Book 5
High Guard

TRAVELLER

Science-Fiction Adventure in the Far Future

Game Designers' Workshop

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Science-Fiction Adventure in the Far Future

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HIGH GUARD DESIGN CREDITS

Game Design ..... Marc William Miller
Technical and General Advice, Assistance and Playtesting ..... Frank Chadwick
Cindy Baker, Chuck Kallenbach, Don Rapp, Tim Brown, James Baker,
Dave Emigh, Tony Svajlenka, Loren Wiseman, John Harshman
Art Direction ..... Paul R. Banner

High Guard
Traveller, Volume 5

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This book is an additional volume in the rules to Traveller, GDW's science-fiction role-playing game set in the far future.

Game Designers' Workshop
203 North Street,
Normal, Illinois 61761

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To Commander Charles Arthur Miller, US Navy, Retired

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 DMI) 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.

THROW TO ENLIST

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

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

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.

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 characters age. Each time that a character reenlists, 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

	Enlisted	*Officer*
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

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+.

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.

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 attaché 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 though 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	Gravitics
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.

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, Gravitics, and Engineering.

NAVAL CHARACTER GENERATION TABLES

COMMAND DUTY

Officer Branch	*Throw*
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

Die Roll	*Assignment*
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

Die Roll	*Enlisted Ranks*	*Die Roll*	*Officer Ranks*
1	Cross-Training	1	Cross-Training
2	Specialist School	2	Intelligence School
3	Recruiting Duty	3	Recruiting Duty
4	Gunnery School	4	Naval Attaché/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

Rank Abbreviation	*Enlisted Rank Title or description*	*Rank Abbreviation*	*Commissioned Rank Title or description*	
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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	*Training*	*Shore Duty*	*Patrol*	*Siege*	*Strike*	*Battle*
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

Die Roll	*Navy Life*	*Shipboard Life*	*Shore Duty Life*	*Petty Officer*	*Command Officer*	*Staff Officer*
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

Die	*Branch*					
Roll	*Line/Crew*	*Flight*	*Gunnery*	*Engineering*	*Medical*	*Technical*
1	Mechanical	Vacc Suit	Fwd Obs	Mechanical	Admin	Mechanical
2	Electronic	Admin	Gun Cbt	Electronic	Jack-o-T	Mechanical
3	Gun Cbt	Gun Cbt	Commo	Engnrng	Electronic	Electronic
4	Navigation	Commo	Computer	Mechanical	Admin	Electronic
5	Computer	Ship's Boat	Gunnery	Vacc Suit	Medical	Computer
6	Liaison	Navigation	Gunnery	Engnrng	Computer	Computer
7	Zero-G Cbt	Pilot	Gunnery	Engnrng	Medical	Gravitics
8	Vacc Suit	Pilot	Gunnery	Engnrng	Medical	Jack-o-T

DMs: No DM if planetary Navy; +1 if subsector Navy; +2 if Imperial Navy.

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 Attaché/Aide: The player rolls one die: on a result of 1 through 4, the character has been assigned as a naval attaché, 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 attaché 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 01+). If the die roll is 12+, then the individual is required to re-enlist.

Re-enlistment in a Different Branch: Characters may not reenlist 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	Specific Game Effects
Blade Combat: Blade combat is a specific military skill in the use of edged weapons in combat.	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.
Carousing: The individual is a gregarious and sociable individual, well-adapted to meeting and mingling with strangers in unfamiliar surroundings.	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.
Communications: The person is trained in the use, repair, and maintenance of communications devices.	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: The individual has been trained in the use of formations and maneuvers in naval operations.	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.
Gravitics: The individual has skill in the use, operation, and repair of gravitic devices.	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.
Gun Combat: Gun combat is a specific naval skill in the use of one of several naval small arms.	Characters who acquire a gun combat skill must immediately choose one category of small arms to apply it to. There are three distinct categories: *Handgun:* Handgun skill may be applied to revolvers, automatic pistols, and body pistols

General Description	Specific Game Effects
	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.
Gunnery: Gunnery is a specific naval skill in the operation and use of one of several types of naval armament.	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.
Interrogation: The individual is practiced in the psychological arts of interrogation as a tool of intelligence gathering.	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

General Description	Specific Game Effects
	effects of interrogation skill 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.
Instruction: The individual has extensive training in teaching students in a clear and lucid manner, and for providing motivation for learning.	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.
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.	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

General Description	Specific Game Effects
	where necessary; thus, liaison-2 is the equivalent of streetwise-1.
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.	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: The individual has been trained in the operation of a starship or space ship in battle.	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.
Survival: The individual is familiar with both the theory and the practice of living off the land.	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.
Vehicle: The individual is a trained vehicle operator.	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 planetary navy with a homeworld having an atmosphere fac-

tor 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 5.

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 hydrographics 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 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.

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+

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. 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. 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.

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+

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

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 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).

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.

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.

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.

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.

In order to allow a clearer understanding of all aspects of starship operations, design, combat and movement, the following synopsis of how such things occur is presented.

MOVEMENT

Starships move through normal 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 drive number 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 which allow high-G maneuvers while the interior G-fields remain normal. Fuel consumption for starships is inconsequential, and 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, which are the measure of the size of hexes in subsector grid maps. Jump-1, for example, indicates the ability to jump one parsec, or one hex. Jump numbers range from 1 to 6; high jump numbers are not possible in ordinary usage, although misjumps (Book 2, page 4) 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 most jumps are made at relatively 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 to make another jump almost immediately (within 2 to 4 hours) 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, maneuvering to a world, landing, unloading and loading cargo, and then maneuvering away from the world for the next jump.

Fuel used for ships is light elemental gases, especially hydrogen. Such gas is available in the atmospheres of gas giants (similar to Jupiter or Saturn), 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," which involves diving into the atmosphere and opening fuel scoops. Such a maneuver is possible only to streamlined ships (configurations 1 or 2). Many large ships carry small streamlined fuel tankers which can dip fuel and return to the parent ship. Water is available in oceans at any world with a hydrographics percentage of 3 or greater (lesser hydrographics 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 fuel shuttles. Fuel which is simply taken is unrefined, and may result in misjumps (Book 2, page 4); however, military and scout ships are built to use unrefined fuel without potential for misjump. Commercial ships may include fuel purification installations in their equipment which will produce refined fuel from unrefined gases.

Fuel consumption is computed on the basis of ship tonnage and jump number. A jump drive uses fuel equal to 10% of a ship's tonnage per jump number used; the jump drive must, of course, be capable of the jump number attempted. A power

plant uses fuel equal to 1% of the ship's tonnage every four weeks, regardless of actual power drain; this usage is primarily to maintain the fusion bottle and other housekeeping functions. Other fuel requirements are considered inconsequential.

Any ship can land on a world with an atmosphere of 0 or 1; for all other worlds, streamlining is required. Worlds with starport types A or B, or with naval or scout bases present, have orbiting stations which serve as ports for unstreamlined ships and 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 small craft using off the shelf components. It is not superseded by the 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 small craft.

Starships may range in size from 100 tons to 1,000,000 tons. Hulls may be constructed of metal, or may be made from hollowed-out planetoids. Hulls may assume a variety of configurations, from needles and cones, to cylinders and spheres. Close structures are assemblages of components around a central framework, while dispersed structures are assemblages around an extended frame.

Starships are classified using a Universal Ship Profile which details construction and weaponry for use in the combat system in this book.

WEAPONRY

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

Offensive weapons include lasers, particle weapons, meson guns, energy weapons, sandcasters, and missiles.

Lasers are the primary armament of small ships, assuming a defensive anti-missile role in larger ships. Lasers fire concentrated light energy in beams or pulses against enemy targets, and cause damage to exterior surfaces.

Energy Weapons include plasma guns and fusion guns, both of which are most effective at relatively close range. In each, the weapon fires a highly energize beam of ionized gas at the target, with the fusion gun actually containing the gas long enough for hydrogen fusion to occur. Energy weapons inflict surface damage on targets. Like lasers, energy weapons are primarily used on small ships, assuming the anti-missile role on larger ships.

Particle accelerators charge and accelerate electrons or hydrogen nuclei to high velocities, and then fire them at targets. Target hits result in surface damage similar to laser fire damage, and in radiation damage to crew and to electronics.

Sandcasters are primarily active anti-missile and anti-laser weapons. Sand, a granular agent which obstructs light and interferes with missile guidance systems, is fired into the path of incoming weapons, where it reduces or eliminates its effectiveness.

Meson guns create high energy mesons and direct them at a target. Mesons have very short lives, which can be prolonged to precise durations by accelerating them to relativistic speeds. By precise calculation, the point of decay of the meson can be produced inside the target ship; the result is high energy explosions in interior spaces. A meson is the particle manifestation of the strong nuclear force; it en-

counters resistance from nothing, passing through matter while in the meson state. When it decays to ordinary matter, the particles are highly energetic, inflicting extensive damage in its vicinity.

Missiles are available in a variety of types and sizes. In essence, they are nuclear (producing surface damage and radiation effects), or non-nuclear (producing surface damage).

Defenses pitted against the array of weapons given above include most of the weapons mentioned themselves, plus configuration, hull armor, nuclear dampers, meson screens, repulsors, and force field generators.

Configuration is an expression of the general size, length, width and construction statistics for a given ship. Configuration is used to determine some hit probabilities.

Hull armor is better able to withstand surface damage than an unarmored hull. Planetoids have a minimum level of armor due to their nature, and buffered planetoids have an increased level of armor due to their interior layout. Some forms of hull have no armor, as their layouts (dispersed and close structures) make the application of armor impractical.

Laser fire can be used in the anti-missile role.

Energy weapons can be used in the anti-missile role.

Sandcasters serve in both the anti-missile and the anti-laser role.

Particle accelerators can be used in the anti-missile role, and are especially effective as they produce both surface damage and radiation damage to electronic components.

Nuclear Dampers project a series of nodes and anti-nodes where the strong nuclear force is enhanced or degraded. The result is the incapacitation of nuclear warheads, rendering them ineffective. Nuclear dampers installed on a ship are sufficient to protect it, in most cases, from nuclear attack.

Meson Screens project an interruption of the strong nuclear force. A meson, upon contacting a meson screen, will immediately decay and discharge its energy harmlessly short of the target.

Repulsors are large focused anti-grav projectors which are directed at incoming missiles, deflecting them away from their targets.

Force Field generators project a barrier which prevents transit of anything but undifferentiated energy. This energy is absorbed, giving the field a black globe appearance, and stored in on-board capacitors. Because the barrier prevents all transit across it, a ship with its black globe force field on cannot maneuver nor can it communicate or detect enemy forces. In addition, if the field is overloaded, the drives may detonate, and the barrier drop, rendering the ship vulnerable to enemy fire. Ships using black globe are quite vulnerable if outnumbered, as they can be attacked easily when the globe is turned off.

Ship construction, especially to hold the weaponry mentioned above, involves special techniques. Any ship may designate a meson gun or particle accelerator as a major weapon, and install it as a spinal mount, an integral part of the ship. Fighter hangars and launch tubes may also be installed in the ship. All other weapons must be installed in bays or turrets. Bays, ranging in size from 100 tons to 10 tons, hold repulsors, meson guns, particle accelerators, energy weapons, and missile racks,

and are intended to hold relatively large weapons. Turrets, available in single, double, and triple mounts, hold lasers, sandcasters, energy weapons, and missile racks. Precise formulas compute the strength of each type of weapon aboard a ship for use in the Universal Ship Profile and in combat.

PROCEDURES

Naval vessels generally operate in task forces, rather than alone, allowing the merits of each type of ship to supplement and complement the others in company with it.

Large ships carry complements of fighters which constantly patrol for hostile forces; such ships are often lightly or inadequately armed, and depend on their fighter screen to produce early warning on enemy activity. The points of greatest danger are just prior to jump (when the fighters have been recalled), and just after returning to normal space (when the fighters have not yet been launched).

The refueling operation for a task force is another point of danger, as forces are vulnerable when lows on fuel and maneuvering in a gravity well. A specific formation, or position, called High Guard, (because the ship is higher, with respect to the gravity well, than its companions) is used to mount protective operations during such maneuvers.

The fighting starships built and used by the navies of the galaxy range in size from 100 tons to 1,000,000 tons, representing the most potent weapons available to any government, corporation, or individual.

STARSHIP DESIGN

Starships are designed by navies using their specifications to produce the exact type of ship desired; contracts are then let to a shipyard and construction is begun. Technological level is an important consideration in the design of starships, as the crew must be capable of operating the ship, and the navy must be capable of maintaining its combat readiness.

Design: A navy can issue specifications for a specific naval vessel within approximately eight weeks of authorization to procure. Corporations and private individuals must obtain the services of a naval architect, at a cost of 1% of the final ship cost, and receive final plans and specifications in about four weeks.

Availability: Starships can be constructed at the shipyard of any class A starport; non-starships may be constructed at the shipyard of either class A or B starports. The technological level of the world holding the shipyard governs the construction capabilities: the tech level of a ship may not be more than 3 greater than the tech level of the shipyard. All higher tech level equipment must be imported, at 50% surcharge.

The Imperial Navy may procure ships of up to tech level 15, although it also procures ships at tech levels 11 to 14; Subsector Navies may procure ships at any shipyard within their borders; Planetary Navies may procure ships at anywhere within the borders of their subsectors, or may construct the ships locally, using local resources, even if a shipyard is not present.

Construction Times: Ships of 5000 tons or less can be completed in 36 months or less by any competent shipyard. Ships over 5000 tons require from 24 to 60 months to complete. Additional identical ships built following the initial ship in a class can be completed in up to 20% less time.

Ship Classes: Once a ship is built, a certain familiarity with the requirements of construction occurs, and a shipyard can then produce such ships more rapidly and with greater efficiency and cost savings. As a result, most ships are members of a class of identical ships. Construction time and cost savings both run about 20%.

Ships of a class are named to show this relationship. For example, the first ship of a class might be named the Intrepid, giving the class its name; additional ships in the class might be called the Fierce, the Resolute, or the Defiant.

SUMMARY OF SHIP DESIGN

The following procedure is followed when designing a ship; more detailed coverage of combat ability, price, and other limitations are presented in specific rules later in this chapter.

Initially, a hull is selected, and a configuration specified; either built-up metal hulls or hollowed-out asteroids or planetoids may be used. Maneuver drives, power plants, and jump drives are selected; planetary navies need not install jump drives, but may elect to do so.

A major weapon (either meson gun or particle accelerator) may be selected, and installed in a spinal mount. Fighter launch tubes and hangars may be specified. Bay weapons (missile racks, energy weapons, particle accelerators, and repulsors) may be selected, at a rate of 1 bay per 1000 tons of ship; spinal mounts and fighter launch tubes count as bays when applying this rate. Turret weapons (lasers, energy weapons, missile racks and sandcasters) may be selected, at the rate of 1 turret per 100 tons of ship. Screen protection for the ship may be specified; examples include force field generators, meson screens, and nuclear dampers (lasers, energy weapons, sand and repulsors are also defensive weapons, but are not specifically classed as screens).

Ship's vehicles, including shuttles, lifeboats, fuel scoops, fighters, as well as land, air, and water vehicles are specified.

The ship's crew requirements are determined, and the actual crew calculated. The area required for living, recreation, working, training, and administration are computed and allocated. The ship's computer is specified.

Fuel requirements are computed, and tankage is specified. Fuel scoops and internal refinery equipment may be selected.

Troop barracks and associated military facilities are specified.

Magazine capacity (to allow use of missile racks in large scale bombing) may be specified. Cargo capacity is specified.

Finally, the factor values for the various weapons and facilities are computed and noted in the *Universal Ship Profile* for use with the combat system. The restrictions of hull tonnage versus desired material may dictate several revisions of the ship equipment before everything fits as desired. Price may also be a restriction.

STARSHIP COMPONENTS

The following components go into a starship:

The Hull: The foundation of a starship is the hull, into or onto which all other components are placed. Hulls are identified by their mass displacement (expressed in tons), 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. Configuration is an expression of ship layout and shape; it affects combat results and determines if a ship is streamlined. Non-streamlined configurations are built in orbit under the supervision of the building shipyard.

CONFIGURATION

Code	*Configuration*	*Streamlined*	*Price Mod*
1	Needle	Yes	+20%
2	Cone	Yes	+10%
3	Cylinder	No	—
4	Close Structure	No	–40%
5	Sphere	No	–30%
6	Flattened Sphere	No	–20%
7	Dispersed Structure	No	–50%
8	Planetoid	No	—
9	Buffered Planetoid	No	—

It is possible to select a planetoid as a hull, hollowing out spaces within 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 configuration 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 Cr1000 per interior (non-waste) ton for fusion tunneling and hollowing of passages and compartments. In addition, there is a transportation charge to bring the planetoid into orbit above the shipyard of Cr100 per ton of planetoid.

TONNAGE

Code	*Tonnage*	*Code*	*Tonnage*	*Code*	*Tonnage*
0	under 100	B	2000	N	40,000
1	100	C	3000	P	50,000
2	200	D	4000	Q	100,000
3	300	E	5000	R	200,000
4	400	F	6000	S	300,000
5	500	G	7000	T	400,000
6	600	H	8000	U	500,000
7	700	J	9000	V	600,000
8	800	K	10,000	W	700,000
9	900	L	20,000	X	900,000
A	1000	M	30,000	Y	1,000,000

Hull tonnage for the *Universal Ship Profile* is expressed as a code; the tonnage table indicates the codes for various levels of tonnage. The tonnage level given includes all values between it and the previous stated level.

Drives: Three types of drives are required for starships — maneuver drives, jump drives, and power plants. Non-starships may omit the jump drives. Custom-built drives must be produced and installed, while observing restrictions as to tech level and interior space.

The drive potential table indicates the percentage of interior space required for a specific drive. The drive tech level table indicates the minimum technological level required to construct the specified drive. The drive cost table indicates the cost in millions of credits to produce the drive per ton of drive.

DRIVE POTENTIAL TABLE

	—— Drive Number ——					
	1	**2**	**3**	**4**	**5**	**6**
Maneuver	2	4	5	12	16	20
Power Plant	1	2	3	4	5	6
Jump	2	3	4	5	6	7

Number is percentage of ship required.

DRIVE TECH LEVEL TABLE

	—— Drive Number ——					
	1	**2**	**3**	**4**	**5**	**6**
Maneuver	7	7	8	8	8	9
Power Plant	7	8	9	10	11	12
Jump	9	11	12	13	14	15

Number is minimum tech level required.

DRIVE COST TABLE

	—— Drive Number ——					
	1	**2**	**3**	**4**	**5**	**6**
Maneuver	1.6	1.0	.7	.6	.5	.4
Power Plant	6.0	4.0	4.0	4.0	3.5	3.0
Jump	4.0	4.0	4.0	4.0	4.0	4.0

Number is cost in million credits/ton.

Drives are noted on 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 higher of the jump drive number or the maneuver drive number.

Fuel: A ship requires fuel for its jump drives and for its power plant; the power plant converts fuel to energy for housekeeping functions and for the maneuver drives. Fuel tankage must be sufficient to contain a full load for the power plant and the jump drive. Additional fuel tankage may be optionally installed. There is no cost for interior fuel tankage.

Jump fuel is computed at 10% of the ship tonnage per jump

number; thus a 10,000 ton jump-6 ship requires fuel tankage for 6000 tons. Fuel usage is computed similarly; 10% of the ship tonnage in fuel is used per jump number used (for the ship mentioned above, performing jump-1 uses 1000 tons of fuel, while jump-6 uses 6000 tons of fuel).

Power plant fuel is computed at 1% of the ship tonnage per power plant number; a 10,000 ton ship with power plant-6 requires 600 tons of fuel tankage for its power plant. Note that power plant fuel also provides energy for the maneuver drives. The stated fuel requirement is sufficient for four weeks of cruising (including while in jump space) before refuelling for the power plant is necessary.

Major Weaponry: A single major weapon may be specified for any ship. It may be either a particle accelerator or a meson gun, and forms the spine or foundation of the ship. The major weapon table indicates the tech level, tonnage, price and weapon code for the Universal Ship Profile. If a particle accelerator is selected for the major weapon, then particle accelerators may not be selected for installation as bay

MAJOR WEAPONS

Particle Accelerator

Code	Tonnage	Tech Level	Cost
0			
1			
2			
3	*Particle Accelerators of factor 9 or less are only the result of turret or bay mountings.*		
4			
5			
6			
7			
8			
9			
A	5500	8	350
B	5000	9	300
C	4500	10	240
D	4000	11	150
E	3500	12	120
F	3000	13	120
G	2500	14	120
H	2500	15	30
J	5000	10	300
K	4500	11	200
L	4000	12	160
M	3500	13	120
N	3000	14	80
P	2500	15	40
Q	4500	12	200
R	4000	13	150
S	3500	14	100
T	3000	15	50

Meson Gun

Code	Tonnage	Tech Level	Cost
0			
1			
2			
3	*Meson guns of factor 9 or less are only the result of bay mountings.*		
4			
5			
6			
7			
8			
9			
A	5000	11	1000
B	8000	11	1200
C	2000	12	300
D	5000	12	500
E	1000	13	80
F	2000	13	100
G	1000	14	50
H	2000	14	60
J	1000	15	40
K	8000	12	1000
L	4000	13	300
M	5000	14	80
N	2000	15	40
P	8000	13	500
Q	7000	14	100
R	5000	15	60
S	8000	14	80
T	7000	15	80

Note: *Prices are shown in millions of credits and cover all required material.*

weapons; if a meson gun is selected as the major weapon, then meson guns may not be selected for installation as bay weapons. Codes 1 through 9 represent allowances for such bay weapon installations, and are determined later in the procedure.

In addition to either a meson gun or particle accelerator as a major weapon, any ship may elect to include a fighter launch tube and appropriate fighter hangars within its hull. For computation purposes, a fighter is assumed to have a mass of 15 tons. A fighter hangar must allow 20 tons (15 for the fighter, plus 5 for maintenance and administration) per fighter. The launch tube for the fighters requires 500 tons interior space.

FIGHTER TABLE

Code	*Fighters Carried*
0	None
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10 — 19
B	20 — 29
C	30 — 39
D	40 — 49
E	50 — 59
F	60 — 69
G	70 — 79
H	80 — 89
J	90 — 99
K	100+

Costs for fighter hangars and launch tube are computed at Cr2,000 per ton.

The Universal Ship Profile code for fighter screen is based on the number of fighters which the ship can carry (and launch). The fighter screen table indicates the codes and corresponding values for fighter screens.

The following section describes bay weapon installation. If a major weapon is installed, it is counted as one bay installation for the purposes of installing bay weapons. If a fighter launch tube is installed, it also counts as one bay weapon for the purposes of installing bay weapons.

Bay Weapons: Weapons may be mounted in bays, which are large designated areas near the ship's hull. Bays are available in 100 ton, 50 ton, and 10 ton sizes (the tonnage indicates the tonnage each occupies in the hull) and are installed during construction. The weaponry within such bays may easily be removed and replaced by other types of weaponry as needs arise. One bay (regardless of size) may be installed per 1000 tons of hull available. Weapon bays cost 10,000 per ton, and need not be assigned weaponry during construction.

Weaponry installed in bays may be of five types: meson guns, particle accelerators, energy weapons (fusion or plasma guns), repulsors, and missile racks. The bay weapons section of the weapons table indicates specific weapon types and shows costs involved for each such type. The table itself indicates the tech level ranges at which the weapons are available, and point values for each weapon at such tech levels.

The Universal Ship Profile code for bay weapons is based on the average strength (per 1000 tons) of all weapons of that single type installed on the ship. Point values from the bay weapons table are totalled; if ship tonnage is over 1000 tons, then the point total is divided by the ship tonnage in kilotons. If the tonnage is 1000 tons or less, then the point value is not modified. The point value is then referenced to the ratings section of the table to determine the exact code for the USP. Note that codes for all weapons installed in bays range from 0 (none) to 9 (the best available).

A factor of zero (0) indicates that no weapon of the specific type is installed. In the combat system, such weapons do not function. Weapons reduced to zero (0) in

WEAPONS TABLE

Bay Weapons — *One bay allowed per 1000 tons of ship*

100 Ton Bays	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Cost**
Meson Gun	—	—	—	—	—	—	—	4	16	70
Particle Accelerator	—	1	2	3	—	—	—	—	—	35
Repulsor	—	—	—	5	10	15	20	30	40	4
Missile Rack	30	30	40	40	50	50	50	50	50	12

50 Ton Bays	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Cost**
Meson Gun	—	—	—	—	—	—	—	—	8	60
Particle Accelerator	—	—	—	3	4	6	8	—	—	24
Plasma Gun	—	—	—	30	40	—	—	—	—	16
Fusion Gun	—	—	—	—	—	90	100	150	180	22
Repulsor	—	—	—	—	—	—	—	15	30	6
Missile Rack	20	20	30	30	30	30	40	40	40	10

10 Ton Bays	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Cost**
Particle Accelerator	—	—	—	—	—	—	10	12	16	12
Plasma Gun	—	—	—	—	30	50	60	—	—	18
Fusion Gun	—	—	—	—	—	—	—	120	150	25
Repulsor	—	—	—	—	—	—	—	10	20	8
Missile Rack	15	15	20	20	20	20	20	30	30	8

Turret Weapons — *One turret allowed per 100 tons of ship not used for bays*

Turrets	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Cost**
Pulse Laser	1	1	1	1	1	1	2	2	2	.5
Beam Laser	2	2	2	2	2	2	3	3	3	1
Plasma Gun	—	—	—	4	5	6	—	—	—	1.5
Fusion Gun	—	—	—	—		8	9	10	12	2
Sandcaster	1	2	2	3	3	3	3	3	3	.25
Missile Rack	1	1	1	1	1	1	1	1	1	.75

Weapon Rating Chart

Code	**Meson Gun**	**Particle Accelerator**	**Energy Weapons**	**Repulsor**	**Missile Racks**	**Laser**	**Sand-caster**
0	—	—	—	—	—	—	—
1	1	1	4	1	1	1	1
2	2	2	20	5	3	3	3
3	3	4	40	10	5	5	5
4	4	6	60	15	10	10	7
5	5	8	80	20	15	20	10
6	6	10	100	25	20	30	20
7	8	12	120	30	30	50	40
8	10	14	150	35	40	70	70
9	12	16	180	40	50	80	80
	Bay	**Bay**	**Both**	**Bay**	**Both**	**—Turrets—**	

Note: After weapons have been selected, determine their point values and refer to the ratings chart for the correct weapon factor for the Universal Ship Profile.

the course of combat action function as zero factor weapons when used in the defense role.

Empty weapons bays may be put to a variety of purposes, from holding additional missile ammunition for other bays to housing vehicles such as air/rafts, shuttles, or ATVs.

Turret Weapons: Weapons may also be mounted in turrets, which extend beyond the hull, and require only a designated hardpoint created during construction. Each hardpoint created during construction requires one ton of interior space allocated to it; a ship may have up to one hardpoint per 100 tons of ship not otherwise used for bays. Turrets themselves are available in single (Cr200,000), double (Cr500,000), and triple (Cr1,000,000) mounts, and allow the mounting of beam lasers, pulse lasers, energy weapons, sandcasters, and missile racks. Lasers, sandcaster, and missile racks may be mounted as single, double, or triple installations; fusion and plasma weapons may be mounted as single or double, but not triple installations. On ships larger than 1000 tons, weapon types may not be mixed within a turret. The turret weapons section of the weapons table indicates specific weapon types and shows costs involved for each such type. The table itself indicates the tech level ranges at which such weapons are available and point values for each weapon at such tech levels.

The Universal Ship Profile code for turret weapons is based on the average strength of all turret weapons of a single type per 1000 tons of ship. The point values from the turret weapons section are totalled. If the ship tonnage is over 1000 tons, then the point total is divided by the ship tonnage in kilotons. If the tonnage is less than 1000 tons, then the point value is not modified. The point value is then referenced to the ratings section of the table to determine the exact code for the USP. Codes range from 0 (none) to 9 (the best available). Only one code is allowed for each type weapon.

Missile racks, fusion weapons and plasma weapons are available as both bay weapons and turret weapons. The point totals for both turret and bay weapons of a single type are totalled, divided by ship tonnage, if necessary, and then referred to the ratings table.

Screens: Ships may install a variety of screens which will reduce or eliminate the force of enemy attacks. Screens may be active, or passive; active screens are weapons already installed in turrets or bays, while passive screens are entirely defensive devices which act specifically against certain weapons. Passive screens include nuclear dampers, hull armor, meson screens, and force field projectors.

HULL ARMOR

Code	*Tech Level*	*Tons*	*Cost*
0	—	—	—
1	7	100	1.0
2	8	90	1.2
3	9	80	1.0
4	10	70	.8
5	11	30	1.2
6	12	25	1.0
7	13	40	.6
8	14	20	.5
9	15	15	.4

Hull armor is a strengthening of the physical hull by the inclusion of additional material. Such strengthening is possible only on ships of configurations 1 (needle), 2 (cone), 3 (cylinder), 5 (sphere), and 6 (flattened sphere). The hull factor is determined by the amount of strengthened armor included in the hull. The armor table indicates the tech level, cost, and required tonnage (per 1000 tons of hull) for armor, as well as the increase in hull factor. Only one type of

armor may be added to a hull on a specific ship. Ships of configuration 4 (close structure) and 7 (dispersed structure) cannot have armor added to their hulls. Ships of configuration 8 (planetoid) have an automatic hull factor of 4; configuration 9 (buffered planetoid) has an automatic hull factor of 5.

NUCLEAR DAMPERS

Code	*TL*	*Tons*	*Cost*
0	—	—	—
1	12	50	50
2	13	20	40
3	13	15	45
4	14	12	30
5	14	10	35
6	14	8	38
7	15	10	30
8	15	15	40
9	15	20	50

MESON SCREENS

Code	*TL*	*Tons*	*Cost*
0	—	—	—
1	12	90	80
2	13	40	50
3	13	30	55
4	14	24	40
5	14	20	45
6	14	16	50
7	15	20	40
8	15	30	50
9	15	40	60

Cost is in millions of credits; tons indicates the total tonnage required to protect the entire ship, regardless of size.

Nuclear dampers are used to prevent nuclear reactions by enhancing the strong nuclear force, and making atomic nuclei more stable. Dampers must be focused on incoming missiles, and depend on an integral fire-control system for efficiency. The nuclear damper table indicates the cost, tonnage, tech level, and code numbers for available nuclear dampers.

Meson screens are a variation of the nuclear damper providing 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 code, tech level, cost and tonnage for the types of meson screens available.

Cost is in millions of credits; tons indicates the total tonnage required to protect the entire ship, regardless of size.

Force field projectors are screen devices which generate a protective barrier around a ship. The tech level required for even maintenance of such devices is a minimum of 15. Only one type of force field generator is available, known as the black globe generator, which totally envelopes the ship in an absorbent black sphere. All incoming energy is diverted to capacitors, and does no damage. However, a ship cannot maneuver or communicate through the barrier while it is on. If a large amount of energy is absorbed by the globe, the capacitors might overload, dropping the barrier as well as doing extensive damage to the ship. Black globe generators are not available commercially; they are generally recovered artifacts installed on a makeshift basis, or experimental versions installed in Imperial warships of tech level 15. The force field table shows the tonnages and code numbers for the models generally encountered; asterisked tech levels indicate models which are installed in Imperial ships. The higher tech level models are shown for reference.

FORCE FIELDS

Code	*TL*	*Tons*
0	—	—
1	15*	10
2	15*	15
3	15*	20
4	15*	25
5	16	20
6	16	30
7	16	35
8	17	20
9	18	20

The acquisition of any black globe generator is probably the result of a lucky find on the part of a government, individual, or company. However, space may be left in a ship in anticipation of later finding such a device.

Computers: One central computer for the ship must be specified; the requirements for this computer are based on the tonnage of the ship. The computer models table indicates model number (and alternate model number), price, tonnage, and CPU and storage capacities, and a maximum ship size. When selecting the computer for a ship, ship tonnage code must be equal to, or less than, the maximum ship size code given. The alternate model number for a computer refers to integral fibre optic back-up networks which are relatively unaffected by radiation damage. The alternate (fibre optic backup) model is available at a 50% increase in price. The computer models table contains much the same information as the computer models table in Book 2. Bis (enhanced) models are excluded; their features may be calculated at double CPU capacity and double price at one tech level higher; bis models are not available with fibre optic back-up. In the combat rules in this booklet, they are treated as the unenhanced version. Letters to designate bis models range from R (1 bis) to X (7 bis).

COMPUTER MODELS

Model		*Cost*	*Tons*	*CPU*	*Stor*	*Ship*	*TL*
1	A	2	1	2	4	6	5
2	B	9	2	3	6	A	7
3	C	18	3	5	9	D	9
4	D	30	4	8	15	K	10
5	E	45	5	12	25	P	11
6	F	55	5	15	35	R	12
7	G	60	5	20	50	Y	13

Model number is used in the Universal Ship Profile, and in the combat system in this book; strict programming is not used, but CPU and storage figures are given for use with Book 2.

Ship's Vehicles: Any ship may be equipped with one or more vehicles for auxiliary or supplemental use. The ship's vehicles table indicates the type, tonnage, cost, and tech level for each vehicle. Tonnage in the ship must be allocated equal to the vehicle tonnage. If fighter hangars and launch tubes are included in the ship (page 25), then sufficient fighters must be purchased to fully fill the available spaces. Ship's vehicles themselves are not included in the USP, but are noted in any description of the ship.

Many vehicles are described in Book 3, pages 16 through 18. Those marked with an asterisk are described below. Prices given in the table here supersede prices shown in Book 3 and Book 2 where any discrepancy occurs.

SHIP'S VEHICLES

	Vehicle	*Cost*	*Tons*	*Tech Level*
	Ground Car	4 000	2	5 — 15
	ATV (Wheeled)	30 000	10	6 — 15
	AFV (Tracked)	70 000	10	6 — 9
	Hovercraft	200 000	8	7 — 9
	Air/Raft	600 000	4	8 — 15
*	Aircraft (Propeller)	40 000	4	4 — 9
	Aircraft (Jet)	1 000 000	6	5 — 9
	Helicopter	100 000	1	6 — 9
*	Dirigible	60 000	4	3 — 9
*	Small Water Craft	60 000	30	1 — 8
*	Submersible	2 000 000	60	4 — 8
	Shuttle	33 000 000	95	7 — 15
*	Fuel Shuttle	28 270 000	95	7 — 15
	Cutter	28 000 000	50	7 — 15
	Pinnace	20 000 000	40	7 — 15
	Ship's Boat	16 000 000	30	7 — 15
	Lifeboat	14 000 000	20	7 — 15
*	Fighter	13 680 000	9	7
*	Fighter	11 500 000	10	15

Propeller-driven Aircraft: TL 4 — Cr 40 000. A twin engine monoplane intended for simple air travel and elementary cargo transport. Capable of a payload of 3 tons in addition to a body weight of 4 tons; cruising speed is 250 kph, with maximum speed of 350 kph.

Dirigible: TL 4 — Cr 60 000. A hydrogen or helium filled envelope suspending a control cabin below, driven by propellers, and steered by vanes or fins. Speeds average 70 kph, with a range (depending on fuel) of approximately 750 kilometers. Tonnage given is for a collapsed example; fully inflated and in flyable condition (the process takes 6 hours), the dirigible occupies 10 000 cubic meters (about the size of a 700 ton hull). Crew is four (primarily for ground handling), and cargo capacity is limited to 4 tons.

Small Water Craft: TL 5 — Cr 60 000. A small cabin cruiser measuring 21 meters by 4 meters, with a 1.5 meter draft, which can navigate mild seas and most inland waterways. Speed is 45 kph, and a crew of two can handle the craft with ease. Starship-board handling requires davits or similar launching mechanisms.

Submersible: TL 5 — Cr 2 000 000. Non-nuclear pocket submarine with a pressurized hull and facilities for crew and passengers totalling 10. Cruising speed is 25 kph surfaced and 30 kph submerged. This vessel can be operated by a crew of 2. As with small craft, starship-board handling requires davits or similar launching mechanisms.

Fuel Shuttle: TL 9 or greater — Cr 28 270 000. Carrying a crew of two, computer Model/1, maneuver-3 and power plant-3. Streamlined, with fuel scoops. Fuel tankage of 78 tons (3 devoted to power plant use). TY-0203311-000000-00000-0.

Fighters: TL 7 to 15 — Prices vary. A range of fighters are available, each carrying a pilot and computer Model/1, plus one turret. The following gives prices and USPs plus specific armament for fighters at each level.

TL 7	F-0101111-000000-20000-0	Cr13 680 000	3 pulse lasers	9 tons
TL 8	F-0101111-000000-20000-0	Cr13 680 000	3 pulse lasers	9 tons
TL 9	F-0103311-000000-20000-0	Cr10 780 000	3 pulse lasers	9 tons
TL 10	F-0104411-000000-01000·0	Cr10 600 000	1 plasma gun	10 tons
TL 11	F-0105511-000000-02000-0	Cr11 700 000	2 plasma guns	10 tons
TL 12	F-0106611-000000-02000-0	Cr11 500 000	2 fusion guns	10 tons
TL 13	F-0106611-000000-40000-0	Cr11 500 000	3 beam lasers	10 tons
TL 14	F-0106611-000000-03000-0	Cr12 500 000	2 fusion guns	10 tons
TL 15	F-0106611-000000-40000-0	Cr11 500 000	3 beam lasers	10 tons

Crew: All starships require crew personnel to operate and maintain the ship. In general, the crew of the ship is based on the drives and power plants- One crew member is required for each 35 tons of drives and power plants actually installed in the ship. Not all such crew persons are involved in engineering operations; many serve in maintenance or support operations. Crew size is coded for the USP using the exponent of crew size; a crew code of 1 indicates a crew of 10 or less, while a code of 2 indicates a crew of between 11 and 100. The population table in Book 3, page 6 indicates these values. The highest crew value available is 4 (indicating a crew of 10 000). At least 10% of the crew will be officers, and each individual must have at least 4 tons of space for staterooms and recreation area.

When an actual ship exists and requires a crew, the rules in Book 2, page 16 should be followed for ships of 1000 tons or less; for ships larger than 1000 tons, the following guidelines should be used.

Command Section: The ship should have a commanding officer, an executive officer, and at least two clerks, plus two navigators, a computer officer, a medical officer, a nurse, and a communications officer. Other personnel may be added to this section as needed.

Members of the command section may be drawn from any of the naval service branches, but the commanding officer and executive officer should always be from the line.

Engineering Section: The ship should have a knowledgeable chief engineer, second engineer, and several (1 to 6) petty officer engineers. The drives themselves should have at least one crewperson per 70 tons of drives installed. All members of the engineering section should be from the engineering branch or the technical services branch. One in ten should be an officer, and at least one in five should be a petty officer.

Medical Section: In addition to the medic and nurse contained in the command section, the ship should have a sick bay staffed with one medical person (at least medic-1) for each 240 crew persons aboard. The medical section should have one officer per three individuals, and one petty officer per three individuals. Personnel are drawn from the medical branch.

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 should have a crew of one person 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. Magazines should have a crew of at least 4 per 100 tons. Each screen device (force field, damper, meson screen) should have a crew of four. There should be one officer per ten crew, and three petty officers per ten crew. Personnel are drawn from the gunnery or the technical services branches.

Flight Section: The ship should have a flight officer, at least one pilot per fighter or non-starship carried, and one rating per such vehicle for maintenance. Fighter launch tubes require a crew of at least 10, including a flight supervision officer, and a preponderance of petty officers. All officers are drawn from the flight branch, and all petty officers and ratings are drawn from the crew or technical services branches.

Crew: The ship itself may have a requirement for any of several sections which provide basic services, including vehicles, shops, security (if there is no marine contingent), maintenance, food service, and other operations. Such personnel are drawn from the crew (or from other appropriate branches).

Ship's Troops: Most ships over 1000 tons have a marine contingent aboard ranging in size from a squad to a regiment. In most cases, ship's troops average two per hundred tons of ship. Such forces may be organized using Mercenary (Book 4), and assigned to the ship. The troop's equipment should be consistent with the tech level of the ship. Ship's troops are used for military adventures, and are used to replace crew casualties following space battles.

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

The Bridge: Any ship of 100 tons or more requires a bridge of 20 tons per 1000 tons of ship, at a cost of Cr500 000 per 100 tons of ship.

OPTIONS AND OTHER POSSIBILITIES

The following options are available for installation on ships. Some are well described, while others are left to the referee to fully implement.

L-Hyd Tanks: Disposable fuel tanks which are fitted outside the ship, and drop away before jump. The result is more interior space available for cargo and passengers. Cost: Cr 10 000 plus Cr1000 per ton of fuel. Usable only with jump drives if a special high capacity accumulator is installed (tech level 12; Cr500 000).

Auxiliary Bridge: This supplementary installation costs as per the standard required bridge, but allows automatic replacement of the bridge if lost in battle.

Magazine: Any ship with missile racks installed in bays may allocate a magazine equal in tons to the points used in determining missile factor for a bay or turret. The total of such points (unaveraged) is then available as a planetary bombing factor. Planetary bombing is not available to ships without missile magazines. Such magazines cost Cr10 000 per ton.

Fuel Scoops: Any streamlined ship may install fuel scoops for dipping gas from a gas giant. This includes hoses for drawing water from an ocean. Cost: Cr1000 per ton of ship.

Fuel Purification Plant: Unrefined fuel can be refined on board ship using this installation. Such a plant can process one ton of gas in a minute (or one ton of water in ten minutes), and masses 50 tons. Cost: Cr 200 000. This installation is available at any tech level 8 industrial world. Mass decreases five tons per tech level higher, and cost decreases Cr10 000 per tech level higher.

Jump Governor: It is possible to procure a jump governor for ships produced according to Book 2. It allows such a ship to utilize fuel more efficiently; instead of consuming all fuel when performing a jump, regardless of jump number, the ship will consume fuel equal to O.1MJn, where **J**n is the actual jump number used, rather than the maximum jump number available. Available at any industrial world with tech level 10 or higher. Cost: Cr300 000. Mass: 1 ton. Ships produced according to this book already have the jump governor as part of their drives.

The following items are suggested uses for interior space aboard a starship. The actual masses and costs for such areas are left to the referee when actually designing such a ship. Many of these items are subsumed in the costs and tonnages of 4 ton staterooms. In most cases, such areas are required only when drawing up deck plans. Food Service Areas, including mess hall, galley, ward room. Scientific Areas, including laboratories and storerooms. Electronics Areas, including commo suites, avionics areas, electronics counter-measures installations, gunnery simulation trainers, computer operations areas and parts storage. Vehicle Decks, including garaging, maintenance bays, launching areas and parts storage. Recycling Stations. Medical Areas, including isolation wards, surgeries, pharmacies, and examination rooms. Recreational Facilities, including theatres, crafts shops, libraries, and pool rooms. Agricultural Areas, including fresh food gardens, hydroponics areas, and algae tanks. Troop Barracks, including squad areas, training rooms, armories, brigs, ammunition magazines, vacc suit storage, capsule launch areas and briefing rooms.

SHIP TYPE CODES

Primary		*Qualifier*	
A	Merchant	A	Armored
B	Battle	B	Battle; Boat
C	Cruiser; Carrier	C	Cruiser
D	Destroyer	D	Destroyer
E	Escort	E	Escort
F	Frigate; Fighter	F	Fast; Fleet
G	Gig; Refinery	G	Gunned
H		H	Heavy
J	Intruder	J	
K		K	Pinnace
L	Corvette	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	T	Troop
U		U	Unpowered
V		V	Vehicle; Van
W	Barge	W	
X	Express	X	
Y	Yacht	Y	Shuttle; Cutter
Z		Z	Experimental

SHIP TYPES

Each ship is of a specific type; type designates the purpose and function the ship performs while on duty. The ship type table indicates primary and qualifying types, and code letters for a variety of ship attributes. These letters are not necessarily exclusive, and are not necessarily used in any distinct order. In addition, some gaps in the list allow referee insertion of newly discovered ship type needs; they should be penciled in as encountered.

In addition, more than two letters may be used where necessary. Some letters may be suppressed in public statements (most specifically Q — for decoy).

For example, the ship type JF can be read as Fleet Intruder, Fast Intruder, Intruding Frigate, or Intruder Fighter. Similarly, a planetoid-hulled battle station could be typed BP, PB, BS, or SB. A decoy station might be publicly referred to as BP, and confidentially as BP (Q).

DOING DECK PLANS

Specific designs for individual ships can easily result in deck plans for use in adventures and campaigns. The following standards are suggested for use by the referee.

1. Grid: A square grid should be used, laying out a floor pattern in squares representing 1.5 meter areas. This is the scale used in Snapshot, and allows use of personal combat from that game where required. The deck plan itself can be drawn with one-half inch squares to allow use of Snapshot counters (or 15mm Traveller miniatures) and rules directly. For smaller drawings, a scale of one-fifth inch per square is suggested, allowing most ships to be drawn on one sheet of paper.

2. Standard Measurements: The following standard dimensions should be used when drawing deck plans.

A. Corridor or Hall Width: One square (1.5 meters).

B. Ceiling Height: From deck to deck, three meters. Actual head clearance, approximately 2.3 meters. The remainder containing structural members and wiring.

3. Volume: When referring to starship tonnage, one ton equals 14 cubic meters; the volume of one ton of liquid hydrogen. Two 1.5 meter squares, from deck to ceiling, occupy approximately one ton.

Both Snapshot and the Journal of the Travellers' Aid Society contain examples of deck plans for various ships.

DESIGN CHECKLIST

Use the following checklist when actually assembling a starship according to these instructions. IN Form 3, Ship's Data, is intended to be photocopied and used to maintain information on ships designed from this book.

Page references indicate locations of governing rules within this booklet. Block numbers refer to locations on IN Form 3. Upon completion of the checklist, transfer coded data to the Universal Ship Profile.

1.	Determine tech level (block 4) of building shipyard.	p. 21
2.	Select hull; determine tonnage (block 8), and configuration (block 9).	p. 22
3.	Select drives (blocks 10, 11, 12).	p. 23
4.	Determine fuel tankage (blocks 29a, 29b) requirements.	p. 29
	A. Consider L·Hyd Tanks and Fuel Scoops.	p. 32
	B. Consider Fuel Purification Plant (block 29c).	p. 32
5.	Select major weaponry (block 23 or 24).	p. 24
6.	Consider fighter launch tube and on-board fighters (block 26).	p. 25
	A. If necessary, design fighters and note USP in block 26.	
	B. Note total quantity of fighters carried in USP.	
7.	Select bay weaponry (blocks 20, 22, 23, 24, and 25a).	p. 25 – 27
8.	Select turret weaponry (blocks 16, 21, 22, and 25a).	p. 27
9.	Select ship armor (block 15).	p. 27 – 28
10.	Select screens (blocks 17, 18, and 19).	p. 28
11.	Select on-board computer (blocks 13a, 13b).	p. 29
12.	Select ship's vehicles (block 27).	p. 29 – 30
	A. If necessary, design vehicles required.	
	B. Allocate ship tonnage for garaging or hangaring.	
13.	Allocate crew for ship (block 14).	p. 30 – 31
	A. If frozen watch is carried, note in (block 14).	
	B. If ship's troops are carried, note in (block 28).	
14.	Consider magazines (block 25b) for planetary bombardment.	p. 32
15.	Designate ship type (block 7).	p. 33
16.	Indicate dates required on form (blocks 1, 5, and 6).	
17.	Determine ship name and class (blocks 2 and 3).	p. 21
18.	Insure tonnage does not exceed hull, and cost does not overrun budget.	

SHIP'S DATA		1. Date of Preparation
2. Ship's 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 ☐ Yes ☐ No	14. Crew
WEAPONRY	Data on ship armaments and defenses for classification into Universal Ship Profile.	
15. Hull Strength	16. Sand	18. 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? ☐ Yes ☐ 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 ☐ Yes ☐ 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.

UNIVERSAL SHIP PROFILE

-7- -Type-

8 9 10 11 12 13 14 – – – – – – Statistics – – – – – –

15 16 17 18 19 20 – – – – – – – – Defenses – – – – – – – –

21 22 23 24 25 – – Attack Weapons – –

26 -Ftrs-

IN Form 3

Starship Combat

This combat system is provided to use the starship factors generated earlier in this book. Certain assumptions are made: first that an encounter of some sort has occurred, and that it must be resolved by combat, and second that the starships involved have been classified using the USP covered in this book.

The combat which takes place can be one-sided, with the referee manipulating the ships of the opposition, or the encounter can be two-sided, with players functioning to control the ships 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 may be a cardboard counter, or it may be a mounted starship model or miniature. This marker may be as austere or as elaborate as deemed necessary.

2. A Ship's Data Sheet. Completely filled out, this form (photocopied from page 35) provides the data for each ship for use in combat. Temporary combat results are marked on the form. Alternatively, each ship may be listed by Universal ship profile on a sheet of paper; allow sufficient space around each USP for the marking of combat results.

SCALE

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

1. Distance is represented by two basic indeterminate ranges which are labelled *short* and *long*. In addition, there is provision for a *very short*, or *boarding*, range in some restricted instances.

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

3. Units represented are individual ships, including small craft such as ship's vessels and fighters.

TURN SEQUENCE

This combat procedure is played in a series of turns, called combat turns, or combat rounds, or firing rounds. Each round represents twenty minutes, and provides the participating forces with the opportunity to change range and fire at enemy forces.

Each combat round is divided into a series of phases which define actions to be performed. The following is the established procedure.

1. Initiative: Players determine which has the advantage.

2. Range Determination: The current range of engagement is determined. Decisions are made concerning breaking off, and screening of ships.

3. Ship Allocation: The player with the initiative allocates his or her ships against enemy ships.

4. Combat Resolution: Ships fire at enemy ships; enemy ships counter-attack. Combat results are implemented, and damage affects ships in later turns.

INITIATIVE

Initiative is an indication of relative advantage; the player with the initiative is in a superior position with respect to both maneuver and forces.

Initiative is determined at the beginning of each combat round, and may shift between the two players through the battle. The initiative is based on relative fleet size, relative fleet speed, and on chance. The player with the least slowest ship is allowed a DM of +1; thus, if one player has many ships with maneuver drives of 5 and one ship with a maneuver drive of 1, while the opposing player has only two ships, each with maneuver drive of 2, then the maneuver-2 ships are the least slowest. The player with the most ships is allowed a DM of +1. Each player rolls one die and applies any allowed DMs; the player with the highest modified die roll is granted the initiative for the current combat round.

The player with the initiative is called the attacker, and is accorded several advantages. First, he or she determines any range changes which may occur. Second, he or she allocates ships against the enemy. Third, he or she fires first in the combat round.

RANGE DETERMINATION

Two ranges (not counting boarding range, which is a special case) are possible during the combat round. Any engagement begins at long range automatically, and may then be changed to short range at any time after the first combat round. The player with the initiative may decide to alter range (from long to short, or from short to long) during the range determination phase.

All ships belonging to a side are at the same range, and may not split up or assume different ranges within the same group of ships (breaking off and boarding are somewhat exceptions to this rule).

At **long range**, lasers and particle weapons are at a disadvantage, while energy weapons may not fire. Missile fire is at an advantage.

At **short range**, energy weapons may fire, while lasers and particle weapons are at an advantage. Missile fire is at a disadvantage.

Boarding Range: Any ship which has suffered combat results which make it unable to maneuver (maneuver drive reduced to 0) is automatically at boarding range after a specific set of circumstances occurs. If alone, it is at boarding range in the next combat round. If accompanied by other ships, it is at boarding range in the combat round in which its comrade ships move from short to long range. The accompanying ships may originally have been at long range; once the range becomes short during the engagement, and then returns to long range, the immobile ship is at boarding range. It remains at boarding range as long as the current range remains long, or as long as an enemy ship remains in boarding position. See Boarding.

Breaking Off: Either side may elect to break off during the range determination phase. Not all ships of a side are required to break off. Those which do break off may leave by jumping; to do so, the ships must be designated as jumping, and are vulnerable to enemy fire during the combat round. The ships which are breaking off must commit their energies to jump, and may not fire during the combat round, although passive screens may be used.

SHIP ALLOCATION

Following range determination, the ships of each side are allocated in terms of targets and positions. The player with the initiative is at an advantage in this phase.

Allocation of ships takes place anew in each combat round. The defender (the player without the initiative) lays out all of his or her ships in a line on the table or playing surface; any number of ships may be placed in a screened position behind the line, and may not be attacked unless the ships in the line are broken through. The attacker (the player with the initiative) then places his or her ships in a line opposite the defending ships. Specific ships are placed opposite enemy ships which are to be fired on; ships which will not take part in combat are screened and placed behind the line of attacking ships. More than one ship may be allocated against a single enemy ship, and there is no requirement that any ships be allocated against any specific enemy ship.

Counter-attacks by the defending ships take place after the attacker has fired, but before any combat results are actually implemented. In some cases, range will affect allowed counter-attacks.

At short range, defending ships must fire at ships allocated against them; they may not fire at ships not specifically allocated against them. Defending ships which were not fired on may fire at any enemy ship which is not screened; screened ships may not fire or be fired on.

At long range, defending ships may fire at any enemy ships, regardless of prior ship allocation. However, screened ships may not fire, and screened ships may not be fired on unless the line-of-battle is broken. See Screening.

At boarding range, firing takes place as at short range. See Boarding.

Screening: Ships may be screened by placing them behind the line of ships. Screened ships may not be attacked unless the line-of-battle is broken; it is broken if all ships in the line are unable to fire offensively. In such a case, then all firing ships may fire again in the same firing round; screened ships may not fire.

COMBAT

The process of firing on enemy ships is called combat, and involves the use of ship's weapons in an effort to penetrate enemy defenses and impact the target's hull or ship interior. Each weapon on a ship may be fired once per combat round in the attack; all fire from a single ship must be directed against a single enemy ship. A weapon used in defense may be used once for each time it is attacked. No weapon may be used in both the attack and the defense in the same combat round.

Specific firing tables are provided for lasers (page 42), energy weapons (page 43), particle accelerators (pages 44 and 45), meson guns (pages 46 and 47), and missiles (pages 48 and 49). Each table indicates the factor of the attacking weapon and the factors of the various possible defenses. At the intersection of the attack column and the defense rows is a number which is the throw that must be made or exceeded in order to penetrate the defense. If the defense is 0 (as a result of combat) the indicated throws is 0. Accompanying each set of tables are notes indicating DMs called for by various circumstances. For example, particle accelerators firing at short range enjoy a DM of +2.

Firing a specific weapon requires that the weapon fire try to penetrate all defenses noted. If the defense indicated is not originally present (the target ship begins

with a factor of zero in that weapon), then the defense is ignored and assumed to have been automatically penetrated by the firing weapon. If a defensive weapon has been reduced to 0 as a result of combat (target began with a weapon factor of at least one, and that factor has been reduced to zero as a combat result), then the defense factor of zero is used when the firing weapon attempts to penetrate the defense weapon (the defense weapon has been reduced to a very low efficiency, but retains the potential for operation).

Once the firing weapon has penetrated all defenses, it utilizes the hull table to determine if the hull of the target itself has been hit. Note that, with respect to the meson gun, hull armor is not considered; ship configuration is instead taken as the hull defense. Meson gun fire hits in the interior of the target, and the prime consideration is not armor, but ship configuration. If successful, the weapon then consults the hit type tables (page 48 and 49). The hit type tables are of three types: surface explosions, caused by lasers, energy weapons, particle accelerators, and missile fire; radiation damage, caused by particle accelerators and nuclear missiles; and interior explosions, caused by meson gun fire.

Surface Explosions Table: This table indicates the four types of damage possible from surface explosions (weaponry reduction, maneuver drive reduction, miscellaneous effects, and critical hits). Any weapon referred to this table consults it once, and implements the result.

Radiation Damage Table: This table indicates the two types of damage possible from radiation effects (crew reduction and computer reduction). Any weapon referred to this table consults it once, and implements the results.

Interior Explosions Damage Table: This table indicates the seven types of damage possible from interior explosions (crew reduction, computer damage, power plant reduction, jump drive reduction, screens reduction, miscellaneous effects, and critical hits). Any weapon referred to this table consults it once, and implements the results.

Damage is recorded on the Ship's Data sheet or on the USP for the concerned ship by striking out the appropriate factor, and marking the reduced factor in its place. For example, a tech level 10 fighter (USP: F-0104411-000000-02000-0) is attacked and receives a hit result of weapon-1. The fighter must have one weapon reduced by one; as it only has one weapon, that one is reduced from 2 to 1. Its new (temporary) USP is F-0104411-000000-01000-0.

Critical hits are special considerations and represent the otherwise undefinable and unpredictable effects possible in space combat. No ship can explode and completely cease to exist except as a result of a critical hit; a ship is considered destroyed for battle purposes when it is incapable of further offensive combat; when it no longer has any offensive weapons of factor 1 or greater, when it no longer has a crew factor of 1 or greater, or when it no longer has a computer of factor of 1 or greater. Reduction of any other factor to zero does not prohibit further combat.

PLANETS

A planetary surface may be near the scene of battle. In such a case, a variety of special circumstances apply.

Refuelling: If the planet is a gas giant, it may be used for refuelling by dipping. Any screened ships may refuel in three turns (one hour), provided they are not interrupted in the course of their maneuver. If interrupted, and removed from the

screened body to the battle line, they are not considered to have completed refuelling.

Orbital Decay: A ship in the vicinity of a planet and which has its maneuver drive reduced to zero (or without fuel) will lose its orbit and fall to the planet in 5D (5 to 30) turns after the end of the battle.

Passing Through The Enemy Line-of-Battle: In some cases, forces may need to pass through an enemy force, for example, to move past a blockade. In order to pass through an enemy line-of-battle, the force must move to and remain at short range for a total of four consecutive firing rounds. If the consecutive time spent at short range is less than four rounds, then the attempt must be made again or abandoned.

Planetary Defenses: Planetary surfaces may be provided with planetary defense installations, generally using weapons used on starships. Such installations are immobile, and are considered mounted on a surface which cannot move. They may be engaged in the same manner as ordinary starships.

Planetary Bombardment: Missiles may be used against planetary surface installations, specifically starports or cities, provided a magazine is installed in the attacking ship.

Attacks are made using the missile attack table; each successful penetration of the defenses present results in an automatic hit. The referee is responsible for the determination of the city or starport's defenses, and for determination of the number of hits required for capitulation and destruction.

SPECIAL RULES

The following special rules add flavor to the combat system.

Pulse Lasers: Pulse lasers have a lower chance of hitting a target, but deliver more power when a hit is achieved. If a ship is equipped only with pulse lasers (for all lasers included in its armament), then it is subject to a negative DM to hit of –3 against the hull only. If it does hit, then the attack consults the surface explosions damage table twice rather than once.

Fusion Drives As Weapons: Any ship may use its maneuver drive as a weapon when at short range, provided the drive is operational, and fuel is available. When used, the ship attacks as with energy weapon. Automatically, the ship (all ships in the side) move to long range, regardless of initiative.

Frozen Watch Revival: If a ship is equipped with a frozen watch, it may be revived to replace casualties taken in battle. Such a procedure requires at least three hours (9 turns, during which the ship must be disengaged from the battle by screening or breaking off). At the end of the period, the crew factor of the ship is restored to its previous level.

Revival of the frozen watch may take place only once before replacement at a naval base or starport.

Boarding: When at boarding range, two procedures are possible for the resolution of the action. For complex detail, Snapshot rules and detailed plans may be used. For simplicity, use the following procedure:

Each turn, both sides may continue to fire as if at close range. In addition, the ship which retains maneuverability may send a boarding party to the other ship. Each side rolls one die; apply the following DMs: +1 if a marine contingent is available, +1 if no crew casualties have yet been taken, and + crew factor of the ship. If the boarding party rolls 6+ and the boarded ship rolls less, then the boarding is success-

ful, and the ship has surrendered. If the boarded ship rolls 6+, it has successfully fought off the current attempt, and all further attempts by the boarders are subject to a DM of –2. This DM is cumulative for successive throws.

In some cases, both sides may ultimately have ships unable to maneuver (as a result of continuing ship-to-ship fire); then each side may send boarding parties to the other ship. Ultimately, one side will produce the surrender of the other.

Damage Control: Following a battle, or in any period of respite (for example, while screened), the crew of a ship may attempt basic damage control to restore maneuver drive, power plant, computer, or jump drive to operational status. The concerned item must be at zero factor as a result of combat, and only one attempt (for one specific item) may be made in a round (twenty minutes). The basic throw to repair is 11+; a DM is allowed for the crew factor of the ship involved.

The referee may elect to instead apply individual character skills and specifically formulated throws in damage control situations.

High Intensity Missile Fire: A ship armed with missiles may attempt to overwhelm its enemy by firing all of its missiles at once. This maneuver may be performed only once, but allows a DM of +4 to penetrate any and all defenses operating, including to hit the hull of the target.

Personal Skills: The referee may allow weapons to be fired, and defenses to operate with DMs imposed for the skill levels of the characters operating them. In most cases, this DM is equal to the skill level of the character.

In addition, pilot skill or ship's boat skill may be used as a DM against hits on the ship hull.

LASER Attack Table

Attacking Laser Factor

Defending Sandcasters

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
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 Laser Factor

Defending Black Globe

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
1	12	11	10	9	8	7	6	5	4
2	13	12	11	10	9	8	7	6	5
3	14	13	12	11	10	9	8	7	6
4	15	14	13	12	11	10	9	8	7
5	16	15	14	13	12	11	10	9	8
6	17	16	15	14	13	12	11	10	9
7	18	17	16	15	14	13	12	11	10
8	19	18	17	16	15	14	13	12	11
9	20	19	18	17	16	15	14	13	12

Attacking Laser Factor

Defending Hull

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
1	3	2	1	0	0	0	0	0	0
2	4	3	2	1	0	0	0	0	0
3	5	4	3	2	1	0	0	0	0
4	6	5	4	3	2	1	0	0	0
5	7	6	5	4	3	2	1	0	0
6	8	7	6	5	4	3	2	1	0
7	9	8	7	6	5	4	3	2	1
8	10	9	8	7	6	5	4	3	2
9	11	10	9	8	7	6	5	4	3

A weapon using this table must penetrate sand and black globe defenses before attacking the hull of the target. A hit result against the hull allows damage as indicated by consultation of the surface explosions damage table.

Notes

If firing at long range, allow a DM of –1.

In all cases, apply a DM equal to the difference between the attacking and defending ship's computers. For example, firing computer model 7 and target computer model 4; apply a DM of +3. If target computer is model 6 and firing computer model 1, apply a DM of –5.

If black globe of firing ship is up during current combat round, apply a DM of –5 to laser fire.

If black globe of target ship is not up in current round, then laser fire ignores black globe defenses.

If a ship's laser factor has been used in the current firing round in missile defense, then it may not be used as an attack weapon. If it is used as an attack weapon, then it may not be used later in the same firing round in missile defense.

This table uses two-dice throws to determine penetration of outer ship defenses (sand and black globe) and, if successful, impact with the target's hull. Die roll modifications for relative computer size and range apply. In addition, a negative DM is called for if the attacker has a black globe generator in operation at any time during the combat round.

A successful penetration or hit has occurred if the number shown on the appropriate table is equaled or exceeded on a two-dice throw.

ENERGY WEAPON Attack Table

Attacking Energy Weapon Factor

Defending Sandcasters

	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	8	6	4	2	1	0	0	0	0
2	9	7	5	3	2	1	0	0	0
3	10	8	6	4	3	2	1	0	0
4	11	9	7	5	4	3	2	1	0
5	12	10	8	6	5	4	3	2	1
6	13	11	9	7	6	5	4	3	2
7	14	12	10	8	7	6	5	4	3
8	15	13	11	9	8	7	6	5	4
9	16	14	12	10	9	8	7	6	5

Attacking Energy Weapon Factor

Defending Black Globe

	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	11	10	9	8	7	6	5	4	3
2	12	11	10	9	8	7	6	5	4
3	13	12	11	10	9	8	7	6	5
4	14	13	12	11	10	9	8	7	6
5	15	14	13	12	11	10	9	8	7
6	17	16	15	14	13	12	11	10	9
7	18	17	16	15	14	13	12	11	10
8	19	18	17	16	15	14	13	12	11
9	20	19	18	17	16	15	14	13	12

Attacking Energy Weapon Factor

Defending Hull

	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	2	1	0	0	0	0	0	0	0
2	3	2	1	0	0	0	0	0	0
3	4	3	2	1	0	0	0	0	0
4	5	4	3	2	1	0	0	0	0
5	6	5	4	3	2	1	0	0	0
6	7	6	5	4	3	2	1	0	0
7	8	7	6	5	4	3	2	1	0
8	9	8	7	6	5	4	3	2	1
9	10	9	8	7	6	5	4	3	2

A weapon using this table must penetrate sand and black globe defenses before attacking the target's hull. A hit result against the hull allows damage as indicated by the surface explosions damage table.

Notes

Energy weapons may only attack at short range.

In all cases, apply a DM equal to the difference between the firing and target ship's computers. For example, the firing ship has a computer model 7 and the target has a computer model 4; apply a DM of +3 to the die roll to penetrate each defense.

If the black globe of the firing ship is up during the current combat round, apply a DM of –5 to energy weapon fire. If the black globe of the target ship is not up during the current combat round, ignore black globe defenses.

Energy weapon factors used for missile defense in the current round are not available for use in attacks; factors used in attacks cannot be used later in the round for missile defense.

Any ship may use its fusion maneuver drive as a weapon with a factor equal to its G rating.

This table uses two-dice throws to determine penetration of outer ship defenses (sand and black globe) and, if successful, impact with the target's hull. Die roll modifications for relative computer size and range apply. In addition, a negative DM is called for if the attacker has a black globe generator in operation at any time during the combat round.

A successful penetration or hit has occurred if the number shown on the appropriate table is equaled or exceeded on a two-dice throw.

PARTICLE ACCELERATOR Attack Table

Attacking Particle Accelerator Factor

Defending Sandcasters

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	9	8	8	7	7	6	6	5	5	4	4	3	3	2	2	1
2	10	9	9	8	8	7	7	6	6	5	5	4	4	3	3	2	2
3	10	10	9	9	8	8	7	7	6	6	5	5	4	4	3	3	2
4	11	10	10	9	9	8	8	7	7	6	6	5	5	4	4	3	3
5	11	11	10	10	9	9	8	8	7	7	6	6	5	5	4	4	3
6	12	11	11	10	10	9	9	8	8	7	7	6	6	5	5	4	4
7	12	12	11	11	10	10	9	9	8	8	7	7	6	6	5	5	4
8	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	5	5
9	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	5

Attacking Particle Accelerator Factor

Defending Black Globe

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
2	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
3	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
4	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7
5	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
6	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
7	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
8	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
9	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12

Attacking Particle Accelerator Factor

Defending Hull

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	3	3	3	2	2	2	1	1	1	0	0	0	0	0	0	0	0
2	4	4	4	3	3	3	2	2	2	1	1	1	0	0	0	0	0
3	5	5	5	4	4	4	3	3	3	2	2	2	1	1	1	0	0
4	6	6	6	5	5	5	4	4	4	3	3	3	2	2	2	1	1
5	7	7	7	6	6	6	5	5	5	4	4	4	3	3	3	2	2
6	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3
7	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4
8	10	10	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5
9	11	11	11	10	10	10	9	9	9	8	8	8	7	7	7	6	6

This table uses two-dice throws to determine penetration of outer ship defenses (sand and black globe) and, if successful, impact with the target's hull. Die roll modifications for relative computer size and range apply. In addition, a negative DM is called for if the firing ship has a black globe generator in operation at any time during the combat round.

A successful penetration or hit has occurred if the number shown on the appropriate table is equaled or exceeded on a two-dice throw.

PARTICLE ACCELERATOR Attack Table

Defending Sandcasters

	Attacking Particle Accelerator Factor									
	J	*K*	*L*	*M*	*N*	*P*	*Q*	*R*	*S*	*T*
0	0	0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0	0	0
2	1	1	0	0	0	0	0	0	0	0
3	2	1	1	0	0	0	0	0	0	0
4	2	2	1	1	0	0	0	0	0	0
5	3	2	2	1	1	0	0	0	0	0
6	3	3	2	2	1	1	0	0	0	0
7	4	3	3	2	2	1	1	0	0	0
8	4	4	3	3	2	2	1	1	0	0
9	5	4	4	3	3	2	2	1	1	0

Defending Black Globe

	Attacking Particle Accelerator Factor									
	J	*K*	*L*	*M*	*N*	*P*	*Q*	*R*	*S*	*T*
0	0	0	0	0	0	0	0	0	0	0
1	3	2	1	0	0	0	0	0	0	0
2	4	3	2	1	0	0	0	0	0	0
3	5	4	3	2	1	0	0	0	0	0
4	6	5	4	3	2	1	0	0	0	0
5	7	6	5	4	3	2	1	0	0	0
6	8	7	6	5	4	3	2	1	0	0
7	9	8	7	6	5	4	3	2	1	0
8	10	9	8	7	6	5	4	3	2	1
9	11	10	9	8	7	6	5	4	3	2

Defending Hull

	Attacking Particle Accelerator Factor									
	J	*K*	*L*	*M*	*N*	*P*	*Q*	*R*	*S*	*T*
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0	0	0	0
5	2	1	1	1	0	0	0	0	0	0
6	3	2	2	2	1	1	1	0	0	0
7	4	3	3	3	2	2	2	1	1	1
8	5	4	4	4	3	3	3	2	2	2
9	6	5	5	5	4	4	4	3	3	3

A weapon using this table must penetrate sand and black globe defenses before attacking the hull of the target. A hit result against the hull allows damage as indicated by the surface explosion and radiation damage tables.

Notes

If firing at short range, allow a DM of +2.

In all cases, apply a DM equal to the difference between the firing and target ship's computers. For example, the firing computer is model 4 and the target computer is model 7; the DM called for is –3.

If the black globe of the firing ship is up during the firing round, then apply a DM of –5 to particle accelerator fire.

If the black globe of the target ship is not up in the current round, then ignore black globe defenses.

If a ship's particle accelerator factor is used in the current firing round in missile defense, then it may not be used as an attack weapon. If it is used as an attack weapon, then it may not be used in missile defense in the current combat round.

A successful hull hit by a particle accelerator weapon results in a consultation of both the surface explosions damage table and the radiation damage table. Both results are implemented on the target ship. Radiation damage results affect only crew factors and computer factors, and may be mitigated by fibre optic back up computer systems and by excess or frozen watch crew arrangements.

Surface explosion damage affects ship exterior features, and is determined in the same manner as laser or energy weapon fire.

MESON GUN Attack Table

Attacking Meson Gun Factor

Defending Meson Screen	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	13	12	11	10	9	8	8	7	7	6	6	5	5	4	4	3	3
2	14	13	12	11	10	9	8	8	7	7	6	6	5	5	4	4	3
3	15	14	13	12	11	10	9	8	8	7	7	6	6	5	5	4	4
4	16	15	14	13	12	11	10	9	8	8	7	7	6	6	5	5	4
5	17	16	15	14	13	12	11	10	9	8	8	7	7	6	6	5	5
6	18	17	16	15	14	13	12	11	10	9	8	8	7	7	6	6	5
7	19	18	17	16	15	14	13	12	11	10	9	8	8	7	7	6	6
8	20	19	18	17	16	15	14	13	12	11	10	9	8	8	7	7	6
9	21	20	19	18	17	16	15	14	13	12	11	10	9	8	8	7	7

Attacking Meson Gun Factor

Defending Black Globe	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
2	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
3	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
4	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7
5	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
6	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
7	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
8	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
9	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12

Attacking Meson Gun Factor

Defending Configuration	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	15	15	14	14	14	13	13	13	12	12	12	11	11	11	10	10	10
2	14	13	13	13	12	12	12	11	11	11	10	10	10	9	9	9	8
3	12	12	12	11	11	11	10	10	10	9	9	9	8	8	8	7	7
4	11	11	10	10	10	9	9	9	8	8	8	7	7	7	6	6	6
5	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4
6	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3
7	7	7	6	6	6	5	5	5	4	4	4	3	3	3	2	2	2
8	6	5	5	5	4	4	4	3	3	3	2	2	2	1	1	1	0
9	4	4	4	3	3	3	2	2	2	1	1	1	0	0	0	0	0

This table uses two-dice throws to determine penetration of outer ship defenses (meson screen and black globe) and, if successful, impact with the interior of the target's hull. Die roll modifications for relative computer size and range apply. In addition, a negative DM is called for if the firing ship has a black globe generator in operation at any time during the combat round.

A successful penetration or hit has occurred if the number shown on the appropriate table is equaled or exceeded on a two-dice throw.

MESON GUN Attack Table

Attacking Meson Gun Factor

Defending Meson Screen	J	K	L	M	N	P	Q	R	S	T
0	0	0	0	0	0	0	0	0	0	0
1	1	2	2	1	1	0	0	0	0	0
2	2	3	2	2	1	1	0	0	0	0
3	3	3	3	2	2	1	1	0	0	0
4	4	4	3	3	2	2	1	1	0	0
5	5	4	4	3	3	2	2	1	1	0
6	6	5	4	4	3	3	2	2	1	1
7	7	5	5	4	4	3	3	2	2	1
8	8	6	5	5	4	4	3	3	2	2
9	9	6	6	5	5	4	4	3	3	2

Attacking Meson Gun Factor

Defending Black Globe	J	K	L	M	N	P	Q	R	S	T
0	0	0	0	0	0	0	0	0	0	0
1	1	3	2	1	0	0	0	0	0	0
2	2	4	3	2	1	0	0	0	0	0
3	3	5	4	3	2	1	0	0	0	0
4	4	6	5	4	3	2	1	0	0	0
5	5	7	6	5	4	3	2	1	0	0
6	6	8	7	6	5	4	3	2	1	0
7	7	9	8	7	6	5	4	3	2	1
8	8	10	9	8	7	6	5	4	3	2
9	9	11	10	9	8	7	6	5	4	3

Attacking Meson Gun Factor

Defending Configuration	J	K	L	M	N	P	Q	R	S	T
0	0	0	0	0	0	0	0	0	0	0
1	9	9	9	8	8	8	7	7	7	6
2	8	8	7	7	7	6	6	6	5	5
3	7	6	6	6	5	5	5	4	4	4
4	5	5	5	4	4	4	3	3	3	2
5	4	4	3	3	3	2	2	2	1	1
6	3	2	2	2	1	1	1	0	0	0
7	1	1	1	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0

A weapon using this table must penetrate meson screen and black globe defenses before attacking the hull of the target. A hit result against the hull allows damage as indicated by the interior explosions table.

Notes

Range has no effect on meson gun fire. Attacks at both long and short range are conducted in the same manner.

In all cases, apply a DM equal to the difference between the firing and target computers. For example, the firing computer is model 5 and the target computer is model 6; the DM called for is –1. If the firing computer is model 1 and the target ship's computer is model 7, then the DM called for is –6.

If the black globe of the firing ship is up at any time during the firing round, then meson gun fire is conducted with a DM of –5.

If the black globe of the target ship is not up in the current round, then meson gun fire ignores the black globe defenses of the target ship.

Meson gun fire is not usable in anti-missile defense. It may not be directed at enemy missiles.

A successful hit by a meson gun results in a consultation of the interior explosions damage table and implementation of the results on the target ship.

MISSILE Attack Table

Attacking Missile Factor

Defending Sandcasters	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
1	9	8	7	6	5	4	3	2	1
2	10	9	8	7	6	5	4	3	2
3	11	10	9	8	7	6	5	4	3
4	12	11	10	9	8	7	6	5	4
5	13	12	11	10	9	8	7	6	5
6	14	13	12	11	10	9	8	7	6
7	15	14	13	12	11	10	9	8	7
8	16	15	14	13	12	11	10	9	8
9	17	16	15	14	13	12	11	10	9

Attacking Missile Factor

Defending Weapons	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
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

Attacking Missile Factor

Defending Black Globe	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
0	0	0	0	0	0	0	0	0	0
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

Missile attacks must pass through sand, laser, energy weapons, and particle accelerator fire, black globe fields, nuclear dampers, and repulsors before attempting hits against the target hull. A hit result by a non-nuclear missile may result in either surface explosion damage or interior explosion damage. A hit result by a nuclear missile may result in either surface explosion damage or interior explosion damage; it will also cause radiation damage.

Notes

This table uses two-dice throws to determine penetration of outer ship defenses (sand, laser, energy weapons and particle accelerators, black globe, dampers, and repulsors), and, if successful, impact with the target's hull. Die roll modifications for relative computer size and range apply. In addition, a negative DM applies if the attacker has a black globe generator in operation at any time during the combat round.

A successful penetration has occurred if the number shown on the appropriate table is equaled or exceeded on a two-dice throw.

A missile attack launched at short range is subject to a DM of –1.

In all cases, apply a DM equal to the difference between the firing and target ship's computers. For example, if the firing ship has a model 3 computer, and the target has a model 2 computer, then a DM of +1 is called for.

If the black globe of the firing ship is up during the current firing round, apply a DM of –5 to all missile fire. If the black globe of the target ship is not up during the current firing round, then ignore black globe defenses.

MISSILE Attack Table

Attacking Missile Factor

Defending Nuclear Dampers	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	9	8	7	6	5	4	3	2	1
2	10	9	8	7	6	5	4	3	2
3	11	10	9	8	7	6	5	4	3
4	12	11	10	9	8	7	6	5	4
5	13	12	11	10	9	8	7	6	5
6	14	13	12	11	10	9	8	7	6
7	15	14	13	12	11	10	9	8	7
8	16	15	14	13	12	11	10	9	8
9	17	16	15	14	13	12	11	10	9

Attacking Missile Factor

Defending Repulsors	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	14	12	10	8	6	4	2	0	0
2	15	13	11	9	7	5	3	1	0
3	16	14	12	10	8	6	4	2	0
4	17	15	13	11	9	7	5	3	1
5	18	16	14	12	10	8	6	4	2
6	19	17	15	13	11	9	7	5	3
7	20	18	16	14	12	10	8	6	4
8	21	19	17	15	13	11	9	7	5
9	22	20	18	16	14	12	10	8	6

Attacking Missile Factor

Defending Hull	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0
1	4	3	2	1	0	0	0	0	0
2	5	4	3	2	1	0	0	0	0
3	6	5	4	3	2	1	0	O	0
4	7	6	5	4	3	2	1	0	0
5	8	7	6	5	4	3	2	1	0
6	9	8	7	6	5	4	3	2	1
7	10	9	8	7	6	5	4	3	2
8	11	10	9	8	7	6	5	4	3
9	12	11	10	9	8	7	6	5	4

When missiles encounter the weapons table (preceding page) the defending ship may utilize lasers, energy weapons, or particle accelerators in anti-missile defense. Only one of the weapons may be selected; the weapon chosen cannot be used later in the combat round in the attack, and cannot already have been used in the attack in the current combat round. Particle accelerators with factors greater than 9 are treated as having a factor of 9. Meson guns are not usable in missile defense.

Missile attacks may be designated as either nuclear or high-explosive. If the attack is not designated prior to combat, it is assumed to be high explosive (non-nuclear). Nuclear missiles must pass through the nuclear damper table, and if unsuccessful, the attack is has no effect. Missiles designated as high explosive ignore nuclear damper defenses. The designation of nuclear or non-nuclear affects the use of the hull table.

Missile attacks against the repulsor table are conducted with a DM of +2 if made at short range. This reflects the shorter reaction time available to the computer during the attack.

Nuclear missiles attack on the hull table with a DM of +5, and if successful, result in consultation of both the surface damage table and the radiation damage table. Non-nuclear missile hits result in consultation of the surface damage table.

Surface Explosions Damage Table		Radiation Damage Table		Interior Explosions Damage Table	
2	Critical Hit	2	Critical Hit	2	Critical Hit
3	Weapon-1	3	Crew-1	3	Computer-1
4	Weapon-2	4	Crew-2	4	Jump-1
5	Weapon-2	5	Computer-1	5	Screens-1
6	Weapon-1	6	Computer-2	6	Miscellaneous Effect
7	Weapon-2	7	Computer-2	7	Power Plant-2
8	Maneuver-2	8	Computer-2	8	Power Plant-1
9	Maneuver-3	9	Crew-1	9	Screens-4
10	Weapon-3	10	Crew-2	10	Power Plant-2
11	Weapon-2	11	Crew-1	11	Computer-1
12	Maneuver-2	12	Crew-1	12	Critical Hit
13	Weapon-1	13	Computer-1	13	Crew-1
14	Weapon-1	14	Computer-1	14	Jump-1
15	Maneuver-2	15	Crew-1	15	Miscellaneous Effect
16	Maneuver-3	16	Computer-2	16	Power Plant-1
17	Weapon-1	17	Critical Hit	17	Computer-1
18	Maneuver-2	18	Computer-1	18	Screens-3
19	Weapon-1	19	Crew-1	19	Critical Hit
20	Maneuver-1	20	Crew-1	20	Crew-1
21	Weapon-1	21	Computer-1	21	Miscellaneous Effect

Applicable DMs:

In all cases, apply a DM equal to plus the configuration of the target ship.

If the weapon inflicting the hit is a particle accelerator or meson gun with a factor greater than 9, then apply a DM of –5.

Modified results greater than 21 are treated as 21. Modified results of less than 2 are treated as 2.

Explanation of Damage Results:

Weapon-n. The firing player may select any non-zero attack weapon factor (lasers, energy weapons, particle accelerators, meson guns, missiles) or surface-mounted defenses (repulsors or sandcasters) on the target ship, and reduce that item by n factors. All reduction must be in one specific item, and any remaining factors after the item is reduced to zero may not be applied to other items. Items operate in subsequent firing rounds using their reduced factors. This result may apply to blocks 16, 20, 21, 22, 23, 24, or 25.

Maneuver-n. The maneuver drive of the target ship is reduced by n factors. If the reduction reduces the maneuver drive to less than zero, it remains at zero and the excess point reduction is lost. However, if a maneuver-n result would place the current maneuver drive at –3 or less, then the drive explodes, destroying the ship. The drive functions in subsequent rounds with its reduced factor. This result applies to block 11.

Crew-n. The crew of the target ship is reduced by n. Upon reduction of the crew factor of a ship to zero, the ship may no longer make attacks, although its defenses, maneuver, and jump drive may continue to operate (some crew personnel are always assumed to survive) for as long as its computer remains operational.

Computer-n. The computer of the target ship is reduced by n factors. If this result is achieved on the radiation damage table, and the computer model includes a fibre optic back-up, then the result is ignored. This result affects block 13.

Power Plant-n. The power plant of the target ship is reduced by n factors. If the reduction places the power plant factor at zero, then any additional point reductions are lost. Both jump drive and maneuver drive may not be operated at a number greater than the current power plant number. This result affects block 12.

Jump Drive-n. The jump drive of the target ship is reduced by n factors. If the reduction in jump drive places the jump drive factor at zero, than any additional point reduction is lost. A ship may not make a jump greater than its current jump number. This result affects block 10.

Screens-n. The firing player may select any non-zero interior screens factor (meson screens, nuclear dampers, or black globe generator) and reduce it by n factors. All reduction must be in one specific screen, and any remaining factors alter the screen are reduced to zero may not be applied to other screens. Screens reduced to zero factor use the zero factor row in the weapons tables. This result may affect block 17, 18, or 19.

Critical Hit: A potentially catastrophic hit has been inflicted on the target ship. Consult the critical hit table.

Miscellaneous Effect: An otherwise undefined effect has occurred. Consult the miscellaneous effects table.

CRITICAL HIT TABLE	
1	Computer Destroyed
2	Power Plant Disabled
3	Jump Drive Disabled
4	One Screen Disabled
5	One Weapon Disabled
6	Frozen Watch Destroyed

MISCELLANEOUS EFFECTS TABLE	
1	Hangar Deck Disabled
2	Boat Deck Disabled
3	Fuel Tankage Shattered
4	Streamlining Shattered
5	Computer-1
6	Crew·1

Explanation of Damage Effects

Computer Destroyed. The ship's computer is reduced to zero factors.

Power Plant Disabled. The ship's power plant is reduced to zero factors.

Jump Drive Disabled. The ship's jump drive is reduced to zero factors.

One Screen Disabled. One screen generator (black globe, meson screen, or nuclear damper, firing player's choice) is reduced to zero factors.

One Weapon Disabled. One weapon (laser, energy weapon, particle accelerator, meson gun, sandcaster, or missile rack, firer's choice) is reduced to zero factor.

Frozen Watch Destroyed. All individuals in low berths are destroyed.

Hangar Deck Disabled. One hangar deck of on-board fighters (up to 40 craft) is destroyed.

Boat Deck Disabled. The ship's boat deck is disabled, and all ship's vessels and vehicles (except fighters on hangar decks) are rendered inoperative.

Fuel Tankage Shattered. The ship's fuel tankage nearly all fuel, making maneuver and jump impossible. Weapons fire and ordinary activity may continue.

Streamlining Shattered. Maneuver in atmosphere is impossible.

Computer-1. The computer is reduced on factor.

Crew-1. The crew is reduced one factor.

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