

CHARACTER GENERATION CHECKLIST

1. Roll personal characteristics: strength (2D - 1), dexterity (2D + 1), endurance (2D - 1), intelligence (2D), education (2D), and charisma (2D).

2. Select service and roll for enlistment using all applicable DMs.

A. If rejected, try draft.

B. Roll for survival.

C. If not commissioned, attempt commission.

D. If commissioned (or loner or emissary), attempt success and consult success table.

E. Determine skills allowed.

1) Automatic skills.

2) Acquired skills.

3) Specify cascade skills.

F. At age 34+, check aging.

G. Roll for reenlistment and return to 2B if successful.

3. Discharge and Muster-out.

A. Determine benefits.

B. If discharged, consider enlistment in new service.

C. Record characteristics and skills for later use.

BASIC SKILL ELIGIBILITY

For initial term of service.....2

Per subsequent term of service...1

Upon receiving commission.....1

Upon receiving success.....1

Note: Loners and emissaries receive skills per term of service.

MUSTER-OUT BENEFITS

Per term of service.....1

If rank 1 or 2.....1

If rank 3 or 4.....2

If rank 5 or 6.....3

Benefits Table: DM + 1 if rank 5+ or prospecting skill.

Cash Table: DM + 1 if gambling or prospecting skill, or if retired.

HEXADECIMAL NOTATION

Base-10	Base-16	Base-10	Base-16
0	0	8	8
1	1	9	9
2	2	10	A
3	3	11	B
4	4	12	C
5	5	13	D
6	6	14	E
7	7	15	F

Use hexadecimal (base-16) numbers for the six characteristics of the UPP (use G for 16).

VARGR PRIOR SERVICE TABLE

	<i>Navy</i>	<i>Corsairs</i>	<i>Army</i>	<i>Emissaries</i>	<i>Merchants</i>	<i>Loner</i>
Enlistment	7+	6+	5+	8+	5+	7+
DM + 1 if	Intel 8+	Endur 9+	Stren 10+	Educ 7+	Dext 8+	Stren 6+
DM + 2 if	Char 6+	Dext 7+	Endur 6+	Char 6+	Intel 8+	Dext 8+
Draft	1	2	3	4	5	6
Survival	5+	6+	5+	4+	3+	6+
DM + 2 if	Educ 7+	Endur 9+	Stren 5+	Char 8+	Intel 9+	Dext 9+
Commission	9+	8+	7+	—	7+	—
DM + 1 if	Intel 7+	Char 7+	Endur 6+	—	Intel 8+	—
Success	see Success Table					
DM + 1 if	Educ 7+	Intel 8+	Educ 9+	Intel 10+	Intel 8+	Intel 9+
DM + 1 if	Char 6+	Char 5+	Char 6+	Char 8+	Char 7+	Char 4+
Reenlist	5+	6+	6+	5+	4+	5+

Characters cycle through this table during each term of service. The reenlistment die throw is required even if the character does not intend to reenlist (a roll of 12 exactly calls for mandatory reenlistment). All rolls except draft are 2D.

TABLE OF RANKS

	<i>Navy</i>	<i>Corsairs</i>	<i>Army</i>	<i>Emissaries</i>	<i>Merchants</i>	<i>Loner</i>
Rank 1	Ensign	Lieutenant	Lieutenant	—	4th Officer	—
Rank 2	Lieutenant	Force Leader	Captain	—	3rd Officer	—
Rank 3	Lt Cmdr	Staff Major	Major	—	2nd Officer	—
Rank 4	Commander	Group Leader	Lt Colonel	—	1st Officer	—
Rank 5	Captain	Commodore	Colonel	—	Captain	—
Rank 6	Admiral	Leader	General	—	—	—

Loners and emissaries do not have commissions or rank, although non-rank aspects of success (the success table and charisma increases therefrom) are allowed.

MUSTERING OUT TABLES

Die Roll	Benefits Table					
1	Low Psg	Low Psg	Low Psg	Low Psg	Low Psg	Low Psg
2	+2 Intel	+1 Intel	+1 Intel	+2 Intel	+1 Intel	+1 Intel
3	+2 Educ	+2 Educ	+1 Educ	+1 Educ	+1 Educ	Gun
4	Gun	Gun	Gun	Blade	Blade	Blade
5	High Psg	Gun	High Psg	Blade	Gun	Mid Psg
6	High Psg	Gun	High Psg	High Psg	High Psg	Mid Psg
7	+2 Char	Corsair	+1 Char	—	Trader	Seeker

Characters with rank 5 or 6 may add +1 to their rolls on this table. Loners with prospecting skill may add +1 to their rolls. Gun and blade benefits must be declared by type immediately; additional benefits of gun or blade may be declared as skill. Additional occurrences of corsair, trader, or seeker are treated as no benefit.

Die Roll	Cash Table (in Credits)					
1	1,000	1,000	5,000	10,000	1,000	0
2	5,000	1,000	5,000	20,000	1,000	0
3	10,000	10,000	10,000	30,000	1,000	10,000
4	10,000	10,000	10,000	40,000	20,000	10,000
5	20,000	30,000	20,000	40,000	20,000	30,000
6	30,000	30,000	20,000	50,000	20,000	40,000
7	40,000	50,000	20,000	50,000	20,000	100,000

Amounts shown are in credits (Cr). No more than three rolls may be made on this table. Retired individuals are allowed DM + 1 on the cash table. Loners with gambling or prospecting skill are allowed DM + 1.

WEAPONS AND EQUIPMENT

Guns and Accessories

<i>Item</i>	<i>Base Weight</i>	<i>Ammo Weight</i>	<i>Rds/Clip</i>	<i>Length Overall</i>	<i>Base Price</i>	<i>Ammo Price</i>	<i>Required Dexterity Level DM</i>		<i>Advantageous Dexterity Level DM</i>		<i>Maximum Effective Range¹</i>	<i>TL</i>
Body Pistol	.250	.050	6	.100	500	20	7	-3	11	+	+1 medium	7
Automatic Pistol	.750	.250	15	.175	200	10	6	-2	10	+	+1 long	5
Revolver	.900	.100	6	.200	150	5	6	-2	9	+	+1 long	4
Carbine	3.000	.125	10	.750	200	10	4	-1	9	-	+1 very long	5
Rifle	4.000	.500	20	1.000	200	20	5	-2	8	+	+1 very long	5
Automatic Rifle	5.000	.500	20	1.000	1000	20	6	-2	10	+	+2 very long	6
Shotgun	3.750	.750	10	1.000	150	10	3	-1	9	+	+1 long	4
Submachinegun	2.500	.500	30	.450	500	20	5	-2	9	+	+2 very long	5
Laser Carbine	5.000	—	—	.800	2500	—	5	-3	10	-	+2 very long	8
LC Power Pack	3.000	—	50	—	1,000	200	—	—	—	—	—	8
Laser Rifle	6.000	—	—	1.000	3,500	—	6	-3	11	+	+2 very long	9
LR Power Pack	4.000	—	100	—	1,500	300	—	—	—	—	—	9
Assault Rifle	3.000	.330	30	.850	300	20	4	-1	8	+	+2 very long	7
LAG	4.000	.500	5	.900	600	20	6	-2	10	+	+2 very long	8
ACR (slug)	3.500	.500	25	.750	1,000	15	5	-2	8	+	+2 1,000	10
HE	3.500	.500	25	.750	1,000	20	5	-2	8	+	+2 1,000	10
DS	3.500	.500	25	.750	1,000	25	5	-2	8	+	+2 1,000	10
Gauss Rifle	3.500	.400	40	.750	1,500	30	6	-2	10	+	+2 1,260	12
Accelerator Rifle	2.500	.500	15	.800	900	25	5	-1	9	+	+1 very long	9
Snub Pistol	.250	.030	6	.100	150	10	6	-2	10	+	+1 medium	8
Combat Snub	.250	.125	20	.100	250	40	6	-2	10	+	+1 medium	8
Hand Grenade	—	1.000	—	—	—	10	6	-2	11	+	+1 medium	5
Grenade Launcher	3.000	.200	1	.750	200	5	7	-3	11	+	+1 very long	7
Auto GL (Pintle)	6.000	3.500	16	.900	1,400	85	7	-3	11	+	+1 very long	7
Auto GL (Turret)	6.000	40.000	200	.900	1,900	1,000	7	-3	11	+	+1 very long	7
RAM GL	4.000	1.400	3	.900	400	50	7	-3	11	+	+1 1,000	8
RAM Auto GL (Pintle)	6.500	9.000	20	.900	2,200	350	7	-3	11	+	+1 1,000	8
RAM Auto GL (Turret)	6.500	9.000	20	.900	2,900	350	7	-3	11	+	+1 1,000	8
AT GL	6.300	1.000	1	.850	200	20	7	-1	10	+	+1 long	6
AT RL	6.500	1.000	1	1.000	300	30	7	-1	10	+	+1 very long	7
LMG with bipod	5.500	2.500	100	1.100	1,200	120	6	-2	10	+	+2 very long	6
LMG with tripod	9.000	2.500	100	1.100	1,450	120	6	-2	10	+	+2 1,000	6
Heavy MG	70.000	13.000	100	1.600	3,000	400	6	-2	10	+	+2 1,300	6
AutoCannon (Pintle)	300.000	100.000	200	1.500	7,500	1,000	6	-2	10	+	+2 1,000	8
AutoCannon (Turret)	400.000	100.000	200	1.500	12,000	1,000	6	-2	10	+	+2 2,000	8
PGMP-12	6.000	—	—	.800	10,000	50	7	-2	11	+	+1 750	12
Power Pack	—	3.000	40	.600	—	2,500	—	—	—	—	—	12
PGMP-13	.900	7.000	—	.900	65,000	20	6	-2	11	+	+1 1,000	13
Power Pack	—	7.000	*	.600	—	50,000	—	—	—	—	—	13
PGMP-14	9.000 ²	1.600	—	.800	300,000	50	7	-2	11	+	+1 1,000	14
Power Pack	—	9.000 ³	*	.600	—	250,000	—	—	—	—	—	14
FGMP-14	1.000	9.000	—	.900	100,000	—	6	-1	10	+	+1 1,500	14
Power Pack	—	9.000	*	.600	—	65,000	—	—	—	—	—	14

Notes: 1. Extreme range for Mercenary weapons.

2. Weighs 50 grams with grav field generator on.

3. Weighs 90 grams with grav field generator on.

*Effectively unlimited.

Weapon types further described in basic Traveller or in Mercenary.

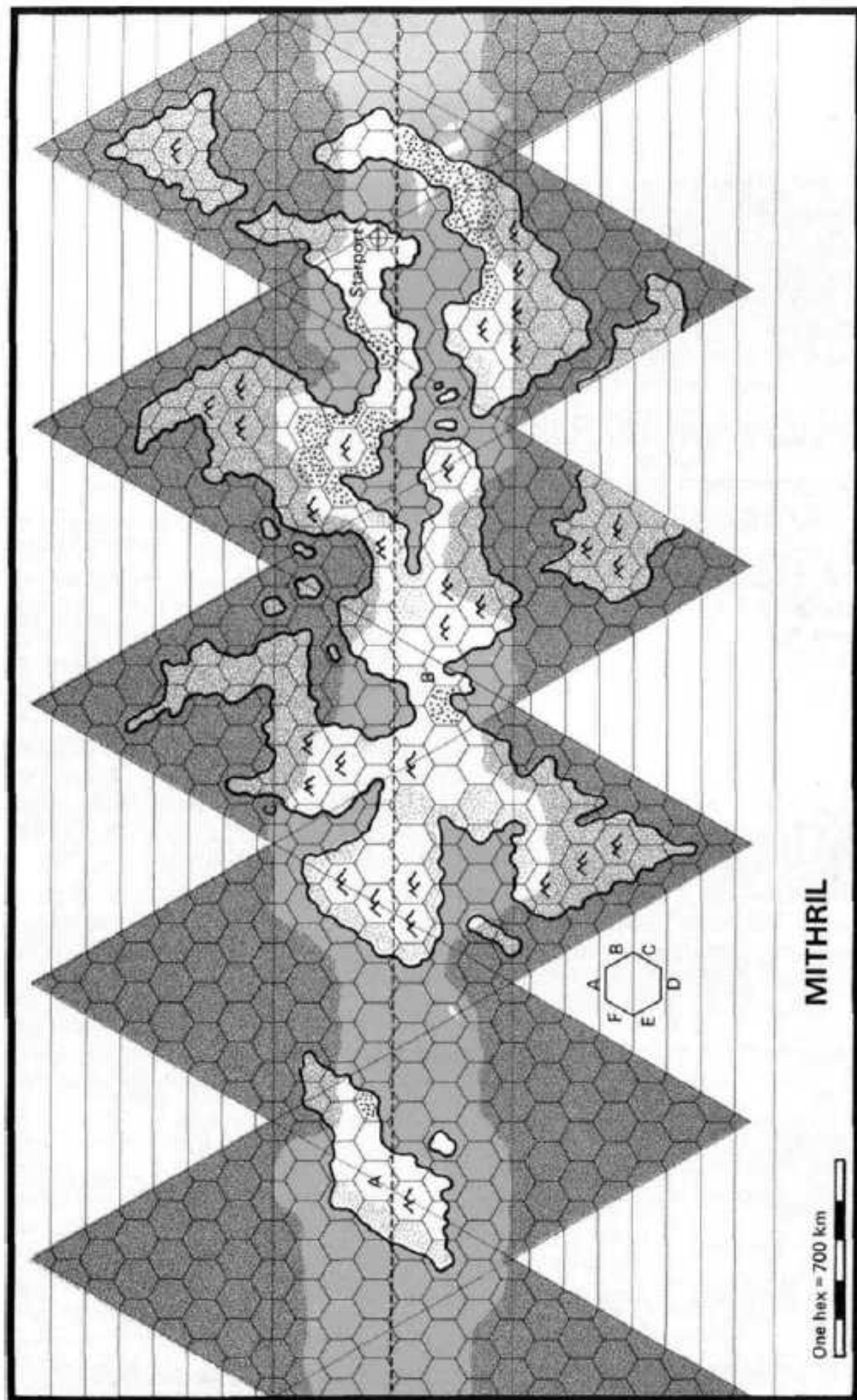
Abbreviations: ACR Advanced Combat Rifle. AT Anti-Tank. DS Discarding Sabot. FGMP Fusion Gun Man Portable. GL Grenade Launcher. HE High Explosive. HEAP High Explosive Armor Piercing. LMG Light Machine Gun. MG Machine Gun. PGMP Plasma Gun Man Portable. RAM Rocket Assisted Munition.

TABLE OF ZONES

Orbit	Star Type (Giant)												Size III
No.	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5	M9
1	—	—	I	I	I	I	I	I	I	I	—	—	—
2	—	—	I	I	I	I	I	I	I	I	—	—	—
3	—	—	I	I	I	I	I	I	I	I	—	—	—
4	—	—	I	I	I	I	I	I	I	I	I	I	—
5	—	I	I	I	I	I	I	I	I	I	I	I	I
6	—	I	I	I	H	H	H	I	I	I	I	I	I
7	I	I	I	H	O	O	O	H	H	I	I	I	I
8	I	I	H	O	O	O	O	O	O	H	H	I	I
9	I	I	O	O	O	O	O	O	O	O	O	H	H
10	I	H	O	O	O	O	O	O	O	O	O	O	O
11	I	O	O	O	O	O	O	O	O	O	O	O	O
12	H	O	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O	O

Orbit	Star Type (Subgiant)									Size IV
No.	B0	B5	A0	A5	F0	F5	G0	G5	K0	
0	—	—	—	I	I	I	I	I	I	
1	—	—	I	I	I	I	I	I	I	
2	—	—	I	I	I	I	I	I	I	
3	—	I	I	I	I	I	I	I	I	
4	—	I	I	I	I	I	I	I	H	
5	—	I	I	I	I	H	H	H	O	
6	—	I	I	H	H	O	O	O	O	
7	I	I	H	O	O	O	O	O	O	
8	I	I	O	O	O	O	O	O	O	
9	I	H	O	O	O	O	O	O	O	
10	I	O	O	O	O	O	O	O	O	
11	I	O	O	O	O	O	O	O	O	
12	H	O	O	O	O	O	O	O	O	
13	O	O	O	O	O	O	O	O	O	

Orbit	Star Type (Main Sequence)												Size V
No.	B0	B5	A0	A5	F0	F5	G0	G5	K0	K5	M0	M5	M9
0	—	—	I	I	I	I	I	I	I	H	H	O	O
1	—	—	I	I	I	I	I	I	I	O	O	O	O
2	—	—	I	I	I	I	I	H	H	O	O	O	O
3	—	I	I	I	I	I	H	O	O	O	O	O	O
4	—	I	I	I	I	H	O	O	O	O	O	O	O
5	—	I	I	I	H	O	O	O	O	O	O	O	O
6	I	I	I	H	O	O	O	O	O	O	O	O	O
7	I	I	H	O	O	O	O	O	O	O	O	O	O
8	I	I	O	O	O	O	O	O	O	O	O	O	O
9	I	H	O	O	O	O	O	O	O	O	O	O	O
10	I	O	O	O	O	O	O	O	O	O	O	O	O
11	I	O	O	O	O	O	O	O	O	O	O	O	O
12	H	O	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O	O



on a continuing shuttle run from Terra to the Imperial Core.

Auxiliary Operations: When the *Azhanti* class was retired in 1048, sixteen of the ships were placed on auxiliary duty. Ten ships assumed tanker duty, serving as fuel storage depots carrying excesses of fuel in their tanks for routine fleet refuelling operations. The remaining six ships operated as cargo carriers, and at the same time performed training runs for various specialist schools of the Imperial Navy.

Commercial Service: Of the eight ships purchased at surplus and placed in commercial service, the most interesting is the *Emissary* (ex-*Sparkling Distress*) operated by Oberlindes Lines in the Vargr Extents. Taking advantage of a bureaucratic loophole, the ship never shed its weaponry, and was operated from a base just beyond the Imperial border, at Pandrin/Uthe. The weaponry projects the proper attitude of power to the Vargr, and while never actually used, it has made the Oberlindes commercial expeditions highly successful.

Other ships in commercial service have tended to serve in either fast, high value cargo transport roles, or as bulk carriers where their jump-5 drives prove practical.

SHIP DESCRIPTION

The *Azhanti High Lightning* class ship is built on a 60,000 ton hull assembled in orbit; its maneuver drives can achieve 2G, while its massive jump drives are capable of jump-5. Ten decks of quarters contain over 600 staterooms allowing a potential 620 crew members, including 150 ship's troops, and 149 flight crew and maintenance personnel for the ship's six fighter squadrons. A capability for 310 additional crew in low passage (the frozen watch) is distributed among the various crew quarters decks. Fuel tankage is 32,000 tons, distributed onto interior decks (they serve as battle damage cushions) and the rear farings. The ship is not streamlined, but is capable of limited refuel skimming.

As a military ship, the major purpose of the ship is as a weapons carrier. The ship is built around three tubes: a spinal mount weapons tube, and a twin small craft launch tubes. Distributed along the dorsal and ventral surfaces are twenty-four ten-ton bays. Finally, the entire surface of the ship is covered with a variety of laser turrets, sandcasters, and repulsors. In addition, the ship carries internal nuclear dampers and a meson screen (plus a black globe in the refurbished models).

Fleet Intruders: In the original fleet intruder, the spinal mount weaponry is a particle accelerator and the ten-ton bays carry missile racks.

Auxiliaries: When converted to auxiliaries, all major weaponry was suppressed (removed and plated over) to comply with Imperial doctrine.

Frontier Cruisers: When converted to frontier cruisers, the spinal mount became a meson gun, and the ten-ton bays were fitted with particle accelerators. Some of the exterior turrets were converted from laser to missile rack.

Scout Ships: The ships received by the scout service retained their particle accelerator spinal mount, but replaced the missile racks in the bays with meson guns of low displacement and heavy duty repulsors.

Originally, all ships had two decks capable of holding 200 tons of cargo each. The scout service ships increased this to four cargo holds by converting the auxiliary bridge and one deck of quarters.

Scout service ships made do with a smaller crew than the naval cruisers, sacrificing many gunners, while adding some alien contact specialists and lab technicians.

GENERAL SPECIFICATIONS

The ships of the *Azhanti High Lightning* class, aside from weaponry changes, remained essentially the same throughout their service lives.

Tonnage:	60,000 tons (standard). 840,000 cubic meters.
Acceleration:	2G constant.
Dimensions:	405m long by 61.2m wide by 36.4m high (fin adds 17m).
Crew:	62 officers, 333 men. 75 pilots. 150 troops.
Jump:	5
Powerplant:	5
Engineering:	Twin Quadric Halonic fusion power plants driving a backed up LSP (or equivalent) Fardrive jump unit. Connected in parallel are standard issue maneuver drives constructed at the local yard.
Gravitics:	Standard inertial compensators, plus 1G floor field.
Range:	Unlimited maneuver. One jump-5 (or equivalent lesser jumps). At least 300 days.
Electronics:	Triple ISMM Model/6.1 on-board computers with multiple input stations distributed throughout the ship. Integral fire control and program storage. Fibre optic back-up network for control of battle damage.
Small Craft:	Four 400-ton fuel shuttles. Ventral docking for ships in the 100 to 400 ton class, including carriage during jump. Sixty fighters (a squadron of ten consists of eight single place and two dual place fighters); five 40-ton launches or gunboats. Two hangar decks with provisions for sixty-six small craft (maximum diameter: 3m; maximum length: 12m).
Armament (FI):	PA-1688 spinal partical accelerator mounted co-axially with fighter launch tubes. Twenty-four fifty ton bays fitted with missile racks.
Armament (CF):	Penbody MA-21 meson gun spinally mounted. Twenty-four bays mounting particle accelerators.
Armament (ISC):	PA-1688 spinal partical accelerator (as built), plus twenty-four bays mounting meson guns and repulsors. All ships have a wide array of laser, missile, energy, and caster turrets for small craft and close-action protection.
Defenses:	NOTB 666 meson screen and heavy pierced plate hull armor throughout. Absalom nuclear dampers (Finalians later). CFs carry Vlandian BGs.

STATISTICS

The tables on the following pages show construction information on the ships of the *Azhanti High Lightning* class. Tail numbers are preceded by the prefix FI (for fleet intruder) for the original version. Ships converted to frontier cruiser take the prefix CF. Ships which serve as auxiliaries take the prefix QC (for auxiliary cruisers). Scout ships take the prefix ISC (for Imperial scout cruiser). Commercial ships generally drop any prefix but retain the tail number as a registry number.

- Grav Vehicle-1, Laser Weapons-2, Leader-1, Mechanical-1, Recon-1, Recruiting-1, Tac Missiles-1, Tracked Vehicle-1.
63. *Morale:* 5. *Skills:* Combat Rifleman-1, Computer-1, Medical-1, Mortar-2, Pistol-2, Wheeled Vehicle-1.
64. *Morale:* 14. *Skills:* Admin-1, Combat Rifleman-1, Grav Vehicle-4, Howitzer-1, Mechanical-1, Mortar-1, Tac Missiles-1, Tactics-1.
65. *Morale:* 12. *Skills:* Combat Rifleman-1, Communications-1, Electronics-1, Laser Artillery-1, Leader-1, Mechanical-1, MRL-1, Wheeled Vehicle-2.
66. *Morale:* 7. *Skills:* Combat Rifleman-1, Forward Observer-1, Grav Vehicle-1, Howitzer-1, Mechanical-1, Pistol-1, Tracked Vehicle-1.

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67. *Morale:* 6. *Skills:* Combat Rifleman-1, Forward Observer-2, Laser Weapons-2, Tac Missiles-2, Vacc Suit-1.
68. *Morale:* 4. *Skills:* Combat Rifleman-2, Grenade Launcher-1, Laser Weapons-2, Mechanical-1, Tracked Vehicle-1, Vacc Suit-1.
69. *Morale:* 6. *Skills:* Auto Weapons-1, Combat Rifleman-2, Grav Vehicle-1, Recruiting-1, VRF Gauss Gun-1.
70. *Morale:* 8. *Skills:* Combat Rifleman-1, Communications-1, Recruiting-1, Tac Missiles-3.
71. *Morale:* 2. *Skills:* Brawling-1, Combat Rifleman-1, Dagger-1, Demolitions-1, Grav Vehicle-2, LAG-1, Medical-1, Pistol-1, Recruiting-1, Survival-1, Tac Missiles-1.
72. *Morale:* 9. *Skills:* Auto Cannon-1, Combat Rifleman-2, Forward Observer-1, Laser Weapons-1, Mechanical-1, Tac Missiles-1, Zero-G Combat-1, Zero-G Weapons-1.
73. *Morale:* 8. *Skills:* Combat Rifleman-1, Instruction-1, Mechanical-1, Recon-1, Vacc Suit-1, VRF Gauss Gun-1, Wheeled Vehicle-1.
74. *Morale:* 8. *Skills:* Auto Cannon-1, Combat Rifleman-1, Laser Weapons-1, Mechanical-1, Mortar-1, Tracked Vehicle-1.
75. *Morale:* 13. *Skills:* Combat Rifleman-1, Grav Vehicle-1, Mass Driver-1, MRL-1, Recruiting-1, Tac Missiles-1.
76. *Morale:* 15. *Skills:* Combat Rifleman-1, Grav Vehicle-3, High Energy Artillery-1, Mechanical-1, Tac Missiles-1.
77. *Morale:* 13. *Skills:* Combat Rifleman-2, Foil-1, Grenade Launcher-3, Gunnery-1, Instruction-1, Leader-1, Recon-1, Survival-1, Vacc Suit-1, Zero-G Combat-1, Zero-G Weapons-1.
78. *Morale:* 6. *Skills:* Auto Cannon-1, Combat Rifleman-1, Forward Observer-1, Grav Vehicle-1, Medical-1, Recruiting-1, Wheeled Vehicle-2.
79. *Morale:* 3. *Skills:* Brawling-1, Combat Rifleman-1, Mechanical-1, Recruiting-1, Tracked Vehicle-1, Vacc Suit-1, VRF Gauss Gun-2, Zero-G Combat-1.
80. *Morale:* 11. *Skills:* Combat Rifleman-1, Computer-2, Mechanical-1, Vacc Suit-1, Wheeled Vehicle-2.
81. *Morale:* 18. *Skills:* Brawling-1, Combat Rifleman-1, Communications-1, Demolitions-1, Electronics-1, Grav Vehicle-2, Mechanical-1, Recruiting-1, Survival-1, VRF Gauss Gun-2, Zero-G Combat-1.
82. *Morale:* 10. *Skills:* Combat Rifleman-3, Laser Weapons-1, Tac Missiles-1, Tactics-1, Vacc Suit-1, Wheeled Vehicle-1.
83. *Morale:* 9. *Skills:* Combat Rifleman-2, Gunnery-1, Leader-1, Pistol-1, Ship's

cess known as the greenhouse effect, which can cause planetary temperatures to rise far over the ranges in which humans could flourish without complete protective equipment. In order for an atmosphere of this kind to exist at a point defined as exotic (rather than some more extreme condition), the world will probably be rather distant from its star, and will probably have a fairly low pressure (very thin or thin). The hydrographic percentage of such a world would probably also be rather low — say in the region of 30% or less. All these factors would allow heat to radiate back from the planet despite the heat-retentive properties of CO_2 . This information can help us visualize the planet quite effectively.

An exotic CO_2 atmosphere on a planet with more tropical conditions — warmer temperatures, greater hydrosphere, etc. — would be poised right on the brink of a runaway greenhouse effect which, within a few centuries at most, would turn the world into a hostile inferno. This might be put to good use by a referee, who could set an adventure on such a world against the backdrop of scientific research into the greenhouse effect — which will surely interest planetologists as much in the 50th century as it would today.

Nitrogen (N_2): A (usually) non-irritant component of exotic atmospheres, nitrogen is probably typical of the classic exotic type. Because nitrogen is relatively inert, atmospheres containing nitrogen in standard temperature and pressure ranges are rarely a problem.

If nitrogen and oxygen are present in an atmosphere in certain combinations, the atmosphere becomes somewhat more hostile. Nitric acid (HNO_3) can form under certain conditions, as can other interesting compounds which can be irritants in low concentrations, or can make the atmosphere corrosive in higher doses.

An atmosphere containing nitrogen can be imagined on almost any type of world.

Methane (CH_4): A non-irritant component of exotic atmospheres, methane is found in terrestrial swamps as "marsh gas." It is also known as "natural gas," and the properties it exhibits on Earth are typical of the chief special danger methane poses to adventurers.

When methane is mixed with a normal oxygen-nitrogen atmosphere, the resultant combination can be quite dangerous. At a critical concentration of between 7% and 14% methane in the air, a spark can cause the methane to explode and burn fiercely. Though it is highly unlikely that free oxygen will be found in an atmosphere containing a high percentage of methane, there is a great danger that adventurers visiting a methane world could themselves create the proper conditions for an explosion. Airlocks which fail to cycle properly, or small leaks in ships, habitats, or space suits, could lead to a concentration of methane; electrical equipment (or static electricity) could cause a spark which will lead to a potentially devastating explosion and fire. Though associated with a foul smell in terrestrial swamps, methane is normally an



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20 20 20 20 40 40 40

10 10 10 10 30 30 30

20 20 20 20 40 40 40

10 10 10 10 30 30 30

20 20 20 20 40 40 40

10 10 10 10 30 30 30

20 20 20 20 40 40 40

10 10 10 10 30 30 30

20 20 20 20 40 40 40

10 10 10 10 30 30 30

20 20 20 20 40 40 40

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

50 50 50 70 70 70 90 90

60 60 60 80 80 80 90 90

212th Fleet	213th Fleet	214th Fleet	103rd Fleet	Corridor Fleet	19th Fleet	43rd Fleet
32nd Fleet	100th Fleet	125th Fleet	151st Fleet	107th Fleet	1st Probe	TF 17

10-10	10-12	10-14	50-14	10-10	50-15	10-13
10-12	50-12	50-15	10-11	10-13	5-15	10-10

B4	C4	B4	C4	B4	C4	C4
3-3-6	1-2-6	3-3-6	1-2-6	5-4-8	2-2-8	1-2-6
C4	B4	C4	C4	B4	B4	C4
2-2-8	5-4-8	2-2-8	2-2-8	5-4-8	5-4-8	3-2-8

50-15	50-15	50-15	50-15	50-15	50-15	50-15
10-15	10-15	10-15	10-15	10-14	10-14	50-14

5-15	5-15	5-15	5-15	1-15	1-15	1-15
5-15	5-15	5-15	5-15	1-15	1-15	1-15

C8	C8	C8	C8	C4	C4	C4
4-2-8	4-2-8	5-4-6	5-4-6	3-4-7	3-4-7	3-4-7
C8	C8	C8	C8	C4	C4	C4
4-2-8	4-2-8	3-2-4	1-1-3	3-4-7	3-4-7	3-4-7

C4	C4	C4	C4	C4	C4	T3
4-4-6	4-4-6	4-4-6	4-4-6	4-4-6	4-4-6	0-0-4
C3	C3	C3	C3	C3	C3	T3
3-4-6	3-4-6	3-4-6	3-4-6	3-4-6	3-4-6	0-0-4

Gireet Fleet	2	3	50-13	10-12	20-13	10-12
Ushih Fleet	4	0-0-6	20-10	20-13	20-10	10-13

1	2	3	4	5	6	7
4 -1	1 +1	4 0	0 +2	0 +3	4 +1	3 0
8	9	10	11	12	13	14
2 +2	4 +3	4 +1	0 0	4 +1	1 -1	4 -1

10-10	10-11	10-10	10-11	10-11	10-13	10-10
50-10	50-10	10-10	2-10	10-10	10-13	10-12

C1	C1	B1	C4	B4	C1	B1
0-2-4	1-2-5	3-3-6	1-2-6	3-3-6	0-2-4	3-4-6
C2	C1	C2	B3	C3	C1	C1
2-2-6	1-2-6	1-2-6	2-3-5	0-2-6	1-2-5	1-2-5

20-15	20-15	20-15	20-15	20-15	20-14	20-14
10-15	10-15	10-15	10-15	5-15	5-14	5-14

A4	A4	A4	A4	B4	S2	S2
0-0-6	0-0-6	0-0-6	0-0-6	0-5-6	0-3-4	0-3-4
A4	A4	A4	A4	S3	S2	S2
0-0-6	0-0-6	0-0-6	0-0-6	0-8-4	0-3-4	0-8-8

B4	B4	B4	B4	B4	B4	B4
6-2-8	6-2-8	6-2-8	6-2-8	5-1-7	5-1-7	5-1-7
B4	B4	B4	B4	B4	B4	B4
3-1-4	3-1-4	3-1-4	3-1-4	2-0-3	2-0-3	2-0-3

B3	B3	B3	B3	B3	B3	B3
8-0-4	8-0-4	8-0-4	4-4-4	4-4-4	4-4-4	5-1-3
B3	B3	B3	B3	B3	B3	B3
8-0-4	8-0-4	8-0-4	4-4-4	4-4-4	2-2-2	2-2-2

B3	B3	C3	1-15	1-16	1-14	1-13
5-1-8	5-1-8	3-3-4	1-15	1-15	1-12	1-14
C3	C3	T3	1-15	1-15	1-12	1-14
3-3-4	3-3-4	0-0-3	1-15	1-15	1-12	1-14

40th Fleet	68th Fleet	69th Fleet	67th Fleet	47th Fleet	26th Fleet	36th Fleet
14th Colonial	15th Colonial	16th Colonial	17th Colonial	1st Assault	2nd Assault	3rd Assault

1 3 0	2 3 +1	3 2 0	4 3 +1	5 2 0	6 0 0	7 3 0
8 1 0	9 1 +3	10 0 +3	11 2 -1	12 2 +2	13 2 0	14 2 +2

A3 0 0-0-4	A2 0 0-0-4	A3 0 0-0-4	A3 0 0-0-4	B2 0 0-6-3	B2 0 0-8-4	B2 0 0-4-4
A3 0 0-0-4	A3 0 0-0-4	A3 0 0-0-4	A3 0 0-0-4	B3 0 0-7-7	B2 0 0-8-5	B2 0 0-6-4

5C-14	5C-14	5C-14	5C-14	5C-14	5C-14	5C-14
1C-14	1C-14	1C-14	1C-14	1C-14	5C-13	5C-14

1C-14	1C-14	1C-14	20-13	10-13	10-12	1-14
1C-14	1C-14	1C-14	20-14	10-11	10-10	10-14

B3 0 3-5-9	B3 0 3-5-9	B3 0 3-5-9	B3 0 3-5-9	B3 0 4-4-9	B3 0 4-4-9	B3 0 4-4-9
B3 0 2-4-8	B3 0 2-4-8	B3 0 2-4-8	B3 0 2-4-8	B3 0 3-3-7	B3 0 3-3-7	B3 0 3-3-7

C3 0 5-2-5	C3 0 5-2-5	C3 0 5-2-5	C3 0 5-2-5	C3 0 5-2-5	C3 0 3-1-5	C3 0 3-1-5
C4 0 2-5-7	C4 0 2-5-7	C4 0 2-5-7	C4 0 2-5-7	C4 0 2-5-7	C4 0 1-1-3	C4 0 1-1-3

Joyous Fleet	1 4 +1	3 2 +2	10-11	10-10	10-10	10-11
Green Fleet	2 4 +2	10-11	10-10	10-10	10-10	50-11

1C-13	2-10	10-10	1C-12	10-10	10-10	20-8	20-13
2-10	2-11	2-13	10-12	20-13	20-13	20-13	20-14

B3 0 4-3-7	C3 0 2-2-7	C3 0 2-2-6	C2 0 0-2-6	B2 0 3-4-6	C2 0 0-2-6	C2 0 0-2-4	B3 0 4-3-7
B3 0 4-3-7	C3 0 2-2-7	C3 0 2-2-6	C2 0 0-2-6	B2 0 3-4-6	C2 0 0-2-6	C2 0 0-2-4	B3 0 4-3-7

20-14	20-14	20-14	Covert	Covert	Covert	Covert	Covert
20-14	1C-14	20-14	Covert	Covert	Covert	Covert	Covert

20-14	20-14	20-14	20-14	20-14	20-14	20-14	20-14
20-14	20-13	20-13	20-13	5-14	5-14	5-13	5-13

B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 3-4-8	B3 0 3-4-8
B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 6-4-8	B3 0 3-2-7	B3 0 3-2-7

B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9	B4 0 4-4-9
B3 0 3-4-8	B3 0 3-4-8	B3 0 3-4-8	B3 0 3-4-8	B3 0 3-4-8	B3 0 3-4-8	B3 0 1-2-4	B3 0 1-2-4

T3 0 0-0-4	C3 0 3-3-6	C3 0 3-3-6	C3 0 3-3-6	C3 0 3-3-6	C5 0 3-0-5	C5 0 3-0-5	C5 0 3-0-5
T3 0 0-0-4	C3 0 3-3-6	C3 0 3-3-6	C3 0 3-3-6	C3 0 3-3-6	C5 0 2-0-5	C5 0 2-0-5	C5 0 2-0-5

A2 0 0-0-6	A2 0 0-0-6	B2 0 4-2-8	B2 0 4-2-8	B2 0 4-2-8	B2 0 4-2-8	B3 0 3-0-5	B3 0 3-0-5
T3 0 0-0-4	C2 0 1-2-5	C2 0 1-2-5	C2 0 1-2-5	C3 0 1-2-5	C3 0 1-2-5	C3 0 1-2-5	C3 0 1-2-5

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Design Sequence Tables

STRIKER

Rules for 15mm
Traveller Miniatures

STABILIZATION TABLE

TL	Volume	Price	Move $\frac{1}{2}$ or less	Move more than $\frac{1}{2}$
	No Gear		-4 EFP, no fire EFP	No Fire
6	5%	20,000	-4 EFP	-4 EFP, no fire EFP
7	7.5%	40,000	-2 EFP	-2 EFP, no fire EFP
8	10%	50,000	No effect	-4 EFP
9	10%	60,000	No effect	-2 EFP
10+	10%	70,000	No effect	No effect

Volume: Multiply weapon weight in tons by the listed percentage to determine volume of stabilization gear in m^3 .

Price: per m^3 in Cr.

Weight: one ton per m^3 .

POWER PLANT TABLE

TL	Description	Output	Weight	Price	Fuel
5	Internal combustion	.15	1	1000	900
6	Improved internal comb.	.25	1	2000	500
7	Gas turbine	.40	1	5000	500
8	MHD turbine	.60	1	10,000	300
9-12	Fusion	2.0	4	200,000	1.5
13-14	Fusion	3.0	3	200,000	1.5
15	Fusion	6	2	200,000	1.5

Output: per m^3 in megawatts. No power plant may be less than 1 m^3 in volume. Very large power plants have increased outputs per m^3 . See the scale efficiencies table.

Weight: per m^3 in tons.

Price: per m^3 in Cr.

Fuel: Liters of fuel consumed per megawatt of output per hour.

CREW SPACE TABLE

TL	V Seated	V Standing
5	2	3
6	1.5	2.5
7+	1	2

Volume: in m^3 .

Weight: .2 tons per crewman.

Price: Cr 100 per crewman.

SCALE EFFICIENCIES TABLE

Type	V	O
Pre-fusion	11+	x1.5
Fusion	6-9	x1.5
Fusion	10-13	x2
Fusion	14+	x3

V: Volume in m^3 of power plant.

Power plants benefitting from scale efficiency must be constructed with an integral volume in m^3 . No fractional number of m^3 is allowed.

O: Output is multiplied by this amount.

TRANSMISSION TABLE

TL	V: Tr	V: Wh	P
5	5	3	1000
6	2	1	1250
7+	.6	.3	1500

V: Volume of transmission in m³ per megawatt of power plant output.

P: Price per m³ in Cr.

Weight: 1 ton per m³.

ARMOR TYPE TABLE

TL	Description	T	Weight	Price
5	Soft steel	x.8	8	1.6
6	Hard steel	x1	8	2
7-9	Composite laminates	x2	7	7
10-11	Crystaliron	x4	10	9
12-13	Superdense	x7	15	14
14-15	Bonded superdense	x14	15	28

T: Toughness, with hard steel set at 1.

Weight: in tons per m³.

Price: in thousands of Cr per m³.

AVIONICS TABLE

TL	V	P	NOE
No Avionics			40/33
8	.4	10	120/100
9	.4	11	130/108
10	.3	12	140/117
11	.3	13	150/125
12	.2	14	160/133
13	.2	15	170/142
14	.1	16	180/150
15	.1	17	190/158

V: Volume in m³.

P: Price in thousands of Cr.

NOE: NOE Speed in km per hour/cm per turn.

Weight: .5 tons per m³.

OBSCURATION DEVICE TABLE

TL	Description	Volume	Price
5	Smoke discharger	.005	150
8	Anti-laser aerosol	.001	20
10	Prismatic aerosol	.001	20

Volume: in m³.

Price: in Cr.

Weight: 1 ton per m³.

LASER SENSOR TABLE

TL	Volume	Price	D
8	.30	25	8+
9	.25	30	7+
10	.20	30	6+
11	.15	34	5+
12	.10	36	4+
13	.10	38	3+
14+	.10	40	2+

Volume: in m³.

Price: in thousands of Cr.

D: Die roll to detect incoming laser beams.

Weight: 1 ton per m³.

ENVIRONMENTAL CONTROL EQUIPMENT TABLE

<i>Description</i>	<i>Volume</i>	<i>Price</i>	<i>Requirement</i>
Sealed environment	.001	10	per m ³ of usable chassis/turret space
Overpressure	.01	10	per m ³ of usable chassis/turret space
Life support	.50	1000	per crewman and passenger
Intake compressor	.10	200	per megawatt of power plant output

Volume: per requirement in m³.

Price: per requirement in m³.

Weight: 1 ton per m³.

VEHICLE MOBILITY TABLE

<i>P/W</i>	<i>M</i>
4-5	15
6-7	20
8-9	25
10-11	30
12-13	35
14-15	40
16-17	45
18-19	50
20-21	55
22-23	60
24-25	65
26-30	70

P/W: Power to weight ratio

M: Movement speed in km per hour

There are several modifiers to road speed:

For tracked and wheeled vehicles:

Add 10 kph per tech level above 5

Add 10 kph if vehicle is wheeled

Add 15 kph if vehicle is light; see the light vehicle table

For ACVs:

Subtract 50 kph at Tech level 7

Subtract 20 kph at Tech level 8

Add 10 kph at Tech level 9+

For all vehicles:

Add 1 kph for each power to weight number over 30.

LIGHT VEHICLE TABLE

<i>TL</i>	<i>Weight</i>
5	5
6	10
7	15
8	20
9+	25

Weight: maximum weight of a light vehicle.

CROSS COUNTRY MOBILITY

<i>P/W</i>	<i>Wh</i>	<i>Tr</i>
4-7	15%	30%
8-11	20%	40%
12-15	25%	50%
16+	30%	60%

If vehicle has a ground pressure of 7+, subtract 10% from the above figures.

P/W: Power to weight ratio.

Wh, Tr: Cross country speed expressed as a percentage of road speed.

GRAV VEHICLE SPEED

G	S
.10	120
.15	180
.20	240
.25	300
.30	360
.35	420
.40	480
.45	540
.50	600
.60	720
.70	840
.80	960
.90	1080
1.0	1200
1.2	1320
1.4	1540
1.6	1760
1.8	1980
2.0	2000
2.2	2200
2.4	2400
2.6	2600
2.8	2800
3.0	3000
3.5	3150
4.0	3200
4.5	3600
5.0	3750

G: Maneuver Gs.

S: Maximum speed in kph. Cruising speed is .75 times maximum speed.

NOE speed is .25 times max. speed but not more than is allowed by avionics.

ARMOR RATINGS

Value	cm	Value	cm	Value	cm
1	0.25	41	36.7	81	1170
2	0.50	42	40.0	82	1280
3	0.75	43	43.6	83	1400
4	1.00	44	47.6	84	1520
5	1.25	45	51.9	85	1660
6	1.50	46	56.6	86	1810
7	1.75	47	61.7	87	1970
8	2.00	48	67.3	88	2150
9	2.25	49	73.4	89	2350
10	2.50	50	80.0	90	2560
11	2.75	51	87.2	91	2790
12	3.00	52	95.1	92	3040
13	3.25	53	104	93	3320
14	3.54	54	113	94	3620
15	3.86	55	123	95	3950
16	4.20	56	135	96	4310
17	4.59	57	147	97	4700
18	5.00	58	160	98	5120
19	5.45	59	174	99	5580
20	5.95	60	190	100	6090
21	6.48	61	207	101	6640
22	7.07	62	226	102	7240
23	7.71	63	247	103	7900
24	8.41	64	269	104	8610
25	9.17	65	293	105	9360
26	10.0	66	320	106	10200
27	10.9	67	349	107	11200
28	11.9	68	381	108	12200
29	13.0	69	415	109	13300
30	14.1	70	453	110	14500
31	15.4	71	494	111	15800
32	16.8	72	538	112	17200
33	18.3	73	587	113	18800
34	20.0	74	640	114	20500
35	21.8	75	698	115	22300
36	23.8	76	761	116	24400
37	25.9	77	830	117	26600
38	28.3	78	905	118	29000
39	30.8	79	987	119	31600
40	33.6	80	1080	120	34400

CPR GUN TABLE

Bore	Crew	Wt/ammo	Price	Set-up	-- Indirect Fire Range --		 Penetration				CBM DM	Illum
					Mort	Hwtz	Gun	ROF	HE	KEAP	HEAP		
2	3/2	.10/.40	2	4	—	—	1	15	1/-/-	3	—	—	—
2.5	3/2	.11/.60	3	5	—	—	2	15	2/-/-	4	—	—	—
3	3/2	.12/.80	4	6	—	—	3	15	3/-/-	5	1	—	—
3.5	3/2	.13/1.2	5	7	—	1	4	15	4/-/-	6	3	—	5
4	4/2	.16/2	6	8	—	2	5	15	5/-/-	8	6	—	10
4.5	4/2	.24/3	8	9	2	3	6	15	6/-/-	10	9	—	15
5	4/2	.30/4	10	10	2.5	4	7	15	7/-/-	12	12	—	20
5.5	4/2	.36/5	12	11	3	5	8	14	8/1/1	14	15	—	25
6	5/2	.42/6	14	12	3.5	6	9	13	9/1/1	16	18	—	30
6.5	5/2	.48/8	17	13	4	7	10	12	10/1/2	18	21	—	35
7	5/2	.54/10	20	14	4.5	8	11	11	11/1/2	20	24	—	40
7.5	5/2	.60/12	23	15	5	9	12	10	12/1/2	21	26	—	45
8	6/3	.66/14	26	16	5.25	9.5	14	9	13/2/2	22	28	—	50
8.5	7/3	.78/18	30	17	5.5	10	16	8	14/2/2	23	30	+1	55
9	8/3	1/22	34	18	5.75	10.5	18	7	15/2/2	24	32	+1	60
10	9/3	1.2/30	42	19	6	11	19	6	16/2/3	25	34	+1	65
11	10/3	1.5/35	50	20	6.5	12	20	5	17/2/3	26	36	+1	70
12	11/3	2.1/40	60	21	7	13	21	4	18/2/3	27	38	+1	75
13	12/3	2.7/46	70	22	7.5	14	22	3	19/3/3	28	40	+2	78
14	13/4	3.3/52	80	23	8	15	23	3	20/3/3	29	41	+2	81
15	14/4	4/60	100	24	8.25	16	24	2	21/3/3	30	42	+2	84
16	15/4	4.5/70	120	25	8.5	16.5	26	2	22/3/4	31	43	+3	87
17	16/4	6/80	140	26	8.75	17	28	2	23/3/4	32	44	+3	90
18	17/5	7.5/90	160	27	9	17.5	30	1	24/3/4	33	45	+4	93
19	18/5	9/105	180	28	9.25	18	32	1	25/4/4	34	46	+5	96
20	19/5	11/120	200	29	9.5	18.5	34	1	26/4/4	35	47	+6	99

CPR GUN TABLE (continued)

Bore	Crew	Wt/ammo	Price	Set-up	--Indirect Fire Range--		Penetration.....					
					Mort	Hwtz	Gun	ROF	HE	KEAP	HEAP	CBM DM	illum
21	20/5	13/140	220	30	9.75	19	36	1	27/4/4	36	48	+7	102
22	21/6	15/155	240	31	10	19.5	40	1/4	28/4/5	37	49	+8	105
23	22/6	17/170	260	32	10.25	20	45	1/4	29/4/5	38	50	+9	108
24	23/7	19/190	280	33	10.5	20.5	50	1/4	30/4/5	39	51	+10	111
25	24/8	21/240	300	34	10.75	21	60	1/4	31/5/5	40	52	+11	114
30	25/10	30/480	400	35	11	21.5	65	1/4	32/5/5	41	53	+12	117
+1				36	11.25	22	70	1/4	33/5/5		54		119
+2				37	11.5	22.5	75	1/4	34/6/5		55		121
+3				38	11.75	23	75	1/4	35/6/5		56		123
+4				39	12	23.5	75	1/4	36/6/5		57		125
+5				40	12.25	24	85	1/8	37/6/6		58		127
+6				41	12.5	24.5	90	1/8	38/6/6		59		129

NOTES

Bore: Diameter of bore in cm.

Crew: Normal/minimum crew sizes.

Wt/ammo: The first number is the weight of a high velocity gun in tons. For other types, multiply by the value given on the CPR multiplier table. The second number is the weight of a single round of ammunition in kg. Multiply the weight of mortar ammunition by .5, RAP ammunition by 2.

Price: Price of a low velocity gun in thousands of Cr. For other types, multiply by the value given on the CPR multiplier table.

Set-up: Set-up time for a towed weapon in complete turns. Multiply the time for mortars and vehicle mounted weapons by .5.

Indirect Fire Range: Indirect fire range of the weapon (mortar, howitzer, or gun) in km. Count down 1 row on the table for each tech level above 5; count down 1 if a high velocity gun, 2 if a hyper velocity gun.

ROF: Rate of fire in rounds per turn. Count up one column for each tech level above 5. Then multiply by 1.5 if a mortar 12 cm or less in bore; multiply by .5 if a medium, high, or hyper velocity gun.

Penetration: Penetration value of a round.

HE: Contact penetration/burst size/fragmentation penetration. Count down one row for each tech level above 6.

KEAP: Penetration of a KEAP round at effective range. Add the following modifiers: for each tech level above 5, +1; for medium velocity guns, +3; for high velocity guns, +6; for hyper velocity guns, +9. Determine long and extreme range penetrations using the KEAP range modifiers table.

HEAP: Penetration of a HEAP round. Count up or down the column as specified in the HEAP penetration modifiers table.

CBM DM: The DM to hit when firing CBM rounds.

Illum: The illumination radius of an illum round. Count down one row for each tech level above 5.

CPR MULTIPLIER TABLE

<i>Type</i>	<i>Weight</i>	<i>Price</i>
Mortar	x.25	x.10
Howitzer	x.50	x1
Med velocity	x.75	x1.5
High velocity	x1	x2.0
Hyper velocity	x1.25	x2.5

Weight: Weapon weight multiplier.

Price: Weapon price multiplier.

CPR CARRIAGE TABLE

<i>Type</i>	<i>Weight</i>	<i>Price</i>
Mortar	x.25	x.10
All others	x2.5	x.25

Weight: Multiply by weight of weapon to find weight of carriage.

Price: Multiply by price of weapon to find price of carriage.

CPR ACCURACY TABLE

<i>Type</i>	<i>Accuracy to ½ range</i>	<i>Accuracy over ½ range</i>
Howitzer, medium velocity gun	-2	-4
All others	-4	-8

Add 1 for each tech level above 5.

CPR DIRECT FIRE RANGE TABLE

<i>Tech Level</i>	<i>Effective</i>	<i>Range Long</i>	<i>Extreme</i>
5	20	60	150
6	40	80	200
7	60	100	250
8	80	150	300
9	100	200	350
10+	150	250	400
	200	300	450
	250	350	500
	300	400	550

Range is given for low and medium velocity rounds.

Count down one column for KEAP and KEAPER rounds, except for low velocity rounds.

Count down one additional column for all high velocity rounds and two additional columns for all hyper velocity rounds.

HEAP PENETRATION MODIFIERS

Tech level 7-8.	down 3
Tech level 9-10.	down 5
Tech level 11-12.	down 6
Tech level 13+	down 7
Medium velocity gun	up 2
High velocity gun	up 3
Tech level 6 hyper velocity gun	up 4
TL 7+ hyper velocity gun	no mod

CPR SIGNATURE DMs TABLE

<i>Bore</i>	<i>DM</i>
5 cm or less	+1
5.5-10 cm	+2
11-15 cm	+3
16 cm or larger	+5

CPR AMMUNITION TABLE

<i>Weapon Type</i>	<i>Base Price</i>
Mortar	x3
Howitzer	x2
Medium velocity	x3
High velocity	x4
Hyper velocity	x5
<i>Ammunition Type</i>	<i>Multiplier</i>
HE	x1
KEAP	x1
Tech level 6 hyper velocity KEAP	x1.5
Tech level 7+ hyper velocity KEAP	x2
KEAPER	KEAP x1.1
HEAP	x1.5
CBM	x3
Flechette	x5
Illum	x2
Chaff	x2
Incendiary smoke	x1
Chemical smoke	x2

Price: weight x base price x multiplier.

KEAP RANGE MODIFIERS

<i>Penetration *</i>	<i>Long</i>	<i>Extreme</i>
Less than 10	-1	-2
10-29	-2	-4
30-34	-3	-6
35-39	-4	-8
40 or more	-5	-10

*at effective range

Penetration at any range may not be less than 0.

CPR LASER GUIDANCE TABLE

<i>TL</i>	<i>Price</i>
8	1000 Cr
9	800 Cr
10	600 Cr
11	400 Cr
12+	200 Cr

FLECHETTE TABLE

<i>Type</i>	<i>Danger space</i>
Howitzer	5
Med. velocity	10
High velocity	15
Hyper velocity	20
<i>Bore</i>	<i>Hit DM</i>
2-2.5	+2
3-3.5	+3
4-6.5	+4
7-10	+5
11+	+6

Danger space: Length of danger space in cm.

Bore: Bore size in cm.

AUTOFIRE BONUS TABLE

<i>Rounds</i>	<i>Eff.</i>	<i>Long</i>	<i>Ext.</i>	<i>Targets</i>
20	+2	+1	0	2
40	+3	+2	+1	4
80	+4	+3	+1	8
160	+5	+4	+2	16
320	+6	+5	+2	16
640	+7	+5	+3	16
1280	+8	+6	+3	16
2560	+9	+7	+4	16

Rounds: Rounds per phase. If the number of rounds fired by a weapon falls between two values, use the lower of the two.

Eff, Long, Ext: Autofire hit bonus at effective, long, and extreme ranges.

Targets: Number of targets engaged.

MD GUN INPUT MULTIPLIERS

<i>Type</i>	<i>Multiplier</i>
Mortar	.01
Howitzer	.10
Medium velocity	.50
High velocity	1.0
Hyper velocity	1.5

BATTERY TABLE

<i>TL</i>	<i>Storage</i>	<i>Price</i>
8	1.25	325
9	2.25	375
10	3	525
11	3.5	675
12	4	850
13	10	3000
14	15	5000
15	25	10000

LASER HIT BONUS TABLE

<i>Type</i>	<i>DM</i>	<i>Targets</i>
Beam	+2	2
Pulse: 1 lens	0	1
2-3 lenses	+1	1
4-7 lenses	+2	2
8-15 lenses	+3	4
16 lenses	+4	8

Storage: Amount of energy stored per kg of battery in megawatt-seconds. (1 megawatt-second will produce 1 megawatt of power for 1 second, .1 megawatts for 10 seconds, etc.)

Price: Price in Cr per kg of battery.

Volume: A battery is .001 m³ per kg.

DM: Hit bonus DM.

Targets: Number of targets engaged.

ENERGY WEAPON TABLE

<i>TL</i>	<i>Weight</i>	<i>Output</i>
10	50	.20
11	30	.24
12	14	.28
13	6	.28
14	5	.40
15	3.5	.40

Weight: in tons per megawatt of input.

Output: in megawatts per megawatt of input.

ENERGY WEAPON MULTIPLIER TABLE

<i>Range</i>	<i>-----Plasma-----</i>		<i>-----Fusion-----</i>	
	<i>Range</i>	<i>Pen.</i>	<i>Range</i>	<i>Pen.</i>
Effective	x1	x30	x1.5	x40
Long	x2	x10	x3	x15
Extreme	x4	x1	x6	x2

Range: Range multiplier.

Pen: Penetration multiplier.

RAPID PULSE TABLE

<i>Tech Level</i>	<i>Bonus</i>						
	<i>+2</i>	<i>+3</i>	<i>+4</i>	<i>+5</i>	<i>+6</i>	<i>+7</i>	<i>+8</i>
11	5	—	—	—	—	—	—
12	10	5	—	—	—	—	—
13	15	10	5	—	—	—	—
14	25	20	15	10	5	—	—
15	35	30	25	20	15	10	5
Targets	2	4	8	16	16	16	16
Multiplier	x2	x4	x8	x16	x32	x64	x128

Bonus: Hit bonus. The numbers are maximum allowed input in megawatts to receive that hit bonus at a given tech level.

Multiplier: Input multiplier.

DIRECT FIRE CONTROL TABLE

TL	Weight	Range			Price
		Effective	Long	Extreme	
5	.005	.6	1	2.5	500
6	.01	1	2	3.5	1000
7	.02	1.5	2.5	4	5000
8	.03	2	3	4.5	10000
9	.05	2.5	3.5	5	20000
10	.06	3	4	5.5	30000
11	.07	3.5	4.5	8	50000
12	.08	4.5	9	18	100000
13	.09	5.25	10.5	21	125000
14	.1	7.75	15.5	31	150000
15	.12	10	20	40	250000

Weight: in tons. Volume in m³ equals weight.

Range: Effective, long, and extreme range in km.

Price: in Cr.

INDIRECT FIRE CONTROL TABLE

TL	Weight	Price
5	.05	6000
6	.075	8000
7	.1	10000
8+	.2	20000

Weight: in tons. Volume in m³ equals weight.

Price: in Cr.

Multiply weight and price of fire control for mortars by .25.

FIRE DIRECTION CENTER TABLE

TL	Targets	Initiative	Weight	Price
5	1	—	.1	.1
6	1	—	.2	.2
7	2	—	.3	.3
8	3	+1	4	4
9	4	+1	5	6
10	8	+2	6	8
11	16	+2	7	12
12	25	+2	8	15
13	25	+2	9	16

Targets: Number of fire missions the center may control at a time.

Initiative: Addition to initiative of weapon crews.

Weight: Weight in tons. Volume in m³ equals weight.

Price: Price in millions of Cr.

OPERATOR GUIDED MISSILE TABLE

TL	Link	Weight	Price	Hit DM	Range
6	wire	1/10	40/400	+1	4
7	wire	2/15	80/800	+3	4
8	wire	2/15	100/1200	+3	8
9+	wire	2/15	100/1500	+3	10
7-8	laser	2/20	150/1600	+3	10
9-12	laser	2/20	150/3000	+3	12
13+	laser	2/20	150/4000	+3	12
7+	maser	2/20	200/4000	+3	10
7	radio	3/20*	120/1000	+3	*
8	radio	2/20*	150/1500	+3	*
9+	radio	2/20*	200/2000	+3	*

Weight: in kg of guidance in missile/launcher.

Price: in Cr of guidance in missile/launcher.

Range: Maximum range of guidance system in km.

*In addition to the listed launcher price and weight, the guidance system must be provided with a radio; prices and weights are given in the electronics section of this book. Maximum range is the range of the radio.

PROPELLANT TABLE

Range	Weight Multiplier
1	x2
1.5	x2.5
2	x3
2.5	x3.5
3	x4
3.5	x4.5
4	x5

Range: in km.

Increase weight multiplier by .5 for every km of range over 4.

TARGET MEMORY MISSILES

TL	Weight	DM	Multiplier
8	3/10	+1	x10
9	2/10	+2	x10
10-11	1/10	+3	x3
12-13	1/10	+3	x1.5
14-15	1/10	+3	x1

Weight: in kg of guidance in missile/launcher.

DM: Hit DM.

Multiplier: Speed multiplier.

TELEGUIDED MISSILE TABLE

TL	Weight	Price
8	3/10	1000/2000
9	2/6	1500/1500
10+	1/4	1500/1000

Weight: in kg of guidance in missile/launcher.

Price: in Cr of guidance in missile/launcher

TARGET DESIGNATED MISSILES

TL	Weight	Price
8	2	1000
9	1	800
10	1	600
11	1	400
12+	1	200

Weight: in kg of guidance in missile.

Price: in Cr of guidance in missile.

DRONE MISSILE BRAIN TABLE

<i>TL</i>	<i>Weight</i>	<i>DM</i>
13	20	+3
14	10	+4
15	5	+5

Price: Cr100,000 each.

Weight: in kilograms

Volume: Volume in m³ is weight in kg divided by 500.

DRONE VEHICLE BRAIN TABLE

<i>TL</i>	<i>Weight</i>	<i>Price</i>	<i>DM</i>
13	200	2	-2
14	150	1	-1
15	100	.75	0

Weight: in kg.

Price: in millions of Cr.

Volume: Volume in m³ is weight in kg divided by 500.

AIRFRAME TYPE TABLE

<i>TL</i>	<i>Type</i>	<i>Weight</i>	<i>Price</i>	<i>Min Sp</i>	<i>Des Sp</i>	<i>G-Eff</i>
5	Simple	.01	10	150/75	300	.85
6	Fast subsonic	.05	20	160/80	800	.90
6	Transonic	.10	30	176/88	1100	.95
7	Supersonic	.20	40	280/140	2800	1.0
8	Hypersonic	.30	100	350/175	5000	1.0

Weight: Weight in tons per ton of aircraft. Add .05 if STOL, .10 if VTOL.

Price: Price in thousands of Cr per ton of aircraft. Multiply by 1.3 if STOL, by 1.5 if VTOL.

Min Sp: Minimum speed in km per hour for normal aircraft/STOL.

Des Sp: Maximum design speed limit of airframe.

G-Eff: G efficiency.

THRUST AGENCY TABLE

<i>TL</i>	<i>Type</i>	<i>Thrust</i>	<i>Fuel</i>	<i>Cost</i>	<i>Airframe</i>
5	Basic propeller	8	2	5	Fast subsonic
6	High performance propeller	16	3	10	Fast subsonic
6	High performance turboprop	25	5	20	Fast subsonic
6	High performance turbojet	30	9	30	Supersonic
6	Basic ramjet	50	40	50	Hypersonic
6	High performance ramjet	65	50	60	Hypersonic
6	Basic rocket	50	80	50	Hypersonic
6	High performance rocket	65	100	60	Hypersonic
7	Basic turboprop	20	4	15	Fast subsonic
7	Basic turbojet	25	6.5	25	Supersonic
7	Basic turbofan	30	7	35	Supersonic
7	High performance turbofan	35	8	40	Supersonic

Thrust: Thrust multiplier. Add 10 if using reheat with turbojet or turbofan.

Fuel: Fuel use multiplier.

Cost: Cost multiplier.

Airframe: Highest speed airframe with which this thrust agency may be used.

WEAPON MOUNT TABLE

TL	Description	Drag	Weight	Capacity	Price
5	Fixed mount	0	0	1 weapon	0
5	Bomb hardpoint	(1)	.02	1 bomb	2000
5	Bomb rack	(4)	.10	6 bombs	8000
5	Internal bomb bay	0	1.00	1 ton of bombs	15000
5	Turret	4	.40	40 kg of weapons	5000
6	Remote turret	2	.50	60 kg of weapons	50000
7	Remote turret	1	.50	60 kg of weapons	20000

Drag: Drag points. Values in parentheses affect only loaded aircraft.

Weight: Weight in tons.

Capacity: Quantity of weapons mount will hold.

Price: Price of mount in Cr.

CREW ACCOMMODATIONS TABLE

TL	Type	Capacity	Weight	Price
5	Simple cockpit	1	.10	5000
5	Crew station	1	.10	5000
5	Passenger section	4	.30	5000
6	Complex cockpit	1	.25	50000
5	Cockpit armor	(1)	+.10	5000
6	Ejection seat	(1)	+.10	5000
7	Advanced ejection seat	(1)	+.25	10000
7	Rocket escape	(1)	+.50	15000

Capacity: Number of men the station will hold.

Weight: in tons.

Price: in Cr.

Parenthetical capacities: May be added to a cockpit/station.

CONTROLS TABLE

TL	Type Controls	Airframe	MP	Weight	Price
5	Simple	Fast subsonic	0	.05	20
6	Boosted	Transonic	1	.10	50
6	Powered	Hypersonic	2	.15	100
7	Enhanced	Hypersonic	4	.20	200
8	Computer enhanced	Hypersonic	6	.15	1000

Airframe: Highest speed airframe this type of control may be used with.

MP: Maneuver points.

Weight: Weight multiplier.

Price: Price in thousands of Cr per ton of controls.

HELICOPTER TABLE

TL	Type	Weight	Payload	Volume	Max Speed	Cruise Speed	NOE Speed	Agility	Fuel	Price
6	Light	2.0	.7	120	200	140	50	2	100	190
	Medium	5.25	2.6	220	210	160	50	4	180	600
7	Light	2.4	1.5	140	210	190	60	6	200	300
	Medium	7.0	4.25	420	230	200	60	5	700	1000
	Heavy	27.0	14.0	1400	300	250	60	5	3000	3000
8	Light	1.5	1.0	500	315	220	80	7	850	1500

Helicopters as listed above include airframe, powerplant, enhanced controls, and avionics. All else, including fuel, must be added.

Weight: Weight of basic helicopter in tons.

Payload: Weight of equipment that may be added in tons.

Volume: Volume in m³.

Speed: in km per hour.

Fuel: Fuel use in liters per hour.

Price: Price of basic helicopter in thousands of Cr.

Pilots: Heavy helicopters require two pilots; all others require one.

MINEFIELD TABLE

Type	Mines per field	
	Regular	Scatterable
Anti-personnel, pressure	30	18
Anti-personnel, proximity	15	9
Anti-vehicle, pressure	10	6
Anti-vehicle, proximity	5	3

DIRECT FIRE HITS

Effective range	8+
Long range	10+
Extreme range	12+
Fragmentation	8+

Direct Fire Hit DMs

Autofire or accuracy bonus	as in weapon rating
If weapon has lost accuracy	as on weapon damage table
Recon by fire	-4
If gunner is elite	+3
If gunner is veteran	+2
If gunner is regular	+1
For each light wound on gunner	-1
If gunner moved:	
Infantry	-2 FFP, no fire EFP
Vehicle	as in vehicle rating
If target moved:	
80-160 cm	-1
+160-240 cm	-2
+240-320 cm	-3
+320-400 cm	-4
+400-480 cm	-5
+480-560 cm	-6
+560-640 cm	-7
+640-720 cm	-8
+720-800 cm	-9
over 800 cm	-10
If target is concealed	-1
If target is infantry and evading	-1
If target is a vehicle	as in vehicle rating for high or low hit

MELEE TABLE

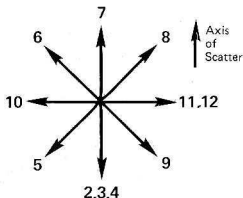
<i>Die Roll</i>	<i>Result</i>
7-	No effect
8-11	Light wound
12-15	Serious wound
16+	Dead

BEATEN ZONE TABLE

<i>Number of Rounds</i>	<i>Sheaf Size</i>
1	1x
4	2x
16	4x
25	5x
36	6x
49	7x
64	8x
81	9x
100	10x
121	11x
144	12x
169	13x
196	14x
225	15x

Air burst HE x2
CBM x4

Deviation Direction



INDIRECT FIRE HITS

Contact hit	11+
Fragmentation hit	10+

Indirect Fire Hit DMs:

	<i>Fragmentation</i>	<i>Contact</i>
Converged Sheaf	+2	+1
Dispersed sheaf	-1	-1
Scattered sheaf	-2	-2
CBM rounds	varies with weapon	

DEVIATION DISTANCE TABLE

<i>Modified Roll</i>	<i>Deviation</i>
0 or less	80
1-2	75
3-4	70
5-6	65
7-8	60
9-10	55
11-12	50
13-14	45
15-16	40
17-18	35
19-20	30
21-22	25
23-24	20
25-26	15
27-28	10
29-30	5
31+	on target

Deviation Table DMs:

Weapon accuracy	+ or -
High initiative crew	+4
Low initiative crew	-4
Observer has map box	+1
Per turn of correction:	
Average initiative observer	+1
High initiative observer	+2
Per turn of fire if gunner can see target	+2
If range is:	
5 km or less	+8
+ 5-10 km	+5
+10-20 km	+4
+20-40 km	+2

WEAPON DAMAGE TABLE

<i>Die Roll (1D)</i>	<i>Surface Damage</i>	<i>Minor Penetration</i>	<i>Major Penetration</i>
1	J1	GA3C2	DC2
2	J2	J4	DC3E
3	I	A6	DC3E
4	A1	D	DC4E
5	A2	D	DC4E
6	A3	D	DC4E

Weapon Damage Results

Jn: Weapon jammed; it may not fire for nx1D turns.

I: Immobilized; a towed weapon may not be moved; no effect on self-propelled.

An: Loss of Accuracy; indirect fire accuracy is reduced by n. For direct fire, n is a negative DM.

G: Gunshield destroyed.

D: Weapon destroyed.

Cn: Each crew member receives a fragmentation attack; it hits on 8+, with a penetration of n.

E: If the weapon uses explosive ammunition (HE, HEAP, or KEAPER), it blows up; each crew member receives one contact hit from the weapon.

SURFACE DAMAGE TABLE

<i>Die</i>	<i>Result</i>
2	Weapon
3	Turret
4	Suspension
5	Cupola
6	Suspension
7	Vision
8	Communicator
9	Sensor
10	Launch Rail
11	Radar
12	Fire control

Surface Damage Results

Weapon: The vehicle's largest weapon is disabled.

Turret: The vehicle's turret or remote mount is jammed and may not traverse.

Suspension: A tracked vehicle is immobilized; a wheeled vehicle's speed is reduced by 50%; an ACV is immobilized by a belly hit only; a grav vehicle is unaffected.

Cupola: One cupola or pintel mounted weapon is disabled.

Vision: One vision enhancement device is disabled.

Communicator: One communicator is disabled.

Sensor: Laser sensors on one side of vehicle are disabled.

Launch rail: one tac missile launch rail is disabled.

Radar: One radar, ladar, direction finder, or jammer is disabled.

Fire control: One fire control system is disabled. Reduce to tech level 5.

VEHICLE DAMAGE TABLES

Minor Penetration

Die Roll (1D)	High	Low				
		Front	Side	Rear	Top	Bottom
1	W	EC	E3C	E2C	E2C	E2C
2	WC	2C	SC	SC	WC	SC
3	W2C	3C	TC	PC	TC	SC
4	EC	SC	P2C	PC	P2C	S2C
5	2C	T2C	F3C	PC	F3C	T2C
6	AC	A3C	A3C	F2C	A3C	FC

Major Penetration

Die Roll (1D)	Result
1	EST4C
2	EWA6C
3	EPF3C
4	EFA5C
5	Catastrophic
6	Catastrophic

Vehicle Damage Results: Major and Minor Penetration

- W:** Weapon. Vehicle's main weapon destroyed.
- E:** Electronics. One electronic system is destroyed. Referee chooses from fire control, communicator, computer, radar. Destroyed fire control is reduced to tech level 5; others cease to work.
- S:** Suspension. Suspension damaged. A ground vehicle is immobilized; a grav vehicle loses one fourth of its total Gs, which may or may not make it unable to move.
- T:** Transmission. The vehicle's transmission is damaged. A ground vehicle is reduced to one tenth speed; a grav vehicle may not move except straight up or down.
- P:** Power plant. The vehicle's power plant is disabled. Vehicles are immobilized and no power-consuming weapons may fire; grav vehicles float to the ground.
- F:** Fuel. If the power plant is tech level 8-, its fuel explodes; a catastrophic hit. Otherwise no damage.
- A:** Ammunition. If the main weapon uses explosive ammunition (HE, HEAP, or KEAPER) or blows up; a catastrophic hit. Otherwise, no damage.
- Cn:** Crew. The indicated number of crew members are hit (if n exceeds the number of crew, some are hit twice). Roll on the personnel wound table for each; use the penetration of the round and the combined armor of the crew member and the vehicle.
- Catastrophic:** A catastrophic hit destroys the vehicle; all crew are killed.

MORALE TABLES

	<i>Proximity to the Enemy/Casualties</i>	<i>Panic</i>
+1	Suppressed	Fall Back
+2	Fall back	Forced back
+3	Fall back	Routed
+4	Forced back	Routed
+5	Forced back	Routed
+6	Routed	Routed

+n is the amount by which the die roll exceeds a unit's morale.

Instantaneous Morale Modifiers

NCO visible within 10 cm	+1
Officer visible within 10 cm	+2
Supreme commander visible within 10 cm	+3
Each friendly casualty this turn:	
personnel within 5 cm *	-1
vehicle within 10 cm *	-2
Unit is concealed	+1
Unit is under cover	+3

*Not on the stand checking morale

AIR SPOTTING TABLE

<i>Speed</i>	<i>Die Roll</i>
under 100 cm	2+
+100-200 cm	3+
+200-300 cm	4+
+300-400 cm	5+
+400-500 cm	6+
+500-600 cm	7+
+700-800 cm	8+
+800-900 cm	10+
+900-1000 cm	11+
over 1000 cm	12+

DM: In terrain following mode:-2

Units in high mode or using radar spot at 3+

GROUND SPOTTING TABLE

<i>Unit being spotted is:</i>	<i>Distance in cm</i>			
	<i>up to 15</i>	<i>+15-50</i>	<i>+50-150</i>	<i>over 150</i>
Moving in concealment	auto	6+	8+	10+
Stationary in concealment	6+	8+	10+	12+
Performing a popup	5+	7+	9+	11+
Stationary in camouflage	8+	10+	12+	14+

Units in the open are automatically spotted.

DMs: Vehicle or heavy weapon	+1
Firing	+2
Signature DMs apply	

PERSONNEL WOUND TABLE

<i>Dice</i>	<i>Effect</i>
3 or less	No effect
4	Light wound
5	Light wound
6	Light wound
7	Light wound
8	Serious wound
9	Serious wound
10	Serious wound
11	Serious wound
12+	Death

ARMOR COMBINATION TABLE

<i>Larger armor minus smaller</i>	<i>Addition to larger armor</i>
0	+8
1-2	+7
3-4	+6
5-7	+5
8-10	+4
11-13	+3
14-18	+2
19-28	+1
29 or more	+0

Personnel Wound Table DMs:

- + Weapon penetration
- Target armor

VEHICLE PENETRATION TABLE

<i>Die Roll (1D)</i>	<i>HE</i>	<i>Round KEAP</i>	<i>Others</i>
1 or less	No effect	No effect	No effect
2	Surface	No effect	No effect
3	2 Surface	No effect	Surface
4	2 Surface	Surface	Surface
5	3 Surface	Surface	2 Surface
6	Minor	Minor	Minor
7	Minor	Minor	Minor
8	Major	Minor	Minor
9	Major	Minor	Major
10	Major	Minor	Major
11+	Major	Major	Major

Vehicle Penetration Table DMs:

- + Weapon penetration
- Target armor