventurers on the road to space.

CHARACTERS

First, allow your players to create a group of human and/or alien characters. Equip them and give all d10 x1000 credits or d's in their bank account. Let them equip themselves with personal items or whatever they wish.

They begin at the Clayton City Starport on Peridot, a human colony.

PERIDOT

Peridot is a human colony that has been settled for a long time. Industrialized, and continually maintaining itself with natural replenishment, Peridot has the reputation as one of the most successful colonies in history. Peridot is ruled democratically with a council of mayors, provinces, and a World Judicial Council. As a full member of ISCO, it may call upon ICL judges and resources to help settle disputes.

GEOGRAPHY

Physically the world is 98% Earth standard with lush forested continents, mountains and a temperate climate. Peridot enjoys short, mild winters and somewhat cool summers. Three large continents are ringed with beaches. Native life on Peridot is, for the most part, benign with only a few toxic species of plant and marine life.

RACIAL MIX

A good mixture of races from earth with mixed tradition and values, they have adapted well to the arrival of other species.

GOVERNMENT

In theory the government functions well, and the people are happy. In reality, Peridot's legal and social system is a corrupt bureaucratic morass controlled by a group of crime lords that have sprung up within the last half century.

CUSTOMS

Culturally, Peridot shows no single specific style or culture. For the last century brick construction in the style of the Earths Early 20th century has been most popular. Most Peridot cities are named after Gems or well-known Earth cities.

PROBLEMS

Disputes that catch the eyes of the crime bosses are dealt with quickly. Nobody wants the ICL to stage a takeover of this garden paradise. For this reason, social programs are progressive, work is plentiful and the people are generally happy. They understand the system and use it to their advantage.

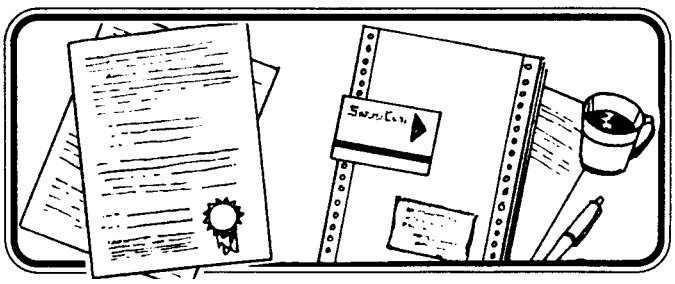
If a bribe is needed now and then, that's part of life. On occasion the crime bosses war with each other, but its usually quite covert and many legitimate businesses thrive next to less legal ones.

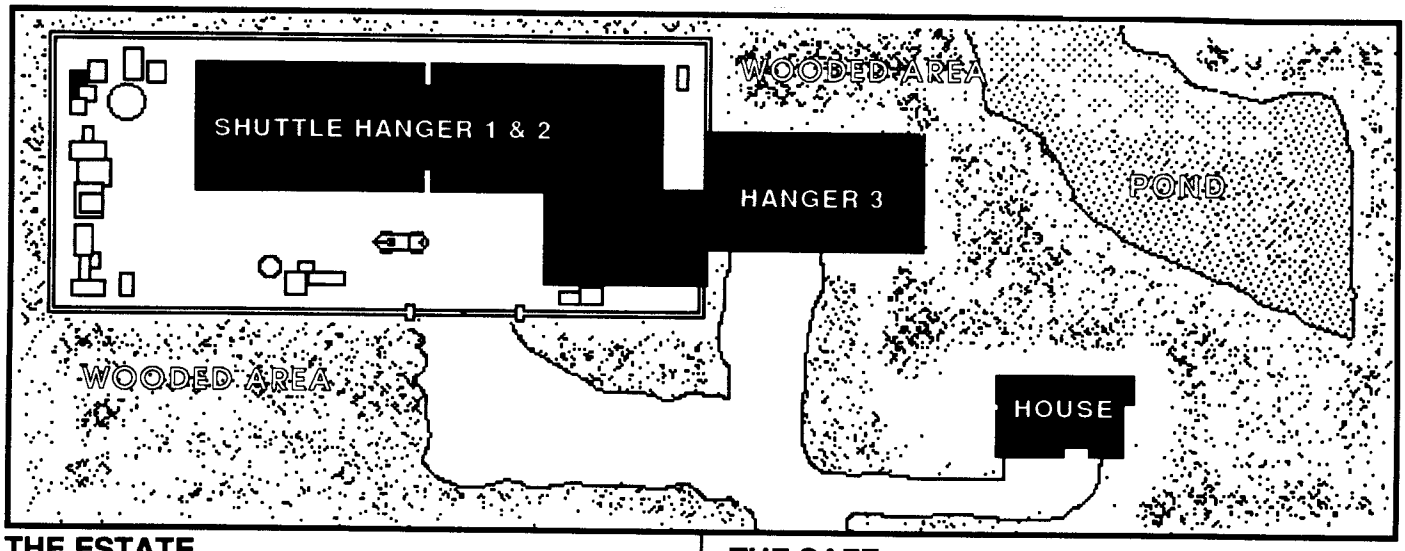
DEATH

Select one of the characters (a human). Inform him or her that an inheritance awaits them. His or her Mother's Brother 'Chet' has passed away and left them an estate. His official cause of death is listed as heart failure and there is no evidence of foul play and absolutely no reasons that it would become a police matter.

INHERITANCE

Called to the law offices of Zmerk, Greenberg, and Kar'Hiwero, the paperwork is signed and the player gains a property and estate deed and a security clearance programming card.





THE ESTATE

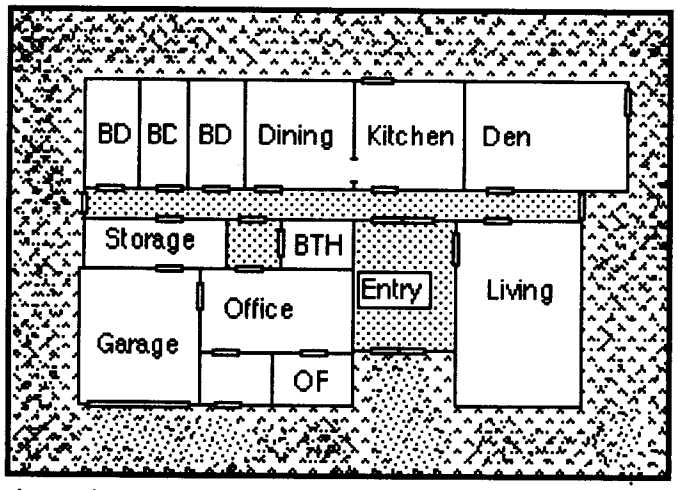
The near country address turns out to be 10 acres of woods filled with junk and space salvage. Three hangers contain fragments of 3 shuttles and quite literally, TONS of miscellaneous parts from aircraft, spacecraft, and who knows what.

Unknown to the new owner, is that the yard is also a refuge of wildlife. While most are skittish and benign, there are a few nests of Terran Hornets, Peridot Gouge Bats, and a family of Beta Neo Raccoons. Beta mutations are most often tool using, and nearly as smart as humans, prone to defend their territory and even set quite elaborate traps. The GM should elaborate on this, and really make the Beta Neo's a continual pain in the players side.

The junkyard is protected by 4 Autohounds and a Security AI system that is reprogrammable or set to ignore anybody with specially coded wrist bands.

THE HOUSE

There is also a modest size home located on the property. Also, a large room attached to the house seems to be some sort of office. The home has been stocked and kept in pristine condition by cleaning robots and a wheeled Robotic AI called "Helper". While Helper needs minor repair, he has a warm and overprotective personality and treats the new owners like children. Helper still is waiting for the master to return.



THE SAFE

Chet's safe contains a few family items, a metal part with an ID tag, and an optical sound disk labeled 'Sound of the Stars' by the Fomalhaut Philharmonic.

MUSIC

The first five minutes of the tape are perfect, the next 30 are an odd hiss of interstellar hydrogen and a second noise that sounds like a ships distress beacon.

PART

The part is an alloy arm from an airlock retraction mechanism. Nothing special by any means, but the tag has a serial number that does not match the engraved serial number that is on the mechanism.

Running the part through the salvage system computer reveals it is was last registered to a long-missing Kansas Class Starship.

The ICO 0007 Key Biscayne was listed as missing nearly two centuries ago. There is no mistaking this airlock retraction mechanism was a part of the ship, and forgery of the part would be a useless gesture. The tag is a string of numbers that any characters with a Space Navigation skill would recognize in a heartbeat. It is a plot for an orbit in the far D Zone of Peridot's star.

Now, there is little out there but debris. Over twenty years ago it was the orbit of a large asteroid.

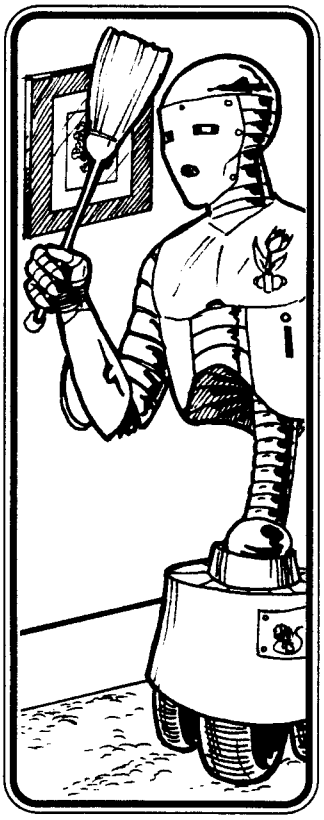
Attached to the mechanism is a simple brass key.

BREAK IN

If characters stay at the house, alarms sound in the late evening. Someone has gained entry to a lower window and is in the office where the safe is concealed behind a portrait of Earth's first lunar landing.

Confronting the thief will cause him to draw a laser and fire it, missing and setting a curtain to flame. At this point he will flee through the open window. If shot or captured he will admit to being Martino Andevi, a local thug with a long record and a tight lip concerning his reasons for burglarizing the office. He has a security band for the junkyard that belongs to Jorgo Serwas. If injured, Martino will die in the hospital under strange and unusual circumstances. If jailed, he's sprung within hours by unknown parties.

SECOND BREAK IN



The next night will result in a second attempt at a break in, in the early hours before morning. This time two individuals will be involved, both armed, and quite trigger happy. Helper will cross their paths as soon as they are in the house, getting in their way or causing an accident with a tray of steaming near-caff Either way, Helper will be sirously wounded in this fracas, and will cease to function. Repair him in d4 hours.

These individuals are also after the contents of the safe, and if caught, will say absolutely nothing. If the police become involved, it will be found that these individuals have ties to the criminal that attempted a break in on the previous day-- Namely Jorgo Serwas.

RESERCH

Research shows that Uncle Chet was a well known name in asteroid mining and space salvage until 20 years ago. In 2428, Chet was involved with three partners in a mining operation on the edge of the Peridot system.

Their target was an unusual Ice Asteroid. Aware of the vast profit potential that this asteroid presented, the group took months to carefully chart the mile large long wedge of ice.

The incident report lists a premature detonation of mining charges and the fragmentation of the asteroid. The mining ship was critically damaged, and the two survivors called for help and launched their shuttle back towards Peridot. Boris, one of the three partners, died before EMR personnel could reach him.

RESCUE

EMR teams found the two survivors and charted the two ice fragments. With no threat to shipping, the largest 2000 foot piece drifted towards deep space, never to be seen again.

Back on Peridot, Chet was fined for unsafe mining procedures but was acquitted from criminal charges of Boris' death. His salvage license was also revoked for 20 years. He and his wife lived at the yard until her death in '46 and his in '48.

CHANCES

Chances are Chet was hiding something that involved the Ice Asteroid. At the point of his death he was drawing up papers to reenter the salvage field with a financing partner named Jorgo Serwas.

Jorgo was well known on Peridot as 'Pockets Serwas', the head of a 'less than legal' investment firm with links to the Interstellar Mob.

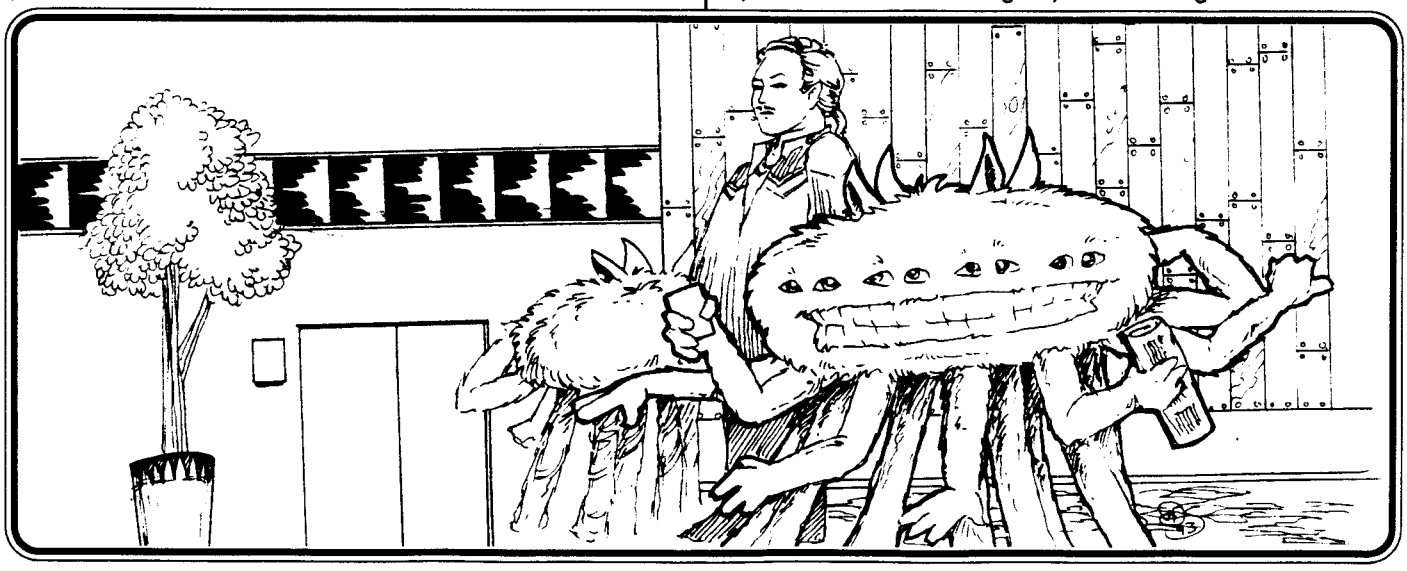
Jorgo was also found chained to an I-Beam at the bottom of a coolant tank last week. Research shows that his home was ransacked and his safe emptied. Friends of Jorgo are few, and all appear to fear for their lives if they talk about him.

Like most problems, tongues can be loosened with a hefty bribe. What little information that characters will get is: The name "Maxo", the guy with the Pink Air-Cushion Caddy Limo.

MAXO

Maxo DeMuria is the Godfather of Peridot. His hands are into every aspect of crime with his specialty of stolen goods and land grabs. Many say he holds the reigns of government and disposes of any who oppose him in a most horrendous way.

Maxo is an imposing 380-pound human with a pair of Bloxian bodyguards. He travels with a support group of 4 thugs and a host of hidden weapons. Legend says he has a violent temper that tends to sour milk in the next room and fancies himself a cut above the street life he deals with. In 25 years he has never been prosecuted and the only IRS (Interstellar Revenue Agent) that investigated him has be-



come his close friend and personal accountant. Some say it was out of fear, others believe him bribed over to Maxo's elite.

"Yeah, I'm the Boss, and so what? You got a problem with that? I run a clean operation within the law. I offer goods, services and security for the average business man.

The world government? The ICL? What worry? What's mine is mine. Cross me and you get what's coming. Kapish?

Maxo DeMuria

INDICATIONS

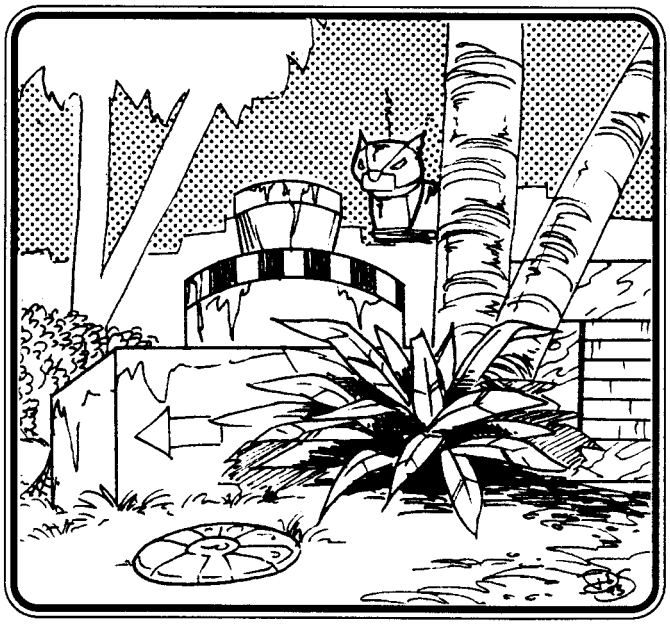
All indications should lead players to believe that there indeed could be a starship out there just waiting for someone to find her. The main problem is getting there.

SHUTTLE REBUILD

The only way for players to get to the Ice Asteroid's current position is by Starship and it will soon become evident that the goal will be increasingly unlikely due to the incredible costs involved in renting a star or system ship. With little evidence and a 5 million d price tag, bank loans are out for that kind of risk.

A second option is to refit and rebuild a VTOL shuttle in the junkyard and launch themselves into orbit. From that point they can attach themselves to a Starship heading in the right direction and hopefully detach themselves before the ship heads into Phase. This is an extremely dangerous gamble, as the shuttle is not deep-space capable, so this will be a one-way ride to the asteroid. With luck, there just may be a starship out there...if not...well, they won't be coming home with any ease.

The rescue of the characters will take a week and then they will be faced with criminal charges and monetary fines for deliberately putting themselves in jeopardy.



DEADLY BONUS

In the midst of scavenging, the group discovers a crate with an illegal Smart Missile with a non-nuclear warhead. This sophisticated AI Targeting System is a vehicle launched device, that the individual launching it can speak verbal commands regarding the target. The AI Targeting System will ask quite intelligent questions to determine the exact target it is to pursue. It will punch 20,000 points of damage into a target, and can be assembled in 5 minutes.

THE BOSS'S VISIT

While working on the shuttle, the Pink Limo will drive through the main gate. Raxnizz, the Bor'Cha chauffeur will ask the owner of the junkyard (whoever inherited it) to join him for a glass of wine inside the limo, and some small talk He guarantees that no one will get hurt.

Maxo will make small talk at first to get to know the character and then make an offer of $250,000 d's for the property, "...a generous offer!" he assures.

If turned down, he offers to be a salvage partner to assist on disposal of anything found in the yard. He will already have had papers drawn up to that effect and will provide 50,000 d's to help operations.

As this will also in all likelihood fail, he will show his true colors and threaten the owner, the owner's friends, business associates, and family as well.

REALITY

Maxo doesn't really know the extent of what is here but he suspects something is hidden within the yard and worth a lot of d's. His partnership papers are little more than a free license to take the property and throw the characters off the site. Before his death Jorgo bragged of making a killing and being in line for a million d's or more. He called it a 'lottery ticket from the stars'.

Maxo suspects Jorgo and the salvagers had found the missing Sundal Corporate Freighter 'Palo Alto. Over a century before the Palo Alto was lost in a phase accident and sought ever since. Its cargo was a ton of securities, gems, and Terran 'Old Master' paintings destined for an art exhibit on Peridot.

THE THIRD BREAK IN

Maxo's efforts finally pay off on the third break-in attempt, as an assault group launches sleep gas canisters at the house from the perimeter of the compound. Maxo and his thugs are then free to roam the house at will, breathing filters firmly attached. When players regain consciousness, they will find that the Airlock Retraction Mechanism, along with the attached key are missing. It is OBVIOUS that Maxo is involved as the players find a note attached to the door of the safe that reads: "I told you so...'M'."

THE POLICE

The police will be most unwilling to actually do anything other than say: "We're working on it.". This is mainly due to the large bribe that Maxo has given them to 'look away' from this situation. If players are persistant, the police will eventually arrest them on trumped-up charges of 'interference with an investigation', and 'obstruction of justice'. They will be held for 24 hours and then brought to trial. A modest bribe

to the jailer could earn the players an early release, as would a bribe to the judge.

CITY PROBLEMS

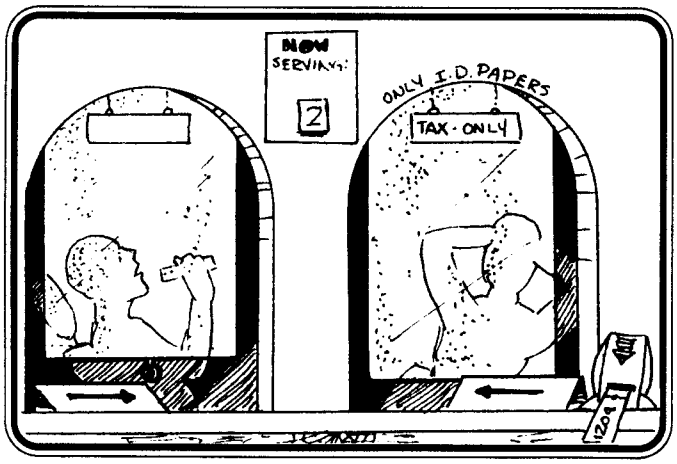
After Maxos visit the salvage yard will be visited again and again by city officials who will inspect and fine the owners. Citing everything from toxic waste, improper storage facilities, public eyesore, and environmental hazards to building code violations, wetlands conservation violations, licensing oversites and missing tax stamps. They will go out of their way to make the characters' lives hell.

LICENSE

City hall can be described as the 'dispenser of red tape' and players will soon be heading from window to window with dozens of forms to get a single piece of paper filed. These include Identification Papers, Tax Stamps, Approval Cards, and anything the GM can think of to complicate matters. Characters will be led on a merry chase around the 7-story building as offices open and close. Oh yes, the elevators are being repaired today, as well. Don't forget the lunch and coffee breaks of the city hall staff.

The only way to get something done, and players don't know this initially, is to pay a bribe and ask for an EZ form. A laser in the clerk's nose will also work amazingly well, and will do wonders for speed of processing. A Smart Missile aimed at the Mayor's mansion can REALLY speed things up.

By this time they will probably have realized that to fight fire you need fire, and with this high level of red tape, you need to bypass it --preferably with a flame thrower.



THE KEY

If players realize that the key that was attached to the mechanism is an important factor, they will obviously have to go after Maxo to retrieve it. They will find that Maxo has fled town, and was last seen heading toward the starport.

With possession of the coordinates as well as the key, players should figure out that things are not going too well in their favor.

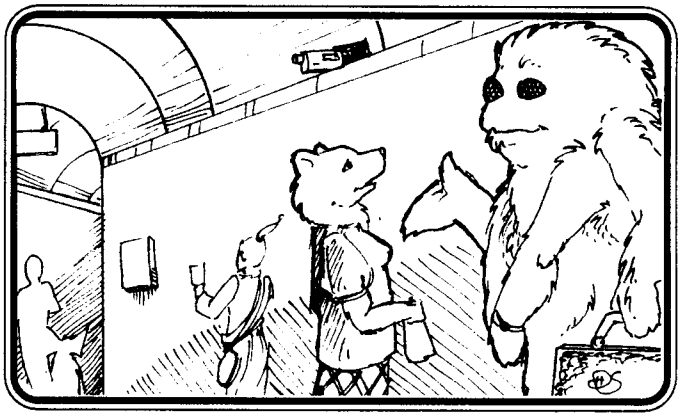
HISTORY OF THE KEY

The Captain of the Key Biscayne, Franklun Westwood was an antique car buff, who continually joked with the media about taking his fully restored 1968 Chevy Malibu with him. He considered the car to be his 'good luck charm', carrying his keys during the testing of the Key Biscayne.

LAUNCH

The hardest task of all to do is get a clearance from the starport to launch a VTOL shuttle. Maxo has quite effectively blocked this completely. The solution is to launch the shuttle anyway and pay the fine of 5000 d's.—IF they catch you.

Obviously the shuttle must reach orbit, but make the players use a few skill rolls to create the chance of a Shuttle Mishap. Make them really feel as if things could fall apart at any time, and really sweat this aspect of the scenario.



LINK TO A STARSHIP

The Peridot Orbital Facility is a moderately sized port with a small number of starships docked. Of the 5 ships there, three will flatly refuse to transport the shuttle, the fourth is unsure, and the fifth somewhat interested, but not sure of the legalities, and implied insurance complications that could arise should a mishap befall the ship.

An old Earth Corp Freighter, the wizened and grizzly commander, Captain Campbell will offer to drop them close to the site if the groups engineers work on his ship for the 12 days it will take to get to the site. He makes no other guarantees and is quite honest with the players. When he learns of the skill and bravery of the players actually launching a rebuilt shuttle (and being INSIDE it as well), he will take a genuine liking to the fledgling spacers and will do everything he can to make the trip at least tolerable for the new spacers.

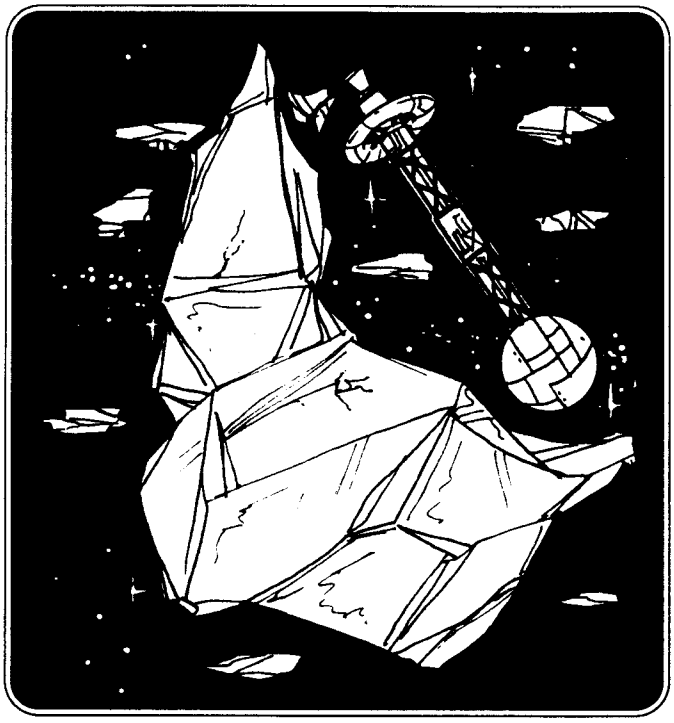
"More than obvious they have guts and the determination to get up here.

There's no reason we can't give 'em a boost in the right direction. Won't be much fuel and they will pay for it. Just hope they find what they are hunting for. May have some old equipment they can use.

Carson Campbell

STARSHIP LAUNCH

By the time the players are ready to launch, they will discover Maxo is hot on their tail and creates an incident or two on the station in order to stop their departure. This may include kidnaping, ambush, or trying to bribe Campbell, who smells a real rat and pulls a few strings of his own to hinder Maxo's efforts to rent a Space Tug.



ICE ASTEROID

The little shuttle will have its share of problems but will eventually finally reach the Ice Fragment. As they approach they find that the only thing out here is just the fragment. Give them time to realize the fragment is just a piece of blasted ice and rock. As they swing around the asteroid, they will discover the ice was shielding the view of a Kansas Class Starship drifting behind it.

THE SHIP

Boarding the ship is simple. Unfortunately, the batteries are long dead and the fusion reactors have been shut down and are in a cold state.

The original crew is still on the ship, now dead for nearly 2 centuries, frozen stiff and well-preserved, waiting to be returned to Earth for burial. They are a grim reminder of the dangers of early starlight, still in uniform with ICO patches and even frozen cups of coffee on their consoles.

What happened was a critical Phase accident. As the ship exited Phase Space the entire crew was hit with a devastating shock to their nervous system that killed them where they stood. A few members of the crew survived for up to 2 minutes and luckily one of the bridge crew initiated a main shutdown sequence. This saved the ship from its self destruct sequence.

REPOWERING THE SHIP

In a few hours, the reactors can be jump-started by the shuttle and within 2 hours, the entire vessel will warm and have a breathable atmosphere. At least an hour of fast hull patching will be necessary to plug a dozen leaks caused by meteor fragments. Remember that the inside temperature of the ship will take 10 hours to warm entirely. This includes the fuel bins.

The original crew must be placed in a cold room before they thaw entirely, and become a serious problem.

MORE PROBLEMS

As the characters secure the ship and finally get the sensors and electronics online, they realize they have company in the form of a deep-space Tug rented by their old friend Maxo and his goons.

In 12 hours he will arrive at the ice fragment and discover a treasure with more value than he could imagine.

THE BRIDGE

An hour of warming allows the ships mechanical systems to be reactivated.

The ships bridge is a confused scene of crew and the captain, frozen these past two centuries in the position of his last act of jettisioning a communications pod, has around his neck a single key that seems similar, but different to the one that was attached to the airlock retraction mechanism that Maxo now has.

THE MISSING KEY

Maxo's key is part of a two key system that controls the ships destruct sequence. The captain, in an effort to customize his starship, re-tooled the ship's computer and destruct access panel to accept the keys to his car as the system access keys. The key that the captain holds is necessary to operate the ship's computer systems, but the key that Maxo now posesses is necessary to disconnect the auto-destruct sequence that has been initiated because of the crew's death

When the ship was found , origionally, Chet took the single key from the Captain and overlooked the second around the captains neck.

Players will find this out, as a single viewscreen on the computer panel suddenly begin counting down from 48 hours. Tampering with the system will accelerate the count.

Any thoughts of dismantling the twin thermonuclear devices at either end of the ship would require d6 hours and a Skill Level of Nuclear Demolition 15. These devices are also armored and hidden.

SOLUTIONS

The solution to this problem is to get the key back from Maxo or to look through the captains posessions in his cabin. In a plastic paperweight on his desk is a duplicate set of keys. The plastic must be dissolved off the keys, melted off or hammered off as long as the critical key is not damaged. With both keys inserted into the panel and turned at the same time, the destruct sequence is canceled and control of the ship is turned over to the characters.

If characters have disabled the distruct system they can move the ship or rotate it until they have regained sufficient control to attempt to restart the engines. Their problem is to keep Maxo and his henchmen off their salvage claim.

THE OTHER SHIP

The captain of the other ship could easily use a laser to threaten the derelict ship. Now held at gunpoint by Maxo, he flatly refuses to give the Crime Boss the access codes to his weapons control station. Maxo knows harming a starship's captain would bring ICL retribution even he would have problems with and is content to gain access to the Kansas without overt violence.

MAXO'S OFFER

Maxo offers to tow the relic back. If players have checked the fuel and engines at all, they will know that they have only a 45% chance of heading back on their own.

If Maxo is allowed to tow, he can claim partial rights if can prove he rescued the characters. In the time the salvage claim takes to go to court you can bet the characters will become hunted by the mob. Maxo would rather dispose of the characters by use of his henchmen and a few well placed Laser bolts as to deal with them legally. Remember that Maxo will never stick his neck out if he has thugsto do his dirty work. Faced with bodily harm, he will find an escape.

THUGS

If the characters allow the Tug to park alongside, a group of 6 thugs will cross the space between ships and attempt to board the Key Biscayne at the main airlock.

The invaders are encumbered in their rented Vac-Suits. This reduces their average Accuracy of 12 to 9 at the max. If they can dispose of their helmets when they board, the score increases to 10.

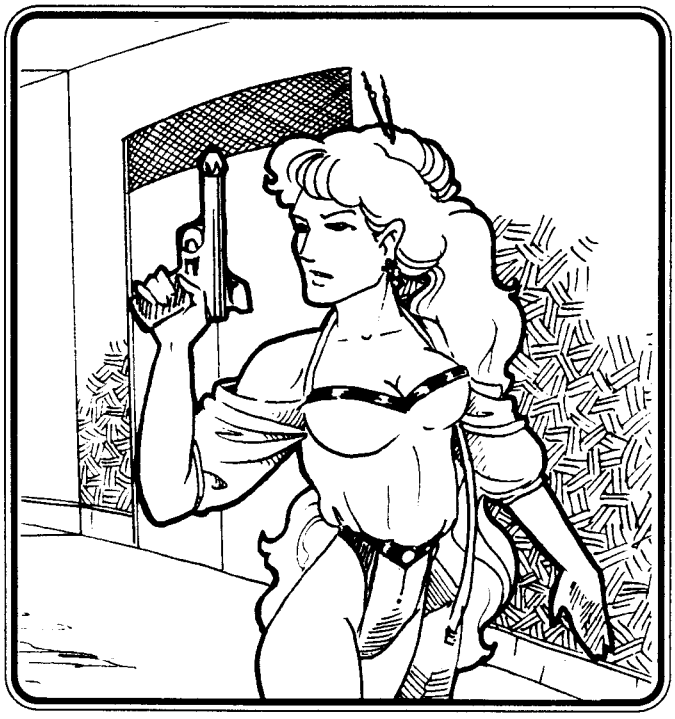
OBJECTIVES

Three of Maxo's men will heade for the Bridge while trying to dispose of as many of the characters as possible. Within each group of 3, two are armed with lasers and the third with a Low Velocity Shotgun loaded with Glaser Style Rounds.

SECURING THE SHIP

The main problem is to capture or neutralize the 6 thugs if they manage to board the ship. While not terribly bright, they are not stupid.

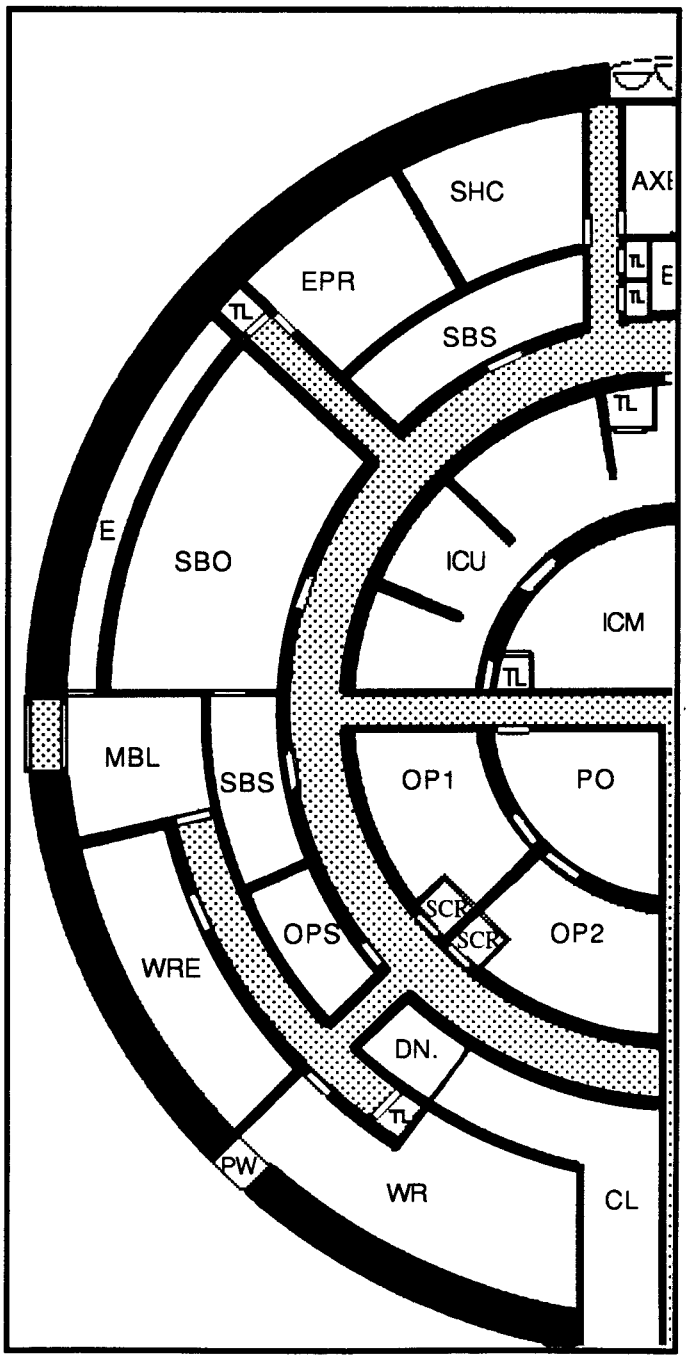
The group has studied a map of the target starship and is in constant communication with Maxo. If characters try, they can listen to the conversations or attempt to jam.



ENTRY BAY

This is the main entry bay and surrounding compartments of the starship.

The airlock to this area was designed for hookup to a station's boarding umbilical. This is the only spot where 6 fully suited men can board at a single time, and it also the largest lock that can be manually operated if the power is shut down. The inside of the Lounge has a number of couchs and small tables used for guests. Wood paneling, plush carpeting, and an 8x8 foot wall view screen dominate the area.



ENTRY BAY AREA KEY

MBL	Main Boarding Lounge	SBS	Sick Bay Stores
MSS	Main Suit Storage	SBL	Sick Bay Labs
E	Electronics Trunk	OP1	Operating Room 1
SBO	Sick Bay Office	WRE	Waste Recovery

ESCAPE

If characters escape with the ship or defeat the thugs sent to capture the ship, Maxo will threaten to destroy the ship. This is a hollow gesture.

The nearly defeated crime boss will make a last dich plea to take in the characters as partners and form a freight company to help his enterprises.

RETURN

The Return of the ICO 0007 Key Biscayne will be a newsworthy event, in fact it will be a 'Media Zoo'. The ship is worth several hundred million d's and the offers will come in for the owner to donate it to a museum, trade it for an Ontario Class Freighter, or sell it to Special Interest Groups. While the characters will be called heroes, their final trials will be back on the planet.

RUSH FOR A SALVAGE CLAIM

The next step is to file for salvage. Officials and Maxo DeMuria begin the battle for the rights. The first step is to beat Maxo to the ICL offices to file the salvage claim. This may become a wild ride from the starport to the city 20 miles away. As Maxo is being continually hindered by the captain of the tug and Spacers at the orbital port, both parties should touch down at the same time.

BACK ON PERIDOT

Maxo is back in his element on the ground and due to the press coverage will simply try to evade publicity and head for the ICL offices.

Characters and thugs will invariably arrive at the ICL tower at the same time and make the mad dash to the claims office on the 14th floor.

"Why you've got quite a claim here, both of you! I can expediate the paperwork but the insistence of a salvage claim by both parties will necessitate the matter being decided in court. Prepare your evidence and find a good lawyer."

Bizzarn Bedan

COURT BATTLE

The initial court hearing will also be a zoo of official, bribed witnesses, and an ICL Judge who quietly stands in the wing and watches.

Players will have 2 weeks to avoid Maxo, secure the services of an honest lawyer, and get their story in order before the local judge bangs the gavel and starts the hearing.

Press coverage on this event will be heavy to say the least. Local and Space Net Today will be in favor of the Players but an orchestrated local hatred of the 'Aliens' will be spawned by Maxo's political machine.

THE LOCAL JUDGE

The trial will be a mass of lies and bogus witnesses that claim the characters have stolen the information that lead to the claim, from Chet's business partner Jorgo Serwas.

The lawyer working for Maxo claims Jorgo was also a partner to Maxo, and by right, the claim was his before the inheritor showed up.

THE FINAL RULING

No matter how gallant the claims, players find the judge leaning towards Maxo's claim as the the protesters outside chant in support of their local businessman.

The judge ponders and makes the final award. He gives a speech that seems like he's about to award it to the characters and quickly awards it to Maxo.

DEFEAT

After the ship is awarded to Maxo, there is a moment of silence and the lawyers begin to pack. Maxo smiles and wishes the Judge 'good luck' on his re-election.

REVERSAL

At this point the ICL Judge steps forward and and pulls rank on the lower court Judge. He reverse the lower courts decision and awards the starship to the salvagers.

With the threatened ICL interdiction, the smaller court will back down in the fear of a legal audit.

Maxo, of course, vows revenge and vanishes to reappear at another time as a thorn in the side of the players.

FINAL AWARD & ICL HELP

The ICL helps the new crew of the Key Biscayne repair the Key Biscayne's defective Phase Drive and update it.

For this repair, the crew is asked to perform a favor for the ICL in a year or two.

As the crew takes the ship and the crew back to Earth they are given a hero's welcome and a simple plaque and an envelope. The envelope is a check for 625,000 d's to help them pay legal expenses and further repair their ship.

If players are lucky, the news media will buy the film rights to their story for another 780,000 d's.

Characters will have a 1 year 'free' docking period as they head for "Space School' and the public is allowed to tour the ship.

Welcome to space.

NUMBER MULTIPLIER 01-50

.12	.25	.50	.75	1.00	1.25	1.50	1.75
001	001	001	001	**001**	001	001	001
001	001	001	001	**002**	002	002	003
001	001	001	002	**003**	003	004	005
001	001	002	003	**004**	005	006	007
001	001	002	003	**005**	006	007	008
001	001	003	004	**006**	007	009	010
001	001	003	005	**007**	008	010	012
001	002	004	006	**008**	010	012	014
001	002	004	006	**009**	011	013	015
001	002	005	007	**010**	012	015	017
001	002	005	008	**011**	013	016	019
001	003	006	009	**012**	015	018	021
001	003	006	009	**013**	016	019	022
001	003	007	010	**014**	017	021	024
001	003	007	011	**015**	018	022	026
001	004	008	012	**016**	020	024	028
002	004	008	012	**017**	021	025	029
002	004	009	013	**018**	022	027	031
002	004	009	014	**019**	023	028	033
002	005	010	015	**020**	025	030	035
002	005	010	015	**021**	026	031	036
002	005	011	016	**022**	027	033	038
002	005	011	017	**023**	028	034	040
002	006	012	018	**024**	030	036	042
003	006	012	018	**025**	031	037	043
003	006	013	019	**026**	032	039	045
003	006	013	020	**027**	033	040	047
003	007	014	021	**028**	035	042	049
003	007	014	021	**029**	036	043	050
003	007	015	022	**030**	037	045	052
003	007	015	023	**031**	038	046	054
003	008	016	024	**032**	040	048	056
003	008	016	024	**033**	041	049	057
004	008	017	025	**034**	042	051	059
004	008	017	026	**035**	043	052	061
004	009	018	027	**036**	045	054	063
004	009	018	027	**037**	046	055	064
004	009	019	028	**038**	047	057	066
004	009	019	029	**039**	048	058	068
004	010	020	030	**040**	050	060	070
004	010	020	030	**041**	051	061	071
005	010	021	031	**042**	052	063	073
005	010	021	032	**043**	053	064	075
005	011	022	033	**044**	055	066	077
005	011	022	033	**045**	056	067	078
005	011	023	034	**046**	057	069	080
005	011	023	035	**047**	058	070	082
005	012	024	036	**048**	060	072	084
005	012	024	036	**049**	061	073	085
006	012	025	037	**050**	062	075	087

Fraction Rounding

All numbers in this table are rounded down to the closest whole number. In the case of fractions of a whole number, the whole number (1) is substituted for playability.

NUMBER MULTIPLIER 51-106

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006	013	026	039	**052**	065	078	091
006	013	026	039	**053**	066	079	092
006	013	027	040	**054**	067	081	094
006	013	027	041	**055**	068	082	096
006	014	028	042	**056**	070	084	098
006	014	028	042	**057**	071	085	099
006	014	029	043	**058**	072	087	101
007	014	029	044	**059**	073	088	103
007	015	030	045	**060**	075	090	105
007	015	030	045	**061**	076	091	106
007	015	031	046	**062**	077	093	108
007	015	031	047	**063**	078	094	110
007	016	032	048	**064**	080	096	112
007	016	032	048	**065**	081	097	113
007	016	033	049	**066**	082	099	115
008	016	033	050	**067**	083	100	117
008	017	034	051	**068**	085	102	119
008	017	034	051	**069**	086	103	120
008	017	035	052	**070**	087	105	122
008	017	035	053	**071**	088	106	124
008	018	036	054	**072**	090	108	126
008	018	036	054	**073**	091	109	127
008	018	037	055	**074**	092	111	129
009	018	037	056	**075**	093	112	131
009	019	038	057	**076**	095	114	133
009	019	038	057	**077**	096	115	134
009	019	039	058	**078**	097	117	136
009	019	039	059	**079**	098	118	138
009	020	040	060	**080**	100	120	140
009	020	040	060	**081**	101	121	141
009	020	041	061	**082**	102	123	143
009	020	041	062	**083**	103	124	145
010	021	042	063	**084**	105	126	147
010	021	042	063	**085**	106	127	148
010	021	043	064	**086**	107	129	150
010	021	043	065	**087**	108	130	152
010	022	044	066	**088**	110	132	154
010	022	044	066	**089**	111	133	155
010	022	045	067	**090**	112	135	157
010	022	045	068	**091**	113	136	159
011	023	046	069	**092**	115	138	161
011	023	046	069	**093**	116	139	162
011	023	047	070	**094**	117	141	164
011	023	047	071	**095**	118	142	166
011	024	048	072	**096**	120	144	168
011	024	048	072	**097**	121	145	169
011	024	049	073	**098**	122	147	171
011	024	049	074	**099**	123	148	173
012	025	050	075	**100**	125	150	175
012	025	050	075	**101**	126	151	176
012	025	051	076	**102**	127	153	178
012	025	051	077	**103**	128	154	180
012	026	052	078	**104**	130	156	182
012	026	052	078	**105**	131	157	183
012	026	053	079	**106**	132	159	185

FTL: 2448 QUICK INDEX

This is a quick guide to sections of the book.

INDEX

PERMISSION GRANTED TO COPY
-Character Sheet
-Body & Equipment Sheet
-PSI Sheet
-World/Life Sheet
-Blank Alien Race Sheet
-Fast Play Chart
-Starchart Worksheet
-Starsystem Sheet Right
-Starsysten Sheet Left
-Engineers Log
-Crew Roster
-Planetary Sheet
-Police Report
-Criminal Data
-Travel Log
-Engineering & Design

About The Author

Sometimes called the Great Gaming Guru of Michigan, Richard Tucholka is a long time RPG'er and once a staff writer for Stardate Magazine. Richard's game designs are unique and varied with an odd sense of humor that keeps creeping in.

Most recently Bureau 13: Stalking the Night Fantastic won the 1991 RPGA Best Fantasy Game of the Year Award at GenCon.

Richard lives in Pontiac, Michigan and is currently trying to index over 18,000 books in his home. You can find him at many Midwestern SF and Gaming Conventions.

MAJOR GAME DESIGNS

- *The Morrow Project* (Timeline)*
- *Bureau 13 : Stalking the Night Fantastic*
- *Fringeworthy*
- *FTL 2448*
- *Incursion*
- *Hardwired Hinterland*
- *Midnight at the Well of Souls (TAG)***

* *With Robert L. Sadler & Kevin Dockery*
** *Astronomical Systems*

ISCO STAR SYSTEM SURVEY FORM

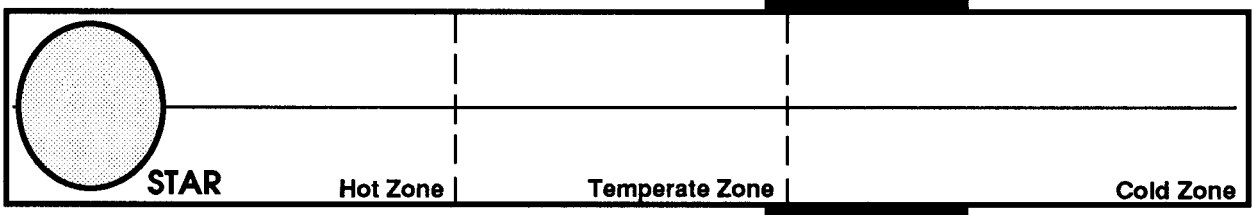
O B A F G K M N
1 2 3 4 5 6 7 8 9 0

1
2
3

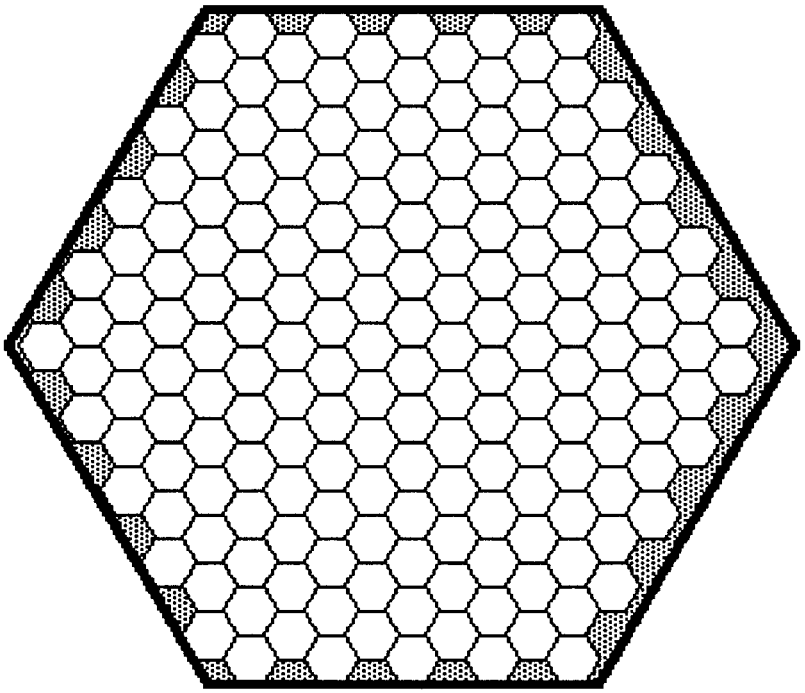
ISCO SURVEY CODE

Survey by

SYSTEM CONFIGURATION



NEAR SYSTEMS

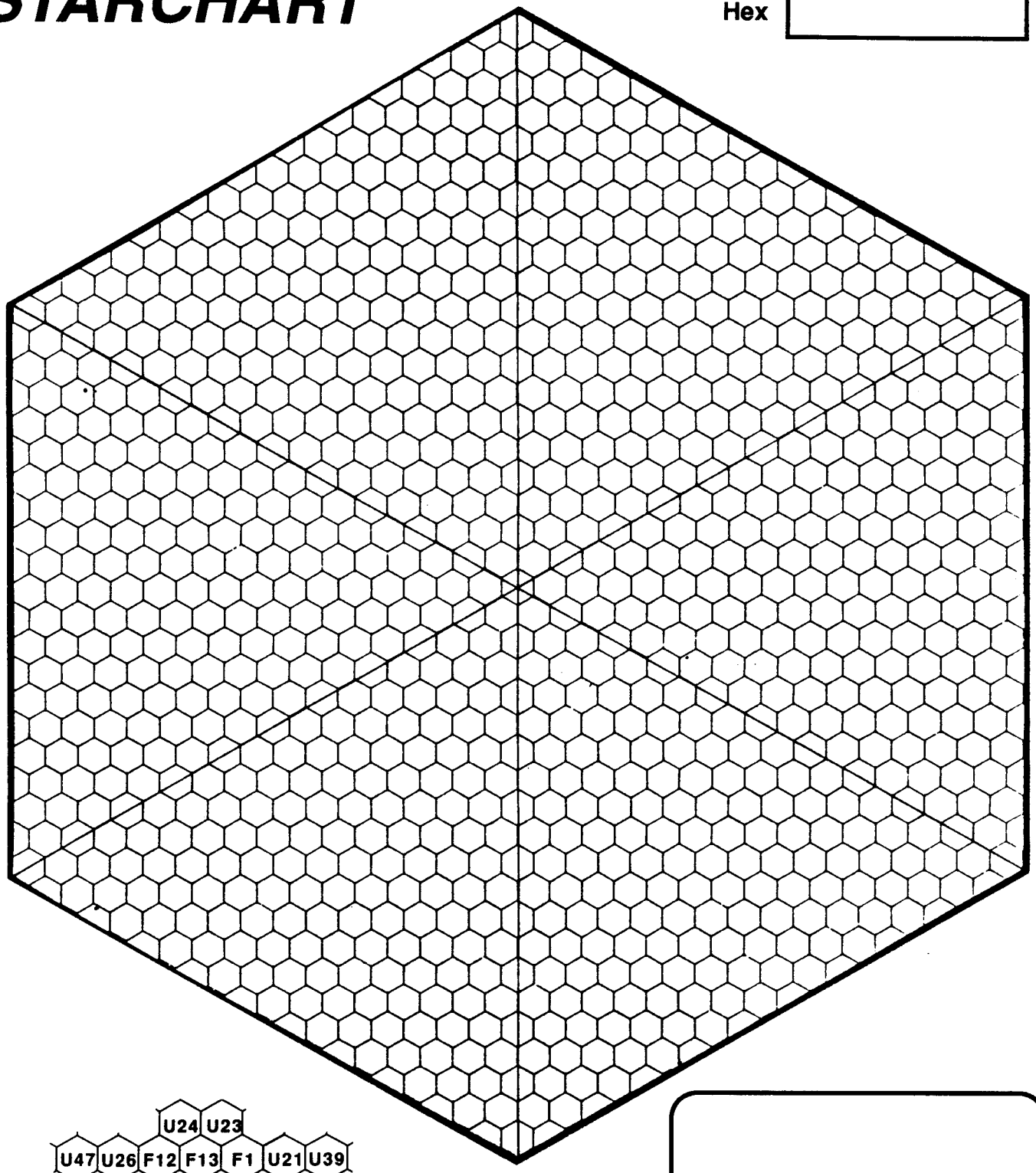


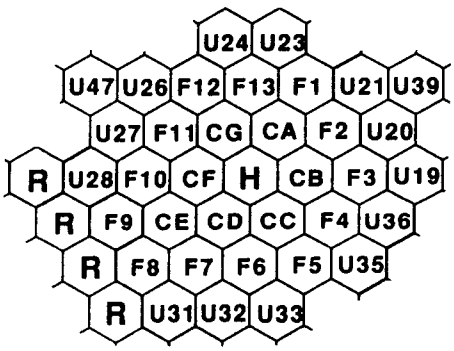
LOCAL AREA MAP

NAMES

STARCHART

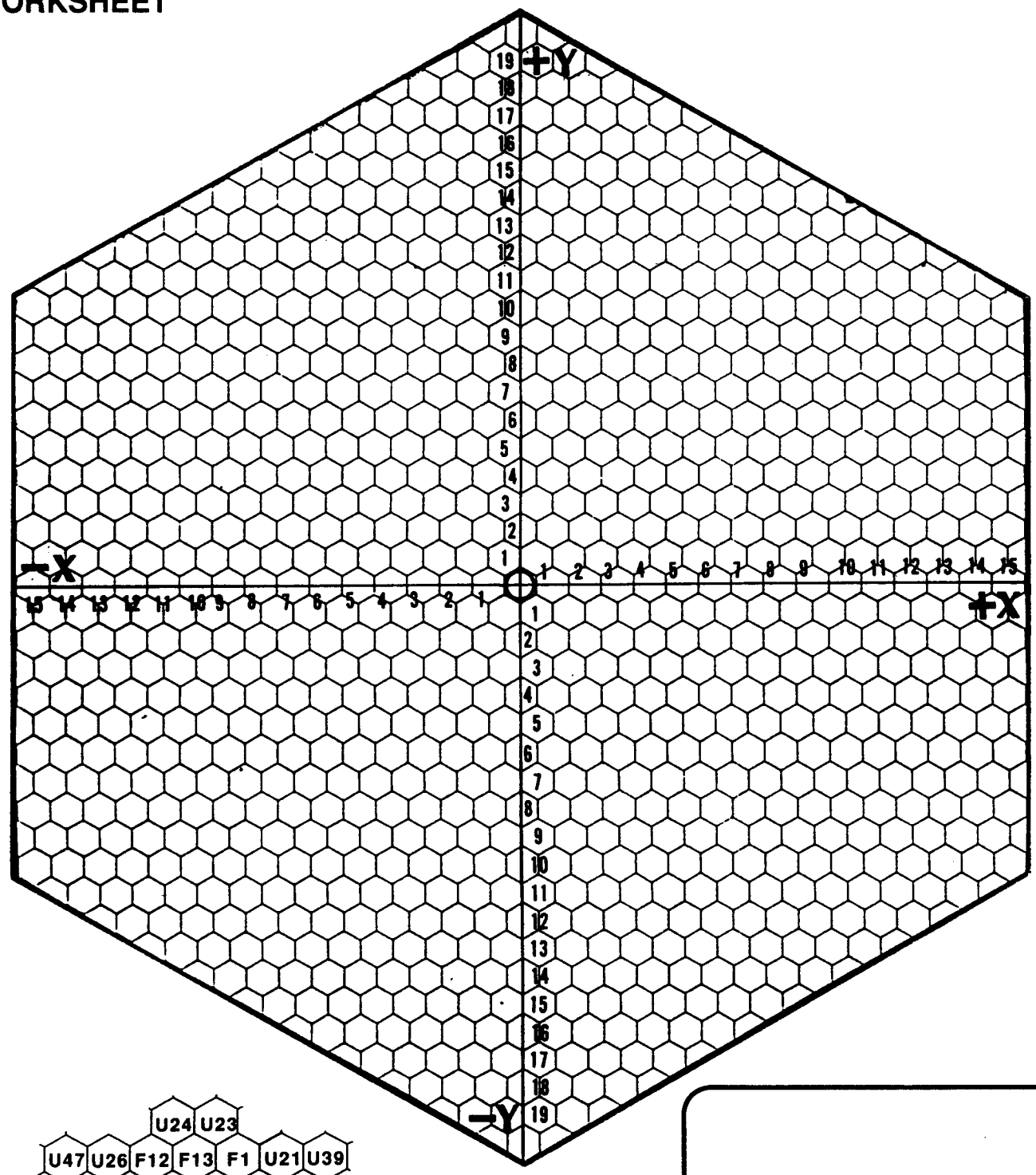
Hex

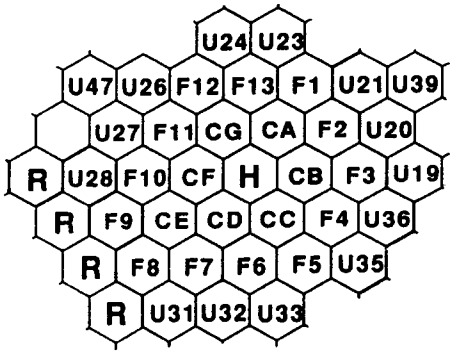




STARCHART
WORKSHEET

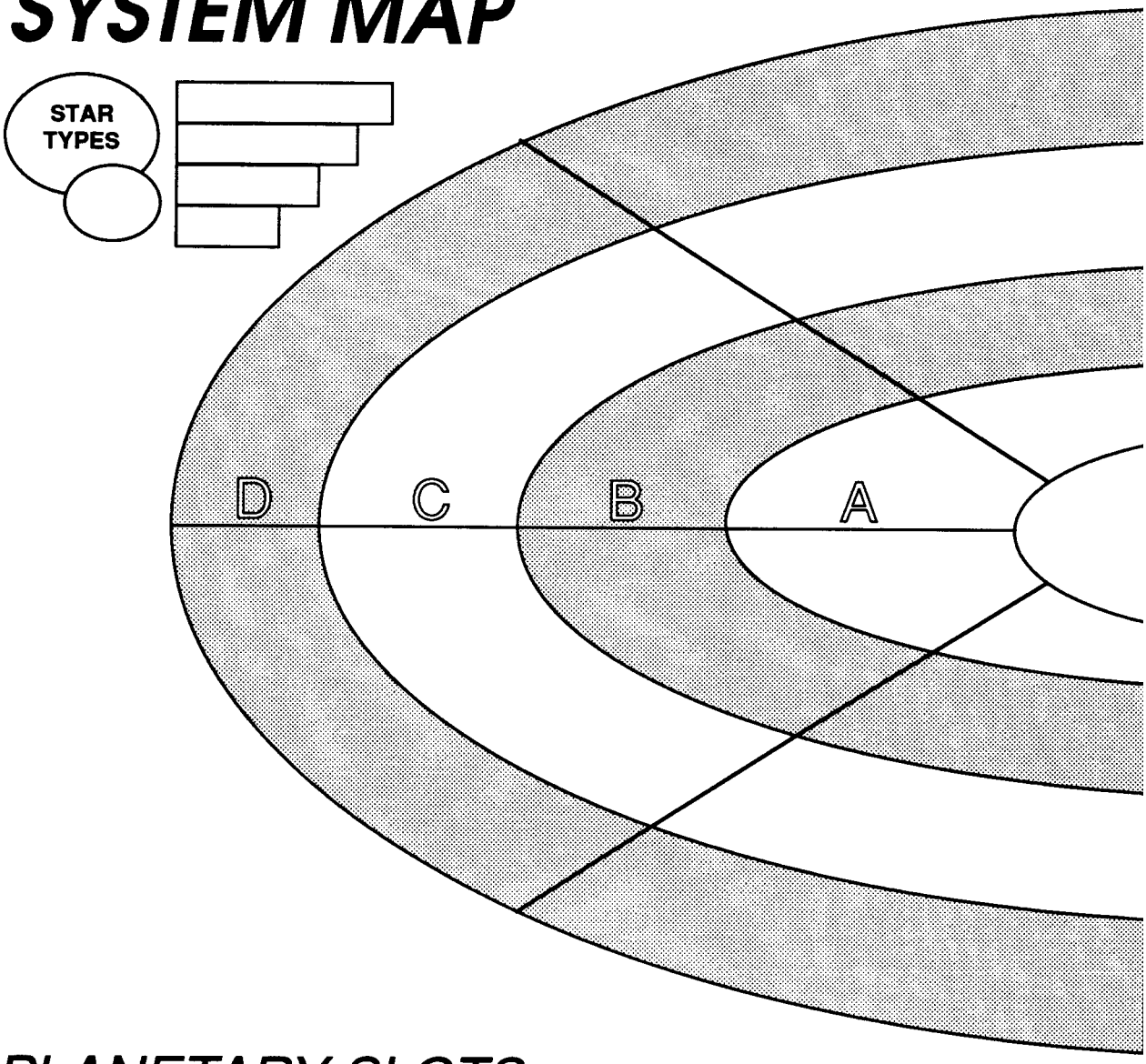
Hex





FTL 2448

SYSTEM MAP



PLANETARY SLOTS

A ZONE

B ZONE

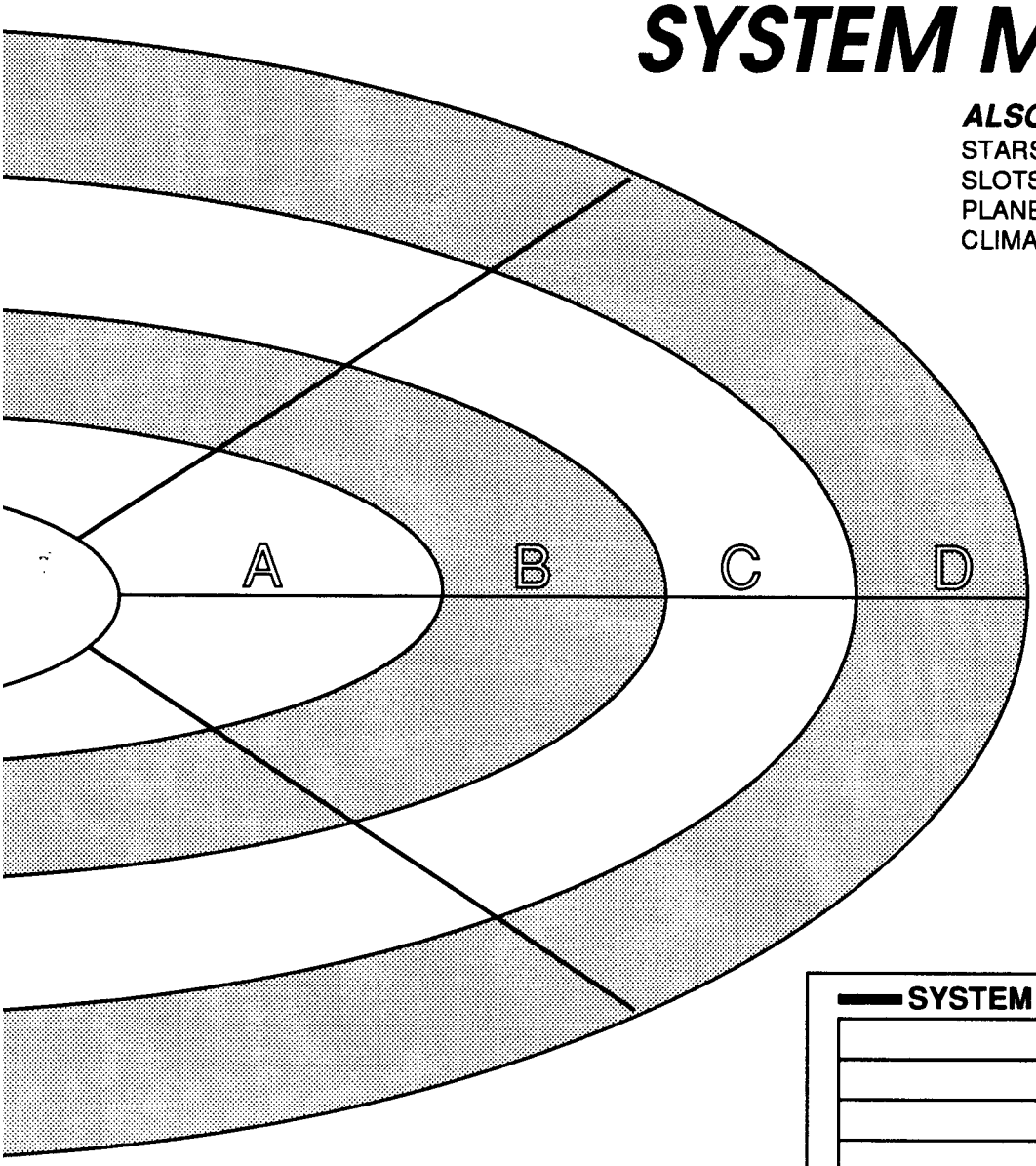
C ZONE

D ZONE

SYSTEM MAP

ALSO SEE PAGE

STARS	210
SLOTS	212
PLANETS	214
CLIMATE	215



SYSTEM SPECIALS

PRIMARY WORLD

DIAMETER
GRAV
HOH%
TEMP
ATMOS

MOONS
DIAMETERS

FTL 2448

POLICE REPORT

REFERENCE CODE

INCIDENT

DATE

TIME

LOCATION

COMPLAINANT IDNT CODE

COMPLAINANT NAME

OFFENSE SEVERITY

VICTIM IDENT CODE

VICTIM NAME

VICTIM CONDITION

PROPERTY DAMAGE

PROPERTY VALUE

WITNESS 1 IDENT CODE

WITNESS 2 IDENT CODE

OFFICE

OFFICER NAME

BADGE IDENT CODE

PRECINCT CITY

SIGNITURE

FOLLOW UP CODE

CLOSURE CODE

NARRATIVE VID CODE

SUSPECT 1 IDENT CODE

SUSPECT 1 NAME

SUSPECT 2 IDENT CODE

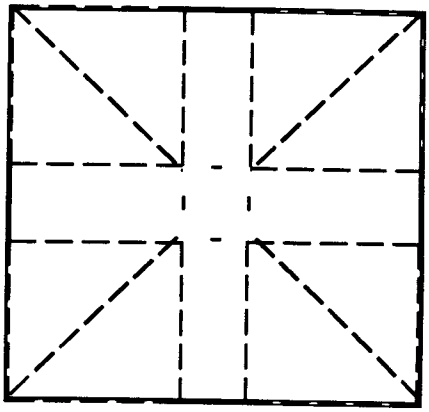
SUSPECT 2 NAME

SUSPECT 3 IDENT CODE

SUSPECT 3 NAME

SUSPECT DATA CHECKOFF

	SUS 1	SUS 2	SUS 3
SOBER			
INTOX			
DRUG			
ARMED			
RIGHTS			



VEHICLE OWNER IDENT

VEHICLE OWNER NAME

MAKE MODEL

LICENSE

DISPOSITION

EXTENT DAMAGE

EXTENT INJURY

PROPERTY DAMAGE

INTOX LEVEL

IMPOUND CODE

ADDITIONAL NARRITIVE

0 76783 00450

Comp Code Ref

CRIMINAL DATA

REFERENCE CODE

NAME

NAME IDENT CODE

ALIAS

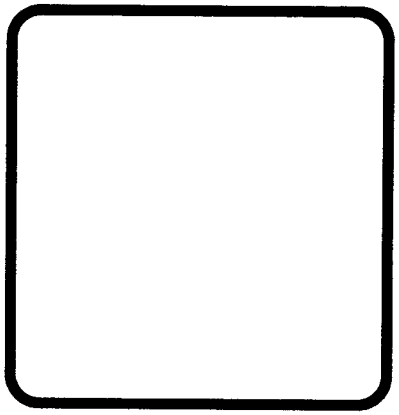
WORLD OF BIRTH

DATE BIRTH

HEIGHT WEIGHT EYES

UNUSUAL FEATURES

PHYSICAL



LAST RESIDENCE

RESIDENCE CODE

ASSOCIATE 1 IDENT CODE

ASSOCIATE NAME

ASSOCIATE 2 IDENT CODE

ASSOCIATE NAME

OFFENSE

SEVERITY	DATE	CONVICTION	SENTANCE	REFRENCE CODE

OFFICE

OFFICER NAME

BADGE IDENT CODE

PRECINCT CITY

SIGNITURE

FOLLOW UP CODE

CLOSURE CODE

PSYCHOLOGICAL PROFILE

Psych 677 Socia L 4.2

MED REF CODE

Gene ID Sterling Sequence

DOCTOR MED IDENT

Comp Code Ref

CARGO

PAGE

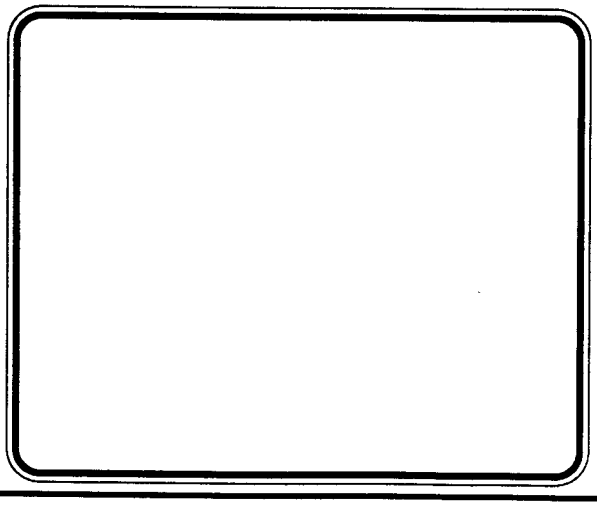
CANISTERS	CONTENTS	DROP POINT	OWNERS	VALUE	PROFIT

TRAVEL LOG

WORLD NAME	SHIPS BUSINESS	TOTAL PORT & OTHER COSTS	T OTAL FUEL USE	TOTAL PROFIT	CREDIT BALANCE

CREW ROSTER

IDENT CODE	NAME	RACE	RANK	SKILL 1	SKILL 2	PAY



NAME

IDENT CODE

RACE

SEX HEIGHT WTE

HAIR EYES

ORIGIN WORLD

MILITARY RANK

SHIPS RANK

SKILL AREAS

ENGINEERS LOG

STARSHIP NAME

STARSHIP CLASS

YEAR BUILT

CARGO SPACE

DRIVES & ENGINES

PHASE DRIVE

HOURS PER LIGHT YEAR

TUNING PERCENTAGE

%

MAIN ENGINES

TUNING PERCENTAGE

%

SHUTTLE ENGINES

TUNING PERCENTAGE

%

FUEL TANKAGE

FUEL STORES

WEAPONS

MISSILES

LASERS

PARTICLE BEAMS

CANISTERS

OTHER

MAIN FUEL TANKS

CAPACITY

UNIT SIZE

NOTES

ALSO SEE PAGES

FUEL USE, STARSHIP	254
FUEL USE, SHUTTLE	250
PHASE DRIVES	253
PHASE FAILURE	251
ENGINE FAILURE	254
ORBITS	255
QUICK DISTANCE	246
SCANNERS	266

ENGINEERING & DESIGN

SPECIAL ENGINEERING DATA

Maximum Size of Phase Field

Minimum Size of Phase Field

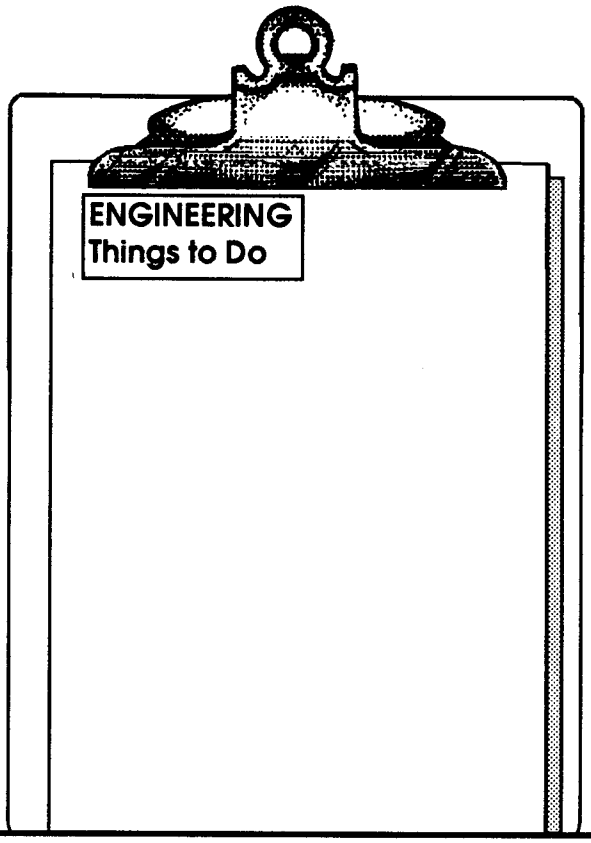
Maximum Lifesytem Capacity:

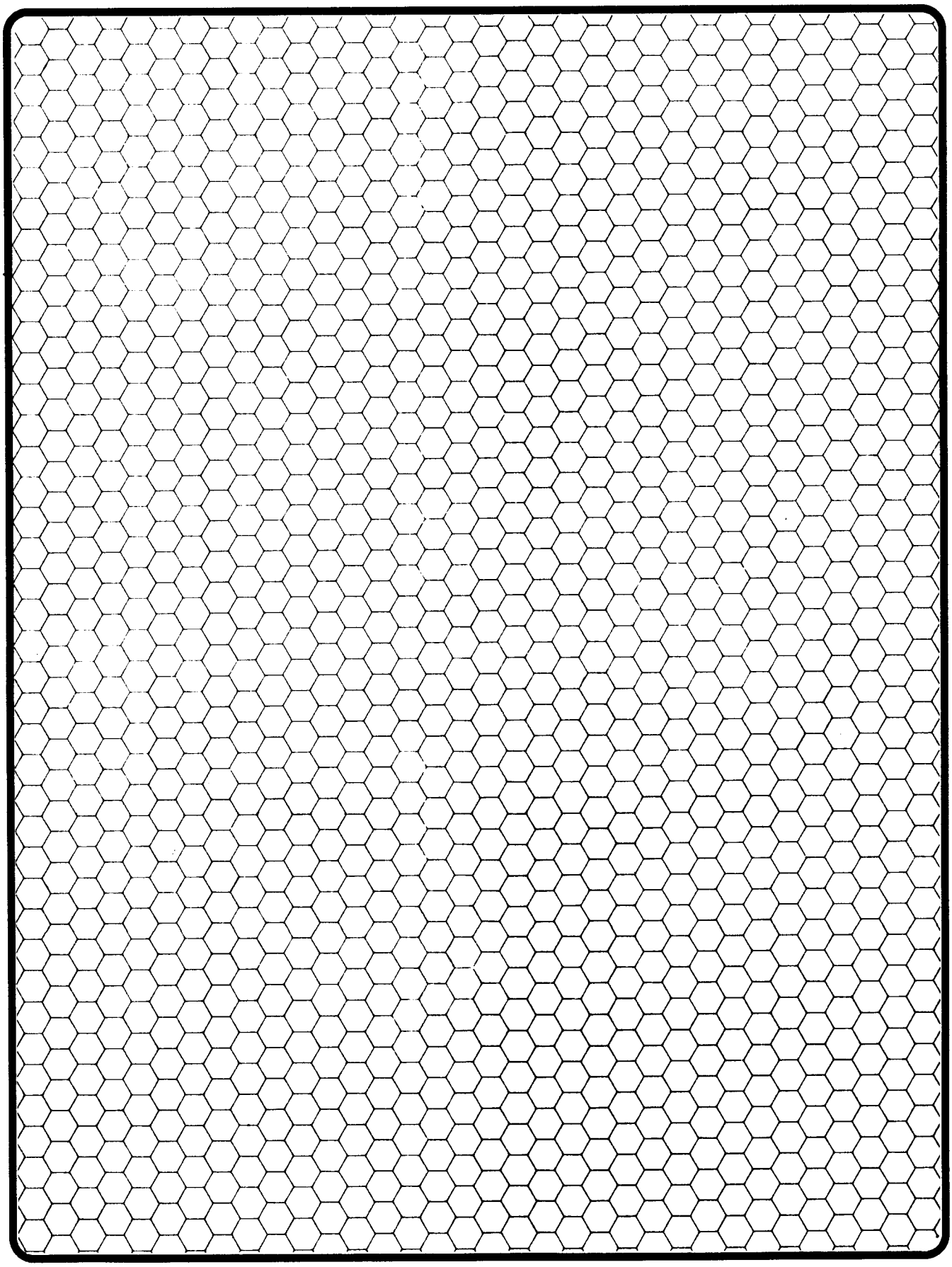
Special Modifications

SHIP'S REGISTRY

Planet of origin: _____
Model: _____
Owner: _____
Purchase Price: _____
Blue Book Value: _____
Captain: _____
License: _____
Navigator: _____
License: _____

ESTIMATED VALUE OF SHIP
ESTIMATED TAXABLE VALUE
ACTUAL VALUE OF SHIP
TAXABLE VALUE
LOAN PAYMENT





Hex Sheet

FTL 2448

Because of the popularity of Many of the Tri Tac RPG's that have been out of print and the Requests by Gamers and Fans, Tri Tac Games has brought back the 1993 edition of FTL:2448 in this PDF Format.

TRITAC GAMES.COM

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High Adventure in Deep Space:

The Universe of FTL: 2448

Book 2

The second book of FTL:2448 gives you the second half of the information that you will require to play FTL:2448. While Book 1 concentrates mainly on Character Generation and Skill Selection, Book 2 provides the background data necessary for your campaign, including: Starships, StarCharts, Ship-Builder, Colony: 2448, Emergency Medical Rescue, Cop:2448, Space Navy, Enemy Stars, Star Pirates, and a lot more!

This is Book 2 of the two books needed to complete your FTL game.

FTL: 2448™

Space is Waiting for You!

FTL: 2448 is a role-playing game complete in two 192 page books. Also look for TTS #2001 FTL: 2448 Book 1. Polyhedral dice are not included.

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TRI TAC

FTL: 2448 TTS 2002