

Book 5
High Guard

TRAVELLER

*Science-Fiction Adventure in
the Far Future*

Game Designers' Workshop

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High Guard
Traveller, Book 5

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This book is an additional volume in the rules to Traveller,
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To Commander Charles Arthur Miller, US Navy, Retired

Introduction

The force that rules the space between the stars controls both transportation and communication, and as a result, controls all intercourse between worlds. The instrument of such control is the Navy.

GENERAL BACKGROUND

An interstellar community operates under many unique restrictions, most notably the fact that it consists of many island-planets set in an ocean of vacuum. Such a society must control of that ocean. Its instrument is the Navy.

Traveller assumes a remote centralized government (referred to in this volume as the Imperium) possessed of great industrial and technological might; but due to the sheer distances and travel times involved within its star-spanning realm, the Imperium is unable to be everywhere at once. As a result, the Imperium allows a large degree of autonomy to its subject worlds, calling only for some respect for its overall policies, and for a united front against outside pressures.

To monitor the space lanes, the Imperium maintains a Navy. Because these forces can never be everywhere at once, local provinces (subsectors) also maintain navies, as do individual worlds. This three tiered structure of Imperial, subsector, and planetary navies produces a flexible system for patrolling space, while putting the limited resources of the Imperium to best use.

High Guard deals with the navies of the Imperium, of subsectors, and of worlds.

REQUIRED MATERIAL

Much of *High Guard* refers to rules and equipment found in *Traveller*. In addition to this book, the basic set of *Traveller* (Books 1, 2, and 3) is essential, as are at least two six-sided dice, paper, and pencil.

In addition, any number of materials may prove useful, depending on the exact nature of the *Traveller* campaign being run. They may include electronic calculators, miniature figures, hexagon or square grid paper, or the various other books, supplements, adventures, and games being published for *Traveller*.

DIE-ROLLING CONVENTIONS

The same die-rolling conventions used in previous volumes of *Traveller* are in force in *High Guard*. To briefly recapitulate:

Throw: That dice roll required to achieve a stated effect. If only a number is stated, it must be rolled exactly. A number followed by a plus (such as 7+) indicates that the number or greater must be rolled. Similarly, a number followed by a minus (such as 3-) indicates that the number or less must be rolled.

Number of Dice: Generally, a dice throw uses two six-sided dice. Throws requiring more (or fewer) dice are clearly stated. For example, where a throw calls for one die only, it would be stated 1D.

Die Modifiers: Die roll modifiers (abbreviated DM) are always preceded by either a plus or a minus. Thus, the notation DM +3 indicates that three is added to the die roll before it is used.

Naval Characters

The Navy is the primary star-faring armed force; its duties include the maintenance of peace and order throughout the spacelanes of the Imperium. Subsector and planetary forces assume such part of this burden as they are capable. *Traveller* Book 1 provides a character generation system suitable for general adventurer characters. For more experienced naval veterans, the following expanded procedure is provided.

BACKGROUND

The naval forces within the Imperium are divided into three general categories—Imperial forces, devoted to the central ruling Imperium and answering only to it; subsector forces, which patrol their individual subsectors, filling the gaps that the Imperial forces cannot handle; and local (planetary) forces raised to protect individual worlds. The distinctions between such forces are primarily those of size, resources, and duties.

ENLISTMENT

Any character beginning a naval career must be aware of three facts—the technological level of the Imperium (tech level 15), the technological level of the subsector he or she is in (taken as the technological level of the capital of the subsector unless otherwise stated), and the planetary characteristics of the character's home world. These factors influence which naval forces are available to the players.

The referee may always determine technological levels more in keeping with the specific campaign being played. In general, however, the technological level of the Imperium should not exceed 15. Space-faring navies are not possible at tech levels below 7, and star-faring navies are not possible at tech levels below 9.

Pre-Enlistment Options: The section on pre-enlistment options provides an individual the opportunity to attend college, a service academy, and even medical school prior to beginning naval service.

Procedure: With the above data, a character may decide to enlist in the navy. A throw to enlist is given for each of the three types. A character may attempt to enlist in any of the three types of navies; if unsuccessful, he or she may attempt to enlist in one of the others; and if unsuccessful there, may attempt enlistment in the remaining force. However, a character may only enlist in the planetary navy of his or her homeworld, or in the subsector navy of his or her home subsector. If there is no planetary navy on his or her homeworld, then that enlistment option is not open.

THROW TO ENLIST

Imperial Navy.9+
Subsector Navy.8+
Planetary Navy	7+

DM +1 if intelligence 8+
DM +2 if education 9+

ACQUIRING SKILLS AND EXPERTISE

Once a character has entered the navy, the following procedure is used to determine the experience and skills which are received.

Terms of Service: Upon enlistment, a character begins a term of service lasting four years. This adds four years to the character's age. Each time that a character re-enlists, it is for an additional four year term.

Each term of service is divided into four one-year assignments. Characters determine their assignment each year, and then resolve all actions pertaining to it. Upon concluding four assignments, a character has concluded one four-year term, and may attempt to re-enlist or elect to muster out.

Branches: When first enlisting, a character may choose one of the several branches of the Navy by consulting the branch selection table. Once a branch is selected, transfer to another branch is extremely difficult.

BRANCH SELECTION

<i>Enlisted</i>	<i>Officer</i>
0 Technical Services	Technical Services
1 Crew	Line
2 Crew	Line
3 Engineering	Engineering
4 Engineering	Gunnery
5 Gunnery	Line
6 Gunnery	Flight
7 Medical	Medical

The six branches in the Navy are Flight, Engineering, Medical, Gunnery, Technical Services, and the Line. The Line is a generalized duty branch for officers; its equivalent for enlisted personnel is called Crew. The Technical Service Branch exists only in the Imperial Navy.

DMs: +2 if education 9+. +2 if intelligence 10+. - 2 if Imperial Navy.

Automatic: Medical if commissioned from medical school. Flight if flight school graduate. Choice if Social 9+.

Selection of branches occurs upon initial enlistment and upon commissioning. One die is rolled and the branch table is consulted;

DMs for education and intelligence may be applied (at the character's option). The result is the branch to which the individual is assigned. However, several exceptions apply— any medical school graduate receives his or her commission in the medical branch, and any flight school graduate receives his or her commission in the flight branch. An individual receiving a commission as a result of OCS must select the same branch previously held, or a branch in which he or she has received cross-training. But, any individual with a social standing of 9+ may select any branch desired.

The only way that characters may change branch is to re-enlist in a different branch at the end of a four-year term. Such re-enlistment in a different branch is possible only if the individual has received cross-training in the new branch at some prior time during his or her career.

Basic and Advanced Training: The first one-year assignment of a character's first enlistment consists of combined basic and advanced training. The individual receives two skills rolled on the branch skill table and does not undergo the normal assignment resolution procedure. An individual entering the service as an officer spends his or her first assignment at basic and advanced officer training and receives two skills rolled on the branch skills table or the officer staff skills table; such training is in lieu of the first normal assignment resolution. Officers receiving their commissions from OCS do not undergo this training.

Assignments: Each one-year assignment is resolved separately. Resolution is a three-step procedure— officers determine if they will hold a command in the

current assignment, the specific assignment is selected, and that assignment is resolved in terms of survival, decorations, promotions, and skills.

1. Command Determination (Officers Only): Any officer may (but is not required to) consult the command duty table on an attempt to be placed in a command position. For each branch, a throw (on two dice) is indicated: achieving that throw places the officer in a command position; failing the throw places the officer in a staff position. Electing to not consult the table results in an automatic assignment to a staff position.

2. Specific Assignment: The character consults the specific assignment table to determine the type of duty to be performed during the one-year term. Such assignments include shore duty, training, battle, siege, strike, patrol, and special duty. Roll two dice and determine the result from the table.

3. Resolution: Every assignment (except special duty) calls for four results—survival, decorations, promotions, and skills.

Survival: Any assignment may pose some danger of injury or death. To survive a unit assignment, the character must throw the indicated number or higher on two dice. If the indicated number is thrown exactly, the character has received a wound or injury; if the injury occurs while serving in a battle or strike assignment, it is officially classed as a combat wound and the character is awarded the Purple Heart.

A character may elect to take a negative DM on his or her survival roll and then apply it as an equal positive DM for decorations in the next step.

Decorations: Characters may receive decorations for their heroism. If a character rolls the indicated number or higher, he or she is awarded the citation for Meritorious Conduct Under Fire (MCUF). If the character rolls a number at least three higher than the stated number, he or she receives the Medal for Conspicuous Gallantry instead. If the player rolls at least six higher than the number indicated, he or she receives the Starburst for Extreme Heroism instead.

If a negative DM was taken on survival, an equal positive DM may be used to attempt to win a decoration. For example, a character might elect to take a DM of - 2 for survival, thus increasing the chance that the throw will not be achieved. If he or she survives nonetheless, then a DM of +2 is allowed when rolling for decorations. The reverse of this procedure (positive DMs for survival and then forgoing decorations because of the negative DM) is not allowed.

Promotion: A character may receive a promotion by throwing the indicated number or greater on two dice. Where a number is listed in parentheses, officers may not roll for promotion. Normally, an officer may not receive more than one promotion per four-year term; but, the fact of receiving a commission (through OCS, for example) does not prohibit the receipt of a promotion during a term, and the automatic promotion given a naval attache does not prohibit the receipt of another promotion during the term. Enlisted men and petty officers may be promoted as often as once per assignment. Petty officers may not be promoted beyond the rank of E9 except through attendance at OCS. The table of ranks indicates the various levels which promotion will bring.

The promotion throw is subject to a DM based on decorations. If the character has received one or more decorations in the current four-year term, then the following DMs are allowed: per MCUF, +1, per MCG, +2, per SEH, +3. No DM is allowed for receipt of a Purple Heart.

Skills: A character may receive skills as a result of his or her assignment. If the

character rolls the indicated number or higher, then he or she becomes eligible for one skill, to be determined immediately.

The types of skills available depend on the character's rank and the nature of the assignment performed. Any personnel may roll on the navy life skills table or on the appropriate branch skills table. Petty officers may elect to roll on the petty officer skills table instead. Officers holding a command position may roll on the command table instead; officers in staff positions may roll on the staff table instead. Any character serving in training or shore duty assignments may roll on the shore duty table; characters not performing training or shore duty may roll on the shipboard life table.

Retention In Assignment: Each assignment lasts one year, and, normally, a character is eligible for reassignment at the end of that year. The realities of ship availability mean that new assignments may not be available; and the character will be forced to remain in his or her present assignment. At the end of each assignment roll one die— if the result is a 6, then the next assignment will be the same as the previous one.

Some exceptions and conditions exist. A person cannot be retained in the same assignment more than once in succession. A person cannot be retained in the same assignment involuntarily at the end of a four-year term, even if he or she re-enlists. Retention cannot occur on special duty.

SPECIAL DUTY

Personnel may be assigned to special duty by the specific assignment table. In this event, consult the special duty table under the correct column.

For Enlisted Personnel and Petty Officers—

1. Cross-Training: The character may roll once on the branch skills table in any other branch. He or she further notes the fact of cross-training in that branch. An individual cross-trained in a branch may re-enlist in that branch at the conclusion of a four-year term, providing the re-enlistment throw is made.

2. Specialist School: The character has been selected to attend a school in a specific field. The character has some control over which school he or she attends; prior to rolling the die, a DM of from 0 to +6 may be chosen, and then applied to one six-sided die. Consult the specialist school table; one level of expertise in the indicated skill is received.

SPECIALIST SCHOOL

- 1 Administration
- 2 Medical
- 3 Liaison
- 4 Mechanical
- 5 Electronics
- 6 Gravities
- 7 Vehicle
- 8 Navigation
- 9 Computer
- 10 Ship's Boat
- 11 Communications
- 12 Vacc Suit

3. Recruiting: The character has been assigned to recruiting duty and receives one level of recruiting skill. In addition, on a die roll of 4, 5, or 6, the character receives one level of administration skill.

4. Gunnery School: The character has been selected to attend weapons school for training in ship's weaponry. The character may receive up to six skills as a result. Roll 5+ on one die for each of

the following aspects of gunnery skill: Ship's Lasers, Ship's Missiles, Ship's Particle Accelerators, Ship's Energy Weapons, Meson Weapons, and Screens.

NAVAL CHARACTER GENERATION TABLES

COMMAND DUTY

<i>Officer Branch</i>	<i>Throw</i>
Line	7+
Flight	8+
Gunnery	9+
Engineering	10+
Medical	11+
Technical Services	12+

DMs: If rank O2 or less, -2. If rank O4 or less, -1. If social standing 11+, +1. If intelligence 7-, -1. If education 7-, -1.

Note: This table is used only by commissioned officers (rank O1+).

SPECIFIC ASSIGNMENTS

<i>Die Roll</i>	<i>Assignment</i>
2	Battle
3	Shore Duty
4	Siege
5	Strike
6	Patrol
7	Training
8	Patrol
9	Strike
10	Shore Duty
11	Special Duty
12	Special Duty

DM: If college educated and non-commissioned, DM +1.

SPECIAL DUTY

<i>Die Roll</i>	<i>Enlisted Ranks</i>	<i>Die Roll</i>	<i>Officer Ranks</i>
1	Cross-Training	1	Cross-Training
2	Specialist School	2	Intelligence School
3	Recruiting Duty	3	Recruiting Duty
4	Gunnery School	4	Naval Attache/Aide
5	Engineering School	5	Command College
6	Officer Candidate School	6	Staff College
7	Officer Candidate School	7	Staff College

DM: Any individual with a social standing of 11+ or a college education may elect to take a DM of +1. This DM is optional, and not cumulative.

TABLE OF RANKS

<i>Rank</i>	<i>Enlisted Rank</i>	<i>Rank</i>	<i>Commissioned Rank</i>
<i>Abbreviation</i>	<i>Title or description</i>	<i>Abbreviation</i>	<i>Title or description</i>
E1	Spacehand Recruit	O1	Ensign 1
E2	Spacehand Apprentice	O2	Sublieutenant 1
E3	Able Spacehand	O3	Lieutenant 2
E4	Petty Officer Third Class	O4	Lieutenant Commander 3
E5	Petty Officer Second Class	O5	Commander 4
E6	Petty Officer First Class	O6	Captain 5
E7	Chief Petty Officer	O7	Commodore 5
E8	Senior Chief Petty Officer	O8	Fleet Admiral 6
E9	Master Chief Petty Officer	O9	Sector Admiral 6
		O10	Grand Admiral 6

Notes: Individuals holding commissions (ranks O1 through O10) are termed officers; all other ranks (E1 through E9) are called enlisted personnel (or ratings). Petty officer should not be confused with officer in the commissioned sense.

The number following commissioned rank is the equivalent Traveller rank from Book 1.

NAVAL CHARACTER GENERATION TABLES

ASSIGNMENT RESOLUTION

Line/Crew:	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	auto	4+	4+	5+	6+	6+
Decoration	none	12+	11+	10+	7+	6+
Promotion	(6+)	(7+)	7+	8+	7+	6+
Skills	7+	7+	6+	6+	5+	5+

DMs: For survival, DM +1 if any branch skill level is 2+. For promotion, DM +1 if education 8+; DM +1 if social standing 9+.

Flight:	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	3+	3+	3+	3+	3+	4+
Decoration	none	none	10+	9+	9+	8+
Promotion	none	11+	11+	10+	9+	9+
Skills	7+	none	7+	7+	6+	6+

DMs: For survival, DM equals pilot expertise level. For decoration in battle or strike, DM equals Traveller Book 1 rank number. Remember the trade-off of survival for decoration, and decoration for promotion (see page 4).

Gunnery:	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	auto	3+	4+	5+	5+	6+
Decoration	none	12+	11+	10+	9+	7+
Promotion	(6+)	(6+)	8+	8+	7+	6+
Skills	8+	none	7+	5+	6+	6+

DMs: For promotion, DM +1 if dexterity 9+. For decoration, DM +1 if dexterity 10+.

Engineering	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	auto	auto	3+	4+	5+	5+
Decoration	none	none	12+	11+	7+	7+
Promotion	(7+)	(7+)	5+	8+	6+	6+
Skills	7+	8+	6+	7+	6+	5+

DMs: For survival, DM +1 if engineering skill 4+.

Medical	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	auto	auto	3+	3+	3+	4+
Decoration	none	none	none	none	11+	10+
Promotion	(7+)	6+	7+	8+	6+	6+
Skills	8+	6+	7+	7+	7+	6+

DMs: For promotion, DM +1 if medical skill 5+.

Technical	<i>Training</i>	<i>Shore Duty</i>	<i>Patrol</i>	<i>Siege</i>	<i>Strike</i>	<i>Battle</i>
Survival	auto	3+	3+	3+	3+	3+
Decoration	none	none	none	none	9+	8+
Promotion	(7+)	8+	9+	8+	7+	7+
Skills	7+	8+	9+	7+	7+	7+

DMs: For promotion, DM +1 if any branch skill 3+.

SERVICE SKILLS

<i>Die</i>	<i>Navy</i>	<i>Shipboard</i>	<i>Shore Duty</i>	<i>Petty</i>	<i>Command</i>	<i>Staff</i>
<i>Roll</i>	<i>Life</i>	<i>Life</i>	<i>Life</i>	<i>Officer</i>	<i>Officer</i>	<i>Officer</i>
1	Brawling	Gambling	Carousing	Vacc Suit	Vehicle	Computer
2	+1 Stren	+1 Dext	Vehicle	Blade Cbt	+1 Endur	Electronic
3	Carousing	Blade Cbt	Fwd Obs	Gun Cbt	Gun Cbt	Gun Cbt
4	Gambling	Mechanical	Vacc Suit	Mechanical	Ship's Boat	Admin
5	+1 Endur	Ship's Boat	Liaison	Medical	Pilot	Bribery
6	+1 Dext	Vacc Suit	Vehicle	Leader	Ship Tactic	Ship Tactic
7	+1 Endur	Zero-G Cbt	Fwd Obs	Zero-G Cbt	Leader	Fleet Tactic
8	+1 Educ	Commo	Survival	+1 Educ	+1 Soc	+1 Intel
9	Carousing	Admin	Vacc Suit	Instruction	Leader	Ship Tactic
10	Vacc Suit	Jack-o-T	Battle Dress	Admin	Ship Tactic	Fleet Tactic
DMs:	+4 if O1+	+4 if O1+	+1 if O4+	+2 if E5+	+2 if O4+	+2 if O4+
Note:	O and E prefixes refer to ranks.			+4 if E7+	+4 if O7+	+4 if O7+

BRANCH SKILLS

<i>Die</i>	<i>Branch</i>					
<i>Roll</i>	<i>Line/Crew</i>	<i>Flight</i>	<i>Gunnery</i>	<i>Engineering</i>	<i>Medical</i>	<i>Technical</i>
1	Mechanical	Vacc Suit	Fwd Obsv	Mechanical	Admin	Mechanical
2	Electronic	Admin	Gun Cbt	Electronic	Jack-o-T	Mechanical
3	Gun Cbt	Gun Cbt	Commo	Engrng	Electronic	Electronic
4	Navigation	Commo	Computer	Mechanical	Admin	Electronic
5	Computer	Ship's Boat	Gunnery	Vacc Suit	Medical	Computer
6	Liaison	Navigation	Gunnery	Engrng	Computer	Computer
7	Zero-G Cbt	Pilot	Gunnery	Engrng	Medical	Gravities
8	Vacc Suit	Pilot	Gunnery	Engrng	Medical	Jack-o-T
DMs:	No DM if planetary Navy; +1 if subsector Navy; +2 if Imperial Navy.					

5. Engineering School: The character has been selected for training in ship's drives. He or she may receive up to four skills as a result. Roll 5+ on one die for each of the following skills: Mechanical, Electronics, Gravities, and Engineering.

6. Officer Candidate School (OCS): The character has been sent to OCS, and has been commissioned as an ensign (rank O1). The individual receives a commission in his or her original branch, unless social standing is 9+, in which case a choice of any branch is allowed, or unless he or she has received cross-training in another branch, in which case that branch may be chosen. Roll once on the officer command skill table, once on the officer staff skill table, and once on the appropriate branch skill table.

If a character is over age 34, then regulations prohibit attendance at OCS. The character must re-roll on the special duty table; if OCS is again received, a waiver has been granted, and attendance is allowed.

For Commissioned Officers—

1. Cross-Training: The character has been assigned to duty in another branch for the current one-year assignment. Roll on the branch selection table for officers, re-rolling if the individual's current branch is received as a result. Continue to resolve the one-year assignment normally in the new branch. The individual reverts

to his or her old branch at the end of the assignment.

2. Intelligence School: The character has been sent to Naval Intelligence School and may receive up to five skills. Roll 4+ (on one die) for each of the following skills: Forgery, Gun Combat, Bribery, Streetwise, and Interrogation.

3. Recruiting Duty: The individual has been assigned recruiting duty and receives an automatic recruiting skill.

4. Naval Attache/Aide: The player rolls one die: on a result of 1 through 4, the character has been assigned as a naval attache, receiving an automatic promotion to the next higher rank, and an increase of +1 Social Standing. On a result of 5 or 6, the character has been assigned as an aid to an officer of flag rank (an officer of rank O7 through O10). He or she receives an increase of +1 Social Standing and may select his or her next assignment, specifying command and specific assignment (and if special duty—specific type, but not attache or aide).

5. Command College: The character has been assigned to the Naval Command College and may acquire up to three skills. Roll 4+ (on one die) for each of the following skills: Ship Tactics, Fleet Tactics, Leader, and Administration.

6. Staff College: The character has been assigned to Naval Staff College and may receive up to four skills. Roll 4+ (on one die) for each of the following skills: Fleet Tactics, Administration, Liaison, and Computer.

Multiple School Assignments: Characters may receive several assignments to the same school, being considered to be taking refresher courses in the listed skills. If a character already has a skill level of 3+ in any one or more skills offered by the school, then the assignment is instead to the school as an instructor; instead of the stated skills, the individual receives an automatic Instruction skill.

RE-ENLISTMENT AND MUSTERING OUT

After completing four one-year assignments, a player has completed one term and may attempt to re-enlist. Re-enlistment is allowed on a throw of 6+; a DM of +1 is allowed for any petty officer (rank E4+) or officer (rank O1+). If the die roll is 12+, then the individual is required to re-enlist.

Re-enlistment in a Different Branch: Characters may not re-enlist in a different branch unless cross-trained in the desired branch. If cross-trained, the individual may re-enlist at the beginning of the new four-year term of service.

Short Terms: If an individual has begun his or her term of service at an age which conflicts with normal procedure, then he or she must re-enlist or muster out at the next correct age (22, 26, 30, etc) even if the term will be shorter than 4 years.

Mustering Out: At the conclusion of a character's last term, all mustering out benefits are received as described in Traveller Book 1.

Retirement: Retirement is treated as indicated in Traveller Book 1.

Aging: Aging is conducted in accordance with Traveller Book 1.

Term Skills: Skill eligibility indicated in this book is in lieu of skill eligibility indicated in Book 1.

SKILLS

Most skills called for by this character generation system appear in Traveller Book 1. The fifteen skills presented here are entirely new skills, or vary significantly from the definitions in Book 1.

General Description

Blade Combat: Blade combat is a specific military skill in the use of edged weapons in combat.

Carousing: The individual is a gregarious and sociable individual, well-adapted to meeting and mingling with strangers in unfamiliar surroundings.

Communications: The person is trained in the use, repair, and maintenance of communications devices.

Fleet Tactics: The individual has been trained in the use of formations and maneuvers in naval operations.

Gravities: The individual has skill in the use, operation, and repair of gravitic devices.

Gun Combat: Gun combat is a specific naval skill in the use of one of several naval small arms.

Specific Game Effects

Characters who acquire a blade combat skill immediately receive one level of skill in one of the following: Dagger, Blade, Cutlass, Foil, or Sword.

All blade combat skills are used as described in Traveller Book 1.

Characters with the social skill of carousing enjoy meeting and dealing with other people. Any level of skill allows a DM of +1 on the roll for a patron encounter; half of any carousing skill level (round fractions upward) serves as a DM on the reaction table when used initially by the patron. Carousing is also usable when meeting individuals as potential hirelings.

While nearly anyone can press the button and make a communicator function, this skill is necessary to understand why the device does not work correctly, or to be aware of the details of limitations of its use.

When an individual is using a communicator for contact with an individual of similar skill, the chance that such communication will be detected is reduced by the average skill level of the two. Communications skill also enhances the ability to jam or evade jamming, and to make minor repairs in emergencies.

Fleet tactics is a skill used by individuals in command of groups of two or more space or star ships. It basically serves as a DM in space combat between fleets; its use is described in the section on space combat in this booklet.

Gravitic items are those devices which utilize the principles of anti-gravity, including air/raft lift modules, grav belts, grav sleds, and grav tanks. This skill is a DM required to understand, repair, assemble, or operate. Complex devices will also require a certain level of education or intelligence.

Referee: specific throws for specific situations must be generated. Obviously some throws will be harder than others, and many may be impossible without an accumulation of DMs based on expertise, education, intelligence, dexterity, and the availability of tools and parts.

Characters who acquire a gun combat skill must immediately choose one category of small arms to apply it to. There are three distinct categories:

General Description

Gunnery: Gunnery is a specific naval skill in the operation and use of one of several types of naval armament.

Interrogation: The individual is practiced in the psychological arts of interrogation as a tool of intelligence gathering.

Specific Game Effects

Handgun: Handgun skill may be applied to revolvers, automatic pistols, and body pistols interchangeably. If Mercenary (Book 4) is being used, this skill may also be used with snub pistols.

Submachinegun: Submachinegun skill may be applied only to submachineguns.

Laser Weapons: Laser weaponry skill may be applied to both laser carbines and laser rifles interchangeably.

Characters who acquire a gunnery skill must immediately choose one category of ship's weaponry to apply it to. There are six distinct categories:

Ship's Lasers: refers to turret mounted laser weaponry.

Ship's Energy Weapons: refers to turret mounted plasma or fusion weaponry.

Ship's Particle Accelerators: refers to all charged particle and neutral particle accelerators, turret or rigid mounted.

Ship's Missiles: refers to turret or rigid mounted missile launch racks.

Meson Weapons: refers to rigid or turret mounted meson guns.

Screens: refers to all protective screen equipment, including nuclear dampers, meson screens, and black globe generators.

The individual will be able to extract more information from a subject than would normally be possible. Generally, this does not involve a direct psychological or physical assault on the individual, but instead results from the ability of the interrogator to derive informational pieces of a puzzle by attitude, word usage, body language, and seemingly meaningless pieces of information. The interrogator has a high ability to detect lying and to piece together hints from a large number of interrogations.

When one subject has a particularly vital piece of information, the interrogator will be better able to tell what approach will yield the best results (up to and including psychological or physical assault) the higher his or her expertise. Unlike most skills, pairs of interrogators may add their skill levels to achieve better results.

Referee: Determine what general level of information an interrogator will derive from a series of interrogations, and present it to him or her as the correct conclusion, since conclusion-drawing on the basis of partial information is integral to the training. Take the above effects of interrogation skill

General Description

Instruction: The individual has extensive training in teaching students in a clear and lucid manner, and for providing motivation for learning.

Liaison: The individual is trained in the art of dealing with others; this skill is usable in relations with members of military units, citizens in a community, and with alien or foreign cultures.

Specific Game Effects

into account. Additionally, generate die rolls for the likelihood of faulty conclusions or inability to detect incorrect information and roll secretly for these events, applying DMs for the interrogator's expertise, the use of drugs, and the use of electronic lie detection equipment.

In the case of individual interrogations, assume a throw of the subject's endurance or intelligence or better (whichever is higher) for the subject to break, allowing a DM of + interrogation skill. The referee may also add a throw for subject unconsciousness, or attempted escape.

Characters with instructional expertise are capable of imparting knowledge of certain well-understood skills to other characters. A skill level up to one level less than the instructional skill, and one less than the taught skill may be imparted. Thus, an individual with instruction-2 and gravitics-2 may instruct another individual in gravitics-1.

Each level of skill taught requires six weeks of instruction during which the referee should severely curtail both individual's activities, or a six month course with activities somewhat less curtailed. At the conclusion of the course, the learning character must roll 9+ on two dice to achieve the skill, DMs +1 for intelligence 8+ or +2 for intelligence 10+.

Referee: Characters may not teach the instruction skill to others. Since the greatest asset an individual has is his or her pool of skills, the referee should exercise great caution in allowing characters to hire non-player characters as instructors.

This individual is trained to subordinate his or her own views and prejudices where they may conflict with those held by the individuals being dealt with. As a result, greater cooperation may be achieved, and substantial progress in mutual projects made. Liaison is primarily used as a positive DM on the reaction table in Book 3.

Referee: Liaison is similar to both streetwise and admin skills. Streetwise tends to deal with unsavory aspects of society, while admin deals with the formal bureaucratic structure. Liaison is a formal training that spans both, but also extends to contact with alien cultures. Liaison may be used as the equivalent of the next lower level of either streetwise or admin where necessary; thus, liaison-2 is the equivalent of streetwise-1.

General Description

Recruiting: The individual is familiar with the most effective means of approaching individuals and presenting proposals for employment, couched in terms most likely to produce acceptance.

Ship Tactics: The individual has been trained in the operation of a starship or space ship in battle.

Survival: The individual is familiar with both the theory and the practice of living off the land.

Vehicle: The individual is a trained vehicle operator.

Specific Game Effects

Characters with recruiting skill will affect both the quality and quantity of recruits who will respond to a request for applications.

Characters with recruiting skills will also have a higher chance of obtaining non-player character hirelings for specific tasks, with recruiting-1 having approximately the same effect on hiring as leadership-4 in Traveller Book 1. As a general guideline, leadership-4 will tend to attract indiscriminately all within the range of the character's personality; recruiting skill will receive favorable DMs when seeking specific hirelings suited to specific tasks.

Ship tactics is a skill used by individuals in command of individual ships in combat. It basically serves as a DM in space combat in individual engagements; its use is described in the section on space combat in this booklet.

Individuals with survival skill are adept at locating food and water, constructing or finding natural weapons and shelter, and finding their way across country in a wilderness. The referee should allow favorable DMs for this skill, based on environment and situation. The likelihood of survival skill (no matter what level) allowing a character to find breathable air in a vacuum is rather slight.

Characters who obtain vehicle skill must immediately choose one of the ten vehicle types listed below. The skill then applies to all vehicles in the category selected. Each category lists the tech level range of the vehicle; a character may not select that vehicle category if the navy in which he or she serves is not within that tech level range. In addition, other conditions apply as noted in each category.

Wheeled (tech level 5 - 15): This skill is the equivalent of ATV skill. Not available in a planetary navy with a homeworld having a hydrographics level of 100%.

Tracked (tech level 6 - 9): This skill is primarily used in military situations, such as Mercenary, Book 4. Not available in a planetary navy with a homeworld having a hydrographics percentage of 100%.

Grav (tech level 8 - 15): This skill is the equivalent of Air/Raft skill.

Propeller-driven Fixed Wing Aircraft (tech level 4 - 9): Not available in a pla-

General Description

Specific Game Effects

etary navy with a homeworld having an atmosphere factor of less than 6.

Jet-propelled Fixed Wing Aircraft (tech level 5-9): Not available in a planetary navy having a homeworld with an atmosphere factor of less than 4.

Helicopter (tech level 6-9): Not available in a planetary navy with a homeworld atmosphere of less than 6.

Hovercraft (tech level 7 -9): Not available in a planetary navy having a homeworld atmosphere factor of less than 4.

Small Water Craft (tech level 1-8): This category includes submersibles; not available in a planetary navy with a homeworld hydrographies percentage of less than 30%.

Lighter-than-Air Craft (tech level 3-9): Not available in a planetary navy having a homeworld with an atmosphere factor of less than 6.

Ship's Boat (tech level 7-15): Available only to planetary navies of worlds having a size factor of less than 3 and an atmosphere factor of 0. The individual may elect to choose vacc suit instead.

Referee: Expertise in a specific category of vehicle allows the character to operate it safely and efficiently. Skill level should be used as a DM to avoid mishap or failure.

Zero-G Combat: The individual has been trained to fight in a zero-G environment.

Virtually all weapons involve some recoil, and in a zero-G environment, this recoil can disorient or disable individuals not trained to compensate for it. When fighting in a zero-G environment, any individual has a chance of losing control of his movement or position each combat round.

Referee: Throw 10+ on two dice) to avoid losing control. Allow the following DMs: Firing a weapon, -4. Firing a low recoil weapon (snub pistol or laser weapon): -2. Using a handhold, +5. Striking with a blade weapon, fist, polearm, or similar: -6. Wearing vacc suit: +2 per level of vacc suit skill. For each level of zero-G combat expertise: +4. If dexterity 9+, +2. If dexterity of 11+, +4. Using a handhold reduces dexterity (for the purposes of weapon accuracy; not for wounding) by -4.

Individuals who lose control in on the above throw may not fire weapons or attack with blades until they have reoriented themselves and gained control. Roll 10+ on each subsequent combat round to regain control; all above DMs apply, except that handholds may not be used, and weapons may not be fired.

PRE-ENLISTMENT OPTIONS

A character may, at age 18, examine the options available instead of direct enlistment in the Navy. These include college and the Naval Academy.

College: Any character may apply for admission to a college. The admission throw determines if the character begins attending college; if the throw is not achieved, the character remains at age 18 and may attempt some other course of action. The success throw determines if the character remains in college for the full four years; if this throw is not achieved, the character

COLLEGE (Four Years)

Admission	9+	DM+2 if educ	9+
Success	7+	DM+2 if intel	8+
NOTC	8+	DM+1 if soc	10+
Education	1D-2	DM+1 if intel	9+
Honors	10+	DM+1 if educ	10+

has aged one year (to age 19) and may now enlist in the Navy; this first enlistment will be for a short (three year) term. The NOTC throw is voluntary; if successful, the individual has undertaken officer training (the Naval Officer Training Corps) while in college, and upon graduation automatically receives a commission as an ensign in the Navy. The education throw determines the increase in education that the individual receives while in college; a throw of less than one is treated as one. Finally, the individual throws for honors (representing a high level of achievement while in the education process): achieving the throw allows the individual to apply for medical school. An individual who is in NOTC and receives honors may apply for flight school. Regardless of whether the individual makes the honors throw, he or she has graduated, aged four years, and may now enlist in the Navy.

The Naval Academy: Any character with a social standing of 8+ may apply for admission to the Naval Academy. The admission throw determines if the character is accepted at the Academy.

NAVAL ACADEMY (Four Years)

Admission	10+	DM+2 if soc	10+
Success	9+	DM+2 if intel	8+
Education	1D-3	DM+1 if intel	9+
Honors	9+	DM+1 if intel	9+

The success throw determines if the character remains at the Academy; if unsuccessful, the character has aged one year (to age 19) and is immediately drafted into the Navy for a short (three year) term. The education throw indicates the character's increased education as a result of attendance.

Skills: The following are each received on a roll of 4+ (on one die): Vacc-1, Navig-1, Engnrrg-1.

In addition, the indicated skills are each received on a roll of 4+ on one die. If the honors roll is achieved, the character is recognized for scholastic accomplishment, and may apply for admission to medical school or flight school. In any case, the character has graduated from the Naval Academy, and automatically receives a commission as an ensign in the Navy; he or she is now 22 years of age.

In the event that the individual attends medical school, service does not begin until that education is completed.

Medical School: Any character who graduates with honors from college or the Naval Academy may apply for admission to medical school. The admission throw determines if the character begins attending medical school; if unsuccessful, the individual then continues normally to entrance into the Navy. The success throw determines if the character remains in medical school for the full four-year term: if unsuccessful, the character has aged one year (to age 23) and then may enlist

in the Navy (or enter as an officer if a commission has been received through

MEDICAL SCHOOL (Four Years)

Admission 9+ DM +2 if educ 10+
Success 8+ DM +2 if intel 9+
Honors 11+ DM+1 if educ 11+

Skills: The following skills are received automatically— +1 Education, Medic-3, Admin-1.

Honors Graduates also receive Medic-1 and Computer-1.

NOTC or the Naval Academy) for a short term of three years. The skills shown are received automatically. If the honors throw is achieved, the character receives one additional level of medic skill and one level of computer skill. The character then graduates (at age 26). He or she may apply for a direct commission (which is granted automatically) as a lieutenant (rank O3) in the medical branch of the Navy (any of the three

types of navies may be selected by the character).

Flight School: Any commissioned college honors or Naval Academy graduate may attend flight school simply by applying. Any other Naval Academy graduate may apply for admission. If the admission throw is not achieved, then the character continues by beginning naval service normally. The success throw determines if the individual passes the course, and is not washed out (if unsuccessful, the character has aged one year, and reports for duty in the Navy). The indicated are each received on a roll of 4+ on one die. In addition, an automatic skill of pilot-1 is received by all graduates of flight school.

Attendance at flight school is possible only for individuals holding commissions; when the character reports for duty, he or she begins serving a short term and enters basic officer training.

FLIGHT SCHOOL (One Year)

Admission 9+ DM+1 if dext 9+
Success 7+ DM +1 if intel 8+

Skills: The following skills are received on a roll of 4+ on one die— Pilot, Ship's Boat, Navigation.

All graduates receive an automatic pilot-1 in addition.

Starships

In order to promote a clearer understanding of starship operations, design, combat, and movement, the following synopsis shows how such events occur.

MOVEMENT

Starships move through ordinary space using maneuver drives as described in Book 2, page 1 under Interplanetary Travel. Power for the maneuver drives is provided by the starship's power plant, which must have a rating equal to or exceeding the drive number of the maneuver drive. Tech level requirements for maneuver drives are imposed to cover the grav plates integral to most ship decks, and which allow high-G maneuvers while interior G-fields remain normal. Fuel consumption for maneuver drives is inconsequential, and is assumed to be part of the power plant consumption, regardless of the degree of maneuver undertaken.

Starships move across interstellar distances using jump drives. Jump distances are calculated in parsecs (3.27 light-years), which is the scale of the subsector grid mapping hexagons. Jump-1, for example, indicates the ability to jump one parsec, or one hex. Jump numbers range from 1 to 6; higher jump numbers are not possible in ordinary usage, although misjumps can carry ships over greater distances. Any jump, regardless of number, takes approximately one week (150 to 175 hours); ships in jump space are untouchable and cannot communicate with other ships or stations. Although jumps are usually made at low velocities, the speed and direction which a ship held prior to jump is retained when it returns to normal space.

Because of the delicacy of jump drives, most ships perform maintenance operations on their drives after every jump. It is possible for a ship to make another jump almost immediately (within an hour) after returning to normal space, but standard procedures call for at least a 16 hour wait to allow cursory drive checks and some recharging. Most commercial vessels spend a week between jumps, using the time to maneuver to a world, land, unload cargo and load new cargo, and maneuver away from the world for the next jump.

Fuel used for ships is hydrogen, which is available in the atmospheres of gas giants (similar to Saturn or Jupiter) or from oceans of water. Gas giants are present in any system on a throw of 9 or less; gas may be taken from them by dipping or skimming, a process which involves diving into the atmosphere and opening fuel scoops. Such a maneuver is possible for streamlined and partially streamlined hulls (configurations 1 to 6). Large ships often carry streamlined fuel tankers which can skim fuel and return it to the unstreamlined parent ship. Water may also be used to provide hydrogen; it is available on any world with a hydrographies percentage of 3 or greater (lower hydrographic percentages require effort and referee control). Water is dipped from oceans by ships landing in the body of water and opening fuel cocks, or through the use of fuel shuttles. Fuel which is skimmed or dipped is unrefined, and may result in misjumps; fuel purification plants can convert such unrefined fuel to refined fuel for safe use.

Any ship of configuration 1 to 6 can land on a world with an atmosphere 0 or 1; for all other worlds, streamlining is required. Dispersed structures and planetoids

cannot land on any world. Worlds with class A or B starports or with naval or scout bases present have orbiting stations which serve as ports for partially streamlined and unstreamlined ships. They also provide shuttle service to the world surface.

DESIGN AND CONSTRUCTION

The ship design and construction system given in Book 2 must be considered to be a standard system for providing ships using off-the-shelf components. It is not superseded by any system given in this book; instead this book presents a system for construction of very large vessels, and includes provisions for use of the system with smaller ships.

WEAPONRY

The types of weaponry available to starship and space combat call for a complex interaction between weapons and defenses.

Offensive weapons include lasers, energy weapons (plasma and fusion guns), particle accelerators, meson guns, and missiles.

Lasers fire concentrated light energy in beams or pulses against enemy targets and cause damage to exterior surfaces.

Energy Weapons (which include plasma guns and fusion guns) fire a highly energized beam of ionized gas at the target; with the fusion gun this gas actually proceeds to fusion. Energy weapons inflict surface damage.

Particle Accelerators charge and accelerate electrons or hydrogen nuclei to high velocities toward targets. Hits produce surface damage and radiation effects.

Meson Guns create high energy mesons and direct them at targets. Mesons have short lives, which can be prolonged to precise durations by accelerating them to relativistic speeds. If the point of decay is manipulated to occur inside the target ship, the result is high energy explosions and radiation damage. Because of the nature of the meson, it can pass through armor and matter without resistance.

Missiles are available in two types, nuclear and non-nuclear. Nuclear missiles produce surface damage and radiation effects, while non-nuclear missiles produce only surface damage.

Defenses may be divided into active and passive classifications. Active defenses include offensive weapons such as lasers and energy weapons, and defensive weapons such as sandcasters and repulsors. Passive defenses include screens such as meson screens, nuclear dampers, and black globe generators, and construction considerations such as configuration and hull armor.

Lasers can be used in the anti-missile role.

Energy weapons (plasma and fusion guns) can be used in the anti-missile role.

Sandcasters project a granular agent which obstructs light; when fired it interferes with incoming laser or energy weapon fire.

Repulsors are large focused anti-grav projectors. When directed at incoming missiles, they deflect them away from their target.

Meson screens project an interruption of the strong nuclear force, prematurely causing decay of incoming mesons.

Nuclear Dampers project a series of nodes and anti-nodes where the strong nuclear force is enhanced or degraded, rendering nuclear warheads ineffective.

Black Globe Generators project a barrier which absorbs all energy, shunting it to on-board capacitors. The barrier prevents all transit across it, and a ship with its black globe on cannot maneuver, fire its weapons, or communicate. In addition, the field may be overloaded, causing the failure of the storage capacitors and destruction of the ship.

PROCEDURES

Naval vessels generally operate in task forces or squadrons, rather than alone; the merits of each individual ship supplement and complement the others in company with it.

Carried Squadrons: One technique used is the construction of tenders or carriers— single large ships which carry well-armed smaller ships which actually do the fighting when battles are joined. When the craft being carried are in the ten to thirty ton range, the ship is a fighter carrier. When the ships being carried are in the 10,000 ton range, and the large ship is 200,000 tons or more, the ship is called a tender or transport.

The points of greatest danger to carried squadrons are immediately prior to jump (when the craft or ships have been recalled) and just after returning to normal space (when the craft have not yet been launched).

High Guard: Refuelling operations for a task force are another danger point, as forces which are low on fuel and maneuvering in a gravity well are especially vulnerable. The high guard position, so named because the ship or ships involved are higher in the gravity well than their companions, is used to mount protective operations during such maneuvers.

Starship Construction

The fighting starships built and operated by the navies of the galaxy range in size from one hundred to one million tons and represent the most potent weapons available to any government, corporation, or individual.

STARSHIP DESIGN

Starships are designed by navies using their own specifications to produce the exact type of ship desired; contracts are then let, and construction begins.

Design: A navy can issue a specification for a naval vessel within approximately eight weeks of authorization to procure. Corporations and individuals must obtain the services of a naval architect (who charges 1% of the final ship cost); the architect can prepare final plans and specifications (from which the shipyard works) in about four weeks.

Availability: Starships (with jump drives) may be constructed at the shipyard of any class A starport; non-starships (without jump drives) may be constructed at the shipyard of any class A or class B starport.

Technological Level: Technological level is important in the design of a ship because it governs where the ship may be produced, and how well the crew can operate and maintain it. The technological level of the building shipyard determines the technological level of the ship being constructed (a class A starport on a tech level 14 world constructs a tech level 14 ship). Equipment and components of a starship may always be equal to or less than the ship's tech level.

The Imperial Navy may procure ships of up to tech level 15, although it also procures vessels at tech levels 10 through 14. A subsector navy may procure ships at any shipyards within its borders. A planetary navy may procure ships at any shipyard within the borders of its subsector; alternatively, a planetary navy may construct ships on its planet, using local resources, even if a shipyard is not present.

Construction Times: Ships of 5,000 tons or less can be completed in 36 months or less by any competent shipyard. Ships over 5,000 tons require from 24 to 60 months to complete, based on conditions, volume of orders, and the degree of haste desired by the ordering government.

Ship Classes: Once a ship is built, a certain familiarity with the requirements of construction is gained by the building crews, and a shipyard can then produce such ships more rapidly and with greater efficiency. Additional identical ships built following the initial ship in a class can be completed in 80% of the original time at 80% of the original construction cost.

Ships of a class are named to show this relationship. For example, the first ship in a series of small, swift escort vessels might be called the *Gazelle*, prompting the formation of the *Gazelle* class of close escorts. Other ship names in the class could be *Reindeer*, *Kudie* (for *Kudebeck's Gazelle*), *Antelope*, *Unicorn*, *Pinto*, as well as any of the many other names for swift herbivores.

SUMMARY OF SHIP DESIGN

The following procedure is used when designing a ship; more detailed and

specific coverage is provided later in this chapter.

The tech level of the building shipyard is determined. A hull is selected and a configuration specified. The hull may be constructed of metal or it may be made from a hollowed-out planetoid. Configuration indicates the shape and degree of streamlining the hull demonstrates.

Maneuver drives and power plants are installed; if the ship is to be interstellar, jump drives must be installed.

Fuel requirements for the ship, based on its installed drives and tonnage, are determined, and fuel tanks are allocated. It is possible to specify fuel scoops for gas giant skimming refuelling, a fuel purification plant to allow use of such unrefined fuel, and L-Hyd drop tanks to increase range of jumps.

The bridge is allocated and the ship's computer is determined.

The hull may be armored through the addition of stronger material.

Weaponry is selected and installed. If desired, one major weapon may be procured (a meson gun or particle accelerator) for attacks of the greatest possible power. Weapons bays, holding particle accelerators, missiles, energy weapons, or repulsors, may be installed. Turrets mounting particle accelerators, lasers, energy weapons, missile racks, or sandcasters may be installed. Screen protection such as force field generators, meson screens, and nuclear dampers may be available.

Ship's vehicles may be selected, including planetary craft, small craft, and large craft. Launch facilities are indicated for ship's vehicles, as needed.

The ship's crew is determined and quarters are allocated for them. Ship's troops and frozen watches may also be specified.

Other aspects of the ship are allocated, such as cargo space, passenger accommodations, low berths and emergency low berths, laboratories, special installations, extra capacitors, or unusual items.

Finally, the figures are analyzed to insure that the project has not exceeded hull capacity and that it has not gone over budget or violated tech level requirements. The various factors for the ship are entered in the Ship's Data Form (IN Form 3) Sheet and the Universal Ship Profile is obtained for use in space combat, should that become necessary.

Non-starships (ships without jump drive, and massing 100 or more tons) are designed in much the same manner as starships; small craft (without jump drives and under 100 tons) follow a slightly altered procedure explained in the small craft section beginning on page 34.

The central chart sheet (pages 23 to 26) contains most of the tables required for the design of starships. It is designed to be pulled from the booklet for easier use and reference. The remainder of the charts are provided on page 36. IN Form 3 is provided on page 37, and may be photocopied for use in designing ships.

BASIC STARSHIP COMPONENTS

The following components are basic to any starship.

Preliminaries: The ship name and ship class must be decided upon. The tech level of the building shipyard must be determined (specified by the referee, determined by the navy involved or by the world the procuring individual is presently on). Precise ship type should be decided.

The Hull: The foundation of the starship is the hull, into or onto which all other components are placed. Hulls are identified by their mass displacement (expressed

in tons; one ton equals 14 cubic meters) and by their configuration.

Hulls may be constructed of metal at a shipyard at a base price of Cr100,000 per ton; this price is modified by the configuration selected.

Hull tonnage for both metal hulls and planetoids is expressed as a code given on the tonnage table. Each specific tonnage level includes all values between it and the next highest stated level. Thus, tonnage code A includes all tonnages from 1,000 to 1,999 tons.

Configuration is a rough description of the shape and design of the starship hull. It affects combat and determines if a ship is streamlined. Streamlining refers to the ability of the ship to enter atmosphere (partial streamlining allows fuel skimming but prohibits entry into world atmospheres for the purpose of landing). Non-streamlined configurations are built in orbit under the supervision of the building shipyard, or on the surface of a vacuum world.

It is possible to select a planetoid as a hull, hollowing out spaces within it for drives and equipment. Such planetoids are generally available for the finding. However, a planetoid must allow 20% waste space (tonnage) for structural integrity; a buffered planetoid has greater ability to withstand combat damage, but must allow 35% interior waste space. Although a planetoid is essentially free, there is a cost of Cr1,000 per interior (non-waste) ton for fusion tunnelling and hollowing of passages and compartments. In addition, there is a transportation charge (Cr100 per ton) to bring the planetoid into orbit above the shipyard.

Drives: Three types of drives are required for starships—maneuver drives, power plants, and jump drives. Non-starships may omit the jump drives. Some ships (such as express boats) omit the maneuver drives. All ships require power plants. Custom-built drives must be produced and installed while observing restrictions as to tech level and interior space. It is possible to include standard drives (at standard prices) from Book 2 if they will otherwise meet the ship's requirements; such drives use fuel as indicated by the formulas in Book 2.

The drive potential table indicates the percentage of interior space required for a specific maneuver or jump drive. The drive tech level table indicates the minimum tech level required to construct the specified maneuver or jump drive. The power plant table indicates the percentage of ship tonnage required per power plant number, based on tech level. The drive cost table indicates the cost (in millions of credits) to produce the specified drive, per ton of drive.

Drives are noted in the Universal Ship Profile by the drive number (from 1 to 6); use 0 if no such drive is present. On any given ship, the power plant number must at least equal the jump number or the maneuver number, whichever is higher. Unlike maneuver or jump drives, power plants can achieve numbers higher than six. Theoretically, a power plant number may reach as high as 50; practically, it should rarely go higher than 35.

Fuel: A ship requires fuel for its jump drives and for its power plant; the power plant converts fuel to energy for computers, jump drives, maneuver drives, weapons, and screens. Fuel tankage must be sufficient to contain a full load for the power plant and the jump drive. Additional tankage may be installed as an option. There is no cost for interior fuel tankage.

Jump fuel requirements are computed at 10% of the ship tonnage per jump number; thus, the Akron is a 10,000 ton jump-6 ship and requires fuel tankage of 6,000. Fuel usage is computed similarly; 10% of the ship tonnage in fuel is used per

TONNAGE

<i>Code</i>	<i>Tonnage</i>	<i>Code</i>	<i>Tonnage</i>	<i>Code</i>	<i>Tonnage</i>	<i>Code</i>	<i>Tonnage</i>	<i>Code</i>	<i>Tonnage</i>
0	to 99	7	700	E	5,000	M	30,000	U	400,000
1	100	8	800	F	6,000	N	40,000	V	500,000
2	200	9	900	G	7,000	P	50,000	W	700,000
3	300	A	1,000	H	8,000	Q	75,000	X	900,000
4	400	B	2,000	J	9,000	R	100,000	Y	1,000,000
5	500	C	3,000	K	10,000	S	200,000	Z	reserved
6	600	D	4,000	L	20,000	T	300,000		

CONFIGURATION

<i>USP Code</i>	<i>Configuration</i>	<i>Stream-lined</i>	<i>Price Modif</i>
1	Needle/Wedge	yes	+20%
2	Cone	yes	+10%
3	Cylinder	partial	—
4	Close Structure	partial	-40%
5	Sphere	partial	-30%
6	Flattened Sphere	yes	-20%
7	Dispersed Structure	no	-50%
8	Planetoid	no	—
9	Buffered Planetoid	no	—

FUEL REQUIREMENTS

Jump Drive: 10% of ship size in tons per jump number of ship capability. This allowance supplies fuel for one jump of that number.

Power Plant: One ton per energy point produced. This allowance supplies four weeks of activity on both the maneuver drive and the power plant.

BATTERIES

<i>Ship Size</i>	<i>Percent Bearing</i>	<i>Ship Size</i>	<i>Percent Bearing</i>
0 to 9	100%	Q	75%
A to K	100%	R	70%
L	95%	S	65%
M	90%	T	60%
N	85%	U	55%
P	80%	V to Y	50%

The number of batteries which may bear in combat is affected by the size of the ship. Only the percentage of batteries shown may bear (fire) on the target in space combat. Round fractions to the nearest whole number.

DRIVE POTENTIAL TABLE

	— <i>Drive Number</i> —
	1 2 3 4 5 6
Maneuver	2 5 8 11 14 17
Jump	2 3 4 5 6 7

Number is percentage of ship required.

DRIVE TECH LEVEL TABLE

	— <i>Drive Number</i> —
	1 2 3 4 5 6
Maneuver	7 7 8 8 8 9
Jump	9 11 12 13 14 15

Number is minimum tech level required.

POWER PLANT TABLE

<i>Percent times Pn</i>	— <i>Tech Level</i> —
	7-8 9-12 13-14 15
	4 3 2 1

Number is percentage of ship tonnage (times Pn) required to produce a power plant of the desired size.

DRIVE COST TABLE

	— <i>Drive Number</i> —
	1 2 3 4 5 6
Maneuver	1.5 0.7 0.5 0.5 0.5 0.5
Power Plant	3.0 3.0 3.0 3.0 3.0 3.0
Jump	4.0 4.0 4.0 4.0 4.0 4.0

Number is cost in millions of credits per ton of drive installed.

HULL ARMOR

	— <i>Tech Level</i> —
<i>Percent of ship</i>	7-9 10-11 12-13 14-15
	4+4a 3+3a 2+2a 1+a

Formula indicates percentage of ship required for armor (a is desired armor factor). Cost is MCr.3+.1a per ton.

MAJOR WEAPONS

Particle Accelerator					Meson Gun				
USP Code	Tonnage	Tech Level	Cost (MCr)	Energy Points	USP Code	Tonnage	Tech Level	Cost (MCr)	Energy Points
A	5500	8	3500	500	A	5000	11	10000	500
B	5000	9	3000	500	B	8000	11	12000	600
C	4500	10	2400	500	C	2000	12	3000	600
D	4000	11	1500	600	D	5000	12	5000	700
E	3500	12	1200	600	E	1000	13	800	700
F	3000	13	1200	600	F	2000	13	1000	800
G	2500	14	800	700	G	1000	14	400	800
H	2500	15	500	700	H	2000	14	600	900
J	5000	10	3000	800	J	1000	15	400	900
K	4500	11	2000	800	K	8000	12	10000	1000
L	4000	12	1600	800	L	5000	13	3000	1000
M	3500	13	1200	900	M	4000	14	800	1000
N	3000	14	1000	900	N	2000	15	600	1000
P	2500	15	800	900	P	8000	13	5000	1100
Q	4500	12	2000	1000	Q	7000	14	1000	1100
R	4000	13	1500	1000	R	5000	15	800	1100
S	3500	14	1200	1000	S	8000	14	2000	1200
T	3000	15	1000	1000	T	7000	15	1000	1200

Explanation: This chart shows the particle accelerators and meson guns used as major weaponry in large starships. Tonnage is the tonnage required in the starship hull for the weapon. Tech level is the technological level required to build the weapon. Cost is the price in millions of credits. Energy points is the total required.

BAY WEAPONS

100-ton Bay Weapon Type	Tech Level										Energy Points	Cost (MCr)
	7	8	9	10	11	12	13	14	15			
Meson Gun	—	—	—	—	—	—	3	5	9	200	70	
Particle Accelerator	—	6	6	7	7	8	8	9	9	60	35	
Repulsor	—	—	—	2	4	6	7	8	9	10	10	
Missile	7	7	7	8	8	9	9	—	—	0	20	

50-ton Bay Weapon Type	Tech Level										Energy Points	Cost (MCr)
	7	8	9	10	11	12	13	14	15			
Meson Gun	—	—	—	—	—	—	—	—	4	100	50	
Particle Accelerator	—	—	—	3	3	4	4	5	5	30	20	
Repulsor	—	—	—	—	—	—	—	3	5	5	6	
Missile	—	—	—	7	7	8	8	9	9	0	12	
Plasma Gun	—	—	—	4	5	6	—	—	—	10	5	
Fusion Gun	—	—	—	—	—	7	8	9	—	20	8	

Explanation: The number in the body of the chart is the USP factor of the type of weapon in the specified size of bay at the tech level shown. In addition, that weapon will require energy points in the amount shown and will cost the amount shown in millions of credits. Note that costs and energy points are not dependent on technological level.

TURRET WEAPONS

USP Code Rating							<i>Particle</i>	
	<i>Beam Missile</i>	<i>Pulse Laser</i>	<i>Plasma Laser</i>	<i>Fusion Gun</i>	<i>Sand- Gun</i>	<i>Particle Caster</i>	<i>Particle Accelerator</i>	<i>Accelerator Barbette</i>
1	1	1	1	1	—	1	—	1
2	3	2	3	4	—	3	1	2
3	6	3	6	10	—	6	2	4
4	12	6	10	16	1	8	4	6
5	18	10	21	20	4	10	6	8
6	30	15	30	—	10	20	8	10
7	—	21	—	—	16	30	10	—
8	—	30	—	—	20	—	—	—
9	—	—	—	—	—	—	—	—
TL Available	7	7	7	10	12	7	15	14
Energy Points	0	1	1	1	2	0	5	5
TL Modif+1	13+	13+	13+	11+	14+	8+	—	—
TL Modif +2	—	—	—	12+	—	10+	—	—
Weight (tons)	1	1	1	2	2	1	3	5
Cost (MCr)	0.75	1.0	0.5	1.5	2.0	0.25	3.0	4.0

Explanation: The number listed in the body of the chart is the number of weapons of the listed type required to achieve the value (USP Code Rating) listed to the left.

TL Available indicates the first tech level at which the weapon becomes available.

Energy Points is the energy point requirement for each weapon installed of the type. For example, twenty fusion guns would require forty energy points.

TL Modifiers indicate a modification to the USP code based on higher tech levels. If all of the weapons involved are of the tech level indicated, then the code rating is increased. For example, 16 plasma guns normally have a rating of 4. At tech level 11, they would have a rating of 5; at tech level 12 or higher, they would have a code rating of 6. TL modifiers are not cumulative; only the best one is used. This tech level increase is the only way that weapons can achieve a rating of 9.

Weight is the tonnage of the turret containing the type of ordnance described, regardless of the number of weapons of that type mounted in it. Particle accelerators may be mounted only one per turret (or barbette). Plasma guns and fusion guns may be mounted two per turret. All other types may be mounted three per turret.

Cost is in millions of credits, for one of the weapon type listed.

SCREENS

—NuclearDampers—					—Meson Screens—					— Force Field —			
Code	Tech	Tons	Cost	EP	Code	Tech	Tons	Cost	EP	Code	Tech	Tons	Cost
1	12	50	50	10	1	12	90	80	0.2	1	15	10	400
2	13	15	40	20	2	13	30	50	0.4	2	15	15	600
3	13	20	45	30	3	13	45	55	0.6	3	15	20	800
4	14	8	30	40	4	14	16	40	0.8	4	15	25	1000
5	14	10	35	50	5	14	20	45	1.0	5	16	20	—
6	14	12	38	60	6	14	24	50	1.2	6	16	30	—
7	15	10	30	70	7	15	20	40	1.4	7	16	35	—
8	15	15	40	80	8	15	30	50	1.6	8	17	20	—
9	15	20	50	90	9	15	40	60	1.8	9	18	20	—

Explanation: Meson screens have an energy point requirement based on the size of the shielded ship: energy points required equal the factor given times 1% of the mass (tonnage) of the ship. For example, a 20,000-ton ship with a level 4 meson screen requires 160 energy points (0.8 x 0.01 x 20,000).

Force fields have no energy point requirements.

SHIP TYPE CODES

<i>Primary</i>	<i>Qualifier</i>
A Merchant	A Armored
B Battle	B Battle; Boat
C Cruiser; Carrier	C Cruiser; Close
D Destroyer	D Destroyer
E Escort	E Escort
F Frigate; Fighter	F Fast; Fleet
G Gig; Refinery	G Gunned
H	H Heavy
I,J Intruder	I,J
K Pinnace	K
L Corvette; Lab	L Leader; Light
M Merchant	M Missile
N	N Non-standard
P Planetoid	P Provincial
Q Auxiliary	Q Decoy
R Liner	R Raider
S Scout; Station	S Strike
T Tanker; Tender	T Troop; Transport
U	U Unpowered
V	V Vehicle
W Barge	W
X Express	X
Y Yacht	Y Shuttle; Cutter
Z	Z Experimental

COMPUTER MODELS

<i>Model</i>	<i>MCr</i>	<i>Ton</i>	<i>Capacity</i>	<i>Ship</i>	<i>TL</i>	<i>EP</i>
1	2	1	2/ 4	6	5	0
1fib (A)	3	2	2/ 4	6	5	0
1bis (R)	4	1	4/ 0	6	6	0
2	9	2	3/ 6	A	7	0
2fib (B)	14	4	3/ 6	A	7	0
2bis (S)	18	2	6/ 0	A	8	0
3	18	3	5/ 9	D	9	1
3fib (C)	27	6	5/ 9	D	9	1
4	30	4	8/15	K	A	2
4fib (D)	45	8	8/15	K	A	2
5	45	5	12/25	P	B	3
5fib (E)	68	10	12/25	P	B	3
6	55	7	15/35	R	C	5
6fib (F)	83	14	15/35	R	C	5
7	80	9	20/50	Y	D	7
7fib (G)	100	18	20/50	Y	D	7
8	110	11	30/70	—	E	9
8fib (H)	140	22	30/70	—	E	9
9	140	13	40/90	—	F	12
9fib (J)	200	26	40/90	—	F	12

Note: Capacity indicates CPU/storage; Ship is the ship requiring this computer as a minimum; TL is tech level. EP is the computer energy point requirement.

STARSHIP DESIGN CHECKLIST

- Determine ship name (entry 2) and ship class (entry 3), and ship type (block 7).
- Determine tech level (entry 4) of building shipyard.
- Determine tonnage (block 8), and hull configuration (block 9).
- Select jump drives (block 10), maneuver drives (block 11), and power plant (block 12).
- Determine fuel tankage (entry 29a).
 - Note maximum jumps (entry 29b).
 - Consider L-Hyd tanks and compute additional range (note in entry 29a).
 - Consider fuel scoops and fuel purification plant (note in entry 29c).
- Compute energy points available (indicate in entry 30).
- Allocate bridge and select computer (block 13). Indicate fibre optic back-up (entry 13b).
- Select hull armor (block 15).
- Select major weaponry such as particle accelerator (block 23) or meson gun (block 24) spinal mount.
- Select bay weaponry such as repulsors (block 20), energy weapons (block 22), par-

tide weapons (block 23), meson guns (block 24), and missiles (block 25).

11. Select turret weaponry; sandcasters (block 16), lasers (block 21), energy weapons (block 22), particle accelerators and barbettes (block 23), and missiles (block 25).

12. Select defensive screens; meson screen (block 17), nuclear dampers (block 18), and force fields (block 19).

13. Select fighters (entry 26) and ship's vehicles (entry 27). Design small craft USPs (note in entries 26 and 27). Note squadrons carried (block 26).

14. Determine ship's crew and allocate quarters. Note code in block 14.

A. Consider frozen watch (entry 14).

B. Consider ship's troops (entry 28).

15. Note cargo, passengers, and other areas (use entry 28).

16. Note ship's agility rating (in entry 30).

17. Note ship's purpose (entry 30).

18. Indicate dates required (entries 1, 5, and 6).

19. Insure that tonnage does not exceed hull, and that cost does not exceed budget. Note cost in entry 30.

jump number used (for the Akron, performing jump-1 uses 1,000 tons of fuel, while performing jump-6 uses 6,000 tons of fuel).

Power plant fuel is computed at 1% of the ship tonnage per power plant number; the Akron has power plant-6 and requires 600 tons of fuel tankage. One ton of fuel supports one energy point of power plant output. Note that power plant fuel also provides energy for the maneuver drives. The stated fuel tonnage supports four weeks cruising (including time spent in jump space) before refuelling is necessary.

Drives obtained from Book 2 require use of the fuel formulas from Book 2.

Any streamlined or partially streamlined ship may be equipped with fuel scoops which allow the skimming of gas from gas giants. On streamlined ships, such an installation also includes hoses or other equipment for drawing water from oceans. No additional tonnage is required; cost: Cr1,000 per ton of ship. If fuel scoops are installed, a fuel purification plant should be installed on the ship or available on another ship before the fuel is used in drives.

Unrefined fuel, when used in starship drives and power plants, can result in equipment malfunctions and misjumps. This can be avoided with the use of a fuel purification plant which allows refining of the raw gas before it is used in the drives. The fuel purification table indicates the various models of plants available: tech level is the tech level at which the plant is produced, tonnage is the tonnage required aboard ship, and cost is the price of the plant in credits. The fuel purification plant cost is based on 1,000 tons of fuel. A large ship with a large fuel tank capacity requires several plants. A small fuel tank capacity requires a fraction of the fuel purification plant shown. In no case may a fuel purification plant be procured with less than one-fifth the tonnage and price shown.

Disposable fuel tanks may be added to the ship to increase its range. These L-Hyd Tanks are fitted to the outside of the ship, and drop away before jump. The result is more interior space available for cargo and passengers. Such tanks must be replaced each time they are used, so they are practical only on runs to civilized areas, or to increase fuel capacity to allow several jumps. L-Hyd tanks are installed outside the hull, and increase the total tonnage of the ship; drives are reduced in their efficiency based on the total tonnage of the ship. With tanks retained, efficiency is decreased, and jump capability is reduced; when the tanks drop away, tonnage is reduced, and the drive efficiency is increased. L-Hyd Tanks cost Cr10,000, plus Cr1,000 per ton of fuel carried.

The Bridge: Every ship requires a bridge for control of the drives and electronics and for navigation. Such a bridge (designated as the main bridge or prime bridge) requires 2% of the ship's tonnage (minimum: 20 tons) at a cost of Cr5,000 per ton of ship. For example, a 100-ton ship must allocate 20 tons for the bridge at a cost of Cr500,000. A 1,000-ton ship must allocate 20 tons for the bridge at a cost of MCr5. A 1,100-ton ship must allocate 22 tons for the bridge at a cost of MCr5.5. The bridge contains all necessary equipment for the control of the ship with the exception of the computer.

One or more auxiliary bridges may be installed to replace the prime bridge in the event of battle damage. Costs are identical to those of the prime bridge.

Energy Points: Before installing computers or arming a ship, it is necessary to calculate the energy points available to the ship. This calculation uses the formula $E=0.01MPn$, where E equals the energy points available, M is the tonnage of the

ship, and Pn is the power plant number. Note: At tech level 15, energy points also equals the tons of power plant installed and the tons of power plant fuel required.

Energy points are used for four purposes: powering weapons, shields, for maneuver drives (for agility), and for computers.

Powering Weapons, Shields, and Computers: Various weapons, screens, and computers require energy points for operation, and these must be provided from the power plant. The weapons and screens installed on a ship may not consume more energy points than the power plant generates. Additional equipment may not be installed in reserve; the total energy point requirement for all equipment aboard ship must not exceed the energy point value of the ship.

Agility: Energy points remaining after weapons, screens, and computers have been installed may be applied toward the ship's agility rating. Divide the remaining energy points by 0.01 M; the result is the number of agility points the ship has. Drop all fractional points. Agility is the ability of a ship to make violent maneuvers and take evasive action while engaging hostile targets. A ship's agility rating may never exceed its maneuver drive rating. For each power plant hit received in combat (cumulative) the ship's agility rating is reduced by one.

A ship may voluntarily refrain from using any weapons or screens (computers may still be used) which require energy points and receive an emergency agility rating (for that combat round only) equal to its current maneuver-drive rating or power plant rating (whichever is lower).

Computers: One central computer for the ship must be specified; the basic requirement for this computer is based on the tonnage of the ship. The computer models table indicates the model number, price, tonnage, CPU and storage, minimum ship size, energy point requirement, and tech level. Model number is the relative size of the computer, and corresponds to the computer model numbers given in Book 2. Model/1 is the standard computer model; Model/1 fib is the same computer with a fibre optic back-up system to resist radiation damage; Model/1bis is an improved version of the standard model with greater program handling capability. Prices are given in megacredits. Tonnage is the number of interior tons required for installation of the computer. CPU and storage capacity are included for use with Book 2 for computer programming. Ship size shows the hull tonnage code which requires this computer model as a minimum; for example, a 10,000 ton ship has hull code K, and requires at least a Model/4 computer be installed. Tech level shows the minimum tech level required to build the indicated computer. Energy point requirement is the number of energy points which must be committed to powering the computer.

Computer model indicates the size of the jump which the computer can control. A model/1 computer can is required on a ship which makes a jump-1; a model/5 computer is required on a ship which makes jump-5. Computer models greater than 6 do not allow greater jumps, and in any case, the ship would require the appropriate jump drive. The bis models (1bis and 2bis) allow are capable of controlling a jump one higher than their model numbers; 1bis is capable of controlling jump-2.

Models bis and fib show a letter in parenthesis after the model number. This letter is the Universal Ship Profile code for the computer. Thus, the USP code for a Model/5fib is E.

Armor: Hulls may be armored with strengthened exterior skins and interior bracing. Such armor is not possible on ships with dispersed structure (configuration

7). The armor factor is the type of armor used; if no armor is selected, the armor factor in the USP is zero. The armor table indicates formulae for the computation of armor tonnage and cost, based on the factor selected. For example, the formula at tech level 9 is $4+4a$ (a is armor factor). On a 100-ton ship with an armor factor of 3, this formula indicates that the ship must allocate 16% ($4+4 \times 3$), or 16 tons. Cost is $M\text{Cr}.3+.1a$ per ton; the cost per ton is $M\text{Cr}.6$ ($.3+.1 \times 3$), or $M\text{Cr}9.6$ (16 tons times $M\text{Cr}.6$) total for the ship. The added value of armor on a ship may not exceed the ship's tech level.

When armor is used, the entire hull is armored. Dispersed structures cannot be armored, and have a hull armor factor of 0. Planetoids (configuration 8) have an automatic hull armor factor of 3; buffered planetoids (configuration 9) have an automatic hull armor factor of 6. Additional armor may be added to planetoids.

WEAPONRY

Ships may be armed for offensive or defensive operations. Inclusion of such weaponry allows them to deal with other armed ships.

Batteries: Ships with more than one weapon mount of a type may group them into batteries. Ships with more than ten mounts of the same type must group them into batteries. A battery may be as few as one turret, or as many as ten, but all batteries of the same type of weapon must have the same weapon code (USP factor). Each bay weapon is automatically a battery. The spinal mount of a ship (if it has one) is a single battery. On ships 1000 tons and under, mixed turrets (weapons of different types in the same turret) are allowed; in such cases, each weapon is a battery.

For example, a ship has eighty triple beam laser turrets. The ship may have 80 batteries of one turret (attack factor 3), 40 batteries of two turrets (attack factor of 4), 16 batteries of five turrets (attack factor of 6), or 8 batteries of ten turrets (attack factor of 8). Other configurations are possible, but these selections constitute the optimal battery configurations on the turret weapon table.

As a general rule, each battery may fire once each fire phase. Battery configurations are determined when the ship is built, not on the spur of the moment. The actual number of batteries which may bear on the target may be less than the total number of batteries on larger ships, and is determined from the battery table.

For example, if a 50,000-ton ship (size code P) has 15 particle accelerators in bays, 100 laser turrets in ten batteries, 50 missile turrets in five batteries, and 80 sandcaster turrets in eight batteries, it could bring to bear 12 particle accelerator batteries, 8 laser batteries, 6 sandcaster batteries, and 4 missile batteries. The figures are based on the table reading that code P hull sizes can bring 80% of their batteries to bear on a target. Round fractions to the nearest whole number. The spinal mount always bears. One battery of each weapon always bears.

When a ship takes a hit, it loses a battery. Ships may change attitude (and are assumed to do so) so that undamaged weapons batteries can continually be brought to bear. Thus, the ship above can initially bring 12 of its 15 particle accelerator batteries to bear, but the first three battery hits the ship takes in particle accelerators will not reduce its firepower.

If a ship has only one battery of a particular type, then a weapon hit on it reduces its weapon code by one; it does not eliminate the battery. This rule also applies to spinal mount weapons.

Major Weaponry: A single major weapon may be specified for any ship. This weapon may be either a particle accelerator or a meson gun, and forms the spine, or foundation, of the ship. The major weapons table shows the USP code, tonnage required, tech level at which produced, cost in millions of credits, and energy points required for each weapon. If a particle accelerator is selected as the major weapon, then particle accelerators may not be selected for installation in bays, barbettes, or turrets. If a meson gun is selected as the major weapon, then meson guns may not be installed as secondary weapons in bays.

Bay Weapons: Weapons may be mounted in bays, large areas near the skin of the ship's hull. Bays are available in 100-ton and 50-ton sizes (the size indicates the tonnage required) and must be installed during construction. The weaponry in bays is easily removed and replaced by other bay weaponry as the need arises.

One bay (regardless of size) may be installed per 1,000 tons of hull available. Tonnage not otherwise allocated to weaponry is considered available. For example, a 50,000-ton ship might be assigned a 5,000-ton type A meson gun; it may install 45 bays in addition to the major weaponry.

Weapons bays cost Cr10,000 per ton; 100-ton bays cost MCr1; 50-ton bays cost MCr0.5. They need not be assigned any specified weaponry during construction.

Weaponry installed in bays may be of five different types: meson guns, particle accelerators, energy weapons (fusion and plasma guns), repulsors, and missile racks. The bay weapons table indicates the cost for one bay weapon and its energy point requirement. The table also cross-references tech level and weapon type. The number at the intersection is the factor used for the weapon on the Universal Ship Profile. All bay weapons of the same type on a ship must be identical. Each bay weapon is a battery. Weapons installed in bays may not be allocated for turrets.

Empty weapons bays may be put to a variety of uses, such as holding small craft (air/rafts, ATVs, fighters, pinnaces, etc), or storing cargo. Vehicles and craft may be carried in otherwise unused bays at 50% wastage (100 tons of bay holds 50 tons of vehicle or craft). A bay may launch one craft per turn. An otherwise unused bay may also be used to carry deadfall ordnance for planetary bombardment; such a bay is useless in battle, but is used to bombard worlds.

Turrets: Weapons may be mounted in turrets emplaced on the hull. Turrets require only that a hardpoint be designated and created during construction. One hardpoint is allowed per 100 tons of hull not otherwise allocated to weapons. For example, a 50,000-ton ship carrying a 5,000-ton type A meson gun and twenty 100-ton bays may designate 250 hardpoints for turrets. Hardpoints require no tonnage; but turrets themselves (when installed) do require tonnage. Hardpoints are designated at no cost.

Turrets are installed on hardpoints with single, dual, and triple configurations, and allow the mounting of lasers (beam or pulse), energy weapons (plasma or fusion guns), sandcasters, particle accelerators, and missile racks. Lasers, sandcasters, and missile racks may be mounted in any turret; energy weapons may be mounted in single or dual turrets; particle accelerators may only be mounted in single turrets. On ships with more than ten turrets, weapons may not be mixed within a turret.

Particle accelerators are also available in barbettes. A barbette is similar to a turret, but larger.

The turret weapons table indicates each type of turret weapon in column and the nine possible USP code ratings in rows. The number at the intersection is the

number of weapons of the type indicated required to achieve the USP code rating. For example, the missile column shows that 18 missile racks are required to achieve the USP code rating of 5. In addition, the table shows the minimum tech level at which the weapon is available, the energy points each individual weapon of the type shown requires, the tonnage required for a turret mounting the weapon (tonnage does not vary with number of weapons within the turret), and the cost for one weapon of the type shown. In addition, the table shows tech level modifications allowed. For example, six triple missile turrets (a total of 18 missile racks) merit the USP missile factor of 5; if the missile racks are tech level 13 or above, that factor is increased by +1, giving a missile factor of 6.

Screens: Ships may install a variety of screens which will reduce or eliminate the force of enemy attacks. Screens are passive; they are installed in the ship interior and operate continually, as opposed to defensive weapons such as sandcasters or repulsors. Screens include nuclear dampers, meson screens, and force field projectors.

Nuclear Dampers are used to suppress the strong nuclear force, making atomic nuclei shed neutrons at low energy levels and rendering fission warheads useless. Dampers must be focused on incoming nuclear missiles and depend on an integral fire control system for efficiency. The nuclear damper table indicates USP code, tech level, tonnage required, cost, and energy point requirement.

Meson Screens are a variation of the nuclear damper which provide specific protection against meson gun fire. The screen is a projection which forces rapid decay of incoming mesons before they can intrude on the interior of a target. The meson screen table indicates USP code, tech level, tonnage required, cost in millions of credits, and energy point requirements for the meson screen.

Force Field Generators project a spherical energy-absorbing shell around a ship, and are therefore known as block globe screens. All energy, whatever its form, that contacts the black globe is absorbed and diverted to the ship's capacitors, doing no damage.

The capacitors contained in the ship's jump drive may be used to store this energy; additional capacitors may also be purchased. The jump drive capacitors mass .5% of the ship's mass, per jump number; for example, a drive capable of jump-3 will include capacitors equal to 1.5% of the ship's mass. Additional capacitors may be purchased at MCr4.0 per ton. One ton of capacitors (in a jump drive or not) will hold 36 EPs.

Black globe generators are not available commercially; they are recovered artifacts installed on a makeshift basis or experimental versions installed on tech level 15 Imperial warships. The force field table shows the USP code, tech level, tonnage, and price required. Black globes have no energy point cost. Devices shown at tech level 15 are used by the Imperium; those at higher tech levels are shown for reference.

The acquisition of any black globe generator is probably the result of a lucky find on the part of a government, individual, or corporation.

SHIP'S VEHICLES

After weaponry has been selected, the auxiliary vehicles for the ship must be determined.

Ship's Vehicles: The various vehicles carried on board ship are not included in the Universal Ship Profile. They are noted on IN Form 3, Ship's Data, however.

Those vehicles carried should be adequately described on the form, or reference made to a more complete description. Tonnage within the ship must be allocated equal to the tonnage of the vehicles carried (or empty weapons bays used). Many of the vehicles shown on the vehicle table are described in Book 3. Prices on the table here supersede those in Book 2 and Book 3 where any discrepancy occurs. Ship's vehicles require tonnage (at no cost) equal to their own mass within the hull.

Small Craft: Various non-starships (such as pinnaces, cutters, ship's boats, shuttles, lifeboats, and fighters) are detailed in the section on small craft. Small craft are carried at their own tonnage on ships 1000 tons and under; they require tonnage equal to 130% of their mass within the hull of larger ships. The cost is Cr2,000 per ton.

Big Craft: Ships may also carry non-starships greater than 99 tons, or even other starships, provided proper arrangements are made. Big craft require tonnage equal to 110% of their mass in the ship; the cost is Cr2,000 per ton.

Vehicle Launch Facilities: Starships and non-starships carried on a ship must be provided with some form of launch facilities.

1. Dispersed Structures: Ships which have a type 7 configuration hull carry craft and ships attached to their exterior. They need no additional fittings. All craft carried by a configuration 7 ship may be launched in one turn.

2. Launch Facility: Ordinary launch facilities for a ship allow one craft to be launched per turn per 10,000 tons of hull. These facilities are available at no cost or additional tonnage.

3. Launch Tubes: Rapid launch facilities may be created to allow the fast deployment of fighters or other craft. The required tonnage is 25 times the tonnage of the largest craft to pass through the facility; cost is Cr2,000 per ton.

CREW

All starships require a crew to operate and maintain the ship. In general, the crew of the ship must provide enough personnel to operate all machinery and man all weaponry. Crew size is coded for the USP using the orders of magnitude. The crew table shows the various crew size codes used.

The actual number of crew personnel required for the ship must be computed based on the drives, weaponry, and other equipment carried by the ship. If the ship is 1,000 tons or under, then the rules stated in Book 2 should be followed. For ships over 1,000 tons, the rules given below govern.

Command Section: The ship should have a commanding officer, an executive officer, a computer officer, two navigation officers, a medical officer, and a communications officer. The section should also have some support personnel, ratings equal to 50% of the total officers in the section. On large ships (over 20,000 tons), the number of personnel in the command section should amount to 5 per 10,000 tons of ship.

The commanding and executive officers will always be drawn from the naval line; other members of the command section may be drawn from any of the naval service branches.

Engineering Section: The ship needs one engineering crew member for each 100 tons of drives installed. This should include a knowledgeable chief engineer, a second engineer, and several petty officers.

All members of the engineering section should be from either the engineering

or technical services branch. There should be 10% officers and 20% petty officers.

Gunnery Section: The ship should have a chief gunnery officer and at least one petty officer for each type of weapon aboard. The major weapon (spinal mount) should have a crew of one per 100 tons of weapon; bay weapons should have a crew of at least two; turret weapons should have a crew of at least one per battery. Each screen device (force field, damper, meson screen) should have a crew of at least four. The gunnery section should have 10% officers, and 30% petty officers. Personnel are drawn from the gunnery branch and the technical services branch.

Flight Section: If the ship has any launched craft, it should have a flight control officer, crew for each craft, and at least one maintenance person per craft. Launch tubes should have a crew of at least ten, which will include a flight supervision officer and a preponderance of petty officers. Pilots must be officers, and maintenance personnel are generally ratings.

All officers are drawn from the flight branch, and all petty officers and ratings are from the technical services branch or the crew.

In addition, if the ship has more than three vehicles (air/rafts, ATVs, etc), the flight section should include vehicle drivers and maintenance personnel for them as well (at least one per three vehicles).

Ship's Troops: Most ships over 1,000 tons have a marine (or military) contingent aboard which ranges in size from a squad to a regiment. Such contingents range from three per 100 tons to three per thousand tons. Such forces are organized according to Mercenary, Book 4, and are assigned to the ship; their equipment should be consistent with the tech level of the ship. Ship's troops often fill the role of security forces aboard the ship, and are used for military adventures by the commander where necessary. Ship's troops are also used for damage control parties, manning of some weapons, and boarding actions.

Service Crew: The ship itself may have a requirement for other sections which provide basic services, including shops and storage, security (especially if there are no ship's troops aboard), maintenance, food service, and other operations. Such personnel are drawn from the crew branch if no other appears appropriate. Allow two crew per 1000 tons of ship; three per 1000 tons if there are no ship's troops.

The Frozen Watch: A ship may have low berths installed (and competent medical personnel assigned). If low berths provide enough places for a 50% overage in personnel (including ship's troops, if any), then the ship has a frozen watch. Replacement personnel are kept available in low berths for continuous replacement of casualties and battle losses; between battles, the frozen watch can be revived and used to restore lost crew.

Quarters: Staterooms or quarters must be provided for the entire crew. The captain of the ship must be provided with an individual stateroom, as must the commanding officers of each section and the commander of the ship's troops. All other personnel on military vessels must be provided with the equivalent of half a stateroom each.

Passengers should be provided with single staterooms.

Low passengers should be provided with individual low berths.

Staterooms require four tons at a cost of Cr500,000 per stateroom. Staterooms actually average about two tons, but the additional tonnage is used to provide corridors and access ways, as well as galley and recreation areas.

Low berths require one-half ton per berth, at a cost of Cr50,000 each.

Emergency low berths weigh one ton and cost Cr100,000; each contains four persons, all of whom share the revival roll. Emergency low berths cannot hold the frozen watch. An emergency low berth can hold one conscious person (functioning as the equivalent of a couch) for several hours at a time.

SMALL CRAFT

Non-starships under 100 tons are considered to be small craft. Production of small craft uses a system which differs in some details from that used for starships and non-starships of 100 tons or more.

Preliminaries: Craft name and class are decided upon. The tech level of the building shipyard is determined.

The Hull: Only hulls of metal may be used for small craft. They are built to tonnages up to 99 tons, at a cost of Cr100,000 per ton. Configurations 1 through 7 (anything but planetoids) may be selected.

Drives: Small craft do not have jump drives. Maneuver drives and power plants are selected from the drive tables and installed. No maneuver drive or power plant may be less than one ton; when a computation produces a drive of less than one ton, use a value of one ton (fractional drive values above one ton, such as 1.7 tons, may be retained instead of rounding). The power plant number must be at least equal to the maneuver drive number, but may be more.

Fuel: Fuel tankage required equals one percent of the ship tonnage times the power plant number. It may never be less than one ton.

Fuel scoops for small craft are automatically assumed to be provided in streamlined or partially streamlined designs. The drives do not require fuel purification plants to allow use of the unrefined fuel.

Energy Points: Energy points are computed as for starships using the standard formula $E=0.01MPn$. Energy points are used for weapons, computer, and agility.

The Bridge and Computer: Either a bridge or a computer is required on a small craft. If a bridge is installed, 20% of the total tonnage of the craft (and not less than four tons) must be allocated to the bridge at a cost of Cr25,000 per ton. It provides life support and couches for two persons. A bridge allows operation of the craft; no computer is necessary. If no computer is installed, use factor zero for the computer.

A computer may be installed instead of a bridge. The price of the computer is paid (standard models only are available; bis and fib models are not allowed), and at least one pilot couch must be provided (one-half ton at Cr25,000). A computer is required if the craft is to mount weaponry.

Both a bridge and a computer may be selected for a small craft. If a computer is installed, but no bridge is present, then the computer is treated as one level lower in combat (Model/2 is treated as Model/1; Model/1 is treated as Model/0, but at least the craft's weaponry may be used).

Weapons: A small craft may mount the equivalent of one turret. In actuality, the mountings are probably rigid, and no actual turret is present. All computations, however, may assume that the craft carries one turret. Weight, tech level, cost, and energy point restrictions must be observed. The pilot is assumed to be the gunner for one type of weapon on the craft. If additional types are mounted (a craft could conceivably have three different types of weapons), a gunner is required for each additional weapon. Exception: no additional gunner is required for sandcasters.

Crew: One crew member is required for the small craft— a pilot. The pilot must

be provided with a control couch and life support (one-half ton; Cr25,000) specifically, or with a bridge. One or more gunners may be optional crew members. Each crew member must be provided a control couch and life support. A bridge allows two crew members automatically.

Passengers: Provision for passengers is on the same basis as for crew. Each requires an acceleration couch and life support at one-half ton, Cr25,000. Such passenger couches can be easily removed to convert the space to cargo hold. Low berths and emergency low berths may also be installed.

Staterooms: Crew and passenger couches allow temporary transportation, up to a maximum of 36 turns in combat (12 hours), and 24 hours for routine operations. For longer periods, staterooms must be provided. Small craft staterooms allow sleeping and privacy at two tons each, Cr100,000. Such staterooms may allow double occupancy (each person has the facilities for half a day) on non-commercial flights. Low berths and emergency low berths may also be installed.

Cargo and Other Provisions: Cargo hold can be formed from otherwise unused tonnage at no cost. Other provisions may be designated by the referee.

Agility Rating: Energy points remaining after weapons and computer installation are used to determine agility. Remaining energy points are divided by 0.01M, dropping fractions. The result is the craft's agility rating.

SMALL CRAFT EXAMPLES

The following examples of small craft should indicate required data.

Launch	GL-0203301-000000-00000-0	MCr8.895	17 tons
Crew=2. Passengers=6. Cargo=6. Fuel=1. Agility=0. TL=8.			
Ship's Boat	QB-0204411-010000-10001-0	MCr21.95	27 tons
Crew=2. Passengers=6. Cargo=6. Fuel=3. EP=1.08. Agility=0. TL=8.			
Pinnace	KK-0106B11-000000-40000-0	MCr27.95	40 tons
Crew=2. Passengers=8. Cargo=12. Fuel=5. EP=4.8. Agility=4. TL=15.			

IN FORM 3-SHIP'S DATA

The Ship's Data Form (Imperial Navy Form 3) provides a uniform location for information about a specific ship or small craft. The starship design and small craft design checklists both refer to IN Form 3. The word entry (such as entry 3) refers to an area in which information is written; block (such as block 26) refers to the Universal Ship Profile blocks and calls for the use of the USP factor.

For example, the Kinunir has eight dual beam laser turrets, and the designer has selected two batteries of factor 5. The entry (entry 21, Lasers) would be three batteries laser-5, (abbreviated to three bty-5) indicating three batteries of factor-5 lasers. The notation (beam) might be added to distinguish them from pulse lasers. The numeral 5 should be placed in block 21 on the USP.

The conventions for entries (shown below) allow consistent placement of data.

In entry 28, indicate "Passengers=00" to show no passengers. Indicate "Low=0" to show no low passengers. Indicate "Cargo=00" to show the cargo capacity.

In entry 30, indicate "EP=00" to show energy points. Similarly, insert "Agility=0" to show agility. Finally, show "MCr100.0" to indicate ship cost.

CREW CODES

Code Crew Size

- 0 No Crew.
- 1 1 to 9.
- 2 10 to 99.
- 3 100 to 999.
- 4 1,000 to 9,999.
- 5 10,000 to 99,999.

FUEL PURIFICATION

TL	Tons	Cost
8	50	200,000
9	45	190,000
10	40	180,000
11	35	170,000
12	30	160,000
13	25	150,000
14	20	140,000
15	15	150,000

-Per 1000 tons of fuel.

ENERGY POINTS

The energy point formula is $E=0.01MP_n$, where E is the energy point output, M is the tonnage of the ship, and P_n is the power plant number.

FORMAT-

this format should be used when IN Form 3 is not.

BC-9514 Kinunir BC-A2447G2-000510-50202-0 MCr1336.63 1250 tons
 batteries bearing 2 2 2 Crew=45.
 batteries 2 2 2 TL=15.
 Passengers=0. Low=0. Cargo=63. Fuel=587.5. EP=87.5. Agility=1. Marines=35.

SMALL CRAFT DESIGN CHECKLIST

1. Determine craft name (entry 2), class (entry 3), and craft type (entry 7).
2. Determine tech level entry 4) of building shipyard.
3. Determine tonnage (block 8) and configuration (block 9).
4. Select maneuver drive (block 11) and power plant (block 12). Enter jump drive (block 10) as zero.
5. Determine fuel tankage (entry 29).
6. Compute energy points and indicate in entry 30.
7. Allocate bridge and computer (block

ACCOMODATIONS

Bridge: 2% of ship (minimum 20 tons) at Cr5,000 per ton of ship.

Small Craft Bridge: 20% of craft (minimum 4 tons) at Cr25,000 per ton of bridge.

Staterooms: Four tons at Cr500,000.

Small Craft Staterooms: Two tons at Cr50,000.

Small Craft Couches: One-half ton at Cr25,000.

Low Berths: One-half ton at Cr50,000.

SHIP'S VEHICLES

Vehicle	Cost (Cr)	Tons	Tech Level
Ground Car	4,000	2	5-15
ATV (Wheeled)	30,000	10	6-15
ATV (Tracked)	70,000	10	6-15
Hovercraft	200,000	8	6- 9
Air/Raft	600,000	4	8-15

AGILITY

Agility is computed from unused energy points using the formula $A=E/0.01M$.

DEFINITIONS

Starship: 100+ ton ship with jump drives.

Non-starship: 100+ ton ship without jump.

Small Craft: Ship 99 tons or less. No jump allowed.

Big Craft: 100+ ton ship carried on another ship.

Vehicle: Surface, grav, or aircraft.

- 13). If no computer, enter zero in block 13.
8. Select weaponry from turret table, such as sandcasters (block 16), lasers (block 21), energy weapons (block 22), particle accelerators and barbettes (block 23), and missile racks (block 25).
9. Determine ship's crew (block 14).
10. Note passenger facilities, cargo, and other areas (use entry 28).
11. Note ship's agility rating (in entry 30).
12. Note craft's purpose (entry 30).
13. Note dates required (entries 1, 5 and 6).
14. Insure that tonnage does not exceed hull, and that cost does not exceed budget.

SHIP'S DATA		1. Date of Preparation
2. Ship Name		3. Class
4. Tech Level	5. Laid Down	6. First Flight
STATISTICS Basic ship information for classification and registration purposes.		
7. Ship Type	8. Tonnage	9. Configuration
10. Jump	11. Acceleration	12. Power Plant
13a. Computer Model	13b. Optic Backup <input type="checkbox"/> Yes <input type="checkbox"/> No	14. Crew
WEAPONRY Data on ship armaments and defenses for classification into Universal Ship Profile.		
15. Hull Strength	16. Sand	17. Meson Screen
18. Nuclear Dampers	19. Force Field	20. Repulsors
21. Lasers	22. Energy Weapons	23. Particle Weapons
24. Meson Gun	25a. Missiles	25b. Magazine? <input type="checkbox"/> Yes <input type="checkbox"/> No
ADDITIONAL DATA Miscellaneous information concerning ship equipment.		
26. Fighter Screen		
27. Ship's Vehicles		
28. Ship's Troops		
29a. Fuel Tankage	29b. Maximum Jumps	29c. Unrefined Fuel? <input type="checkbox"/> Yes <input type="checkbox"/> No
30. Intended Ship's Purpose		

Using this form: Transfer data from the body of this form in appropriate codes to this 21 character Universal Ship Profile. Numbers below each block refer to numbered areas on this form.

-Type-	7	[]
	8	[]
	9	[]
---Statistics---	10	[]
	11	[]
	12	[]
	13	[]
	14	[]
	15	[]
---Defenses---	16	[]
	17	[]
	18	[]
	19	[]
	20	[]
---Attack Weapons---	21	[]
	22	[]
	23	[]
	24	[]
	25	[]
-Ftrs-	26	[]

UNIVERSAL SHIP PROFILE



Starship Combat

This combat system makes use of the Universal Ship Profiles (USP) generated by the previous starship construction rules. Certain assumptions are made with these rules: first, that an encounter has occurred and that it must be resolved by combat, and second, that the starships involved have been classified using USPs.

Combat using these rules may be one-sided (the referee manipulates the opposition) or two-sided (with players controlling their own squadrons on each side).

REQUIRED MATERIALS

In addition to these rules (and to the ubiquitous six-sided dice) the following materials are required for each ship involved:

1. A Marker. This marker indicates the ship and may be as simple as a cardboard counter, or as elaborate as a miniature starship figure or model.

2. A Ship's Data Sheet. Completely filled-out, this form (photocopied or reprinted from page 38) provides the data for the ship to use in combat. Temporary combat results are marked on the form. Alternatively, each ship may be listed by USP (and other data) on a sheet of paper using the format given in ship construction; allow sufficient space around each USP to mark combat results.

SCALE

High Guard uses the following scales in this space combat system:

1. Distance is represented by two indeterminate ranges which are labeled short and long.

2. Time is represented by turns equal to twenty minutes each.

3. Units represented are individual ships, small craft, and fighters.

SEQUENCE OF PLAY

The combat procedure is played in a series of turns or combat rounds. Each combat round is divided into a series of discrete steps, in each of which different actions may be performed. In turn, these steps are performed in a definite sequence (shown on pages 48 and 49). No action may be performed out of sequence. The steps of a turn are repeated and explained in the rules below.

BATTLE FORMATION STEP

Both players form their ships into two lines each. The first is the line of battle; the second is the reserve. Ships in the line of battle may fire and be fired upon. Ships in the reserve are screened; they may not fire and may not be fired upon unless their defending line of battle is broken (see Breakthrough).

Launch and Recovery: Ships carrying vessels (small craft or big craft) may launch or recover them. A launch facility may launch one vessel each per turn. A launch tube may launch up to forty vessels in a turn. A ship with a dispersed structure configuration may launch all its vessels in one turn. Recovery of craft is performed at the same rate.

Vessels are ready to engage in combat in the same turn that they are launched.

INITIATIVE DETERMINATION STEP

Initiative for each turn is determined by dice rolls, with modifications. The player with the higher die roll has the initiative and is termed the attacker; the other player is the defender. Note that this has nothing to do with who fires at whom. In the case of a tie, roll again. There are three possible DMs on the initiative die roll. The player with the faster fleet is allowed a DM of +1; the faster fleet is defined as the one whose least agile ship has the highest agility. For example, if one player has three ships with agility 5, 5, and 1 while a second player has three with agilities of 2, the second player has the faster fleet. The player with the most ships in his or her line of battle (all those counted must be capable of both fire and maneuver) is allowed a DM of +1. If the fleets are being used as a part of a campaign, and characters are operating the fleet, then each player may use the fleet tactics skill of the overall commander of the fleet as a +DM.

RANGE DETERMINATION STEP

There are two possible ranges of engagement: long and short. All ships in a battle are at the same range of engagement. This range may alter from round to round. On the first round of any battle, however, the range is automatically long. On each subsequent round, the player with the initiative chooses the range. Lasers, particle accelerators, and meson guns are most effective at short range. Missiles are most effective at long range. Energy weapons fire only at short range.

PRE-COMBAT DECISION STEP

There are several decisions players must make before the firing begins. The defender must make all these decisions before the attacker. In addition to the decisions covered below, see the Black Globe rule.

Breaking Off: There are two ways for a ship to break off from the battle: by jumping out of the system or by accelerating away from the enemy. Ships may attempt to break off one at a time or in groups.

Jumping: A ship which breaks off by jumping must have a destination and enough fuel to get there. It must expend energy points equal to two turns output from a power plant whose number is equal to the jump being attempted (EP required = $0.01MJn$). If it can do this in two turns, it jumps at the end of two turns. If it can do this in one turn or less, it jumps at the end of one turn (in the pursuit step). A ship which cannot summon the required energy in two turns may not jump at all. For instance, if a ship with power plant 8 attempts jump 5, it takes two turns; if it attempts jump 4 (or less), it takes only one turn. Energy used to power the jump may not be used for other purposes. Ships may jump from the line of battle or from the reserve; they may jump at any range of engagement.

Acceleration: A ship which breaks off by acceleration must start at long range. It automatically escapes at the end of the pursuit step if it is not pursued. See Pursuit. A ship may break off from the line of battle or from the reserve.

Emergency Agility: A ship may be declared to be using its emergency agility during the pre-combat decision step. If so, the ship may not fire any of its energy consuming weapons (all but missiles and sandcasters), but its agility becomes equal to its maneuver drive or its power plant number, whichever is less. The ship may still use its computers and screens. This tactic is especially useful when breaking off by acceleration.

COMBAT STEP

In the combat step, all ships in both sides' main battle lines may fire their weapons at any other ships in the enemy battle line. To avoid chaos, this procedure has been ordered. To begin, each player organizes the ships in his or her line of battle in order of size with the largest first. Fire is conducted with one ship at a time as target. First, the attacker (the player with the initiative) puts forward his or her largest ship. The defender may fire at it with any of the batteries of any of his or her ships. He may fire as many or as few batteries as he wants, from any combination of ships. He may even decline to fire at all. After all fire against that ship has been resolved (but remember that damage does not take place until the damage step) the defender puts forward his largest ship and the attacker's ships may fire. This continues with players alternating until all ships have been exposed to fire (but not necessarily fired upon) once. If one player has more ships than the other, the rest are exposed to fire at once after the other player's last ship. Each battery on a ship may fire once in the turn, either offensively against another ship, or defensively against incoming fire. Fire against each ship occurs in the following sequence:

A. All batteries which will fire against that ship must be stated.

B. Dice are rolled for each battery to determine if it scored a hit.

C. For each battery that achieved a hit, dice are rolled to determine if it penetrated the defensive fire of the target. Each battery fired by the target ship as defense may not be fired again in the turn.

D. Dice are rolled to determine if the passive defenses of the target ship are penetrated.

E. If the battery has hit and then penetrated all defenses, then damage inflicted is determined.

There is an attack table for each type of weapon (missile, both nuclear and non-nuclear; beam weapons, including lasers, plasma and fusion guns; meson guns; and particle accelerators). The first portion gives the hit number for each weapon factor. This is the number which must be rolled or exceeded on two dice in order to score a hit. The die roll may be modified by a number of factors as indicated in the notes to each table. If the weapon does not score a hit, there is no further effect.

If a weapon does score a hit, then it must penetrate first the defensive weapons and then the passive defenses. Defensive weapons (sandcasters, repulsors and beam weapons used as missile defense) must be allocated against the hits of specific batteries. For instance, if a ship has eight laser batteries and has been hit four times by enemy missiles, the player may allocate two laser batteries against each missile battery hit, all eight lasers against one of the missile battery hits, or any other combination which satisfies the player. Passive defenses (nuclear dampers, meson screens, and configuration) resist each battery that hits. Both defensive weapons fire and passive defenses are resolved in the same way. Consult the relevant portion of the weapon's attack table. The number at the intersection of the column corresponding to the attacking weapon's factor and the defending factor must be rolled or exceeded on two dice to penetrate the defense. The die roll may be modified as indicated by the notes on the table. If there is no portion of an attack table for a defending weapon or passive defense, that defense is useless against that weapon.

Weapons which penetrate the ship's defenses inflict damage on their targets. Each battery is allowed one roll on one or more damage tables, depending on weapon type. This roll may be modified by various factors.

Spinal Mounts: All spinal mount weapons which hit and penetrate inflict one extra damage roll (on each appropriate table) for each letter by which their size exceeds 9. For example, a particle accelerator with a code of A gets 2 rolls on both the surface explosion and radiation tables; a factor of B receives 3 rolls, etc. The number of extra rolls is reduced by one for each factor of armor the target ship has (but a weapon always gets one roll). Meson guns are not reduced by armor.

Critical Hits: All batteries whose weapon code exceeds the size code of the target ship will inflict (if they hit and penetrate) automatic critical hits equal to the size difference. For example, if a missile battery of factor 9 hits a size 4 ship, it will (in addition to any other damage) inflict 5 critical hits. These critical hits are reduced in number by one for each two factors of armor the target ship has; round odd numbers down. Meson gun hits are not reduced by armor.

BREAKTHROUGH STEP

A breakthrough occurs if all of one player's line of battle ships have been rendered incapable of firing any offensive weapons. If this occurs, the other player is allowed to fire all of his or her line of battle ships at any of the ships in the enemy's reserve. The (formerly) screened ships are not allowed to fire back, but may fire defensively. In the next turn, the player may form a new line of battle.

PURSUIT STEP

Ships breaking off by acceleration must begin at long range; they may break off from the line of battle or the reserve. Ships may break off alone or in groups; a group breaks off at the agility of its slowest ship. Ships breaking off from the reserve (assuming the line of battle has not been broken through) do so as if their agilities were two greater than they are. Enemy ships (from the line of battle or the reserve) may pursue if their agility is at least equal to that of the group breaking off. Each group of pursued and pursuers forms a small battle of its own. No ships ever return to the main battle. Ships may attempt to break off from their pursuers. A ship succeeds in breaking off if it is not pursued. Emergency agility may be used to determine agility for the purpose of breakoff and pursuit, if it has been declared.

Suppose three Imperial ships, the *Alpha* (agility 4), *Beta* (5), and *Gamma* (5) are fighting three Solomani ships, the *Chi* (6), *Psi* (5), and *Omega* (5). The *Omega* has an emergency agility of 6. The Imperial player puts the *Gamma* in the line and his other two ships in reserve; the Solomani puts *Chi* and *Psi* in the line and *Omega* in reserve. The Imperial player wins the initiative and chooses long range. In the pre-combat decision step the Solomani, suspecting a break-off attempt, decides to use the *Omega*'s emergency agility. Sure enough, the Imperial player announces that all three of his ships will break off. The combat step passes without major losses on either side. In the pursuit step, the *Beta* automatically escapes because her agility-5 is raised to 7 by being in the reserve; none of the Solomani can catch her. *Chi* and *Omega* (agility-6 each) pursue the *Alpha* (also effectively agility-6). *Psi* pursues *Gamma*. In the next round *Alpha* is incapable of breaking off and will probably be destroyed. *Gamma*, fighting *Psi*, again gets the initiative and again tries to break off. In the combat step she achieves a fortunate hit on *Psi*'s maneuver

drives and suffers no corresponding damage herself. *Psi* now has an agility-4 and is unable to pursue, so *Gamma* escapes.

THE BLACK GLOBE

Since a black globe absorbs all energy, a ship with its field on is protected from all fire. Unfortunately, the forcefield works in both directions; the ship may not fire, maneuver, or even see out. These limitations would make the black globe of little value in battle if not for the ability of the field generator to flicker— switch the field on and off many times per second— giving the ship part-time protection while still allowing it to fire, maneuver, and track enemy ships during the "off" intervals. A black globe screen's factor is its maximum rate of flicker; a screen may be on up to 10% of the time times its factor. For instance, a screen with a factor of 2 may flicker at a maximum rate of 20%; it is on 20% of the time in every second. In the pre-combat decision step, a player decides the flicker rate of each ship's black globe (if any), which may range from its maximum rate down to zero (off).

Each 10% of flicker acts as two levels of armor, protecting the owning ship and any enemy ship it fires at. For instance, if a ship has a black globe with a factor of 4 operating at the maximum of 40% flicker rate, all damage rolls against the ship will receive a DM of +8, and all damage rolls it inflicts on enemy ships will also have a +8 DM. Unlike normal armor, a black globe also affects meson guns.

Energy striking a black globe screen is diverted to the ship's capacitors. Each ton of capacitors will hold 36 energy points. When the screen is flickering, a percentage of the incoming energy equal to the flicker rate is absorbed. In order to strike the black globe, the weapon must first hit and penetrate all defenses. The amount of energy a weapon transfers depends on its type and factor. Turret and bay weapons inflict a number of energy points equal to their factors times the energy point requirement for one such weapon installed in a turret. Non-nuclear missiles inflict two points times their factor; nuclear missiles inflict 100 points times their factor; meson guns inflict 20 points times their factor. Spinal mount weapons inflict their full energy point requirements. For example, a particle accelerator bay with a factor of 8 would inflict 40 energy points each time it hits and penetrates. If the target ship's black globe is operating at a flicker rate of 10%, the ship's capacitors would absorb 4 energy points.

If a black globe absorbs energy and the ship's capacitors are already full, the ship is destroyed. A ship without additional capacitors installed has capacitors (for the jump drive) equal to 0.5%MJn.

Stored energy may be removed from the capacitors by using it to power the ship. Energy may only leave the ship, however, when the black globe is off (or during the off intervals of its flicker). During a turn, a ship may dispose of its energy from its capacitors equal to the number of points generated by its power plant, minus 10% for every 10% of flicker rate of the black globe screen. For example, if a ship's black globe screen is operating at 60% and its power plant has an output of 1000 EP, 400 EP may be removed from the ship's capacitors that turn.

The screen also affects a ship's ability to maneuver. A ship's agility is reduced by 10% (round fractions to the nearest whole number) for each 10% of flicker rate of its black globe.

Instead of flickering, any black globe may be turned completely on. No enemy

fire will affect it, but the ship may not fire or maneuver. While the black globe is on, all enemy fire automatically hits the screen, and 100% of its energy is absorbed. No energy may be removed from the ship's capacitors while the screen is on. All fire also automatically hits (although it may not penetrate the ship's defenses) in the first turn after the black globe is turned off.

If a ship absorbs enough energy to make a jump, and is supplied with sufficient fuel, it may jump at the end of the turn.

Invisibility: Since a black globe field absorbs all energy, a ship with its field completely on is, at any range over a few kilometers, effectively invisible. In battle this will have no effect, since a ship that suddenly disappears from enemy sensors in this way will have its course predicted on the basis of its last known position; since the ship cannot maneuver while in the field, the prediction will always be correct.

However, the advantages to a fleet which has not yet been detected by the enemy are immense. Suppose, for instance, that a fleet were to jump into a system with its black globes on and its velocity set upon a predetermined course. It could drift unseen past any defending fleet and drop its screens at a preplanned moment, to bombard a planet or to engage enemy fleets by surprise. Further tactical possibilities are left to the imaginations of the referee and players.

BOARDING

Disabled enemy ships may be captured by boarding. In order for boarding to take place, two conditions must be satisfied.

First, the ship to be boarded must be disabled; it must be incapable of maneuvering, all of its offensive weapons must be disabled, and it must not have a working black globe generator.

Second, it must be separated from protecting friendly ships; this is assumed to occur if, at any point after the ship is disabled, the owning player has the initiative and changes range from short to long (retreating, in effect).

At any time thereafter, the ship may be boarded. Any ship capable of maneuver may attempt to board, and may do so from the safety of the reserve. A boarding party consists of the ship's troops. If the ship has no marines, it will have security troops (consisting of one-third of the ship's service crew section); only marines and troops may board. The entire remaining crew of the disabled ship may defend.

Boarding actions may be resolved using deck plans and personal combat rules (from Book 1), or the *Snapshot* or *Azhanti High Lightning* rules, or the following abstract system may be used.

Boarding Action Resolution: Each player rolls one die, and applies the following DMs. For each five marines, +1. For each ten (non-marine) troops, +1. For each 50 (non-marine, non-troop) crew, +1. The player with the higher modified die roll gains (or retains) control of the ship. In the case of ties, roll again. Win or lose, each side takes casualties equal to twice the other side's modified die roll. If a boarding attempt succeeds, all surviving enemy crew are taken prisoner; the boarding party becomes a prize crew and may make use of all still-operating ship systems. Additional crew may be transferred to the captured ship, to make repairs, and perhaps even to return it to combat. If the attempt fails, the boarding player is forced outside the ship. They (or anyone else) may attempt to board again in a later turn. A captured ship may be the target of a boarding party from the original owning player.

THE FROZEN WATCH

A ship's frozen watch is a reserve pool used to replace crew casualties. If a ship has a frozen watch, it may be revived and used to replace one crew casualty; for instance, a ship which has been reduced to a crew factor of 2 may restore its factor to 3 by reviving the frozen watch. This process takes two turns. Obviously, if the frozen watch has been revived and the ship suffers another crew hit, the frozen watch may not be revived a second time.

DAMAGE CONTROL AND REPAIR

It is possible for a ship to undertake emergency repairs during a battle. The ship must be in the reserve and its crew must be intact (its crew factor is at full value). The crew may attempt to repair one ship system for each 10,000 tons of ship, or fraction thereof. Attempts may be made to repair weapons (both offensive and defensive), screens, drives and power plants, and computers. A repair attempt takes one turn, and succeeds on a dice roll of 9+. A successful repair attempt negates the effect of one hit; in most cases this means that the repaired system regains one lost factor; weapons batteries that were knocked out with one hit are restored to full function. The crew may not attempt to repair the same system more than once in a turn (although different batteries of the same weapon type may be repaired). The effects of critical hits may not be repaired. The referee should keep in mind that these emergency repairs are jury-rigged and may not survive long under hard usage.

After the battle, damaged ships may be repaired at shipyards. Jump drives may be repaired at class A starports; any other ship systems may be repaired at class A or B starports. In any case, repairs must be conducted at shipyards of the required tech level (although the referee may make exceptions). Repair costs one-half the purchase price of a system; systems which have been the victims of critical hits must be entirely replaced at full price. Systems which have been repaired during the battle must still be repaired in a shipyard to function properly in the long run.

INDIVIDUALS

The skills of individual participants in a battle may affect its outcome, and the reverse is certainly true.

Skills. The skills of player characters, if sufficiently higher than average, may have a noticeable effect on the battle. The average skill level of a non-player character in his assigned job (and hence the background level of the combat system) is assumed to be two. Higher skill levels are useful in four cases:

Fleet Tactics: The skill level of the fleet commander is a modifier to the initiative die roll. See the initiative determination step.

Ship Tactics: The skill level of a ship's (or small craft's) captain affects its performance. Subtract one from the skill level of the captain and divide it by two, dropping fractions. The resulting number is used as a + modifier to the ship's effective computer level (a computer model/5 is treated as a model/6). The computer must be working at at least level 1 for the modifier to apply.

Pilot: The skill level of a ship's command pilot affects its maneuver. Subtract one from the skill level of the ship's command pilot and divide by two, dropping fractions. The resulting number is used as a + modifier to the ship's effective agility. The ship's agility must be at least one for the modifier to apply.

Ship's Boat: Treat ship's boat for small craft in the same way as pilot for ships.

MISSILE ATTACK TABLE

Missiles must achieve the to hit number (or greater) on two dice. If a hit is achieved, then sandcaster, beam weapons (laser and energy; each type uses the beam section), repulsors, and dampers must be penetrated (throw the number shown or greater on two dice). If all throws succeed, go to the damage tables.

Missiles must be designated nuclear or high explosive before the attack. HE (non-nuclear) missiles ignore dampers; nuclear missiles stopped by dampers have no effect.

DMs Allowed To Hit:

- + relative computer size.
- + target size modifiers.

Energy Weapons: not allowed at long range.

Lasers: -1 at long range.

Missiles: -1 at short range.

DMs Allowed To Penetrate:

- + relative computer size.

Energy Weapons: +2.

TARGET SIZE DM (To Hit)

Size Code *Die Modification*

0 (zero) -2

1 to A -1

B to K none

L to P +1

Q+ +2

Use only on die roll to hit.

BEAM WEAPON TABLE

Beam weapons include lasers and energy (fusion and plasma) guns. All use the same table (with DMs shown above). After hits and penetration, proceed to the ship damage tables.

		— Attacking Missile Factor —								
		1	2	3	4	5	6	7	8	9
<i>Sand or Beam</i>	<i>To Hit:</i>	6	6	5	5	4	4	3	3	2
	1	5	4	3	2	1	0	0	0	0
	2	6	5	4	3	2	1	0	0	0
	3	7	6	5	4	3	2	1	0	0
	4	8	7	6	5	4	3	2	1	0
	5	9	8	7	6	5	4	3	2	1
	6	10	9	8	7	6	5	4	3	2
	7	11	10	9	8	7	6	5	4	3
	8	12	11	10	9	8	7	6	5	4
9	13	12	11	10	9	8	7	6	5	
<i>Repulsor</i>	1	15	14	13	12	11	10	9	8	7
	2	16	15	14	13	12	11	10	9	8
	3	17	16	15	14	13	12	11	10	9
	4	18	17	16	15	14	13	12	11	10
	5	19	18	17	16	15	14	13	12	11
	6	20	19	18	17	16	15	14	13	12
	7	21	20	19	18	17	16	15	14	13
	8	22	21	20	19	18	17	16	15	14
	9	23	22	21	20	19	18	17	16	15
<i>Nuclear Damper</i>	1	10	9	8	7	6	5	4	3	2
	2	11	10	9	8	7	6	5	4	3
	3	12	11	10	9	8	7	6	5	4
	4	13	12	11	10	9	8	7	6	5
	5	14	13	12	11	10	9	8	7	6
	6	15	14	13	12	11	10	9	8	7
	7	16	15	14	13	12	11	10	9	8
	8	17	16	15	14	13	12	11	10	9
	9	18	17	16	15	14	13	12	11	10
		— Attacking Beam Factor —								
		1	2	3	4	5	6	7	8	9
<i>Sand</i>	<i>To Hit:</i>	8	7	7	6	6	5	5	4	4
	1	6	5	4	3	2	1	0	0	0
	2	7	6	5	4	3	2	1	0	0
	3	8	7	6	5	4	3	2	1	0
	4	9	8	7	6	5	4	3	2	1
	5	10	9	8	7	6	5	4	3	2
	6	11	10	9	8	7	6	5	4	3
	7	12	11	10	9	8	7	6	5	4
	8	13	12	11	10	9	8	7	6	5
9	14	13	12	11	10	9	8	7	6	

		Attacking Meson Gun Factor																
		1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H
<i>To Hit:</i>		9	9	8	7	7	7	6	6	6	5	5	5	4	4	4	4	4
<i>Meson Screen</i>	1	16	15	15	14	14	13	13	12	12	9	9	8	8	7	7	6	6
	2	16	16	15	15	4	14	13	13	12	10	9	9	8	8	7	7	6
	3	17	16	16	15	15	14	14	13	13	10	10	9	9	8	8	7	7
	4	17	17	16	16	15	15	14	14	13	11	10	10	9	9	8	8	7
	5	18	17	17	16	16	15	15	14	14	11	11	10	10	9	9	8	8
	6	18	18	17	17	16	16	15	15	14	12	11	11	10	10	9	9	8
	7	19	18	18	17	17	16	16	15	15	12	12	11	11	10	10	9	9
	8	19	19	18	18	17	17	16	16	15	13	12	12	11	11	10	10	9
	9	20	19	19	18	18	17	17	16	16	13	13	12	12	11	11	10	10
<i>Configuration</i>	1	12	12	12	11	11	11	10	10	10	8	8	8	7	7	7	6	6
	2	11	11	10	10	10	9	9	9	8	7	7	6	6	6	5	5	5
	3	10	9	9	9	8	8	8	7	7	6	5	5	5	4	4	4	3
	4	7	7	6	6	6	5	5	5	4	3	3	2	2	2	1	1	1
	5	6	5	5	5	4	4	4	3	3	2	1	1	1	0	0	0	0
	6	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3
	7	15	15	14	14	14	13	13	13	12	11	11	10	10	10	9	9	9
	8	4	4	4	3	3	3	2	2	2	0	0	0	0	0	0	0	0
	9	14	13	13	13	12	12	12	11	11	10	9	9	9	8	8	8	7

		Attacking Particle Accelerator Factor																
		1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H
<i>To Hit:</i>		9	8	7	7	6	6	5	5	4	3	3	3	3	3	2	2	2

GAME-TURN SEQUENCE

1. Battle Formation Step. Both players determine their line of battle and reserve positions. Craft are launched and recovered.

2. Initiative Determination Step. Dice determine who has the initiative. The player with the initiative is called the attacker for the turn.

3. Range Determination Step. The attacker decides the range for the turn.

4. Pre-Combat Decision Step. Each player decides for each ship

- A. Whether to break off this turn,
- B. Whether to use emergency agility,
- C. If black globe will be on.

The defending player announces all such decisions before the attacker.

5. Combat Step. Players arrange their battle lines by size with largest ship

first. Attacker then presents his first ship as a target for the combat procedure. Then the defender presents his first ship. Combat continues with players alternating until all ships in both battle lines have been presented as targets. For each ship, the combat procedure is :

A. Fire Allocation. Firing player indicates which batteries will fire.

B. Hit Procedure. Firing player determines which batteries have scored hits.

C. Defensive Fire. Target uses its defensive batteries to prevent enemy weapons from penetrating.

D. Passive Defense. Passive defensive screens must be penetrated.

E. Damage Determination. Batteries which hit and penetrate all defenses must determine the damage they inflict.

		—Attacking Meson Gun Factor—									
		J	K	L	M	N	P	Q	R	S	T
To Hit:		4	4	4	4	4	4	4	4	4	4
Meson Screen	1	5	5	4	4	3	3	2	2	1	1
	2	6	5	5	4	4	3	3	2	2	1
	3	6	6	5	5	4	4	3	3	2	2
	4	7	6	6	5	5	4	4	3	3	2
	5	7	7	6	6	5	5	4	4	3	3
	6	8	7	7	6	6	5	5	4	4	3
	7	8	8	7	7	6	6	5	5	4	4
	8	9	8	8	7	7	6	6	5	5	4
	9	9	9	8	8	7	7	6	6	5	5
Configuration	1	6	5	5	5	4	4	4	3	3	3
	2	4	4	4	3	3	3	2	2	2	1
	3	3	3	2	2	2	1	1	1	0	0
	4	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0
	6	2	1	1	1	0	0	0	0	0	0
	7	8	8	8	7	7	7	6	6	6	5
	8	0	0	0	0	0	0	0	0	0	0
	9	7	7	6	6	6	5	5	5	4	4

		—Attacking Particle Accelerator Factor—									
		J	K	L	M	N	P	Q	R	S	T
To Hit:		2	2	1	1	1	1	1	0	0	0

Damage is recorded but does not apply until step 6.

F. *Fire procedure begins* for the next ship.

6. Damage Step. Damage inflicted during combat (5E) takes effect.

7. Breakthrough Step. If one player's line of battle has been broken, ships in the line of battle of the victorious player may fire again at any ships in the enemy reserve position. Go through steps 5 and 6 again; ships in the enemy reserve position may not fire except defensively.

8. Pursuit Step. Ships which are breaking off may be pursued by enemy ships.

9. Terminal Step. Planetary bombardment, refuelling, revival of the frozen watch, and other non-battle operations are performed.

MESON ATTACK TABLE

Meson guns attacking a target must achieve a hit by throwing the to hit number (or greater) on two dice. If a hit is achieved, then the meson screen and configuration must be penetrated (throw the indicated number or greater on two dice).

If the throws are successful, proceed to the ship damage tables.

DMs Allowed To Hit:

+ relative computer size.

- target agility rating.

+ target size modifier.

Meson Gun:+2 at short range.

DMs Allowed To Penetrate:

+ relative computer size.

TARGET SIZE DM (To Hit)

Size Code	Die Modification
0 (zero)	-2
1 to A	-1
B to K	none
L to P	+1
Q +	+2

The target size DM is used only on the die roll to hit.

PARTICLE ACCELERATOR

Particle accelerators attacking a target must achieve a hit by throwing the to hit number (or greater) on two dice. Proceed to the damage tables.

DMs: Use the DMs, given above for meson guns, but the particle accelerator is not allowed the +2 DM at short range.

SHIP DAMAGE TABLES

<i>Die</i>	<i>Surface Explosion</i>	<i>Radiation</i>	<i>Interior Explosion</i>
(2D)	<i>Damage Table</i>	<i>Damage Table</i>	<i>Damage Table</i>
2	Critical	Critical	Critical
3	Interior Explosion	Crew-1	Critical
4	Interior Explosion	Computer-4	Critical
5	Interior Explosion	Crew-1	Fuel Tanks Shattered
6	Maneuver-2	Computer-3	Computer-2
7	Fuel-3	Crew-1	Screens-3
8	Weapon-3	Computer-2	Jump-2
9	Maneuver-1	Computer-2	Power Plant-2
10	Fuel-2	Weapon-4	Crew-1
11	Weapon-2	Computer-2	Computer-1
12	Maneuver-1	Weapon-3	Screens-2
13	Fuel-1	Computer-1	Jump-1
14	Weapon-1	Weapon-2	Power Plant-1
15	Weapon-1	Computer-1	Computer-1
16	Fuel-1	Weapon-2	Screens-1
17	Weapon-1	Weapon-1	Jump-1
18	Weapon-1	Weapon-1	Power Plant-1
19	Fuel-1	Weapon-1	Screens-1
20	Weapon-1	Weapon-1	Jump-1
21	Weapon-1	Weapon-1	Power Plant-1
22+	No Effect	No Effect	No Effect

Use This Column For:
Energy Weapons, Lasers,
HE and Nuclear Missiles,
and Particle Weapons.

Use This Column For:
Particle Accelerators
Nuclear Missiles, and
Meson Guns.

Use This Column For:
Meson Guns

DMs for the Ship Damage Tables:

1. Apply armor of the defending ship as a +DM against all weapons on the surface explosions table and all but meson guns on the radiation damage tables.
2. If the weapon inflicting the hit has a factor of 9 or less, apply a DM of +6.

CRITICAL HIT TABLE

<i>Die</i>	<i>Critical Hit Result</i>
2	Ship Vaporized.
3	Bridge Destroyed.
4	Computer Destroyed.
5	Maneuver Drive Disabled.
6	One Screen Disabled.
7	Jump Drive Disabled.
8	Hangars/Boat Deck Destroyed.
9	Power Plant Disabled.
10	Crew-1.
11	Spinal Mount/Fire Control Out.
12	Frozen Watch/Ship's Troops Dead.

3. If the weapon inflicting the hit was a nuclear missile, apply a DM of -6 on surface explosion damage.

4. If the weapon inflicting the hit was a pulse laser, apply a DM of -2.

5. Rolls resulting from other rolls (for example, interior explosion caused by surface explosion) are unmodified.

CRITICAL HITS

In addition to rolled damages, each critical hit reduces a target's armor factor by one. A ship's armor factor may not be reduced to less than zero.

EXPLANATION OF DAMAGE RESULTS

If an indicated damage location on a ship does not exist, the damage is ignored.

Bridge Destroyed: The ship may not maneuver or jump. It fires and is fired upon as if its computer were half its actual factor (rounding down). If the ship has an auxiliary bridge then command may be transferred to it, negating all penalties.

Computer-n: The USP computer factor is reduced by n. If this result is rolled on the radiation damage table and the computer has a fibre-optic backup, it is ignored.

Computer Destroyed: The USP computer factor is reduced to zero; the ship may not jump, although it may continue to fire weapons and maneuver.

Crew-n: The USP crew factor is reduced by n. Upon reduction of the crew factor from its initial level, the ship may no longer fire its weapons or attempt repair, although it may use its passive defenses, maneuver, or jump. This result does not affect the frozen watch or ship's troops.

Critical: Roll again on the critical hit table. Reduce the ship's USP armor factor by one for each critical hit received.

Frozen Watch/Ship's Troops Dead: On a die roll of 1-3, all personnel in low berths or the frozen watch are dead; on a roll of 4-6, all ship's troops (including marines and security troops) are dead.

Fuel-n: Current fuel is reduced by n% of total fuel capacity (at least 10 tons).

Fuel Tanks Shattered: All fuel on the ship is lost and the ship may not be refueled. No ship systems requiring energy points may operate.

Hangars/Boat Deck Destroyed: Craft carried by the ship are destroyed, up to 600 tons in aggregate displacement of small craft, or one craft of 600 tons or more. One launch facility or launch tube is also destroyed. The specific craft and facilities destroyed are determined by the referee or random die rolls.

Interior Explosion: Roll again on the interior explosion table.

Jump-n: The USP jump factor is reduced by the indicated amount.

Jump Drive Disabled: The USP jump factor is reduced to zero.

Maneuver-n: The USP maneuver factor is reduced by the indicated amount.

Maneuver Drive Disabled: The USP maneuver factor is reduced to zero.

One Screen Disabled: One screen (nuclear damper, meson screen, or black globe) of the firing player's choice has its USP factor reduced to zero.

Power-n: The USP power plant factor is reduced by the indicated amount.

Power Plant Disabled: The USP power plant factor is reduced to zero.

Screen-n: The USP factor for one screen (nuclear damper, meson screen, or black globe) selected by the firing player is reduced by the indicated amount. Damage must be divided as evenly as possible: no screen may receive two hits until all other screens have at least one, or three hits until all others have at least two.

Ship Vaporized: The ship is utterly destroyed.

Spinal Mount/Fire Control Out: On a die roll of 1-3, the USP spinal mount factor is reduced to zero; on a roll of 4-6, fire control is out, and no weapons except the spinal mount may fire.

Weapon-n: Each hit destroys one battery of weapons, either offensive (laser, energy weapon, meson gun, particle accelerator, or missile) or defensive (sandcasters, or repulsors). If the ship has only one battery of a type (including spinal mounts), a hit reduces its USP factor by the indicated amount. As with screens, the firing player chooses which weapons are affected, but damage must be divided as evenly as possible.

High Guard Statistics

The correct listing and identification of a ship is important to insure that combat proceeds smoothly and quickly. To this end, a ship listing should be kept in an easy to read format, and care should be taken that all appropriate information is available. Consider the following sample ship listing:

CE-13768 Unicorn CE-3455762-300000401000-0 MCr355.99 300 tons
batteries bearing 2 2 Crew=12
batteries 2 2 TL=14
Passengers=0. Low Berths=0. Cargo=6. Fuel=81. EP=21. Agility=0. Troops=0.
Note: L-Hyd Tanks add 100 tons of fuel and mass (CE-4444762) and cost MCr.11.

GG-13768.1 Gig GG-0106B21-000000-20000-0 MCr27.65 20 tons
Agility=6. one battery Crew=1. TL=14.
Passengers=7. Emergency Low Berths=3 (for 12). Cargo=2. Fuel=2.2. EP=2.2.

The listing attempts to provide all information which may possibly be of use to the players and referee, while not being cumbersome or confusing. The first line contains the most important information: ship number and name, USP, cost, and tonnage. Batteries bearing and total batteries are listed below to show how many times the specific factors may be used in a turn (this information may be omitted if all factors are of one battery each). The number of personnel in the crew and the tech level are also shown.

Note the second listing identifies and explains the gig carried by the ship.

Boarding: Boarding actions make use of the listed crew numbers and the listed troop and marine numbers. When specifying ship's troops, note either Troops=, or Marines= to note which type of troops is carried. In the rare instance where both naval security crew and marines are carried, be sure to note both.

Agility: The agility listing indicates the standard agility rating of the ship. Emergency agility can be determined from the lower of the power plant and maneuver drive numbers in the USP.

Fuel: Power plant fuel required for a ship is equal to its energy points; the remainder is available for use in jump.

L-Hyd Tanks: Drop tanks can make radical changes in ship performance. The ship listing should indicate ship performance without drop tanks installed, and without the extra fuel tank capacity available. On an additional listing line, the comment that L-Hyd tanks are fitted should be made, with specification of total drop tank tonnage. The revised performance portion of the USP (the first third) should be stated to show ship tonnage and performance while burdened with the drop tanks. If agility rating changes with the addition or deletion of drop tanks, it should also be noted.

Vehicles: For adventuring purposes, the ship listing should indicate ship's vehicles (air/rafts and ATVs).

Vessels: The ship listing should include beneath it similar listings for all other

craft carried aboard, such as pinnaces, gigs, fighters, or boats. The tonnage and cost of such craft are included in the overall tonnage and cost of the ship itself.

Pulse or Beam Lasers: Lasers are assumed to be beam lasers unless the notation "pulse lasers" is made on the listing.

Energy Weapons: There is no practical difference between plasma and fusion guns in the use of factors; there is no need to differentiate between them in the ship listing.

Frozen Watch: If a frozen watch is carried, it must be noted in the listing separate from the low berth listing, and the number in the frozen watch may not exceed the number of low berths available.

Computer: The computer carried is listed in the USP, and need not be noted separately. Players should remember, however, that if the ship size code is 0 (small craft) then the computer is treated as -1 for weapon firing.

Miscellaneous: Items not listed or enumerated are assumed to be zero (for example, if passengers are not listed, it is assumed that there is no special passenger space designated).

Battle Cruiser Kinunir: The Imperial battlecruiser Kinunir, subject of Traveller Adventure 1, has been constructed according to the starship design system, and is presented below.

The battlecruiser Kinunir is the first of 24 authorized units in its class (20 actually built). Governing tech level is 15. Its 1250-ton hull is of the cone configuration (actually slightly flattened, with a central fin mounted dorsally); it is streamlined and capable of atmospheric work (hull cost, including 10% surcharge for cone configuration: MCr137.5).

The ship is jump-4 (62.5 tons; MCr250), maneuver-4 (137.5 tons; MCr68.75), and power plant-7 (87.5 tons; MCr262.5). The power plant provides 87.5 energy points.

Fuel tankage requires 500 tons for jump fuel and 87.5 tons for power plant fuel; a total of 587.5 tons. There are fuel scoops (MCr1.25) and a fuel purification plant (8.8 tons; MCr.08125).

A bridge (25 tons; MCr6.25) and a computer Model/7fib are installed (18 tons; MCr100; 7 energy points).

The ship carries no armor, no spinal mount, and no bay weaponry.

Eight dual beam laser turrets (8 tons; MCr16; 16 energy points) are installed and grouped into two batteries of factor 4 each, which tech level bumps to factor 5. Two particle accelerator turrets (6 tons; MCr6; 10 energy points) are installed as two batteries at factor-2. Finally, two triple missile turrets are installed (2 tons; MCr4.5; no energy points) as two batteries of factor-3.

The ship carries a factor-5 nuclear damper (8 tons; MCr30; 40 energy points) and a factor-1 black globe generator (10 tons; MCr400; no energy points).

Ship's vehicles include three air/rafts (12 tons; MCr1.8) and a grav APC (10 tons; MCr9.3). A pinnace (35 tons; MCr21.7) is carried for troop landings.

The crew numbers 45, plus 35 marines, and requires 4 single occupancy staterooms and 38 double occupancy staterooms (168 tons; MCr21).

A cargo hold of 63 tons is provided.

The ship has an agility of 1; it has an emergency agility of 4.

BC-9514 Kinunir BC-A2447G2-000510-502020 MCr1336.63 1250 tons
 batteries bearing 2 2 2 Crew=45.
 batteries 2 2 2 TL=15.
 Passengers=0. Low=0. Cargo=63. Fuel=587.5. EP=87.5. Agility=1. Marines=35.

The Kinunir's pinnacle is also tech level 15. It has a cone configuration (35 tons; MCr3.85). The pinnacle mounts maneuver-4 (3.85 tons; MCr1.925) and power plant-4 (1.4 tons; MCr4.2). Fuel tankage is 1.4 ton. The power plant produces 1.4 energy points.

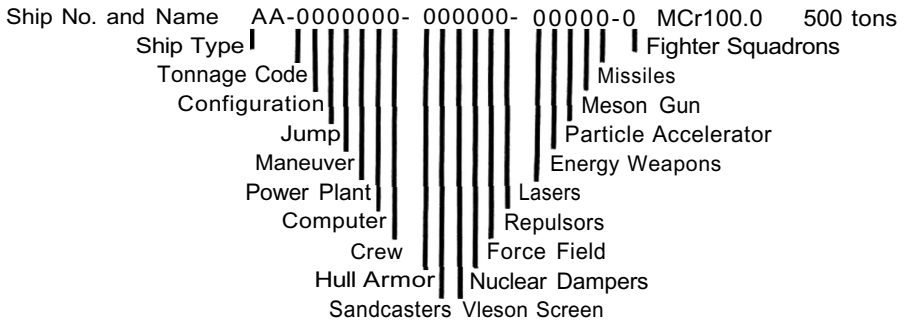
The pinnacle has no bridge, but does carry a Model/2 computer (2 tons; MCr9). A triple missile rack installation arms the craft (1 ton; MCr2.25).

For crew, the pinnacle carries a pilot and gunner, requiring two couches (1 ton; MCr.05). Passenger facilities for 34 are provided (another 34 couches; 17 tons; MCr.425). Cargo capacity is 7.35 tons (25 tons if the passenger couches are removed).

The pinnacle has an agility of 4.

KT-9514.1 Pinnacle KT-0204421-000000-30000-0 MCr21.7 35 tons
 Passengers=34. Low=0. Cargo=17. Fuel=1.4. Agility=4. Crew=2. TL=15. 8attery=1.

The Universal Ship Profile: The following breakout of the Universal Ship Profile (more fully delineated on IN Form 3, page 37) shows the meaning of each position within the data string.



Letter Codes Beyond 9: When using letters to indicate numbers greater than 9, remember to omit the letters I and O (to avoid possible confusion with numbers). As a result, A=10, L=20, and W=30.