THE GAME OF ROLE-PLAYING IN SPACE

FTL: 2448

FASTER THAN LIGHT
2448

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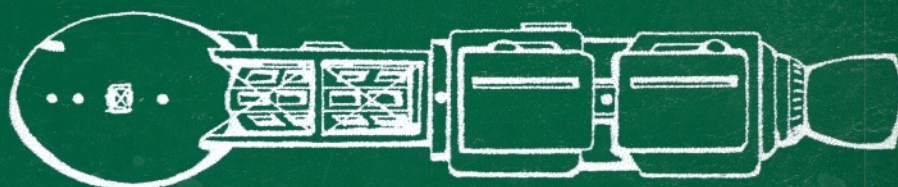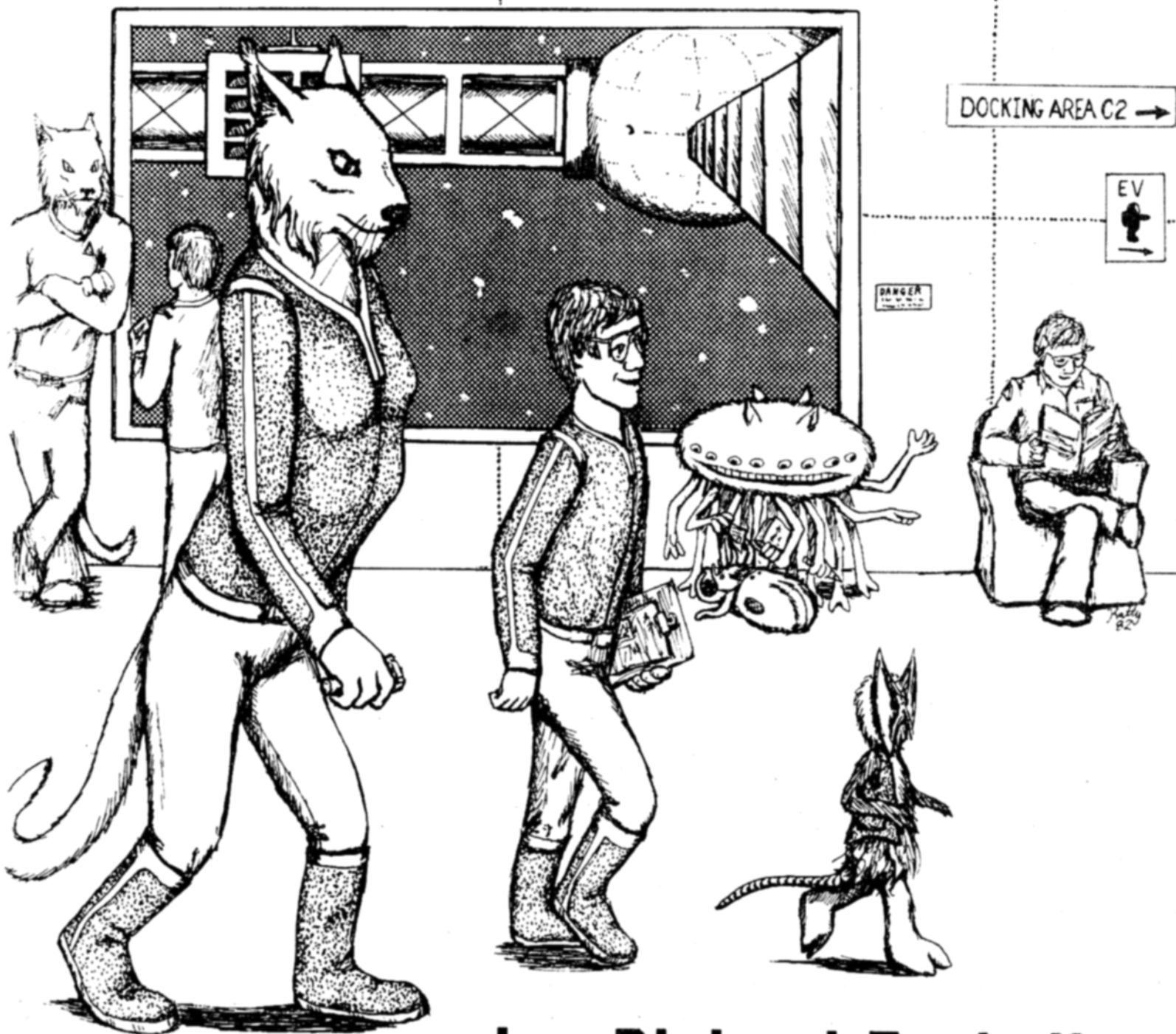
by Richard Tucholka

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Introduction

FASTER THAN LIGHT 2448

"The history of technological advancement of the human race is riddled with political manipulation and massive sociological misunderstanding that may cost us the stars".....Franco Omoxomo.

   The last decades of the Terran twentieth century showed technological spinoffs of space exploration created many new industries and a fantastic amount of new technology. Most people of the times failed to realize that the comfort and security of their lives was closely related to the continuing development of space technologies. In economic moves to better faltering economies, the space programs of the free world began to be strangled by budget cuts and politicians who thought the money better spent on pay raises and short sighted social programs that failed to solve the real economic problems of the day. History shows us that the technology was there to alleviate the problems. It is unfortunate that big business was so short sighted and that the population did not know what the real issues of the day were. As the nuclear industries folded because of protest secretly backed by petrolium interests, the fate of the economies was sealed into a downswing to disaster.
   Finally a minor electronic blunder in the Soviet Union's computerized defense system triggered a conflict that left most of Europe and the Middle East in ruins. The following depression of the Lawless Years and the collapse of centralized governments taught the survivors that the world was too small a place for haphazard planning and political stupidity.
   It may be concidered ironic that the forces to pull together and rebuild the world were not the governments and military, but the remaining corporations. The new corporate goverments, thus formed, began to rebuild the technologies that favored their survival. Soon the old launch sites were active again as space became a necessity.
   The new governments prospered and mankind moved rapidly to the stars; where, in a spirit of brotherhood and destiny, it gained the friendship and federation of several intelligent alien races.
   But history tends to repeat itself when the frontiers are measured in light years. Special interests, corporate corruption and political stupidity begin to rise again from the ashes of history unlearned.

   The year 2448 is a time of many opposites; a time of wealth and harsh colonial life, and of corporate honesty and industrial terrorism. Aliens in many forms are joining man for his ideals.
   It is the new age of the independent starship and the crews who run them.

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WELCOME to 2448

It's Not Glamorous, But it's ours.

</div>

FTL 2448

Faster Than Light 2448 is a role playing game of planetary exploration and adventure in the not so far future.

You will become a human or alien in a time of exploration and corporate expansion. Fortunes can be made and lost by the seldom considered individual. You will travel to worlds of wealth or poverty, work hells or worlds built on ideals. Aliens and robots will be your friends as you travel the frontiers of settled space.

In FTL you will find no Galactic Empires of Star Kings, Dreadnaughts, Battle Cruisers, or planet destroying Galactic Rangers. You will find real people interacting with alien cultures under the watchful eyes of a police agency dedicated to fairness and peace.

Welcome to 2448

FTL

FTL 2448 has been written to be realistic, concise and easy to play. It was designed by role players who understand the problems of running a game with overlong text and complex systems that make game play a burden for the player and GM.

The most difficult part of FTL 2448 will be the necessary set up time for more complex adventures and exploration. Almost a third of FTL 2448's text will be color coded charts of information useful to the GM.

Materials Needed

A One or more copies of the game FTL 2448.
B Paper, Pencils, Notebooks, and Index cards.
C A set of common polyhedral dice, the more the better. These include four sided (d4), six sided (d6), eight sided (d8), ten sided (d10), and the hundred sided or percent dice (d100).
D One to twenty players and a gamesmaster.
E A pocket calculator, home computer or slide rule may be helpful but not a great necessity.
F Miniature figurines and buildings are handy at times for placing the setting of your adventure.
G Photocopies of Character, Equipment, Hex, and World sheets are almost a must.*
H An outstanding imagination or a bachelors degree in astrophysics, sociology, history and engineering.
I Time to plan and a place to play.

Photocopying

TERMS

ROLEPLAYING
Is the ability of the game player to design a character he wishes to become with that character's strengths and limitations. The character is guided through a series of adventures and general living by the Games Master. The player makes the characters decisions, right or wrong, as he continues his characters life within the framework of the game.

GAMESMASTER
The records keeper and designer of the adventure. This is the person who sets the stage of events your player character will experience. The abbreviated term for Gamesmaster is GM.

PLAYER CHARACTER
The individual(s) created by the player for the game. This character is controlled entirely by the player. Player characters may also include animals as long as they are played true to intelligence, personality, and temperament.

NON-PLAYER CHARACTERS
These are the characters created by the GM that become the friends and foes in the game. Their characters and development may range from simple to complex colorful individuals.

FTL 2448
Faster Than Light 2448, An optimum year for the second "boom" age of exploration on the frontiers of settled space.

4 d6

This is the indicator for rolling a random number on any of a series of types of dice. The initial number (4) is always the number of dice to roll of the type designated by the (d). The example 4d6 has the player or GM rolling four six sided dice and totaling the resulting numbers.

4 d6 +2

The +2 modifier is added to the total of the first dice rolling operation. Always follow operations from left to right.

4 (d6+2)

This +2 dice modifier is attached to the individual type of dice being rolled. For each die rolled 2 is added to the total of the die.

MEASUREMENT
FTL was designed with the English system of measurement. A metric conversion table is in the appendix.

4d6 x.50

The (x.50) is a modifier for the final total result. Most of these multipliers can be found in the Number Breakdown Chart in the appendix. Fractions are always rounded down.

UTILITY SHEETS
    These are example sheets that can be photocopied for player / GM use. Do not use the original for game play. There is a large Utility Appendix (white color) at the end of this book.

Time And Motion

    Throughout FTL time will be listed as actions, turns, and real time.

        ACTION = 2 seconds real time
        TURN   = 1 minute or 30 actions

    In an action characters can perform short physical movements as:

        MOVE   THROW AN OBJECT
        SAY A FEW WORDS   FIRE A WEAPON
        PUSH TWO BUTTONS IN CLOSE PROXIMITY

    A high agility may increase your number of movements per action.

        Movement rates per action:

        WALK   =   05 feet per action
        DODGE =   07 feet per action
        RUN   =   10 feet per action

Actions

    Each action the characters make a decision to:

    ATTACK
    Attempt to hit a target by rolling a d20 under your characters dexterity. Use size and speed modifiers from the projectile and weapons fire section. You may also use optional motion modifiers from the same section.

    DEFEND
    To protect from a physical attack. Roll a d20 under the characters dodge number for success in dodging an attack. This choice of action does not allow a return attack. High velocity projectiles can not be dodged.

    MARTIAL ARTS
    These varied skills give the character a second chance to repeat an action. A martial arts level of 5 gives the user a 25% chance to reroll any martial arts physical attack or defense. The use of martial arts may also allow a character to return an attack after a dodge. Always roll under your martial arts skill level on a d100 for successful use.

Examples

    As you progress through the ideas and game systems of FTL you will meet and get to know three of the races in settled space.
    The lives of Ben, Bells, and Quagmire will guide you through this book as an example of how to use the game systems.
    These are the trials and tribulations of a Human, a Kymnar, and a Trell whose lives begin here.

Ben, Bells & Quagmire

BEN WARREN
    Age: 34   Sex: Male   Planet: Mars

    The son of a corporate engineer, Ben spent most of his childhood on the vast space port complex of Fomalhaut. Because of his father's Martian citizenship he has a home planet even though he has never been there.
    At age 18 Ben took a four year military service contract and became a Phase Drive Engineer of lower standing. For the last 12 years he has been a Phase mechanic for a very small corporation on Fomalhaut. Ben is not married and has few family ties. Secure in his job, he does not realize his luck has just changed. His employer was just bankrupt by the Interstellar Revenue Service (IRS) of Fomalhaut.

LISTENER TO INVISIBLE AIRWAVES (BELLS)
    Age: 27   Sex: Female   Planet: C'char

    Firsborn of a Kymnar military family that was forced to leave her world because of an obsession with terrestrial music over military studies. As firstborn this shoots her customary inheritance to hell. She is currently a jazz musician in a small bar on Fomalhaut. Bells plays poker with Ben on Thursday nights. She generally tries to keep his temper on slow boil. For a Kymnar this is next to impossible. Male Kymnar consider her a flake.

Johnathon Quagmire The Third
    Age: 21   Sex: Male   Planet: Darnel

    The 8th of the litter, Quagmire's parents thought to terrestrialize their childrens names. With agriculture in mind, Quagmire left his family of engineers and set out to find employment. On an orbital starport this becomes gardening on one of the nature decks. Happy and content, he also plays poker with Ben and Bells on Thursday.
    Last Monday Quagmire played poker with a different group and took them to the cleaners for a profit of 14,700 d's (earth dollars).
    In a last frustrated bet the businessman bet a digital watch and a deed to what he thought was an asteroid. Winning the last hand, the Trell, Quagmire, admired his watch and stuffed the deed into his vest.
    At the Thursday night game he tells Ben of his fortune and the deed. Ben chokes, the paper is the ownership deed to a junked star ship waiting to be scrapped. Ben smiles. The ICSS Wapakoneta waits.

Notes to the GM

01 Never let your players gain control of the game. Your decisions should be final.

02 In the same vein, don't keep absolute control over your players. Let them make their own decisions and mistakes.

03 Be reasonable. Let a player state a valid argument. Be willing to change a ruling without making it a habit.

04 The invincible is no fun for the GM or other players. Changing or fudging a character's stats should not be allowed. Often a character with a low to mediocre stats becomes interesting and more of a challenge to role-play than any super character.

05 Make your players work for their supplies and wealth. See what they can do without, not with. Don't be afraid to destroy equipment or damage a starship. Necessity is the mother of invention and the basis of a good game.

06 Don't design killer adventures with no solution. A grim, bloodthirsty GM is no fun for the adventurers. Always give your players a way out of a situation they can not handle.

07 You may find yourself in a situation where you are tempted to fudge a die roll to your players benefit. This is not the sign of a weak GM, but a good GM who can understand the difference between bad luck and a bad decision. Just don't let them know.

08 Inconsiderate, ridiculous, or homocidal players should be removed from the game at the first opportunity, (preferably out an airlock without a vac suit). There is no room in a role-playing game for fools who get other player's characters killed or spoil an adventure with acute stupidity.

09 A little humor in a game makes it a lot more fun. Remember humor has its place so don't get too wrapped up in fun or your credibility as a GM will suffer as slapstick. GM's provide little enjoyment to the serious role-player.

10 Be fair and honest with your players. You are the person they trust to guide them through an adventure.

11 Find an interruption free area to play in. The tension or mood of the game is likely to suffer with distraction.

12 Don't forget the paper, pencils, dice, and munchies.

Though the previous remarks should not be considered the last word on gaming, they may help to make a game more enjoyable for all.

Adventure orginization and design in FTL is the GM's choice though it is often a suprise as to where the players can take the campaign.

During three years of playtesting the systems that became FTL 2448 there were many types of groups that crossed settled space.

Listed by popularity are several examples of FTL campaigns.

01 The Independent Freighter Crew
02 Corporate Freighter Crew
03 Independent Exploration Crew
04 Corporate Backed Exploration Group
05 Emergency Medical Rescue Team (EMR)

06 Inter-Stellar Court of Law (ICL) Team
07 ICL Marines or Swat Teams
08 The Ultra Rich Out For Adventure
09 Terrorists / Pirates / Colonists
10 Students / Hitch Hikers

Campaigns

A campaign cannot be continuous unless the characters are continuous. This implies the players must be continuous, but this is not always the case. In circumstances where the players cannot maintain a starship crew on a regular basis, a different campaign structure is needed to promote a realistic game.

Stable

These are the players who always show for a game, reguardless of weather or unfavorable circumstance. With no difficulty, any form of campaign will work for this group.

Mostly Stable

These are the gamers who attend the game most of the time. For this type of group a corporate "Starship" mission or adventuring on a "per-trip" basis is necessarily easier than a full starship crew where scenairos may involve game years.

Unstable

With a variable group of players it is best to run a campaign where characters can enter and exit without hindrance. Police, Medical Teams, Students, and Hitch Hikers are ideal for this group where the management of a starship from week to week would be near impossible.

CHARACTERS

There is nothing as important as your character, his personality and history. Many of these factors influence his day to day life, his reactions under stress, and his general attitudes.

Before you begin character generation and play, think about your character and remember a few basic rules for role playing.

REMEMBER

01 When your character is generated decide on his or her personal makeup.

02 Keep in character, think, will the characters next reactions be logical for this character? Will a devout coward rush into battle or hide behind the computer to save himself?

03 Once having established a personality, stick with it. A good way to drive a GM crazy is a character with a half a dozen personalities. A drunk one week doesn't become a saint the next without a little work. When he becomes a lost corporate president the third week, there may be a credibility gap.

04 Remember you can always roll a new character to replace the old if you become discouraged with the characters personality. Temporary retirement gives the benefit of having a character for a later date.

05 Index over to the Alien races (green) if you decide to become one of the 22 races of FTL. Read their personality descriptions first. Come back to this section and begin generation of your character.

Notes to Parents

Far from a game of Monsters in caverns and mazes, Faster Than Light will be a game and also a learning experience in general astronomy. In years of game playing it became evident most astronomical data was ignored by game designers, or changed beyond sensible recognition. FTL has attempted to remedy this by presenting accurate data in a playable or fun format.

In FTL 2448 your children will be encouraged to explore and travel the frontiers of space, rather than kill monsters for treasure.

In the process of play they may even learn a few facts about space.

Remember the purpose of any game is fun and challenge. Roleplaying has become arm - chair adventure of the highest caliber that promotes positive small group interaction and encourages learning.

Future suppliments to FTL 2448 will continue to encourage this spirit of learning and factual information.

Character Sheet FTL 2448

CHARACTER NAME _____ RACE _____

OCCUPATION _____ WORLD _____

COMMAND _____ SEX _____ AGE _____

EXPERIENCE LEVEL _____ EXPERIENCE POINTS _____

STR _____ INT _____ THR _____

CON _____ WIS _____ DOD _____

DEX _____ LCK _____ ACC _____

AGL _____ CRZ _____ WKP _____

SIZ _____ PSI _____ HPT _____ .

SKILLS   LEVEL   SKILLS   LEVEL   DAMAGE

Character Generation

Start with a blank character sheet. An example is in the utility appendix of FTL.

CHARACTER INFORMATION

NAME
The name of the character you design. The name may be simple or colorful. Characters from "alien" worlds should be named with reasonably realistic alien names.

RACE
The race of the character. When designing aliens remember:

01 Generate the character as you would a human. When most of the work is done it is a simple matter to convert the character into an alien.

02 Do not generate skills until after you convert into an alien form.

03 THR and DOD are not changed when the characters statistics are recalibrated into alien form.

OCCUPATION
The primary skill of the character, what he or she does for a living.

PLANET
This is the characters planet of origin. This may include adopted planets or colonies and will not necessarily predetermine race.

COMMAND
This is a characters rank from current or past military experience.

AGE
This is the age of the character.

SEX
The characters sex.

LEVEL
The current experience level of the human or alien player character.

EXPERIENCE
The number of experience points the player character has earned on his or her life and adventures.

STATISTICS

These are the randomly generated numbers that give your character his strengths and limitations. The character sheet above shows the block of 14 statistics you will generate.

STR   STRENGTH

Strength is the force a character can exert to lift or move objects. Each point of strength allows a character to carry 4 pounds with reasonable comfort.

STRENGTH HAS FIVE OPTIONS:

01	CARRY	:	4 pounds per point of STR with reasonable comfort.
02	DEAD LIFT	:	Double STR use in a lift situation for d4+2 actions in a 5 minute period.
03	DRAG	:	Four times STR use for d4+2 actions in a 5 minute period.
04	COMBAT	:	To punch or strike with an object or self. See damage relating to strength.
05	THROW	:	The limit of distance an object may be thrown. See damage relating to impact.

For your strength roll 4d6 and subtract four from the result.

CON   CONSTITUTION

Constitution is the general health of the the character, his or her basic life force. Constitution can be reduced by sickness or critical damage to the character. At -1 CON a character is unconscious. At -3 CON a character suffers death shock and will die unless aided.

For a characters constitution roll 4d6 and subtract four from the result.

DEX   DEXTERITY

Dexterity is the characters measure of hand to eye co-ordination that allows him to do a precision task. This is also the hand to hand combat number that allows physical or hand held weapon attacks. Always roll a d20 under your DEX to strike at a target, but remember the modifiers in the combat charts.

For dexterity roll 4d6 and subtract four from the result.

SIZ   SIZE

Size is the general size of the character as indexed from racial statistics in the Character Types section.

AGL   AGILITY

Agility is the speed of action of the character and the co-ordination of his or her movements.

For agility roll 4d6 and subtract four from the result.

Determine your character's movement and action rate from the table below. Index across from your characters agility.

AGILITY	RATING	ACTIONS	MOVEMENT
01-04	Low	x0.50	xo.50
05-16	Average	x1.00	x1.00
17-20	Above Average	x1.50	x1.50
21-25	High	x2.00	x2.00
26-30	Very High	x2.50	x2.50
31-40	Fast	x3.00	x3.00
41+	Very Fast	x3.50	x3.50

Agility is also used for determining the sucess or failure of difficult acrobatic stunts, jumping, and the rate of speed of physical combat. See the character Experience and Difficulty tables.

INT   INTELLIGENCE

Intelligence is the learning ability of the character you design. A lower INT may limit the character's skills but will in no way make him or her any less of a playable character.

For intelligence roll 4d6 and subtract four from the result.

WIZ   WISDOM

Wisdom is the characters ability to use sound judgement in an alien society or learn the purpose of items of unknown function. Always roll under your wisdom on a d20 for successful use.

Your wisdom score is found by rolling 4d6 and subtracting four from the result.

LCK   LUCK

Luck helps the player-character in adverse situations, mostly when he needs that extra point on the dice to make a fortune or not fall off a thousand foot cliff. It is used at the discretion of the games master. Luck does not effect situations of combat or equipment failure. Luck can be used for repair percentages.
Luck is always a critical roll. Luck adds one or two points to a percent (%) dice roll. Always roll under your luck for success.

For luck roll 4d6 and subtract four from the result of the roll.

CRZ   CHARISMA

Charisma is the rating of a character's personality and physical appearance. Charisma is mostly irrerevent when dealing with aliens life forms.

For charisma roll 4d6 and subtract four from the result.

PSI   PSIONICS

Psionics is the ability to have an extra range of controlable senses. PSI ability can manifest itself in many forms or combinations of forms.

For PSI ability roll 4d6 and subtract four from the result. A character with an 18 or above has the potential to have PSI ability.

01 On a PSI of 18 or above, roll a d4 and add this result to your PSI score.
02 Any total equal to or over 21 gives the character a PSI ability.

TOTAL SCORE	NUMBER OF PSI ABILITIES
20	Borderline, No ability, sensitive to PSI use.
21	One ability
22	Two abilities
23	Three abilities
24	Four abilities

See PSI in the appendix for information on abilities and use.

THR   THROW

Throw is the characters natural ability to physically propel an object toward a target in the hope of hitting the target. Always roll under your throw on a d20 to hit a target. Your ability to throw is limited by optional modifiers.

01 ATTACKER / DEFENDER MOVEMENT
02 SIZE / SPEED OF TARGET
03 WEIGHT / SIZE OF THE OBJECT THROWN

For your ability to throw add your ratings of Strength, Accuracy, and Dexterity. Divide the result by three. Round fractions down to the nearest number.

$$\frac{STRENGTH + ACCURACY + DEXTERITY}{DIVIDE\ BY\ THREE}$$

ACC   ACCURACY

Accuracy is your base number for any type of projectile weapons combat. Optional combat modifiers are added to this number. Always roll a d20 under your accuracy to hit.

For accuracy roll 4d6 and subtract four from the result.

DOD   DODGE

Dodge is the ability to avoid a physical strike or move out of the way of a thrown or dropped object, if not surprised. Arrows and high velocity projectiles can not be dodged. Always roll under your dodge rating on a d20 for success.

For your ability to dodge add your ratings in Strength and Agility. Divide the result by two, rounding fractions down to the nearest number.

$$\frac{STRENGTH + AGILITY}{DIVIDE\ BY\ TWO}$$

WKP WORKING PSI

Working PSI is the characters reserve of psionic power. This reserve can be used for general PSI use or for defence from PSI attack. See WKP use and regeneration in the PSI section of FTL.

For WKP add your Constitution to your PSI score. Divide the result by two, rounding fractions down to the nearest number.

$$\frac{CONSTITUTION + PSI}{DIVIDE\ BY\ TWO}$$

HPT   HIT POINTS

Hit points are the physical structure of your character. Hit points are the total number of points a character can take in damage before he or she is incapacitated or killed. At 0 hit points a character is unconscious. At -10 hit points a character is dead.

Hit points are the product of Strength added to double your Constitution rating with the addition of a d10.

STRENGTH + (2x CONSTITUTION) + d10

Character Sheet   FTL 2448

CHARACTER NAME	BEN WARREN	RACE HUMAN
OCCUPATION	PHASE ENGINEER	WORLD FOMALHAUT / MARS
COMMAND	NONE	SEX M AGE 34
EXPERIENCE LEVEL	0	EXPERIENCE POINTS 0

STR 15	INT 12	THR 12
CON 10	WIS 08	DOD 12
DEX 12	LCK 10	ACC 11
AGL 07	CRZ 08	WKP 07
SIZ 5'8	PSI 04	HPT 43

75% HPT	32
50% HPT	21
25% HPT	10

Alien Life

The next section will be your guide to turning your character into an alien.

ALIENS

The changing of your character into any of the races of "FTL" settled space is a simple procedure.

REMEMBER

01 Go to the Alien Race section of the appendix and choose your race after careful reading. Remember each race has it's own strengths, limitations, and personality quirks.

02 Return to this section to index from the race name and modify your player character's statistics.

03 When finished go back to the hit point section of character generation and re-figure your hit points using your new statistics.

04 DO NOT re-figure your Dodge, Throw, or Working PSI statistics. These stats do not change.

05 Make notes of changed values in tissue and natural body armor.

06 No characters statistic can be less than one point. Convert all negative and zero statistics to one

Alien Statistics

	STR	CON	DEX	AGL	INT	WIZ	PSI
ARKOL	n/c	n/c	-02	+02	n/c	n/c	no
BARLOW	+04	+02	n/c	n/c	n/c	n/c	*a
BERIAN	n/c	n/c	+01	n/c	n/c	-01	no
BLOX	-03	+02	+04	+01	n/c	n/c	n/c
BORCHA	+16	+04	-02	-02	n/c	n/c	n/c
DABE	+12	+06	-02	-01	n/c	n/c	no
FALCS	-01	n/c	+02	+04	n/c	-04	*b
FRENDLE	n/c	+02	+04	+08	n/c	-02	no
FRITZIAN	-04	+02	+02	+01	+02	+04	n/c
GREX	-03	+04	+03	+03	-01	-01	n/c
HUMAN HEAVY WORLD	n/c	n/c	n/c	n/c	n/c	n/c	n/c
HUMAN MUTANT	+04	+01	n/c	-01	n/c	n/c	n/c
HUMAN LIGHT WORLD	-01	n/c	n/c	n/c	n/c	n/c	*c
HUMAN	-04	-02	+02	+02	n/c	+01	n/c
KENDAK	-04	+04	+01	+02	*d	-04	*e
KRELVIN	-06	n/c	+06	-02	+05	+03	*f
KYMNAR	+06	+02	n/c	+01	n/c	n/c	*g
SANDROL	+20	+08	-05	-04	n/c	-06	no
SKAY	+04	+02	n/c	n/c	n/c	n/c	n/c
TRELL	-07	+09	+08	+01	-04	n/c	*h
TUGAN	+08	+04	-03	-02	-01	n/c	no
VESH	+06	+15	+01	-01	-02	-09	no
WHURR	-10	n/c	+10	+06	n/c	n/c	no
ZATH	n/c	+02	n/c	+03	n/c	-02	n/c
ZUMWOL	-05	n/c	+06	-04	-04	n/c	no

Natural PSI

Some of the races of FTL have specific PSI abilities inherent to the race. These PSI talents are explained in the Alien Race appendix.

Races With PSI

The following list explains PSI special information that is in the race table.

n/c : No change in statistic for this race.

NO : No ability in this area.

*a : Barlow start with a natural 20 in PSI instead of a randomization. Barlow's have d4 PSI abilities as a racial norm. Barlow are normally telepaths.

*b Falcs have a natural PSI empathy to their own and most human like races.

*c Humans with borderline PSI talent may be pushed over the edge by drug use. This drug will have drastic effects on the user. See the PSI appendix.

*d The Kendak are a hive mind with d6+2 members in the group who always share conscious thought. The group has a collective (4d6) -4) intelligence.

*e Kendak are also telepathic within their group.

*f Krelvin have natural PSI ability that allows them three natural abilities and an ability of their choice. These natural abilities will always include mind control through mental illusion, telekenesis (100 lb's), and general telepathy.

*g Kymnar with PSI abilities are rare and not generally tolerated by their species. Multiply a psionic Kymnar's statistics by (.75). The psionic Kymnar is often a nervous psychotic.

*h Trell have a telekinetic ability that replaces their useless paws. They can precisely manipulate objects that rest in their paws.

Alien Size

ARKOL	5 - 6 ft.	HUMAN MUTANT	5 - 6 ft.
BARLOW	5 - 6 ft.	LIGHTWORLDER	6 - 7 ft.
BERIAN	4 - 5 ft.	KENDAK	3 - 4 ft.
BLOX	3 - 4 ft.	KRELVIN	2 - 3 ft.
BOR'CHA	6 - 7 ft.	KYMNAR	6 - 7 ft.
DABE	7 - 8 ft.	SANDROL	7 - 8 ft.
FALCS	6 - 7 ft.	SKAY	6 - 7 ft.
FRENDLE	5 - 6 ft.	TRELL	2 - 3 ft.
FRITZIAN	3 - 4 ft.	TUGAN	5 - 6 ft.
GREX	3 - 4 ft.	WHURR	1 - 2 ft.
HUMAN	5 - 6 ft	VESH	6 - 7 ft.
HEAVY-		ZATH	5 - 6 ft.
WORLDER	4 - 5 ft.	ZUMWOL	2 - 3 ft.

These are average heights in comparison to the racial norm. Some individuals may have a slightly greater or lesser height. Races like the Barlow, Frendle, Whurr, and Zumwol are measured head to tail as they have a semi vertical or horizontal posture.

Primary Skills

Every character is assumed to have a general range of skills necessary to survive on his or her world. This primary education is taken for granted by the GM.

As the character gains advanced education there is a choice of skill and specialization of educational area.

Skill Aquisition

Use the table of skill acquisition to pick the type of knowledge you wish your character to have. Concentrate types of skills in a specific area or have several skill areas of general experience.

Education

Skills have five different letter prefixes that designate your characters method of learning. These include:

W	WORK EXPERIENCE	10 years
T	TECHNICAL SCHOOL	04 years
M	MILITARY EDUCATION	06 years
H	HIGHER EDUCATION	06 years
S	SELF TAUGHT	

Choose any one letter for your characters education, then any skills with that letter prefix. Any additional Military training allows the character to use skills with the prefix M.

Self taught skills are the hardest way to aquire skills. These are mostly for the character who wants a special skill not in the realm of his or her education. The initial player taking of a Self Taught skill requires the loss of a skill. As a character gains skill levels this initial cost becomes a two point penalty to start self teaching.

Extra-Legal Skill

Extra Legal skills are always self taught skills. Find them after the main skill table and the Space Training section.

Medical Skill

Medical Skills require a different process than normal skills. If you decide to become a doctor use the Medical Skills section after the experience tables.

Space Training

Space Training is a specialized branch of skills seperate from normal skill generation. Space training is an optional though costly addition to skills. Training takes 1 year

Advanced Space Training is a must for all who operate, command, or explore. Licenseing is required for such individuals who take this 2 year course.

Skill Generation

Skills are an integral part of the player character. A skill is a specialized area of knowledge and training developed by your character after study and time.

Each point of skill level gives a player a +5% chance to accomplish a task relating to that skill. Levels for skills range from 0 to a maximum of 20. As a character gains experience he can develop existing skills or entirely new skills.

REMEMBER

01 Choose a primary occupational skill. Your starting level for this skill is d4 +4.

02 Choose two skills that relate or help you in this primary skill. Start the level of these skills as d4 +2.

03 Index from the characters intelligence to find the number of additional types of skills you may choose. Try to relate these skills to your primary skills, but do not forget hobbies or special areas of interest. Start the level of these skills as a d4.

Number Of Skills

INTELLIGENCE		ADDITIONAL SKILLS
01-04	Slow Learner	06
05-09	Average Learner	12
10-16	Excellent Learner	15
17-19	Fantastic Learner	19
20-21	Genius	22
22-24	More Than Human	26
25+	Beyond Human	30

Ben,Bells, & Quag

Ben's job skill of Phase Engine Tec is his primary skill. His two other related skills are Electronic Diagnosis and Electronic Repair.

SKILL	LEVEL	%SUCCESS
Phase Engine Tec.	05	25%
Electronic Diagnosis	04	20%
Electronic Repair	03	15%

Ben's player now chooses 15 additional skills because of his intelligence of 12. For each of these new skills he rolls a d4 to determine their starting level.

SKILLS	LEVEL	SKILLS	LEVEL	DAMAGE
PHASE TECHNOLOGY	5	ENGLISH	20	
ELECT DIAGNOSIS	4	LOGLAN	14	CLAW
ELECT REPAIR	3	KYFHAR	3	
STRUCTURAL DIAGNOS	3	ALIEN CUSTOMS	1	BITE
ROBOTICS	2	VAC SUIT USE	1	d. PUNCH
COMPUTER	2	STARSHIP COMPUTER	2	
MICRO ELECTRONICS	2	ZERO GRAVITY TRAIN	1	2d. LIGHT

W	T	H	M	S	SKILL TYPES
		H	M	S	Abnormal Psychology
W		H	M	S	Accounting
W	T	H	M	S	Administration
	T		M	S	Air Sea Navigation
	T	H	M	S	Aerodynamics
W	T	H	M	S	Agriculture
		H		S	Archeology
W	T	H	M	S	Animal Husbandry
W		H	M	S	Animal Training
		H	M	S	Anthropology
	T		M		Aquatic Vehicles Tec
	T		M	S	Aquatics (Diving)
		H	M	S	Archery Technology
	T	H	M	S	Art, Commercial
W	T	H	M	S	Art, Drafting
	T	H		S	Art, Painting
	T	H		S	Art, Sculpture
		H		S	Art, History
	T	H	M	S	Astronomy
		H	M		Astrophysics
	T	H	M	S	Atmospherics (weather)
W		H			Banking
		H	M	S	Balloon Technology
W	T		M	S	Barbering
	T	H	M		Bio-Chemistry
		H		S	Biology, Animal
		H	M	S	Biology, Human / Alien—
		H		S	Biology, Marine
			M	S	Blade Weapons Technology
W		H	M	S	Boating, Small
W	T	H	M	S	Boating, Large Power
W	T		M		Boating, Large Commercial
W	T	H	M	S	Boating, Sail
W		H		S	Brokering, Commercial
		H	M		Business Law
W	T	H	M	S	Calligraphy
W	T	H	M	S	Ceramics, Industrial
W		H		S	Ceramics, Classical
	T	H	M		Chemistry, Organic
	T	H	M		Chemistry, Inorganic
W		H	M	S	Child Care
	T	H	M	S	Civil Engineering
		H	M	S	Civil Law
	T	H	M	S	Climate Generation
			M	S	Cold Survival
			M	S	Commando Training
W	T	H	M	S	Communications Technology
W	T	H	M	S	Computer Programming
W	T	H	M		Computer, Space Systems
W	T		M		Computer, FTL Phase
W	T	H	M		Corporations, Space
W	T	H			Corporate Structure
W		H			Corporate Management
W	T	H		S	Cosmetology
W		H	M	S	Criminal Investigation
W		H	M	S	Criminal Law
W	T	H	M	S	Criminal Science
			M		Cryptology
			M	S	Crude Weapons
W	T	H		S	Cuisine
		H		S	Dancing
W	T	H	M	S	Data Manipulation
W	T		M	S	Demolition
			M	S	Desert Survival
		H	M	S	Diplomacy, Interstellar—
W		H		S	Domestic Technology
W	T	H		S	Domestic Trade
W		H		S	Drama, Theater Arts

W	T	H	M	S	
W		H		S	Ecology
		H	M		Education (teaching)
W	T	H	M	S	Electronic Diagnosis
W	T	H	M	S	Electronic Engineering
W	T	H	M	S	Electronics, Micro
W	T	H	M	S	Emergency Medical Care
W		H		S	Entertainer
W	T	H	M	S	Enviromental Engineering
W	T	H	M	S	Fabrication, Metal
W	T	H	M	S	Fabrication, Wood
W	T	H	M	S	Fabrication, Plastic
W		H		S	Fashion
		H	M	S	Fencing Technology
			M		Fighter Pilot, Air / Space
W	T	H	M	S	Finance, Interstellar
W	T	H	M	S	Food Processing
	T	H	M		Fusion Technology
W	T	H	M		Fusion Generator
W	T	H	M		Fusion Engine, Small
W	T		M		Fusion Engine, Starship
W	T	H	M	S	Fluid Systems, (plumbing)
		H	M	S	Forest Survival
		H	M	S	Geography
	T	H	M	S	Geology
			M	S	Grenade Weapons
			M	S	Guerrilla Tactics
W		H	M	S	Gymnastics
		H	M	S	Glider Technology
W	T	H	M	S	Health Care
W	T		M	S	Heavy Equipment Operation
		H	M	S	History, Human / Alien
W		H	M	S	Horsemanship / Equivalency
	T	H		S	Interior Design
			M	S	Interrogation
W	T	H	M	S	Journalism
			M	S	Jungle Survival
W		H	M	S	Labor Relations
W	T	H	M	S	Language, Additional
W	T	H	M	S	Laser Technology
W		H	M		Law Enforcement
		H	M		Linguistics
W	T	H	M	S	Lifesaving
W	T	H		S	Marketing
		H	M	S	Martial Arts, Combat
		H	M	S	Martial Arts, Defense
		H	M		Mathematics, Higher
		H	M		Mathamatics, Phase Drive
W	T	H	M	S	Mechanical Diagnosis
	T	H	M	S	Metallurgy
	T	H	M		Microwave Technology
		H	M	S	Mountain Climbing
W	T	H	M	S	Mortuary Science
W	T	H		S	Music Technology
		H		S	Music Performance
	T	H	M		Nuclear Physics
W	T	H	M		Nuclear Power Technology
			M		Nuclear Weapons Technology
W	T	H	M		Nursing
	T	H	M	S	Oceanography
	T	H	M	S	Optics
	T		M		Particle Beam Technology
		H		S	Philosophy
W	T	H	M	S	Photography

W	T	H	M	S	Skill
	T	H	M		Phase Drive Technology
			M	S	Physical Surveillance
		H	M	S	Physics
		H	M	S	Political Science
W	T	H	M	S	Projectile Weapons Technology
W		H	M	S	Public Speaking
		H	M	S	Psychology
W	T	H	M	S	Pilot, Motor Vehicle
W	T		M	S	Pilot, Heavy Motor Vehicle
		H	M	S	Pilot, Ultralight Aircraft
	T	H	M		Pilot, Fixed Wing Aircraft
	T	H	M		Pilot, Jet Aircraft
	T	H	M		Pilot, Rotary Wing Aircraft
	T		M		Pilot, Submersible
W	T		M		Power Armor Technology
		H	M	S	Psionic Study
			M		Reconnaissance
W		H		S	Religion
W	T	H	M	S	Retail Science
	T	H	M	S	Robotics
W	T		M	S	Sanitation Engineering
W	T	H	M	S	Security
W	T	H	M	S	Skiing
		H	M	S	Sociology
W		H	M	S	Social Work
W	T	H	M	S	Solar Electric Technology
W		H	M	S	Swimming
W		H	M	S	Sport (specialized)
W	T	H	M	S	Starship (general info)
	T	H	M		Structural Diagnosis
	T	H	M		Structural Engineering
	T	H	M		Tax Lawyer
			M	S	Tactics
W	T	H	M		Terraforming
	T	H	M		Undersea Engineering
		H	M		Undersea Survival
	T	H	M		Undersea Technology
	T	H	M	S	Ultralight Aircraft Tec.
W	T	H	M		Vacuum, Mining
	T	H	M		Vacuum, Cargo Handling
	T	H	M		Vocational Rehabilitation
		H		S	Voice
W	T	H	M	S	Writing
W	T	H	M	S	Xeonology
W	T	H	M		Xerography

Extra-Legal Skills

Arson
Assassination
Booking (bets)
Brawling
Breaking & Entering
Computer Crime
Counterfeiting
Drug Traffic
Electronic
  Countermeasures
Espionage
Extortion
Forgery

Fraud
Illegal Gaming
Kidnapping
Organized Crime
Pickpocketing
Procuring
Safe Cracking
Smuggling
Tax Evasion
Terrorism
Theft, Petty
Theft, Grand
Traps

These skills, while not the normal skills of the typical character, can be handy in adverse situations.

SPACE SKILLS

Space Training is an optional set of skills that relate to characters who wish to work, travel, or live in space. This one year of intensive training gives the player 6 + d6 basic skills that start at a level of d4 as normal skills. These skills can be taken as normal skills after space training or may become an area of specialization. Any additional year of space training gives the character d6 additional skill points at a cost of 10,000 d's. This may only be repeated twice.

REMEMBER

01 Take 6 + d6 Basic space skills.
02 Start their level at d4.

Alien Customs
Alien Economy
Alien Law
Alien Psychology
Alien Worlds

Colonial Life
Corporations in Space
Emergency Medicine in Space
Emergency Vac Suit Repair
Hostile Environment Survival
Passenger Laws
Regulations on Economics
Regulations on Space Travel
Starship Computer Systems
Starship Courtesies
Starship Operating Systems
Vac Suit Use
Zero Gravity Training

Advanced Training

Advanced Space Training is a two year training period where the character learns to live on and operate a starship. The character gains 4 + d4 skills that start at a level of d4. This training is a one shot experience. Cost of Training, 35,000 d's.

REMEMBER

01 Choose 4 + d4 skills from the advanced skill list.
02 Start the levels at d4.

Skills

Alien Contact
Biological Survey
Exploration
Cultural Survey
Mineral Survey
Phase Navigation
Ships' Weapons
Shuttle Pilot
Starship Management
System Navagation

LANGUAGE

A character learns one language in his or her formative years. This becomes his native language. As a character gains skills he may elect to learn additional languages in place of new skills.

Bi-Lingual

Characters raised in a double language or bilingual enviroment automatically add the second language as an additional skill.

REMEMBER

01 Start your character with his native language at a level of 20.

02 Additional languages may be added as regular skills. Languages start at a level of d4.

03 Characters who are from a bilingual enviroment start their second language at a level of 16 + d4.

04 A character who studies or stays in a foreign language situation can gain d6 points of level in that language per year of total immersion. Immersion is the complete dedication to learning a language.

Language Level

LANGUAGE LEVEL	DESCRIPTION	CHANCE OF COMMUNICATION
01-03	Totally Unintelligible	15%
04-06	Mostly Unintelligible	30%
07-09	Somewhat Understandable	45%
10-12	Almost Understandable	60%
13-15	Understandable	75%
16-18	Fluent	90%
19	Fluent / Can Translate	95%
20	Talks Like A Native	99%

Earth Languages

01	Arabic	11	Japanese
02	Chinese	12	Korean
03	French	13	Latin
04	Gaelic	14	Polish
05	German	15	Portuguese
06	Greek	16	Russian
07	Hebrew	17	Spanish
08	Hindi	18	Swahili
09	Hungarian	19	Swedish
10	Italian	20	Welsh

21 Loglan, the technical language hybrid that originated in the late 20th century, now a common trading and business language.

Ben, Bells, & Quag

As Ben Warren worked the endless years in the Fomalhaut dockyards he took the hobby of reading a tourist's pocket guide in order to learn to speak low Kymnar. In three years he has gained the language proficiency of 3 or a 15% chance of being understood.

In a crowded bar Ben first caught sight of the Kymnar musician Bells who sat at a table with an empty seat.

In his best faltering Kymnar, Ben asked if the seat was taken. Bells smiled and gestured to the chair, curious about the human who had just politely addressed her as his uncle and had asked if the rock is spiced purple.

Ben, who was being totally unintelligible, but determined to make a friend, resorted to other forms of communication.

After an hour of futile conversation and scribbled notes on the table, Ben borrowed a language computer and invited Bells to a poker game.

What Ben does not realize is that in her four years of stay on Fomalhaut Bells has learned the Terran language Loglan and speaks it with a level of 14. Ben, bilingual, speaks Loglan at a level of 18.

Alien Languages

ARKOL:	Sine
BARLOW:	Barlow
BERIAN:	Tceb, Family, or Outsider
BLOX:	Bloxian
BOR'CHA:	Som'Che, Or'Che, C'Che
DABE:	Dabe Common, Respectful
FALCS:	30 different relating to Family, Home, and Planet.
FRENDLE:	234 seperate language groups with 50 in common daily use.
FRITZIAN:	One known language.
GREX:	High, Medium, and Low Grex.
HUMAN:	More than 200 Terrestrial with many dead languages.
KENDAK:	A pigeon Loglan hybrid only.
KRELVIN:	No spoken language.
KYMNAR:	High, Family, Warrior, and Technical.
SANDROL:	No spoken language.
SKAY:	Sfine
TRELL:	High or Flunkey (translation)
TUGAN:	Sfine or Old Sfine
VESH:	Common or Soft one
WHURR:	Whurr (see alien appendix)
ZATH:	Two languages by gender.
ZUMWOL:	One language.

Universal Translator

The universal translator is a hand held, pocket computer that can translate with an 89% accuracy. It's invention allows the great interaction of alien races across settled space.

CHARACTER SKILL LEVELS

Skill levels (0 to 20) are a measure of the character's ability to perform a task. Each point of skill level is worth +5% on the attempt to successfully accomplish such a task.

Difficulty ratings are the toughness of a task a player character wishes to accomplish.

All skill attempts of any importance have GM rated difficulty potential. This is the number a player must roll under on a d100 (percent dice roll).

This number for success is modified by resources available, time, and situation.

REMEMBER

01 Each point of skill is worth +5% toward your needed number.

02 Related skills from a single player can be combined for the attempt at a task under the discretion of the GM.

03 Skills can not be combined with those from other players. The highest skill level that is available is the level used for the task attempt. Each player helping adds +1% on the final totals.

04 On the GM's decision the luck roll can used where a percentage roll fails and falls short by one or two points.

05 An unmodified roll of a 01 on a d100 is always a success. A roll of 00 is always a crashing failure.

Difficulty Rating

The difficulty rating is the measurement of difficulty of an attempted task. It can be used for fabrication, repair, feats of agility and dexterity.

DIFFICULTY RATING	PERCENT CHANCE OF SUCCESS
01	+95% + Skills +)- optional modifiers
02	+80% + Skills +)- optional modifiers
03	+65% + Skills +)- optional modifiers
04	+35% + Skills +)- optional modifiers
05	+20% + Skills +)- optional modifiers
06	+05% + Skills +)- optional modifiers
07	0% + Skills +)- optional modifiers
08	-05% + Skills +)- optional modifiers
09	-20% + Skills +)- optional modifiers
10	-35% + Skills +)- optional modifiers
11	-65% + Skills +)- optional modifiers
12	-80% + Skills +)- optional modifiers
13	-95% + Skills +)- optional modifiers

Ben, Bells, & Quag

INDEPENDENT STAR SHIP "WAPAKONETA"

After a week of hectic paperwork Ben, Bells, and Quagmire are able to visit the ship Quagmire owns.

As they turn the corner in the docking umbilical they see the pitted airlock of the starship they plan to turn into a freighter.

As they press the cycle button to open the hatch a curl of smoke rises from the control button. Pushing the button again, Quagmire jams it solidly.

A repair is necessary.

Ben's skills that relate to the project:
    ELECTRONICS DIAGNOSIS 04 (+20%)
    ELECTRONIC REPAIR   03 (+15%)

The GM rates the difficulty of the repair as a 6 or 5% chance of success. Ben's chance to repair the airlock is 5% + his skills + any optional modifiers. Ben now has a 40% chance of success.

(Ben's player must now roll under 40 on a d100, percent dice for success.)

A 55 is rolled. The hatch will not open even after Ben thought he fixed the problem. Ben goes home for his tools and a repair kit.

In an hour, Ben returns and can add these modifiers to the dice roll.
    COMPLETE TOOLS AVAILABLE   +05%
    COMPLETE INFORMATIO AVAILABLE   +10%

Now with a 55% chance of success, Ben tries to fix the airlock.

A 66 is rolled on a d100 and Ben curses the manufacturer in three languages.

In complete aggravation he goes to "Honest Abduhl's Used Parts" and purchases a lock repair kit for 86.4 d's (earth dollars).

    PREPACKAGED "HOW-TO" KIT   +15%

Back at the airlock Ben has a 70% chance of making the door open.

Holding his breath, he makes the last connection and pushes the button.

A 23 is rolled on a d100.

The hatch opens.

Randomization

This chart allows for the randomization of difficulty by generating a level of difficulty from general information.

REPAIR	RATING	
Simple Repair or Fabrication	d4	
Repair or Fabrication	d4	+1
Complex Replacement	d4	+2
Complex Fabrication	d4	+3
Very Complex Replacement	d6	+3
Very Complex Fabrication	d6	+4
Speciality Fabrication / Repair	d6	+6
Unlikely Fabrication or Repair	d6	+7
AGILITY		
Easy Acrobatics	d4	
Difficult Acrobatics	d4	+2
Almost Impossible Acrobatics	d4	+4
Impossible Acrobatics	d6	+4
Unlikely Acrobatics	d6	+6
Ridiculous Stunts	d6	+7

Skill Modifiers

REPAIR / FABRICATION

		MODIFIER
01	Lack of Tools	-05%
02	Lack of Technology	-10%
03	Lack of Materials	-10%
04	Fabrication Under Stress or Combat	-05%
05	Fabrication in Hostile Environment	-10%
06	Old Parts, Undependable	-10%
07	Lack of Instructions	-10%
08	Complete Tools Available	+10%
09	Complete Information Available	+10%
10	Prepackaged "How-To" Kit	+15%
11	Familiar Design	+15%
12	Semi-Familiar Design	+05%
13	Unfamiliar Design	-05%
14	Something Never Attempted	-10%
15	More Than Three Failures at Attempt	-10%
16	More Than Six Failures at Attempt	-20%
17	Semi-Alien Design	-10%
18	Alien Design	-15%
19	Totally Alien Design	-20%
20	Archaic / Old Design	-05%

Agl / Dex Modifiers

A character's agility or dexterity may be used in the same way as a skill level to accomplish a difficult acrobatic or balance saving feat. Each point of a character's agility is worth a +5% in an attempt.

AGILITY / DEXTERITY

		MODIFIER
01	Attempt at a well known activity while under no stress.	+15%
02	Character plans a complex action in a non stress situation.	+05%
03	Character plans a complex action in a moderate stress situation.	- 0%
04	Character plans a complex action in a high stress situation.	-10%
05	Action attempted for the first time without practice.	-15%
06	Character is wounded with less than half hit points remaining.	-20%
07	Character under weight burden.	-10%
08	Character under heavy or light gravity situation.	-10%
09	Character wounded in arm or leg.	-15%
10	Less than half constitution is remaining in character.	-25%

REMEMBER

These modifiers are options for the GM or players use at the GM's discretion.

Personal Modifiers

These modifiers are optional for personal difficulty. The GM may wish to use them for special situations. They can apply to most repair, fabrication, dexterity, and agility feats.

Health

		MODIFIER
01	Fresh, Healthy	+05%
02	Very Healthy	+03%
03	Healthy	+01%
04	Sick	-03%
04	Tired	-05%
05	Tired and Sick	-07%
06	Pushed to Limit	-10%
07	Under Effects of Drugs	-10%
08	Tipsy (drunk)	-05%
09	Drunk	-20%
10	Roaring Drunk	-40%

Distraction

		MODIFIER
01	General Annoyance	-02%
02	Continued Annoyance	-05%
03	Rampant Annoyance	-08%
04	Total Annoyance	-10%
05	Pain, Light	-05%
06	Pain, Heavy	-10%
07	Stun, Light	-15%
08	Stun, Heavy	-40%
09	Forced Against Will	-05%
10	Forced at Gunpoint	-10%

EXPERIENCE

Experience points are a system of reward points for positive action in the game. With these points characters reach new plateaus of level where they are able to improve and gain skills. With each additional level chances of survival are improved by an increase in hit points.

Experience may be awarded for individual or group action. This experience is usually accumulated by the playing group as a whole and divided equally to characters who survive the game.

REMEMBER

- 01 Experience is the GM's decision.
- 02 Do not give experience for every small action that adds to the general welfare of the party.
- 03 Do not award experience for killing, looting, burning, or unjust mayhem by the players. Players who have their brains in their trigger fingers should be limited by Negative Experience.
- 04 Negative Experience is a system of not allowing a character to progress in level until a GM set amount of new experience is returned as penalty.
- 05 A character can never lose experience already gained from past games.

Levels

0	Groundhog	08	Space Wise
01	Space Cadet	09	Spacer
02	Rookie	10	Spacer, Fourth Class
03	Rocket Jockey	11	Spacer, Third Class
04	Experienced	12	Spacer, Second Class
05	Pro	13	Spacer, First Class
06	Veteran	14	Starborne
07	Old Hand		

Experiance Points

LEVEL	POINTS		ADDITIONAL HIT POINTS GAINED	ADDITIONAL SKILL PTS. GAINED
01	100-	1000	d10	d4
02	1001-	2000	d10	d4 +01
03	2001-	4000	d10	d4 +02
04	4001-	8000	d10	d4 +03
05	8001-	16000	d10	d4 +04
06	16001-	32000	d10	d4 +05
07	32001-	64000	d10 +01	d4 +06
08	64001-	120000	d10 +01	d4 +07
09	120001-	240000	d10 +02	d4 +08
10	240001-	480000	d10 +02	d4 +09
11	480001-	730000	d10 +03	d4 +10
12	730001-	980000	d10 +03	d4 +10
13	980001-	1230000	d10 +04	d4 +10
14	1230001-	1480000	d10 +04	d4 +10
15	250,000 per level		d10 +05	d4 +10

Ben, Bells & Quag

After minor adventures on Fomalhaut, Ben has gained a little experience.

Ben is a little tougher and a little more experienced in his skills use.

Now at first level Ben gains the roll of a d10 to increase his hit points and a d4 more skill points to increase his levels in old skills or start new skills.

Ben's player rolls a 5 on a d10, bringing his characters hit points to 48. He then rolls a 3 on a d4 for additional skill points.

Ben decides to take a new skill, Metal Fabrication and gives it one point. With his remaining 2 points he improves his Electronic Repair by 2.

Ben's skills are now:

SKILLS	LEVEL	SKILLS	LEVEL	DAMAGE
PHASE TECHNOLOGY	5	ENGLISH	20	
ELECT DIAGNOSIS	4	LOGLAN	14	CLAW
ELECT REPAIR	5	KYPMAR	3	
STRUCTURAL DIAGNOS	3	ALIEN CUSTOMS	1	BITE
ROBOTICS	2	VAC SUIT USE	1	d.
COMPUTER	2	STARSHIP COMPUTER	2	PUNCH
MICRO ELECTRONICS	2	ZERO GRAVITY TRAIN	1	2d. LIGHT
CERAMICS	2	STARSHIP OPERATIONS	4	
STRUCTURAL REPAIR	1	EMERGENCY VAC SUIT	2	3d. MEDIUM
PHYSICS	1	COLONIAL LIFE	4	
PSYCHOLOGY	1	EMERGENCY SPACE MED	1	4d. HEAVY
BASKETBALL	1	ALIEN WORLDS	3	
PILOT, MOTOR VEH	1	CUISINE	1	
MARTIAL ARTS, DCF	1	METAL FABRICATION	1	

Experience

	Total PARTY EXPERIENCE
Exploration and Discovery	100 pts.
Outstanding Exploration	500 pts.
Good Judgement, Sound Reasoning	200 pts.
Outstanding Reasoning, Insight	800 pts.
Outstanding Detective Work	750 pts.
Blending into an Alien Culture	1000 pts.
Aiding the Needy	400 pts.
Going Out of Their Way to Aid	1000 pts.
Risking Their Lives to Aid	2000 pts.
Outstanding Aid	3000 pts.
No use of Violence	2000 pts.
Minimal Use of Weapons	500 pts.
Effective Use of Weaons as Needed	500 pts.
Avoiding Traps	400 pts.
Outsmarting a Superior Force	1000 pts.
Outfighting a Superior Force	500 pts.
Playing in Character	100 pts.
Good Group Organization	500 pts.
Good Organization After Leadership Loss	400 pts.
Dealing Peacefully with Aliens	1000 pts.
Accepting Alien Law	1000 pts.
Not Damaging Alien Culture	1000 pts.
Trying to Deal Peacefully with Hostile Aliens or Humans	1000 pts.

These are only examples of possible ways to gain experience. Groups who are outside the law may gain experience for the opposite reasons. This is the GM's decision.

MEDICAL SKILLS

Separate from general skills are the special medical skills a character may have when he or she plays a doctor.

A character who becomes a doctor uses a separate skill generation and experience system.

REMEMBER

01   The only requisite for becoming a doctor is a minimum intelligence of 12.
02   Choose a primary medical specialty. Start this skill at a level of d4 +4.
03   Choose four other medical skills, start their level at d4 +1.
04   Choose 12 skills from the general skill table with the prefix H. Start these skills at a level of d4. A character with military training may also use the M prefix skills.

Medical Skill Types

ANATOMY
   The study of the structure of life.
ANESTHESIOLOGY
   The science of administering local and general anesthetics.
AUDIOLOGY
   The science of hearing.
AUTODOC
   The use and maintainence of the mechanical medical system in universal use.
AUTOPSY
   The science of medical examination after death to ascertain the cause of death.
BACTERIOLOGY
   The science and study of bacteria.
BEHAVIOR - MODIFICATION
   The study of the total response of a living organism to internal and external happenings. The alteration of behavior.
BIONICS / REPLACEMENT SURGERY
   The science of replacing human or alien parts with fabricated parts that serve a similar function.
BIO-CHEMISTRY
   Study of the chemistry of living tissues.
BIO-PLASTIC SURGERY
   The alteration of living tissue to change it's shape and general appearance
BOTANY
   The study of plants and their medical use.
BURN TECHNOLOGY
   The use of high technology to treat and repair burn damage.
CHEMISTRY
   A working knowledge of general and specialized chemistry in the lab or field.
COLONIAL / COMMUNITY MEDICINE
   The knowledge of the medical needs of a colony or community often specialized by race and world.
DENTISTRY
   Science of the prevention, diagnosis, and treatment of disease of the mouth & teeth.

DERMATOLOGY
   Science of the structure, function, and diseases of the skin.
DRUG THERAPY
   The use of drugs to treat diseases and disorders over a period of time.
FREEZING / CRYO -SLEEP TECHNOLOGY
   The science and use of cold hibernation to preserve life over an extended time.
GENETICS / GENETIC ENGINEERING
   The science of heredity and variation, the engineering of traits in living things.
IMMUNOLOGY
   The science of dealing with the reactions of living tissues to foreign biological material.
INTERNAL MEDICINE
   Medicine that deals with the diagnosis and medical therapy of diseases of internal organs by non-surgical methods.
MICRO-SURGERY
   Surgical methods for correcting problems at the microscopic level that most often requires special equipment.
MEDICAL TECHNOLOGY USE
   The knowledge and the use of the latest in available medical technology and hardware.
NEUROLOGY / NEURO SURGERY
   The study of the anatomy, physiology, and pathology of the nervous system. This also includes general repair and restructuring.
OBSTETRICS
   The study and care of prenatal life, including birth and infant care.
ONCOLOGY
   The study and care of neo-plastic growths, the formation of new tissues commonly called cancers and tumors.
ORTHOPEDICS
   The branch of surgery concerned with the correction of deformities and diseases of the muscle and skeletal system.
OPTHALMOLOGY
   Science of the anatomy, physiology, and diseases of the eye.
PATHOLOGY
   The science of disease and its treatment.
PARASITOLOGY
   The study of parasitic organisms.
PHARMACOLOGY
   The science of the nature and properties of drugs, particularly in their actions on living things.
PSYCHOLOGY
   The science that studies the function of the mind.
PSYCHIATRY
   The medical science that deals with the origins, diagnosis, and treatment of mental and emotional disorders.
RADIOLOGY
   The branch of medicine that deals with the treatment of disease by radioactive substances.
SCAN TECHNOLOGY
   The branch of medicine that deals with the diagnosis of injury and disease by use of special systems.
SPACE MEDICINE
   The study and treatment of disease and disorders common to people working and living in space.

SURGERY

The branch of medicine dealing with trauma and diseases requiring any operative restructuring procedures.

TOXICOLOGY

The science of the nature and effect of poisons, their detection, and treatment of their effects.

VIROLOGY

The study of viruses and virus diseases.

Character Sheet · FTL 2448

CHARACTER NAME _PAUL BARTICOWSKI_ RACE _HUMAN_

OCCUPATION _Doctor_ WORLD _BORMIS_

COMMAND _No_ SEX _M_ AGE _46_

EXPERIENCE LEVEL _0_ EXPERIENCE POINTS _0_

STR _10_ INT _12_ THR _10_

CON _09_ WIS _10_ DOD _12_ 75% HPT [25]

DEX _12_ LCK _04_ ACC _09_ 50% HPT [17]

ACL _14_ CRZ _15_ WKP _11_ 25% HPT [08]

SIZ _111_ PSI _11_ HPT _34_

SKILLS	LEVEL	SKILLS	LEVEL	DAMAGE
PATHOLOGY	4	ENGLISH	20	
ANATOMY	5	FRENCH	10	CLAW
IMMUNOLOGY	3	LATIN	14	
TOXICOLOGY	3	VIDEO GAMES	2	BITE
BACTERIOLOGY	2	BOTANY	2	.50cal PUNCH
JUNGLE SURVIVAL	2	PILOT, ULTRALIGHT	1	
COMPUTER	3	CUISINE	4	LIGHT
PSYCHOLOGY	2	PILOT, MOTOR VEHICLE	2	
VAC SUIT	1	SPACE MEDICINE	3	MEDIUM
ZERO GRAVITY TRAIN	2	EMERG VAC SUIT	1	

Levels

0	Medic	08	Junior Resident
01	Medic 4	09	Resident
02	Medic 3	10	Senior Resident
03	Medic 2	11	Chief Resident
04	Medic 1	12	Doctor
05	Intern 3	13	Specialist
06	Intern 2	14	Research Physician
07	Intern 1		

Experience Points

LEVEL	POINTS		ADDITIONAL HIT POINTS GAINED	ADDITIONAL SKILL PTS. GAINED
01	100-	1000	d10	d4 +02
02	1001-	2000	d10	d4 +03
03	2001-	4000	d10	d4 +04
04	4001-	8000	d10	d4 +05
05	8001-	16000	d10	d4 +06
06	16001-	32000	d10 +01	d4 +07
07	32001-	64000	d10 +01	d4 +08
08	64001-	120000	d10 +01	d4 +09
09	120001-	240000	d10 +02	d4 +10
10	240001-	480000	d10 +02	d4 +11
11	480001-	780000	d10 +03	d4 +12
12	780001-	1080000	d10 +04	d4 +12
13	1080001-	1380000	d10 +05	d4 +12
14	1380001-	1680000	d10 +06	d4 +12
15	300,000 per level		d10 +06	d4 +12

Medical Abilities

RESUSCITATION

For every level of experience a doctor possesses he or she has a 5% cumulative chance to save a victim from death shock.

This resuscitation is the attempt to restart the victims life functions after they have stopped. Each attempt takes d4 minutes. During the attempt the victims constitution remains stable until the attempt succeeds or fails.

Roll a d100, scoring under the Doctor's "ability to resuscitate", level percentage, for success. This may also be taken as a separate skill.

A successful roll gives the victim a second death shock roll to survive. This procedure can be continued 6+ d6 attempts before it is no longer effective.

A second type of failure to resuscitate is where the attempts go over a maximum time. At this time the character becomes hopelessly brain damaged and useless.

CONSTITUTION	TIME TO BRAIN DEATH
0 - 02	03 minutes
03 - 08	04 minutes
09 - 14	05 minutes
15 - 18	06 minutes
19 - 22	07 minutes
23 - 26	08 minutes
27 - 30	09 minutes
31 - 40	10 minutes
41+	12 minutes

Emergency Healing

Emergency healing has a base of 5% for every level a doctor possesses.

This ability allows the doctor to repair physical damage. This ability is limited to one use per day per patient. The attempt takes d100 minutes of the doctors time.

Healing restores a limited number of hit points to the character or NPC character.

Healing

	PER 48 HOURS	RATE
Natural Healing		d4 +1
Well Equipped Hospital,		d10
Poorly Equipped Hospital		d8
Field Hospital		d6 +1
Adverse Conditions		d6
Lack of Equipment, Supplies		d4
Worst Possible Conditions		d4 x.50

Modifiers on situation may come from the difficulty tables in the previous section.

Doctors are an important rarity where office calls are measured in light years or where colonies can not afford the special autodoc systems for healthcare.

AUTODOC

In 2448 medical science has progressed in many ways to near perfection in repair and replacement surgery. In many cases these mechanical doctors are far superior to their living counterpart.

The AutoDoc has six basic types.

AUTODOC TYPE	CAPABILITIES										
01	A										
02	A	B									
03	A	B	C	D							
04	A	B	C	D	E	F					
05	A	B	C	D	E	F	G	H			
06	A	B	C	D	E	F	G	H	I	J	
06b	A	B	C	D	E	F	G	H	I	J	K

AUTODOC SYSTEMS FOR MEDICAL AID

A General first aid, skin repair of small areas, sealing cuts, treating minor burns and insect bites. Dispensation of low level non-prescription drugs.

B Medical assist, blood analysis, deep cuts, stitching, antibiotics, dispensation of dietary suppliments, health improvement.

C Major assistance, poison antidotes, body chemistry analysis and correction, bone repair, blood replacement, resuscitation.

D Life prolongation treatment, full medical analysis and correction of chemical and toxin problems.

E Tissue repair of muscles and minor surgery that includes grafting.

F Cosmetic surgery, the repair of features, color, physical defects.

G Major repair surgery of internal organs, transplants, re-attachment of limbs, the limited (within 1 hour) resuscitation of dead, major restructuring of body systems.

H Simple speed healing of the body to regrow damaged tissue and organs.

I Complex reconstruction, regrowth of the internal organs, nerve re-attachment and speed healing, forced regrowth of major organs, complex transplants or replacement surgery.

J Complex reconstruction, re-growth of limbs and internal organs.

K Not commonly available. the complex gene engineering systems improve or replace defective genes in individuals before birth.

LIMITATIONS

01 The autodoc must have an analysis pack of the character being repaired or the treatments for any regrowth or speed healing are 75% fatal. An analysis pack is a full body scan that records the individuals body structure. This must be updated every 6 months.

02 The autodoc can not regenerate brain tissue and keep the characters memory and skills intact. Brain damage is permanent or limiting to the character at the GM's decisions.

03 Tissue must exist for regeneration.

AUTODOC INFORMATION	ANALYSIS	TIME
Simple First Aid	5 min.	5+ d6 min.
First Aid	5 min.	10+ d6 min.
First Degree Burns	5 min.	15+ d6 min.
Second Degree Burns	5 min.	30+ d6 min.
Third Degree Burns	10 min.	10+ d6 hrs.
Minor Surgery	10 min.	d4 hrs.
Major Surgery	15 min.	6+d10 hrs.
Bone Breakage	5 min.	4+d10 hrs.
Minor Poison	10 min.	6+d10 hrs.
Major Poison	10 min.	10+d20 hrs.
Minor Infection	10 min.	2+ d4 hrs.
Major Infection	10 min.	4+d10 hrs.
Minor Regeneration	60 min.	20+d10 hrs.
Re-attachment Surgery	30 min.	20+d20 hrs.
Replacement Surgery	10 min.	6+d10 hrs.
Transplant Surgery	30 min.	20+d20 hrs.
REGROWTH		
Simple	60 min.	20+d20 hrs.
Major Organ	60 min.	100+d20 hrs.
Per Inch of Limb	60 min.	20+d20 hrs.

SIMPLE USE
    d6 hours per point of damage regenerated.

AUTODOC RESUSCITATION

The autodoc system has a limited chance of resuscitation, (revival of a character) after the character has had time to decay.

CHANCE OF RESUSCITATION (body at 68 degrees)

Less 1	98%	06-07	40%
01-02	90%	07-08	30%
02-03	80%	08-09	20%
03-04	70%	09-10	10%
04-05	60%	10-11	05%
05-06	50%	11-12	03%
		12-13	02%

MODIFIERS ON BODY PRESERVATION

Ice Pack	1 hr. decay per 08 hrs. time
Cold Freezing	1 hr. decay per 04 days time
CRYO-Freezing	Suspends decay of body
Drugs	1 hr. decay per d4 hrs. time

CAUTION: Hot or Tropical climates double the rate of decay and halve the resuscitation percentage.

MEDICAL STOCK NEEDED FOR AUTODOC USE

Any autodoc must have a complete medical stock of 16 items and 6 program packs for use for each race treated.

STOCK

01	Skin Matrix	09	Anti-Coagulant
02	Muscle Matrix	10	Anti-Venom
03	Soft Tissue Matrix	11	Anti-Toxin
04	Fluids	12	Anti-Allergen
05	Blood Matrix	13	Anti-Cancerine
06	Neural Regenerative	14	Anti-Biotic
07	Tissue Regeneration	15	Chemical Pack
08	Bone Matrix	16	Drug Pack

16a Life Prolongation Pack
16b Any Bio replacement or transplant packs
16c Gene Replacement Pack

PROGRAM PACKS PER RACE
01 Repair and Surgery
02 Tissue Regeneration
03 Neural Regeneration and Repair
04 Life Resuscitation
05 Life Prolongation
06 Individuals Information Pack

HISTORY

Date   Event

1945   Birth of the Atomic Age.
1959   First orbital satellite launched by
         the Soviet Union.
1961   First manned space flight.
1969   First lunar exploration by the United
         States.
1981   First reusable space vehicles launched
         by the United States.

1983   The first permanent space station is
         completed by the Soviet Union.
1985   Corporations ignore the space treaty
         drafted by the United Nations and
         begin plans for building manufacturing
         stations in space.
1988   First solar satellite work stopped by
         ecological protesters and violence at
         the NASA launch facility in Texas.
1989   Accident triggers nuclear exchange
         between Soviet Union and the United
         States. The short lived war is over in
         a few hours. Sixteen U.S. cities are
         lost along with many cities in Europe,
         Britain, and the Soviet Union. The
         U.S. is blamed for this catastrophe.
1990   The Soviet Union collapses when its
         satellite countries revolt. European
         ground war destroys the last remaining
         economies and plunges the continent
         into depression.

1991   World-wide warfare continues. The
         United States is under martial law.
         War in the Middle East escalates to
         nuclear weapons. Canada and Australia
         close borders.
1992   Beginning of "Lawless years". The
         U.S. government, strained by the loss
         of its reserves and raw materials,
         collapses as protesters storm and
         destroy government offices. Gangs
         take control of Detroit. Mexico
         closes its borders to refugees.
1993   The remains of U.S military joins the
         major corporations still operating to
         begin reorganization.
1994   Plagues sweep Asia, Europe, Africa,
         and Australia.
1996   United, the last corporations form the
         International Corporate Organization
         (ICO). the "Lawless Years" end.

1999   Detroit is now reclaimed in the second
         American Civil War.
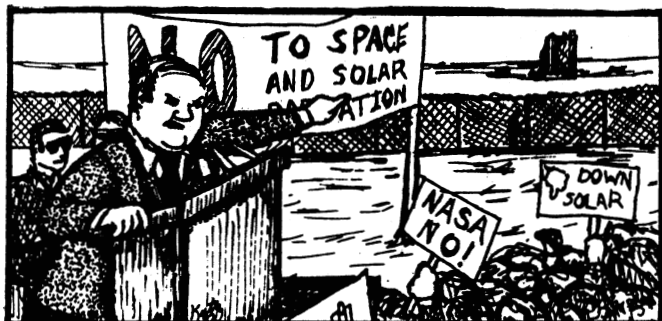
2000   Shuttles begin to launch again for
         satellite replacement and removal of
         nuclear weapons in orbit.

The year 2000 was the last year of what
historians call the "Age of Waste". After the
failure of careless expansion, there came a
sense of unity to the survivors. They began
to work together to make the world a better
place with the hope the mistakes of the last
decades of the twentieth century would not
repeat themselves.

2009   Permanent space platforms established
         for shuttles. ICO begins specialty
         manufacturing in space.
2018   A multi-national corporate expedition
         is sent to Mars.
2019   Construction of four solar satellites
         begins. First permanent settlement
         established on the moon.
2021   Political unrest in Canada and Brazil
         as Mexican rebels begin terrorist
         activities against ICO offices.
2025   General Franco Ortega Omoxomo takes
         control of Brazilian government. The
         first solar satellite begins to beam
         power to earth.

2027   Civil war splits Canada. Quebec gains
         a long sought independence. The
         Northwest Territories join ICO as the
         remaining provinces form New Canada.
2029   Mexican rebels attempt takeover of
         Mexican government and are crushed.
         ICO and The Japanese Corporate State
         begin construction of sea habitats,
         the first underwater cities. Britain
         becomes a province of New Canada.
2030   Mexican troops clash with Brazilian
         invasion force in Panama. ICO aids
         Mexico. Cuba and United Africa join
         ICO. Puerto Rico becomes a Brazilian
         protectorate.
2036   ICO second expedition to Mars becomes
         a permanent colony at the North Polar
         ice cap. Brazil begins accelerated
         space program.
2039   Makzie / Phillips fusion torch tests
         successful. Brazilian space platform
         assembled in orbit.

2041   First in-system ships with fusion
         drives completed. The solar system
         is opened to exploration. The first
         of three space habitats is begun.
2043   Brazil uses spacecraft for asteroid
         mining. ICO establishes second colony
         on Mars and sends exploration teams
         to the outer planets.
2046   Dr. John Lashaw finishes Einstein's
         Unified Field Theory and begins work
         on Phase Mathematics.
2047   Construction begins on first L5 space
         city.
2048   Janice Herbert publishes her thesis
         on "Applications of the Lashaw Mathe-
         matical Theories". Construction on
         second L4 space city by the Asian
         Peoples Corporate State. First mass
         driver (space catapult) built on the
         lunar surface. Permanent underground
         citys are planned for workers on
         the moon.

2049	Herbert and Lashaw, working together, propose a design for a phase-drive, a Faster-Than-Light star drive system. Pacific sea cities unite to form the Federation of Aquatic Habitats. (FAH) Brazil changes name to become the Brazilian Corporate States. (BCS)
2050	Herbert and Lashaw vanish while on a Caribbean cruise. Mexico is again threatened as Omoxomo's impassioned speeches cause a patriotic ferver throughout the New Brazilian Corporate States and Territories. He directs the construction of forty freighters in orbit. Rumors point to a Mars colonization project.
2052	The world is shocked when the first Brazilian starship "Rio" is phased to Alpha Centauri. ICO raid on the Brazilian city of Campos rescues Herbert and Lashaw. Omoxomo declares war on the ICO and Mexico but takes no action.
2053	Starship "Rio" returns from Centauri. In four weeks it is launched for a new destination and lost. ICO phase-explorer "Messenger" launched to the star Groombridge. FAH and BCS clash over Tierra Del Fuego's fight for independence from Brazil.
2054	FAH headquarters on Guam is destroyed by a tactical nuclear weapon. FAH and Australia declare war on BCS. BCS denies all responsibility. The world on the brink of world war IV. Over a two month period, 40,000 Brazilians vanish. From orbit, Omoxomo declares Earth a hell and phases his now completed fleet to find a better home for his people. ICO, FAH, Mexico, and Australia prepare for the assault on the BCS.
2055	With Omoxomo gone, a quick and bloody revolution wrecks the last remaining semblance of BCS control. The new BCS calls for a truce which is welcomed.
2056	BCS joins ICO.

2060	A colony on Ross 128 is established.
2061	Niblock Industrial funds the building of 21 starships of experimental design and utility.
2063	Three new colonies opened to humanity.
2070	Beginning of the "Big Ship" era. The modular Kansas Class A designs under construction. A Brazilian freighter returns to Earth from two prospering colonies. The location of Omoxomo and 10 freighters of his fleet are unknown and never found. Niblock Industrial folds after the experimental starship "Altamera" is stolen.
2076	First corporations on other worlds are started by ICO splinter groups. The International Scientific Co-Op (ISCO) takes control of starship construction and exploration.
2084	ISCO 0024b "Santa Barbara" lost in a phase accident. "Homesteader Class" colonizers and freighters in general use throughout Sol and other near star systems. Phase time is now 50 days per light year traveled.
2095	Research task ship H.M.S. Aardvark lost in quantum jump drive accident. Over 1700 crew vanish with the ship. All quantum jump drive tests and use are banned.
2100	Frenner Colony 3 established.

The phase drive system slowly opened space to development and human colonization. Unfortunately as the drive-times improved, so did the incidences of drive failure and what was to be called "Phase Sickness". The simple method to end the problem was freezing crews while traveling in phase space. Given time, each drive improvement was refined and the problems for the crews eliminated. Freezing became unnecessary.

2104	Work begins at colony "America" to build an orbital starport and starship construction facility.
2116	Construction on "Fomalhaut" starport continues as it opens for use. It soon becomes the commerce center for settled space.
2118	Mars declares independence and is granted self rule after a year of ICO debate. Titan and Io colonies declare independence but give it up as a bad idea. Terraforming on Venus fails.
2120	"Henderson / Archeaopteryx" deep space survey ships leave on a four year tour and assumed lost five years later.
2122	Wreckage of an alien shuttle found off Luytens 789-6. Extensive research shows a slightly inferior technology in electronics and propulsion. Pilot size estimated at 600+ pounds.
2125	Damaged alien freighter goes into orbit at Ross colony. Humans and the alien "Bor'cha" achieve a peaceful meeting. The bear-like aliens prove open and friendly. "Bor'cha history and politics are a close mirror of human development. Aside from shape and family structure, the Bor'cha are psychologically identical to humanity. Bor'cha discover tobacco.

2128   Humans and the Bor'cha sign expansion
        treaty and begin working together.
        Starship "Henderson" now returns home
        without sister ship. The story unfolds
        of a disasterous meeting with another
        alien race.
2130   Humans and Bor'cha form close economic
        ties.   Mixed settlements and crews
        become common. Bor'cha soon have new
        communities on Earth and Mars. Humans
        begin to settle on "Faxn'chr" the home
        world of the Bor'cha.

    The first human-alien meeting was a total
success.   The   Bor'cha heavy construction
techniques and human technologies gave both
races an economic boost. The Bor'cha were
like humanity in their hopes, fears, humor,
and business practices. It was a remarkable
joining of cultures that would repeat itself
many times in the next 300 years.

2132   Three intelligent lizard like races
        are discovered on "Hansens World".
        The Arkol, Skay, and Tugan soon become
        common across human space.   In time
        they have colonies established in the
        Sahara and Australian Heartland.
2145   Celestar Corporate scout finds the
        race that destroyed the Henderson-
        Archaeopteryx mission. The race calls
        itself "Kymnar".
2149   Celestar scouts Kymnar home world and
        three colonies.   A long range plan of
        conquest is formulated.
2154   A race called the Blox are discovered
        on Ott.   The Blox prove to have a
        talent for paperwork and organization,
        finding a niche in government and
        merchandising.   Within the decade the
        Blox are living on all the known
        home worlds and colonies.
2160   Despite being faced with a superior
        enemy, the Kymnar choose retaliation
        to surrender,   giving Celestar the
        excuse for a full scale attack.

2162   Final elimination of Kymnarin space-
        craft paralyzes their colonies and
        gives Celestar control over Kymnar
        space.   Kymnar is blackmailed into
        harsh trade concessions to keep their
        colonies alive. Celestar announces the
        end of the Kymnar menace and is given
        protectorate rights over the Kymnarin
        worlds by the ICO.   ICO becomes the
        Inter-stellar Corporate Orginization.
        The Kymnar are cut off from space and
        ICO contact for the next 80 years by
        Celestar.

2175   Task Ship "John Lashaw" built at the
        Fomalhaut.   This ship is the largest
        starship to date, a deep space city /
        industrial center.
2180   Kymnar revolt on C'char is brutally
        crushed by Celestar.
2190   Colonial corporations open four new
        planets for settlement. For 50,000d's
        anybody can settle on a new world.
2192   Busy with politics and the expanding
        of settled space, ISCO fails to check
        the validity of the Celestar cultural
        reports on the Kymnar.

2200   Task ship "Omoxomo" launched from the
        Brazilian colony of Bryox. It is the
        second largest starship to date. ISCO
        becomes the Inter-Stellar Scientific
        Co-Op.
2210   The destruction of three ISCO cultural
        teams reinforces Celestar's bann on
        communication with the Kymnar.
2230   The Omoxomo task ship disaster kills
        18,280.

    This era spread humans and aliens over
thirty habitable and semi-habitable worlds.
High technology gave colonists many worlds
that had little survival quality. Once new
populations rooted it was near to impossible
to move them even. with the supporting
corporations ending their involvement on the
worlds.   ISCO began to support these fragile
oasis of life until   they became self
supporting, if ever.

2238   Second Kymnar revolt stopped in a four
        day war.
2239   Task ship John Lashaw disaster kills
        21,230. The remaining three task ships
        are dismantled.
2248   Ben Paumnol takes command of Kansas
        class ship ISCO 0013 "Ventura".
2250   Ventura becomes first independent star
        freighter.
2251   Omoxomo and John Lashaw disasters are
        exposed as Celestar sabotoge. Celestar
        tyranny exposed. ISCO / Kymnar raid on
        Celestar headquarters brings their
        demise.
2252   ISCO begins the control of corporate
        expansion. Treaty of Hono signed
        with Kymnar. Kymnar worlds freed.

2260   Inter-stellar protection treaty signed
        to ensure protection of all races, to
        provide for a common defense, to guide
        the welfare of intelligent life in any
        form.
2275   Opening of Mars Orbital Air and Star
        Flight Museum.   Second terraforming
        attempt on Venus fails.
2285   Plague on Seredin kills 80% of the
        Human, Bor'cha, and Blox population.
        The beginning of a medical renaissance
        across settled space.
2287   John Rogan, considered the greatist
        economic genius of the time predicts
        economic disaster unless a new set of
        guidelines and economic systems are
        developed.   He is ignored by most of
        the prospering Corporate worlds.   The
        Kymnar begin outworld travel and trade
        ventures into settled space.

2290   "Frendle" are discovered.   Their non
        expansion doctrines confuse the ISCO
        contact teams. Even more confusing is
        the race 2.1 light years from the
        Frendle. The "Dabe" have been trying
        to start a conflict with the Frendle
        for 400 years. After meeting with the
        Dabe, ISCO decides the entire race may
        suffer from some form of minor mental
        instability. Dabes soon spread across
        settled space.   The Frendle are more
        cautious. Only a few Frendle will ever
        venture into space.

2300   For 25,000d's anyone can settle on any
        of the colonies. Colonization at peak
        with over 1 million people yearly
        leaving Earth. Phase time is refined
        to 14 days per light year. Crews and
        passengers are no longer frozen.
2320   Economic depression curtails expansion
        as the colonial agencies collapse. The
        large starship yards are mothballed as
        independent shipping prospers. A 30
        year reorganization is begun. This
        reorganization bogs down in red tape
        and corporate bureaucracy within a
        year.
2330   First "Grexian" deep space scout comes
        to Fomalhaut and spends a month
        learning of settled space. He departs
        with a return visit promised. For the
        next 40 years the Grex are not seen.

2335   Kansas C class launched. These multi-
        purpose freighters become an economic
        necessity for many worlds. The new
        "Ontario" class freighter become an
        economic alternative to the larger
        more expensive ships. The "Nudge"
        cannister freighters take economy one
        step further with modular designs.
2340   Recovery is progressing carefully with
        the colonies being reopened. Human
        settlement on Zoet fail to report an
        alien colony already on the world.
        Humans and "Whurr" prosper together
        for more than a century before ISCO
        notices. Colonists change the name of
        their new world to Fenderwall for
        no apparent reason.
2350   Phase time is now 10 days per light
        year.
2370   Grexians discovered after a 40 year
        silence. The race was exterminated
        down to a few thousand by a mutant
        virus. The common terrestrial flu is
        found to be the cause. ISCO begins to
        aid the Grexian survivors.

2372   A race called the "Fritzians" are
        found to be ancient star travelers.
        They have one colony and a superior
        technology but refuse to have any
        commerce or discussion with the other
        known races.
2382   A conference on interstellar law and
        commerce forms a police agency. The
        Interstellar Court of Law (ICL) will
        oversee difficulties and crime that
        spans more than one legal system.
2390   Phase time is now 5 days per light
        year.
2400   Interest in exploration is waning,
        economic security is overshadowing new
        progress in many areas.

2425   Independent starships have all but
        been eliminated by corporate dealings.
2434   A race called the "Trell" discovered
        on a dying world. Despite insurmount-
        able odds they continue to survive.
        Much like the Blox they find a niche
        in technical fields and spread across
        settled space.
2440   Barlow discovered. Because of the odd
        nature of the race, the ICL and ISCO
        keep their location classified.

2444   Phase time now three days per light
        year. Venus terraforming fails again.
2448   A man called Philip Clarke inherits a
        junkyard and the lost starship ISCO 024
        Santa Barbara. He becomes a new popular
        hero as the captain of the first
        independently owned starship of the
        25th century.

    This marks the return of the independent
starship and the beginnning of a new era of
human - alien expansion in space. It is a
time of fortunes and adventure, corporate
intrigue and bureaucracy.

History Use

    This history is only limited by the
imagination of the gamesmaster. You may use
the history provided, starting a game any
year before 2448 in the early days of space
exploration or after 2448 in the future you
create.
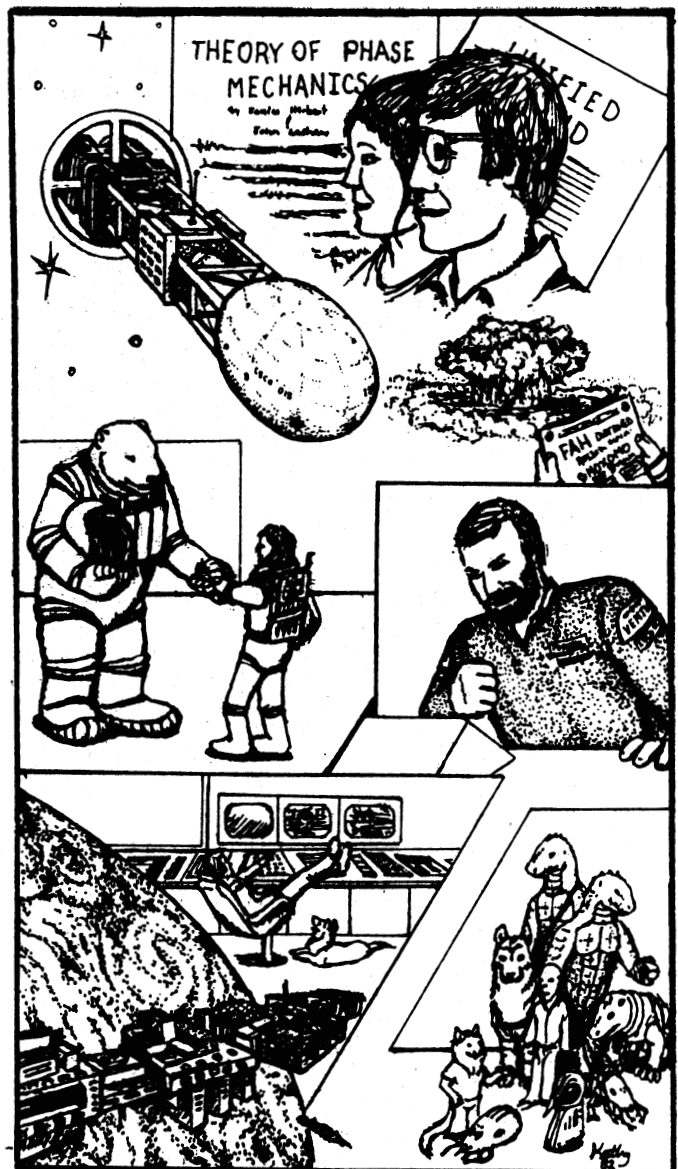
DAMAGE

In FTL 2448 damage is defined as the amount of punishment a character or structure can withstand before ceasing to function.

Damage to your character may come in three forms during play.

01 WHOLE BODY DAMAGE
    This is damage from concussion, shock, and other types that effect a wide body area and reduce hit points.

02 SPECIFIC BODY DAMAGE
    This damage is taken in a specific area from impact, high velocity projectiles, contact burns and energy. These areas have only a limited number of the body's structure or hit points. Specific damage that is over the area's total value will continue to travel through the body to exit and possibly hit a second target.

03 SYSTEMIC DAMAGE
    This is continuing damage to the health of the character. Systemic damage will reduce the constitution for a critical period of time. This is mostly in the case of suffocation, poisoning, and the general or specific metabolic disruption of disease.

Many forms of damage combine several or all of these types of damage. A laser, for example, may cause burn, fragments from penetrated armor and blast if it pulses.

Level of Play

FTL uses two levels of damage for play. This is the GM's decision on complexity.

LEVEL ONE   (Fast Play)
    Streight hit point reduction, ignoring all specific area damage.
EXAMPLE
    Shot in the leg, Grady takes 14 points of damage, walks to the autodoc and sets it for heal. In a few hours he's out as good as new to fight again. While simple and direct, it lacks realism.

LEVEL TWO   (Recommended Play)
    This level makes use of the complete medical system including specific area damage that includes death shock, bloodloss, and add realism.
EXAMPLE
    Shot in the leg, Grady takes 14 points of damage. The bullet slices through the knee, severing an artery and splintering the bone. The bone splintering adds 5 points to the 14 already suffered and the artery wound adds d6 points per round in damage until he can stop the bloodloss.

In some ways the recommended system is a little more harsh than taking straight structure without side effects. This system is not recommended for NPC's or animals.

Atmospheric Damage

Atmospheric damage is sustained when a character is exposed to any environment that has the wrong presure or atmosphere mixture.

Pressure

DAMAGE PER MINUTE	HIT POINT REDUCTION	CONSTITUTION REDUCTION
Vacuum	2d10	2d10
Very Thin	d10	d6
Thin	No Damage	1
Thin Standard	No Damage	*
Standard	No Damage	No Damage
Heavy Standard	No Damage	*
Heavy	No Damage	1
Super Heavy	2d10	d6
Dense	3d10	d10

* These atmospheric pressures only effect characters who are exerting a high degree of physical action. Reduce constitution one point per minute until they rest or fall unconscious. At this time they begin to recover constitution normally.

Atmospheric Content

Atmospheric damage can also be sustained by breathing gasses that damage lung tissue or inhibit proper respiration.

Lung Damage

DAMAGE PER MINUTE	HIT POINT REDUCTION	CONSTITUTION REDUCTION
Light Corrosive	d6	d6
Medium Corrosive	d10	2d6
Heavy Corrosive	2d10	3d6
Light Noxious	No Damage	1
Medium Noxious	No Damage	d4
Heavy Noxious	d4	d6

Noxious atmospheres are higher in Ammonia, Hydrogen, Methane, Chlorine, Cynide Compounds and Sulfur Dioxide. In higher concentrations Ammonia, Chlorine, Sulfur Dioxide, become corrosive and deadly to unprotected life.

In some cases the wrong mixtures of common breathable gasses will also cause side effects of giddiness, dizziness, difficult respiration, unconsciousness and death.

Vac Suit Modifiers

Most normal vac and environmental suits are designed to withstand the extremes of pressure and temperature. Punctures to suits that are not re-sealing are normal damage. Punctures to extremities cause half damage.

ANIMAL ATTACKS

Bite

		DAMAGE
BI01	Bite, very small	d4 x.25
BI02	Bite, small	d4 x.50
BI03	Bite, medium	d4
BI04	Bite, large	d6
BI05	Bite, gigantic	d10
BI06	Adds 25% on damage because of rip or slash attack.	
BI07	Adds 50% on damage because of rip or slash attack.	

Claw

		DAMAGE
CL01	Claw, very small	d4 x.25
CL02	Claw, small	d4 x.50
CL03	Claw, medium	d4
CL04	Claw, large	d6
CL05	Claw, gigantic	d10
CL06	Adds 25% on damage because of rip or slash attack.	
CL07	Adds 50% on damage because of rip or slash attack.	

Horn

		DAMAGE
HO01	Horn, very small	d4 x.50
HO02	Horn, small	d4
HO03	Horn, medium	d6
HO04	Horn, large	2d6
HO05	Horn, gigantic	2d10
HO06	Adds 25% on damage because of impaling attack.	
HO07	Adds 50% on damage because of impaling attack.	

Sting

		DAMAGE
ST01	Sting, very small	d4 x.25
ST02	Sting, small	d4 x.50
ST03	Sting, medium	d4
ST04	Sting, large	d6
ST05	Sting, gigantic	d10
ST06	Adds 25% on damage because of impaling attack.	
ST07	Adds 50% on damage because of impaling attack.	

Pincer

		DAMAGE
PI01	Pincer, very small	d4 x.25
PT02	Pincer, small	d4 x.50
PT03	Pincer, medium	d4
PT04	Pincer, large	d6
PT05	Pincer, gigantic	d10
PT06	Adds 25% on damage because of scissors type attack.	
PT07	Adds 50% on damage because of scissors type attack.	

Mandible

		DAMAGE
MA01	Mandible, very small	d4 x.25
MA02	Mandible, small	d4 x.50
MA03	Mandible, medium	d4
MA04	Mandible, large	d6
MA05	Mandible, gigantic	d10
MA06	Adds 25% on damage because of puncture attack.	
MA07	Adds 50% on damage because of puncture attack.	

Paw

		DAMAGE
PW01	Paw, very small	d4 x.25
PW02	Paw, small	d4 x.50
PW03	Paw, medium	d4
PW04	Paw, large	d6
PW05	Paw, gigantic	d8
PW06	Adds 25% on damage because of high strength.	
PW07	Adds 50% on damage because of high strength.	

Hoof

		DAMAGE
HF01	Hoof, very small	d4 x.25
HF02	Hoof, small	d4 x.50
HF03	Hoof, medium	d4
HF04	Hoof, large	d6
HF05	Hoof, gigantic	d10
HF06	Adds 25% on damage because of high weight impact.	
HF07	Adds 50% on damage because of high weight impact.	

Tail

		DAMAGE
TA01	Tail, very small	d4 x.25
TA02	Tail, small	d4 x.50
TA03	Tail, medium	d4
TA04	Tail, large	2d4
TA05	Tail, gigantic	3d4
TA06	Adds 25% on damage because of high strength impact.	
TA07	Adds 50% on damage because of high strength impact.	

Tentacle

		DAMAGE
TN01	Tentacle, very small	d4 x.25
TN02	Tentacle, small	d4 x.50
TN03	Tentacle, medium	d4
TN04	Tentacle, large	d6
TN05	Tentacle, gigantic	d10
TN06	Adds 25% to damage because of crushing attack.	
TN07	Adds 50% to damage because of crushing attack.	

Misc.

		DAMAGE
MS01	Trunk, medium	d6
MS02	Trunk, large	d8
MS03	Trunk, gigantic	d10
MS04	Stampede, small	d10
MS05	Stampede, medium	2d10
MS06	Stampede, large	4d10
MS07	Stampede, concentrated	8d10
MS09	Kick or Butt See Strength Related Damage	
MS10	Snake Constriction See Tentacle Damage	
MS11	Full Body Impact See Strength Related Damage using Punch Damage	

Burn Damage

Any source of heat that damages living tissue is a burn. Burns may come from direct contact or projected energy.

Flashburn

	TEMPERATURE DAMAGE PER ACTION		
	HOT	BURN	HIGH TEMP
Radiant Heat	d4	d8	d10
Flashburn*	d6	d10	2d10
(chance blindness)	10%	40%	85%
(natural recovery)	90%	65%	20%

* If eyes are unshielded blindness may result from flashburns. Natural recovery is automatic with autodoc assistance.

Fire Spread

Near contact burns usually do not ignite the victim unless the burn is classified as a high temperature burn. Any high temperature burn has a 25% chance of causing a flammable object to ignite if the burn lasts more than one action.

Burn damage continues from the initial burn damage taken. Each turn the amount of damage will increase by the INCR number until the fire is extinguished.

Contact

	TEMPERATURE DAMAGE PER ACTION			
	HOT	BURN	HI-TMP	INCR
Small Area	d4x.25	d4x.50	d4	1
Medium Area	d4x.50	d4	d6	2
Large Area	d4	d4+02	d6+02	4
Fragment Burn*	d6	2d6	3d6	

BURNING LIQUID SATURATION

	HOT	BURN	HI-TMP	INCR
Limited Spotting	d4	d6	d10	2
Saturation up to 25% body	d6	2d6	3d6	5
Saturation up to 50% body	2d6	3d6	4d6	8
Saturation up to 75% body	3d6	4d6	5d6	10
Saturation up to 99% body	4d6	5d6	6d6	14

Lung Damage

BURN DAMAGE TO LUNGS PER ACTION

	HOT	BURN	HI-TMP
Constitution Damage	d4	2d6	4d6

	LIGHT	HEAVY	DENSE
Smoke Inhalition	0	1	d4

* Burning fragments do the same damage as projectiles with the added ability to burn until extinguished. This includes tracers, sodium, and phosphorus projectiles.

Extinguishing Fire

Any character may assist the burning victim or object by trying to smother the fire. Each person assisting may add to the damage stopped per turn.

TYPE	EXTINGUISHES PER ACTION	DAMAGE TO RESCUER
Bare Hands	d6	d4
Roll on Ground	2d6	d4 x.50
Roll in Snow	3d6	d4 x.50
Blanket Wrap	2d6	d4 x.50
Fire Blanket	4d6	d4 x.25
Dry Extinguisher	5d6	0
Water Bucket	2d6	0
Sand Bucket	3d6	0
CO2 Extinguisher	4d6	0
Soda Acid	3d6	0
Chem Foam	6d6	0
Water Emmersion	10d6	0

Electrical Damage

To find any electrical damage multiply the voltage by the amperage. Divide the result by 100.

RESULT	CHANCE OF UNCONSCIOUSNES	CHANCE OF DEATH	HIT POINT DAMAGE
001-010	10%	0%	d4
011-020	15%	10%	2d4
021-030	20%	15%	2d6
031-040	25%	20%	3d6
041-050	30%	25%	4d6
051-060	40%	30%	5d6
061-070	50%	40%	6d6
071-080	60%	50%	7d6
081-090	70%	60%	8d6
091-100	80%	70%	9d6
101-200	90%	80%	10d6
201+	98%	98%	10d6

PHYSICAL CONTACT WITH ELECTRICAL SOURCES

01-08	Full damage, victim thrown by shock.
09	Two actions full damage then go to 1.
10	Victim paralyzed to source until off or contact is broken.

At death a victom goes automatically unconscious. His or her constitution begins to fail at a rate of two points per minute until death or medical aid.

SURVIVING ELECTRICAL DAMAGE

Any electrical shock that kills has a chance of doing mental damage to the victim.

01-95	There is No Mental Damage
96-98	Reduce d6 mental skills one point
99	Reduce d4 mental skills d4 points
00	Reduce skills and statistics d4 points

Explosion

Objects are affected in three different ways by explosives.

    01 Energy Blast Damage
    02 Concussion Damage
    03 Fragmentation

ENERGY BLAST DAMAGE
This first type is applicable only in vacuum. This damage is flashburn damage equal to half the concussion damage. Flash damage is divided by the target's distance in feet from the blast.

CONCUSSION DAMAGE
The second type of damage from explosion is straight concussion damage. This slap of force is divided by the object or victim's distance in feet from the blast center.

FRAGMENTATION
The third type of damage is created by fragmentation that is deliberate or caused by material disintegration. These fragments travel with the same penetration as the force of the blast. Treat fragments as bullet wounds. Fragment velocity is divided by the victims distance in feet from the blast.

REMEMBER
    01 Divide the total points of blast damage or fragmentation velocity by the distance, in feet, from the blast.

MODIFIERS
Different circumstances will change the configuration of the blast wave and the resulting damaging slap of force.

TYPE	MULTIPLIER	TYPE	MULTIPLIER
Unprepared	Full	Mud	x.50
Prone	x.75	Sand	x.75
Shallow Hole	x.50	Debris	x.50
Deep Hole	x.25	Rock	x.25
Heavy Wall	x.50	Brush	x.75
Heavy Trees	x.25	Snow	x.75
Light Trees	x.50	Water	x.75

Ben,Bells & Quag

On inspection of their ship, Bells and Quagmire, the Trell, check the arms locker.

Not knowing what the spherical object is, Quag pulls the pin. As the spoon flips away, Bells slams the grenade into a disposal vent and hits the emergency eject.

Too late, the grenade detonates in a lower section of the ship. Four hundred points of damage vaporize the transit pipe that can only take 90 points. The remaining 310 point blast travels 10 feet to the wall Ben is standing behind. The damage from the blast is divided by the distance of the target from the blast in feet. The 310 points become 31 points of blast as they hit the wall.

The inch thick plastic wall can withstand 20 points of blast. The remaining 11 points destroy the wall and hits Ben with a total of 11 points of damage. Ben swears again as sewage floods all over G deck.

Impact Damage

Any object dropped on a character may cause damage. All weights listed are in lbs.

DAMAGE IN SIX SIDED DICE

OBJECT WEIGHT	HEIGHT OF FALL								
	10	20	30	40	50	60	70	80	90+
01- 09	0	1	1	2	2	3	4	5	6
10- 20	1	1	2	2	3	4	5	6	7
21- 30	1	2	3	4	5	6	7	8	9
31- 40	2	3	4	5	6	7	8	9	10
41- 50	3	4	5	6	7	8	9	10	11
51- 60	4	5	6	7	8	9	10	11	12
61- 70	5	6	7	8	9	10	11	12	13
71- 80	6	7	8	9	10	11	12	13	14
81- 90	7	8	9	10	11	12	13	14	15
91-100	8	9	10	11	12	13	14	15	16
101-150	9	10	11	12	13	14	15	16	17
151-200	10	11	12	13	14	15	16	17	18
201-250	11	12	13	14	15	16	17	18	19
251-300	12	13	14	15	16	17	18	19	20
301-350	13	14	15	16	17	18	19	20	21
351-400	14	15	16	17	18	19	20	21	22
400+	15	16	17	18	19	20	21	22	23

Ben Only

Thinking himself safe, Ben breaths a sigh of relief just before a purification unit finishes breaking loose. Seeing the 10 foot mass of piping and filters moving his way, Ben takes a second to scream as he dodges out of the way. Had he not escaped, the unit would have impacted with 15 d6 damage.

Head Damage

Crushing or severe, structural damage to the character's head invariably kills the character.

Index the size of the object by the damage it does for the chance of death shock. Roll above the percentage on a d100 to avoid death shock. If the character fails and is resuscitated roll a second time. When this roll fails his head has been crushed and his brain destroyed.

Damage Modifiers

MASS OF OBJECT	HEIGHT OF FALL			
	01-05	06-10	11-20	30-40
Very Light	0%	0%	02%	02%
Light	0%	02%	02%	04%
Medium	04%	06%	10%	15%
Heavy	06%	10%	15%	30%
Dense	10%	15%	30%	60%

SIZE MODIFIER

Very Small	-10%	Chance brain damage
Small	-05%	Chance brain damage
Medium	0%	No modifier
Large	+10%	Chance brain damage
Gigantic	+20%	Chance brain damage

FALL

When a character falls, there are two choices of fall. First is the uncontrolled, panic or surprise impact. This type of impact does full damage to the character.

The second type of impact is the no panic, controlled impact. The chance of the accomplishment of a controlled impact is rolled on a d100. The base number to roll under is 20 + Agility + one point per level of martial arts defense skill.

This controlled impact reduces fall damage by 50% (multiply damage by x.50). This ability to control fall is limited to falls under 50 feet in height.

REMEMBER
01 Roll under (20 + Agility +1pt per martial arts level) on a d100 for success.

Fall Damage

DAMAGE IN d10

WEIGHT OF	HEIGHT IN FEET OF FALL					
VICTIM	0-10	11-20	21-40	41-60	61-80	81-100
001-025	0	0	0	0	1	2
026-050	0	0	0	1	2	3
051-075	0	0	1	2	3	4
076-100	0	1	2	3	4	5
101-150	1	2	3	4	5	6
151-200	2	3	4	5	6	7
201-250	3	4	5	6	7	8
251-300	4	5	6	7	8	9
301-350	5	6	7	8	9	10

IMPACT MODIFIERS ON DAMAGE

TYPE	MODIFIER	TYPE	MODIFIER
Water	x.75	Debris, Small	x.50
Mud	x.50	Debris, Medium	x.75
Damp Earth	x.75	Branches, Light	x.75
Sand	x.50	Branches, Dense	x.50
Gravel	x.75	Coniferous	
Dry Earth	x1.00	Branches	x.50
Swamp	x.50	Partial	
Spongy Plants	x.50	Parachute	x.50

Bells & Ben

Knowing Ben is in trouble a few decks below, Bells jumps into an elevator to take her to the scene of the accident. As she reaches for the buttons she realizes the elevator is little more than a hollow shell without a floor.

Bells will impact with 4d10 damage unless she can control her impact. Her base percentage is 20 + her Agility of 16 + her martial arts defense ability of 3 or 3%. She must roll under a 39 on a d100 for success.

Rolling 46 on a d100, Bells slams into the elevator roof and takes 19 points generalized damage. She decides her father's advice on martial arts training had it's merit.

RADIATION

In cases of radiation exposure multiply the intensity of the radiation by the time the character spends in the area.

PERCENTAGE OF HOUR IN HOT AREA	RADIATION MULTIPLIER
01-05 Minutes	0.06 Accumulation
06-10 Minutes	0.12 Accumulation
11-15 Minutes	0.25 Accumulation
16-30 Minutes	0.50 Accumulation
31-45 Minutes	0.75 Accumulation
46-60 Minutes	1.00 Accumulation

RADS/HOUR ACCUM.	HIT POINT DAMAGE PER HOUR	CONSTITUTION REDUCTION PER HOUR	STRENGTH REDUCTION PER HOUR
0- 100	0	0	0
101- 150	0	d4 x.25	0
151- 200	d4 x.25	d4 x.50	0
201- 300	d4 x.50	d4 -1	0
301- 400	d4	d4 -1	d4 x.25
401- 500	d6	d4 -1	d4
501-1000	d10	d4	d4
1001-2000	2d10	d6	d4
2001-4000	4d10	d8	d6

DEFINITIONS
RADS
The intensity of the radiation.
DAMAGE
The hit point damage a character suffers per hour while exposed to radiation.
CONSTITUTION REDUCTION
The loss of constitution per hour indexed by the amount of exposure in rads.
STRENGTH REDUCTION
The loss of strength per hour after being exposed to radiation.

REMEMBER
01 Radiation exposure is accumulated.
02 Every hour after exposure the total accumulated radiation level drops by 3d10 +3 points. This is the ability of the character to recover from exposure
03 At higher levels of exposure the victim begins to take constitution and strength damage until the level of exposure drops to safer levels.
04 Specialized hospital care and autodoc treatments can double the accumulation reduction per hour. At exposures of 500 rads or above the character's natural constitution regeneration and hit point healing stops.

At high rad doses characters experience nausea, shaking, vomiting, high temperature, convulsions, and death.

At the bottom of the elevator shaft, Bells finds several small cylinders labled Nuclear Battery Components, Danger. Seeing the sign for radiation exposure, she quickly drops the unit and wipes the goo off her hands.

Making her wisdom roll, she decontaminates herself and checks the rad count. A 500 rads accumulation for 9 minutes gives her a total radiation accumulation of 60 points.

TOXINS

Toxins and poisons are any material, ingested, inhaled, or contacted that does 3 possible types of damage.

DAMAGE
- A CAUSTIC TO TISSUES
  Does d4 points of damage per level of toxin, per hour, until it is neutralized. Effects hit points.
- B NEURAL TOXINS
  Any substance that slows or damages nervous function in living tissue. Effects constitution.
- C HEMO TOXINS
  Any substance that impairs or damages the blood transport system.

Each poison listed has an assigned or a variable toxic level. This level is the damage to Hit Points or Constitution per hour. This continues until the victim passes through the critical period of poisoning.

TOXIN RATING		CONSTITUTION REDUCTION PER HOUR	
01	d4 x.25	06	d6 +01
02	d4 x.50	07	d6 +02
03	d4	08	d6 +03
04	d4 +01	09	d6 +04
05	d6	10	d6 +06

REMEMBER
- 01 Roll damage once per hour until the poison passes its critical stage.
- 02 Poison antidotes for general types of poisons reduce the loss of hit points and constitution by d4 points per hour in the critical phase.
- 03 Specific poison antidotes reduce hit point and constitution damage by d10 points per hour in the critical phase.
- 04 Specific toxin antidotes only effect specific types of poisoning. The wrong antidote type has no effect. It takes one hour per antidote test.
- 05 After the critical hours have passed the victim begins to recover normally.
- 06 Toxins may have lingering side effects or lengthy recovery periods.

Toxin Types

ANIMAL POISONS
Rating 01-08 Critical Time 4d6 hrs.
Effect Any Symptoms a b c d e g h m
(stings, bites, and contact toxins)

PLANT POISONS
Rating 01-10 Critical Time 4d6 hrs.
Effect Any Symptoms a b c d e f g h i j
(mostly ingested plant toxins)

MISCELLANEOUS PESTICIDES
Rating 01-06 Critical Time 3d4 hrs.
Effect B Symptoms g h
(damages respiration)

RODENTICIDES
Rating 01-06 Critical Time 3d8 hrs.
Effect B Symptoms g j
(damages heart)

NITROGEN COMPOUNDS
Rating 01-08 Critical Time d6 hrs.
Effect C Symptoms a b l m k
(damages blood / respiration)

HALLOGENATED HYDROCARBONS
Rating 01-10 Critical Time d4 +01 hrs.
Effect C Symptoms a b c d e g h i
(damages heart)

ALCOHOLS AND GLYCOLS
Rating 01-04 Critical Time 3d4 hrs.
Effect B Symptoms a b c d e g h
(drinkable alcohol, rates 1 at 80 proof, 2 at 151 proof and 3 in pure ethyl form)

ESTERS, ALDEHYDES, KEYTONES
Rating 01-10 Critical Time 2d4 hrs.
Effect A Symptoms b c k g l m
(damage to tissues)

HYDROCARBONS
Rating 01-08 Critical Time 3d6 hrs.
Effect A Symptoms a b c f g m
(damage to tissues)

CORROSIVES
Rating 01-10 Critical Time 3d6 hrs.
Effect A Symptoms c m
(damage to tissues)

METALLIC POISONS
Rating 01-10 Critical Time 3d6 hrs.
Effect C Symptoms a b e h j m
(damage to circulatory system)

CYANIDES, SULFIDES
Rating 01-10 Critical Time 2d6 hrs.
Effect B Symptoms a b c e h k
(damage to central nervous system)

FOOD POISONING / BACTERIAL
Rating 01-04 Critical Time 2d4 hrs.
Effect B Symptoms a b c d f
(impairs respiration)

FOOD POISONING / BOTULISM
Rating d4 +4 Critical Time 4d4 hrs.
Effect B Symptoms a b c h j o
(impairs central nervous system)

ANESTHETICS
Rating 01-06 Critical Time 4d6 hrs.
Effect B Symptoms a e j g
(impairs respiration)

DEPRESSANTS
Rating 01-08 Critical Time 4d6 hrs.
Effect B Symptoms a g i o
(impairs respiration)

AMPHEDIMINES
Rating 01-06 Critical Time 4d6 hrs.
Effect B Symptoms b e i j k l o

Symptoms

a	Nausea	i	Coma
b	Headache	j	Muscle Tightness
c	Vomiting	k	Confusion
d	Cramps	l	Dizziness
e	Tremors	m	Pain
f	Diarrhea	n	Fatigue
g	Difficult Respiration	o	Visual Impairment
h	Convulsions		

These toxins are generally effective on humanoid races though some may have better or weaker resistance to damage and differing critical times.

Toxin effects on alien races are the decision of the GM.

Temperature

Exposure to extremes of temperature will cause damage if adequate protection is not available to the character.

PROTECTION

BUFF   This is absolutely no protection.
MINIMAL   This is the lightest or least amount of clothing available.
LIGHT   This is normal summer wear and light foot protection.
MEDIUM   Light protection for cooler climates including light jacket.
HEAVY   Winter protection from cold, snow and frigid climate.
ARCTIC   Special cold protection available for survival in sub-zero cold.
VAC SUIT High-tec body protection for hostile environment and atmosphere.

Cold

PER TWO MINUTES

| | -200 | -174 | -149 | -124 | 0 |
	-175	-150	-125	0	+025
Buff	4d6	3d6	2d6	2d6	d6
Minimal	4d6	3d6	2d6	d6	d6x.50
Light	3d6	2d6	1d6	d6x.50	n/e
Medium	2d6	d6	d6x.50	n/e	n/e
Heavy	d6	d6x.50	n/e	n/e	n/e
Arctic	d6x.50	n/e	n/e	n/e	n/e

Heat

PER ONE HOUR

| | +100 | +126 | +151 | +176 |
	+125	+150	+175	+200
Buff	d6x.50	d6	2d6	3d6
Minimal	n/e	d6x.50	d6	2d6
Light	n/e	n/e	d6x.50	d6
Medium	n/e	n/e	n/e	d6x.50

Many of the alien races in FTL come from different temperatures and climates. The tables here are for general human types.

Vehicle Impact

Index the MPH speed of the vehicle and multiply the result by 2. Index this vehicle rate to find the damage to the character. A controlled impact modifier can be used in the same way as a controlled fall modifier. See the Impact tables for information.

VEHICLE RATING / MPH	HIT POINT DAMAGE	CHANCE BREAKAGE	BONES BROKEN
0-025	d10	10%	d4x.50
026-036	2d10	20%	d4 -01
037-050	3d10	40%	d6 -01
051-075	4d10	80%	d8 -01
076-100	5d10	85%	d10 -01
101-200	2x5d10	95%	2d6 -02
201-300	3x5d10	98%	4d6 -04
301-400	4x5d10	98%	6d6 -06

Passengers

For damage to passengers involved in vehicle collisions, index the MPH of the vehicle and add modifiers for vehicle and restraint.

VEHICLE SIZE	CONSTRUCTION TYPE	DAMAGE MULTIPLIER
Compact	Fragile	x2.00
Midsized	Fragile	x1.50
Fullsized	Fragile	x1.00
Compact	Semi-Tough	x1.50
Midsized	Semi-Tough	x1.00
Fullsized	Semi-Tough	x0.75
Compact	Tough	x1.00
Midsized	Tough	x0.75
Fullsized	Tough	x0.50

RESTRAINT MODIFIERS

VICTIM IN REAR SEAT	MULTIPLIER
Unrestrained	x1.00
Lap Belt	x0.75
Shoulder Belt	x0.50
Impact Device	x0.25
VICTIM IN FRONT SEAT	MULTIPLIER
Unrestrained	x1.25
Lap Belt	x1.00
Shoulder Belt	x0.75
Impact Device	x0.50

OTHER MODIFIERS	
On Impact Side of Vehicle	x1.50
Vehicle Rolls 1-2 Times	x1.50
Vehicle Rolls 3-5 Times	x2.00
Impact, Unyielding Object	x2.00
Protective Interior Padding	x0.75
Heavy or Padded Clothing	x0.75

HEAD-ON IMPACT

In head-on vehicle impacts total the speed of both vehicles together and double the result. This is the MPH to index for damage in this particular type of crash only.

DISEASE

This set of tables deals with infection, the pathalogical effect of characters exposed to alien viral and bacterial life.

BIOLOGICAL COMPATABILITY

The majority of viral and bacterial agents will be so physiologically different as to have no effect on life exposed to them.

ROLL A d100 FOR COMPATABILITY

ALIEN WORLD	HOME WORLD	EFFECTS
01-97	01-10	No Infection
98-99	11-97	Go To Severity
00	98-00	Go To Severity add +10 Modifier

SEQUENCE OF INFECTION

01 Roll severity of infection on a d100.
02 Roll incubation of infection on a d10, consulting the time table.
03 Roll length of symptoms on the time table. Use a d10.
04 Generate symptom number and type.
05 Check for Critical Infection.
05b Generate time critical symptoms appear by rolling a d10 on the time table.
06 Roll length of critical phase on time. Roll a d6 for this time.
07 Roll chance recovery hourly during the critical phase until the infection breaks.
08 Roll recovery time if infection breaks and the character survives.

SEVERITY OF INFECTION		SYMPTOMS			CRITICAL	
		AB	CD	E	%	F
01-25	Light	d4	no	no	no	no
26-50	Medium	d4	d4	no	no	no
51-75	Heavy	d4	d4	d4	03%	no
76-95	Serious	d4	d4	d4	50%	no
96-98	Dangerous	d4	d4	d4	85%	any
99-00	Terminal	d4	d4	d4	98%	d4

The critical % is the chance an infection will go to a critical phase where death could occur. Randomize the symptom's types from the tables in the next column.

TIME IN DAYS AND HOURS

01	d6 +04 Hours	06	03 Days +2d10 Hrs.
02	d6 +06 Hours	07	04 Days +2d10 Hrs.
03	d6 +10 Hours	08	05 Days +2d10 Hrs.
04	01 Day +2d10 Hrs.	09	06 Days +2d10 Hrs.
05	02 Days +2d10 Hrs.	10	10 Days +2d10 Hrs.

During critical illness constitution and hit points do not regenerate. The standard autodoc recovers d4 +2 constitution per hour during treatment of an infection.

TABLE A Roll a d20		TABLE B Roll a d20	
01	No Symptoms	01	No Symptoms
02	Mild Gastritus	02	Awful Feeling
03	Loss of Balance	03	Dizziness
04	Fever +d4 Degrees	04	Sweating
05	Hypersensitivity	05	Itching
06	Blocked Sinus	06	Nose Bleed
07	Loss of Appetite	07	Hiccups
08	Skin Color Flush	08	Drowsiness
09	Mild Stomach Cramps	09	Insomnia
10	Sore Throat	10	Depression
11	Muscle Stiffness	11	Shakes
12	Light Sensitivity	12	Mild Rash
13	High Thirst	13	Irritation
14	Watering Eyes	14	Weakness
15	Abnormal Feeling	15	Aches
16	Migrane Headache	16	Red Eyes
17	Sound Sensitivity	17	Headache
18	Shortness of Breath	18	Tingling
19	Appetite Increase	19	Numbness
20	Irritability	20	Fainting

TABLE C Roll a d10		TABLE D Roll a d10	
01	Lung Congestion	01	Vomiting
02	Swelling in Joints	02	Boils
03	Fever +d6 Degrees	03	Diarrhea
04	Bleeding, Eyes/Ears	04	Ulcerations
05	Extremity Numbness	05	Convulsions
06	Internal Swelling	06	Hair Loss
07	Blurred Vision	07	Mental Lapse
08	Intense Cramps	08	Tremors
09	Lack Coordination	09	Choking
10	Incapacitating Cramps	10	Dehydration

TABLE E Roll a d10		TABLE F Roll a d10	
01	Open Sores	01	Kidney Failure
02	Loss of Hearing	02	Coma
03	Loss of Sight	03	Liver Failure
04	Paralyzation	04	Heart Failure
05	Fever +4d4 Degrees	05	Mental Problems
06	Hallucinations	06	Digestive Failure
07	Glandular Failure	07	Muscle Breakdown
08	Major Loss Weight	08	Bloodclotting
09	Internal Bleeding	09	Leukemia
10	Lung Collapse	10	Hemophilia

Critical Phase

Roll a d20 Every Hour of the Critical Phase

01	Character Loses	2d4		Constitution
02-03	Character Loses	d4		Constitution
04-06	Character Loses	d4 x.50		Constitution
07-08	Character Loses	1		Constitution
09-12	Character is Stable			
13-14	Character Gains	1		Constitution
15-17	Character Gains	2		Constitution
18-19	Character Gains	d4 +02		Constitution
20	Infection Breaks, Begin Recovery			

These tables are for general humanoid use and may be adapted for alien life.

Disease Transmission

TRANSMISSION OF DISEASE

Roll a d100 for a percent chance of the agent infecting the victim who contracts it. This becomes the future percentage of a member of that race contracting the disease.

TRANSMISSION		TYPE INFECTING AGENT	
01	Animal Vector	01-30	Virus
02	Insect Vector	31-80	Bacteria
03	Airborne	81-82	Parasite
04	Waterborne	83-00	Multicellular
05	Contact With Victim		Organism
06	Plant Vector		
07	Food Source		
08	Contact With Infected Material		
09	Roll d8 for 2 different transmitters of the infecting agent.		
10	Roll d8 for 3 different transmitters of the infecting agent.		

Treatment with the proper type of drugs or procedure can reduce the loss of constitution in the Critical Phase. Successful treatment reduces the loss of constitution d4 points per hour of treatment.

INFECTION WEAKNESSES
01 Chemical Inhibitor
02 Bacterial Inhibitor
03 Broad Spectrum Antibotic
04 Antibotic Specific
05 Changes in Body Chemistry
06 Tailored Antibotic

Historical Note:

Kirl 7, once the home of a star traveling race called the Grex, now lies mostly empty and abandoned.

In the 2300's a Grexian Starship came to the Fomalhaut Star Docks to meet the races of settled space. In their stay the Grex picked up many things including knowledge, information, souvenirs and the common flu virus.

By human standards the flu was a thing of minor annoyance, curable by a single dose of a common drug. Unfortunately the Grex were not as immune as humanity. In the Grex it found a resistance free home. It mutated.

THE GREXIAN BLACK DEATH
SYMPTOMS: Watering Eyes, Fever, Shakes, Aches, Blurred Vision, Choking,
CRITICAL SYMPTOMS
Internal Bleeding, Coma
Death shock due to liver and kidney failure.

TIME INCUBATION	10.5 days
CRITICAL PHASE	10.0 days

The 30 Grex crew died within the week, as their ship automatically returned home.

At a transmission rate of 99% contact and airborne, the disease scythed through Grex populations. The antibiotic specific came far too late to save more than a hundred thousand of a 23 billion population.

Health Modifiers

STATISTICS REDUCTIONS FROM MEDICAL PROBLEMS

These are the temporary or continuing modifications on a character's statistics when effected by health or damage problems.

TYPE MINOR	STR	DEX	AGL	WIZ	ACC	DOD	THR
Nausea			-01			-01	
Drowsiness		-01	-01	-01			
Hiccups		-02			-03		
Watery Eyes		-02			-01		
Cramps	-01	-01	-01			-01	
Shakes	-01	-02	-01		-02	-01	
Headache		-01	-01			-01	
Migraine	-02	-03	-01		-03	-01	-02
Insomnia	-01	-01	-01	-01	-01	-02	-03
Light Cough	-01				-01		-01
Heavy Cough	-03				-02		-02
Weakness	-02		-01			-01	-02
Dizziness	-03	-02	-03		-03	-03	-02

TYPE SERIOUS	STR	DEX	AGL	WIZ	ACC	DOD	THR
Cramps	-02	-03	-04		-03	-04	-04
Vomiting	-04	-03	-03		-05	-03	-05
Fever	-02	-01	-01	-01	-01	-02	-04
Blurred Vision	-04				-05	-01	-06
Numbness	-04	-06	-03		-01	-04	-06
Sneeze	-02	-04	-02		-06	-01	-06
Light Pain	-01	-01	-02		-01	-02	-01
Heavy Pain	-02	-02	-04		-02	-04	-02
Agony	-06	-06	-06	-02	-07	-08	-09
Light Stun	-03	-03	-05	-02	-03	-05	-04
Medium Stun	-05	-05	-07	-03	-05	-07	-06
Heavy Stun	-06	-06	-09	-04	-06	-09	-08

Bones & Muscles

MUSCLES	STR	DEX	AGL	HEALING	
Sprain	-04	-02	-05	d4	Weeks
Torn Ligament	-08	-04	-09	d6 +2	Weeks
Torn Muscle	-09	-06	-09	d4	Months

BONES	STR	DEX	AGL	HEALING	
Bruised	-01	-01	-01	d4 +2	Weeks
Fractured	-04	-06	-08	d4 +2	Months
Compound Break	-08	-09	-09	d4 +2	Months
Crushed	-10	-10	-12	d4 +4	Months

Damaged bones and muscles effect only the specific areas they are located in. Some statistics may not be effected due to the location of the injury. Use logic when utilizing these modifiers. See the autodoc section for faster than natural healing rates and treatment time.

ARMOR

Armor is any material which forms a physical barrier for the protection of a character, NPC or Target.

In FTL armor reduces the penetration and damage from projectile and physical attack.

Index the defenders type of armor by the attackers type of damage to find the number of damage points stopped by the armor.

DAMAGE TYPES

EN: Energy, Laser	PU: Puncture, Stab
BI: Bite	BL: Blade
CL: Claw	FA: Firearms

-AGL Is the characters loss of agility because of the bulk of the armor worn.
-ACC Is the characters loss of accuracy during stress or movement situations.

ARMOR	EN	BI	CL	PU	BL	FA	-AGL	-ACC
Bare Skin	0	0	0	0	0	0	0	0
Fabric	01	01	02	01	0	0	0	0
Heavy Fabric	02	02	03	01	02	0	0	0
Padded Fabric	03	03	04	02	03	01	0	-01
Leather	03	03	05	03	03	01	0	0
Heavy Leather	04	05	07	04	05	02	0	-01
Hard Leather	05	07	09	06	06	03	0	-02
Thin Plastic	05	04	07	05	05	01	0	-01
Plastic Chain	05	06	05	04	08	01	0	0
Plastic Plate	07	08	09	07	10	04	-01	-01
Carb Filament	09	10	12	09	12	04	-01	0
Light Metal	12	14	16	10	14	02	-01	-01
Metal Chain	14	16	18	12	16	02	-02	-02
Metal Plate	16	18	20	16	18	06	-03	-04
BALLISTIC								
Cloth	07	08	06	14	10	16	0	0
Plastic	12	15	17	16	15	21	-01	-01
Metal	14	16	18	18	18	19	-02	-01
VAC SUIT								
Tourist	06	05	08	06	06	01	-01	0
Light	08	07	10	08	08	02	-01	-01
Medium	10	09	12	10	10	02	-02	-02
Heavy	13	12	15	13	13	10	-03	-03
Exploration	18	17	20	18	18	20	-04	-04
Armored	23	22	25	23	23	30	-05	-06
NATURAL ARMOR								
Light Hide	01	01	02	01	01	0	0	0
Heavy Hide	02	02	04	02	02	0	0	-01
Chitin	04	02	03	05	03	01	-01	-01
Stoney Hide	05	03	05	07	04	01	0	-01
Bone	06	04	07	09	05	01	-01	-01
Fur Layer	03	02	03	01	02	01	0	0
Dense Fur	06	04	05	02	03	02	-01	-01
Soft Wood	04	06	08	05	07	02	-01	-01
Hard Wood	06	08	10	07	09	03	-01	-01

Alien Armor

The natural armor of the aliens of FTL is listed in the Alien Appendix.

Armor Mapping

This is an example of armor mapping for characters in combat situations. Armor will stop damage up to the value of the armor per type of attack.

Example:

ARMOR

Glasses

Shirt

Elbow Pads

Heavy Fabric Jacket

Chronograph Band

Tool Pouch

Pants

Knee Pads

Fabric Socks

Boots

AGILITY MODIFIER = 0
ACCURACY MODIFIER = 0

Ben & Quag

The second morning aboard their ship, Ben, thinking himself safe, turns a corner to the galley.

The first two slow pulses from the laser burn a hole in his knee and leg. Of the 12 point hit in his knee, his ballistic cloth knee pads absorb 7 points along with an extra 3 points due to the padded fabric that holds them in place. Ten points of damage are deflected. The other two points burn through the skin and surface tissue of the knee. Not a major wound, it is still painful.

The second shot grazes a little higher than Ben's knee pad. Eight points grazes Ben's leg for 4 points of burn. It ignites his pants leg. Slapping the burn and doing a point of damage to himself in the process, he turns to find Quagmire with a laser and a bucket full of dead rats.

Ben begins to loose his temper.

Quagmire decides to take his hunt to a lower deck as Ben begins a search for the baseball bat he saw somewhere on B deck.

RESOLUTION

WEAPONS FIRE RESOLUTION

REMEMBER
01 Total the modifiers you are using.
   This will give you a + or - modifier.
02 Add this modifier to your accuracy.
   This is the number you must roll under
   on a d20 to hit a target.
03 If the player's roll is below half the
   number needed to hit the target, the
   player has the choice of where he puts
   the shot on the target.

Ben, Bells & Quag

Ben has just attacked the health inspector
that toured the ISS Wapakoneta. After four
hours of insults and a certification that the
ship could only haul garbage, Ben pulls out
a pistol and charges.

Thirty feet away, the inspector realizes
he has three actions before Ben reaches him.

Thinking quickly, the inspector fast draws
a tranquilizer pistol and puts a shot into
the charging madman.

```
MODIFIERS
        Size / Speed.......-2
        Movement...........-2
        Weapon Modifier...+2
        TOTAL             -2
```

There is a -2 on the Inspector's ability
to hit Ben. He fires three times.

With an accuracy of 14 he now needs a 12
to hit. A 16 is rolled for the first shot
and results in a miss. The second shot hits
with a 8 rolled, grazing Ben in the arm.
The final shot hits with a 3 and the dart is
imbedded in Ben's unprotected chin.

With a resounding thump, Ben slides to the
inspectors feet, drugged and unconscious.

Shot Breakdown

```
 0  01  02  03  04  05  06  07  08  09  10
11  12  13  14  15  16  17  18  19  20
```
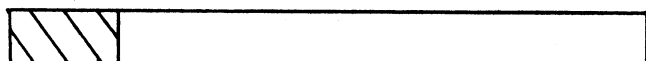
MISS
RANDOM HIT IN AREA AIMED AT
(randomize from detail body areas)

HIT IN SPECIFIC AREA AIMED AT

First Action

First action is the ability of a
character to complete an action first. Always
roll a d10 and add this number to your
agility per attempted action. The player
with the highest total is first. In cases
of tie the actions happen at the same time.

Multiple Hits

NUMBER OF SHOTS ON TARGET
REMEMBER
01 Total all modifiers for range, size,
   recoil, and target spread.
02 Roll a d100 and add modifiers.
03 Index the number of shots fired by the
   result in 2 to find the number of shots
   that hit the target.

RANGE MODIFIER		SIZE MODIFIER	
Point Blank	+25	Very Small	-10
Very Short	+15	Small	0
Short	+10	Medium	+05
Medium	+05	Large	+10
Long	0	Very Large	+15
Very Long	-10	Gigantic	+20
RECOIL MODIFIER		TARGET SPREAD	
No Recoil	0	Close Spread	-05
Light Recoil	-05	Medium Spread	-10
Heavy Recoil	-10	Wide Spread	-15

d100	04	05-06	07-08	09-10	11-12	13-15	16-20 ROUNDS FIRED
01-05	01	01	01	01	01	01	01
06-10	01	01	01	02	02	02	02
11-15	01	01	01	02	02	03	03
16-20	01	01	01	03	03	04	04
21-25	01	01	02	03	03	04	05
26-30	01	02	02	04	04	05	05
31-35	01	02	02	04	04	05	06
36-40	01	02	02	04	05	06	06
41-45	01	02	03	05	06	06	07
46-50	01	02	03	05	06	07	07
51-55	02	03	03	05	06	07	08
56-60	02	03	04	06	07	08	08
61-65	02	03	04	06	07	08	09
66-70	02	03	04	06	08	09	09
71-75	02	03	05	07	08	09	10
76-80	03	04	05	07	09	10	11
81-85	03	04	05	07	09	10	12
86-90	03	04	06	08	10	11	12
91-95	03	04	06	08	10	12	13
96-00	03	04	06	09	11	12	13

For bursts of over 20 shots, index the
table a second or a third time for the
remainder of the shots.

Ben & Bells

Seeing Ben sprawled on the floor, Bells
snaps back to her military training and fires
the antique she found at the fleeing victim.
The antique's thirty-round clip empties.
```
        Short Range........+10
        Medium Size........+05
        Heavy Recoil.......-10
        Total             +05
```
A d100 is rolled and the +05 is added to
the result of 42.
   40 ROUND BURST
   47 indexed by a 30 round burst = 07
   47 indexed by a 10 round burst = 05
   TOTAL NUMBER OF SHOTS ON TARGET 12
Twelve shots slam into the horrified agent
as he hits the airlock. He realizes his new
ballistic cloth suit was well worth the cost.

WEAPONSFIRE

There are four main modifiers to take into account when firing a weapon at a target.

    01   SIZE / SPEED
    02   RANGE OF TARGET
    03   ATTACKER / DEFENDER MOVEMENT
    04   EQUIPMENT BONUSES
    04b ANY OPTIONAL MODIFIERS

REMEMBER
    01   All modifiers 1 to 4 are combined to create a final accuracy modifier.
    03   These modifiers can be used for any modifiers including:

        01   Bows
        02   Thrown and Grenade Weapons
        03   Firearms and Lasers
        04   Thrown Edged Weapons

1 Size / Speed

SIZE	TYPE	EXAMPLE
VSM	Very Small	The size of a rat.
SMA	Small	A medium sized dog.
MED	Medium	Generally man sized.
LAR	Large	The size of a horse.
XLA	Extra Large	An average elephant.
GIA	Gigantic	Semi-Truck sized.

SPEED	TYPE	EXAMPLE
VSL	Very Slow	1 foot per action
SLO	Slow	2 feet per action
MED	Medium	5 feet per action
FST	Fast	10 feet per action
VFS	Very Fast	20 feet per action
LFS	Lightning Fast	40 feet per action

	SIZE OF TARGET					
SPEED	VSM	SMA	MED	LAR	XLA	GIA
STILL	0	+01	+02	+04	+06	+08
VSL	-01	0	+01	+02	+03	+04
SLO	-02	-01	0	+01	+02	+03
MED	-03	-02	-01	0	+01	+02
FST	-04	-03	-02	-01	0	+01
VFS	-05	-04	-03	-02	-01	0
LFS	-06	-05	-04	-03	-02	-01

2 Range

Each weapon has a modifier for range from the target. These inherent modifiers differ with style of weapon and manufacture.

PISTOL	Semi-Auto	"Auto-Mag"					
ROF 1	AMO fgh	PB	VS	SH	ME	LO	VL
ROL A	CYC n/a →	+2	+2	+2	0	-1	-4 ←
CAP 8	WTE 3.5	5	4	4	3	2	2
CIR 1970	MIS 01%d	SPC celuz				Modern	

RANGE	TYPE	EXAMPLE	
PB	Point Blank	Under 5 feet to target	
VS	Very Short	06- 25 feet to target	
SH	Short	26- 100 feet to target	
ME	Medium	101- 500 feet to target	
LO	Long	501-1000 feet to target	
VL	Very Long	1001+ feet to target	

3 Movement

Index attacker and defender's movement rates for the target movement modifier.

RATES

A	Still	F	Running
B	Slow Walk	G	Dodging
C	Walk	H	Wild Dodge
D	Fast Walk	I	Evasion
E	Slow Run / Jog	J	Roll, Tumble

ATTACKER								DEFENDER	
	A	B	C	D	E	F	G	H	I	J
A	+3	+2	+1	0	-1	-2	-3	-4	-5	-6
B	+2	+1	0	-1	-2	-3	-4	-5	-6	-7
C	+1	0	-1	-2	-3	-4	-5	-6	-7	-8
D	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
E	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
F	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
G	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
H	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26
I	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28
J	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30

Evasion

Attempting to dodge wildly, a character has a chance of falling. Roll a d10 each action you move at rates H to J.

RESULT

    01-07   No effect or regain balance.
    08-09   Stumble, roll a d10 again next action with a modifier of +2
    10   Fall, spend d4 actions in recovery.

4 Special Equipment

Target Sighting Devices are the special optional equipment that improves the accuracy of a character.

TYPES OF WEAPON

H =	Handgun	R =	Rifle / Assult Rifle
S =	Shotgun	M =	Sub / Machine Gun
L =	Hand Laser	E =	Laser Rifle

TYPE	MODIFIER	WEAPON					
Optical Scope	+02	H	R	-	M	L	E
Electronic Scope	+04	-	R	-	M	-	E
Laser Lock On	+06	H	R	S	M	L	E
Radar Lock On	+07	-	R	-	-	-	E
Quick Point Sight	+01	H	R	S	M	L	E
Still Stand, Bipod	+01	-	R	S	M	-	E
Computer Omni-Sight	+10	-	R	-	-	-	E

Optional Modifiers

These modifiers are optional for movement and weapons fire in adverse situations.

TERRAIN
Grass, High (crops)	-02
Hills	-02
Hills, Low	-02
Rockey	-03
Mountainous	-03
Jungle	-03
Jungle, Dense	-04
Sandy	-01
Sand Dunes	-02
Swamp	-01
Dwamp, Dense	-02
Swamp, Tropical	-03
Trees, Wide Spaced	-01
Trees, Light Forest	-01
Trees, Heavy Forest	-02
Trees, Coniferous	-03
Tundra	0

WEATHER
Fog, Light	-02
Fog, Medium	-04
Fog, Heavy	-08
Light, Attacker Facing, Bright	-03
Light, Target silhouetted	+02
Rain, Light	-02
Rain, Heavy	-04
Rain, Downpour	-06
Smog	-02
Smog, Heavy	-03
Snow, Dry	-01
Snow, Wet	-02
Snow, Heavy	-03
Snow, Blizzard	-06
Sunny, Clear	0
Sunny, Hazy	-01
Water, Clear (target submerged)	-02
Water, Murky (target submerged)	-04
Wind	-01
Wind, High	-03
Wind, Hurricane	-07
Windblown Sand (no eye protection)	-06
Windblown Sand (with eye protection)	-03
Smoke	-02
Smoke, Dense	-06

CITIES
Close Buildings	-01
Cobblestones	-01
Dawn / Dusk	-03
Falling / Jumping (target)	-04
Falling (recovering from)	+04
Ladders / Rope (climbing)	-02
Ladders / Rope (desending)	-04
Rope (swinging)	-06
Moonlight	-06
Night, Overcast	-12
Roof, Major Incline	-03
Roof, Minor Incline	-02
Rubbish, Low	-03
Rubbish, High	-04
Steps	-02
Steps, Narrow	-03
Swimming	-03
Water, Waist Deep	-01

VEHICLES
Fast Moving (attacker or target inside)	-04
Slow Moving (attacker of target inside)	-02
Very Rough Road -04 Cratered Road	-06

Range Modifiers

MODIFIERS FOR MEDIUM AND LONG RANGE

TARGET POSITION	AREA AIMED AT: HEAD	HAND	CHEST	LEG	ARM
Standing	-04	-06	-02	-03	-05
Stooping	-05	-07	-03	-04	-06
Crouching	-06	-08	-04	-05	-07
Prone	-07	-09	-05	-06	-08

WEAPONS FIRE FROM MOVING ANIMAL
OR ANIMAL DRAWN WAGON
A = Excellent Riding Ability
B = Fair Riding Ability
C = Poor Riding Ability
D = Firing From Flatbed Wagon
E = Firing From Coach

QUADRUPED PACE	A	B	C	D	E
Walking	0	-01	-02	-02	-02
Canter	-02	-03	-04	-03	-02
Gallop	-03	-05	-07	-04	-03
Run	-04	-07	-09	-05	-04
Trot	-05	-09	-12	-06	-05

Material Strength

MATERIAL	ACCURACY DEFLECTION
Glass	-1 per quarter inch
Double Strength Glass	-2 per quarter inch
Reinforced Glass	-3 per quarter inch
Bulletproof Glass	-4 per quarter inch
Plexi Glass	-1 per quarter inch
Bulletproof Plastic	-6 per quarter inch
Vehicle Windshield	-2 per quarter inch
Vehicle Side Windows	-1 per quarter inch

Below are the strengths of common building materials and the damage needed to penetrate or destroy them.

LVI: Low Velocity Impact   (strength related)
HVI: High Velocity Impact   (most firearms)
BLA: Blast Damage To Destroy   (explosives)
(q) = Quarter Inch (h) = Half Inch (i) = Inch

	PER	LVI	HVI	BLA
Glass	(q)	2	1	5
Plastic	(q)	4	1	10
Soft Wood	(h)	8	2	20
Hard Wood	(h)	16	3	30
Loose Earth	(i)	4	2	20
Packed Earth	(i)	6	3	30
Sand	(i)	5	2	30
Plasterboard	(q)	5	1	10
Concrete	(h)	18	6	60
Block, Hollow	2x(h)	10	3	25
Brick	2(i)	15	5	50
Stone	(h)	21	7	70
Metal Thin	(h)	8	2	20
Metal Plate	(h)	18	6	60
Metal Hard	(h)	27	9	90
Vac Plastic	(h)	60	20	200
Ships Hull	6(i)	900	300	3000
Ships Bulkhead	6(i)	300	100	1000
Ships Floor	6(i)	450	150	1500
Ship Armor	2(i)	600	200	2000

2448 WEAPONS

TERMINOLOGY OF WEAPONS

ROUND: A single unit of ammunition.
ROF: Rate of Fire is the number of times a weapon can be fired in an action.
ROL: Rate of Load is a weapons reload time.
CAP: Capacity is the number of rounds a weapon can hold.
CIR: The year of a weapons introduction.
AMO: Ammunition is the type of projectile and the specific type of damage dice.
CYC: Cyclic rate is the number of rounds an automatic weapon fires in an action.
WTE: This is the unloaded weight of the weapon in pounds.
MIS: This is the percent chance of improper function per 10 actions use and the table to index the result of misfire.
SPC: Specials are the general information and idiosyncracies of weapons.

PISTOL	Percussion	"Pepperbox"						
ROF 1/2	AMO C		PB	VS	SH	ME	LO	VL
ROL D	CYC n/a		0	-2	-6	-14	-18	-20
CAP 08	WTE 1.5		3	2	2	1	1	.50
CIR 1849	MIS 10%B	Archaic						

Accuracy Range Modifiers & Dice of Damage

	PB	VS	SH	ME	LO	VL
ACCURACY MODIFIER :	0	-2	-6	-14	-18	-20
NUMBER OF DICE :	3	2	2	1	1	.50

Under the accuracy range modifiers are the number of dice of damage that particular weapon does at that range.

The particular damage of the die is found in the AMO (PROJECTILES) chart.

Load Speed

CODE	TYPE	DESCRIPTION	ACTIONS
A	Box/Clip	Complete Reload	01
B	Manual	1 Step Reload	01
C	Manual	2 Step Reload	02
D	Manual	3 Step Reload	03
E	Manual	4 Step Reload	04
F	Manual	5 Step Reload	05

Multiple barrels multiply the time of loading. The above rates are for single barrel loading only. Multiply load time by the number of barrels.

Types

Weapons in FTL are listed in three general historical types of design. These include:

ARCHAIC : A primitive early design of the type of weapon listed.
20th CENTURY : A Terran mid twentieth century example of the weapon type.
25th CENTURY : The state of the art example of the weapon type.

Projectile Damage

DAMAGE OF PROJECTILES

TYPE		TYPE OF DICE	
B	Rocks (gravel)	d4	
C	Ball (round lead or iron)	d4	+1
D	Conical	d4	+2
E	Flat Point (lead)	d6	
F	Jacketed	d6	
	01 Tracer (add d6 burning)	d6	
	02 Armor Piercing	d6	+2
	03 Explosive	d6	+3
G	Jacketed Hollow Point	d8	+1
H	Jacketed Soft Point	d8	
I	Flechette	2d4	
J	Dart (drug filled)	d4	
K	Tagging Round	1	
L	Shotgun (multiple ball) *	d4	+1
M	Shotgun (shot) *	d4	
N	Multiple Flechette	each d4	
O	Air Space Point	d8	+1
	01 Tracer (add d6 burning)	d8	+1
	02 Armor Piercing	d8	+2
	03 Explosive	d8	+3
P	Jacketed Flat Point	d8	
Q	Shotgun (slug)	d10	+1
R	Stun Bullets	(See Stun & Shock)	
T	Shotgun (stun bag)	(See Stun & Shock)	

* These projectile types are classified as specific area damaging at ranges of PB and VS. At other ranges they do whole body damage because of scatter effect.

Misfires

TYPE B	RESULT
01-80	Hangfire (d6 +1 actions)
81-90	Mechanical Break or Jam of Weapon
91-95	Weapon Explodes go to Critical 1
96-00	Weapon Explodes go to Critical 2

TYPE D	RESULTS
01-80	Cartridge Jam
81-90	Mechanism Jam
91-98	Mechanical Break
99	Weapon Explodes go to Critical 1
00	Weapon Explodes go to Critical 2

TYPE F	RESULTS
01-85	Jammed Shell
86-98	Smashed Shell
99	Weapon Explodes go to Critical 1
00	Weapon Explodes go to Critical 2

CRITICAL 1 Victim takes 2d6 from detonating weapon and d4 x.50 fragments that hit at d6 penetration in random areas.

CRITICAL 2 Victim takes 3d6 from detonating weapon and d4 fragments that hit at d6 +3 penetration in random areas.

SPECIALS

A	Moisture Sensitive	U	Box Clip In Grip
C	Rare / Expensive	W	Speed Loader Rate A
F	Near Concealable	B	Belt Fed
J	Light Recoil	C	Tripod Mount
K	Moderate Recoil	E	Vehicle Mount
L	Heavy Recoil	P	Box Magazine

Pistols

PISTOL — Flintlock — "Kentucky Pistol"
ROF 01 | AMO C | ROL F | CYC n/a | CAP 01 | WTE 2.5 | CIR 1690 | MIS 20%B | SPC a | Archaic

	PB	VS	SH	ME	LO	VL
	+2	+1	0	-1	-4	-8
	4	3	3	2	1	1

PISTOL — Double Action — "S&W .357 Magnum"
ROF 1/2 | AMO EGH | ROL B | CYC n/a | CAP 06 | WTE 4.0 | CIR 1935 | MIS 01%F | SPC fjw | 20th Cen

	PB	VS	SH	ME	LO	VL
	+3	+3	+2	0	-2	-4
	5	4	3	3	2	1

PISTOL — Semi-Auto — "Walden Welsh 10mm"
ROF 1/2 | AMO FGPR | ROL A | CYC n/a | CAP 15 | WTE 1.5 | CIR 2406 | MIS 01%F | SPC fjpv | 25th Cen

	PB	VS	SH	ME	LO	VL
	+3	+2	+2	0	-2	-5
	5	5	4	3	3	2
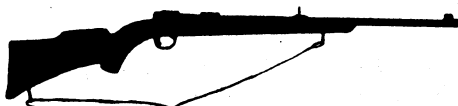
Rifles

RIFLE — Flintlock — "Kentucky Rifle"
ROF 01 | AMO C | ROL F | CYC n/a | CAP 01 | WTE 6.0 | CIR 1700 | MIS 15%B | SPC a | Archaic

	PB	VS	SH	ME	LO	VL
	-1	+1	+3	+2	+1	0
	4	3	3	2	2	2

RIFLE — Bolt Act. — "Winchester .300 Magnum"
ROF 01 | AMO FH | ROL B | CYC n/a | CAP 04 | WTE 9.0 | CIR 1965 | MIS 01%D | SPC k | 20th Cen

	PB	VS	SH	ME	LO	VL
	-1	0	+2	+3	+1	+1
	6	6	5	5	4	4

RIFLE — Semi-Auto — "Colonial 5000"
ROF 01 | AMO F-N | ROL A | CYC n/a | CAP 08 | WTE 15 | CIR 2366 | MIS 01% | SPC clp | 25th Cen

	PB	VS	SH	ME	LO	VL
	-6	-4	0	+1	0	0
	10	10	9	8	7	6

Military Rifles

RIFLED MUSKET — Flintlock — "Harpers Ferry"
ROF 01 | AMO C | ROL F | CYC n/a | CAP 01 | WTE 7.0 | CIR 1803 | MIS 15%B | SPC ag | Archaic

	PB	VS	SH	ME	LO	VL
	-1	0	+3	+2	+1	0
	5	5	4	3	2	1

RIFLE — Assault — "Belgian FN-FAL"
ROF 1/3 | AMO FH | ROL A | CYC 20a | CAP 20 | WTE 9.0 | CIR 1958 | MIS 01%D | SPC p | 20th Cen

	PB	VS	SH	ME	LO	VL
	-1	0	+2	+2	0	-2
	5	5	4	4	3	2

RIFLE — Assult — "Wolverne 906"
ROF 1/3 | AMO FIKR | ROL A | CYC 40 | CAP 50/100 | WTE 5.0 | CIR 2390 | MIS 01%F | SPC p | 25th Cen

	PB	VS	SH	ME	LO	VL
	0	+4	+3	+2	+2	+1
	7	6	6	5	4	3

Sub-Machine Guns

SUB-MACHINE GUN — "Israeli UZI"
ROF 1/3 | AMO F | ROL A | CYC 20a | CAP 25 | WTE 9.0 | CIR 1952 | MIS 01%D | SPC p | 20th Cen

	PB	VS	SH	ME	LO	VL
	+1	+1	0	-2	-4	-8
	4	4	3	3	2	1

SUB-MACHINE GUN — "Saulnier SMG 10mm"
ROF 1/3/6 | AMO P | ROL A | CYC 40a | CAP 40 | WTE 5.5 | CIR 2425 | MIS 01%F | SPC p | 25th Cen

	PB	VS	SH	ME	LO	VL
	+2	+1	+1	0	-3	-7
	5	4	3	2	2	1

Machine Guns

MACHINE GUN — "M60 30 Cal"
ROF 5 | AMO F | ROL D | CYC 15a | CAP 250 | WTE 23 | CIR 1960 | MIS 01%D | SPC abde | 20th Cen

	PB	VS	SH	ME	LO	VL
	0	0	+2	+4	0	-2
	6	5	4	4	3	2

MACHINE GUN — "Eckhout Thunder"
ROF 1/20/50 | AMO F | ROL D | CYC 200a | CAP 5000 | WTE 30 | CIR 2388 | MIS 01%D | SPC be | 25th Cen

	PB	VS	SH	ME	LO	VL
	0	0	+2	+4	0	-2
	7	7	6	6	5	4
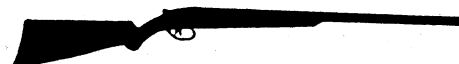
Shotguns

SHOTGUN — Flintlock
ROF 01 | AMO CLM | ROL F | CYC n/a | CAP 01 | WTE 10 | CIR 1690 | MIS 20%B | SPC ak | Archaic

	PB	VS	SH	ME	LO	VL
	-1	0	0	-1	-5	-8
	4	4	3	2	1	.50

SHOTGUN — Cartridge — "Stephens M311R"
ROF 1/2 | AMO J-NQR | ROL B(x2) | CYC n/a | CAP 02 | WTE 6.0 | CIR 1910 | MIS 01%D | SPC k | 20th Cen

	PB	VS	SH	ME	LO	VL
	-1	0	+2	+1	0	-4
	5	5	4	3	3	2

SHOTGUN — Cartridge — "Spurlock M861b"
ROF 1/2 | AMO JNQRT | ROL B(x6) | CYC n/a | CAP 06 | WTE 8.5 | CIR 2290 | MIS 01%D | SPC k | 25th Cen

	PB	VS	SH	ME	LO	VL
	0	+1	+3	+2	+1	-3
	5	5	4	3	3	2

SHOTGUN — Assault — "Attison Full Auto"
ROF 1/3 | AMO JNQRT | ROL A | CYC 10a | CAP 20 | WTE 11 | CIR 1980 | MIS 01%D | SPC k | 20th Cen

	PB	VS	SH	ME	LO	VL
	-1	0	+4	+1	0	-4
	5	5	4	3	3	2

SHOTGUN — Assault — "Kymnaran Ranger"
ROF 1/6 | AMO JNQRT | ROL A | CYC 10a | CAP 60 | WTE 14 | CIR 2430 | MIS 01%F | SPC k | 25th Cen

	PB	VS	SH	ME	LO	VL
	-1	0	+2	+1	0	-4
	7	7	6	5	4	3

LASERS

PISTOL	Laser					"GE 1000"	
ROF 1/4	AMO d6 burn	PB	VS	SH	ME	LO	VL
ROL A	CYC 4a	+1	+4	+6	+4	+2	+0
CAP 100	WTE 2.5	6	6	5	5	4	4
CIR 2180	MIS 08%	SPC a				Archaic	

PISTOL	Laser					"Brazilia 404"	
ROF 1/4	AMO d6 burn	PB	VS	SH	ME	LO	VL
ROL A	CYC 4a	+1	+4	+6	+4	+4	+2
CAP 100	WTE 2.0	Adjustable to 10d6					
CIR 2400	MIS 01%	SPC f				25th Cen	

RIFLE	Laser					"Mk 4 Burner"	
ROF 1/2	AMO d10 burn	PB	VS	SH	ME	LO	VL
ROL A	CYC 2a	-1	+1	+4	+6	+6	+4
CAP 100	WTE 14	6	6	5	5	4	4
CIR 2096	MIS 04%	SPC a				Archaic	

RIFLE	Laser					"Leopard 86"	
ROF 1/4	AMO d10 burn	PB	VS	SH	ME	LO	VL
ROL A	CYC 4a	-1	+1	+4	+6	+6	+4
CAP 200	WTE 9.5	Adjustable to 10d10					
CIR 2399	MIS 01%	SPC				25th Cen	

TRIPOD	Laser					"M2422"	
ROF 1/6	AMO d10 burn	PB	VS	SH	ME	LO	VL
ROL B	CYC 6a	-2	0	+1	+6	+6	+4
CAP 1000	WTE 37	Adjustable to 20d10					
CIR 2422	MIS 01%	SPC ce				25th Cen	

MINING	Laser					"Starlight F"	
ROF 1/20	AMO d100 brn	PB	VS	SH	ME	LO	VL
ROL D	CYC 20a	-9	-6	-4	0	+6	+6
CAP 1000	WTE 164	Adjustable to 20d100					
CIR 2378	MIS 02%	SPC ce				25th Cen	

Laser Damage

Lasers differ from normal weapons in having a battery charge to expend. Each die of damage done with a laser reduces the charge one point. A 6d burst will reduce the charge 6 points. The cyclic (CYC) rate is now the number of pulses that can be fired per action. This number is adjustable from one to the cyclic limit. Laser damage dice can also be adjusted from 1 to the limit of the laser. Laser damage is in burn. A pulse laser also creates blast and stun effects.

LASER RECHARGING

A laser can be recharged from normal house current at a rate of one point per minute.

Heavy lasers require high voltage and double recharge time.

Lasers can run continuously with the use of a man portable fusion power pack. This 80 pound unit runs for 5 years on a unit of fuel. It can be turned off but must have a high voltage source to turn on again.

Six of these packs are necessary to operate a standard mining laser.

See power and ship operations in the Ship appendix.

Special Weapons

LAUNCHER	Grenade	"Thump Gun"
ROF 01	AMO Variable	A shotgun styled
ROL B(x2)	CYC n/a	40mm grenade capsule
CAP 02	WTE 8.0	launcher with a 02
CIR 2006	MIS 01%D	mile range.

SHELL TYPES		BLAST	BURN
01	High Explosive	500 pts.	-
02	Fragmentation (see grenades, high yeild)		
03	Incendiary	100 pts.	6d10
04	Chemical (see chemical)	25 pts.	-
05	STUN BAG (see Stuns)	-	-
06	Flares	5 pts.	2d10

Parachute or star shell illuminates an area for 3 minutes, most colors.

MORTAR	Grenade	"81mm"
ROF 01	AMO Variable	An 81mm computer
ROL B	CYC n/a	guided mortar with
CAP 1	WTE 24	a 5 mile range.
CIR 2108	MIS 01%D	

Shells are the same as types 1 to 4 of the thump gun with double to triple the yield.

Missiles

Most missiles are one shot disposable launcher systems that can be operated by an individual. Ready time is 4 actions.

TYPE		RANGE	PUNCH	BLAST	BURN
01	Armor Piercing	2 mi.	1000	250	d10
02	High Explosive	2 mi.	250	1000	d4
03	Incendiary	2 mi.	30	50	10d10
04	HE + AP	2 mi.	800	450	d10
05	AP + IN	2 mi.	750	140	6d10
06	Chemical	2 mi.	25	40	d6

These missiles are available in miniature form in vehicle mounted, computer controlled pods of 6 to 24 missiles. This computer link also allows sensors for:

A Infrared
B Visual Lock On
C Laser Lock On
D Sound
E Energy
F Radar / Sonar

Indirect Fire

For missile fire use accuracy with normal modifiers and a +10 bonus for any special missiles with sensors for targeting. For indirect fire imagine a clock face over your target, roll a d12 for the direction of the shell fall. Index the indirect fire distance chart.

SHOT NUMBER		STILL TARGET NUMBER OF FEET FROM TARGET
01	First Shot	2x d100
02	Second Shot	d100
03	Third Shot	.50x d100
04	Fourth Shot	5 d10
05	Fifth Shot	3 d10
06	Sixth Shot	2 d10
07	Seventh Shot	d10

Explosives

Explosives come in many variable strengths and types. Some general examples include:

NAME	STYLE	FUSE	DAMAGE PER UNIT
TNT	BL	ABC	200 pts.
C-4 (old style)	BL	BC	180 pts.
-Demo Pack	12BL	BC	2160 pts.
C-6 (old style)	BL	BC	560 pts.
-Demo Pack	10BL	BC	5600 pts.
C-8	BL	BC	740 pts.
-Demo Pack	10BL	BC	7400 pts.
Dynamite	ST	ABC	150 pts.
Dynamite (colony)	ST	ABC	190 pts.
NITRO	DI	ABC	220 pts.

STYLES   BL A small rectangular block.
            ST Stick 12" long 1" wide.
            DI A 2 inch by .25 inch disk.

DETONATOR
    A   Fuse burns 1 inch per action
    B   Blasting Cap d4 +6 detonation
    C   Primer Cord d4 per foot length

Any manner of device type may be used to trigger a detonator.

Grenades have an adjustable fuse rate of 1 to 10 actions. Most grenades can be thrown an average of 100 feet or up to 10 times that distance with a launcher attachment.

TYPE	BLAST	BURN
High Explosive	200	d10
Smoke (see accuracy modifier)	-	d6
Incendiary (30 foot circle)	50	6d10
Illumination (as a flare)	-	d10
Phosphorus (see burn damage)	65	-
Fragmentation (low yield)	110	-
Fragmentation (high yield)	140	d6

FRAGMENTATION	DISTANCE IN FEET						
	35	30	25	20	15	10	05
(low yield)	0	1	d2	d4	d4	d6	d8
(high yield)	1	d2	d4	d6	d8	d10	d20
(phosphorus)	0	0	1	d2	d4	d4	d6

Grenades explode with damage from blast and fragments that travel with penetration equal to the force of the blast divided by the distance of the target in feet.

Chemical grenades effect victims in a variety of ways. Most are tailored for a particular racial type.

NAME	TYPE EFFECT		
BZ	Happy Hallucinogenic		
	DE: d4 min.	DU: d4+4 hrs.	DX: 05%
BX	Bad Trip Hallucinogenic		
	DE: 1 min.	DU: 3d8 hrs.	DX: 08%
BN	Optic Disruptive		
	DE: 1 min.	DU: d6+9 hrs.	DX: 01%
CN	Tear Gas		
	DE: Contact	DU: d6 hrs.	DX: 01%
DM	Vomit Gas		
	DE: Contact	DU: d4 hrs.	DX: 01%
SL	Sleep Gas		
	DE: 1 min.	DU: d6+6 hrs.	DX: 01%
NG	Nerve Gas		
	DE: 1 min.	DU:	DX: 95%
PO	Poison Gas	(see toxin types)	

DE=Delay to Effect DU=Duration DX=Death %

Bows

EARLY BOW	PB	VS	SH	ME	LO	VL
ARROW TYPE:ABC	0	+1	+4	+3	0	-3
BREAK 06%a	3	3	2	2	1	1

LONG BOW	PB	VS	SH	ME	LO	VL
ARROW TYPE:A-D2	0	+1	+4	+4	+2	0
BREAK 03%a	4	4	3	2	1	1

MODERN BOW	PB	VS	SH	ME	LO	VL
ARROW TYPE:E1-5	0	+1	+4	+3	+1	0
BREAK 02%a	4	3	2	2	1	1

COMPOUND	PB	VS	SH	ME	LO	VL
ARROW TYPE:E1-5	0	+1	+5	+5	+3	+1
BREAK 01%b	4	4	3	3	2	1

ARBELEST	PB	VS	SH	ME	LO	VL
BOLT TYPE:A-D3	-1	+1	+4	+3	-4	0
BREAK 07%b	4	4	4	3	3	1

CROSS BOW	PB	VS	SH	ME	LO	VL
BOLT TYPE:E1-5	-1	+1	+4	+3	+2	+1
BREAK 01%b	5	5	4	3	3	2

PISTOL CROSS BOW	PB	VS	SH	ME	LO	VL
BOLT TYPE:E1-5	+4	+3	+2	0	-4	-8
BREAK 03%b	3	3	3	2	1	1

WRIST BOW	PB	VS	SH	ME	LO	VL
BOLT TYPE:E1-5	+3	+2	+1	0	-8	-12
BREAK 05%b	3	3	2	2	1	1

VAC CROSS BOW	PB	VS	SH	ME	LO	VL
BOLT TYPE:F1-4	-6	-2	+2	+4	+2	0
BREAK 10%b	1	2	3	4	6	6

JAPANESE BOW	PB	VS	SH	ME	LO	VL
BOLT TYPE:A-E	0	+2	+4	+3	+2	+1
BREAK 01%a	4	4	3	2	2	1

ARROW TYPE		BREAKAGE %	DAMAGE DICE
A Blunt Wood		30%	d4
B Pointed Wood		40%	d4 +1
C ARROWHEAD:			
Stone, Bone, Shell		55%	d6
D EARLY METAL			
01 Bronze		40%	d6
02 Iron		20%	d6
03 Steel		10%	d6
E MODERN			
01 Target		03%	d4 +1
02 Broadhead		01%	d6
03 (3) Blade		02%	d6 +1
04 (4) Blades		03%	d6 +2
05 Fishing		03%	d4 +2
F SPECIAL			
01 Rocket Assist		05%	d6 +4
02 Explosive		99%	(blast 3d6)
03 Incenderary		95%	(burn 2d4)

Breaks

BREAK A	BREAK B
01-07 String Snaps	01-07 String Snaps
08-09 Bow Cracks	08-09 Mechanical
10 Bow Breaks	10 Bow Breaks

Weapons Generation

By the end of the twentieth century there were over 100,000 different types of firearms and miscellaneous small arms in existance.

By 2448 the number, with alien designs, has grown to well over 750,000 different types.

These tables allow a character to shop for weapons. A GM may generate a few dozen to have on the side. Results may go from outstanding to whimsical for random design of weapon. Start with a blank card or use the bottoms of photocopied equipment sheets.

AVAILABLE

01-03	Handgun	08	Hand Laser
4-06	Rifle	09	Laser Rifle
07	Shotgun	10	Assault Rifle

RATE OF FIRE / CYCLIC ACTION

Roll a d6 for the rate of fire and index over to find the weapons cyclic action. Where there is no cyclic action the weapon is semi-auto or other.

RESULT	ROF	CYCLIC	RESULT	ROF	CYCLIC
01	1	n/a*	04	1/3	20a
02	1/2	n/a*	05	1/3	30a
03	1/3	n/a*	06	1/3/6	40a

* Weapons with this designation may be of these types.

	TYPE	CAPACITY
01	Bolt Action	d6 Rounds
02	Manual Load	d10 Rounds
03-06	Separate Box	3d10 Rounds
07-08	Grip Box	4d4 Rounds
09	Cylinder	2d4 Rounds
10	Feed Tube	2d6 Rounds

Weapons without the * designation may be of these types.

	TYPE	CAPACITY
01-04	Separate Box	4d10 Rounds
05-06	Grip Box	5d4 Rounds
07-08	Drum	6d10 Rounds
09	Belt Fed	Any Amount
10	Manual Load	2d10 Rounds

WEIGHT IN POUNDS

PISTOL TYPE	WEIGHT	RIFLE TYPE	WEIGHT
01-02 Light	.50	01-02 Light	4.00
03-04 Medium	1.50	03-04 Medium	7.00
05-06 Heavy	3.00	05-06 Heavy	10.00

SHOTGUN TYPE	WEIGHT	LASER TYPE	WEIGHT
01-02 Light	5.00	Laser Hand	2.00
03-04 Medium	8.00	Laser Rifle	8.00
05-06 Heavy	12.00		

AMMUNITION

Ammunition (AMO) is the choice of the player, depending on availability of the shells required and location of purchase. A weapons ammunition manufacturing station may be purchased for 15,000 d's. This allows the player to manufacture specialty shells of the types listed in the weapon section.

Accuracy

TYPE	RATING	PB	VS	SH	ME	LO	VL
01 Handgun	Awful	0	-1	-3	-5	-7	-10
Rifle	Awful	-4	-4	0	-2	-4	-8
Shotgun	Awful	0	-1	-2	-3	-5	-8
02 Handgun	Bad	0	0	-2	-3	-6	-8
Rifle	Bad	-3	-3	-2	-1	-3	-5
Shotgun	Bad	-1	0	0	-1	-5	-8
03 Handgun	Poor	+2	+1	0	-1	-3	-6
Rifle	Poor	-3	-2	-1	0	-1	-2
Shotgun	Poor	-1	0	+1	0	-2	-6
04 Handgun	Average	+3	+2	+2	0	-2	-4
Rifle	Average	-2	-1	0	+1	+1	0
Shotgun	Average	-1	0	+2	+0	-1	-4
05 Handgun	Good	+4	+3	+2	+1	0	-2
Rifle	Good	-1	+1	+2	+1	+1	+2
Shotgun	Good	-1	0	+2	+1	0	-4
06 Handgun	Great	+4	+4	+3	+2	0	-2
Rifle	Great	0	0	+1	+2	+3	+3
Shotgun	Great	-1	+1	+2	+2	+1	0

Damage

TYPE	RATING	PB	VS	SH	ME	LO	VL
01 Handgun	Awful	2	2	1	1	.50	.50
Rifle	Awful	3	3	3	2	2	1
Shotgun	Awful	3	3	2	2	1	1
02 Handgun	Bad	3	2	2	1	1	.50
Rifle	Bad	4	4	3	3	2	1
Shotgun	Bad	4	3	2	2	1	1
03 Handgun	Poor	3	3	2	2	1	1
Rifle	Poor	5	4	4	3	3	2
Shotgun	Poor	4	4	3	2	1	1
04 Handgun	Average	4	3	3	2	2	1
Rifle	Average	5	5	4	4	3	3
Shotgun	Average	5	5	4	3	2	1
05 Handgun	Good	4	4	3	3	2	1
Rifle	Good	7	6	5	5	4	4
Shotgun	Good	5	5	4	3	3	2
06 Handgun	Great	5	5	4	4	3	2
Rifle	Great	10	10	9	8	7	7
Shotgun	Great	6	6	5	4	3	2

These weapon damages are the combined factors of a weapons efficiency and the AMO specific to that type of weapon.

These damages can be modified by one with a character's research and use of gunsmithing or the purchase (DM approved) of better grades of ammunition.

It is always fun to add idiosyncracies to weapons including: jamming, sticking, hard to get ammunition, sensitivity to specific environment and unpopularity are suggested.

A GM may also wish to alter the range modifiers. Remember, in a tight situation, weapons are useful, but your campaign should not rely on weapons and equipment only.

Fast Kill

In fast action situations the complete generation of protagonists is a waste of the GM's time. Other than accuracy, and agility disposable NPCs should be generated in batch and kept on file.

The following charts speed disposal of NPC characters and animals in a simple fashion.

If the GM wishes to add a little realism and uncertainty to the game, roll on the options table when a fast kill is attempted.

REMEMBER
01 Every projectile striking a target per action adds a +1 on the result total.
02 Modifiers do not affect a roll on the options table.
03 In some cases an option will not work for a particular situation.
04 This table may also be used for alien life. It is recommended this table not be used for player character wounds.

Result

01 Victim is grazed.
02 Victim is grazed and loses next action.
03 Minor wound lightly stuns victim.
04 Wound stuns victim for d6 minutes.
05 Wound stuns victim for d6+10 minutes.
06 Critical wound, NPC falls unconscious after next action.
07 Critical wound, NPC falls unconscious after one more action, dies d10 minutes.
08 Critical wound, NPC falls unconscious immediately. Dies in d10 minutes.
09 Critical wound, NPC falls unconscious and dies in d4 minutes without aid.
10 Victim falls unconscious, dies.
11+ Victim dead before he hits the ground.

Optional

01 Victim is spun by shot. Must take d4 actions to recover.
02 Victim's armor reduces first table roll by d4 on the initial d10 roll.
03 Victim's armor reduces first table roll by d4 +2 on the initial d10 roll.
04 Victim fumbles next action.
05 Victim is knocked d4 feet backwards by shot. Takes d6 actions to recover.
06 Obstruction or possession deflects the shot. Knocks victim backwards as #5.
07 Fear reduces the victim's accuracy by d6 on the next shot if the next action is weapons fire.
08 Obstruction or possession deflects the shot totally. No action penalty to NPC.
09 NPC's weapon jams or disfunctions on the next or last action.
10 If NPC is alive after and conscious after being hit, he will feign death, (play possum) until he has an advantage.

Animal Fast Kill

Use this table in the same way as the first set of tables with these results:

Result

01 Victim is grazed.
02 Victim is grazed and loses next action.
03 Minor wound lightly stuns victim.
04 Wound stuns victim for d6 minutes.
05 Wound stuns victim for d6 +4 minutes.
06 Critical wound, victim falls unconscious after next action.
07 Critical wound, victim falls unconscious after next action and dies in d10 minutes.
08 Critical wound, victim falls unconscious after next action and dies in d6 minutes.
09 NPC falls unconscious, dies d4 minutes.
10 Victim falls unconscious, dies.
11 Victim dropped in tracks, dead.

Optional

01 Victim flees in terror if alive.
02 Victim flees in terror in direction of attacker if still alive.
03 Deflection reduces attacker's primary dice result by d4.
04 Victim will feign death until attacker leaves or death occurs.
05 Victim will feign death and counter attack the attacker at the first opportunity.
06 Victim begins to thrash and die violently.
07 The kill attracts scavengers, if any.
08 The kill attracts predators, if any.
09 This kill attracts more of the victim's type, if any.
10 Victim panics, runs off to die.

TEMPERAMENT IN ANIMALS
Most animals will avoid contact with the races of FTL whenever possible.
Only when sick, cornered, wounded, or protecting young will they attack with a berserk fury. See the Temperament charts.

DEXTERITY IN ANIMALS
An animal's Dexterity and Agility is the choice of the GM. Averages may be:

	DEXTERITY	AGILITY
VERY SLOW	d6 +04	d6 +04
SLOW	d6 +06	d6 +06
MEDIUM	d6 +08	d6 +08
FAST	d6 +10	d6 +10
VERY FAST	d6 +12	d6 +12
LIGHTNING FAST	d6 +14	d6 +14

The detailed body tables may be used for damage to quadrupeds with minor structural modifications.

Animals may have different skin armor ratings, bone values and tissue thicknesses. Body areas may generally have the same function though the GM may wish to change death shock percentages and structure.

Wound Shock

As a character takes Whole Body Damage he or she suffers the possibility of wound shock that may become a death shock.

REMEMBER
01 Index the general area hit.
02 Break hit points into 25%,50%,75%,100%.
03 Reduce the character's percentage of shock by the victim's remaining value of constitution.
04 Roll under this percentage on a d100 for the character to go into shock.
05 If the character goes into a state of shock, repeat steps #1-3 and roll on the death shock table. Death shock is immediate.
06 Chance of shock and death shock can be reduced by drugs.

% HIT POINTS LOST	PERCENT CHANCE SHOCK	PERCENT CHANCE DEATH SHOCK
BRAIN AREA		
Graze	-	-
01-25%	20%	10%
26-50%	50%	40%
51-75%	70%	50%
76-98%	90%	70%
VITAL AREA	(chest, abdomen, spine)	
Graze	-	-
01-25%	20%	10%
26-50%	40%	20%
51-75%	50%	30%
76-98%	70%	50%
EXTREMITY	(arm, leg, tail)	
Graze	-	-
01-25%	10%	05%
26-50%	20%	10%
51-75%	30%	15%
76-98%	50%	30%
FAR EXTREMITY	(hand, foot)	
Graze	-	-
01-25%	-	-
26-50%	05%	-
51-75%	10%	05%
76-98%	50%	10%

Ben, Bells & Quag

Still smoldering from the laser burn, Ben finds the heavy baseball bat and goes Trell hunting.

Blasting Quagmire from behind, Ben does 9 points to the head area. This is between 25 and 50 percent of Quag's hit points. Reduced by his Constitution of 20, the 50% chance of shock is reduced to 30%. Rolling a d100, the result of 22 sends Quag into dream land with a 40% chance reduced by his constitution to a 20% chance of dying from the shock. A 44 is rolled on a d100 and the Trell is only stunned and damaged.

Realizing what he did, Ben drops the bat and rushes Quagmire to the autodoc for treatment. Ben burns the bat.

Stun

Related to wound shock, stun is another side effect of damage. When a character is damaged check for stun intensity and length.

REMEMBER
01 The stun percentage is always reduced by the remaining value of the character's constitution value.
02 A player character has a final action before becoming totally unconscious.

Time

FAST:	d6	Actions
LIGHT:	3d6	Actions
MEDIUM:	d6	Minutes
HEAVY:	3d6	Minutes
HARD	d6+6	Hours

PERCENTAGE DAMAGE TAKEN	PERCENT CHANCE OF STUN	TYPE OF STUN
BRAIN AREA		
Graze	20%	Fast
01-25%	30%	Light
26-50%	50%	Medium
51-75%	70%	Heavy
76-98%	98%	Hard
VITAL AREA	(chest, abdomen, spine)	
Graze	05%	Fast
01-25%	20%	Fast
26-50%	40%	Medium
51-75%	60%	Medium
76-98%	80%	Heavy
EXTREMITY	(arm, leg, tail)	
Graze	05%	Fast
01-25%	10%	Fast
26-50%	20%	Light
51-75%	40%	Medium
76-98%	60%	Heavy
FAR EXTREMITY	(hands, feet)	
Graze	-	-
01-25%	-	-
26-50%	10%	Fast
51-75%	20%	Light
76-98%	40%	Medium

Fast and Light stuns are more an action penalty than the character actually falling unconscious. See the medical reductions in the disease section.

Hit Locations

HIT LOCATION	FRONT OR BACK	GOTO
01-10	Right Leg 50% Tail Hit	E/F
11-15	Foot L or R	F
16-30	Left Leg 50% Tail Hit	E/H
31-45	Left Arm	D
46-56	Right Arm	D
57-60	Hand, L or R	G
61-75	Abdomin	C
76-90	Chest	B
91-00	Head	A

HIT LOCATION	SIDE OR PRONE	GOTO
01-30	Leg, L or R	E
31-35	Foot L or R	F
36-50	Abdomen	C
51-70	Chest	B
71-85	Arm L or R	D
86-90	Hand L or R	G
91-00	Head	A

Detailed hits are the tables for shrapnel hits, automatic weapons fire, and long range projectile fire where you do not have much of a choice in hit location.

Specific Areas

	AREA	GOTO	ROLL
01-04	Right Foot	F	2d6
05-08	Right Calf	F1	d6
09-12	Right Knee	E4	d6
13-16	Right Hip	E1	d6
17-20	Right Thigh	E2	d6
	or Tail, Right	H	2d6
21-24	Left Foot	F	2d6
25-28	Left Calf	F1	d6
29-32	Left Knee	E4	d6
33-36	Left Hip	E1	d6
37-40	Right Thigh	E2	d6
	or Tail, Left	H	2d6
41-44	Right Hand	G	2d6
45-48	Right Lower Arm	D6	d6
49-52	Right Elbow	D4	d6
53-56	Right Upper Arm	D3	d6
57-60	Right Shoulder	D1	d6
61-64	Left Hand	G	2d6
65-68	Left Lower Arm	D6	d6
69-72	Left Elbow	D4	d6
73-76	Left Upper Arm	D3	d6
77-80	Left Shoulder	D1	d6
81-84	Genitals	C6	d6
85-88	Abdomen	C	2d6
89-92	Chest	B	2d6
93-96	Neck	B1	d6
97-00	Head	A	2d6

This table is used for easy access to the detailed body area tables. You may also use it for shrapnel and automatic weapons fire.
On this table only, read 2d6 as a location in the detailed charts.
EXAMPLE D6 Roll d6: Body table D, Section 6, Roll a d6 for exact area.

Detailed Body Areas

EXAMPLE AREA CODES

```
3,4   **B(6) (M)****(A)(SP 12)**              T=26
a     b c d   e  b   f  g  h  b              n

      DS = 80%+   Heart, Upper R
      i       j k  l        m
```

Codes

Always roll 2 six sided for the area hit. Read each die separately.

a This is the number of the area found by randomization or design.

b The * is the indicator of one point of damage absorbed by the tissue in that area. This is also used for toughness and the indicator of structure of major organs.

c B is the indicator of bone in that area. Always check the bone special chart when damage is over the value of the bone. Damage under the value always lodges the projectile in the bone.

d After a B is always the value of the bone in brackets ( ).

Major Organs

e This (M) is the indicator of a major organ in the area.

f The (A) in brackets indicates a possible high bloodloss area. When this appears the artery hit table is checked. Any damage that severs or damages arteries reduces the damage penetration by one point.

g The (SP) is the code for a spinal hit, Check the optional Spine Hit specials for additional damage and death shock.

h This is the damage needed to penetrate the spine.

i DS is the death shock indicator for damage in that particular area.   A failure to roll over this percentage indicates wound shock kills the character.   See medical skills.

Death Shock

j This is the death shock percentage the character must roll over on a d100 to live.

k The + is an indicator showing a possible higher death shock percentage.

l This is the major organ or (b) bone hit. In arms, legs, tail, hand and foot areas the bone is the only listing.

Location

m This is the location of the area hit in organs that have more than one listing.

n This is the total damage penetration needed to punch a projectile through a body in that specific area.

A Head

1,1 Miss
1,2 Graze A
1,3 Graze B
1,4 Graze B
1,5 Graze A
1,6 Miss

2,1 Graze B
2,2 *B(8) (M)****(A) B(8)*   T=23
   DS = 94%   Brain, Forehead L
2,3 *B(8) (M)****(A) B(8)*   T=23
   DS = 98%   Brain, Forehead Mid L
2,4 *B(8) (M)****(A) B(8)*   T=23
   DS = 98%   Brain, Forehead Mid R
2,5 *B(8) (M)****(A) B(8)*   T=23
   DS = 94%   Brain, Forehead R
2,6 Graze B

3,1 Graze B
3,2 *EYE(4) B(4) (M)****(A) B(8)*   T=22
   DS = 98%   Brain, Eye L
3,3 *B(3) B(6) (M)****(A) B(8)*   T=23
   DS = 94%   Brain, Bridge Nose L
3,4 *B(3) B(6) (M)****(A) B(8)*   T=23
   DS = 94%   Brain, Bridge Nose R
3,5 *EYE(4)B(4) (M)****(A) B(8)*   T=22
   DS = 98%   Brain, Eye R
3,6 Graze B

4,1 Graze B
4,2 *B(4)*B(6) (M)***(A) B(8)*   T=24
   DS = 80%   Brain, Zygomatic L
4,3 *B(3)*B(5) (M)***(A) B(8)*   T=22
   DS = 85%   Brain, Maxilla Palate L
4,4 *B(3)*B(5) (M)***(A) B(8)*   T=22
   DS = 85%   Brain, Maxilla Palate R
4,5 *B(4)*B(6) (M)***(A) B(8)*   T=24
   DS = 80%   Brain, Zygomatic R
4,6 Graze B

5,1 Graze B
5,2 *B(3)*B(4) (M)***(A) B(8)*   T=21
   DS = 60%   Brain, Teeth Upper L
5,3 *B(3)*B(4) (M)***(A) B(8)*   T=21
   DS = 70%   Brain, Teeth Upper Mid L
5,4 *B(3)*B(4) (M)***(A) B(8)*   T=21
   DS = 70%   Brain, Teeth Upper Mid R
5,5 *B(3)*B(4) (M)***(A) B(8)*   T=21
   DS = 60%   Brain, Teeth Upper R
5,6 Graze B

6,1 Graze B
6,2 *B(3)*B(4)*B(6)*   T=17
   DS = 03%   Mandible, Jaw L
6,3 *B(4)***(A) (SP 12) B(8)*   T=29
   DS = 15%+   Mandible, Mid L
6,4 *B(4)***(A) (SP 12) B(8)*   T=29
   DS = 15%+   Mandible, Mid R
6,5 *B(3)*B(4)*B(6)*   T=17
   DS = 03%   Mandible, Jaw R
6,6 Graze B
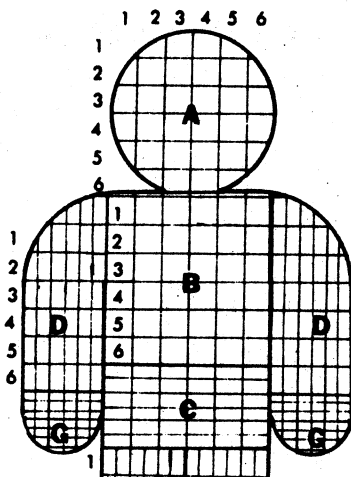
B Chest

1,1 Graze B
1,2 **B(6) ***   T=11
   DS = --   (b) Clavicle, Shoulder L
1,3 ***(A) *(SP 12)*   T=17
   DS = 04%+ Trachea, Air Passage
1,4 ***   *(SP 12)*   T=17
   DS = 04%+ Esophagus, Food Passage
1,5 **B(6) ***   T=11
   DS = --   (b) Clavicle, Shoulder R
1,6 Graze B

2,1 Graze B
2,2 **B(4) (M)****(A) B(4)**   T=16
   DS = 07%   Lung, Upper L
2,3 **B(4) (M)*(A)*** (SP 12) B(4)**   T=28
   DS = 10%+ Bronchial Tube L
2,4 *B(6) **(A)*B(4)**   T=16
   DS = 04%   Esophagus
2,5 **B(4) (M)****(A) B(4)**   T=16
   DS = 10%   Bronchial Tube R
2,6 **B(4) (M)****(A) B(4)**   T=16
   DS = 07%   Lung, Upper R

3,1 Graze B
3,2 **b(4) (M)**** B(4)**   T=16
   DS = 10%   Lung, Mid L
3,3 **B(6) (M)****(A) B(4)**   T=18
   DS = 80%   Heart, Upper L
3,4 **B(6) (M)****(A) (SP 12)**   T=26
   DS = 80%+ Heart, Upper R
3,5 **B(4) (M)****(A) B(4)**   T=16
   DS = 10%   Lung, Mid R
3,6 Graze B

4,1 **B(4) (M)****(A) B(4)**   T=16
   DS = 14%   Lung, Lower L
4,2 **B(4) (M)****(A) B(4)**   T=16
   DS = 20%   Lung, Lower Mid L
4,3 **B(6) (M)****(A) B(4)**   T=18
   DS = 90%   Heart, Lower L
4,4 **B(6) (M)****(A) (SP 12)**   T=26
   DS = 90%+ Heart, Lower Mid R
4,5 **B(4) (M)****(A) B(4)**   T=16
   DS = 20%   Lung, Lower Mid R
4,6 **B(4) (M)****(A) B(4)**   T=16
   DS = 14%   Lung, Lower R

5,1 Graze B
5,2 **B(4) (M)****(A) B(4)**   T=16
   DS = 06%   Liver, L
5,3 **B(4) (M)****(A) B(4)**   T=16
   DS = 90%   Heart, Lower L
5,4 **B(4) (M)****(A) (SP 12)**   T=24
   DS = 10%+ Liver, Mid L
5,5 **B(4) (M)****(A) B(4)**   T=16
   DS = 10%   Stomach, Mid R
5,6 **B(4) (M)****(A) B(4)**   T=16
   DS = 12%   Spleen, R

6,1 Graze B
6,2 ** (M)*****(A) ***   T=10
   DS = 10%   Liver, L
6,3 ** (M)****(A) ***   T=09
   DS = 08%   Pancreas, L
6,4 ** (M)****(A) *(SP 12)**   T=21
   DS = 10%+ Duodenum, L
6,5 ** (M)****(A) ***   T=09
   DS = 15%   Stomach, Mid
6,6 ** (M)****(A) ***   T=09
   DS = 10%   Spleen

```
1,1   Graze B
1,2   ** (M)****(A) ***                    T=09
      DS = 08%    Liver, L
1,3   ** (M)****(A) ***                    T=09
      DS = 10%    Kidney, L
1,4   ** (M)****(A) (SP 12)**              T=20
      DS = 10%+   Stomach, L
1,5   ** (M)****(A) ***                    T=09
      DS = 08%    Kidney, R
1,6   ** (M)****(A) ***                    T=09
      DS = 05%    Colon, R

2,1   ** (M)****(A) ***                    T=09
      DS = 04%    Colon, L
2,2   ** (M)****(A) ***                    T=09
      DS = 10%    Kidney, Lower L
2,3   ** (M)****(A) *B(4)**                T=13
      DS = 10%    Intestine, L
2,4   ** (M)****(A) *(SP 12)**             T=21
      DS = 12%+   Intestine, R
2,5   ** (M)****(A) ***                    T=09
      DS = 10%    Intestine, R
2,6   ** (M)****(A) ***                    T=09
      DS = 05%    Colon, R

3,1   ** (M)****(A) *B(4)*                 T=12
      DS = 05%    Colon, L
3,2   ** (M)****(A) *B(4)*                 T=12
      DS = 08%    Intestine, L
3,3   ** (M)****(A) *B(6)*                 T=14
      DS = 08%    Intestine, Mid L
3,4   ** (M)****(A) *(SP 12)*              T=20
      DS = 08%+   Intestine, Mid R
3,5   ** (M)****(A) *B(4)*                 T=12
      DS = 08%    Intestine, R
3,6   ** (M)****(A) *B(4)*                 T=12
      DS = 05%    Colon, R

4,1   ** (M)****(A) *B(4)**                T=13
      DS = 08%    Colon, L
4,2   ** (M)****(A) *B(10)**               T=19
      DS = 08%    Intestine, L
4,3   ** (M)****(A) ***                    T=09
      DS = 08%    Intestine, Mid L
4,4   ** (M)****(A) *(SP 12)*              T=20
      DS = 08%+   Intestine, Mid R
4,5   ** (M)****(A) *B(10)**               T=19
      DS = 08%    Intestine, R
4,6   ** (M)****(A) *B(4)**                T=13
      DS = 05%    Colon, R

5,1   ** (M)****(A) *B(4)***               T=14
      DS = 05%    Colon, L
5,2   ** (M)****(A) *B(10)***              T=20
      DS = 08%    Intestine, L
5,3   ** (M)****(A) *B(2)***               T=12
      DS = 08%    Intestine, Mid L
5,4   ** (M)****(A) *B(5)***               T=15
      DS = 08%    Intestine, Mid R
5,5   ** (M)****(A) *B(10)***              T=20
      DS = 05%    Appendix, R
5,6   ** (M)****(A) *B(4)***               T=14
      DS = 05%    Colon, R

6,1   Graze B
6,2   ** (M)****(A) *B(5)***               T=15
      DS = 10%    Bladder, L
6,3   ** (M)****(A) *B(3)***               T=13
      DS = 06%    Genitals, L
6,4   ** (M)****(A) *B(3)***               T=13
      DS = 06%    Genitals, R
5,5   ** (M)****(A) *B(5)***               T=15
      DS = 10%    Bladder, R
5,6   Graze B
```

◄◄ C Abdomen
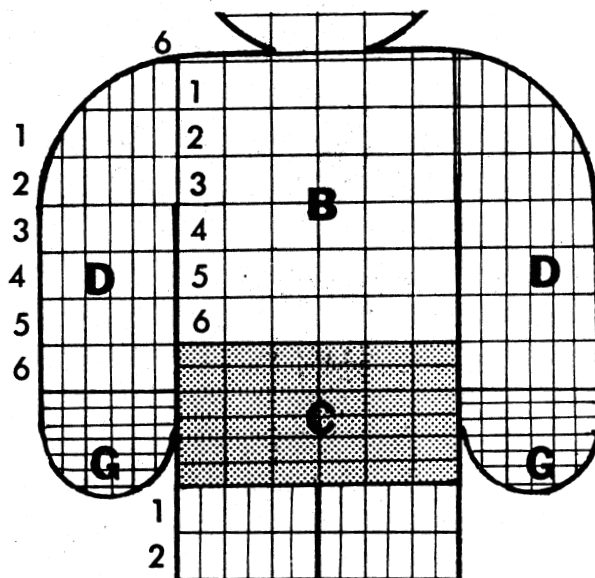
D Arm

```
1,1   Graze A
1,2   Graze B
1,3   *** B(6)**              Clavicle       T=11
1,4   *** B(8)**              Shoulder       T=13
1,5   ** B(6) *(A)B(8)*       Clavicle       T=18
1,6   ***B(8) ***             Shoulder       T=14

2,1   Graze A
2,2   Graze B
2,3   ***(A) B(7)***          Humerus        T=13
2,4   ***(A) * ***            Arm, Upper     T=07
2,5   Graze B
2,6   ***(A) B(8)**           Shoulder       T=13

3,1   Graze B
3,2   ***(A) * ***            Arm, Upper     T=07
3,3   ***B(8) ***             Humerus        T=14
3,4   ***(A) B(7)***          Humerus        T=13
3,5   ***(A) * ***            Arm, Upper     T=07
3,6   Graze B

4,1   Graze B
4,2   *** ** ***              Arm, Mid       T=08
4,3   ***(A) B(8)***          Humerus        T=14
4,4   **(A) B(10)*            Elbow          T=13
4,5   ***(A) B(8)***          Humerus        T=14
4,6   Graze B

5,1   Graze A
5,2   Graze B
5,3   ***(A) B(6)***          Radius         T=12
5,4   ***B(6) *B(7)**         Radius-Ulna    T=19
5,5   ***(A) B(7)**           Ulna           T=12
5,6   ***(A) * **             Arm, Lower     T=06

6,1   Graze A
6,2   Graze B
6,3   ***(A) B(5)**           Radius         T=10
6,4   ***(A) B(6)**           Ulna           T=11
6,5   Graze B
6,6   Graze A
```

E Leg

1,1	Graze A		
1,2	*** B(10)****	Pelvis	T=17
1,3	*** B(9)***	Hip, Joint	T=15
1,4	*** B(10)***	Pelvis	T=16
1,5	Graze B		
1,6	Graze A		
2,1	Graze B		
2,2	****(A) B(12)****	Femur	T=20
2,3	**** B(12)****	Femur	T=20
2,4	**** ** ****	Leg, Upper	T=10
2,5	Graze B		
2,6	Graze A		
3,1	Graze B		
3,2	****(A) B(12)****	Femur	T=20
3,3	**** B(12)****	Femur	T=20
3,4	**** ** ****	Leg, Upper	T=10
3,5	Graze B		
3,6	Graze A		
4,1	Graze B		
4,2	**** B(12)****	Femur	T=20
4,3	**(A) B(9)***	Knee	T=14
4,4	**B(9) B(8)**	Knee	T=21
4,5	**** B(12)****	Femur	T=20
4,6	Graze A		
5,1	Graze B		
5,2	*** B(10)***	Fibula	T=16
5,3	*** B(10)***	Fibula	T=16
5,4	***(A) B(8)***	Tibia	T=14
5,5	*** B(8)***	Tibia	T=14
5,6	Graze A		
6,1	Graze B		
6,2	***(A) B(10)***	Fibia	T=16
6,3	*** B(10)***	Fibia	T=16
6,4	*** B(8)***	Tibia	T=14
6,5	***(A) B(8)***	Tibia	T=14
6,6	Graze A		

F Foot

1,1	Graze B		
1,2	*** B(10)***	Fibula	T=16
1,3	***(A) B(10)***	Fibula	T=16
1,4	***(A) B(8)***	Tibia	T=14
1,5	*** B(8)***	Tibia	T=14
1,6	Graze A		
2,1	Graze B		
2,2	**(A) B(10)**	Ankle Joint	T=14
2,3	** B(11)**	Ankle	T=15
2,4	**(A) B(10)**	Ankle Joint	T=14
2,5	** B(11)**	Ankle	T=15
2,6	Graze A		
3,1	Graze B		
3,2	** B(8)**	Talus	T=12
3,3	**(A) B(8)**	Talus	T=12
3,4	** B(8)**	Talus	T=12
3,5	Graze B		
3,6	Graze A		
4,1	Graze B		
4,2	** B(7)**	Cuboid	T=11
4,3	**(A) B(7)**	Navicular	T=11
4,4	**(A) B(7)**	Cuneiforms	T=11
4,5	**(A) B(7)**	Cuneiforms	T=11
4,6	Graze A		
5,1	Graze B		
5,2	** B(3)**	Medicarpal	T=07
5,3	** B(3)**	#2 Medicarpal	T=07
5,4	** B(3)**	#3 Medicarpal	T=07
5,5	** B(3)**	#4 Medicarpal	T=07
5,6	** B(3)**	#5 Medicarpal	T=07
6,1	Graze B		
6,2	** B(2)**	Philanges	T=06
6,3	** B(2)**	#2 Philanges	T=06
6,4	** B(2)**	#3 Philanges	T=06
6,5	** B(2)**	#4 Philanges	T=06
6,6	** B(2)**	#5 Philanges	T=06

```
6

5

4

3

2

1
     1  2  3  4  5  6
```
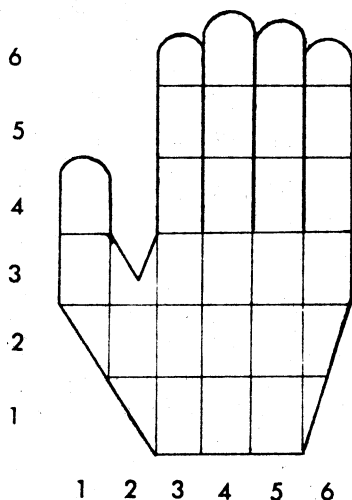
G Hand

1,1	Graze B			
1,2	*** B(5)**	Radius	T=10
1,3	***(A) B(5)**	Radius	T=10
1,4	***(A) B(6)**	Ulna	T=11
1,5	*** B(6) **	Ulna	T=11
1,6	Graze A		
2,1	Graze A		
2,2	Graze B		
2,3	**(A) B(4)**	Schapoid	T=08
2,4	**(A) B(4)**	Lunate	T=08
2,5	Graze B		
2,6	Graze A		
3,1	Graze B		
3,2	** B(4)**	Trapezium	T=08
3,3	**(A) B(4)**	Trapizoid	T=08
3,4	**(A) B(4)**	Capitate	T=08
3,5	Graze B		
3,6	Graze A		
4,1	** B(4)**	Thumb	T=08
4,2	Graze A		
4,3	** B(3)**	Philanges	T=07
4,4	**(A) B(3)**	#2 Philanges	T=07
4,5	**(A) B(3)**	#3 Philanges	T=07
4,6	**(A) B(3)**	#4 Philanges	T=07
5,1	** B(3)**	Thumb, Mid	T=07
5,2	Graze A		
5,3	** B(3)**	Philanges	T=07
5,4	** B(3)**	#2 Philanges	T=07
5,5	** B(3)**	#3 Philanges	T=07
5,6	** B(3)**	#4 Philanges	T=07
6,1	** B(2)**	Thumb Tip	T=06
6,2	Graze A		
6,3	** B(2)**	Philanges	T=06
6,4	** B(2)**	#2 Philanges	T=06
6,5	** B(2)**	#3 Philanges	T=06
6,6	** B(2)**	#4 Philanges	T=06

Bone Damage
OPTIONAL BONE DAMAGE

01	Clean Hit, reduce damage penetration by 4 points from this point.
02-05	Normal Damage, no modifiers.
06-09	Bone Breaks, Add d4 points to the final damage. This does not add to the penetration of the projectile.
10	Bone Splinters, Add d6+1 points to the final damage. This does not add to the penetration of the projectile.

Bloodloss
OPTIONAL ARTERY DAMAGE

01-07	No Damage, no special bloodloss.
08-09	Artery Nick, Artery or vein damage adds one point of damage per minute until stipped by medical aid.
10	Artery Sever, A sever adds d6 points of damage per minute until stopped by medical aid.

AREA MODIFIERS FOR ARTERY DAMAGE

Brain	+2 on roll
Heart	+4 on roll
Stomach	+d4 on roll
Intestine	+d4 on roll
Spleen	+2 on roll
Any Arm-Hand Sever	+4 on roll
Any Leg Sever	+5 on roll
Liver	+1 on roll
Colon	+1 on roll
Kidney	+1 on roll
Crush Sever	
Any Arm, Leg, Hand	-1 on roll
Blast Sever	
Any Arm, Leg, Hand	+2 on roll

Spinal Damage
OPTIONAL SPINAL DAMAGE

01-04	Graze on Spine, Adds d6 damage to the damage result. Does not increase damage penetration of projectile.
05-06	Adds 2d6 on final damage with an additional 04% chance of death shock.
07-08	Direct Hit, Roll a second death shock percentage over 25% on a d100 for character survival. Add 2d10 to the final damage. Roll a 40% chance of paralization from the point of inpact down.
09	Hit on Disc Between Vertebrae, Roll a second death shock percentage over 40% for character survival. Add 2d10 to the final damage. Roll a 70% chance of paralyzation from the point of impact down.
10	Spine Shattered, Roll a second death shock percentage over 60% for the character survival. Add 3d10 to the final damage. Roll a 90% chance of paralyzation from the impact down.

Tail Hits

For many of the alien races an H body table is necessary for impact on tail areas.

Because of the wide variety of tail types, use this generalized table. Remember, Hits on tails that penetrate will continue into legs or lower back in most cases.

TAIL STRUCTURE HITS
01 Graze A
02 Tissue Hit Only
03 Bone Hit of General Type for that Race.
04 Tissue Hit Only, Check for artery hit.
05 Tissue Hit Only
06 Graze B

Grazes

Grazes are minor structural damage, Whole Body Damage, equal to:
A d6 Damage
B Damage multiplied by .25 or 25%

Alien Structure

Alien body structure is based on the general human table with skin, tissue, and bone modifications.

RACE	SKIN VALUE	BONE	TISSUE
ARKOL	2	+1	n/c
BARLOW	n/c	+1	x1.75
BERIAN	n/c	n/c	n/c
BLOX	n/c	+1	n/c
BOR'CHA	6	+8	x2.00
DABE	6	+9	x2.00
FALCS	n/c	n/c	n/c
FRENDLE	8	-	x1.75
FRITZIAN	n/c	-1	x0.75
GREX	n/c	n/c	n/c
HUMAN (heavy world)	n/c	+2	x1.25
HUMAN	n/c	n/c	n/c
HUMAN (mutant)	n/c	n/c	n/c
HUMAN (light world)	n/c	-1	n/c
KENDAK	6	-	x0.50
KRELVIN	3	-	x1.25
KYMNAR	n/c	+1	x1.50
SANDROL	4	+10	x2.00
Survival Armor	97	-	-----
SKAY	9	+6	x1.50
TRELL	n/c	-1	x0.50
TUGAN	12	+8	x2.00
VESH	14	-	x2.00
WHURR	08	-	x1.50
ZATH	n/c	n/c	n/c
ZUMWOL	05	-	x0.50

The average Trell has the same skin armor thickness as a human on the detailed body breakdowns. Any bone structures are a point less dense in value than a human. Because of the Trell's size, his general tissue values are reduced by half.

TEMPERAMENT

All intelligent animals and life have a temperament rating .this rating shows how easily the species is provoked.

The T scale has humans set at a base of 50 for comparison.

```
      0------25------50------75------100
Hostility                        Pacifism
```

PROVICATION TO ACTION
Add modifiers to find temperament rating.
Index to find the provication to action.

TEMPER	PROVICATION TO ACTION	TEMPER	PROVICATION TO ACTION
01-05	98%	46-50	40%
06-10	96%	51-55	35%
11-15	90%	56-60	30%
16-20	85%	61-65	25%
21-25	80%	66-70	20%
26-30	75%	71-80	15%
31-35	70%	81-85	10%
36-40	65%	86-90	05%
41-45	60%	91-95	02%
		96-00	n/a

	MODIFIERS FOR PROVOKING	TEMPER MODIFIER
01	Trying to be peaceful	+05
02	Generally peaceful	+02
03	Neutral	+00
04	Neutral, hostile	-10
05	Hostile	-15
06	Really trying to provoke	-20
07	Taunting to provoke	-25
08	Physical assault	-30
09	Continued physical assault	-35
10	Major physical assault	-40

Provication Result

INTELLIGENT HOSTILE

01 Attack immedately
02 Attack next action
03 Attack in d4 actions
04 Attack if provoked again
05 Reason d4 actions, attack
06 Reason 2d4 actions, attack

INTELLINGENT PACIFISTIC

01 Stop hostility by force
02 Warn, then use force
03 Flee hostility
04 Flee hostility
05 Continue to reason
06 Not fight back

RESULT OF PROVICATION TO ANIMALS AND MINIMALLY INTELLIGENT LIFE

HOSTILE: Attack immediately
PACIFISTIC: Flee immediately

ALIEN RACES

It became evident, early in mankind's exploration of the stars, that natural forces created life wherever there was half a reason for it's existance and in a few places that defied logic.

In FTL we present 22 intelligent races and the general information on history, skills, and personality.

HOME WORLD
    The planet of origin of the race.
COLONIES
    This is the number of colonies of this race or a general discription of their colonial preferences.
SIZE
    This is the vertical height of the Alien in feet. Some races without vertical posture are measured in horizontal length.
LSP
    Lifespan is the maximum age an alien may achieve in human years. The first number is the natural life span. The second number is the possible life span with high technology medical science and life prolongation drugs.
SEX
    Sex is the number of sexes of that race.
ENV
    Environment is the average temperature a member of that race finds tolerable.
GRA
    Gravity is the gravity of the Aliens native planet.
TMP
    Temperament is a scale of determining the index of agravation a being can take before he, she, or it becomes upset.
MOT
    Motivation works on the same general scale as temperament with human motivations set at 50. At a MOT of 00 the Alien is totally non-understandable and generally motivated by non-selfishness. At 01 an Alien race is non-understandable with self interest as a focus of motivation.

BLOX

HOME WORLD:
Ott

COLONIES:
Anywhere

SIZE: 3-4 ft.

LSP: 80 / 196

SEX: 8

ENV: 60-115

GRA: 0.85

TMP: 55

MOT: 50
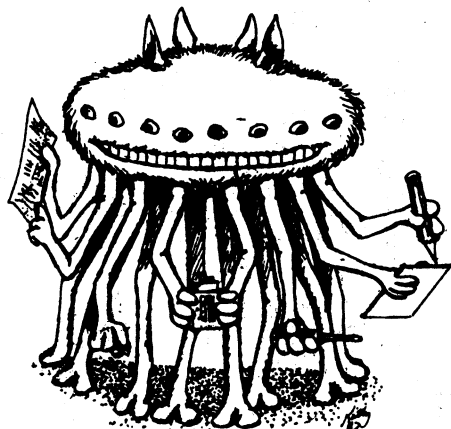
ARKOL

HOME WORLD:
Hansen's World

COLONIES:
Everywhere

SIZE: 5-6 ft.

LSP: 90 / 160

SEX: 2

ENV: 40-90

GRA: 0.96

TMP: 41

MOT: 49

First contacted by a human colonization ship, the Arkol were the second of the three intelligent races discovered on Hansen's World. The Arkol are a highly industrious semi-aquatic lizardine reknown for their increadable materials and bio-engineering skills.

The Arkol have several underwater cities on the planet Earth, which they consider to be their home-away-from-home. On their own world the Arkol have a thriving commerce with their land-based cousins, the Skay; but it is often concidered an insult even to mention the name of the hated third race on Hansen's World. See Skay and Tugan.

SKILL TENDENCIES: Aquatic Farming, Medicine, Engineering, Mining, and Exploration.
GOOD TRAITS: Good Swimmers, Make Excellent Teachers, Hard and Determined Workers, Logical Perfectionists.
BAD TRAITS: Impatient With Slow Learners, Damp, Quiet, Talk With A Lisp, and Drool.

Of the intelligent life forms found, the Blox have been the quickist to be assimilated into human societies.

The name Blox is uncommonly descriptive for a species that is effectively a ball of fur standing four feet above the ground on eight spindly legs, with eight arms and many large smilig teeth.

In the Blox, most Humans see a near psychological mirror of themselves. In Humanity, the Blox saw a deep need for orginization that only they had the talent for. Humans and Blox became inseperable.

Possessing the best minds for governmental bureaucracy and paperwork, it is the Blox who keep business and planetary governments in power and solvency.

SKILL TENDENCIES: Accounting, Math Computers, Fine Electronics Tec, Engineering.
GOOD TRAITS: Ability to Organize, Management, Human Motivations, Friendly, Talkative.
BAD TRAITS: Consider Red Tape a Necessity for Business, Loud, Often Paranoid, Talkative

BARLOW

HOMEWORLD:
Integrity

COLONIES:
0

SIZE: 5-6 ft.
(horizontally)

LSP: 250 / 300

SEX: 2

ENV: 20-90

GRA: 1.2

TMP: 96

MOT: 94

The Barlow are a very recently discovered race unique in the fact of their high PSI abilities and their total racial commitment to pacifism. Far in the Barlow's past, a war of unbelievable proportions nearly destroyed the entire race.

Barlow's have only recently re-built their society and were again looking to the stars when they were discovered by an ISCO scout.

A few Barlows have spread across settled space and began to use their mental abilities to aid their newfound friends. Other Barlows are learning technology and it's applications for their own use in the hopes of developing starships.

All Barlow have PSI Empathy of 2 as a normal ability and racial telepathy. Barlow may learn to communicate telepathically with other races but must first learn their language up to a level of 6 and become familiar with an individual of that species.

SKILL TENDENCIES: Any
GOOD TRAITS: Honest, Friendly, Diplomatic, Loyal, Pleasant Company for most races except Kymnar. Love children and animals.
BAD TRAITS: Make Non-PSI users uneasy, Tend to howl in the presence of violence, naive, give PSI users headaches and have difficulty in understanding motives and actions of other races. Children tend to cluster around them.

BERIAN

HOME WORLD:
Cashow

COLONIES:
1

SIZE: 4-5 ft.

LSP: 65 / 110

SEX: 2

ENV: 45-90

GRA: .94

TMP: 47

MOT: 54

The Berian are a shy, basically peaceful race who are prone to attacks of paranoia stemming from a century of enslavement under the agressive Kymnar race. Freed from their captivity at the end of the Celestar Corporate scandle, the Berians went back to their home world and hid for more than a half century.

Eventually the more adventurous among them began to filter out into settled space to carve a niche in interstellar society for their primitive race.

SKILL TENDENCIES: Technicians, Electronics,
GOOD TRAITS: Good Students, Serious,
BAD TRAITS: Paranoid to violent in the presence of Kymnar. Prone to seemingly odd or ridiculous tasks; at least until the reasons become apparent later on. Tend to be vague and often do not like to volunteer information.

PHYSICAL COMBAT MODIFIERS
SIZE EFFECTS ON PHYSICAL COMBAT
DEXTERITY TO HIT MODIFIER

AT = ATTACKER
DF = DEFENDER

INDEX HEIGHT OF ATTACKER BY DEFENDER

AT	DF									
	01	02	03	04	05	06	07	08	09	10
01	0	0	+1	+1	+1	+2	+2	+2	+3	+3
02	0	0	0	+1	+1	+1	+2	+2	+2	+3
03	-1	0	0	0	+1	+1	+1	+2	+2	+2
04	-1	-1	0	0	0	+1	+1	+1	+2	+2
05	-1	-1	-1	0	0	0	+1	+1	+1	+2
06	-2	-1	-1	-1	0	0	0	+1	+1	+1
07	-2	-2	-1	-1	-1	0	0	0	+1	+1
08	-2	-2	-2	-1	-1	-1	0	0	0	+1
09	-3	-2	-2	-2	-1	-1	-1	0	0	0
10	-3	-3	-2	-2	-2	-1	-1	-1	0	0

All heights are in feet.

DABE

HOME WORLD:
Blant

COLONIES:
4

SIZE: 7-8 ft.

LSP: 60 / 130

SEX: 2

ENV: -10-+70

GRA: 1.34

TMP: 59

MOT: 24
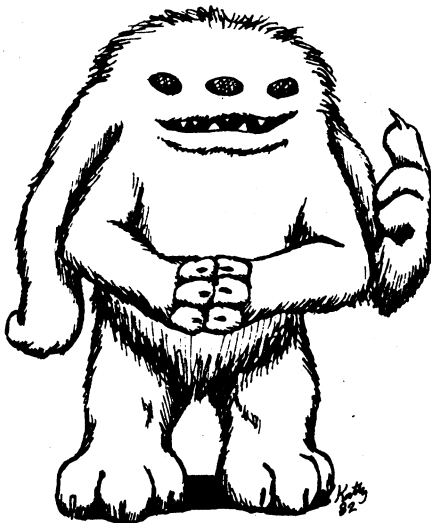
The Dabe race blundered it's way into space through a series of accidents and lucky guesses. Shortly later they found the Frendle, a highly advanced race who chose to mind their own business.

The Dabes wanted to colonize the new found world but the Frendle had other ideas - they didn't like noisy neighbors. Not a race to give up without a fight, the Dabes tried again....and again...and again.

When ISCO found the frendle they also found the next in a long line of Dabe ships making another attempt. The Dabes were overjoyed at meeting humans and naturally took to any and all humans.

SKILL TENDENCIES: Labor and Heavy Equipment Operation. Structural Engineering.
GOOD TRAITS: Like Most Races, Polite, Trusted Friends with a Bizarre Sense of Humor.
BAD TRAITS: Can Do Obnoxious Nerve Wracking Things. Illogical, Semi-Practical Jokers. Occasionally known to eat house pets.

BOR'CHA

HOME WORLD:
Faxn'Chr

COLONIES:
Everywhere

SIZE: 6-7 ft

LSP: 90 / 200

SEX: 2

ENV: 18-75

TMP: 64

MOT: 54

GRA: 1.20

Humanities first contact with a alien race was with the Bor'Cha. The ursoid-like race welcomed a rescue shuttle as a damaged exploration starship fell toward destruction.

Bor'Cha are highly intelligent, strong and very social. They took to human social order quickly and began to blend in. They took jobs at construction sites where their strength and heavy construction techniques were found to be invaluable. Both males and females of the speciues found easy friends among the humans they worked with. Soon humans and Bor'Cha became a mixed population.

Within a century the origional social order of the Bor'Cha race began to disappear becoming absorbed into the greater human societies.

SKILL TENDENCIES: Engineering, Construction, Fabrication, (all W and T skill types)
GOOD TRAITS: Great Sense Humor, Easy-Going, Think Bars are a Fantastic Invention, Social, Like Human Company, Large Happy Families.
BAD TRAITS: Like Cheap Tobacco, Loud, Drink Too Much, Gamble to Excess, Like Bar Fights Sometimes Don't Know Their Own Strength.

FALCS

HOME WORLD:
Bayl Eegt

COLONIES:
3

SIZE: 6-7 ft.

LSP: 70 / 140

SEX: 2

ENV: 68-96

GRA: .85

TMP: 72

MOT: 78
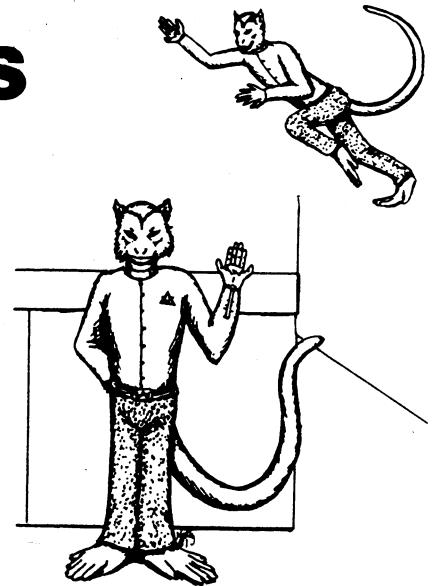
The coming of the disturbing creature called man has shook the Falcs and made them realize chaotic minds had the potential to spread across space.

With this fact in mind, the Falcs have engineered a large number of treaties orientated toward their protection and general non - interference by mankind or his friends. Medical personnel and free -lance traders are the few Falcs to leave their worlds.

Most Falcs have an empathic ability that is natural for the species. It is an equivilent of Empathy at level 4.

SKILL TENDENCIES: Medicine, Fine Electronics, Art and Design, Piloting, Brokering.
GOOD TRAITS: Logical, Thoughtful, Always Think Before They Act. Fast, Agile, Have Natural Acrobatic Abilities, Honest.
BAD TRAITS: Smug, Considered Cowards, Dull, Boring at Parties, Enjoy Hanging From the Ceiling.

FRENDLE

HOME WORLD:
Wilkisonn

COLONIES:
0

SIZE: 5-6 ft.
(horizontal)

LSP: 180/240

SEX: 3

ENV: 50-130

GRA: 1.14

TMP: 88

MOT: 16
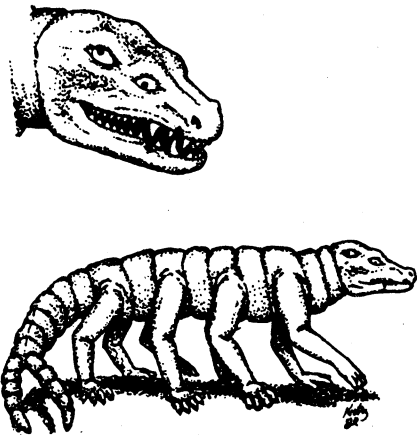
The Frendle are a race whose physical characteristics can only be discribed as a cross between a crustacean and an eight armed reptile.

Socially the Frendle have kept to themselves for over five thousand years. Only when the insistant Dabe race appeared did they decide that total isolation was now impossible. For over four centuries the Dabes tried to colonize the Frendle with no success.

In settled space the Frendle are beginning to mingle with galactic society, many are demonstrating an uncanny dexterity with electronics and computers.

SKILL TENDENCIES: Computers, Piloting, Fine Electronics, Medicine, Law and Economics
GOOD TRAITS: Fast, Agile, Outstanding use of logic and knowledge. Protective of Friends.
BAD TRAITS: Mentally Disturbing, A Different System of Honor and Ethics, Quiet, Deadly if provoked the wrong way. Hold Grudges.

FRITZIAN

HOME WORLD:
Xtchinanct

COLONIES:
1

SIZE: 3-4 ft.

LSP: 240/700

SEX: 2

ENV: 50-70

GRA: .86

TMP: 26

MOT: 90
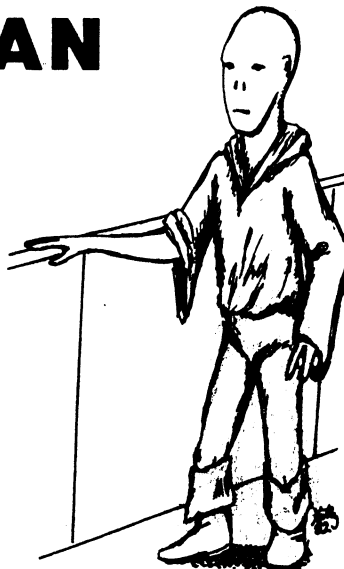
GREX

HOME WORLD:
Kirl Seben

COLONIES:
0

SIZE: 3-4 ft.

LSP: 75-160

SEX: 2

ENV: 40-110

GRA: .96

TMP: 45

MOT: 61
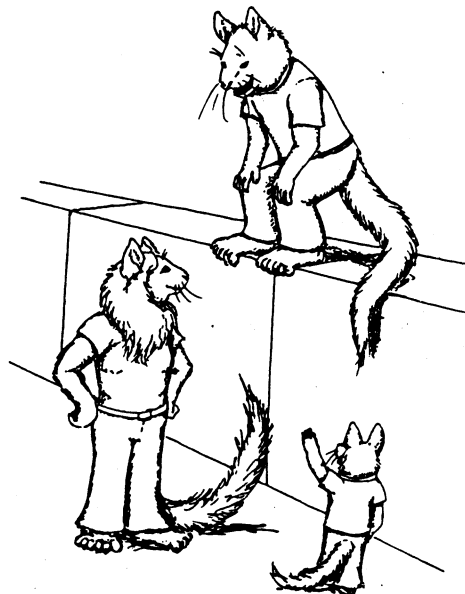
A once thriving civilization, now the Grex world lies in ruin. Until the mutant flu-like virus decimated their population into a handful of ragged survivors, the Grex enjoyed a high technology that rivaled the best of settled space.

With the technology in ruin the hellish plant life of their world closed in for the final destruction of the Grex. It was only luck and ISCO's dedication that eventually gave the survivors a second chance. Now with aid, the civilization of the Grex is being rebuilt.

SKILL TENDENCIES: Electronics Engineering, Mathematics, Computers, Social Work, Medicine and Jungle Survival.
GOOD TRAITS: Fast, Agile, Protective of their family and friends. Vegetarians, Loyal and Friendly.
BAD TRAITS: Tend toward alcoholism, Become easily panicked, Fight Dirty and Shed Fur.

Contacted in 2372, the Fritzians became known as the oldest of the star traveling races. Technologically advanced well beyond FTL levels, the Fritzians have sunk into a stagnent don't-rock-the-boat atitude that has isolated them from other the races.

With no concern for aliens, they go about their own business and commerce to their one colony. Little is known about the Fritzian social structure or lifestyle. What little information is known comes from the wreckage of one of their sun sail starships destroyed off Fomalhaut. What little technology was learned from the all but disintegrated wreck sparked a new wave of design and spacial engineering.

SKILL TENDENCIES: Trade, Others Unknown
GOOD TRAITS: Advanced Technology, Will trade outstandingly for odd objects they want.
BAD TRAITS: Snobbish, Will Not Deal With Lesser Life or The Races of Settled Space.

KENDAK

HOME WORLD:
Hyve

COLONIES:
0

SIZE: 3-4 ft.

LSP: 30 / 45

SEX: 3

ENV: 40-120

GRA: .84

TMP: 50

MOT: 87

One of the few hive mind intelligences found, the Kendak comprise a planet wide society that has not changed in over 200 thousand years.

Kendak are hatched in groups of 12 that share a common mind form of telepathy. These groups come under the control of the over-mind of the hive.

Many Kendak hatch groups are born with a deviant mental mutation that isolates them from the hive mind. These groups are sent into settled space to dispose of them and learn of settled space.

Kendak function as a single mind with the equivalency of one personality and identical learning and skill levels per individual.

SKILL TENDENCIES: Any Skills, Engineering, Fabrication, Language, Cleaning and Repair.
GOOD TRAITS: Loyal to a fault, Hard Working
BAD TRAITS: Awful Smell, Difficulty with pronouns, I/WE MYSELF/OURSELVES, give PSI's minor headaches.

HUMANS

HOME WORLD:
Terra

COLONIES:
60+

SIZE: 5-6 ft.

LSP: 90 / 190

SEX: 2

ENV: 20-110

GRA: 1.0

TMP: 50

MOT: 50
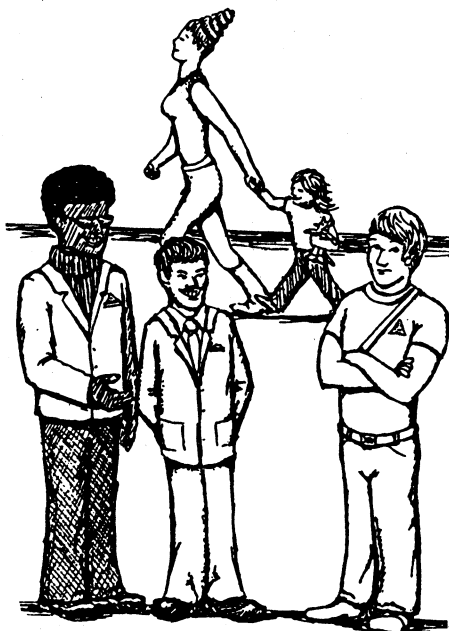
In the four centuries since their fast emergence into space the human race has become the driving force of Interstellar Society. The Interstellar Scientific Co-Op (ISCO) and it's multi-world legal branch, The Interstellar Court of Law (ICL) are effectively responsible for modern society.

Humans are an extremely individualistic race. No one specamin can be chosen as a "normal" example of the race.

SKILL TENDENCIES: Any
GOOD TRAITS: Determined, Intelligent, Honest and Resourceful, Friendly.
BAD TRAITS: Every bad trait you can possibly think of can manifest itself in the average human. This makes them highly unpredictable.

KRELVIN

HOME WORLD:
Unknown

COLONIES:
Unknown

SIZE 2-3 ft.

LSP: Unknown

SEX: Unknown

ENV: 20-110

GRA: 1.25

TMP: 54

MOT: 75

Oddest of the known races, the Krelvin are suspected to inhabit a Dysan Sphere in the general vicinity of Settled Space.

It is apparent Krelvin are masters of genetic engineering and have changed themselves to their present shape, though only God knows why.

Concerned with the general welfare of man and the other races, Krelvin venture into Human space for their own reasons. Often a Krelvin will have heart to heart talk with a Bor'Cha while presenting him with a case of loaded cigars.

Some researchers speculate the Krelvin have advanced beyond any imaginable technology level and are only having fun.

Krelvin possess mastery over PSI abilities in Empathy, Telepathy, Telekenesis and total Spectralkenesis with a +50 on the WKP recovery roll.
GOOD/BAD TRAITS: Masters of light and illusion. Prefix their names with Dr. Titles. Carried by weird bio-constructions when not using telekenesis.

KYMNAR

HOME WORLD:
Kymnar

COLONIES:
7

SIZE: 6-7 ft.

LSP: 70 / 158

SEX: 2

ENV: 30-98

GRA: .99

TMP: 36

MOT: 44

    Proud and Agressive, the Kymnar enjoyed a
half century of starflight and colonizing
before the human Celestar Corporation crushed
them and began nearly a century of harsh
colonial rulership.
    With the propaganda of the "Kymnar Menace"
by Celestar, a generation believed them to be
little more than bloodthirsty savages that
blundered into space.
    With the end of the Celestar Tyrany came a
greater understanding of the Kymnar's deep
traditions of Honor, Family, and Feuding.
    By 2448 the Kymnar are the full partners
of Mankind and the federated races. Kymnar
play an important part in protection and the
Interstellar Court of Laws Military Arm, the
Starborne Rangers.

SKILL TENDENCIES: Military or Technical with
Engineering, Piloting, and Police Science
GOOD TRAITS: Trusted Friends, Good Fighters,
will always stick by a friend in trouble.
BAD TRAITS: Tempermental; to a fault, become
aggravated quickly.   Military Orientation.

SANDROL

HOME WORLD:
Unknown

COLONIES:
Unknown

SIZE: 7-8 ft.

LSP: Unknown

SEX: Unknown

ENV: Unknown

GRA: Unknown

TMP: 27

MOT: 38
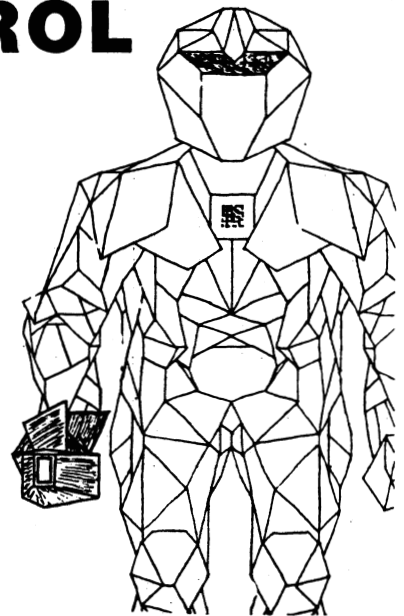
    The Sandrol are a leftover from a past
empire or race of warriors spawned at the
bottom of some hellish gas giant.
    Sandrol live in ceramic crystal armor when
out of their native environment.   There
appears no limit on length of time a suit of
Sandrol armor will support the life inside.
    Described as something nausious by PSI
telepaths who have attempted to probe what
little minds the Sandrol have, they continue
to filter into settled space from a series of
ammonia methane gas giants.
    Having long lost the technology to build
these suits, the Sandrol will go to great
lengths to retrieve a suit from Sandrol who
have died.   A punctured suit will detonate
with 3d6 x1000 points of blast.

SKILL TENDENCIES: Engineering,   General
Labor, Heavy Construction.
GOOD TRAITS: Strong, Loyal, Shy and Helpful.
BAD TRAITS: Stupid ,   Too Strong,   Easily
 Confused, Prone to react without thought.

    The Skay are the second most successful
race on Hansen's World. They differ from the
water dwelling Arkol and the mountain
dwelling Tugan in that they can exist in
either environment equally well. The Skay
are born traders and have developed a
thriving commerce with the Arkol.
    When the ISCO contact teams landed the
Skay were the first to take advantage of
their new contacts and begin a trading empire
that has lasted for centuries. It is common
to see the houshold crests of Skay trading
familys throughout trade lanes of settled
space.
    Skay colonies have been established in the
Australian Heartland and Sahara on Terra as
well as the Great Waste on Faxn'Chr.

SKILL TENBENCIES: Any skills, with heavy
concentrations in engineering and business.
GOOD TRAITS: Excellent Workers,   Friendly
BAD TRAITS: Smoke, Drink, Enjoy raw meat,
Trigger happy in stress situations.

SKAY

HOME WORLD:
Hansen's World

COLONIES:
Everywhere

SIZE: 6-7 ft.

LSP: 140/210

SEX: 2

ENV: 45-130

GRA: .96

TMP: 53

MOT: 48

TRELL

A miracle of adaptation, the Trell are the last survivors on the dying world of an M class star.

As Darnel's sun died the Trell moved deep underground with their Durf herds. For countless thousands of years they maintained a closed cycle of existance in the dark caverns.

Now liberated, the Trell enjoy trade for their Durf meat and the export of their populations to settled space. Trells, second to the Blox in population dispersion, have become common across settled space.

With gusto, they scavenge and repair becoming outstanding technicians and helpers of the Blox. Trell have developed a limited PSI ability to replace their useless hands. Any object thay can hold in their paws, they can telekinetically dismantle or reassemble with a percision unmatched in other species. See Telekenisis level 4.

Trell will dismantle mostly anything they can get their paws on. They also steal.

TUGAN
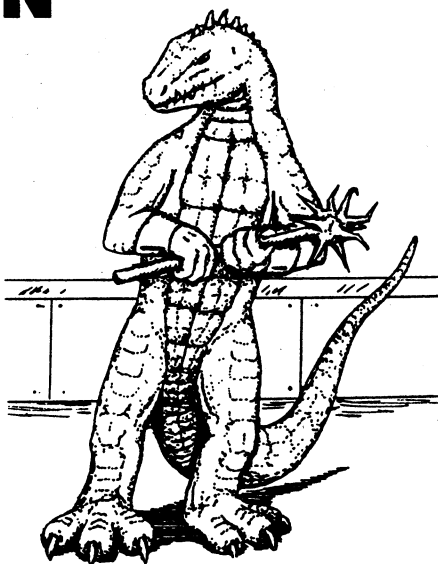
The Tugan are the third lizardine race on Hansen's World. They were the first of the three to adapt to a land existance and stay in their primitive form.

When the ISCO single-scout discovered their world, the Tugan were in a genocidal war with their more genetically advanced cousins. Intervention of ISCO stopped the war and offered the Tugan a less threatened existance for their few thousand survivors.

The Tugan are the smallist of Hansen's three related species. They are not particularly bright creatures when it comes to high technology, but they do possess an inate ability as hunters. ICL and underworld forces both employ them as bounty hunters and security guards.

SKILL TENDENCIES: Security, Heavy Labor, Hunters and Trackers, and General Help
GOOD TRATES: Hard Workers, Loyal, Strong
BAD TRAITS: Stupid, Are Defensive, Enjoy a good fight. Mop the floor with Arkol & Skay.

VESH

The Vesh are a mystry to ISCO and the settlers they displaced from the Chen Family Colony.

Researchers speculate the fragment of a ship that brought them was the remainder from a much larger craft that suffered a drive accident some other place and possibly time. The 12,000 Vesh survivors of the wreck may only have been a small percentage of the actuat total.

Obviously, the Vesh are the final product of massive genetic engineering. The average Vesh can dismantle his body parts, removing an arm, leg or organ to plug in a living special function replacement for a specific job.

Vesh often inspire fear in many races who have problems understanding this gentle creature who removes his head and tinkers with his neck in a public place.

The Vesh are beginning to spread quietly across settled space as workers and technicians. They will not talk about their home.

WHURR

HOME WORLD:
Vhe Aet

COLONIES:
4

SIZE: 1-2 ft.

LSP: 600 / 890

SEX: 2

ENV: 40-110

GRA: 1.20

TMP: 51

MOT: 50
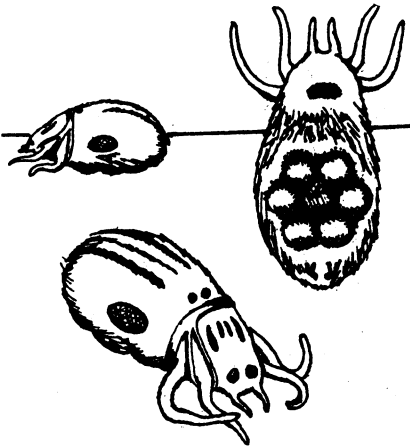
It is ironic the race with the closest atitudes and motivations to mankind is the one race that is radically different from any of the other races.

The Whurr is a bio-plastic life form unique in settled space. In shape the whurr moves by rolling on seven ball-bearing like wheels under it's body. The Whurr can achieve speeds in excess of 30 miles per hour for a brief period of time.

Whurr starships are unique in that they are a living creature adapted to survive in space. Carrying Whurr internally, this ship is capable of an FTL jump called the Whurr blink drive or Wurp Drive. This process is only available in Whurr craft which are far too small for human passengers.

Whurr are crafty traders and expert in obtaining what they wish.

SKILL TENDENCIES: Trade, Commerce, Engineering, Chemical Manufacturing, Bio-Plastic Engineering, and Vehicle Design.
GOOD TRAITS: Most human traits.
BAD TRAITS: All human bad traits. Talk sideways, Mistaken for Machines.

ZATH

HOMEWORLD:
Ardaxis 4

COLONIES:
0

SIZE: 5-6 ft.
(horizontal)

LSP: 49 / 110

SEX: 2

ENV: 20-86

GRA: 1.22

TMP: 36

MOT: 30
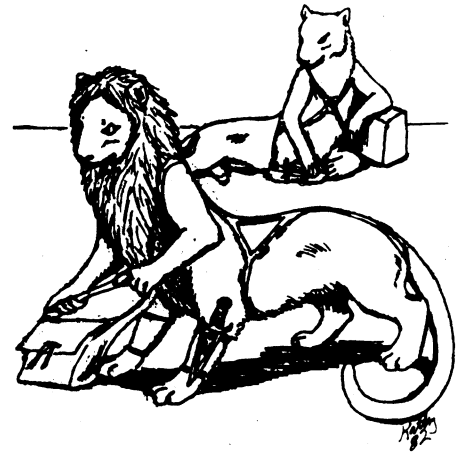
The Zath are a race contacted too early in their development by an untrained survey party. The damage done, now ISCO is responsible to guide the Zath into the 25th century from a primitive iron age culture.

In Zath society the Female of the species is dominent, having a 5 to 1 population over their male counterparts.

Zaths have a psychological adversion to lies in any form, whether verbal or physical. A majority of their laws and custom are based on this quest for absolute truth. Even a small lie to a Zath is a mortal insult.

The more severe the lie, the more likely a Zath will challenge the liar to a death duel.

SKILL TENDENCIES: Metal Fabrication, Blade Weapons Fabrication, Law and it's Enforcement
GOOD TRAITS: Never Lie, Known for Fairness. High Code of Honor and Justice.
BAD TRAITS: Often Biggoted, Temperamental, have no hesitation at action to damage an offender.

ZUMWOL

HOME WORLD:
Gaccellus

COLONIES:
0

SIZE: 2-3 ft.

LSP: 30 / 60

SEX: 2

ENV: 40-90

GRA: .72

TMP: 05

MOT: 48

If there was ever a creature that did not deserve sentience, it was the Zumwol. By far, the Zumwol would have been left on their home world had it not been for their fantastic mind for higher mathamatics and information storage. For this ability they paid the price of being the most fowel tempered life form known in settled space.

The Zumwol has become firmly rooted in FTL society as a living link to computer systems. This is only when they wish to cooperate. A Zumwol will go out of his way to aggrivate a character to blind rage. The Blox avoid Zumwol with all haste.

More Zumwol die in Airlock accidents every year than any other cause.

SKILL TENDENCIES: Computer programming and Repair. Debate, Law, Business, and Insurance
GOOD TRAITS: Accurate in complex mental calculations 99.96% of the time.
BAD TRAITS: Most, Usually

PSI

One of the most fantastic discoveries of the early 22nd century was the establishment and acknowledgement of the existance of a special range of mental abilities usable by rare individuals.

PSI, as it became known, became the long sought and feared next development in human mental evolution. As these mutants banded together it became clear they could help develop PSI in borderline individuals and strengthen themselves.

Joining police, medical, and governmental agencies, the human and alien PSI users have become a necessity to modern life.

Psi Ability

REMEMBER
01 PSI is a limited talent. In each area of talent a character possesses, a d10 is rolled to find the maximum level the character can achieve.
02 The character runs his PSI skills as any other skill in FTL with the same modifiers for health and aggravation. The PSI skill level is worth +05% to accomplish the use of PSI. Each attempt takes a certain number of actions and working PSI energy called (WKP).
03 Caldonimine 806 and it's derivatives are outlawed and dangerous drugs that have a chance of boosting a character's PSI over the edge of borderline. A dose has five possible effects.
    01-75 A PSI rating heightened by d6 for d10 minutes with no ill effect. After this time the character suffers a complete and permanent mind burn out with a deathshock equivilency of 2d100 points. Survivors reduce all skills and statistics by 4d10.
    76-95 All skills and statistics are reduced by d6 points due to a massive mental seizure. This adds d6 to PSI after the point reductions.
    96-98 Victim looses one point from all skills and stats. In d10 hours he or she gains d6 +1 in PSI ability.
    99 Victim drops dead.
    00 Victim "sees the light" then detonates in a 4d10 burn, 20 foot fireball.

Borderline Psi

Characters with borderline PSI are often sensative to PSI use in their general area. This may manifest in any of a number of ways.

RESULT
01-75 Twinge or uncomfortable feeling.
76-90 A definite feeling.
91-95 Mild Headache.
96-97 Migrane Headache or Nosebleed
98-00 Fainting or Seizure

Psi Talents

Roll a d100 for PSI area ability. Index to the ability and roll a d100 for the maximum type a character may obtain in that PSI field.

RESULT		RESULT	
01-25	Empathy	81-85	Astro Projection
26-50	Telepathy	86-90	Telekenesis
51-60	Precognition	91-95	Spectral Kinesis
61-70	Healing	96-98	Pryo/Cryo Kinesis
71-75	Clairvoyance	99-00	No maximum limit
76-80	Body Control		on one PSI talent

REMEMBER
01 On the roll of a 99-00 the character has the ability to reach the maximum 100% chance level in the ability of his choice.
02 Each attempt at an ability has a 5% chance of success per try per level of ability. Whether the character suceeds or fails the WKP cost is the same per attempt.

LIM = Limit of distance of PSI ability
      t: touch f: Feet y: Yards m: Miles
COS = Cost of try in (WKP) working PSI
TIM = Time necessary for single PSI attempt
      A: Actions M: Minutes H: Hours

EMPATHY		LIM	COS	TIM
01	Fast Emotional Impression	5f	1	1A
02	Read Emotion	25f	2	2A
03	Detect Emotional Problem	25f	2	3A
04	Read Hidden Emotions	25f	3	3A
05	Probe Disturbed Individual	t	3	1M
06	Ease Emotion	5f	4	3A
07	Change Emotional State	5f	5	3A
08	Alter Group Emotion (2-6)	25f	8	3A
09	Alter Group Emotion (7-12)	25f	10	3A
10	Alter Group Emotion (12-25)	35f	14	3A

TELEPATHY		LIM	COS	TIM
01	Catch Passing Thought	10f	1	1A
02	Listen Without Detection	25f	3	2A
03	Lock on Single Mind	60y	5	4A
04	Send to Another Telepath	1m	3	2A
05	Send to Non-Telepath	1m	6	4A
06	Detect Truth / Lie	25f	4	1A
07	Shield From PSI	-	6	2M
08	Memory Scan Self	-	5	1M
09	Probe Other Mind	t	8	1M
10	Probe Alien Mind	5f	10	1M

CLAIRVOYANCE		LIM	COS	TIM
01	Whats Happening Now	1m	2	1M
02	Whats Happening Now	2m	3	1M
03	Whats Happening Now	4m	4	1M
04	Whats Happening Now	10m	5	1M
05	Whats Happening Now	100m	6	1M

POSTCOGNITION / PRECOGNITION		LIM	COS	TIM
06	What Will or Has Happened	1m	4	2M
07	What Will or Has Happened	2m	6	5M
08	What Will or Has Happened	4m	8	5M
09	What Will or Has Happened	10m	10	10M
10	What Will or Has Happened	100m	12	10M

Precognition involves a specific search area within the limit listed.

Psi Talents

HEALING		LIM	COS	TIM
01	Heal 1 point	t	2	10A
02	Heal d4 +1 points	t	4	1M
03	Heal d6 +1 points	t	6	2M
04	Heal d10 +4 points	t	10	5M
05	Heal d20 +2 points	t	14	10M
06	Absorb Damage 1 point	t	8	2M
07	Absorb Damage d4 points	t	10	3M
08	Absorb Damage d6 +1 points	t	12	6M
09	Slow Death (d10 minutes)	t	15	1M
10	Resuscitate Attempt (CPR)	t	15	d4M

CLAIRVOYANCE, PRE and POSTCOGNITION are related abilities that overlap in many cases.

When you roll for clairvoyance, transpose the second part of the table to the first part. This gives you Clairvoyance with a chance of Pre / Postcognition.

BODY CONTROL (Self)		LIM	COS	TIM
01	Relax Body	-	1	1M
02	Control Heart Rate	-	2	1M
03	Breath Control (4 +d4 Min)	-	3	-
04	Diagnose Body Damage	t	4	1M
05	Speed or Retard Metabolism	-	6	10H
06	Adrenalyn Surge +d4 on Agl	-	8	2A
07	Adrenalyn Surge +d4 on Dex	-	8	2A
08	Ignore Pain / Stun Effect	-	8	10M
09	Stop Blood Loss	-	10	10M
10	Ignore Damage Effects	-	15	5M

ASTRO PROJECTION		LIM	COS	TIM
01	Relax Body	-	1	10M
02	Whats Happening	10m	2	10M
03	Whats Happening	100m	3	12M
04	Whats Happening	200m	4	14M
05	Whats Happening	400m	5	16M
06	Whats Happening	800m	6	18M
07	Whats Happening (02% DS)	1200m	7	20M
08	Whats Happening (03% DS)	1600m	8	25M
09	Whats Happening (04% DS)	2100m	9	39M
10	Whats Happening (05% DS)	4000m	10	1H

Projection has the added risk of a death shock equal to an equivilent of 5d10 damage.

Use of Projection requires a quiet place where the user will not be disturbed.

TELEKINESIS		LIM	COS	TIM
01	Lift 1 oz. 12 minutes	25f	1	10A
02	Lift 6 oz. 10 minutes	25f	2	10A
03	Lift 1 lb. 8 minutes	25f	3	10A
04	Lift 10 lb. 6 minutes	20f	4	10A
05	Lift 20 lb. 4 minutes	18f	5	10A
06	Lift 40 lb. 3 minutes	16f	6	8A
07	Lift 80 lb. 2 minutes	15f	7	6A
08	Lift 160 lb. 1 minute	10f	8	5A
09	Lift 250 lb. 30 seconds	10f	10	5A
10	Lift 500 lb. 15 seconds	10f	12	5A

SPECTRALKINESIS		LIM	COS	TIM
01	Light Flash (instant)	-	2	1A
02	Light (faint glow 1 min.)	-	3	3A
03	Light (reading 1 min.)	-	4	4A
04	Light (movable ball 1 min.)	50f	5	5A
05	Light (shaped form 1 min.)	50f	6	8A
06	Light (as #1 with color)	-	3	2A
07	Light (as #2 with color)	-	4	4A
08	Light (as #3 with color)	-	5	5A
09	Light (as #4 with color)	50f	6	6A
10	Light (as #5 with color)	50f	8	9A

PYROKINESIS		LIM	COS	TIM
01	Warm area +01-15 degrees	25f	2	2A
02	Chill area -01-15 degrees	25f	2	2A
03	Warm area +16-30 degrees	25f	4	3A
04	Chill area -16-30 degrees	25f	4	3A
05	Warm area +31-50 degrees	25f	8	4A
06	Chill area -31-50 degrees	25f	8	4A
07	Heat Area +51-75 degrees	25f	10	5A
08	Chill Area -51-75 degrees	25f	10	5A
09	Spark +500 degrees	25f	12	8A
10	Freeze -100 degrees	25f	12	8A

Spark and Freeze are instant effects in a pinpoint area. Other effects cover a 1 cubic inch area for 1 minute. Each additional point used increases the area of effect by 1 cubic inch.

PSI DEFENCE

If a character knows he or she is being probed by a PSI there is a chance of warding off the PSI attack by use of WKP and their general mental resistance.

REMEMBER
- 01 Any defence attempt has a base cost of 2 WKP points.
- 02 Index the character's PSI to find his percent chance of PSI resistance.

PSI	RESISTANCE	PSI	RESISTANCE	PSI	RESISTANCE
0	95%	08	20%	16	45%
1	90%	09	10%	17	50%
2	80%	10	05%	18	55%
3	70%	11	10%	19	60%
4	60%	12	15%	20	65%
5	50%	13	20%	21	70%
6	40%	14	30%	21+	75%
7	30%	15	40%		

WKP RECOVERY

A Character has a PSI recovery rating that returns WKP as it is used.

RESULT	RECOVERY			
01-90	Normal	d6	points per 5 minutes
91-96	Fast	2d6	points per 5 minutes
97	High	3d6	points per 5 minutes
98	Complete Recovery		per 5 minutes
99-00	Special		

RESULT	RECOVERY
01-90	Unstable Psi may manifest in other uncontrolled abilities at random times. Roll recovery again.
91-95	High PSI, double effect ranges, and effect times.
96-98	Easy PSI, all WKP costs for PSI use are halved.
99	You may trade ability for:

MIND CONTROL		LIM	COS	TIM
01	Stun Normal (4d10 stun)	25f	5	3A
02	Stun Normal (6d10 stun)	25f	8	6A
03	Stun PSI (4d10 stun)	50f	8	6A
04	Stun PSI (4d10 stun)	50f	10	8A
05	Stun Normal (death shock)	25f	14	10A
06	Stun PSI (death shock)	25f	16	12A
07	Control Normal (10 min.)	100f	8	8A
08	Control PSI (10 min.)	25f	12	10A
09	Hypnotic Suggestion	t	10	1M
10	Alter Memories/ Plant Blocks	t	12	1H

00 Total minute to minute recovery.

SHUTTLES

③ Orbital Port
Cargo out
⑦ Starship
To other worlds or in system manufacturing
② Cannister Ship
Cargo in
④ Re-entry
⑧ Shuttle traffic
① Linear Accelerator
⑤ Recovery
Factories, Launch sites
⑥ Return
Shuttle Ports

Raw & Manufactured Goods

Passengers & Live Cargo
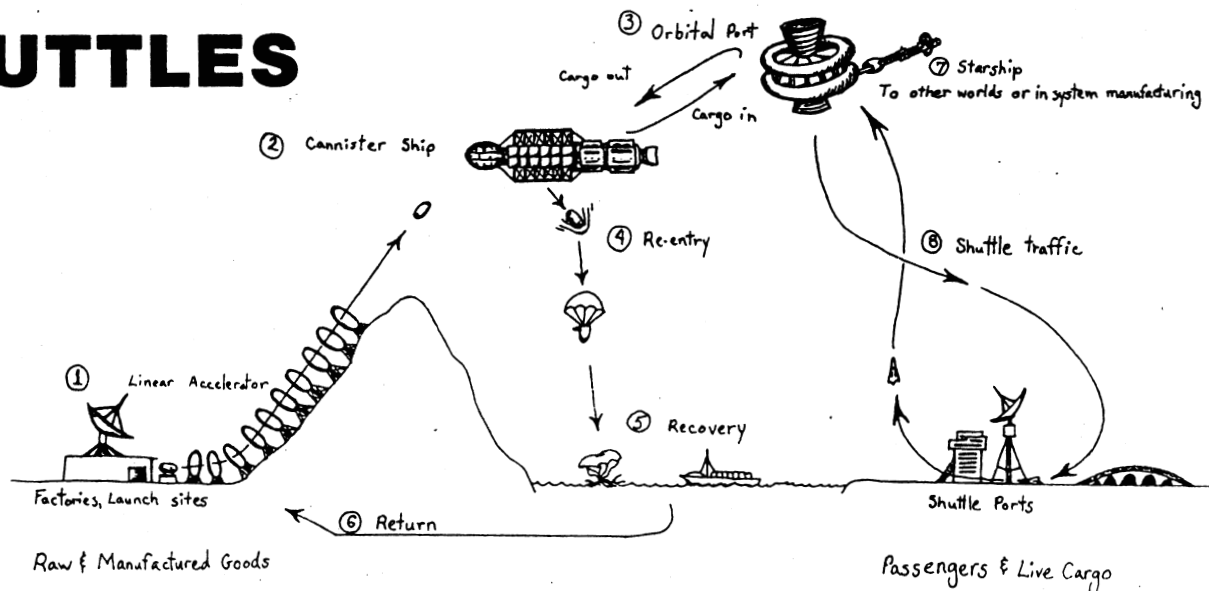
Cargo handling is a snap on most developed worlds. Most cargo is loaded into 10x10x10 cans and shot into orbit in units of three by a mass accelerator built up the side of a mountain. Cannisters are caught in orbit by special ships and transported to orbital stations for re-distribution. Returning cargo is an even simpler process of dumping the cannister back into the world's gravity where it re-enters the atmosphere and deploys a parachute or parasail for a smooth water or a very rough land landing.

Unfortunatly this easy high acceleration system is not usable for passengers and fragile equipment. For this, shuttles are a neccessity.

CANNISTER
LFT: Parachute / Para Sail
ENG: None
LAN: Water or Rough
RET: Vehicle / Accelerator
FUL: None
CAR: 3 (10x10x10) Block
POW: Battery
SPE: Retrieval Beacon
PAS: no
SIZ: 12x40

LIGHT SHUTTLE
LFT: Wings
ENG: Fusion
LAN: Runway
RET: Internal
FUL: 1000 units
CAR: 6 (10x10x10)
POW: Fusion
SPE: Fully Equipped
PAS: 1 to 24
SIZ: 20x94
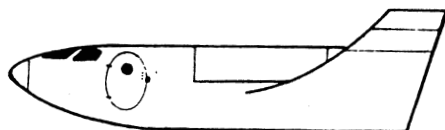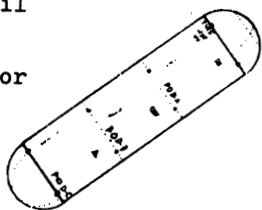
LANDER
LFT: Lift Body
ENG: Chemical
LAN: Land / Water
RET: Cannister / Vehicle
FUL: 200 units
CAR: 6x6x6
POW: Battery
SPE: Survival Pack
PAS: 1 to 4
SIZ: 5x34

HEAVY OR PASSENGER SHUTTLE
LFT: Wings / VTOL
ENG: Fusion
LAN: Runway
RET: Internal
FUL: 2100 units
CAR: 18 (10x10x10)
POW: Fusion
SPE: Fully Equipped
PAS: 1 to 100
SIZ: 25x125

LFT = Lift Type
ENG = Engine Type
LAN = Landing Type
RET = Orbital Return
FUL = Fuel Units
CAR = Cargo Size Area
POW = Power Source
SPE = Special Equipment
PAS = Passengers
SIZ = Height & Length

Fuel Use

In FTL, fuel use is a simple point system of expenditure and cost by size of fuel unit.

Before using this section see the starship fuel use information.

VTOL LAUNCH TO ORBIT

LOAD	GRAVITY					
	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
Overloaded	150	200	300	400	500	600

GLIDE DOWN FROM ORBIT

LOAD	GRAVITY					
	0.50	0.75	1.00	1.25	1.75	2.00
Empty	01	02	03	04	05	06
Light	02	03	04	05	06	08
Medium	03	04	05	06	08	10
Heavy	04	05	06	08	10	12
Overloaded	05	06	08	10	12	14

SUB ORBITAL FLIGHTS

LOAD	GRAVITY					
	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
Overloaded	150	200	250	300	400	500

The sub orbital fuel use listed is with runway use only. This does not include the launch cost of VTOL (vertical take off or 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 costs by 25%. This multiplies the fuel use by (.75).

Most shuttle flights to planet take 1 hour + 10d6 minutes of travel time. Shuttles also enter space on the lowest edge of the Decaying Orbit Tables.

Shuttle Crash

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

Ben, Bells, & Quag

Out of the Autodoc, Quagmire is bright and back to exploring his starship. On the lower deck he finds the keys to the shuttle under the bottom of brandy bottle.

As Quagmire begins to bring the ship's light shuttle to pre-launch status, Ben turns off the main power to the shuttle's bridge. He then takes the brandy and retires to his cabin. Ben is learning.

Crash Modifiers

SPEED	MODIFIER		ANGLE	MODIFIER
Very Slow	-10		15 degree	-10
Slow	0		30 degree	+10
Medium	+10		45 degrees	+20
Fast	+20		60 degrees	+40
Very Fast	+40		75 degrees	+60

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

SKILL MODIFIERS

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

RESULT
01-05   A Perfect Textbook Landing
06-50   Standard Landing
51-98   Rough Landing, (see crash 01-10)
99-00   Crash

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

01-10   Rough landing shares everything loose with a 60% chance of breaking fragile items. Maintainence is d100 hours to next flight.
11-20   Bellies in, rips off wheels, landing gear, heat shielding, VTOL surfaces damaged. Maintainence is 4xd100 hours.
21-40   Shuttle takes, near maximum, underside structural damage, total loss of heat shielding, wing damage. Repair d4+2 months repair in a repair facility.
41-75   Partial break up, hull splits, control bridge destroyed. Crew takes 75mph vehicle passenger damage. See Vehicle Impact tables.
76-85   Complete break up, Crew takes 100mph vehicle impact.
86-95   Breakup and scattering. Crew takes 150mph vehicle impact.
96-99   Breakup and scattering. Crew takes 200mph vehicle impact with a 40% chance of being caught in a 6x (d100) blast or 50% chance of being caught in a 10d6 fireball.
00   Splattered across the countryside with the crew taking a 300mph impact with a 60% chance of taking a 10x (d100) blast and a 75% chance of being caught in a 10d10 fireball.

REMEMBER
01   This crash table is designed only for critical landings.
02   Shuttles can be rated much the way phase drives are rated. Allow players to improve shuttle operation condition.
03   Rating failure can be an easy to very difficult repair task. Give them time.

STAR TRAVEL

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 became the standard for space travel.

Before you read this section, get to know the System Generation and Space section of FTL. 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 time and distance are different. This discovery of a second time distorted space lead to the development of a simple drive system that could push a starship into this fringe area between universes and cut travel time and distance. From the first moderately succesful 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.

REMEMBER
01 Objects that leave the ship's sphere of phase return to normal space as energy.
02 Phase fields, when collapsed, have the residual energy to drop a starship into normal space without damage.
03 Phase fields that cross phase fields will unbalance each other and cause the phase field with the lowest operating percentage to have a phase failure. The surviving drive suffers a 4d10 point untuning.
04 Phase drives require tuning to improve the operating or phase percentage. Ships drives always untune with use.
05 Phase drives are large bulky cannister shaped devices containing the special equipment and masses of spun copper wire necessary to open holes in phase space.
06 Travel through phase has no ill effects on crew unless a phase failure occurs.
07 More efficient drives have the faster light year travel time.
08 There are no reported sightings of ships in phase. In the phase field the ship becomes a world to itself guided by the ships navigational computer.
09 There is no combat or communication in phase. There is communication between worlds only by starship or phase drone.
10 Engaging FTL phase drive in planetary and stellar gravity wells causes massive phase untuning and phase failure. The untuning in system is equal to the number of planetary slots remaining between your distance and the end of your out zone. If the number is less than 0, add the negative number of points to your phase failure percentage as a positive modifier.

FTL DRIVES	OUT ZONE	DRIVE EFFICIENCY	DRIVE LIMITS
Herbert-Lashaw Phase	D	A	BDE
HL Phase 2	D	A-C	BDEH
HL Phase 3	D	B-D	ABDF
HL Phase 4	D	D-H	BD-H
HL Standard	D	E-J	G
HL Standard b	C/D	E-G	EFG
Nordholm Quantom Jump	Any	T (banned)	AEGH
Kitch-Grice Quantom Jump	B	S (banned)	AEGH
Bor'Cha K Drive	D	B-E	FG
Kymnar GCTM Drive	D	DEFG	EFG
Vesh Thermoflux	A	C (rare)	ABH
Fritzian Sunjammer	A	G (rare)	-
Krelvin Sunsailer	B	G (rare)	-
Sandrol Drive	D	C	ABH
Whurr Blink Drive	Any	S	-

This drive is a biological part of the Whurr living starship. It can not be removed with out killing the ship. Killing the ship kills the drive and its biological computers.

Travel Time

EFICIENCY :
The time it takes to travel a light year.

A	85 days	K	12 hours
B	62 days	L	06 hours
C	31 days	M	03 hours
D	20 days	N	01 hour
E	10 days	N	30 minutes
F	06 days	O	15 minutes
G	04 days	P	07 minutes
H	02 days	Q	03 minutes
I	24 hours	R	02 minutes
J	16 hours	S	01 minutes
		T	Instant

OUT ZONE :
The phase point where the ship can phase with minimal, 1 point, untuning.
DRIVE LIMITS :
The problems with that drive type during use. Most happen during the process of 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.
C Tendency toward failure. Every 5th use add a 20% chance to the phase failure percentage.
D Tendency toward bad star system entry navigation. Add d100 hours per system entry time.

E Tendency toward mis-directed navigation. Crew does not know failure has occured until they drop out of phase space, having traveled in a random direction. Use the indirect fire tables information for 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) xd100 wound shock equivalency.

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

H Tendency for ship to become lost with the effects of D, E and B with a wound shock equivilency of 5d10. See page 69.

Phase Failure

Every 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. If the number is greater than the operating percentage a phase or drive failure has occured.

DRIVE FAILURE RESULTS A

01-80 Computer shuts down.
81-90 Computers shut down, breakers open with a d6 minute delay to next try.
91-93 Computer shuts down, breakers blown.
94-96 Phase linkage damage, d10 hour repair.
97-98 Same as 94, with computer having to be checked, reprogrammed at 2d10 hours.
99-00 Goto Table B for Serious Problems.

DRIVE FAILURE RESULTS B

01-30 See drive limitation H and Table A(97)
31-59 See B(01) Drive tuning drops d100 pts.
60-80 Linkage to phase drive fuses, see F in the limitation table. Repair 2d100 Hrs with parts and tools.
81-90 Primary and secondary linkages to the Phase computer fuse. See B(60).
91-93 Phase generator suffers structural damage that takes 3d100 hours to repair. Also see B(91).
94-96 Phase generator totaled. Must be re-built with new components. 8xd100 Hrs.
97-98 Same as 94 with destruction of phase computer. Replace or rebuild.
99-00 Goto Table C for Critical Results.

DRIVE FAILURE RESULTS C

01-80 See B(97) with phase sickness as the equivalency of limitation table A.
81-90 Phase system totaled, jump in a random direction to the nearest star. See C(01) for other effects.
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 into large pieces.
00 As C(99) with the ship breaking up into small pieces.

Fuel Use

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 an extra equivalency of fuel capacity.

FUEL TYPE	MULTIPLY FUEL BY
Common Water	0.75
Duterium	1.00
Tritium	1.25

FUEL EQUIVILENCIES
Gigantic Ship Unit	=	50 medium Units
Large Ship Unit	=	25 Medium Units
Medium Ship Unit	=	01 Medium Unit
Small Ship Unit	=	.50 Medium Unit
Shuttle Unit	=	.25 Medium Unit
Truck, Vehicle Unit	=	.25 Shuttle Unit
Small Vehicle Unit	=	.50 Truck Unit

From a ships fuel capacity deduct fuel units when a ship:

	FUEL COST
Travel Through Phase Space (light year)	05
Travel Across Planetary Slot	05
(1 hour per planetary slot in travel time)	

Initial Orbital Costs:

WORLD SIZE	ORBITAL 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 Giants	60 +d10 fuel units

TURNING SHIP ➤➤
A Slow Turn   01 unit
B Medium   02 units
C Fast, Panic Turn:

TURN 45	TURN 90	TURN 145	Turn 180
1 unit	2 units	4 units	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.
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 toward target.
03 Determine world size and orbital costs. Drop cargo, dock, or whatever.
04 Change ship's orbital level and plot fuel use. Plot fuel use to break orbit. Go to other, in system, destinations repeating steps 1-3 or accelerate out of system at half the in system travel cost.
05 At phase point the phase computer takes control of the ship and it's engines. Under computer control for days or months, the starship travels FTL.

Orbital Level

Parking a spacecraft into an orbit is a simple procedure. Roll on the tables indicated for orbit by type of use.

```
ORBITAL USE                          TABLE  ROLL
A  Going into orbit with ship         A     d10
B  Shuttle returning from world to a level
   of orbit.                          B     d6
```

From the initial level, characters can pilot ships and vehicles into more or less stable orbits by the immediate expenditure of 5 points of fuel. With a level of A7, a starship can boost to a more stable level of A1 with the expenditure of 30 units of fuel.

REMEMBER:
01 5 fuel units = a 1 level orbit change.
02 Level B10 is the point of no return for ships without "atmospheric" capability. The level B11 is planetary atmosphere.
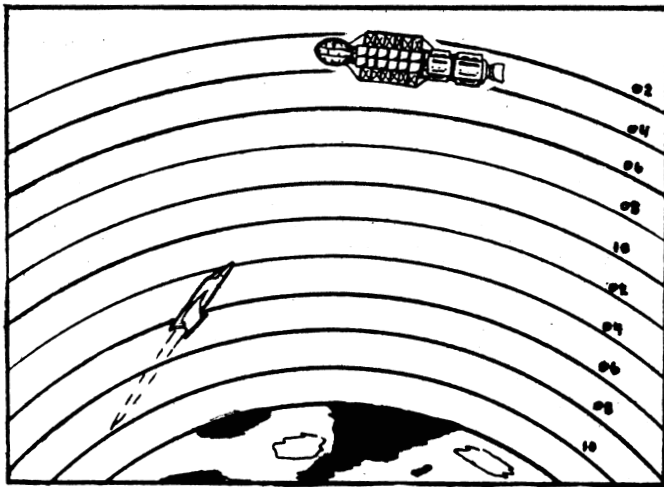
TABLE A (STABLE ORBITS)

```
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    5 years
06  Decaying,  decrease 1 level in    1 year
07  Decaying,  decrease 1 level in    6 months
08  Decaying,  decrease 1 level in    1 month
09  Decaying,  decrease 1 level in   15 days
10  Decaying,  decrease 1 level in    1 day
```

TABLE B (TERMINAL DECAY)

```
01  Decrease 1 level in   12 hours
02  Decrease 1 level in    6 hours
03  Decrease 1 level in    3 hours
04  Decrease 1 level in  1.5 hours
05  Decrease 1 level in    1 hour
06  Decrease 1 level in   30 minutes
07  Decrease 1 level in   15 minutes
08  Decrease 1 level in    7 minutes
09  Decrease 1 level in    3 minutes
10  Decrease 1 level in    1 minute
    and begin re-entry.
```

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.

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

CRITICAL FUSION FAILURE
01-50 Fusion computer control destroyed. (replace unit or repair in d6 days)
51-75 Engines suffer structural damage. (d6+4 days for repair)
76-90 Engines suffer partial meltdown. (replace or d6 months repair)
91-95 Engines slag. (replace only, area suffers radiation contamination of (d100 x100) x.25 until cleaned)
96-99 Same as 91 with explosion of d100 x50 points. (replace engines and area)
   00 Same as 91 with a d100 x100 point detonation of the engines.

ENGINE ABUSE

The time required to travel out of system can be cut by factors of 25% by increasing fuel use and engine wear. The average ship leaving a system in 39 hours can cut it's 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 days retuning work.

FUEL ECONOMY

TIME REDUCTION	UNTUNING	FUELUSE
25% Normal Time out	d10 +6	x4.0
50% Normal Time Out	d10 +2	x3.0
75% Normal Time Out	d6	x2.0
Normal Time Out	1 point	x1.0
02x Normal Time Out	1 point	x.75
04x Normal Time Out	1 point	x.50
10x Normal Time Out	1 point	x.25
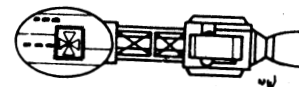
STARSHIPS
Historical
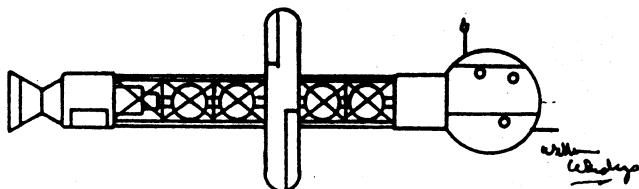
N: Ivan Rogov   P: 6
Y: 2003   T: A   M: 20
L: 190'   S: M   F: 1000
Terran, H, Sov Peoples
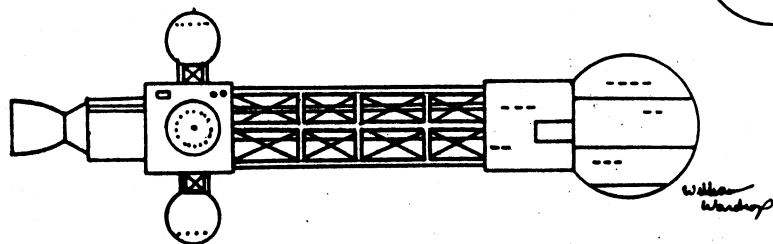
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Y: 2051   T: A   M:406
L: 480'   S: L   F: 1800
Terra, H, Can/Aus Fed.
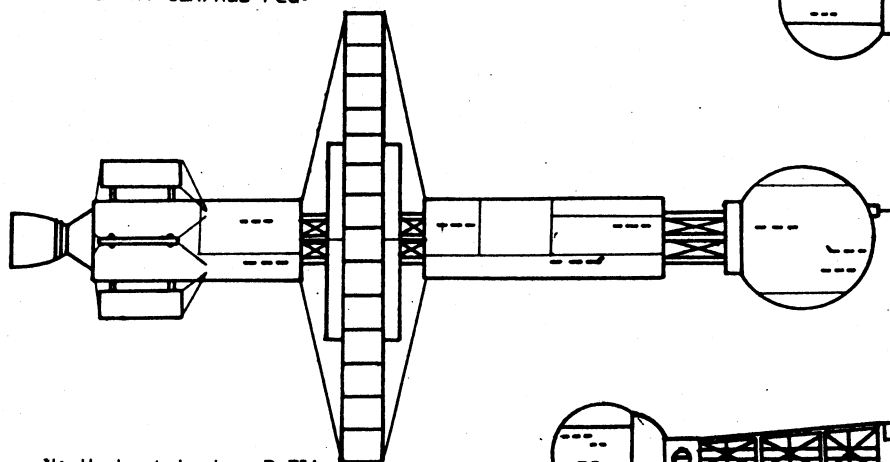
N: Herbert Lashaw P:316
Y: 2071   T: E   M:3000
L: 1040   S: L   F:2900
Terra, H, ICO
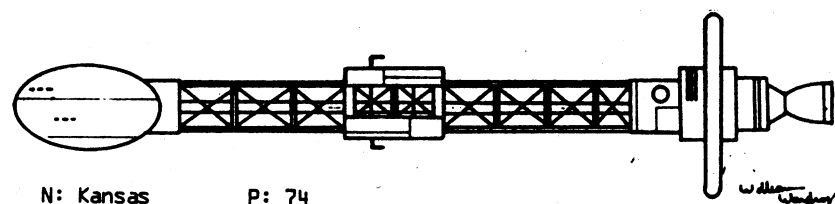
N: Kansas   P: 74
Y: 2070   T:B   M:1800
L: 1000'   S:L   F:1590
Terra, H, ICO, ISCO
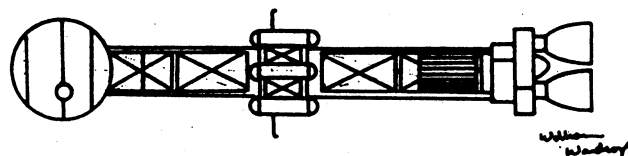
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Y: 2006   T: A   M:143
L: 300   S: L   F: 150C
Terra, H, America
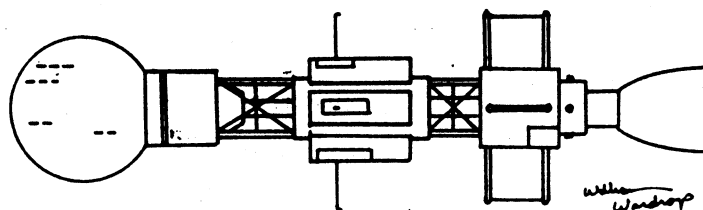
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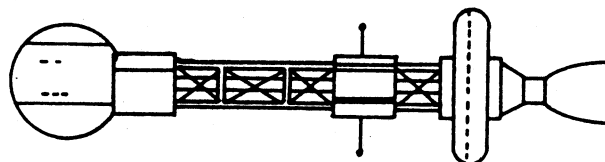
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L: 210'   S:M   F:990
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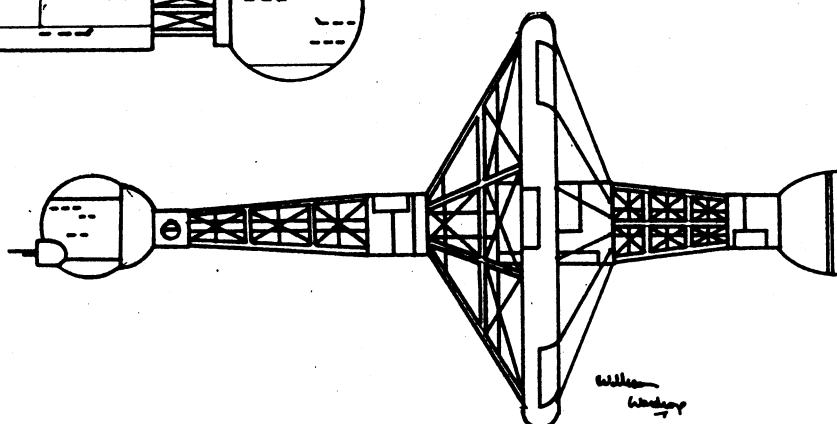
N: ObOra   P: 39
Y: 2125   T: E   M:190
L: 811'   S: L   F:2500
Faxn'Chr, B,

TERMS
N= Name   P= Crew   A In System
Y= Year   T= Type   B Exploration
S= Size   F= Fuel   C Freighter
L= Ship Length   D War Ship
F= Fuel Capacity by Ship Unit Size
M= Cargo Capacity of 10x10x10 cargo cans
E= Any use Utility Ship

STARSHIPS
"Big Ship Era"
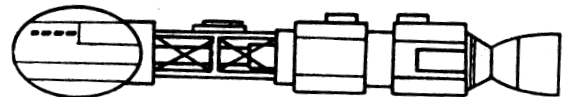
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Y: 2290 T:Any M:75
L: 280' S: S F:1677
Terra, Canada
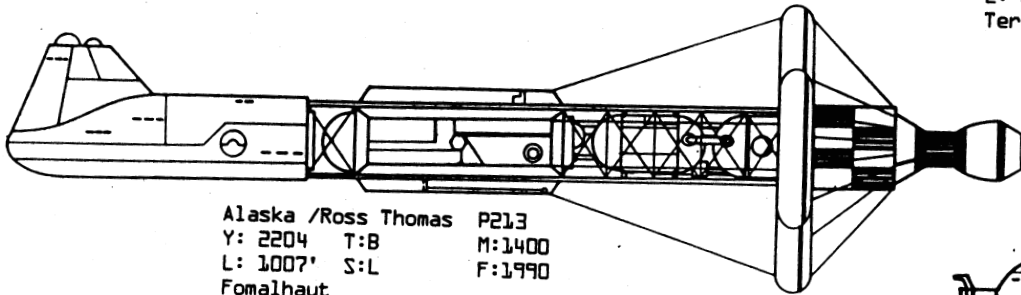
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L: 1007' S:L F:1990
Fomalhaut
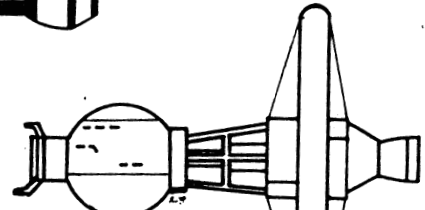
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Y: 2210 T: C M:120
L: 404' S: S F:1600
Alverez, H

N: Wood P:34
Y: 2206 T: B M:72
L: 360' S: S F:1200
Terra, H

N: Stilwell P:72
Y: 2180 T: C M:980
L: 780' S: M F:2100
Fomalhaut

N: Cleveland P:127
Y: 2144 T: C M:340
L: 520' S: S F:1900
Fomalhaut, H,B,S

N: Tampa P:45
Y: 2275 T: C M:604
L: 560 S: M F:1230
Alverez

ISCO
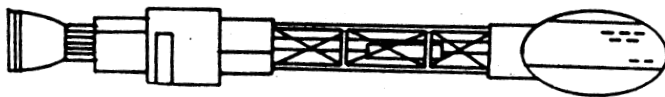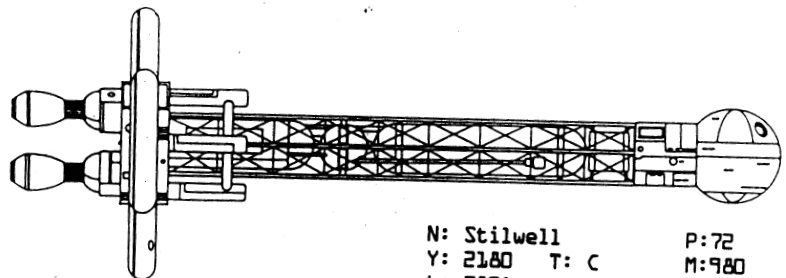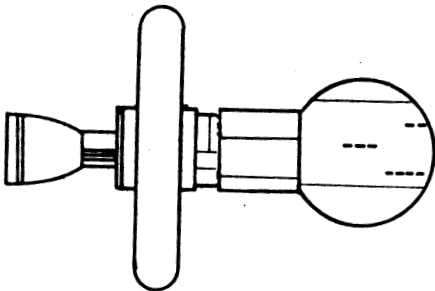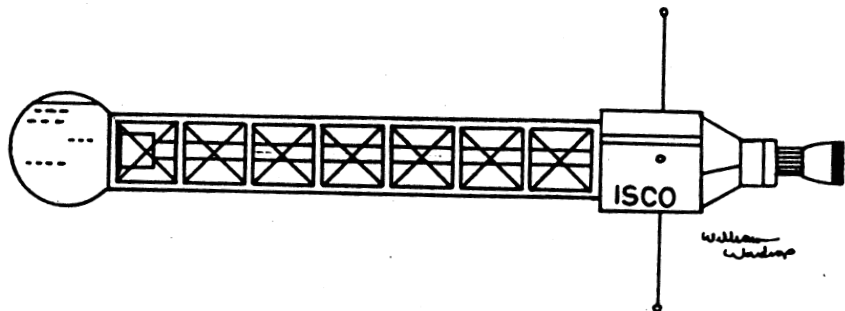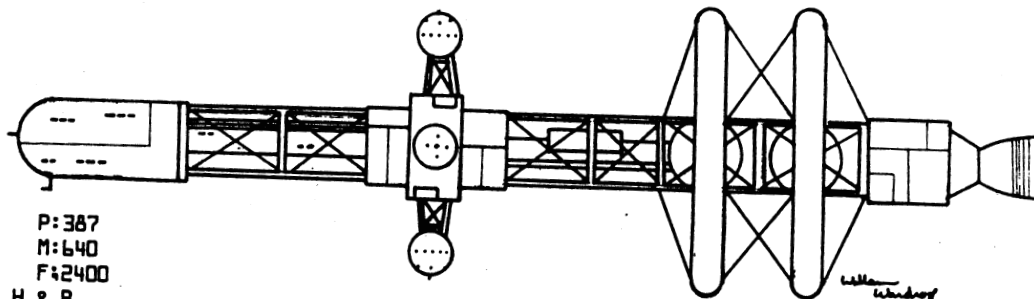
N: Homesteader P:387
Y: 2132 T: C M:640
L: 1400' S: G F:2400
Terra, Faxn'Chr, H & B

STARSHIPS
Modern
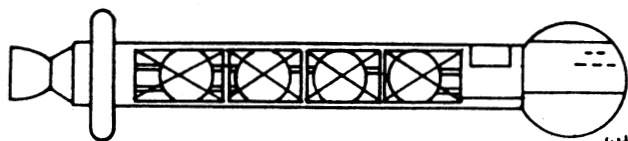
N: Alaska Ross Thomas B P:64
Y: 2375 T:B   M:140
L: 340' S:S   F:2268
Fomalhaut

N: Piper H   P:39
Y: 2340 T:C   M:88
L: 440' S:M   F:6890
Alverez
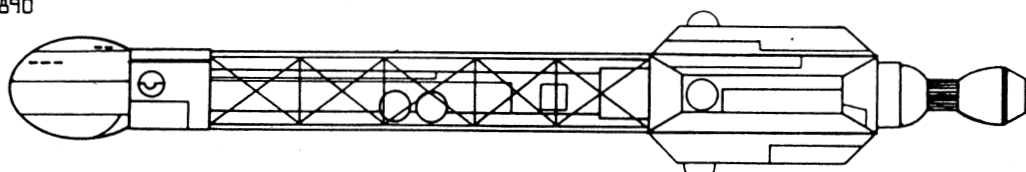
N: Chicago   P:210
Y: 2390 T:Any   M:2130
L: 1210' S:G   F:2340
Remoxo / Brazilia
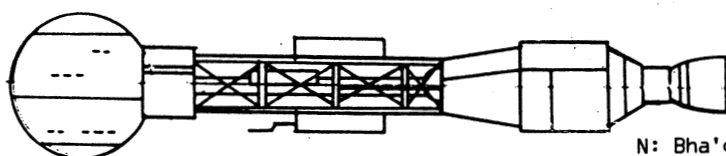
N: Bha'che   P:110
Y: 2388 T:B   M:340
L: 760' S:L   F:1140
Alverez
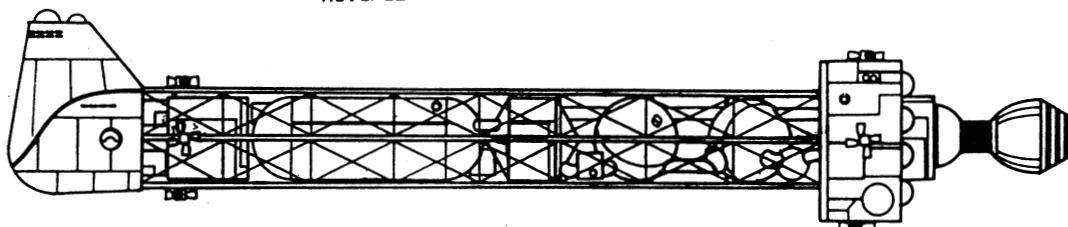
N: Ross Thomas C P:107
Y: 2410 T:B   M:389
L: 1234' S:G   F:4400
Fomalhaut

N: Kanpur   P:78
Y: 2430 T:B   M:340
L: 580' S:M   F:2600
Alverez

N: Centauris   P:48
Y: 2412 T:C   M:8000
L: 790 S:M   F:2006
Faxn'Chr
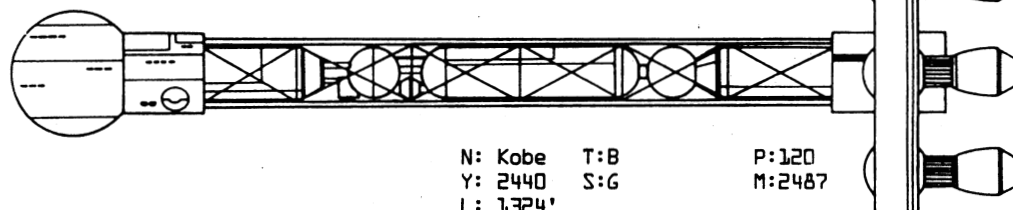
N: Kobe   T:B   P:120
Y: 2440 S:G   M:2487
L: 1324'
Fomalhaut

Gravity Generation

As a by product of the phase drive, a .96 gravity field can be seperately generated along the horizontal axis of the ship.

These mini-grav plates extend a gravity effect in a 50x50 (2500 Sq Ft) area. These generators burn out if activated on planet.
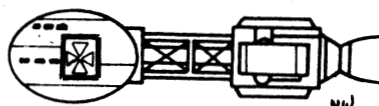
N: Harlan / Nudge
Y: 2399 T:A P:10
L: 82' S:S M:10
Fomalhaut   F:880

SCANNERS

On entering star systems a ships sensors can accumulate information on bodies 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	Infared / UV	A-G

DISTANCES IN SPACE
A Very Close	within	300 Feet
B Close	300 to	5000 Feet
C Short	01 to	10 Miles
D Medium	10 to	100 Miles
E Long	100 to	1000 Miles
F Very Long	1000 to	100,000 Miles
G Extreme	100,000 to	1 Million Miles
H System	1 Million to	100 Million Miles

SIZE OF OBJECT
Very Small	(VSM)	under	200 Feet
Small	(SMA)	200 to	1000 Feet
Medium	(MED)	1000 to	5000 Feet
Large	(LAR)	2 to	10 Miles
Very Large	(VLG)	10 to	100 Miles
Gigantic	(GIA)	100 to	1000 Miles
Planetary	(PLA)	1000 to	20,000 Miles
Gas Giants	(GAS)	20,000 to	200,000 Miles

Larger than 200,000 is hard to miss.

Scan Results

Chance of success per 30 minute 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%	88%	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	0%	01%	02%	05%	15%	35%	55%	75%
System +	0%	0%	01%	02%	05%	15%	35%	55%

SEARCH MODIFIERS
Specific Search For Known Object	+05%
Specific Search For Unknown Object	-10%

SYSTEM SCANS
Computer Planetary Prediction	+05%
Computer Memory Card / System Map	+10%

Weapons Fire

WEAPONS FIRING
This table is also used for the percent chance to hit another ship with weapons fire from projectiles, missiles and lasers.

MODIFIERS
Computer Weapon's Lock On	n/c
Mass Driver Projectiles	-15%
Dumb Missiles (fired projectiles)	-10%
Smart Missiles	+10%
Intelligent Missiles	+15%
Ships Laser	+20%

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" table with modifiers.

Evasion Tactics

Ships sensors are a 10x10x10 area that operate much like the computers in design. Each Sensor type has a programming card and a sensor array unit.

Each of these units also has a counterpart available in the form of an Electronic Countermeasure Card that fools a scan up to the rating percentage of the card. Each level percentage of rating, 1% to 100% has a base cost of 1000 d's. A 50% card has a value of 50,000 d's.

Also available are counter-countermeasure cards with a base price of 2000 d's per percentage rating of the card.

OTHER ACTION TO AVOID OR BREAK SCAN

	TIME REQUIRED	CHANCE OF EVASION	FUEL USE
COURSE CHANGE			
Minor	30 minutes	05%	10
Major	01 hour	10%	20
Hard	02 hours	20%	30
Radical	02 hours	40%	40
HIDING			
Behind Asteroid		50%	20
Behind Moon		75%	-
Behind Planet		90%	-

NAVIGATION MODIFIERS

REMEMBER
01 Use the navigation and system map grid to determine the random planetary placement when entering a system.
02 Determine random ship entry point and navigate from there.
03 Special bad navigation may include an extra d4x d100 hours to the edge of the D zone point of entry.

SHIP COMBAT

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.
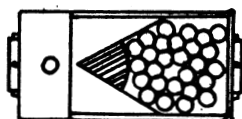
Cannisters

CANNISTER LAUNCH

Cannisters are computer launched drums of varied complexity and use. Once free of the ship a cannister is controlled by the ships computer and sensors. A small chemical engine activates to stabilize course and send the cannister in the direction of the target. The cannister detonates sending a small amount of high velocity debris to strike the other ship. This debris (d20 pieces) hits the ship doing 4 x (1000 +d100) points in damage per piece. Finer material travels at the same velocity striking any targets or exposed personel at x.25 damage.

A third cannister type detonates close to the launching ship, showering the area with laser reflective flakes that reduce laser fire damage by d100 percent per cannister. This effect lasts 5 minutes per detonation and disapates at 5% percent effectivness per minute.

Effective Range of Shrapnal
  Extreme (200,000 miles)
Effective Range of Laser Reflective
  Close   (1000 feet)

Missiles
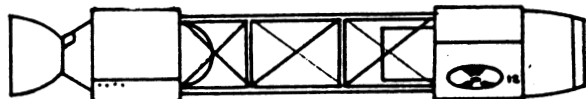
MISSILES

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 propellent charge and a warhead. They lack guidance and can not be controlled once they leave the ship. Each warhead does damage equal to (d4x 1000)+d100.

SMART MISSILES

Launched in groups of d4, these limited guided missiles have their own navigation equipment and a single or double sensor type. They travel farther than dumb missiles and have a limited ability to correct course. They may have an anti sensor card replacing a sensor card. Damage from smart missiles is rated at (d6x 1000)+d100.

INTELLIGENT 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 do (d20x 1000)+d100.

TYPE	RANGE	
Dumb	Long	(1,000 mi.)
Smart	Very Long	(200,000 mi.)
Intelligent	Very Long	(250,000 mi.)
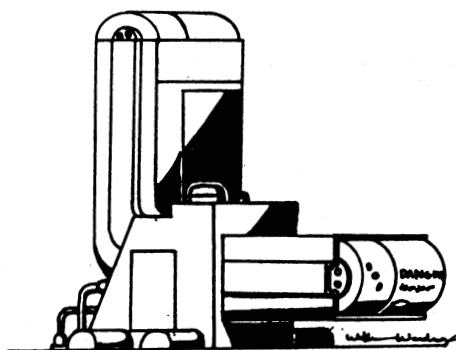
Launcher
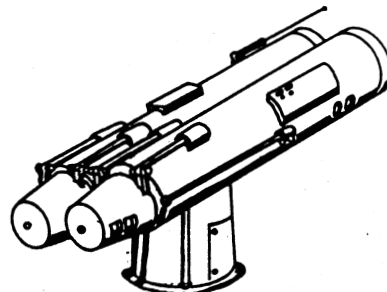
Laser

A heavy, fluid cooled, computer controlled weapon that burns for 4x d1000 (d100 x10) points of damage and .50 x the damage of blast inside the ship if the ships hull is punctured and the compartment at the site of the hole is pressurized.
Effective Limit Very Long Range (25,000 mi.)
Overheat Cutoff 3% per Firing   ROF 1 Action
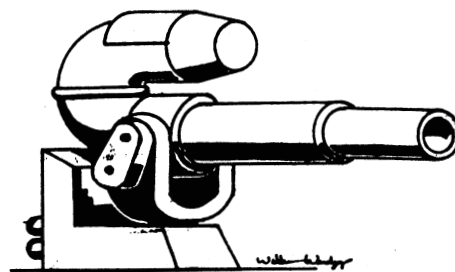
Particle Beam

The electron or particle 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.

Particle beams have the same general damage as lasers with the added effect of damaging electronic hardware and software in the general area of the hit. Roll a %d100 for electronic disruption in important equipment.

Gamma Emitting variations of this system damage at x.50 laser equivalency damage but also add a d4x (d100 x10) radiation exposure that lasts for d10 minutes as the beam hits.
Effective Limit: Long Range
Overheat Cutoff 7% per Use   ROF 1 per Minute

Structural Damage

Index Total Damage Taken By Weapons Systems

MON:	Mounting	HOU:	Housing
MAI:	Main Body	ELC:	Electronic Link to
MOB:	Mobility		Computer
POW:	Power	COJ:	Cooling Jacket

DAMAGE TAKEN	0001-500	0501-1000	1001-2000	2001-3000	3001-4000	4000-5000
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

RESULTS

A Minor structural damage to unit.

B Structural damage to unit requires 4d10 minutes to repair or a -20% chance to hit a target.

C Major damage to unit requires 4d10 hours 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 Units totally destroys, 80% chance of explosives detonation.

Explosion

Holes blown in the side of ships effect one square root of hull per thousamd points of damage. A shaped charge damages hull at half the explosive rate and pushes the blast inside the hull with shrapnal.

EXPLOSIVE DECOMPRESION

Hull damage continues like other explosive damage only when the compartment behind the damage is presurized. In cases where the compartment is not presurized, the damage is in the form of shrapnal 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 Suits Most Light	d4	x100	rads
Vac Suits, Most Heavy	d4	x100 +600	rads
Heavy Rad Suit		2000	rads
Shiphull		3000	rads
Ship Armor Per Inch		1000	rads
Rad Entrapment Generator		4000	rads
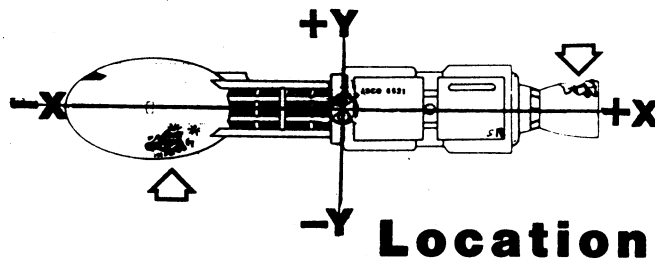
Location

To find the hit location on a ship struck by weapons fire determine range of target from attacker. This tells you if the shot hit where planned or was a random hit.

DISTANCE TO TARGET	HITS AREA
Very Close	Attacker's Choice
Close	50% Attacker's Choice
Short	10% Attacker's Choice
Medium	Random
Long	Random
Very Long	Random
Extreme	Random

To hit a random area imagine an outline of an (X,Y) coordinate system over the angle of your target ship as in the side illustration above. Chart the center of the ship as 0 and the edges as 100%. This is for all 4 of the ships edges.

X AXIS (horizontal) Roll a d6
RESULT
01-03 Ship hit on negative side of axis.
04-06 Ship hit on positive side of axis.
Roll a d100 for X AXIS location on ship.

Repeat with the Y AXIS (vertical) using the center x axis you just found as the new 0 point for finding the Y Axis. With general deck plans and a little imagination the results can be realistic. Remember hull values and damage.

Travel Formula

$$\text{Light year distance} = \sqrt{X^2 + Y^2 + Z^2}$$
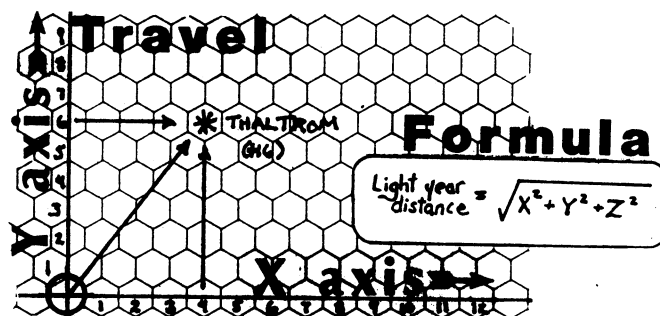
REMEMBER

01 These distances are the most difficult calculations in FTL. You will need a calculator.

With your location as the start of the calculation, find the X and Y axis by counting to the destination star's (X Y) line intersection. From the destination star, count up or down to find the number of light years that seperate your levels. This number is the Z coordinate. Find the square root of the the totals of

$$(X^2 + Y^2 + Z^2)$$

This is the number of hexes or light years that seperate you from your destination.

+Y

19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

−X

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

+X

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

−Y

Travel

Y axis

★ THALTROM (H4)

X axis

Formula

$$\text{Light year distance} = \sqrt{X^2 + Y^2 + Z^2}$$

01	EARTH / TERRA	+0 G
02	PROXIMA CENTAURI	-4 M
03	ALPHA CENTAURI	-4 GK
04	WOLF 359	+1 M
05	LALANDE 21185	+5 M
06	SIRIUS	-2 A
07	LUYTEN 726-8	-3 MM
08	ROSS 154	-4 M
09	ROSS 248	+7 M
10	LUYTEN 789-6	-3 M
11	eERIDANI	-2 K
12	ROSS 128	+0 M
13	61 CYGNI	+7 KK
14	eINDI	-9 K
15	PROCYON	+1 F

16	BD+43'44	+8 MM
17	BD+59'1915	+10 MM
18	CD-36'15693	-7 M
19	tCETI	-3 G
20	BD+5'1668	+1 M
21	CD-39'14192	-8 M
22	KAPTEYN'S STAR	-9 M
23	KRUGER 60	+11 MM
24	ROSS 614	-1 M

25	BD-12'4523	-3 M
26	VAN MAANEN'S STAR	+1 B{dw}
27	WOLF 424	+2 MM
28	CD-37'15492	-9 M
29	BD+50'1725	+11 K
30	CD-46'11540	-11 M
31	CD-49'13515	-12 M
32	LUYTEN 1159-16	+3 M
33	CD-44'11909	-11 M
34	BD+68'946	+14 M
35	ROSS 780	-4 M
36	LUYTEN 145-141	-14 B{dw}
37	40 ERIDANI	-2 K
38	BD+20'2465	+6 M
39	LALANDE 25372	+4 M

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	=	31x31x41	Light Years
SYSTEM HEX	=	1	Light Year
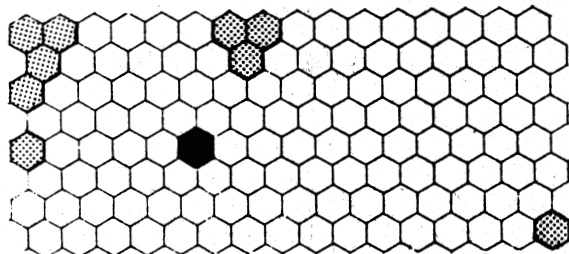
The relatively tiny chunk of explored space in the above illustration has been the total area of play for three years of play testing as FTL grew from a few ideas into it's present form.

In FTL 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
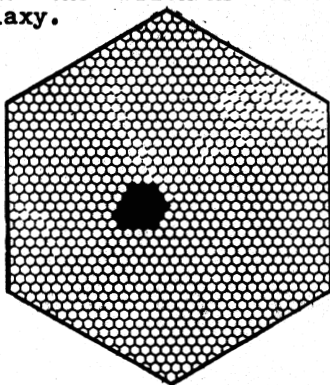
This shaded area of a prime hex is the location of our general neighborhood of stars. If we single out the darkened hex in this representation we find it is made of numerous smaller hexes. Each of these hexes represents an area 31x31 light years. The enlargement below shows the areas of explored space used in FTL.
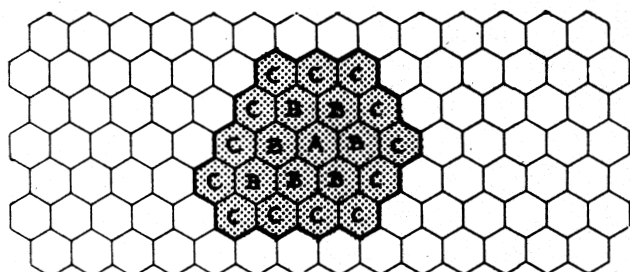
A HOME SPACE = The center of human space.
B SETTLED SPACE = Longest colonized areas.
C FRONTIER = Semi-Explored Space.

Mapping Space

These tables are for the generation of Stars, Planets, Climate, Geology, Life, Alien Physiology, Intelligence and Culture.

REMEMBER
01 Before you start, have a few copies of the hex, system and world sheets handy.
02 Be patient, your time will be rewarded with great detail and something for your players to explore.
03 Don't try to map the galaxy.

Start

Placing star systems in a two dimensional plane is the first step to map 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.
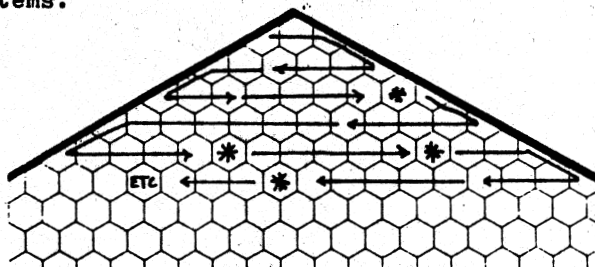
Now that you have a two dimensional map of space you must make it three dimensional.

Each System hex is 41 light years deep. If we can assume star systems are not less than one light year distant from each other, there are 41 possible positions for your system.

METHOD
To find the vertical level roll a d20 for the position of the star system. Now roll a d6.
  RESULT
  01-03   System is Positive
  04-06   System is Negative
On a roll of a (+1) or (-1) star locations, Roll a d6.
  RESULT
  01-03   System moves to 0 position.
  04-06   System stays as designated.

Have fun naming your stars.
EXAMPLE   +16 = The position of the star
        Thaltrom = The name of the star
           F32 = The hex letter and card or page number.
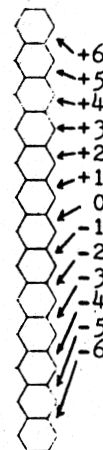
STAR SYSTEMS

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 it's own system of orbiting masses.

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

Number Of Stars

To generate the number of stars in a system, 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 occure. They add a little spice to the average stellar groups.

RESULT	TYPE
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 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 in formation.
00	SPECIAL B

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	Small Black Hole
99	Medium Black Hole
00	Large Black Hole

Star Size

Roll a d100 for the size of the star.

RESULT	SIZE OF STAR
01-10	Dwarf
11-40	Small
41-85	Medium
86-95	Large
96-99	Giant
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
03-40	Red	M	3,500
41-55	Orange	K	5,000
56-70	Yellow	G	6,000
71-82	Yellow-White	F	7,000
83-93	White	A	10,000
94-98	Blue-White	B	23,000
99-00	Blue	O	25,000

Gravity Zones

Each star, because of mass, exerts a pull on any bodies orbiting or passing nearby. This pull is gravity.

The larger the mass of a star the larger the gravitational pull and the star's ability to hold planets. This area of stellar pull is the star's zone of control. In FTL we divide this zone into four areas.

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.

A ZONE   B ZONE   C ZONE   D ZONE
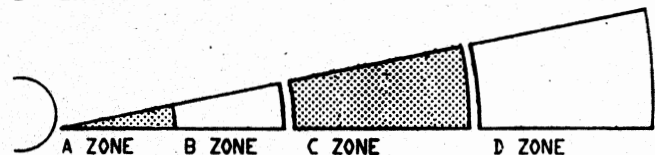
These zones are divided into numbers of slots whose numbers differ due to star mass. These slots hold planets and possible system debris. They are also reference points for system travel and time.

A ZONE
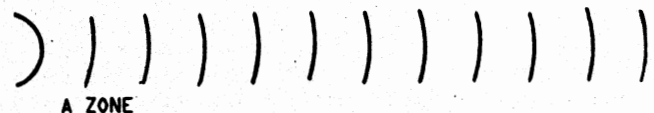
Spectral Class

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	f
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	d8 (-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 and planetary placement. Whenever placing an object randomly, roll the die appropriate to the area.

Binaries

When placing Binaries and multiple stars, remember a few basic rules.

REMEMBER
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 and special problems.

Multiple Stars

Roll a d100 for placement of multiple stars. Roll the exact zone slot with the apropriate 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.

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.

RESULT	STAR PLACEMENT
01-50	d100 x10 planetary slots from the farthest slot of the primary star's D zone. This distance effectively eliminates zone overlap and planet gravitational disturbences.
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.

Planet Type

Roll a d10 for planetary type.

RESULT	TYPE OF PLANET
01-05	Planet
06-10	Gas Giant

Planet Placement

Roll a d10 for planetary placement into zone.

TYPE OF PLANET	ZONE POSITION 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.

Slot Overlap

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

RESULT	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.

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.

RESULT
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

RESULT	PLANETS DIAMETER IN MILES	SURFACE GRAVITY	NUMBER MOONS
01	Asteroid or small planet, Roll a (d6-1) x1000 for the diameter in miles. Under 1000 miles roll a d100 x10 for diameter in miles.		

HABITABLE PLANETS

02	5,500	Small	.60	d4 (-1)
03	6,000	Small	.70	d4 (-1)
04	6,500	Small	.80	d4 (-1)
05	7,000	Medium	.85	d6 (-1)
06	7,500	Medium	.90	d6 (-1)
07	8,000	Medium	1.00	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)

Gas Giants

RESULT	GAS GIANTS DIAMETER IN MILES	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)

Moon Size

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 planet orbiting a dead or hellish world.

MOON SIZE RESULT

PLANET	SMALL	MEDIUM	LARGE	GIANT
Small	01-04	05-10	-	-
Medium	01-04	05-09	10	-
Large	01-04	05-09	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
x100	x100+	x100+	x100+
	(400)	(1400)	(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	Mineable Minerals	03	Ammonia Ice
04	Volcanic Rock	04	Sulfur
05	Mineable 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.

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 planet.
13	Geologically active moon orbiting gas giant
14	High mineralization,asteroid belt.
15	Masses of cometary fragments.
16	Ejected stellar debris, possible hot clouds.
17	High sunspot activity increases radiation by bursts of d4x1000 +d100 rads per hour. (Phase drive untunes d6 points per day in high flare conditions.
18	Two moons sharing same orbit.
19	Moon with high chemical composition.
20	Planet with high value 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 asteroid belt			

System Map

Quadrant Map

CLIMATE

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

REMEMBER
01 Index your star's system size.
02 Index across to where your planets are set in the slots.
03 Index down to find the type of world. (if the planet is in an M life area).
04 If not an M, index general type of climate. You can add mineralization.

```
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  H3  H4  H4  H4  M1  M2  M1  M2  M3  F4  F4  F3  F3  F2  F2  F   F
F     H3  H4  H4  H4  M1  M2  M3  F4  F4  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  F3  F2  F2  F   F   F   F   F   F   F   F   F   F   F   F
```

Type

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

Class H

H : Burned Off World
H2 : Very Hot, Usually no atmosphere
H3 : Hot, Usually Dense, turbulent high pressure or no atmosphere.
H4 : Mostly Hot, dense, turbulent high pressure, or no atmosphere.

Class M

M1 : Like Terrestrial with a +1 modifier on atmosphere and temperature.
M2 : Most Terrestrial
M3 : Like Terrestrial with a -1 modifier on atmosphere and temperature.

Class F

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

Most generation information on worlds ends here. From this point the M type world becomes our primary concern. This is first dependent on having an M world in a system.

Moon Modifier

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

REMEMBER
01 Generate Moon Modifiers
02 Generate Atmospheric Density (you now have an atmospheric modifier)
03 Generate Zone Modifier
04 Generate Star Type modifier
05 Add all modifiers.
06 Roll the indicated dice and add all of the generated modifiers.
07 Index the result to temperature.

Moon Size

Use on Small, Medium and Large Planets.

NUMBER OF MOONS

MOON SIZE	0	01-02	03-04	05-09	10+
Small Moon	+1	0	-1	-2	-3
Medium Moon	+1	-1	-2	-2	-4
Large Moon	+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.

World Size

SMALL WORLDS   Roll a d10

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

MEDIUM WORLDS   Roll a d10

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

LARGE WORLDS   Roll a d10

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

Zone

PLANETS ZONE MODIFIER

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

STAR INTENSITY MODIFIER

Star

	STAR TYPE / SPECTRAL CLASS							
	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

ADD MODIFIERS INDEX BY WORLD SIZE

For Small Worlds Roll a d4, add Modifiers
For Medium Worlds Roll a d6, add Modifiers
For Large Worlds Roll 2d4, add Modifiers

Climate

RESULT	CLIMATE	LIFE	TEMPERATURE
-4 Lower	Frozen	0%	-200+ average
-3,-2	Very Cold	0%	-200 to -100
-1, 0	Cold	05%	-099 to -025
01-02	Cool	40%	-050 to +050
03-04	Terran	80%	-010 to +100
05-06	Warm	40%	+050 to +150
07-08	Very Warm	05%	+100 to +200
09-10	Hot	02%	+150 to +250
11-12	Very Hot	01%	+200 to +300
13-14	Burning	0%	+250 to +400

This completes FTL's world and planetary generation. The next tables will add other optional design information to your worlds.

Atmosphere

Breathability is one of the primary requisites of worlds that are near terrestrial in temperature and atmospheric pressure. Roll a d20 for atmospheric content.

RESULT	CODE	DISCRIPTION
01-04	A	Toxic, Highly Poisonous
05-06	B	Wrong Mixture, Toxic Elements
07-08	C	Wrong Percentages, (must be filtered and supplimented for Terran use)
09-10	D	Mostly Breathable
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

Illumination

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 by the spectrun of the star in question.

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	-3	-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

Roll A d6 and Add Modifier

RESULT	ILLUMINATION
-01 Less	Dark
0	Very Dim
01	Dim
02	Dusk
03	Normal Light
04	Normal / Bright
05	Bright
06	Very Bright
07	Painfully Bright
08	Damaging Bright

Food

RESOURCES ON ALIEN WORLDS Roll a d20

RESULT	COMPATIABILITY
01-04	Extremely Toxic
05-06	Mostly Toxic
07-08	Mixed Toxic and Edible with generally poor food values.
09-10	Variable forms with good nutritional values. Most are non-toxic.
11-12	Inert materials may become toxic if ingested for any length of time.
13-15	Toxic, Poisonous
16-20	Extremely Toxic Corrosive

GEOLOGY

The design of worlds is the GM's choice. This section aids in the generation of world discriptions and geology.

Water

For the amount of water on an M world, roll a d100 percent dice for amount of water. The remainder of the surface of the world is land mass.

REMEMBER
01 On frozen or cold worlds a majority of this water may be locked into ice, or ice caps. In some cold cases only an equitorial band of free standing water may be seasonally unfrozen.
02 Dry arrid worlds may hide water deep underground or freeze it in icecaps.

WATER QUALITY (Roll a d10)

RESULT	COMPATABILITY
01-05	Brackish, salt or chemical laden.
06-08	Usable with special filtering.
09	Usable with minimal filtering.
10	Fresh water.

Continents

RESULTS		NUMBER
01	Unbroken Land Masses	1
02-04	Super Continents	upto 3
05-06	Large Continents	d6 +2
07-08	Medium Continents	d10 +2
09	Small Continents	2d10 +2
10	Island Chains Only	see Islands

Islands

TYPE OF ISLANDS	FREQUENCY OF ISLANDS NONE	FEW	COMMON	MANY	MILES DIAMETER
Micro	1	2-3	4-7	8-10	d100 x.50
Small	1	2-3	4-7	8-10	d100
Medium	1	2-3	4-7	8-10	2d100
Large	1-2	3-5	6-8	9-10	2d100 +100
V Large	1-2	3-5	6-8	9-10	3d100 +100
Gigantic	1-3	4-6	7-9	10	4d100 +100

Geo Stability

01 STABLE CRUST
Stable likely shallow oceans, little to no volcanic activity or plate tectonics. Earthquakes mostly unknown.
02 MOSTLY STABLE CRUST
Like #1 with a little activity but not enough to notice over long periods.
03 ACTIVE GEOLOGY
Minor geological effects. Worn mountain ranges from slow plate collision. Very minor volcanic activity.
04 VERY ACTIVE
Common geological effects including mountain ranges pushed up in cycles of growth and decay, plate tectonics, earthquake activity, fault lines, and volcanic activity.
05 HIGHLY ACTIVE
As #4 with a high rate of activity.
06 GEOLOGICAL HELL
With major activity of all types, these unstable worlds are a nightmare of fast sismic activity and problems.

Terraine

RESULT (of a d10 Roll)

01 Flat
02 Rolling Hills, Mostly Flat
03 Steep Hills, Small Valleys
04 Very Steep Hills, Rock Outcroppings, Small Valleys
05 Rockey Hills, Steep Valleys
06 Deep Valleys, Eroded Mountains
07 Mountains
08 High Mountains
09 Volcanic Mountains
10 Active Volcanic Mountains

Special

RESULT (of a d10 Roll)

01 Major scarring from meteorite impact.
02 Deep Lakes
03 Large Shallow Lakes
04 Salt or Chemical Flats, Deserts
05 Deep Geological Falts or Canyons
06 Scarring from Climactic Upheval
07 Outstanding Highlands
08 Geological Sculpturing of Rock in large areas.
09 Roll a d8 twice above.
10 Roll a d8 four times above.

Minerals

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

Plant Life

RESULT	DESCRIPTION
01-30	VERY EARLY Simple mosses, slimes, molds, some diversified sea plant life.
31-40	EARLY Simple land plants, abundant sea growth, fungi, moss, liverwart and ferns like plants.
41-75	MIDDLE Complex diversified land plants that include cycad type plants and coniferous (pine like) plants.
76-97	LATE Introduction of monocots and dicot flowering plants. Many forms of plants have specialized to climate and geography.
98-99	VERY LATE Less diversified forms have high survival rates. Limited mobility and nervous system adaptations to promote survival.
00	CLIMAX Totally adapted and universal, these few forms leave little else in diversification. Some forms may develope limited hunting and survival instincts in sessile or mobile forms.

Animal Life

RESULT	TYPE
01-02	VERY EARLY SEA Simple sea life and primitive fish.
03-25	EARLY SEA Sea life is developing and taking many forms. Early life is making an inroad to the land from the sea.
26-50	EARLY LAND Sea life has become complex and diversified. Land life is still primitive but spreading in early forms.
51-75	MIDDLE LAND Sea life is stabilizing into less diverse forms. Land life is developing specialized forms to aid survival. Hunting and browsing instincts, limited form of survival intelligence, flying.
76-95	LATE LAND Forms in land and sea have reached the stage where they can learn, if minimally. A proto intelligence is developing. Roll on Intelligence.
96-98	VERY LATE Forms of life have adapted to climate and geography in forms that insure survival. Less diversified types. Intelligence allows animal life to adapt behavior to changing conditions, preditors and adverse conditions. Roll on Intelligence.
99-00	CLIMAX Ancient forms with little or no competition. Highly adapted for survival in a variety of hostile conditions. Roll for a proto Intelligence at -25, Intelligence with no roll modifier and a higher Intelligence at +20. (3 checks)

Intelligence

Roll a d100 to generate the race's basic level of intelligence.

RESULT	
01-25	No real technology or language. Very clever animals with the potential to develope intelligence in time.
26-50	Primitives, Crude language, stone or natural tool manipulation, survival by random subsistance.
51-75	Fine tool manipulation, language and the beginnings of culture.
76-90	Very fine tool use, beginning of art and agriculture, beliefs, religion, imagination, and superstition.
91-95	As 76 with more refined arts, belief, and knowledge that is passed from generation to generation. Specific value systems and social structures exist.
96-98	Goto Energy Development and Culture. Modify the result on Energy by -10.
99-00	Goto Energy Development and Culture. Modify the result roll by +10 if the initial roll is under 75.

Culture

CULTURAL MODIFIERS   (Roll a d10)

RESULT	TYPE	MODIFIER
01-02	Highly Shifting Resources	-3
03-04	Seasonaly Shifting Resources	-2
05-07	Stable resources	0
08-09	Very Stable Resources	+2
10	Near Perfect Stability	+3

CULTURE DISPERSION (Roll a d10, + Modifiers)

RESULT	TYPE
01-02	Nomadic (reduce development technology by a -1 per every roll. Any energy development at -10.)
03-04	Rural, Dispersed
05-07	Rural and sparce urban culture.
08-09	Urban and rural cultures.
10	Dense urban and rural cultures.

CULTURE DEVELOPMENT RATE (d10 + Modifiers)

RESULT	TYPE
01	Regressing, Fallen
02	Collapsing
03	Falling
04	Stagnent
05	Borderline Stagnent
06	Developing Slowly
07	Developing from Setbacks
08	Developing from Major Setbacks
09	Developing at a Fast Pace
10	Developing at a Very Fast Pace

RELIGIOUS AND POLITICAL MODIFIERS

RESULT		MODIFIER
01-02	Restricting, tight control	-3
03-04	Restricting, some control	-2
05-06	No Control	0
07-08	Progressive atitude	+1
09	Progressive, some influence	+2
10	Very Progressive	+3

TECHNOLOGY

TECHNOLOGIES AND SOCIETIES

With these tables the GM is able to generate technological development of and human or alien sciety.

REMEMBER
- 01 Generate energy level by rolling a d100
- 02 For primitive and non energy dependent cultures, roll on table A. Roll a d10 for each technological and social area.
- 03 For higher technology, use column A. A d10 is rolled for each area.

ROLL	ENERGY USE LEVEL
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	Internal combustion and chemical power 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, geo-magnetic taps.
00	Mass to energy / Antimatter
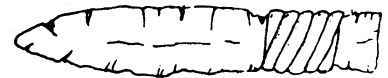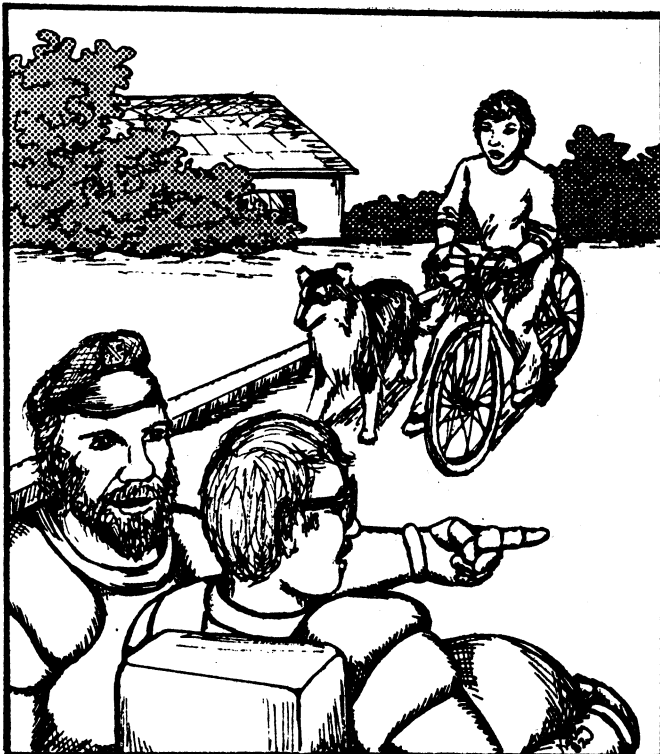
ENERGY LEVEL UNDER 50
NON-ENERGY DEPENDENT
ROLL A D10 ON EACH

STONE
01-02	Basic use of stone tolls, natural shelters only
03-05	Rought shaped stone for foundations
06-08	Shaped stone for most building
09	Heavy stone construction and carving
10	Diversified specialized agriculture and farming knowlage

FOOD
01-02	Gathering and some hunting
03-05	Hunting and some gathering
06-08	Subsistance agriculture
09	Improved agriculture / surplus
10	Diversified specialized agriculture and farming knowledge

ANIMAL HUSBANDRY
01-02	None
03-05	Domestication of a small number of species
06-08	Domestication of a large number of species
09	Improved breeding of a number of species
10	Diversified breeding for needs and improving species

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

EARLY METALWORK
01-02	Soft mallable metals
03-05	Bronze, early iror and forging
06-08	High use of iror , casting
09	High carbon steel
10	Low carbon steel

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

SOCIAL SCIENCE
01-02	None
03-05	Social science for social necessity
06-08	Higher authority sets some social controll of the population
09	Social science to orient the population
10	Social controls in high use

HIGH TEC

HIGH POWER USE TECHNOLOGY
INDEX BY ENERGY LEVEL

LEVELS 50-85   Use Column A
LEVELS 86-00   Use Column B

SYNTHETICS

A	B	
01-02	01	Simple alloys
03-05	02-05	Complex alloys and early synthetics
08-10	06-08	Plastics
	09	Special alloys synthetic fuels
	10	Synthetic metals, heavy elements, go to 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	Synthetic and organic chemistry
	10	Complex synthetic and organic chemistry

MECHANICAL

A	B	
01-02	01-02	Simple use of basic mechanical devices
03-05	03-05	Complex mechanical devices
06-08	06-08	Complex mechanical and simple automation
09	09	Complex automation, high use of mechanical devices
10	10	Very complex mechanical devices and high automation

ELECTRICAL USE

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

MEDICINE

A	B	
01-09	01-02	General medical diagnosis and treatment in most areas
10	03-05	Specialized treatment, repair and reconstruction
	06-08	Synthetic replacement, high use of medicine
	09	Regeneration and cold sleep technology
	10	Life prolongation and effective resucitation

SPACE FLIGHT

COMPUTER TECHNOLOGY

A	B	
01-09	01-02	Bulky mechanical devices of limited function
10	03-06	Bulky electrical devices of limited function
	07	Light weight devices of limited function
	08	Bulky devices of advanced functions
	09	Light weight devices of advanced function
	10	Miniaturized devices of advance function

SOCIAL SCIENCE

A	B	
01-02	01-02	No use of social science
03-05 use.	03-05	Social control in monimal
06-09	06-08	Some social controll in use
10	09	High use of social control
	10	High knowledge of the motivations of a society and control of it's operation

FLIGHT

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

EARLY SPACEFILGHT

A	B	
01-09	01-02	Early testing
10	03-05	Early orbital flights
	06-08	Space stations
	09	Interplanetary exploration
	10	In-sysyem colonization, 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 nearest stars with early FTL drives
	09	Colonization of near stars
	10	Commercial starflight
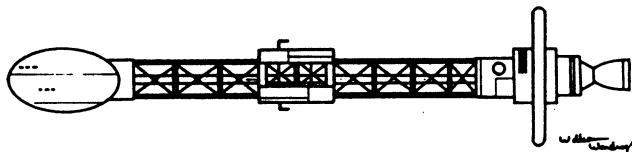
Alien Life

The general design of alien life is the decision of the GM or available by random generation with the following tables.

REMEMBER
```
01  Roll number of Body Segments
02  Roll Symetry & Body Shape
03  Roll Posture
04  Roll Head Attachment, if any
05  Roll Manipulative Members & Shape
06  Roll Walking Members & Shape
07  Roll Face, Design, Senses
08  Roll Skin Covering & Texture
09  Roll Skin Color & Pattern
10  Roll Defence , Temperament
```

BODY SEGMENTS	(Roll a d100)		
RESULT	SEGMENTS	HEAD CHANCE	TAIL CHANCE
01-10	01	20%	10%
11-20	1	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		SYMITRY	
01-50	Distinctive	01-90	Bilateral
51-98	Fused	91-95	Quadralateral
99-00	Both	96-99	Trilateral
		00	Non Symetrical

POSTURE
```
01-75  Horizontal
76-95  Horizontal & Vertical
96-99  Vertical
  00   Vertical & 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	2 basic shapes
	96-98	Disproportioned
	99	Non Conventional
	00	Slightly Variable

HEAD ATTACHMENT		MEMBERS PER BODY SEGMENT	
01-25	Direct	01-50	Two Locomotive
26-85	Short Neck	51-75	Two Locomotive
86-95	Medium Neck		or Manipulative
96-99	Long Neck	76-95	Three Locomotive
00	Very Long	96-98	3 Manipulative
			or Locomotive
		99-00	3+ any combo.

ARM LENGTH		LEG LENGTH	
01-70	Short	01-70	Short
	(.25 of body span)		(.25 of body span)
71-85	Medium	71-85	Medium
	(.50 of body span)		(.50 of body span)
86-95	Long	86-90	Long
	(.75 of body span)		(.75 of body stan)
95-00	Very Long	95-00	Very Long
	(equal to body span)		(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     size of hand span.
  99   Tenticles
       2x d100 percent of body length without
       arms.  d100% of body length with arms.
  00   Pincers
       Two to 4 in symetry.
```

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 sem-usable thumb
99-00  Prehensile toes with usable thumb
```

FACIAL DISCRIPTON
```
01-90  Face in centralized area
91-99  Decentralized face
  00   Sensors where necesary
```

FACE STRUCTURE			TABLE B	
MOUTH	Roll a d8	on B	01	Nil
FACE	Roll a d6	on B	02	Very Small
NOSE	Roll a d10	on B	03	Small
EYES*	Roll a d10	on B	04	Medium
EARS	Roll a d10	on B	05	Large
TEETH	Roll a d6	on B	06	Very Large
			07	Covered Hole
SENSORY SPECIALS			08	Sensory Spot
01-04	Infared		09	Sensory Stalk
05-07	Radar		10	Antenna Stalk
08-09	Spacial Sense			
10	Smell		(*) d6 in quantity)	

SKIN TEXTURE		PROTECTIVE COVERING	
01-10	Velvet	01-25	None
11-20	Smooth	26-36	Fur, Thick or Thin
21-30	Rough	37-50	Hair, Thick or Thin
31-40	Sandpaper	51-60	Scale
41-50	Sharp	61-70	Feather
51-60	Leathery	71-80	Boney Platlets
61-70	Wrinkled	81-90	Shell / Capapice
71-85	Warty	91-95	Spines
86-90	Lumpy	96-98	Heavy Platelets
91-97	Knobby	99	Roll 2 Coverings
99-00	To Textures	00	Roll 3 Coverings

COLOR				PATTERN	
01	White	11	Purple	01	Solid Areas
02	Black	12	Grey	02	Spotted, large
03	Pink	13	Gold	03	Spotted, small
04	Tan	14	Silver	04	Belted
05	Brown	15	2 shades	05	Splotched
06	Orange	16	3 shades	06	Dotted
07	Red	17	4 shades	07	Stripes, small
08	Yellow	18	2 color	08	Stripes, large
09	Blue	19	3 color	09	Camoflage
10	Green	20	4 color	10	Seasonal Shift

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

LAW IN SPACE

The Interstellar Court of Law, ICL is the main peace keeping force throughout settled space. Many worlds subscribe to the laws and charters from this organization.

Because laws and regulations vary across colonies, alien worlds, and corporate planets a set of general laws is impossible. The following set of basic rules is designed to be used for most legal systems.

REMEMBER
01 Determine the severity of the offense.
02 Total 13 possible legal modifiers.
03 Add modifiers to a d100 roll and index the outcome by the type of dispute.
04 Pay fines, (and /or) serve time.

Severity

		MODIFIER
01	Defers charges to general claims and fines. No court case.	+20
02	Judge wonders why this was brought to court.	+15
03	Very Minor Offense	+10
04	Minor Offense	+05
05	Not Very Sereous Offense	0
06	Sereous Offense	-05
07	Very Sereous Offense	-10
08	Severe Offense	-15
09	Very Severe Offense	-20
10	Absolutely the most Severe Possible	-25

Judge & Jury

JUDGE			JURY		
01	Bored	-2	01	Bored	-3
02	Disinterested	-1	02	Disinterested	-2
03	Routine	0	03	Neutral	-1
04	Interested	+1	04	Interested	+1
05	High Interest	+2	05	High Interest	+2
06	Fascinated	+3	06	Fascinated	+3

Legal Aid

Roll a d6		DEFENSE LAWYER	PROSECUTION LAWYER
01	Incompetent	-3	+3
02	Not Very Competent	-2	+2
03	Somewhat Competent	-1	+1
04	Mostly Competent	+1	-1
05	Competent	+2	-2
06	Totally Competent	+3	-3

Witnesses

Roll a d6		WITNESS DEFENSE	WITNESS PROSECUTION
01	Incompetent	-3	+3
02	Not Very Competent	-2	+2
03	Somewhat Competent	-1	+1
04	Mostly Competent	+1	-1
05	Competent	+2	-2
06	Totally Competent	+3	-3

Politics

Roll a d6 Twice		RESULT 01-03 MODIFIER	RESULT 04-06 MODIFIER
01	No Involvment	0	0
02	Little Involvment	+1	-1
03	Some Involvment	+2	-2
04	Involvment	+3	-3
05	High Involvment	+4	-4
06	Political Intrigue	+5	-5

Evidence

		DEFENCE	PROSECUTION
01	None	+10	-10
02	Very Little	+05	-05
03	Evidence	+01	-01
04	Large Amount	-05	+05
05	Serious Evidence	-10	+10
06	Damaging Evidence	-15	+15

Bribes

		DEFENCE	PROSECUTION	JUDGE
01	Accepted	+10	-10	+10
02	Accepted	+05	-05	+05
03	Accepted	+03	-02	+02
04	Accepted	+01	+01	0
05	Rejected	-02	+05	-05
06	Rejected	-05	+10	-10

Other

		MODIFIER
01	Setting Precedent	+02
02	Popular Support (+05) Condemnation	-05
03	Predjudiced to Aliens, to Outsiders	-10
04	Difficult Case or Language Barrier	-05
05	Being Made an Example	-10
06	Unexpected Aid	+05

Outcome

CRIMINAL DISPUTES		FINE MODIFIER
01-10	Highest Punishment	+100%
11-25	Near Highest Punishment	+ 75%
26-50	Harsh Punishment	+ 50%
51-75	Standard Punishment	No
76-80	Lesser Than Normal Punishment	- 25%
81-90	Very Low Punishment	- 50%
91-98	Lightest Possible Punishment	- 75%
99-00	Case Thrown Out of Court	No

LEGAL RULINGS & PROPERTY SETTLEMENTS	
01-10	Highest Unfavorable Ruling
11-25	Near Highest Unfavorable Ruling
26-50	Highly Unfavorable
51-75	Unfavorable But Fair Ruling
76-80	Favorable Ruling
81-90	Very Favorable Ruling
91-98	Highest Favorable Ruling
99-00	Case Thrown Out of Court

FINES / COURT TIME
Multiply the severity level of the crime by a d10. Multiply the result by a second d10 roll. Time spent in court averages the severity level of the crime xd10 days.
PUNISHMENT
From primitive justice to sophisticated mind wipe, this is the decision of the GM.

Starports

Many of the worlds in FTL have orbital facilities for incoming starships. These range from the small system becon platform to the 10 mile diameter Fomalhaut dockyards.

FACILITY TYPE		PER	FUE	SHU	REP	CAR	TYP
A	No Port	-	-	-	-	-	-
B	Automatic Platform	-	A	B	A	A	B
C	Manned Platform	A	B	C	B	A	B
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	Orbital Star Port	F	F	F	D	E	E
J	Full Starport	G	F	F	E	F	F
K	Dockyards	F	F	E	F	E	E

PERSONEL   (PER)

A	Under 10	E	100 to 500
B	11 to 20	F	500 to 1000
C	21 to 50	G	1000 to 5000
D	51 to 100	H	5000 +

FUEL   (FUE)
- A Reserves Only
- B High Cost, Infrequent Supply
- C Occasional Availability
- D Schedualed Availability
- E Available
- F Available, 24 Hour Service

SHUTTLE SERVICE   (SHU)
- A Never
- B Only on Special Missions
- C Infrequent Shuttle Runs
- D Frequent Shuttle Runs
- E Constant Schedualed Runs
- F Commercial 24 Hour Service

REPAIR   (REP)
- A None
- B Minor Electrical Engineering
- C Minor Structural Repair
- D Repair, No Fabrication
- E Full Repair / Fabrication Specialized Service and Some Parts on Hand.
- F Full Construction and Repair

CARGO HANDLING   (CAR)
- A None
- B Drop Only, Prepackaged Landers
- C Drop Only, Prepackaging Facilities Available for Hire
- D Schedualed Dropping, Packaging And Pick Up Facilities
- E Two Way Bulk Cannister Service
- F Two Way Bulk Cannister and Broker Service Available.

PORT DESCRIPTION (TYP)
- A Private
- B Specialized, Non Commercial
- C Specialized, Commercial
- D Open Commercial Port, No Frills
- E Open Commercial Port With Some Recreational Facilities
- F Open Port, Star City Class, With Business, Lodgings, Food and Fun

Colonies

As starships dock and release their crews who have been too long in space, the ever present call goes out, "It's Groundhog Day".

What they find is generally up to the devious mind of the GM as aided by these tables on Colonial Life.

REMEMBER
- 01 Establish an orbital and ground port. There are no prerequisites for the efficency of the port as relating to the colonies society. As an Example, Fomalhaut has the best orbital port this side of Faxn'Chr. The miles long port has become a small moon of goods and services for settled space. The planet it orbits, "America" has a small Human Amish, Bloxian, and Human Mongolian population. It's ground port is only a class H where Fomalhaut is a Three star Class J/K.
- 02 Ports are also rated with a number to show information on a world and a second letter to show the worlds ground port facilities. EXAMPLE "Fomalhaut JK,08,H"

COLONIAL POPULATIONS AND PERSONALITIES

01 NATIVES 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 the port authority and visitors.

02 PRIVATE HOSTILE
In private ownership, this world is a "no trespassing" situation for visitors. Persons wealthy enough to own worlds often back up their no entry beacon with appropriate force.

03 CORPORATE HOSTILE
These are the company run worlds with the fenced off groundport facilities. They often do not allow outside contact with non-company personel.

04 COLONY HOSTILE
Settling off their home world for social or political reasons, these people would rather put a shotgun round into your shuttle than give you the time. Thinking theirs is the one true way, they go to pains to separate the "outsider" groundport from their populations.

05 NATIVE, APATHETIC
06 PRIVATE, APATHETIC
07 CORPORATE, APATHETIC
08 COLONY, APATHETIC
These are the fun places that make Toledo look like a Corporate Carnival City. Here the populations are too busy harvesting their new gritch crop to notice the alien visitors. As long as visitors obey laws, nobody cares.

09 NATIVE, FRIENDLY
10 PRIVATE, FRIENDLY
11 CORPORATE, FRIENDLY
12 COLONY, FRIENDLY
The true great places to visit. As long as characters don't ruin their day, these folks will aid and treat travellers with compassion and respect. (they enjoy the tourist trade)

Cargo Hauling

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

BULK CANNISTERS

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

PASSENGERS

Passengers are a variable cargo that may be demanding or working for transport. The average freighter can rent cannister sized passenger quarters for 500 d's per trip. These allow 1 passenger living space and life support for 2 months in emergencies. This non luxury hauling has a cost of 500 to 1000 credits unless the passenger works and can come to some other agreement with the ship's owner or captain. Ships may also be rented by private concerns, companies, universities, and the military.

Cargo Sale

Another way to make money is the outright purchase and sale of cargo. Determine cargo and general value. Most of these sales are handled by a licenced agent called a broker.

REMEMBER
01 Brokers work for 1000 d's or 2% of the value of the cargo sold.
02 A broker will try to sell a cargo as many times as possible. Each selling takes d6 days.
03 Only the GM knows the real honesty and ability of the broker.
04 After each failure at a sales attempt the brokers selling ability drops 5% on that cargo.
05 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. Auction costs 10% of final profits and works the way of a broker with a -10% chance of sales. There is no stopping an auction sale.

BROKER ABILITY

RESULT	SKILLS	SALES MODIFIER	CHANCE SWINDLE
01	Awful	-25%	50%
02	Bad	-20%	40%
03	Poor	-10%	30%
04	Below Average	-05%	20%
05	Average	0%	10%
06	Good	+05%	05%
07	Very Good	+10%	02%
08	Excellent	+15%	02%
09	Supurb	+20%	01%
10	The Best	+20%	01%

Specialized brokers add +5% to sales chances with higher fees. Don't forget planetary tax, cargo taxes, licences and other bureaucratic hassles.

Sale Result

Roll a d100 with modifiers

RESULT	MARKET	PROFIT
01-10	No Market	-10%
11-25	Bad Market	0%
26-50	Very Poor Saleability	3%
51-75	Low Average	5%
76-85	Average	5%
86-95	High Average	10%
96-97	Very High Demand	25%
98-99	Critical Demand	50%
00	Sold Immediately	100%

Cargo Mishap

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

RESULT	SHIPPING	
01-97	No Problems With Cargo	
98-99	Cargo Aggravation	Goto A
00	Cargo Mishap	Goto B

A MINOR PROBLEMS
01 Minor perishable item if food or drugs looses 10% of it's value.
02 Same as 1 with a 20% loss.
03 Difficulty with cargo licencing.
04 Difficulty with living cargo, if any.
05 Vandelism 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 authorities red tapes cargo sale for some reason.
10 Local black market takes an interest in your cargo's type or destination.

B MAJOR PROBLEMS
01 Major perishable item if food or drugs, looses 50% of it's value.
02 Supprise Perishable, Reduce it's value by d100% +20%.
03 Cargo mishap destroys d100% of cargo.
04 Licencing 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 concidered contriband and removed.
09 Cargo lost or stolen with a very long insurance battle to replace.
10 Glut on market makes cargo useless.

These general guidelines are expandable for any number of situations.

Insurance

Cargo can be insured by licenced agents for between 5 and 20 percent of it's value. This insurance will net d100 +20% (not to exceed 95%) of a cargo's value in return after a lengthly informative investigation. Insurance Corporations, by 2448, have made an art of claims collecting being hopelessly snagged by red tape. Settlement time is d10 (-1) years +d12 months. The average claims representitive is, or is aided by, a Zumwol with a 12 in accounting and few social graces.

Cargo

When starships reach port they usually register a flight plan and their availability to haul cargo to their next destination. The port local authority usually forewards this authority to a Broker / Cargo Network that offers the ship d6 hauling jobs per day.

01 Explosives
02 Prisoners
03 Petrolium Distilates
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)
12 Colonists (new Colony)
12b Colonists Equipment
12c Colonists Vehicles
13 Medical (EMR) Personell

14 Research Personell
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 Cangoods
28 Packaged Alcoholic Beverage
29 Beer, Bottled, Tank, Packet, or Freeze Dried Concentrate
30 Securities (valuables)

31 Drugs
32 Politicians
33 Fertilizer
34 Animal Feed
35 Specimines (living or dead)
36 Plants (live or seed)

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 Sealent 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 Cannisters
87 Textiles
88 Bulk Ores and Minerals
89 Mail
90 Survival Cannisters
91 Carpeting

92 Entertainment Equipment
93 Office Equipment
94 Research Equipment
95 Robots
96 Hydroponics Equipment
97 Nuclear Fuel or Waste

98 Heating, Cooling Equipment
99 Bulk Documents
00 Troops, Special (ICL) Police

Ben, Bells, & Quag

Finally in business after seven months of cleaning and general repair, the Wapakeneta is ready to recieve cargo.

In a sigh of exceptance, Ben checks off the cargo manifest of 39 10x10 cans of living Turkeys as they are loaded into a cargo area.

With a 13 light year trip planned Ben figures the turkeys have a net value of 19,500 d's in shipping value.

Ben, now believing this situation is for the birds, jumps ship.

By 2448 the science of Robotics has progressed to a fine art. As a utility and a hobby, robots are found in every aspect of work and leasure.

To simplify design and function, a standard control format was designed to make most robotics interchangable and easy to work with. The basic robot, in whatever form, has these control areas:

A Central Processing Unit
The main computer for function and logic. The more sophisticated the computer, the larger the slot number.
B Programming Cards
The programs that control the robots actions and skill abilities.

ROBOTICS

Programming Cards

Robots have special programming cards that correspond to learned skill levels. Each level of skill takes a single card. A robot with a skill level of 20 in electronic repair will have 20 cards. A defective or missing card stops the skill level at that point.

Robots have single operation cards for most motive and sensor functions.

Shape of robots depends on function and the owner's aesthetic sense. Design may fall between hulking and finely crafted.

CLASSES OF ROBOTS

WORK CLASS		HUMANOIDS	
A	Basic Work	M	Menial
B	Advanced Work	N	Characature
C	Specialized	O	Aid
G	Heavy Industrial	P	Secretary
I	Auto Hound Security	Q	Pet

Most interesting of the robots are the humanoids. These expensive designs have generally human features, movement and speech created by miniature programming cards.

TYPE	AVERAGE COST	#CARDS
Basic Work	15,000	40
Advanced Work	40,000	88
Specialized	60,000	110
Heavy Industrial	100,000+	50
Security Auto Hound	18,000	20
Menial	5,000	30
Characature	25,000	40
Aid	50,000+	75
Secretary	30,000	50
Pet	10,000+	20

REMEMBER

01 Robots are always programmed never to harm living beings.
02 Robots will protect themselves unless this rule contradicts the first rule.
03 A good programmer can make a robot do anything he wants the robot to do.
04 Starship Computers and Phase Navigation systems operate under this general system. Ships computers have card capabilities of 1000 cards per computer bank. The average ship has 1-100 of these computer banks. Cards may be in computer or stored. The smart ship owner has backups. Regular cards measure 3x5 inches, Mini 2x3 inches.
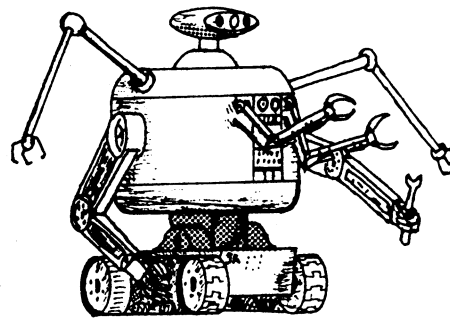
ROBOT PART	CARD NEEDED	AVERAGE EXPENSE
CPU 20 Slot Module 6x6x6 in	Y	100 d
CPU 20 Slot Mini-Module 3x3x3 in	Y	250 d
Programming Card, Skill 3x5 in		1000 d
Programming Card, Mini 2x3 in		2000 d
Optics or Infared 4x4x4 in ea.	Y	750 d
Radar or Sonar 4x4x4 in ea.	Y	960 d
Radiation 4x4x4 in ea.	Y	580 d
Taste or Smell 4x4x4 in	Y	800 d
Sound or Motion 3x3x3 in	Y	190 d
Wheels Per 2	Y	175 d
Treads Per 2	Y	240 d
Walker Per 4 Legs	Y	640 d
Hover	Y	340 d
Upright Walker* 2 Legs	Y	960 d
Mono Wheel*	Y	1300 d
*(need gyro) 6x6x6 in	Y	870 d
Battery 4x4x4 in (20 hour)		75 d
Recharger, Self 4x4x4 in	Y	120 d
Arms, Simple Per 2	Y	130 d
Arms, Complex Motion Per 2	Y	240 d
Hands, Simple Gripper Each		50 d
Hands, Complex Each	Y	460 d
Speech, mechanical tone 3x3x3	Y	110 d
Speech, modulated voice 3x3x3	Y	350 d
Personality (3x3x3)	Y	489 d
Link to Main Frame Computer 4x4x4	Y	240 d
Link to Owner (beeper) 3x3x3	Y	48 d
Self Repair Kit 2x3x5	Y	110 d
Strength per point		20 d
Dexterity per point	Y	20 d
Accuracy per point	Y	50 d
Agility per point	Y	150 d

Robot Programming Station			1200 d
Card Programming Station			2400 d
Blank Cards for Programming			40 d
Starship Computer Bank			40000 d
Starship Navigation Cards			1000 d
Starship Phase Computer			150000 d
Language Translator	Y		4000 d
Language Level Cards	Level	1- 5	500 d
	Level	6-10	900 d
Each card holds	Level	11-15	1000 d
5 language levels	Level	16-18	1200 d
at lower levels	Level	19	each 1500 d
	Level	20	each 2000 d
Home / Ship Maintainence Card			300 d
Ground Vehicle Auto Pilot Card			150 d
Ships Systems Cards (126 card set)			124000 d

Includes Maintainence, system's monitor, log, Communications, Crew, Cargo, and Health records.

DRUGS

Available to the populations of the 25th century are a variety of drugs for medicinal and general use.

Use of many of these drugs are controlled by the various governments.

Many weapons are available that launch darts for tagging, hunting, and drugging victims. These darts are special projectiles for injecting drugs that can be set for a specific penetration damage. Examples here are common varieties that effect most humanoid races in the same general way.

DRUG TYPE	LEGALITY OF DRUG	COST DOSE
ANPHEDAMINE	Semi	.50 d

Any of a wide variety of drugs that create increase in nervous and metabolic activity Most Common are Pep and Refresher Drugs.

DEPRESSANTS	Semi	.50 d

Drugs including depressants that slow nervous or metabolic activity. May be specific or over all for type of effect.

PSYCHEDELIC	No	7.00 d

Mind altering drugs that produce a mild to a sereous loss of contact with reality. May be a synthetic or natural chemical.

ANTIBOTIC	Yes	.50 d

Drugs that aid in the fighting of desease by adding a amall modifier on the critical rolls during infection.

ANTI BACTERIAL	Yes	.75 d

Bacterial destroying drugs that work much the same way as antibotics.

ADDICTIVE	No	20.00 d

Any number of drugs with the side effect of physical addiction to the drug.

PSI ENHANCING	No	4000.00 d

Dangerous drugs that increase the PSI potential, range, and WKP cost.

PSI DEPRESSING	No	80.00 d

Dangerous drugs that decrease PSI scanns and increase resistance to being probed.

MIND ENHANCING	Semi	5.00 d

Drugs that boost intelligence by .50xd4 over a short period of time.

TAILORED BIO SPECIFIC	Yes	2500.00 d

Drugs tailored to specific function and circumstances.

TAILORED NEURO SPECIFIC	No	10.00 d

These are the stun drugs that effect the nervous system in a variety of ways, mostly the paralization of specific areas of the brain or spinal nerves.

LIFE PROLONGATION	Yes	1.00 d

A wide variety of drugs that increase the natural life span by up to 100%. These drugs are administered to slow natural ageing.

ANTI SHOCK	Yes	2.00 d

Drugs that reduce death shock or improve resuscitation percentages.

HEALING	Yes	4.00 d

Natural and synthetic compounds that aid in the natural healing process.

Metabolic reactions to drugs may have a wide range of effects on slightly different metabolisms. When working with new drugs, roll a racial effect.

RESULT	EFFECT
01-50	Toxic as a d10 level poison
51-75	No effect
76-98	Minor effect, nausia, vomiting
99-00	Drug effect, goto table B

RESULT	B DRUG EFFECTS
01-50	Very minor effect, roll on drug type
51-75	Minor effect, roll on drug type
76-95	Moderate effect, roll on drug type
96-98	Strong Effect, roll on drug type
99	Very Strong Effect
00	Outstanding Effect

RESULT	TYPE		
01-70	Depressant	01-90	General
		91-98	Localized
		99	Neuro Specific
		00	PSI Depressive
71-95	Amphedamine	01-90	General
		91-95	Specific Area
		96-99	Anti Shock
		00	PSI Enhancer
96-99	Healative	01-50	Anti Bacterial
		51-75	Anti Biotic
		76-90	Bio Specific
		91-98	Healative
		99-00	Life Prolongation
00	Narcotic	01-75	Euphoric
		76-95	Psychedelic
		96-98	Addictive Euphoric
		99	Addictive Psychedelic
		00	Addictive Roll type

Food Values

TYPE	VALUE	TYPE	VALUE
Most Breads	1.00	Fresh Meat	2.00
Sweet Breads	2.00	Packaged Meat	1.50
Processed Bread	.75	Fish	2.00
		Fowl	1.50
Fresh Fruit	1.00	Canned Meat	1.00
Canned Fruit	1.50		
Nuts	1.00	Wine	1.00
Fresh Vegatables	1.00	Beer	1.50
Canned Vegetables	1.00	Booze (most)	.50
		Coffee (most)	.25
Rations (space)	4.50	Hot Chocolate	1.50
Rations (ground)	8.00	Milk (synthetic)	1.50
Reprocess Food	3.50	Milk (fresh)	2.00

By 2448 hightec tank farming and synthetic reprocessing have eliminated hunger where ever it was profitable to do so. Food processing machines can reconstitute food for any race in any form with reasonable accuracy in smell and taste.

Ben in the Galley

With stelth and the greatist expertice in engineering, Ben reprograms the Food O' Rama Deluxe Processing Computer to produce 80 proof rum cake.

As the first rum cake falls out of the hopper ben takes a bite and recoils in horror from the taste. Too late he realizes Bells has reprogrammed the system to produce Kymnar Honey Rum which is a minor vomiting agent to humans. Ben staggers out of the galley

BANKING FTL

With currencies changing from planet to planet and even country to country, a method had to be devised to allow commerce over settled space.

The result was the universal credit meter of the Star Bank of Seredin. This pocket sized computer has a permanent memory of transactions and available credit based not from precious metal or resource, but from man hours of labor.

REMEMBER

01 Credit meters may be used for person to person transactions by joining them and transfering credits.

02 Transactions may be transfered to printed form with any simple printer attachment.

03 Any attempt to alter or open or scann a credit meter wipes the credit and all information while triggering other meters in 500 ft to report tampering. The damaged meters serial number, credit info and ownership is transferred to civil authorities.

04 Credit meters are near practically indestructable.

05 For nostalgas sake most products and prices are price based on the former earth standard of metric currency.

100 Yen = 1.00 Dollar Terran
y   = Yen
d's = Dollars
h's = Dollars in Hundreds
t's = Dollars in Thousands
m's = Dollars in Millions
b's = Dollars in Billions

d's

Shopping FTL

STARSHIPS
Port Cost, Full Docking (Day)	d4 in t's
Parking Fee, Orbital Port (Day)	d6 in h's
Starship Inspection	d4 in h's

GROUNDPORT
Shuttle, Landing or Leaving	d4 in h's
Shuttle Inspection	d10 in t's

FUEL TYPES
Gigantic Unit	1725 in d's
Large Unit	800 in d's
Medium Unit	32 in d's
Small Unit	16 in d's
Shuttle Unit	8 in d's
Truck Unit	2 in d's
Small Vehicle Unit	1 in d's

VEHICLE
Shuttle (large)	100 in m's
Shuttle (medium)	50 in m's
Shuttle (small)	25 in m's
Lander	200 in t's
Atmospheric Entry Pod (emergency)	30 in t's
Small Jet (vtol)	18 in m's
ATV Truck	140 in t's
Truck (hover)	90 in t's
Truck	60 in t's
ATV Car	50 in t's
Car (hover)	20 in t's
Car	10 in t's

		d4 in t's

TRAVEL FARES
1st Class Starship	(light year)	1 in t's
Econo-Fare	(light year)	500 in d's
No-Frills Passage	(light year)	250 in d's
Cryo-Frozen	(trip)	1 in t's
Shuttle Rental	(day)	d4 in t's
Air Fare	(interorbital)	d4 in h's
Train	(surface)	d100 in d's
Express Tube Train	(subsurface)	d100 in d's
Bus Fare	(continent)	d100 in d's
Cab Fare	(mile)	.50 in d's
Truck Rental	(day)	d100 in d's
Rent-A-Hover Car	(week)	d100 in d's

VAC EQUIPMENT
Vac Suit	(emergency)	d10 in h's
Vac Suit	(light)	d4 in t's
Vac Suit	(standard)	d10 in t's
Vac Suit	(heavy)	d100 in t's
Exploration Suit	(very heavy)	4d100 in t's
Vac Armor	(powered)	d4 in m's
Automatic Suit Patch Feature		d10 in h's
Vac Travel Pack uses (180 unit equivilency of small vehicle fuel)		d20 in t's

WEAPONS
Pistol		d4 in h's
Pistol	(automatic)	d6 in h's
Laser Pistol		d6 in t's
Rifle		d10 in h's
Assault Rifle	(automatic)	d10 in h's
Laser Rifle		d10 in t's
Shotgun		d4 in h's
Assault Shotgun		d10 in h's
Most Weapon Rounds		d100 in y
Explosives, Case	(licenced)	d100 in t's
Ballistic Plastic Vest		2d100 in d's

GOODS AND SERVICES
Clothes, High Quality	2d100 in d's
Clothes, Discount Prices	d20 in d's
Boots, Shoes	d100 in d's
Backpack	d100 in d's
Tent (d100 per man sized)	d100 in d's
Arctic Clothing	d4 in h's
Air Filter Mask	d100 in d's
Breathing Pack (d100 hour)	d4 in h's
Personal Pocket Computer (secretary, info storage, audio / visual, voice activation & talks)	d6 in h's
Computer Program Cartridges	d100 in d's
Communicator Beeper (an audio-visual, didgital wrist chronograph that also can monitor life function and talk)	d4 in h's
Hotel	d100 in d's
Meal	d10 in d's
Coffee	d100 in y
Fifth Alcohol	d10 in d's
Case of Softdrink	d4 in d's
6 Pack Beer	d6 in d's
Can Vegetables	.50 in y
Ration Pack	d4 in d's
Tool Kit	4d10 in d's
Carpentry Kit (plastic / wood)	2d10 in d's
Metal Fabrication Tools	10d10 in d's

REPAIR & PROFESSIONAL SERVICES
Electronic Technician	2d10 d's hour
Shuttle Repairman	5d10 d's hour
Phase Technician	10d10 d's hour
Fusion Technician	10d10 d's hour
Lawyer or Accountant	4d10 d's hour
Medic	2d10 d's hour
Doctor	d100 d's hour
Psychiatrist	8d10 d's hour

Price Quality Multiplier:	Outstanding	x4.00
	Average	x1.00
	Sleeze	x0.75
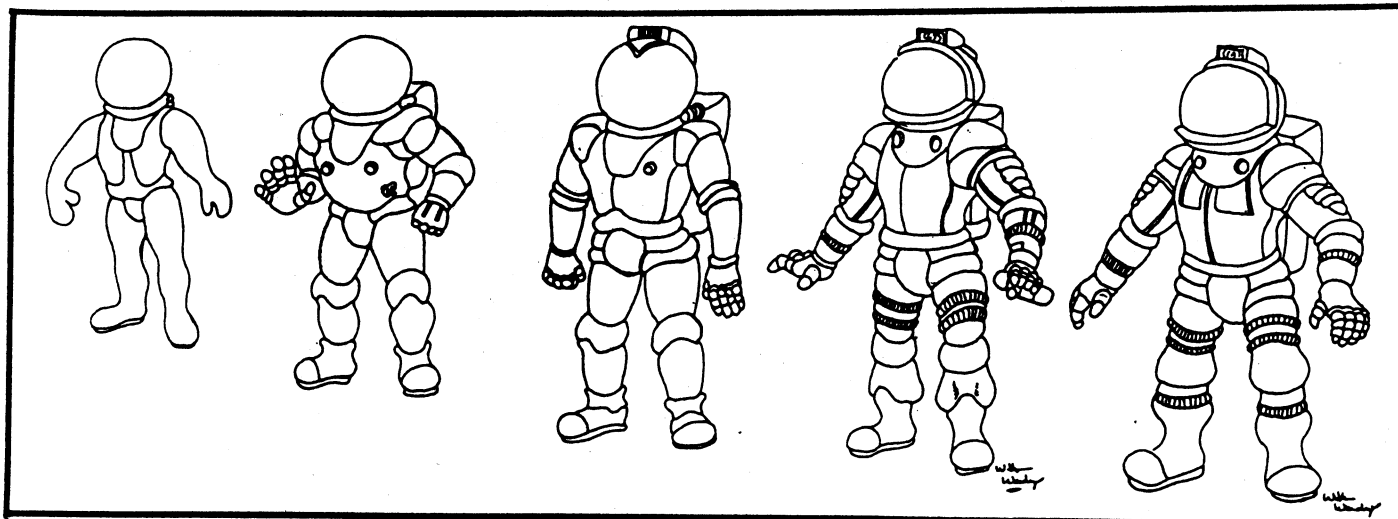
VAC SUITS

Emergency

HELMET: 10	CHEST PLATE: 12	BOOTS: 14
VISOR: 07	BACK PLATE: 12	GLOVES: 07
JOINTS: 08	BACK PACK: 16+	SUPPLY: A-F
YOLK: 10	FABRIC: 06	RESERVE: a

Light

HELMET: 14	CHEST PLATE: 16	BOOTS: 18
VISOR: 11	BACK PLATE: 12	GLOVES: 10
JOINTS: 12	BACK PACK: 18+	SUPPLY: A-F
YOLK: 14	FABRIC: 08	RESERVE a

Medium

HELMET: 18	CHEST PLATE: 20	BOOTS: 22
VISOR: 15	BACK PLATE: 16	GLOVES: 12
JOINTS: 16	BACKPACK: 21+	SUPPLY: A-F
YOLK: 18	FABRIC: 10	RESERVE: b

Heavy

HELMET: 21	CHEST PLATE: 24	BOOTS: 25
VISOR: 18	BACK PLATE: 20	GLOVES: 15
JOINTS: 20	BACKPACK: 25+	SUPPLY: A-F
YOLK: 21	FABRIC: 14	RESERVE: b

Exploration

HELMET: 25	CHEST PLATE: 28	BOOTS: 30
VISOR: 21	BACK PLATE: 24	GLOVES: 20
JOINTS: 24	BACKPACK: 30+	SUPPLY: A-F
YOLK: 25	FABRIC: 16	RESERVE: c

Armor

HELMET: 30	CHEST PLATE: 35	BOOTS: 40
VISOR: 25	BACK PLATE: 30	GLOVES: 25
JOINTS: 30	BACKPACK: 40+	SUPPLY: A-F
YOLK: 30	FABRIC: 20	RESERVE: c

Air Supply

	USE TIME	AIR RESERVE
A Tourist	20 hrs.	a: 10+ d10 minutes
B Light	40 hrs.	b: 20+ d10 minutes
C Work	72 hrs.	c: d4 hours +
D Heavy	6 days	
E Exploration	10 days +	d10 hrs.
F Recirculating	1 year +	d100 days

NPC Interaction

CHARISMA SCORE	MODIFIER TO AID	MODIFIER TO HINDER
01	-8	+5
02-04	-6	+4
05-07	-2	+2
08-10	0	0
11-13	+2	-2
14-16	+5	-4
17-18	+5	-6
19	+9	-8
20	+10	-10

FAST CHRISMA USE IN DEALING WITH NPS'S

When dealing with NPC'S the GM usualy determines the general hostility of the encounter or rolls a d10 on the chart below.

	GENERAL MOOD OF THE NPC	AID	HINDER
01-10	Outright hostile	05%	95%
11-25	Hostile	20%	90%
26-45	Semi-hostile	40%	80%
46-70	Neutral	50%	50%
71-85	Almost friendly	80%	40%
86-90	Friendly	90%	20%
91-98	Very friendly	95%	10%
99-00	Completely friendly	98%	05%

Being friendly or hostile does not Necessairly constitute a total direction of aditude. Even in extremely friendly situations a hinderance may happen. Roll on each table for a result.

HOSTILITY MODIFERS

01	Bribe with something valuable	+20%
02	Bribe with small sum	+10%
03	Persistant	-10%
04	Minor violance	-10%
05	Major violence	-20%
	+5% per skill level of interrigator.	
06	Blackmail	+20%

HINDERANCES
01 Wrong information
02 Temperament
03 Just trying to be helpful even when no information is available
04 Wants something in return
05 Sense of humor
06 Apathy

ROLL	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00
1	0	0	0	1	1	1	1	2
2	0	1	1	2	2	3	3	4
3	0	1	2	3	3	4	5	6
4	1	2	3	4	5	6	7	8
5	1	2	3	5	6	7	8	10
6	1	3	4	6	7	9	10	12
7	1	3	5	7	8	10	12	14
8	2	4	6	8	10	12	14	16
9	2	4	6	9	11	13	15	18
10	2	5	7	10	12	15	17	20
11	2	5	8	11	13	16	19	22
12	3	6	9	12	15	18	21	24
13	3	6	9	13	16	19	22	26
14	3	7	10	14	17	21	24	28
15	3	7	11	15	18	22	26	30
16	4	8	12	16	20	24	28	32
17	4	8	12	17	21	25	29	34
18	4	9	13	18	22	27	31	36
19	4	9	14	19	23	28	33	38
20	5	10	15	20	25	30	35	40
21	5	10	15	21	26	31	36	42
22	5	11	16	22	27	33	38	44
23	5	11	17	23	28	34	40	46
24	6	12	18	24	30	36	42	48
25	6	12	18	25	31	37	43	50
26	6	13	19	26	32	39	45	52
27	6	13	20	27	33	40	47	54
28	7	14	21	28	35	42	49	56
29	7	14	21	29	36	43	50	58
30	7	15	22	30	37	45	52	60
31	7	15	23	31	38	46	54	62
32	8	16	24	32	40	48	56	64
33	8	16	24	33	41	49	57	66
34	8	17	25	34	42	51	59	68
35	8	17	26	35	43	52	61	70
36	9	18	27	36	45	54	63	72
37	9	18	27	37	46	55	64	74
38	9	19	28	38	47	57	66	76
39	9	19	29	39	48	58	68	78
40	10	20	30	40	50	60	70	80
41	10	20	30	41	51	61	71	82
42	10	21	31	42	52	63	73	84
43	10	21	32	43	53	64	75	86
44	11	22	33	44	55	66	77	88
45	11	22	33	45	56	67	78	90
46	11	23	34	46	57	69	80	92
47	11	23	35	47	58	70	82	94
48	12	24	36	48	60	72	84	96
49	12	24	36	49	61	73	85	98
50	12	25	37	50	62	75	87	100
51	12	25	38	51	63	76	89	102
52	13	26	39	52	65	78	91	104
53	13	26	39	53	66	79	92	106
54	13	27	40	54	67	81	94	108
55	13	27	41	55	68	82	96	110
56	14	28	42	56	70	84	98	112
57	14	28	42	57	71	85	99	114
58	14	29	43	58	72	87	101	116
59	14	29	44	59	73	88	103	118
60	15	30	45	60	75	90	105	120
61	15	30	45	61	76	91	106	122
62	15	31	46	62	77	93	108	124
63	15	31	47	63	78	94	110	126
64	16	32	48	64	80	96	112	128
65	16	32	48	65	81	97	113	130
66	16	33	49	66	82	99	115	132
67	16	33	50	67	83	100	117	134
68	17	34	51	68	85	102	119	136
69	17	34	51	69	86	103	120	138
70	17	35	52	70	87	105	122	140

ROLL	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00
70	17	35	52	70	87	105	122	140
71	17	35	53	71	88	106	124	142
72	18	36	54	72	90	108	126	144
73	18	36	54	73	91	109	127	146
74	18	37	55	74	92	111	129	148
75	18	37	56	75	93	112	131	150
76	19	38	57	76	95	114	133	152
77	19	38	57	77	96	115	134	154
78	19	39	58	78	97	117	136	156
79	19	39	59	79	98	118	138	158
80	20	40	60	80	100	120	140	160
81	20	40	60	81	101	121	141	162
82	20	41	61	82	102	123	143	164
83	20	41	62	83	103	124	145	166
84	21	42	63	84	105	126	147	168
85	21	42	63	85	106	127	148	170
86	21	43	64	86	107	129	150	172
87	21	43	65	87	108	130	152	174
88	22	44	66	88	110	132	154	176
89	22	44	66	89	111	133	155	178
90	22	45	67	90	112	135	157	180
91	22	45	68	91	113	136	159	182
92	23	46	69	92	115	138	161	184
93	23	46	69	93	116	139	162	186
94	23	47	70	94	117	141	164	188
95	23	47	71	95	118	142	166	190
96	24	48	72	96	120	144	168	192
97	24	48	72	97	121	145	169	194
98	24	49	73	98	122	147	171	196
99	24	49	74	99	123	148	173	198
100	25	50	75	100	125	150	175	200
101	25	50	75	101	126	151	176	202
102	25	51	76	102	127	153	178	204
103	25	51	77	103	128	154	180	206
104	26	52	78	104	130	156	182	208
105	26	52	78	105	131	157	183	210
106	26	53	79	106	132	159	185	212
107	26	53	80	107	133	160	187	214
108	27	54	81	108	135	162	189	216
109	27	54	81	109	136	163	190	218
110	27	55	82	110	137	165	192	220
111	27	55	83	111	138	166	194	222
112	28	56	84	112	140	168	196	224
113	28	56	84	113	141	169	197	226
114	28	57	85	114	142	171	199	228
115	28	57	86	115	143	172	201	230
116	29	58	87	116	145	174	203	232
117	29	58	87	117	146	175	204	234
118	29	59	88	118	147	177	206	236
119	29	59	89	119	148	178	208	238
120	30	60	90	120	150	180	210	240
121	30	60	90	121	151	181	211	242
122	30	61	91	122	152	183	213	244
123	30	61	92	123	153	184	215	246
124	31	62	93	124	155	186	217	248
125	31	62	93	125	156	187	218	250
126	31	63	94	126	157	189	220	252
127	31	63	95	127	158	190	222	254
128	32	64	96	128	160	192	224	256
129	32	64	96	129	161	193	225	258
130	32	65	97	130	162	195	227	260
131	32	65	98	131	163	196	229	262
132	33	66	99	132	165	198	231	264
133	33	66	99	133	166	199	232	266
134	33	67	100	134	167	201	234	268
135	33	67	101	135	168	202	236	270
136	34	68	102	136	170	204	238	272
137	34	68	102	137	171	205	239	274
138	34	69	103	138	172	207	241	276
139	34	69	104	139	173	208	243	278
140	35	70	105	140	175	210	245	280

Metric Conversion

METRIC EQUIVALENTS

LENGTH

1	Inch	=	2.54	Centimeters or
			25.40	Millimeters
1	Foot	=	30.48	Centimeters
1	Yard	=	0.9114	Meters
1	Mile	=	1.61	Kilometers
1	Centimeter	=	0.3937	Inch
1	Meter	=	3.28	Feet or
			1.093	Yards
1	Kilometer	=	0.6214	Mile

WEIGHT

1	Ounce	=	28.35	Grams
1	Pound	=	453.60	Grams
1	Gram	=	0.03553	Ounce
1	Kilograms	=	2.206	Pounds

For these conversions you will need a pocket calculator or a little patience.

Reading

Burnham's Celestial Handbook,	Volumes 1-3
The Telescope and the World of	
Astronomy	(Riemer)
Drama of The Universe	(Abell)
Communication With Extraterrestrial	
Intelligence	(Sagen)
Other Worlds Than Ours	(Cade)
Is There Life On Other Worlds?	(Anderson)
Habitable Planets For Man	(Dol4)
"too many books to mention by"	(Asimov)
Frontiers of Astronomy	(Hoyle)
American Space Exploration	( )
Russians in Space	(Riabchikov)
Carrying The Fire	(Collins)
2000 pounds of NASA Handouts	(NASA)
Confrontation In Space	(Stein)
The Universe	(Time-Life)

MAGAZINES
 Icarus
 Astronomy
 Sky and Telescope
 Analog   Science Fiction / Science Fact
 Astounding   (1949-1961, became Analog)
 The Magazine of Fantasy and Science Fiction
 Omni
 Science Digest
 Playboy
 Isaac Asimov's Science Fiction Magazine

LIBRARIES
 University of Michigan Astronomy Library
                              Ann Arbor, Mi.
 Library of Congress
                              Washington, DC.
 Kresgee Library, Oakland University
                              Rochester, Mi.
 Southfield Public Library
                              Southfield, Mi.
 Tucholka Science Fiction Library
                              Madison Hts. Mi.

Ben, Bells & Quag

On Fomalhaut, Bells finds Ben in the Space Dragon's Den getting blasted. Without hesitation she picks him up by the collar and takes him back to Quagmire's starship.

On the ship, Ben is dragged in front of the Trell owner. Accepting his fate and the loss of a good bottle of scotch, Ben is totally suprised when Quagmire drops the captain's hat on his chest.

The bargin is struck. Ben and Bells and future crew run the company while Quagmire, the owner, runs the hydroponics room. Ben decides to stop drinking.

In the years that follow Ben, Bells, Quag, Chuckles, Gramps, Jigsaw the Vesh, Bendorf the Blox, and Jakson West prosper as they adventure and salvage across the frontiers of settled space.

Space Salvage

Johnathon Quagmire III
Listener to Invisible Airwaves
Ben Warren

Fomalhut Telcom 802

From the Novelettes by   Robert Sadler &
                         Richard Tucholka.

"The Ventura Odyssey"
"Anywhere But Space"
"Starheat"
"A Matter of Anti-Matter"
"The Disaster Crew"

Future FTL

FTL 2448 is the second in a series of games created along a timeline that runs between 1989 and 2776.

Look for future suppliments and a GM's shield.

FUTURE FTL SUPPLIMENTS

 EMR Emergency Medicine and Rescue in Space
 FTL Guide to Alien Flora and Faunna
 FTL Ship Plans Volume 1 to 4
 Kansas Class Blueprints
 The FTL Book of Alien Starflight
 FTL adventures and suppliment pages.

Fringeworthy

FTL and Fringeworthy have near identical playing systems and can work equally well together. While traveling the fringepaths check alternate platform +36 Ring #2 for the location to Santa Barbara California, 2448.

But remember, don't let the Mellor in.

Ship Status

SHIP NAME _____ TYPE _____ OWNER _____ REG NO. _____

PORT EMBARCATION _____ DESTINATION _____ FUEL TYPE ——

_____ to _____

MAIN TANKS _____

ENGINE %   A ☐   B ☐   C ☐   D ☐   RESERVE _____

PHASE %   A ☐   B ☐   C ☐   D ☐   DROP TANKS _____

CREW ROSTER

NAME	RACE	POSITION	SALARY
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FUEL USE
IN/OUT SYSTEM
IN PHASE
TOTAL USE
CARGO CANS
CANS DELIVERED
NO. PASSENGERS
CARGO FEES
PASSENGER FARES
OTHER
GROSS INCOME
EXPENSES
FUEL
DOCKING FEES
SALARY TOTAL
REPAIRS
TOTAL EXPENSE
NET INCOME

Cargo Manifests

NUMBER CARGO CAN{s}	SPECIFIC CARGO TYPE	CARGO FROM	CARGO TO	PRICE OF TRANSPORTATION	CARGO VALUE

Captain _____   Cargo Officer _____   (96) Page _____   Starship _____

WORLD MAP

GENERAL INFORMATION
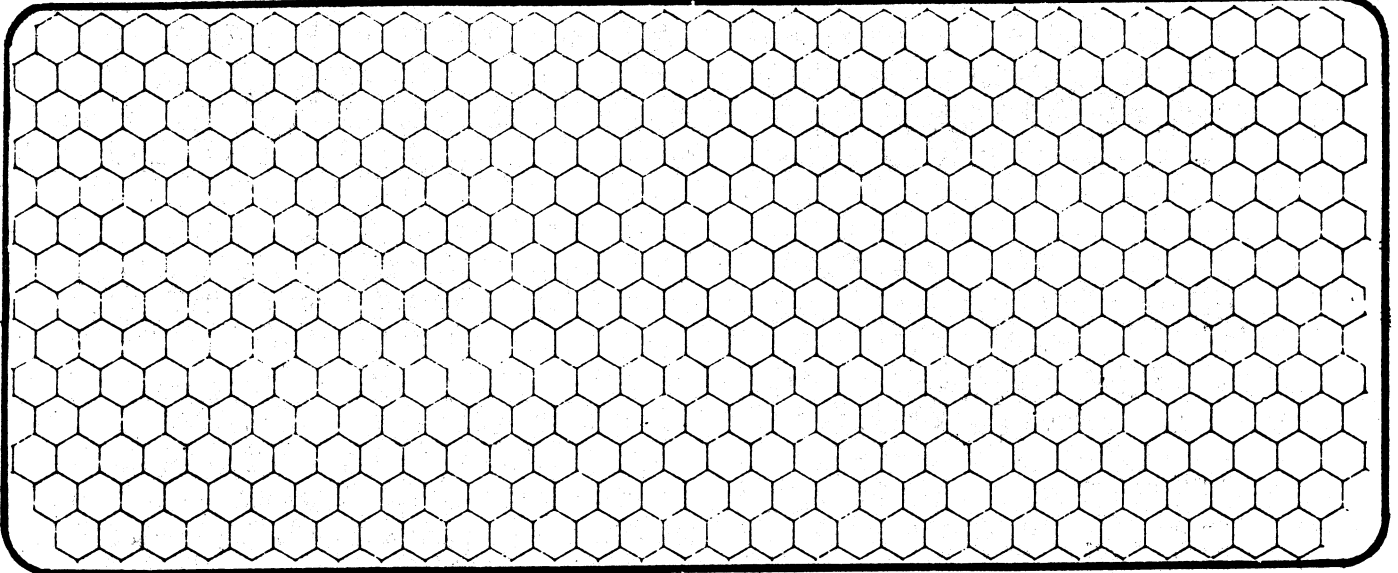
SPECIAL INFORMATION

ATMOSPHERE	GRAVITY
PRESURE	
SEASONAL TEMPERATURE	
WORLD SIZE	%HOH
LUMONISITY OF SUNLIGHT	
BIO COMPATABILITY	
GEOGRAPHY	
PLANTS	ANIMALS
RESOURCES	
FACILITIES	PORTS
STATUS	OWNERSHIP
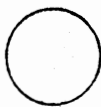
System Map

SYSTEM NAME   STAR NAME   LOCATION

STAR   A ZONE

B ZONE

C ZONE

D ZONE

EXPLORATION	SPECIAL INFORMATION

Quadrant Map

4 1
3 2

QUADRANT

A ZONE   B ZONE   C ZONE   D ZONE
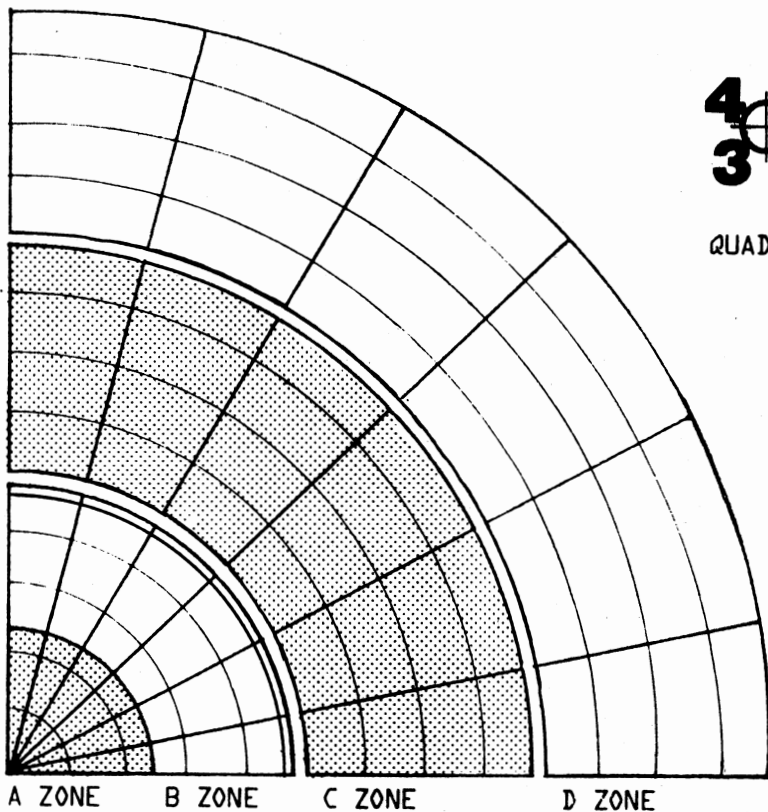
Quadrant Location / Planet

FUEL USE
Large Band   = 5 Slots
Small Band   = 2 Slots
Per Slot Crossed = 5 Fuel
Per Quad Band   =20 Fuel

c 1982 Tri Tac Inc.

Character Sheet   FTL 2448

CHARACTER NAME _____   RACE _____

OCCUPATION _____   WORLD _____

COMMAND _____   SEX _____ AGE _____

EXPERIENCE LEVEL _____ EXPERIENCE POINTS _____

STR _____ INT __/___ THR _____

CON _____ WIS _____ DOD _____

DEX _____ LCK _____ ACC _____

AGL _____ CRZ _____ WKP _____

SIZ _____ PSI _____ HPT _____

75% HPT [ ]

50% HPT [ ]

25% HPT [ ]

SKILLS	LEVEL	SKILLS	LEVEL	DAMAGE
_____	_____	_____	_____	_____
				CLAW
_____	_____	_____	_____	_____
_____	_____	_____	_____	
				BITE
_____	_____	_____	_____	_____
_____	_____	_____	_____	
				PUNCH
_____	_____	_____	_____	_____
_____	_____	_____	_____	
				LIGHT
_____	_____	_____	_____	_____
_____	_____	_____	_____	
				MEDIUM
_____	_____	_____	_____	_____
_____	_____	_____	_____	
				HEAVY
_____	_____	_____	_____	_____
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

Armor Map

NORMAL DRESS LOCATION	ARMOR	VAC SUIT / BATTLEDRESS LOCATION	ARMOR
		Helmet	
		Visor	
		Joints	
		Yolk	
		Chest Plate	
		Back Plate	
		Backpack	
		Gloves	
		Fabric	
		Boots	
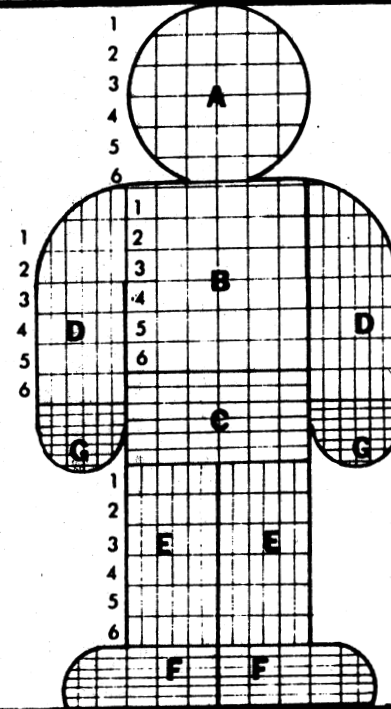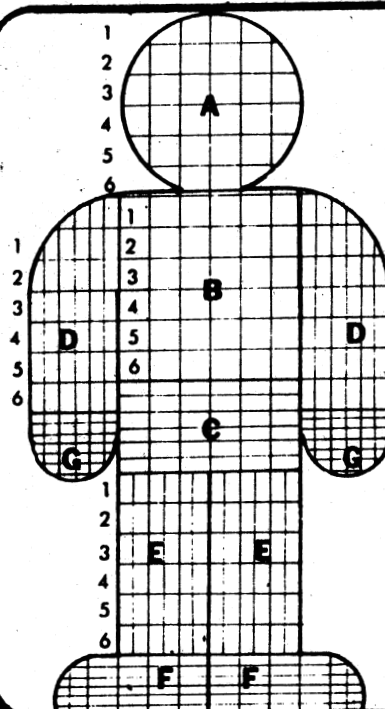
Special

Weapons

ROF	AMO	PB	VS	SH	ME	LO	VL
ROL	CYC						
CAP	WTE						
CIR	MIS	SPC					

ROF	AMO	PB	VS	SH	ME	LO	VL
ROL	CYC						
CAP	WTE						
CIR	MIS	SPC					

ROF	AMO	PB	VS	SH	ME	LO	VL
ROL	CYC						
CAP	WTE						
CIR	MIS	SPC					

FTL 2448

Hex Grid

□ □ □
□ □ □
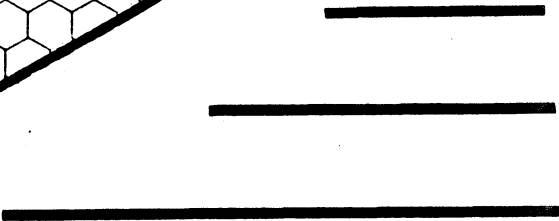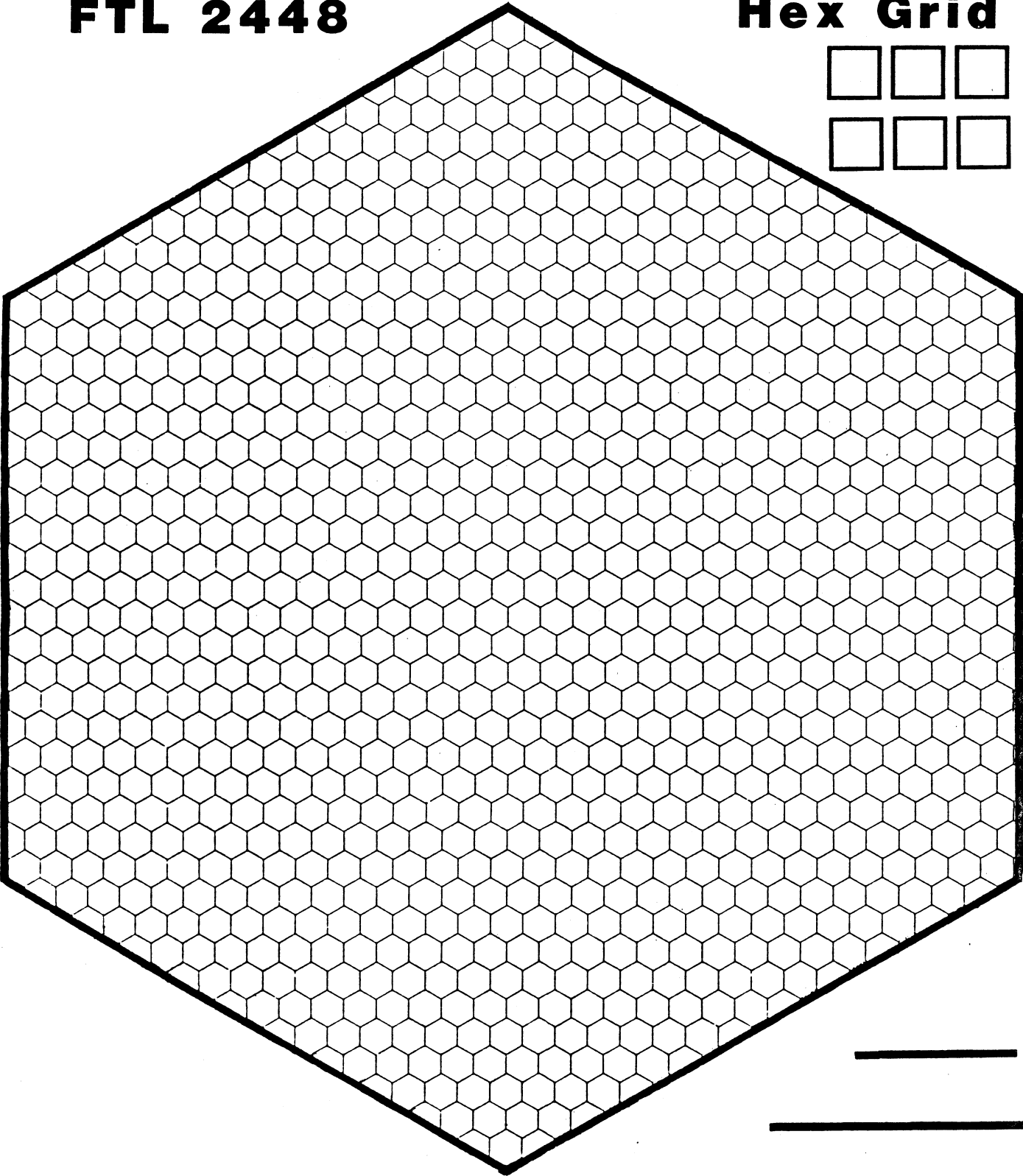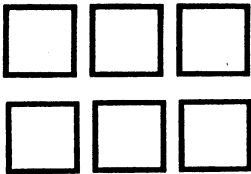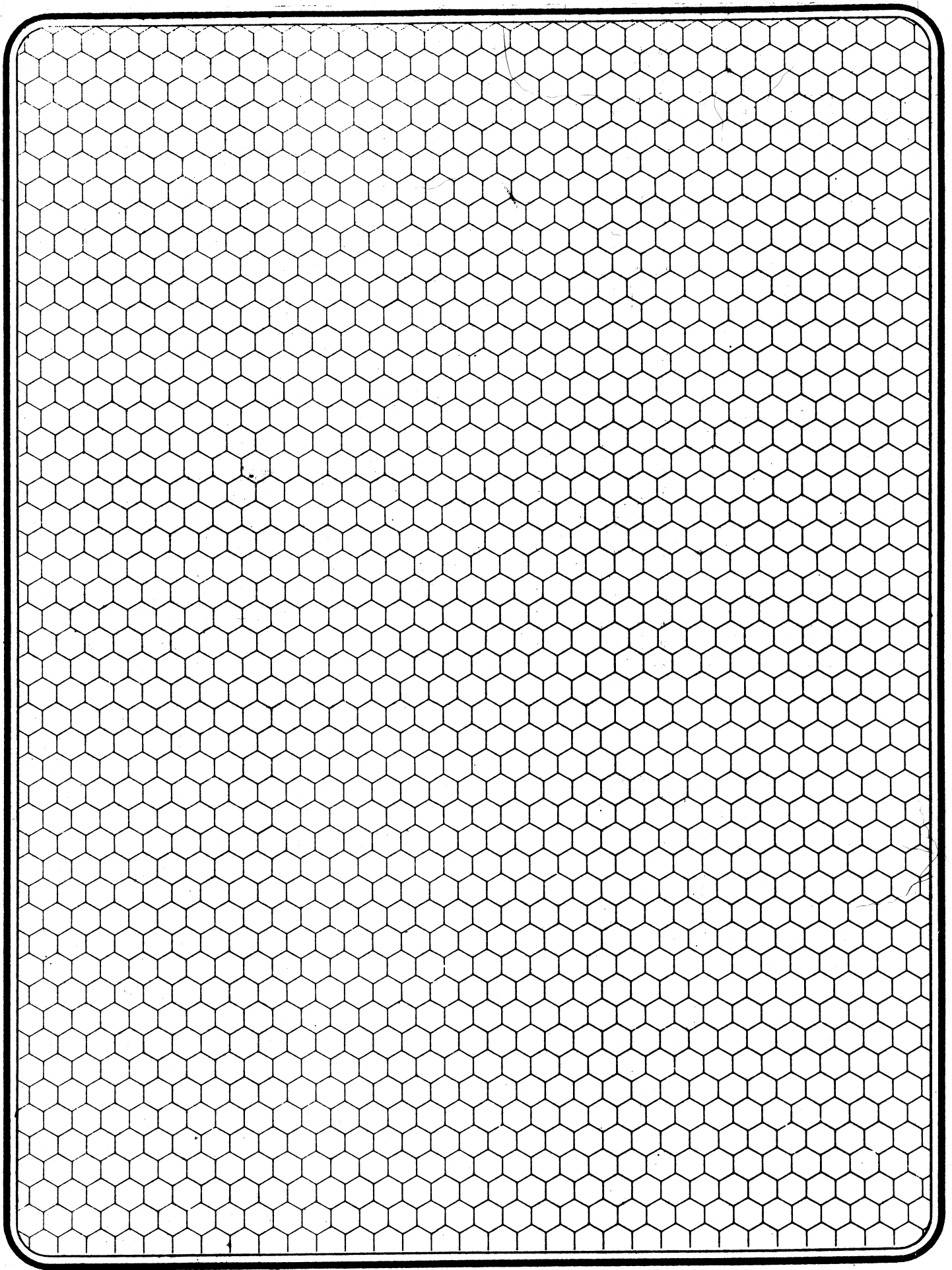
INCLUDING: SHIP DESIGN
ALIEN RACES
FUTURE HISTORY
SYSTEM GENERATION
AND MUCH MORE.

TRI TAC
INC.