Traveller Hero

Book 2: Adventure In Charted Space

The Imperium, Gadgets, Vehicles, Robots and Starships

Science Fiction Adventure in the Far Future using the HERO System 5th Edition

Traveller Hero
Book 2

Traveller Hero – A Sourcebook for Traveller® in the HERO System™® 5th Edition

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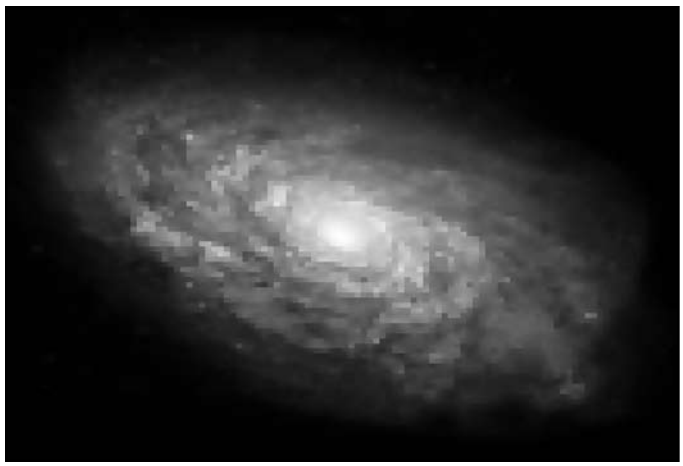
Special Thanks

First, a great big thanks to Marc Miller, who started it all with the original Traveller®.

Second, thanks to Steve Long at HERO Games, for HERO 5th Edition, and thanks to Steve Long and Jim Cambias for Star Hero©

Third, we definitely want to give thanks to ComStar/ Avenger, who felt the passion of Traveller Hero and arranged for licensing from both Traveller and HERO Games.

Last, but not least, we'd like to thank all of the fans who have contributed ideas as this guide has grown.



Dedication

There are a number of dedications we'd like to make.

Rob Bruce: *I dedicate this book to my parents, my wife, and the foster children we've had the joy of knowing.*

Kevin Walsh: *I dedicate this book to Eric "Kody" Nelson, who finally found the road back home again.*

Table Of Contents

Introduction

The universe is a big place, and one of the challenges faced by many *Star Hero* GMs is creating that universe, or at least the part of it that's important to the campaign.

Traveller Hero Book 2 is a sourcebook for playing *Star Hero* campaigns in the Traveller setting using the *HERO System 5th Edition* rules.

Section One, *Traveller Across Time*, provides history and a timeline of adventures.

Section Two, *Imperial Life*, discusses some of the facets of life and travel in charted space.

Section Three, *Equipment and Technology*, provides a large resource of equipment encountered in the reaches of charted space. Discussed technology includes computers, sensors and communications, medical, survival, and miscellaneous equipment.

Section Four, *Mechanical Men*, provides a selection of robots that may be encountered.

Section Five, *Transportation*, provides a selection of vehicles from speeders to hovertanks.

Section Six, *Starships*, discusses starship construction and provides a selection of starships, including free traders, scout ships, and military craft.

The *GM Vault* includes information on World Generation and Cybernetics.

Traveller Resources on the Web

ComStar, Publishers of material that can be used for all versions of Traveller, and of course the publishers of *Traveller Hero*.
http://www.comstar-games.com

Far Future Enterprises, Marc Miller's site for buying Traveller books (and much more), is at
http://www.farfuture.net/

Quiklinks Interactive (QLI/RPG), which has T20 and information about Marc Miller's *Traveller 5*, is at
http://www.travellerrpg.com/

Freelance Traveller, a very good general source of information on Traveller in all its forms, is at
http://www.freelancetraveller.com

The Traveller Downport, another good source of general information, is at http://www.downport.com

The **Traveller Integrated Timeline** is at
http://winterwar.prairienet.org/dmckinne/TimelineV2.pdf

The Interactive Atlas of the Imperium is at
http://www.utzig.com/traveller/iai.shtml

The Traveller Starship Technical Manual is at
http://members.cox.net/magash/STM/Intro.htm

Traveller *planet generation software* can be found in the computer connection part of *Freelance Traveller*. Shadowcat also recommends *Heaven and Earth* or *Galactic 2.4*, both of which are free.

Star Hero Web Resources

The HERO Games Star Hero Links is at http://www.herogames.com/StarHero/index.htm

Star Hero Fandom is at http://www.starherofandom.com/index.php, and Shadowcat's Traveller Hero is at http://www.starherofandom.com/h_traveller/index.php

Recommended Books

Because *Traveller Hero* is about playing the Traveller genre in the HERO System, you will find it helpful to have materials from both systems.

HERO SYSTEM BOOKS

To play *Traveller Hero*, you must have either *HERO System 5th Edition*, *HERO System 5th Edition Revised*, or *HERO System Sidekick*. You will also find the following HERO System books invaluable:

Terran Empire contains profession templates (package deals) not included in this book, as well as races that can be used as minor races, weapons and other gadgets that could be included with some modification, and starships that could be included with some modification.

Dark Champions contains additional profession templates (such as Cat Burglar, Delta Force soldier, and Private Investigator), extensive Small Arms Weapons, Resource Rules, and much more.

Star Hero, the core book, contains profession and alien templates, as well as extensive and helpful information for creating galaxies down to planets, creating believable alien races and cultures, technology and starships, and much more.

Alien Wars covers *Terran Empire* during the Xenovore wars period, contains additional alien races not found in *Terran Empire* that can be used in *Traveller Hero*, as well as good information about space military groups.

Spacer's Toolkit provides a set of weapons, defenses, and other devices, as well as vehicles and starships specific to *Terran Empire*, but many can be modified to use in *Traveller Hero*.

TRAVELLER SYSTEM BOOKS

For the backdrop you are playing in, you should have at least the books for that era (e.g. *Traveller: The New Era* for playing in that time period).

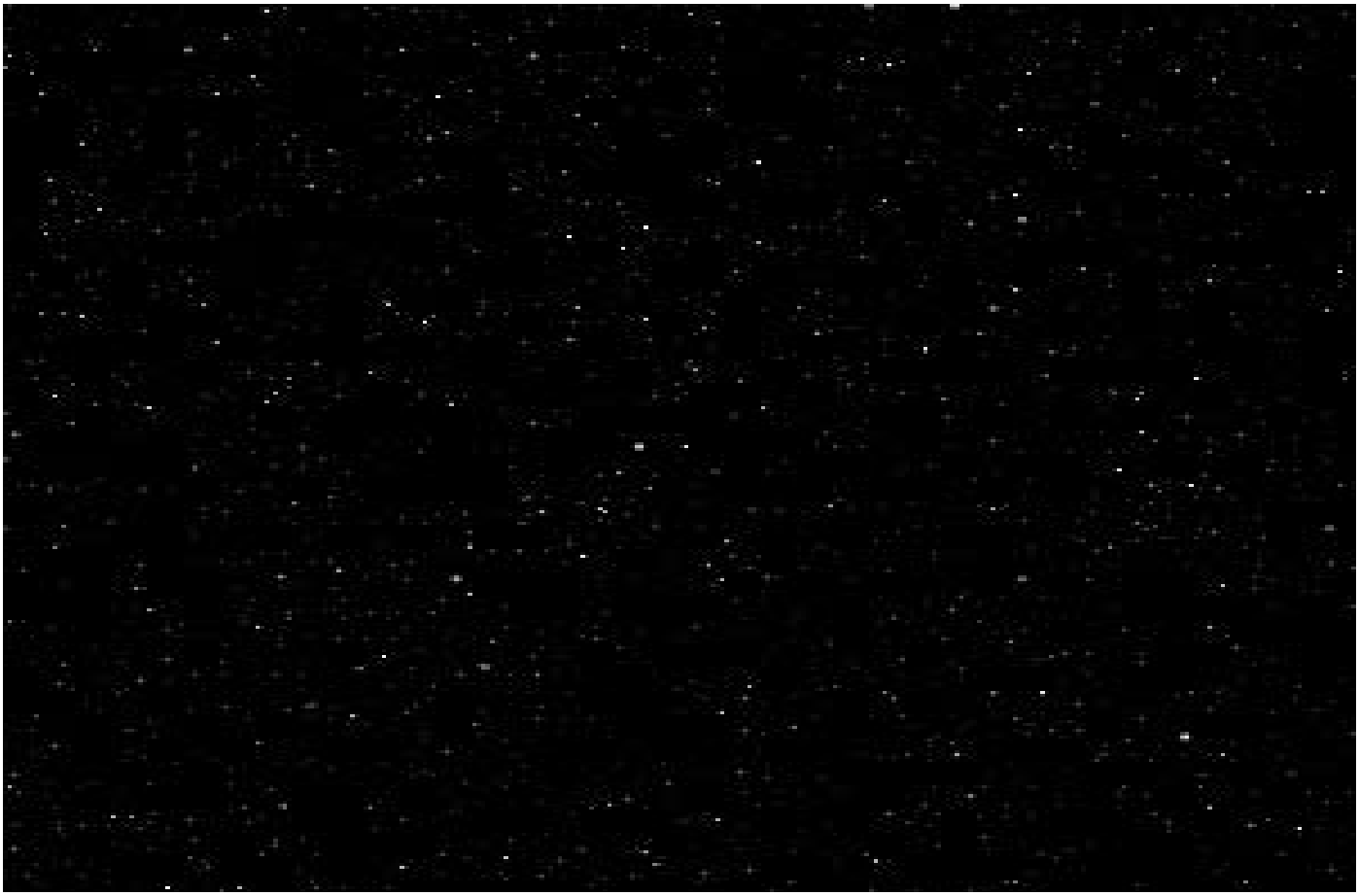
Additional books that are useful for *The New Era* are *Path of Tears*, *Smash & Grab*, *1248: Out Of The Darkness*, and *Bearers Of The Flame*. Many published adventures from the Third Imperium are noted in the *Traveller Integrated Timeline*, and those will be invaluable as well.

TRAVELLER HERO BOOKS

Of course, we hope you enjoy the *Traveller Hero* line from ComStar, and will purchase our other *Traveller Hero* books, including:

Golden Age Starships 1
Golden Age Starships 2

Our plans are to produce additional books, including *Grand Fleet Traveller Hero*, *Gadgets and Gear Traveller Hero*, and others (names subject to change). If there's something you would like to see, such as a campaign book like *The Traveller Adventure* or *Tarsus*, let us know.



Traveller Across Time

History of Charted Space

History of The Imperium

The Third Imperium of Traveller is predated by two previous Imperiums and various empires and coalitions. Some of these past occurrences rarely find an entry in the Imperial History database, and others have shaped the Third Imperium.

Early History

In the early times of the galaxy, a race which came to be known as the Ancients spread humanity among various worlds of the galaxy. Millennia later, as Terrans began to explore space, they encountered these human races – the Vilani and Zhodani – as well as other non-human races.

The Terrans first encountered the Vilani in 2096 AD (IY -2422) at Barnard's Star. The Vilani already possessed an empire, known as *Ziru Sirka* — the Grand Empire of Stars. The Vilani were able to create their great empire for one basic reason: they reached the stars first.

THE VILANI

Having achieved starflight around 5500BC, the Vilani explored, exploited, and settled virtually every world they contacted between 4400BC and 1400 BC. Exploration and contact were quickly followed by colonization. Barren worlds were exploited for immediate gain; inhabited worlds were exploited as well, as the Vilani imposed their culture, their law, and their interstellar economic community on all the worlds they encountered.

The subject races made few objections; the rewards were far too great when compared to the sacrifices they were called upon to make. Vilani help (or interference) gradually brought the subject races to a high technology level. The Vilani culture had no concept of a "prime directive" banning interference with local cultures. Instead, Vilani culture and technology were handed out wholesale to bring the many non-Vilani races forward. Early Vilani conquests were not military; they were more subtle exercises in economic subjugation.

At its height in 1000 AD, the Ziru Sirka contained over 15,000 worlds – worlds garnered from absorbed conquered states, settled regions which graduated from territorial to sector government status, and continued colonization of explored space.

THE VARGR

About 2100 AD, the wolf-like barbarian Vargr began pillaging the Ziru Sirka's civilized territories in the direction of the galactic core. Between then and 2800 AD, Vargr fleets were a significant factor in the Imperial (Ziru Sirka) retreat out of coreward territories.

FIRST CONTACT

Other border territories were in revolt, and even some interior territories were becoming unruly in their demands for self-government and less rigid controls from above. It was against this background of a decaying empire that the first Imperial contact with Terra took place. In 2096 AD, Terran explorers encountered the Vilani at Barnard's Star. The Terrans were understandably surprised to learn that someone else already owned the stars. The Ziru Sirka (First Imperium) on the other hand, dismissed the Terrans as simply another barbarian race of little consequence.

SECOND IMPERIUM

Over the next 200 years, the old Vilani empire collapsed under the advance of the Terrans, who took over the Vilani bureaucracy and replaced it with what they called the "Rule of Man." The Terrans changed policies and procedures, developed and harnessed technologies not previously allowed under the former Vilani empire, and made Terran English (now known as Galanglic) the dominant language throughout the new empire. The new empire became known as the Second Imperium.

It was during the Second Imperium that contact was made with the Zhodani, Aslan, and Hiver races.

Over the next 450 years, the myriad of changes made by the Terrans caused difficulties they had not foreseen. Administrating an empire of 10,000 worlds became beyond the Rule of Man's ability, and the Second Imperium slid into the Long Night.

LONG NIGHT

Without the imperial control to hold the economic entity of the Second Imperium together, interstellar trade faded as a dominant activity. Without interstellar trade, most worlds turned inward to their own needs. Pockets of worlds grouped together, but they tended to be self-serving and insular. Small local wars played out over the next several hundred years, but with little overall effect.

Eventually one such pocket empire which had started at Sylea began expanding, reaching out to former members of the Second Imperium. After 350 years of slow but steady growth, Cleon I realized that his Sylean Federation had to have a vision to continue growing. He brought back the elements of the old Imperium – titles of nobility, line names, and the grandeur – and announced the founding of the Third Imperium.

4521 AD: Dawn of the Third Imperium

AD	IY	Event
4521	0	Dawn of the Third Imperium; Cleon I transforms Sylean Federation into Third Imperium; Imperial calendar begins. *GDW, Supplement 8 - Library Data (A-M)*, p. 10.
4538	17	Emperor Cleon I declares that any sentient life form can be a citizen of the Imperium. *DGP, Travellers' Digest #12*, p. 38.
4542	21	Birth of Cleon II, only child of Cleon I. *GDW, Supplement 8 - Library Data (A-M)*, p. 44.
4571	50	First Imperial contact with Zhodani. *GDW, Alien Module 4 - Zhodani*, p. 8.

The Third Imperium was founded in Imperial Year 0 (4521 CE) by Cleon Zhunastu of Sylea after a 30-year campaign of unification and conquest. Cleon declared himself Cleon I and declared his empire to be the Third Imperium in order to draw legitimacy from the earlier Vilani Imperium and Solomani Rule of Man.

In the early years, the Imperium expanded quickly to the coreward, absorbing the remnants of the Vilani and then moving spinward, establishing a colony at Mora in what is now the Spinward Marches by the year 60.

To the rimward, things went slower. These were already long-settled words, even if interstellar travel had become irregular since the collapse of the Rule of Man in Imperial Year -1776. They did not join the new Imperium quickly, nor could they be easily coerced. It was not until 588 that Terra itself joined the new Imperium.

During this time, most of the current Imperial worlds in the Spinward Marches Sector were settled and contact was made with the third major branch of Humaniti, the Zhodani. For a period of time, the two groups worked side-by-side to settle the spinward/coreward most regions of the Spinward Marches, but tensions between the Imperium and Zhodani Consulate increased, erupting into open warfare in IY 589.

This war, the First Frontier War, was to have disastrous consequences for the Third Imperium as a whole. The Zhodani, in conjunction with Vargr allies from the neighboring Gvurrdoun Sector, were effectively defeated, but not without forcing the Imperium to cede to them a large section of the Chronor subsector. In compensation, the Imperium was able to lay claim to the majority of disputed territory in the Jewell, Querion and Vilis subsectors.

However, danger to the Imperium came as a result of the victory. Grand Admiral Olav hault-Plankwell, the victorious leader of the Imperial forces in the Spinward Marches, led his forces to march on the Imperial Core, assassinated the legitimate Empress Jacqueline I, and declared himself to be Emperor. This began eighteen years of Civil War. In those eighteen years, the Third Imperium had seventeen emperors as well as a period of two years with no emperor, self-proclaimed or not. Of those seventeen emperors, Olav himself ruled the longest, for three years. The year 618 saw four emperors and 619, five.

In 615, the Zhodani, again allied with several small Vargr states, saw their opportunity and attacked the Imperium, quickly driving deep into the Jewell subsector. With no support from the Imperial core, the forces in the Spinward Marches were left on their own resources and newly appointed Grand Admiral Arbellatra Alkhalikoi struggled to fight a holding action long enough for the shipyards in the Marches and Deneb sectors to build large enough forces that the Imperial Navy could take the offensive. In 620, these forces were able to fight a decisive engagement against the "Outworld Coalition" (as the Zhodani and their allies styled themselves) and force an end to the war. Even so, the Imperial position was not the superior one and Admiral Alkhalikoi was forced to surrender new territory to the Zhodani and declare certain Imperial systems as independent in the peace settlement.

5623 AD: Golden Age of the Third Imperium

Classic Traveller (the Little Black Books) begins in 1105 IY (5623 AD), or 1105 years after the beginning of the Third Imperium. The Imperium is in its Golden Age, though by no means at peace with its neighbors.

Events in 1105 and 1106 hint at another possible frontier war with the Zhodani, which begins in 1107.

The published adventures and events are given below. The information is derived from Tom McKinney's *Traveller Integrated Timeline* at:
http://winterwar.prairienet.org/dmckinne/TimelineV2.pdf

IY 1105 (5623 AD)	
Day	**Events**
001	*Adventure 1 - The Kinunir* (Spinward Marches); *The Traveller Adventure*; Aramis (3110 Spinward Marches).
054	Travellers' Digest #11: *Missing in Transit, Far Trinity*
183	*Double Adventure 1 - Annic Nova*; Keng (2405 Spinward Marches); JTAS #1: *Rescue on Ruie*, Ruie (1809 Spinward Marches)
190	*Double Adventure 1 - Shadows*; Yorbund (2303 Spinward Marches)
216	Travellers' Digest #12: *Life Underground*, Inthra (0607 Old Expanses)
274	JTAS #2: *The Ship in the Lake*
347	1000 ton merchant ship "Bloodwell" owned by Oberlindes Lines destroyed by Imperial naval fire. *GDW, Adventure 3 - Twilight's Peak*, p. 42

IY 1106 (5624 AD)

Day	Events
001	*Adventure 5 - Trillion Credit Squadron*; Islands Clusters; JTAS #3: *Planetoid P-4836*, Rabwhar (1822 Spinward Marches)
002	*Double Adventure 2 - Mission on Mithril*; Mithril (1628, Spinward Marches)
060	JTAS #4: *Salvage on Sharmun*
090	*Double Adventure 2 - Across the Bright Face*; Dinom (1811, Spinward Marches)
183	JTAS #5: *Foodrunner*, Roup (2007 Spinward Marches)
300	*Adventure 2 - Research Station Gamma*; Vanejen (3119 Spinward Marches)
356	*Travellers' Digest #13: Terra Incognita*, Terra (1827, Solomani Rim)

IY 1107 (5625 AD)

Day	Events
001 to 049	*Double Adventure 5 - Horde*; Raschev (outside Spinward Marches); *Double Adventure 5 - The Chamax Plague*; Alenzar (outside Spinward Marches); *Double Adventure 2 - Mission on Mithril*; Mithril (1628, Spinward Marches); *Double Adventure 4 - Marooned*/Marooned Alone; Pagliacci (3209 Solomani Rim); *Adventure 4 - Leviathan*; Berengaria (2105 Trojan Reach); *Adventure 3 - Twilight's Peak*; Fulacin (2613 Spinward Marches)
050	*Double Adventure 6 - Divine Intervention*; Pavabid (1238 Spinward Marches)
175	*Adventure 6 - Expedition to Zhodane*; Utoland (1209 Spinward Marches)
186	Zhodani battle fleets appear at Ruie (1809 Spinward Marches)
187	Zhodani declaration of war delivered to Imperium; Fifth Frontier War begins. *GDW, Spinward Marches Campaign*
196	*Adventure 7 - Broadsword*; Garda-Vilis (1118 Spinward Marches)
201	Imperium begins evacuating Regina (1910 Spinward Marches). *GDW, Spinward Marches Campaign*
204	Imperium announces presumed state of war with Sword Worlds. *GDW, Spinward Marches Campaign*
206	Detached Imperial Scouts called up. *GDW, Spinward Marches Campaign*
210	Regina (1910 Spinward Marches) reports no invasion to date. *GDW, Spinward Marches Campaign*
212	Duke Norris of Regina reported ill or deposed. *GDW, Spinward Marches Campaign*
214	Heavy fighting takes place at Efate (1705 Spinward Marches) and Louzy (1604 Spinward Marches). *GDW, Spinward Marches Campaign*
243	Serious guerrilla attacks by Ine Givar across Spinward Marches. *GDW, Spinward Marches Campaign*
334	JTAS #11: *Thunder on Zyra*, Zyra (2934 Spinward Marches)

IY 1108 (5626 AD)

Day	Events
001 to 034	*Adventure 8 - Prison Planet*; Newcomb (2913 Solomani Rim); Imperial Research Station on Duale (2728 Spinward Marches) refitted and refurbished. *GDW, Spinward Marches Campaign*; Imperial overtures to Tarsus (1138 Spinward Marches) to join Imperium increase. *GDW, Module 1 - Tarsus*
035	Yorbund (2303 Spinward Marches) taken by Vargr. *GDW, Spinward Marches Campaign*
036	Ruby (1005 Spinward Marches), Emerald (1006 Spinward Marches) and Lysen (1307 Spinward Marches) taken by Zhodani. *GDW, Spinward Marches Campaign*
074	JTAS #12: *Tarkine Down*, Tarkine (1434 Spinward Marches)
097	Zhodani raiding fleet strikes Inthe (2410 Spinward Marches), crippling massing Imperial fleet. *GDW, Spinward Marches Campaign*
104	*Travellers' Digest #15: Krimm's Paw*, Pierson (1536 Daibei)
168	Sword Worlds troops invade Saurus (1520 Spinward Marches). *GDW, Spinward Marches Campaign*
229	Zhodani fleet strikes Boughene (1904 Spinward Marches). *GDW, Spinward Marches Campaign*
258	JTAS #14: Aces & Eights, Malefolge
281	Imperial fleet strike against Lysen (1307 Spinward Marches) unsuccessful. *GDW, Spinward Marches Campaign*
302	Imperial and Zhodani fleets clash at Tremous Dex (1311 Spinward Marches). *GDW, Spinward Marches Campaign*
338	Heya (2402 Spinward Marches) and Beck's World (2204 Spinward Marches) capitulate to Vargr invasion fleets. *GDW, Spinward Marches Campaign*
362	Mirriam (1315 Spinward Marches) occupied by Zhodani fleet, Calit (1515 Spinward Marches) under attack. *GDW, Spinward Marches Campaign*

IY 1109 (5627 AD)	
Day	**Events**
001 to 020	*Adventure 13 - Murder on Arcturus Station*, Arcturus Belt (2921 Solomani Rim); *Travellers' Digest #18: Clan and Pride*
021	Ghandi (1815 Spinward Marches) attacked by Zhodani fleet, including elements of Zhodani Consular Guard. *GDW, Spinward Marches Campaign*
029	Imperial operations to relieve Efate (1705 Spinward Marches) fail. *GDW, Spinward Marches Campaign*
053	*Travellers' Digest #17: The Blade of Koiyekh*, Kusyu (1919 Dark Nebula)
059	JTAS #15: *Chill*, Sainte Foy; *The Drannixa Gambit*, Azun (0809 Solomani Rim); Couriers from Jewell (1106 Spinward Marches) report the world continues to hold out. *GDW, Spinward Marches Campaign*
071	Last sighting of the *Falchion*, a Sword Worlds based Broadsword-class mercenary cruiser, after raiding Lanth (1719 Spinward Marches). *GDW, Challenge #44*
083	Imperial fleets retake Yorbund (2303 Spinward Marches), and continue operations against Heya (2402 Spinward Marches). *GDW, Spinward Marches Campaign*
096	Sword Worlds forces driven off Lanth (1719 Spinward Marches). *GDW, Spinward Marches Campaign*
119	JTAS #16: *Last Flight of the Themis*, Gwydion; *Day of the Glow*, Purfyr
122	Vargr battle fleet destroyed off Dentus (2201 Spinward Marches). *GDW, Spinward Marches Campaign*
128	Imperial forces raid Ninjar (0608 Spinward Marches). *GDW, Spinward Marches Campaign*
130	Rampart IV fighter begins operational deployment in Spinward Marches. GDW, Challenge #27
132	Duke Norris of Regina relieves Sector Admiral Santanocheev of command. *GDW, Spinward Marches Campaign*
147	Imperial forces retake Calit (1515 Spinward Marches). *GDW, Spinward Marches Campaign*
231	Battle of Rhylanor (2716 Spinward Marches). GDW, Spinward Marches Campaign
241	Sword Worlds forces expelled from Lanth subsector. *GDW, Spinward Marches Campaign*
252	Rampart V fighter begins operational deployment in Spinward Marches. *GDW, Challenge #27*; Vargr forces surrender, negotiating a separate peace. *GDW, Spinward Marches Campaign*

IY 1109 (Continued)	
Day	**Events**
274	JTAS #18: *Chariots of Fire*, Gatina; *Without a Trace*, Banasdan (2920 Solomani Rim)
348	Zhodani fleet retreating from Rhylanor ambushed at Calit (1515 Spinward Marches). *GDW, Spinward Marches Campaign*
???	Imperial Guard regiments dispatched from Capital to the defense of Rhylanor (2716 Spinward Marches). *DGP, Travellers' Digest #9*, p. 20
???	Terra (1827 Solomani Rim) returned to home rule by Imperium. *GDW, Alien Module 6 - Solomani*, p. 12.

IY 1110 (5628 AD)	
Day	**Events**
001 to 003	*Adventure 12 - Secret of the Ancients*; Boughene (1904 Spinward Marches); Colonists begin to arrive at Forboldn (1807 Spinward Marches) in cold sleep from the Imperial core. *GDW, Adventure 1 - The Kinunir*, p. 39; *Module 1 - Tarsus*; Tarsus (1138 Spinward Marches).
004	Federation of Arden discards neutrality and allies with Imperium. *GDW, Spinward Marches Campaign*
023	Operations to relieve Jewell (1106 Spinward Marches) begin; Lysen (1307 Spinward Marches) retaken. *GDW, Spinward Marches Campaign*
060	JTAS #19: *Pride of the Lion*, Grizel; *Small Package*, Karin (0534 Spinward Marches).
099	Armistice declared effective 120-1110. *GDW, Spinward Marches Campaign*
100	JTAS #20: *Critical Vector*; JTAS #20: *Raid on Stataolai*.
132	*Adventure 10 - Safari Ship*; 567-908 (1031 Spinward Marches)
236	Project Blackheart (Imperial Navy) commences operation in Spinward Marches. *DGP, Travellers' Digest #11*
240	*Travellers' Digest #19: Out of the Night*, Ahfatre (2219 Riftspan Reaches)

IY 1111 (5629 AD)	
Day	**Events**
001	*Biter* (1526 Spinward Marches). *GDW, Spinward Marches Campaign*
030	JTAS #22: *Ventures Afar*, Denotam (1413 Spinward Marches); *The Thing in the Depths*, Sturray
097	*Travellers' Digest #20: An Act of Conscience*, Halka (0510 Trojan Reach)
180	JTAS #23: *The Birthday Plot*, Efate (1705 Spinward Marches)
290	JTAS #24: *Embassy in Arms*, Aramanx (3005 Spinward Marches); *The Lost Village*, Gadden (2506 Solomani Rim).
321	*Plague of Perruques*, Uakye (1805 Spinward Marches)
IY 1112 (5630 AD)	
001	*Lost Treasure Ships of the Abyss Rift* published by Enll Iddukagan in Lanth (1719 Spinward Marches). *GDW, Challenge #44*
115	*Travellers' Digest #21: One Last Stop*, Pixie (1903 Spinward Marches)
142	Challenge #27: *Chosen at Random*, Aegadh (1317 Gvurrdon)
IY 1113 (5631 AD)	
	No adventure events
IY 1114 (5632 AD)	
001	Emperor Strephon names Duke Norris of Regina first Archduke of Deneb. *GDW, MT Players' Manual*, p. 83.
288	*The Trouble with Kids*, Peraspera (2028 Solomani Rim). *DGP, Travellers' Digest #13*
IY 1115 (5633 AD)	
	The Possession Ball, Morninglori (1216 Deneb). *DGP, Travellers' Digest #19*, p. 15.

5634 AD: Rebellion and Shattered Imperium

The Shattered Imperium (*MegaTraveller*) begins a period of civil war in the Third Imperium.

By 1116 IY, the Third Imperium had become static and hemmed in at its borders. There was nothing truly holding the empire together. In the usual fashion of Imperial politics, Archduke Dulinor the Black assassinated Emperor Strephon. Dulinor attempted to take the throne as his own, but the former empire would not accept his claim. Instead of looking for a new emperor, the former empire split into a dozen competing factions, each with only one agenda. Each faction was resolute in that they were the only faction that would rule the new Empire.

The factions began slaughtering each other, and the Vargr and Aslan took advantage of the power vacuum to raid worlds and annex them into their own empires. The civil war raged for many years, with billions dead.

IY 1116 (5634 AD)	
Day	**Events**
132	Archduke Dulinor of Ilelish assassinates Emperor Strephon; beginning of the Shattered Imperium. *GDW, MT Players' Manual*, p. 31.
202	Vland (1717 Vland) receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*, p. 30.
237	Vland (1717 Vland) receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*, p. 30.
244	Dlan (1021 Ilelish) receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*, p. 30.
245	Archduke Dulinor of Illelish announces his assassination of Strephon at Dlan (1021 Ilelish). *GDW, Challenge #30*, p. 30.
250	Warinir receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*, p. 30.
300	Dlan (1021 Ilelish) receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*, p. 30.
309	Warinir receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*, p. 30.
311	Terra (1827 Solomani Rim) receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*, p. 30.
328	Regina (1910 Spinward Marches) receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*, p. 30.

IY 1117 (5637 AD)	
Day	**Events**
001 to ???	*Ghost Ship*, Aki (2035 Spinward Marches). *DGP, Travellers' Digest #14*; *Mistaken Identity*, Walston (1232 Spinward Marches). *DGP, Travellers' Digest #15*; *Sword of Arthur*, Caladbolg (1329 Spinward Marches). *DGP, Travellers' Digest #16*; *Psionic Knights*, Enos (1130 Spinward Marches). *DGP, Travellers' Digest #17*; Emperor Lucan orders Corridor fleets back to the Imperial core, abandoning Corridor sector. *GDW, MT Players' Manual*, p. 87; Emperor Strephon reappears in Usdiki, revealing that his double was killed. *GDW, MT Imperial Encyclopedia*, p. 11.
001	Home (Aldebaran) receives advance word of Emperor Strephon's assassination via jump-6 courier. *GDW, Challenge #30*
036	Terra (1827 Solomani Rim) receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*
067	Regina (1910 Spinward Marches) receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*
117	Home (Aldebaran) receives official word of Emperor Strephon's assassination via jump-4 courier. *GDW, Challenge #30*
297	Challenge #32: *A World On Its Own*, Khirar (Ilelish); *Swift Water*, Indeep.
	IY 1119
	The Glorious Empire reconquered by Aslan Hierate's trans-Rift lords. *DGP, Travellers' Digest #20*
	IY 1120
121	*The Pirates of Tetrini*, Cossor (2424 Zarushagar). *DGP, Travellers' Digest #21*
123	*The Hiawatha Gambit*, Border Worlds Confederation (Spinward Marches). *DGP, Travellers' Digest #20*
206	*Challenge #44: Operation Flashfire*, Esalin (1004 Spinward Marches). *GDW, Challenge #44*
351	*Challenge #46: Fated Voyage*, Lanth (1719 Spinward Marches). *GDW, Challenge #46*
	IY 1121
???	*Rapid Repo*, Atsah (2913 Deneb). *DGP, The MegaTraveller Journal #3*

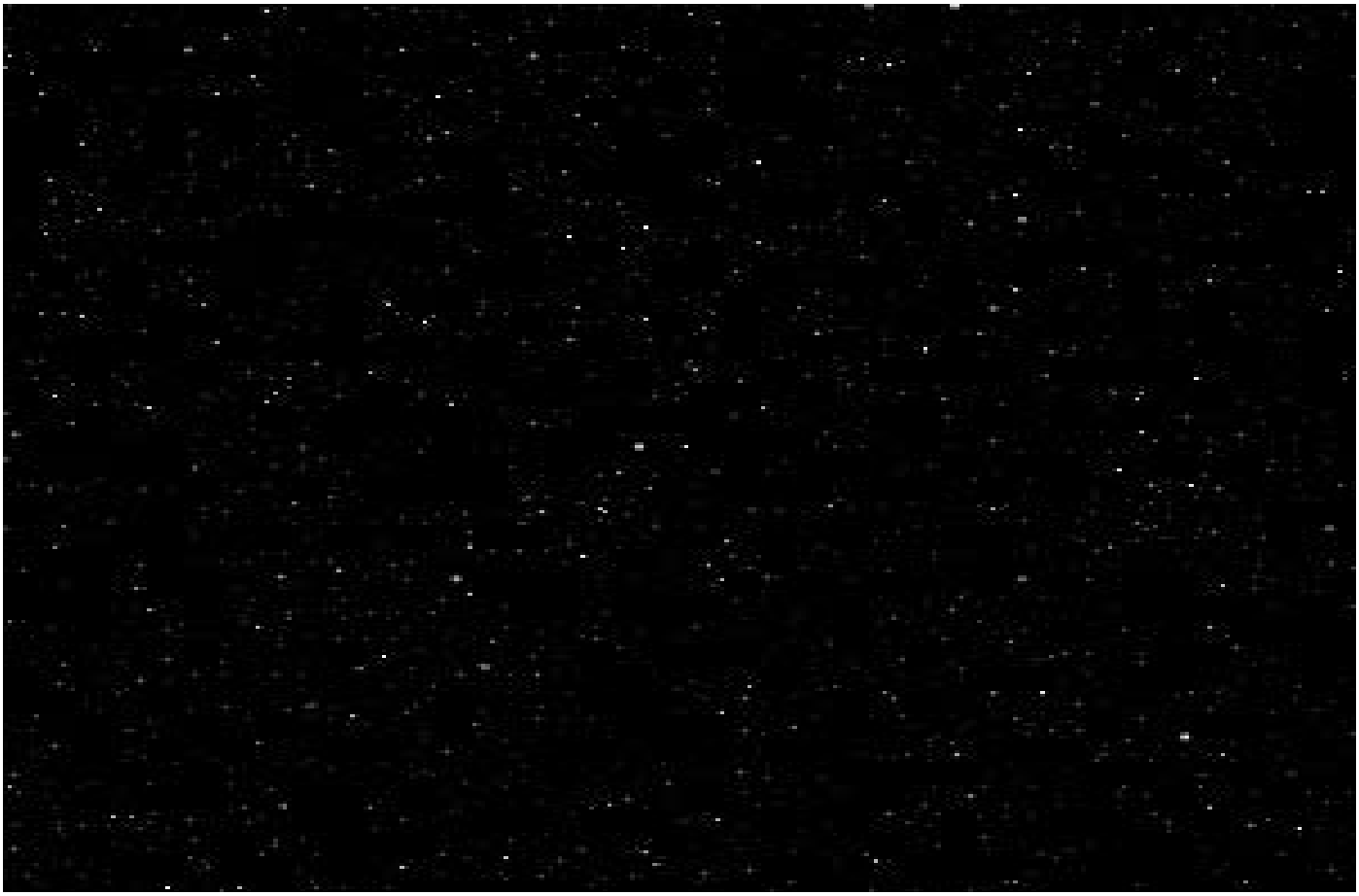
5717 AD: The New Era

Following Dulinor's (attempted) assassination of Emperor Strephon, the Imperium shattered into many factions, each with only one thing in common. They were determined that no one else would lead the Imperium. In this vat of twisted thinking, Virus was born, the ultimate weapon. Virus turned every computer system, whether sensor or starship or toy, into a murderous, suicidal, and intelligent menace. It was every nightmare imaginable, and it took the stars away from humanity.

Now is the beginning of a New Era. A few areas have been spared or recovered enough to begin to regain the stars. The Reformation Coalition has been aided by the Hivers, who had been virtually unaffected by Virus, came and began to help humanity to start over and regain the stars. Their military/exploration arm, the RCES (Reformation Coalition Exploration Service), is working to reclaim the stars. The humans of the Regency subsector, largely intact thanks to the Great Rift, continue on and work to expand and reclaim the Imperium.

Meanwhile various pocket empires and isolated world try simply to recover and exist.

	Events
IY 1130 (5648 AD)	
	AI Virus is released; collapse of human civilization begins. *Traveller: The New Era*
IY 1192 (5710 AD)	
	Hivers send contact teams into the Imperium ruins. *Traveller: The New Era*
IY 1193 (5711 AD)	
	Hivers establish technical training schools for humans in the Old Expanses. *Traveller: The New Era*
IY 1195 (5713 AD)	
	Humans begin interstellar trade in the Old Expanses. *Traveller: The New Era*
IY 1197 (5715 AD)	
	Dawn League is established in the Old Expanses. *Traveller: The New Era*
IY 1200 (5716 AD)	
	All Dawn League ships sent to Diaspora declared lost. Dawn League dissolved, Reformation Coalition founded in its place. *Traveller: The New Era*
IY 1201 (5717 AD)	
	The New Era begins. *Traveller: The New Era*
IY 1202 (5718 AD)	
	Expansion of powers begins as Regency and Reformation Coalition expand. *Traveller 1248: Out of the Darkness*
IY 1209 (5725 AD)	
	"Curtain War" led by Vampire Fleets and Lucan sympathizers attempt to crush all survivor states. *Traveller 1248: Out of the Darkness*
IY 1248 (5764 AD)	
	Beginning of the Fourth Imperium, as Avery I crowned emperor. Star Vikings head coreward to rescue worlds from the "Empress Wave". *Traveller 1248: Out of the Darkness*



Imperial Life

Travel and Communications

As with all interstellar communities, travel and communications are very important aspects. Without the means to communicate and travel among the member worlds, the Imperium would fall apart (q.v. *Traveller: The New Era*).

Travel

Travelers in *Traveller Hero* can journey within the system or from system to system. All travel costs money.

In-System Travel

Traveling to planets within the same system, from planet to orbit or orbit to planet require a *spaceship*, a vessel with a Maneuver drive.

Trips from planet to orbit or orbit to planet cost 1/100 the normal interstellar costs, so passenger costs for such trips are 80 - 100 Cr, while cargo transport costs 10 Cr per ton.

Travel from planet to planet in-system costs 1/10 the normal interstellar cost, 800-1000 Cr per trip per passenger (depending on accommodations) and 100 Cr per ton for cargo.

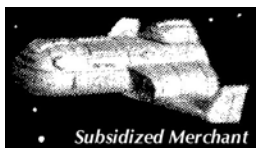
In-System Travel

In-System Trip	Cargo	Passenger
Planet to Orbit	10 Cr/ton	100 Cr
Orbit to Planet	10 Cr/ton	100 Cr
Planet to Planet	100 Cr/ton	1000 Cr

Interstellar Travel

Traveling from system to system requires a *starship* – a ship with a jump drive. Standard jump procedure is that the starship moves 100 planetary diameters from the nearest world (gravity interferes with jump drives), which takes about 5 hours at 1G. The ship then jumps into J-space, similar to using an artificially-created wormhole. The trip takes 1 week, regardless of the jump distance.

Jump drives are rated from 1 to 6, the rating being the number of parsecs real-distance that they can travel per jump. (For ease, we have changed the number to an even 3 light years, rather than a parsec of 3.26 light years.)


Subsidized Merchant

Commercial starships usually make two jumps per month - one week in jump, one week in system (traveling to the destination, refueling, buying and selling cargo, traveling out 100 diameters to the next jump point), followed by the next jump and the next week in system.

TRAVEL COSTS

Interstellar travel costs for passengers and cargo, otherwise known as *passage*, are based not on the distance traveled but on one jump – regardless of whether the jump is 3 light years (J1) or 18 light years (J6) – and includes the entire trip from starport to starport. There are four accepted types of passage: High Passage (first class), Middle Passage (second class), Low Passage (cryogenic sleep), and Working Passage.

High Passage. Also known as First Class passage, it's travel in style with all needs catered to and one passenger per stateroom. High Passage passengers are allowed up to 1000 kg of baggage. High Passage costs 10,000 Cr per trip (starport to starport).

Middle Passage. Also known as Second Class or Coach Class, it's mediocre accommodations and food, with two passengers per stateroom. Passengers are allowed up to 100kg of baggage. Middle passage costs 8,000 Cr per trip (starport to starport) in the Third Imperium, 5,000 Cr per trip in the Regency/New Era.

Low Passage. Low passage involves travel in a cryogenic sleep chamber aboard ship during the entire trip (starport to starport). Low passage costs 1000 Cr.

Working Passage. If a ship's crew is shorthanded, the captain may allow a qualified (skilled) individual to work on the ship in return for travel. Common law says that if the worker stays for 4 or more jumps, he is considered to have been hired by the captain. Working passage allows up to 1000 kg of baggage, and costs the individual no money.

Interstellar Passenger Travel

Per Jump	Cost (Third Imperium Rates)	Cost (Regency / New Era Rates)
High Passage	10,000 Cr	10,000 Cr
Middle Passage	8,000 Cr	5,000 Cr
Low Passage	1,000 Cr	1,000 Cr
1 Ton Cargo	1,000 Cr	1,000 Cr

NOTES ON PASSENGER SHIPS

The pricing provided above relates to the economies of scale of the 1970's, when Traveller was first developed. The standard ships provided in the various Traveller supplements are relatively small in comparison to today's passenger ships. A Traveller *Subsidized Liner* is only 600 Displacement tons, with rooms for 21 passengers. In comparison, a medium-sized cruise ship like Carnival Cruises is 58,600 gross registered tons (Displacement tons) with space for 1500 passengers and revenue of about $3.2M for a 1 week trip.

The benefit of the smaller ship is maximum jump value. A *Subsidized Liner* could have a jump engine capable of jump-4 or better; the larger Carnival Cruise size ship is so massive that it would be limited to jump-1 or jump-2.

A suggestion for commercial passenger ships in the time of the Third Imperium is for major passenger vessels to be in the 50,000 Displacement tons to 70,000 Displacement tons range, with passenger capacities in the 500-1500 range, and Jump-1 or Jump-2 engines.

The niche for smaller vessels such as the *Subsidized Liner* and *Far Trader* is going to be excursions - going places not many people go, because it's exotic, dangerous, or out of the way. If the Liner and Trader ply the common cruise spaceways, passage fares should be one-half to one-third that normally stated, as a matter of capacity and competition.

TRAVELLERS' AID SOCIETY

Members of the *Travellers' Aid Society* receive as part of their membership one Middle Passage every month (or one High Passage every two months, in *The New Era*). The vouchers may be used at any time, they may be saved for future use, and they may be sold for 90% of their face value. Membership

in the Society is usually awarded as a mustering out benefit, but can be purchased for one million credits (MCr 1) for a lifetime membership.

COMMERCIAL CARGO

Interstellar cargo is shipped at the standard rate of 1000 Cr per ton per jump.

MAIL

Subsidized merchants may earn a mail contract, if they have a standard route they always follow. Such merchants must commit 5 tons of cargo space to mail at all times, and the ship must be armed and have a full-time gunner. The ship is paid 25,000 Cr per trip, regardless of whether they carry 1 ton or 5 tons of mail.

Communications

Communications in *Traveller Hero* is limited by the speed of light and the speed of jumps - there is no FTL communications technology.

In-System Communications

In-system communications are limited to the speed of radio and light waves, so communications between worlds in-system often have a time delay, ranging from minutes to hours.

One AU is 8.3 Light Minutes, so a signal traveling from Earth to Pluto (58 AU away) would take 8 hours to arrive.

Interstellar Communications

Interstellar communication is handled in one of two ways: Mail runs for time-insensitive communication, and Express Boats (X-boats) for time-sensitive communication.

Mail Runs. See the information above on Mail runs.

Express Boats. Express Boats are communication ships which are designed to make optimum use of jump technology in communicating information within the Imperium. Because the Third Imperium is so large, ordinary communication must depend on ships traveling along established trade routes, making Regina nearly 4 years out from the Imperial Core.

The express boat (abbreviated X-boat) system, established originally in 624 and expanded to cover the entire Imperium by 718, cuts this communication time by nearly 75 percent. Selected locations along major trade routes are established as sites for express stations, which are orbital facilities which service and refuel the X-boats on their communications runs.

As an X-boat arrives in a system, it beams its recorded data to the express station, which then retransmits it to an X-boat standing by for a jump out-system. Time between jumps is almost always less than four hours and has been recorded at under seven minutes, making the speed of communication nearly the speed of jump (since X-boats carry jump-4 drives, speeds near four parsecs per week). In practice, this speed is somewhat reduced by the fact that trade routes do not follow straight lines and that not all jumps are made at jump-4. Nonetheless, the system achieves approximately jump-2.6 per week.

The primary means of interstellar communication within the Imperium is the express boat - a small, fast, information carrying ship. Outlying worlds of the Imperium stand nearly four years from the capital, and express boat links have been established to insure the rapid transmission of messages (governmental, commercial, and private) with a maximum of efficiency.

In *The New Era*, X-boats see little use due to the breakdown of the Imperium.

Trade

Trade is the lifeblood of the Imperium and the New Era, whether in peace or war.

Money

"Money, money, money... it's a rich man's world."
-- *ABBA*

Imperial Credit

The official currency of the Imperium is the *credit* (Cr). The Credit is also abbreviated for thousands of credits (kCr) and millions of credits (MCr).

Member worlds may have their own currencies, but all starports trade in credits.

One credit has the approximate buying power of $3 USD, circa 2005... at least according to researching current prices for firearms and other contemporary items.

Trade and Transport

Traders make money by using starships to carry passengers, cargo, mail and charters. To summarize the *Travel and Communications* chapter...

Transport Costs

Cargo	Income
Passengers	
High Passage (each)	10,000 Cr
Middle Passage (each)	8,000 Cr (Third Imperium) / 5,000 Cr (New Era)
Low Passage (each)	1,000 Cr
Cargo	
Freight (per ton)	1,000 Cr
Mail (per trip)	25,000 Cr
Special	
Purchased Cargo	Varies
Charter	Varies

Making Money

Interstellar commerce is a mainstay of Traveller, and most commercial carriers simply charge a flat rate of 1000 Cr per ton of cargo carried. For the smaller merchant ships, doing nothing more than transporting others' cargo (or passengers) is a losing proposition.

Paying for crew (4-person crew * 5000 Cr/month = 20,000 Cr) plus Loan payment (typically 200,000 Cr per month on a 40-year 6% loan on a Free Trader) plus incidentals means the ship needs about 250,000 Cr per month to break even. At two jumps per month, that translates to at least 125 tons of cargo per trip just to break even, but the Free Trader only has 82 tons of cargo space.

On the other hand, if the Free Trader is free and clear of loan payments, the ship needs only 50,000 Cr per month to break even. If the trader can deliver 82 tons of cargo every jump, that's 164,000 Cr, with a monthly profit of 114,000 Cr.

Similarly, a Subsidized Merchant type M has crew (9 * 5000 Cr = 45,000 Cr) plus loan payment (1.2 MCr per month for a 40-year 6% loan) and needs 1.3 MCr per month to break even, and requires 650 tons of cargo per jump, but only has 124 tons of cargo space.

Even for carrying passengers, a Subsidized Merchant type R has a crew salary cost of 5*5000 = 25,000 Cr/month plus a loan payment of 550,000 Cr/month. If they have full Middle Passage passengers all month, they will only make 128,000 *2 jumps, or 256,000 Cr/month. If the Subsidized Merchant is free and clear of loans, the vessel can make a profit of nearly 200,000 Cr per month if they carry a full Middle Passage manifest every trip.

Many merchant-traders start off buying a used ship, typically 15-20 years old, at roughly half the cost of a new ship. This reduces the loan payment per month, but increases the risk of unforeseen repairs being needed.

Obviously, the extra money to make loan payments has to come from somewhere (and it becomes obvious why banks worry about 'skips'). One of the ways merchants try to make up the difference is speculation — buying low and selling high for cargo that can be transported in unused cargo space. An example is radioactives, buying 5 tons from a non-industrial (NI) world (average cost 700,000 Cr/ton on a NI world) and selling them on an industrial world (average selling price 2MCr/ton on an Industrial world) yields a one-time profit of 6.5 MCr! But speculation is as likely to fail as succeed, being dependant on a number of factors. The source and destination worlds have to be within jump distance of each other and usually not on main trade routes, the materials that are available on one world should fill a definite need on the destination world, there have to be sufficient quantities to make transport viable, and the buying and selling prices should be sufficiently divergent. And that's forgetting about broker fees, handling fees for partial orders, and so forth.

Speculation

What follows is a means of determining purchase and resale prices of goods when the crew is ready to try speculation. The method is a mix of *Classic Traveller*, *The New Era*, modifications for using HERO System skills, and some approximations where necessary.

STEP 1: DETERMINING CARGOS FOR SALE

Cargo Type: The GM should determine the type(s) and tonnage of cargoes available, either by design or by random selection from the Trade And Speculation table. Cargoes available for purchase and resale should be logical for the source world, so there should not be mass-produced laser pistols on a TL5 world, or plant nurseries with tons of Living Plants on an airless world.

Example: *Captain Tucker is ready to look for goods, and the referee rolls to find a cargo. He generates Polymers as the sole available.*

Base Cost and Tonnage: Find the base cost of the goods and the tonnage available in the Trade and Speculation table.

Example: *Polymers have a base cost of 7000 Cr per ton, and the referee rolls 4Dx5 to get 35 tons available.*

Planetary Modifiers: In addition, add all the appropriate Purchase DMs of source world, and make note.

TRADE AND SPECULATION

The following is an amalgamation of CT and TNE trade goods speculation prices, and some guessing. Use the following tables for prices of goods, with modifiers based on the worlds in question. Blank entries are left for GM personalization.

d66	Trade Good	Base Price per Ton	Base Qty (Tons)	Purchase DMs						Resale DMs					
1	**Natural Resources**			**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**
11-13	Metallic Ores (Iron, Copper)														
14-15	Nonmetallic Ores (coal, etc.)														
16	Radioactive Ores (uranium, etc.)														
21-24	Raw Crystals (quartz)				-3	+4					-3	+3		+3	
25-26	Raw Precious Gems (topaz)	1,000,000	1D			+4	-8		-3			+4	-2	+8	
31-36	Raw Hydrocarbons (natural gas, oil)														
41	Raw wood (lumber)	1000	2Dx10	-6						-6		+1		+2	
42	Plant bales (hay)														
43	Plant fibers (flax)														
44	Plant edible (herbs, spices)	6,000	1Dx5	-2	+3	+2				-2				+2	+3
45-46	Wild Plants, living														
51-53	Plants, food, living (fruit)	1,000													
54-56	Plants, food, living (corn, rice, grain)	300	8Dx5	-2	+1	+2				-2					
61-63	Animals, living (dogs, cats, etc.)														
64-66	Animals, livestock (cattle, goats)														
2	**Processed Resources**			**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**
11	Processed Metals (Iron, Copper)	2000	4Dx10			-2		-1	+1			-2		-1	+3
12	Metal Alloys (Steel)	500	4Dx10			-2		-1	+1			-2		-1	+3
13-14	Composite Materials														
15	Special Alloys	200,000	1D			-3	+5	-2				-3	+4	-1	
16	Precious Metals	70,000	1Dx5			+5		-1	+2			+5		-1	
21	Crystals	20,000	1D		-3	+4									
22-24	Radioactives	1,000,000	1D			+7	-3	+5				+6	-3	-4	
25	Rare Earths														
26	Isotopes														
31-36	Foodstuffs														
41-44	Petrochemicals	10,000	6Dx5		-4	+1	-5				-4	+3	-5		
45	Textiles	3000	3Dx5	-7	-5		-3								
46	Explosives														
51-56	Polymers	7000	4Dx5			-2		-3	+2			-2		+3	
61-66	Fertilizers														
3	**Manufactured Goods**			**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**
11-12	Pharmaceuticals	100,000	1D		-3	+4			+3		-3	+5		+4	
13-14	Spice	6,000													
15	Meat	1,500	4Dx5	-2	+2	+3				-2		+2			+1
16	Gourmet Food														
21-23	Alcoholic Beverage	10,000	1Dx5	-4						-3		+1		+2	
24-26	Non-alcoholic Beverage														
31	Consumable Teas														
32	Exotic Fluids														
33-36	Aromatics														
41-42	Clothing														
43	Protective Gear	400,000	1Dx5		-5	-3		-1			-1		+2		+1
44	Body Armor	50,000	2D			-1		-3	+3			-2		+1	+4
45-46	Weapons / Ammunition	30,000	2D			-3		-2	+3			-2		-1	+3
51-52	Electronic Parts	100,000	1Dx5			-4		-3					+2		+1
53	Mechanical Parts	75,000	1Dx5			-5		-3		+2			+3		
54-55	High-Tech Parts	150,000	1Dx5			-5		-3		+1	+2		+3		
56	Tools / HTH Weapons	10,000	2D			-3		-2	+3			-2		-1	+3
61-63	Entertainment Equipment	1,000,000	2D			-2		-2		-3			+2		+1
64	Computers	10,000,000	1D			-2		-2		-3			+2		+1
65-66	Robots	1,000,000	1D			-2		-2		-3					

d66	Trade Good	Base Price per Ton	Base Qty (Tons)	Purchase DMs						Resale DMs					
4	**Information**			**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**
11-12	Writings (paper)														
13-14	2-D Still pictures														
15-16	3-D Still pictures														
21-22	Software, computer														
23-24	Software, robotic														
25-26	Software, starship														
31-33	Artistic Images														
34	Audio recordings														
35	2-D Video recordings														
36	3-D Video recordings														
41-46	Data and records, paper														
51-56	Data and records, electronics														
61-66	Data and records, biosamples														
5	**Vehicles**		**Base Qty (single)**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**
	Aircraft	1,000,000	1D			-4		-3					+2		+1
	Air/Raft	6,000,000	1D			-3		-2					+2		+1
	ATV	3,000,000	1D			-2		-2		+1			+2		+1
	AFV	7,000,000	1D			-5		-2	+4	+2	-2			+1	
	Farm Machinery	150,000	1D			-5		-2		+5	-8				+1
6	**Novelties**			**AG**	**NA**	**IN**	**NI**	**RI**	**PO**	**AG**	**NA**	**IN**	**NI**	**RI**	**PO**

Example: *Captain Tucker is on a Poor Industrial world, and Polymers have a DM of -2 for Industrial and +2 for Poor, for a net DM of -2+2=+0.*

Starport Cost: The type of starport the characters are in affects the purchase price, see the table below.

Starport Type	Modifier
A	-25%
B	+0%
C	+25%
D	+50%
E	+75%
X	+125%

Example: *The world Captain Tucker is visiting has a Class A starport, which reduces the base cost by 25%, or from 7000 Cr/ton to 5250 Cr/ton.*

Delivery to The Ship: Delivery can take 2-4 days (1/2d6 +1), depending on how busy the station is. The time can be reduced 1 day per 10% of the base price, with a minimum of 1 day.

Example: *The referee determines that the polymers would normally be delivered in 3 days, and the captain wants them in 1 day. It costs an extra (10% x 2 days x 7000) or 1400 Cr/ton for a 1 day delivery.*

Purchase Cost. Add all the pieces together to come up the with total cost.

Example: *In this case, the Polymers are base 7000 Cr/ton, reduced to 5250 Cr/ton because of the Starport; +1400 Cr/ton for 1 day delivery; total of 6650 Cr/ton.*

Trading Skill: Now it's time to add negotiations, so have the buyer roll his *Trading* Skill roll, add the DM for the Planet Type, and look in the table below to find the price modifier.

Trading Skill Roll	Price Modifier
Natural 18	+2
Failed by 10 or more	+1
Failed by 7-9	+3/4
Failed by 4-6	+1/2
Failed by 1-3	+1/4
Made Exactly	+0
Made by 1-2	-1/4
Made by 3-4	-1/2
Made by 5-6	-3/4
Made by 7-8	-1
Natural 3	-2

Example: *Captain Tucker makes his roll by 3, including the DM of +0 for the world type; so the price gets a -1/2 "limitation" adjustment, with a final negotiated price of 6650 Cr/(1 + 1/2) = 4433 Cr/ton. On the other hand, if he had failed his roll by 2, the final price would go up to 6650 Cr*(1 + 1/4) = 8312 Cr/ton.*

STEP 2: SELLING THE CARGO

Cargo Type: The cargo should be the same cargo purchased in Step 1.

Base Price and Tonnage: The Base Price is the same base price found in the Trade and Speculation table. Though not usual, the Captain may choose to sell less than his total purchased tonnage.

Example: *Captain Tucker has 35 tons of Polymers, with a base price is 7000 Cr/ton.*

Tech Level: Except in cases where the TL does not affect the goods (raw ores, living plants, etc.), take the TL of the destination world, subtract the TL of the source world, and multiply by 10%.

Example: *Captain Tucker bought his Polymers on a TL9 world, but his destination world is TL11, so the effect of different TLs is (9-11)*.10 = -.20, or -20%. The base selling price becomes 80% of 7000 Cr/ton, or 5600 Cr/ton.*

Planetary Modifiers: Add the planetary modifiers for the world on which the cargo is being sold.

Example: *Captain Tucker is selling the Polymers on a Rich Industrial world, the DMs are -2+3 = +1.*

To Broker or Not: If the cargo is sold through a broker, the broker takes 2.5% of the final market price, and can broker the cargo within a day. If a broker is not used, it will take 1d6 days to find a buyer for the cargo.

Example: *Captain Tucker decides he needs to sell quickly and move on, so he contacts a Broker.*

Trading Skill, Bribery, and Supply and Demand: To simulate the quirks of supply and demand, and the Captain's Trading skill, have the Captain roll his Trading Skill roll.

If the Captain also wishes to try bribery, he should roll a *Bribery* Skill Roll, which is treated as a complementary roll to the *Trading* Skill roll. However, a severe failure on the *Bribery* Skill Roll can lead to arrest (GM discretion).

For every two points the *Trading* Skill Roll is made or failed by, the result is a -1 or +1 modifier to the *Actual Value* roll (see the Actual Value table below). Add the DM for the Planetary Modifiers to the modifier.

Example: *Captain Tucker makes his Trading Skill Roll by 3, giving him a +2 DM; the Rich Industrial planet is a +3-2=+1, so the overall DM is +2+1 = +3.*

Next roll 2d6, add the and consult the Actual Value table below.

Actual Value Table

2d6	Percentage Value
2 or less	40%
3	50%
4	70%
5	80%
6	90%
7	100%
8	110%
9	120%
10	130%
11	150%
12	170%
13	200%
14	300%
15 or more	400%

Example: *Captain Tucker rolls an 7 on 2d6, his Actual Value Roll is 7+2+1 = 10, yielding an Actual Value of 130%. 5600 Cr/ton * 130% = 7280 Cr/ton. After taking out the 2.5% for the Broker, the final price is 7098 Cr/ton.*

The captain bought at 4433 Cr/ton, sold at 7098 Cr/ton, for a final profit of 2665 Cr/ton. If he sold all 35 tons he made 93,275 Cr, which should help pay salaries and some of the ship's loan payment.

NOTES

This method is somewhat complicated, but then so is interstellar economics. A more streamlined method can be found in *Star Hero,* page 130.

Planetary Trade Classifications

The cost of goods (buying and selling) is based on the type of world, and Traveller classifies worlds for trade based on the Traveller Planetary Trade Classifications.

Agricultural World (AG)

Any world with an atmosphere of 4-9, hydrographic percentage 4-8, and population 5-7.

Non-agricultural World (NA)

Any world with an atmosphere of 3 or less, hydrographic percentage of 3 or less, and population of 6 or greater.

Industrial World (IN)

Any world with an atmosphere of type 0, 1, 2, 4, 7, or 9, and a population of 9 or more.

Non-industrial World (NI)

Any world with a population of 6 or less.

Rich World (RI)

Any world with a government type 4-9, an atmosphere of 6 or 8, and a population of 6-8.

Poor World (PO)

Any world with an atmosphere of 2-5, and a hydrographic percentage of 3 or less.

OTHER WORLD CLASSIFICATIONS

The following additional world classifications are standard classifications, and may have an impact on goods available or potential resale opportunities. Specific effects are left to the discretion of the GM.

Water World (WA)

Any world with a hydrographic percentage of A.

Desert World (DE)

Any world with a hydrographic percentage of 0 and an atmosphere of 2 or greater.

Vacuum World (VA)

Any world with an atmosphere of 0.

Asteroid Belt (AB)

Any size 0.

Ice Capped World (IC)

Any world with an atmosphere of 0 or 1 and a hydrographic percentage or 1 or more.

Religion and Philosophy

Religion is rarely mentioned in Traveller, for the simple reason that it's a controversial topic. It was also not popular with the seventies counter-culture of the original designers.

Religion is a powerful force, one that provides a sense of community and shapes the hearts of a culture. It's the belief in one or more deities and the faith involved in that belief. Religions can be a powerful source of support and compassion, as shown by Mother Teresa. But religion can also be used as a powerful force for evil, as evidenced by many of the cults that have appeared.

Philosophy, on the other hand, tends to stress an ideal rather than worship of one or more divine beings. In Traveller, the Irklan belief system is an example of a philosophy rather than a religion, as it stresses behavior without adhering to any particular deity.

Imperium Religions

Surviving Terran Religions

One of the questions the GM needs to decide is the fate of the major Solomani (Terran) religions in the 57th century. The fact that Galanglic (English) is the official language of the Imperium speaks highly of the survival of many aspects of English culture, so it could well be that Christianity (as well as the other Abrahamic religions) survived as official to the Imperium. If they survived, how have they evolved after 57 centuries? One possible result is something similar to the Galactic Church of The Creator (*Terran Empire,* page 98).

With the colonization efforts of various human cultures, it's also likely to find at least pockets of Buddhists, Shintoists, and other religions.

Church of The Stellar Divinity

The Church of the Stellar Divinity, a popular religion in the Third Imperium, believes that all stars are gods, conscious beings of transcendental power. Those who worship their Sun, follow the church teachings, and live a good life will become part of their Sun at death, joining with their deity.

Irklan Philosophy

Specific to the Irklan, a sect on Menorb, this philosophy focuses on survival, and only those who survive all challenges and therefore live to a ripe old age will benefit in the afterlife.

Other Religions

The other worlds in the Imperium have their own individual religions, some of the details of which may be in the Traveller guides for those cultures.

Aslan Religion

Official Information: No Details Available.

Probable Information: There are two facets of Aslan culture which most likely influence their religion: an Oriental-style code of honor, and a separation of skills by male and female. It is likely to be a pantheistic religion, similar to Oriental styles in which there are several deities governing various aspects of the culture. For example:

Murna: Goddess of the hunt and success
Norawl: God of earth and territory
Growas: Goddess of family and order
Dranlek: God of honorable battle

Droyne Religion

Official Information: No Details Available.

Probable Information: With the Droyne's caste system, and their propensity for psionics, theirs is likely a deity representative of each of the castes. Each deity would represent the best of that caste, and be psionic as well.

Hiver Religion

Official Information: No Details Available.

Probable Information: Hiver religion is likely to be Monotheistic, with a deity that is a great creator and orchestrator. It would take pride in the deeds of its children, especially those that are clever.

K'kree Religion

Official Information: No Details Available.

Probable Information: The K'kree source book hints that the K'kree religion has many gods, and is probably similar to one of the Japanese religions having many spirits and a sort of celestial hierarchy. As with the K'kree, none of the spirits would be singular or alone, all would be in groups.

Vargr Religion

Church of The Chosen One

This is a religious sect which believes that the Ancients made the Vargr to populate their part of the galaxy. The church does not worship the Ancients, but just asks the devotees to be faithful and to trust the church.

The Church of the Chosen Ones has enjoyed periodic revivals and declines, but is not a particularly viable movement around 5623 AD, a period when its findings are usually discredited.

Zhodani Religion

Official Information: No Details Available.

Probable Information: The Zhodani are likely to have a religion that melds elements of a Greco-Roman style philosophy with added elements influenced by their Droyne neighbors.

Criminal Underworld

Traveller is by no means a utopian society, and crime has spread as far as humaniti has. Some types of crime have changed slightly, but there are still laws and there are those who try to break (or bend) them.

Crimes

The Imperium handles all law enforcement in Imperial space, but leaves planetary law enforcement to the planetary governments. The exception to this rule is starports. The Imperium considers each planetary starport to be part of the Imperium, and so crimes taking place in starports come under Imperial jurisdiction.

In space, the Imperium is limited to handling four kinds of crime: piracy (and hijacking), smuggling, slavery, and espionage.

PIRACY

The most well-known type of crime in space is piracy. There are three kinds of pirates according to the Imperial Navy: pirates, raiders, and hijackers.

Pirates lurk along spacelane jump routes where there are plenty of valuable cargoes and few naval vessels to interfere. Their targets tend to be merchant cargo vessels, although a few choice military couriers have also been targets.

Pirate vessels have superior armaments to most merchant vessels, but most pirates prefer to have the target surrender rather than fight, as a starship battle could damage the cargo. Most pirates will take the cargo and leave the ship's crew and passengers alive and well, so that future merchants will give up easily knowing their crew will be safe. Bloodthirsty pirates tends to be the focus for Naval armadas, and there's no money in that.

Raiders target stations and worlds rather than ships, in the Viking fashion. They make a sudden appearance, take everything they can from the station or world, and head back home to a hidden base.

Raiders tend to travel with multiple vessels so that they have the level of force needed to target stations and worlds, and the cargo space for all their stolen wealth.

Raiders may be humane, only killing if directly attacked so they can plunder the same world over and over again. Others may be bloodthirsty, destroying all in their wake so they can take everything they see.

Hijackers infiltrate a vessel by posing as passengers or crew, working from within the target ship instead of from outside. Of all the types of pirates, hijackers tend to be the most bloodthirsty, making sure there are no witnesses left alive. Hijacking victims may be killed, abandoned on a marginally inhabitable world, jettisoned into space, or sold into slavery.

SMUGGLING

As old as piracy, there's also smuggling. Smuggling includes any kind of contraband, from weapons of mass destruction to illegal drugs.

Some smugglers carry goods that are legal one place to a place where they are illegal. The practice may be one of monetary gain (smuggling narcotic drugs to a pre-industrial world), political gain (smuggling weapons to revolutionaries), or philosophical (smuggling religious books into an area where religion is banned).

Other smugglers carry goods that are illegal everywhere: slaves, stolen secrets, and the like.

SLAVERY

It is unfortunate that slavery continues in areas where unscrupulous organizations enslave entire races for a cheap work force (for example a megacorporation and the Ael Yael, q.v.). The Imperium steps in to stop this when it can.

ESPIONAGE

Espionage as a crime is the obtaining of sensitive information and providing or selling that information to an enemy power. Such information may include the names of state spies, espionage operations or safe houses, restricted or military technology, and the like.

The penalty for criminal espionage is the same as that for treason.

Criminal Groups

In the Traveller books, no specific criminal groups are mentioned (that I'm aware of). Organized crime inevitably exists on various human planets, and the GM is free to develop various groups. See *Dark Champions* for information and ideas on various criminal organizations that can be transplanted.

The Vargr are a disorganized group, conducting pirate raids on shipping along the Imperial-Vargr border. There is no unified organization behind the raids, its just what Vargr do best.

Megacorporations have the money and power to get away with a lot left unchecked, and it's hard to always check them. Entire planetary political systems have been influenced by money and mercenaries provided by megacorporations - essentially buying politicians and rulers favorable to the Megacorporation.

Though not official, below are some sample criminal groups you may include in your campaigns.

THE DUSTERS

Based in the Regency Sector, the Dusters rose to prominence with the growth of the use of "Dust" in a number of worlds in the Regency Sector. They control entire "uninhabited" worlds where the materials to manufacture Dust are found in abundance. There are approximately 15 families in the Dusters, one in each of the prominent subsectors.

Families are the basic structure, with members based on blood relation, marriage, adoption into the family, and other bonds of loyalty. Members of the family handle all the manufacturing and distribution of Dust, making it a profitable enterprise.

Duty to family is an important part of the Dusters life, and laziness, lack of respect, or breaking an oath can be death sentences.

Each family has profits in the millions of credits each year.

THE GHOSTERS

The Ghosters are a loose organization of thieves, specializing in the theft of art and collectibles, information, and valuable rarities. Ghosters operate in cells across various worlds, with each cell leader reporting to a boss who eventually reports to the Overlord.

The Ghosters have lawyers and other officials on the take for those cases when one of them gets caught. Cells have 8-12 individuals, and a given world may have up to 10 cells depending on the size and population.

Museums and private collectors are common targets of the Ghosters, typically as the result of someone with too much money wanting an item added to their personal collection.

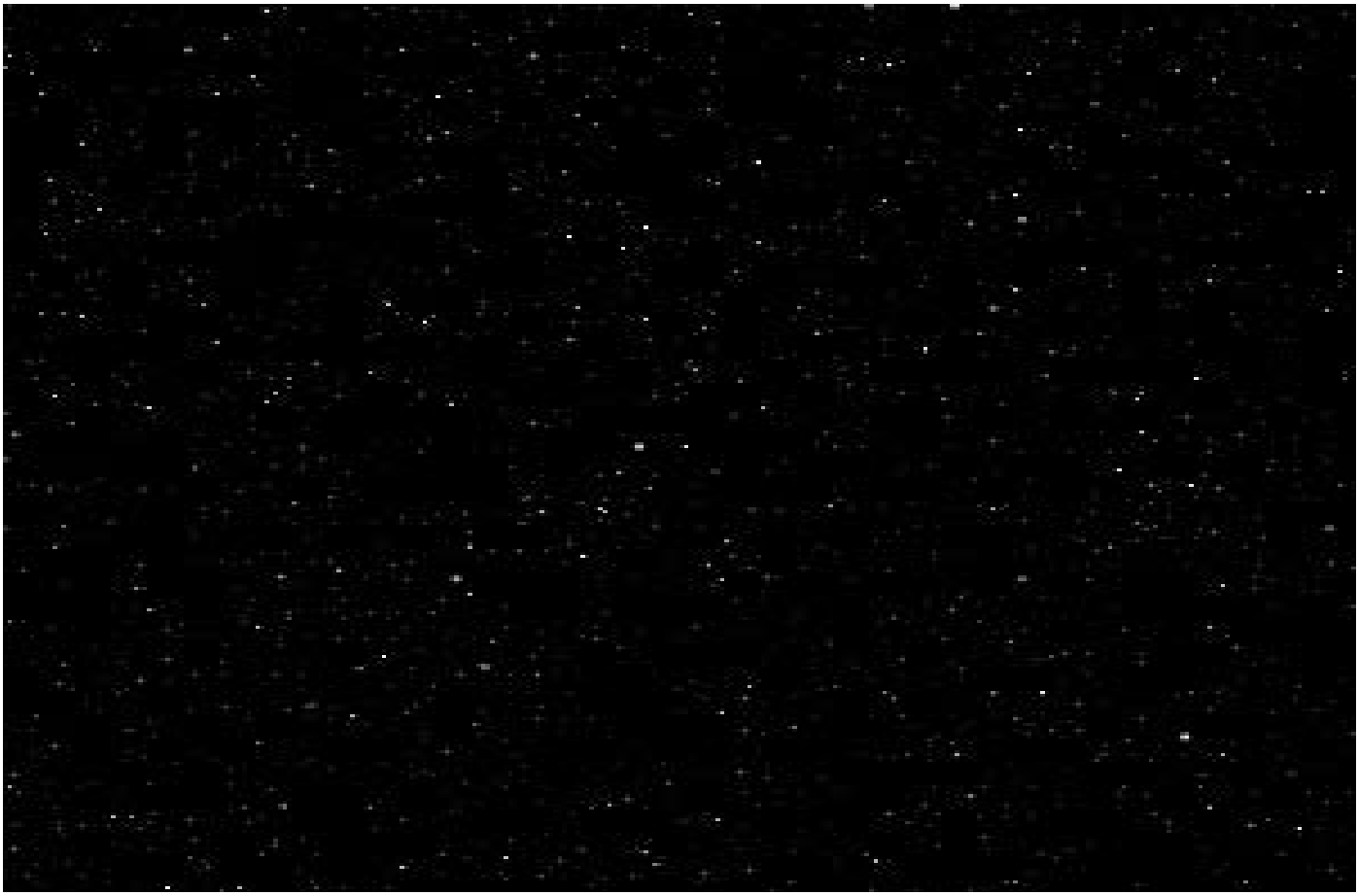
Law Enforcement

Law enforcement exists at two levels — planetary law enforcement and Imperial law enforcement.

At the planetary level, the kinds of law enforcement vary depending on the political structure (democracy, despotism, communism, and others) and the size of the population (small colony versus highly populated).

At the Imperial level, law enforcement is handled at the subsector level, typically as part of the Imperial Navy forces.

There are also independents who become involved with law enforcement for money or for duty: bounty hunters, skip tracers, and so on.



Equipment and Technology

Personal Tech

Tech and Tech Issues

Technology in the Third Imperium spans the tech levels across the many worlds.

Tech Level

Traveller uses a technology rating as known simply as "Tech Level" or TL to rate worlds and equipment.

Current Tech Level

At the time of *Classic Traveller*, the Third Imperium sustains TL15 on some worlds such as Terra, while some areas have TL12 technology or less (see *Spinward Marches*). The Imperial Tech Level continues at its existing level into the era of MegaTraveller and the rebellion, and falls in the time between MegaTraveller and The New Era as Virus destroys much technology and life.

The other Major Races (Aslan, Droyne, K'kree, Hiver, Vargr) are at the same TL as the Imperium, but with variations.

Protecting Technology

A lot of technology is readily available. Commerce makes the galaxy work, and very little is not for sale.

Technology above TL15 is not generally available, usually appearing only as military or experimental devices. Such equipment is protected as well as possible from foreign sale.

Technology Compatibility

All Imperial standard devices use compatible technology. Issues arise with technology specific to a non-human species, such as the Jgd-il-Jag.

Technology Compatibility Table

Species	Human	Aslan	Droyne	Hiver	K'kree	Vargr
Human	F	P	P	P	P	P
Aslan	P	F	P	P	P	P
Droyne	P	P	F	P	P	P
Hiver	P	P	P	F	P	P
K'kree	P	P	P	P	F	P
Vargr	P	P	P	P	P	F

F = Fully Compatible; P = Partially Compatible; B = Barely Compatible

Traveller Versus Star Hero

There are some definite differences between the technology in *Star Hero* and *Terran Empire* and the technology in *Traveller*.

WEAPONS SYSTEMS

Antimatter Missiles are advanced tech +2.

Standard nukes are uncommon, however **Detonation Laser Nuclear Warheads** see common use in space combat.

Plasma/Fusion Weapons in *Traveller* have a considerable range advantage over those in Star Hero.

Turreted weapons in *Traveller* have a higher rate of fire.

SENSORS

Traveller doesn't use Variable Power Pools for sensors, because even at high tech levels the sensor arrays are standard and not changeable.

Meson sensors and communications comes into use at TL15.

POWER PLANTS

Traveller hasn't advanced to antimatter power except for experimental uses, and even then it's advanced tech [+2]. Cold fusion is the standard power supply.

FTL TRAVEL

FTL travel in *Traveller* is far slower than *Terran Empire*. *Traveller* uses Jump Drives only, with a maximum of 18 LY per week, compared with 700+ LY per week in *Terran Empire*.

FTL COMMUNICATION

FTL communication doesn't exist at all in *Traveller*, even for theoretical applications.

SCREENS AND FORCE FIELDS

Screens and force fields do not exist in *Traveller* on a personal level until very advanced tech levels. Ships and vehicles are limited to nuclear dampers and meson screens, and late TL15 Black Globe Generators.

ARTIFICIAL INTELLIGENCE (AI)

Classic *Traveller* has very limited AI until TL15, then true AI becomes feasible. AI in the form of Virus is a part of the *New Era*.

TRACTOR BEAMS AND REPULSORS

Tractor Beams are very limited in usage until TL15. At TL13, they become available as defensive bay weapons called Repulsors.

TELEPORTATION/MATTER TRANSPORT

Teleportation as a technology is an advanced tech in *Traveller*, experimentation starting at late TL15. TL15 Transporters have very short range, are extremely bulky, and have high power requirements.

Tech Level Definitions

Here are the various Tech Levels and how they affect various phases of life and military.

Personal Military Technology

TL	Technology
5	Circa 1930
6	Circa 1950
7	Circa 1970
8	Circa 1990
9	Circa 2010, More lethal laser weapons, ablative armor
10	Advanced Combat Rifle with RAM GL becomes standard, along with reflective armor.
11	Combat Armor first appears

12	The Gauss Rifle is first introduced as a sniper weapon, along with the first man portable plasma gun[PGMP-12]
13	Most armies at this tech level equip their troops with gauss rifles and combat armor. Early forms of Battledress also appear at this tech level, along with plasma weapons designed for BD use only
14	By this point most front line troops are using Battledress and the PGMP-13, while the man portable fusion gun is now introduced, plasma and fusion weapons also incorporate gravitic recoil compensators.
15	More powerful fusion and plasma weapons, along with low recoil plasma weapons that don't require compensators become available.
16	Early Neural Weapons and Neural Shields appear
17	Pistol sized fusion weapons
18	Early Disintegrators, personal nuclear dampers
19	Disintegrator pistols
20	Disintegrator wands
21	Personal White Globe Force fields, Relativity Rifles

Heavy Military Technology

TL	Heavy Military Technology
5	Machine Guns, Trench Mortars, Breech Loading Field Artillery, Early Tanks.
6	Armored vehicles increase in importance, leading to the development of a variety of anti tank weapons. Tactical and strategic rockets and missiles appear along with primitive self-propelled projectiles. This TL also sees the introduction of Strategic Nuclear Weapons.
7	Tanks now incorporate weapon stabilization allowing them to fire while moving. Composite laminate armor also appears. A wide range of guided missiles are introduced along with the first appearance of beam lasers.
8	The first barely practical particle accelerators appear, they are non-mobile and quite large, computerized systems become standard in all military vehicles.
9	The Mass Driver is introduced as an alternate artillery weapon. An improved and lighter weight version of composite armor appears. The first Grav Vehicles and tank-mounted lasers appear late in the period.
10	Tracked vehicles are completely supplanted by grav vehicles and light wheeled vehicles with crystaliron armor. The plasma gun appears as an artillery and space vehicle weapon, and late in the period is mounted on ultraheavy grav tanks, Gravity repulsors appear for use by space vehicles operating outside of a gravity well.
11	Large gauss guns appear as infantry support weapons. Almost all grav vehicles are grav propelled and possess a pronounced free-flight capability, effectively merging with military aircraft. Meson guns are introduced as planetary defense and heavy starship weapons. Robotic drone missiles appear as an alternative to tube artillery.
12	Conventional artillery is almost completely supplanted by drone missiles. Fusion guns appear as grav tank and space vehicle weapons. Nuclear dampers and superdense armor appear late in the period.
13	X-Ray band lasers are introduced, along with gravitic recoil compensators for vehicle-mounted plasma and fusion guns allowing these weapons to be mounted even on very light vehicles, Heavy grav vehicles are virtually indistinguishable from orbital craft.
14	Bonded superdense armor appears along with advanced nuclear dampers capable of providing area defense.
15	The Battlefield Meson gun becomes the primary indirect fire weapon. Early black globes enable space vehicles to gain complete protection against all forms of incoming enemy fire.
16	Short range tractor beams appear along with antimatter missiles.
19	Proton Screens and Plastic Metal Armor appear.

Electronics

In general, electronic devices are Cr 100 and 0.2 kilograms per real point; foci may be inobvious if small (note that electronics built into armor are slightly more expensive). Round point costs to 0.1 for devices under 5 active points. Devices built at TL12+ are smaller but more expensive than devices built at lesser TLs. Subtract 10 from the TL, and divide the mass by that number; multiply the credit cost by the same number. For purposes of *Traveller*, radio hearing is 1 point, hear and transmit is 2 points, high range is 5 points, and normal device range is 1 kilometer. Standard devices (TL 10 stats) include:

- **Radio, Handset:** Cr 100, 0.2 kilograms. Also appropriate for a cell phone.
- **Radio, Headset:** Cr 150, 0.3 kilograms.
- **Radio, Multiband:** Cr 250, 0.5 kilograms.
- **Long Range Radio**: x2 weight/cost. Telescopic 1 level.
- **Lasercomm:** Cr 400, 0.8 kilograms. Mindlink, Anyone, Line of Sight Only, Both Ends must have link, OAF.
- **Goggles, Night Vision or Thermal:** Cr 300, 0.6 kilograms.
- **Goggles, Radar or Sonar:** Cr 1,000, 2 kilograms.
- **Binoculars (x8)**: Cr 400, 0.8 kilograms; Cr 600, 1.2 kilograms as goggles.
- **Radscanner:** Cr 750, 1.5 kilograms. Detect ranged discriminatory radiation.
- **Camera:** Cr 300, 0.6 kilograms. Limited eidetic memory.
- **Tools:** toolkits for most technical skills are 1 kilogram and Cr 1,000; weight does not drop at higher tech levels.

Class of Item	Base Price
Communications	10 credits x Active points
Computers	20 credits x Active points
Defenses	15 credits x Active points
Electronics	20 credits x Active points
Medical	20 credits x Active points
Robots	200 credits x total Character points
Sensors	20 credits x Active points
Tools, general	10 credits x Active points
Vehicles	1,000 (or more) credits x total Character points
Weapons	30 credits x Active points
*** Ammo	1 credit x Active points
Modifiers	**Multiplier**
Cutting Edge Technology	x10 base price
Demand for item exceeds supply	x2 base price, or more
Illegal items	x2 base price, or more
Luxury or high-quality	x4 base price
Military or military-grade	x5 base price, or more
Rare or handmade items	x2 base price
Supply of item exceeds demand	x½ base price, or less
Tech Level difference	x10 per level
Vehicle/base technology other than weapons and defenses	x2 base price, or more

See individual weapon entries for how many rounds per purchase.

Computers

Computers are one of the basic elements of space fiction, no less so in Traveller. This section discusses the concepts of computer-controlled devices, computers, and computer systems, as well as memory, storage, interfaces, and peripherals.

COMPUTER-CONTROLLED DEVICES

Computer-controlled devices contain a computer chip, also known as CPU (central processing unit) or microprocessor. The microprocessor enables electronic devices such as automobile regulators, cell phones, and children's toys to access and run sophisticated programs and actions not normally possible with mechanical-only devices. Programs used by computer-controlled devices are typically hard-coded into module chips or cards. Module chips are typically built into a device, and can only be removed or replaced by a technician. Module cards, like floppy disks and flash drives, can be inserted and removed at need; this allows for devices with interchangeable program cards for different learning applications, such as children's tutorial devices (math card, alphabet card, phonics card, and so forth.)

The INT and DEX of computer-controlled devices is typically (TL + 3) or less for commercial or civilian devices, (TL + 5) or less for business and industrial devices, and (TL + 10) or less for military-grade devices. The SPD for computer-controlled devices is *typically* TL * 0.3, rounded down. For example, a TL 9 device would typically have a SPD of 2.7 rounded down to 2. Business and military-grade devices may add an additional point of SPD as appropriate.

The DEX of computer-controlled devices varies greatly, depending on the need of the system to interact with people and other devices. A children's toy will typically have a low DEX (6-8), a typical commercial device with normal input and interaction will have a 10 DEX, and a device which requires high-speed interaction, like a computer-driven car, requires a DEX of 13 or higher.

COMPUTERS

Computers, as those of us in the twenty-first century think of them, are a tool containing a microprocessor, memory, and programs that assist with various tasks or provide entertainment. Computers may be stand-alone, or connected via a network, but are still independent devices.

The INT and DEX of computers varies, based on the TL of the system and application respectively. Computers will commonly have an INT approximately equal to (TL - 2) * 2. A TL 12 computer would then have an INT of 20, or slightly less. Industrial and military-grade computers may have an INT as high as (TL -2) *3, which would be INT 30 for a TL 12 computer. Most computers only require a DEX of 10, although higher level industrial and military-grade computers may have higher speed reactions of up to 15.

COMPUTER SYSTEMS

Computer Systems, such as those that run starships, power plants, planetary defenses, and even today's military ships and office complexes, are actually two or more specially integrated computers working together as a single system. Each part of the system has a function or series of functions which it performs, and it communicates status and other information with the other parts of the system.

The INT and DEX of computer systems is the same as that for individual computers, but by their systemic nature they are able to do more than a single computer can do. A computer *system* will often have extra INT to represent the nature of it being a system rather than a single computer.

Computer Components

MEMORY

Memory, or RAM, is the amount of space the system has for processing, essentially the number of programs that can be run at any given time. The HERO System rules state that a computer can have 1 program running per 5 points of INT (or INT/5).

Memory can be increased with additional hardware, by adding additional INT only for the purposes of increasing the number of programs that can be run simultaneously. The example below is enough added capacity for 2 more programs to run simultaneously.

Additional Memory: *+10 INT (10); Only For Running More Programs Simultaneously (-1). Total cost: 5 points*

Some systems can take advantage of multiprocessor boards, increasing the responsiveness of the system by having multiple processors work on differing simultaneous tasks.

Multiprocessor Board: *+1 SPD (10). Total cost: 10 points.*

The time it takes to complete a task varies: combat programs acquiring a target lock and firing are split-second tasks, while searching a database for all known instances of a research topic may take a turn or more. Additional memory and multiprocessor boards can reduce tasks accordingly. Conversely, trying to run programs in a low-grade computer means the programs will take longer to run. For each point of difference between the TL of the program and the computer, the change is ten-fold. A TL 12 program running on a TL 11 computer takes 10 times as long; on a TL 10 computer, it takes 100 times as long.

STORAGE

Storage is the amount of physical storage space (hard drives, for example) available to the system. Normally in the HERO System this isn't a concern, just pay more points for programs and skills and assume you increase your hard drive space accordingly.

Where storage becomes a concern is downloading data from other systems, removable storage devices, and infection by *Virus*.

The table below gives the estimated storage for a personal or business computer with a single hard drive and a removable storage slot, based on the TL of the computer.

TL	Mass Storage	Removable Storage
5	1 KB	-
6	64 KB	.72 MB
7	10 MB	1 MB
8	100 MB	3.5 MB
9	1000 GB	5 GB
10	1000 TB	5 TB

11	1000 PB	1 PB
12	1000 EB	1 EB

Computer-Controlled

Computer-controlled devices have very little built-in storage, only enough temporary storage for calculations, music, or in the case of toy animals enough for personalization of the programmed personality. Many devices, like digital cameras, have slots where removable memory cards can be inserted, expanding the storage of the device and making the information stored easily transportable.

Virus: Computer-controlled devices do not have nearly enough room for Virus with their built-in memory, so if Virus finds a way to communicate with these devices, it places an *egg* within. (For more about Virus eggs, see the chapter on Virus.) Removable memory cards are another matter.

Computers and Computer Systems

Computers and Computer Systems are dependent on having large amounts of storage for use by data and programs. Computers and computer systems, including robots, of TL 9 or higher are susceptible to *Virus;* those of TL 8 or less are only susceptible to Virus eggs, due to space considerations.

INTERFACES

Interfaces are the ways that computers interact with users and other systems. Some of the common interface devices for computers include the following:

Modem Card

Modems require connection into an active phone line to connect to the network, and are therefore susceptible to downed lines, slow connection speeds, and various other problems.

Modem: *Radio Perception/Transmission (Radio Group) (10 Active Points); OAF (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, Connection Protocols; -¾), Limited Power Only Connects When Plugged Into Active Phoneline (-¼). Total cost: 3 points.*

Ethernet Card

Ethernet Card: *Radio Perception/Transmission (Radio Group) (10 Active Points); OAF (-1), Limited Power Only Connects When Plugged Into Active Network Plug (-¼). Total cost: 4 points.*

Wireless Ethernet Card

Short-Range Wireless Connection: *Radio Perception/Transmission (Radio Group), OAF (-1). Total cost: 5 points.*

Long-Range Wireless Connection: *High Range Radio Perception (Radio Group), OAF (-1). Total cost: 6 points.*

Infrared Communications

Infrared Communications Port: *Infrared Perception (Sight Group), +1 to PER Roll, Transmit (8 Active Points); OAF (-1) , Limited Power Range Limited To 20 Hexes (-¼). Total cost: 3 points.*

Secure Links

Secure links are encrypted communications links between any two systems capable of secure link communications. Secure link modules are most commonly found in military and espionage systems, but have been known to show up in criminal and mercenary systems.

Secure Link: *Mind Link , Machine class of minds, Any Willing Target (15 Active Points); OAF (-1), Only With Others Who Have Mind Link (-1), Does Not Provide Mental Awareness (-¼), Sense Affected As Radio (-¼). Total cost: 4 points.*

Compound Signal

Compound signal systems find outgoing messages in one of the local communications bands, and mix the current signal with one that was found. This 'piggyback' approach hides the signal within another, and only those looking for the hidden signal can filter the signal appropriately (requiring a compound signal receiver).

Compound Signal: *(Total: 27 Active Cost, 13 Real Cost) High Range Radio Perception (Radio Group) (12 Active Points); OAF (-1) (Real Cost: 6)* **plus** *Shape Shift (Radio Group, four (max) shapes), Reduced Endurance (0 END; +½) (15 Active Points); OAF (-1) (Real Cost: 7). Total cost: 13 points.*

LCD Screens

LCD screens are a lightweight alternative to TL 8 CRT screens.

LCD Wallpaper

Available at TL 10, LCD wallpaper comes in a roll that can be unrolled and placed on any location - wall, floor, tabletop, or special easels.

LCD Wallpaper: *Sight Group Images 1" radius, +1 to PER Rolls, Reduced Endurance (0 END; +½) (19 Active Points); OAF (-1), Set Effect Only To Display 2D Image Of Information Accessed (-1). Total cost: 6 points*

Holographic Display

Holographic Displays provide three-dimensional viewing of the information being accessed.

Holographic Display: *Sight Group Images 1" radius, +1 to PER Rolls, Reduced Endurance (0 END; +½) (19 Active Points); OAF (-1), Set Effect Only To Display 3D Image Of Information Accessed (-1). Total cost: 6 points*

Holographic Projection System

The Holographic Projection System displays holographic information on a large scale, suitable for entertainment, business and educational presentations, and other large group meetings. Images can be displayed at up to 4" radius (16 meters diameter).

Holographic Projection: *Sight and Hearing Groups Images Increased Size (4" radius; +½), +1 to PER Rolls, Reduced Endurance (0 END; +½) (36 Active Points); OAF (-1), Set Effect Only To Display 3D Image and Sound Of Information Accessed (-1). Total cost: 12 points*

Voice Recognition System

Voice Recognition Systems enable the computer to understand 1 spoken language as an input to the system, although higher end systems may allow several languages.

Voice Recognition System: *Language: Galanglic (idiomatic; literate) (5 Active Points); OAF (-1). Total cost: 2 points.*

Voice Recognition and Reply System

The VRRS enables the computer to understand a spoken language as input to the system, and to respond when applicable in the spoken language.

Voice Recognition and Reply System: *(Total: 13 Active Cost, 5 Real Cost) Language: Galanglic (idiomatic; literate) (5 Active Points); OAF (-1) (Real Cost: 2)* **plus** *Hearing Group Images 1" radius, +1 to PER Rolls (8 Active Points); OAF (-1), Set Effect (Only To Speak Computer's Reply; -1) (Real Cost: 3). Total cost: 5 points.*

Devices

HAND CALCULATOR

Common hand device for simple to complex mathematical calculations.

TL: 6+
Cost: 250 Cr
Mass: 0.10 kg

Hand Calculator: *Lightning Calculator (3 Active Points); OAF (-1), Real Technology (-¼). Total cost: 1 point.*

COMPUTER LANGUAGE TRANSLATOR

Commonly available on worlds of TL10 or above, CLTs use language clips (memory clips containing 1 language). Each CLT can hold only two clips, and each clip contains only one language.

Each user places one clip for his native language and one clip for the language to be translated in the CLT, and plugs the device into a communicator. The CLT translates the language from native to target, so that communication is possible.

There are over 700 languages available.

TL: 10+
Cost: 2000 Cr for unit, 150 Cr per language clip
Mass: 0.5 kg

Computer Language Translator: *Universal Translator 16- (25 Active Points); OAF (-1), Real Technology (-¼). Total cost: 11 points.*

PERSONAL COMPUTER 2006

Commonly available on worlds of TL 9 and greater, personal computers provide an assortment of programs for performing various types of work.

The personal computer is a desktop model, requiring connection to a power outlet to operate.

TL: 9
Cost: 350 Cr for unit, additional programs extra
Mass: 5 kg

Cost	Personal Computer 2006
3	*Computer*: Personal Computer (see below); OAF (-1)
3	*Modem*: Radio Perception/Transmission (Radio Group) (10 Active Points); OAF (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, Connection Protocols; -¾), Limited Power Only Connects When Plugged Into Active Phoneline (-¼)
5	*Short-Range Wireless Connection*: Radio Perception/Transmission (Radio Group) (10 Active Points); OAF (-1)
3	*Infrared Communications Port*: Infrared Perception (Sight Group), +1 to PER Roll, Transmit (8 Active Points); OAF (-1), Limited Power Range Limited To 20 Hexes (-¼)
14	**Total Cost**

Personal Computer

Val	Char	Cost	Roll	Notes
10	INT	0	11-	PER Roll 11-
10	DEX	0	11-	OCV 3 DCV 3
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 0

Abilities & Equipment

Cost	Power	END
18	**Antivirus Program**: Dispel Virus 4d6, Reduced Endurance (0 END; +½) (18 Active Points)	0
	Talents	
3	*Computer Clock*: Absolute Time Sense	
5	*Computer Memory*: Eidetic Memory	
3	*Computer CPU*: Lightning Calculator	
	Programs	
1	*Internet Browser*: Search and Display Internet Sites	
1	*Firewall*: Monitor Ports For Unauthorized Attacks	
1	*Scheduler*: Schedule Programs and Utilities	
1	*Entertainment*: Play Games, Music, and Movies	
1	*Adobe Creative Suite*: Create and Edit Artwork	
1	*Business Suite*: Word Processing, Presentation, and Calendar	
1	*HERO Designer*: Create HERO System characters	

Cost	Skills
3	Computer Programming 11-
2	Systems Operation (Cellular and Digital, Telephone Communications) 11-
2	KS: Computer Games 11- **Notes**: *Represents about 100 Computer CDs of Games collected over the years*
2	KS: Popular Music 11- **Notes**: *Represents about 100 Music CDs playable in the CD/DVD Drive*
2	KS: Popular Movies 11- **Notes**: *Represents about 100 DVDs playable in the CD/DVD Drive*
2	*Financial Software*: KS: Personal Finances 11-

Total Abilities & Equipment Cost: 49
Total Computer Cost: 49

Value	Disadvantages
20	*Physical Limitation*: Must Be Plugged Into Power Outlet To Function (All the Time, Greatly Impairing)

Total Disadvantage Points: 20
Total Cost: 29/5 = 6

TL12 Options

Increase INT to 15, DEX to 15, SPD to 3
Add:
Holographic Display Unit and *Voice Recognition Unit*

LAPTOP COMPUTER 2006

Commonly available on worlds of TL 9 and greater, the laptop is a smaller version of the personal computer that provides an assortment of programs typically used in a profession.

The laptop computer can be plugged into a power outlet or operated on a 4-hour battery back. At higher TLs, the battery pack has a longer life.

TL: 9
Cost: 350 Cr for unit, additional programs extra
Mass: 3 kg

Cost	Laptop Computer 2006
5	*Computer*: Laptop Computer (see below); OAF (-1)
3	*Modem*: Radio Perception/Transmission (Radio Group) (10 Active Points); OAF (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, Connection Protocols; -¾), Limited Power Only Connects When Plugged Into Active Phoneline (-¼)
5	*Short-Range Wireless Connection*: Radio Perception/ Transmission (Radio Group) (10 Active Points); OAF (-1)
3	*Infrared Communications Port*: Infrared Perception (Sight Group), +1 to PER Roll, Transmit (8 Active Points); OAF (-1), Limited Power Range Limited To 20 Hexes (-¼)
16	**Total Cost**

Laptop Computer

Val	Char	Cost	Roll	Notes
10	INT	0	11-	PER Roll 11-
10	DEX	0	11-	OCV 3 DCV 3
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 0

Abilities & Equipment

Cost	Power	END
18	*Antivirus Program*: Dispel Virus 4d6, Reduced Endurance (0 END; +½)	0
	Talents	
3	*Computer Clock*: Absolute Time Sense	
5	*Computer Memory*: Eidetic Memory	
3	*Computer CPU*: Lightning Calculator	
	Programs	
1	*Internet Browser*: Search and Display Internet Sites	
1	*Firewall*: Monitor Ports For Unauthorized Attacks	
1	*Scheduler*: Schedule Programs and Utilities	
1	*Entertainment*: Play Games, Music, and Movies	
1	*Business Intelligence Tools*: Retrieve and Analyze Data	
1	*Business Suite*: Word Processing, Presentation, and Calendar	
1	*Database Development Tools*: Create and Administer Databases	

Cost	Skills
3	Computer Programming 11-
2	Systems Operation (Cellular and Digital, Telephone Communications) 11-
2	KS: Computer Games 11- **Notes**: *Represents about 100 Computer CDs of Games collected over the years*
2	KS: Popular Music 11- **Notes**: *Represents about 100 Music CDs playable in the CD/DVD Drive*
2	KS: Popular Movies 11- **Notes**: *Represents about 100 DVDs playable in the CD/DVD Drive*
2	*Company Work Files*: KS: Business Data 11- **Notes**: *Represents assorted spreadsheets and database files concerning user's business*
3	*Java GDI and Compiler/Debugger:* Language: Java (fluent conversation; literate)
2	*Database Query Tools:* KS: Corporate Operations Data 11-
2	*Local Database:* KS: (choose topic) 11-

Total Abilities & Equipment Cost: 56
Total Computer Cost: 56

Value	Disadvantages
5	*Physical Limitation*: Must Be Plugged Into Power Outlet To Function Or Use 4-hour Battery To Function (Infrequently, Slightly Impairing)

Total Disadvantage Points: 5
Total Cost: 51/5 = 10

WIRELESS DATA SYSTEM

The Wireless Data System is a BlackBerry®-style device that offers the freedom and connectivity of an all-in-one mobile cellular phone, e-mail device, web browser and organizer.

Additional modules and memory can be added for further convenience.

TL: 9
Cost: 60 Cr
Mass: 0.15 kg

Cost	Wireless Data System
3	*Computer*: Wireless Data System (see below); OAF (-1)
5	*Communication Module*: Radio Perception/ Transmission (Radio Group) (10 Active Points); OAF (-1) **Note**: *Contains Cell Phone And Walkie-Talkie*
6	*Long-Range Wireless Connection:* High Range Radio Perception (Radio Group) (12 Active Points); OAF (-1)

3	*Infrared Communications Port*: Infrared Perception (Sight Group), +1 to PER Roll, Transmit (8 Active Points); OAF (-1), Limited Power Range Limited To 20 Hexes (-¼)
11	*Digital Camera Module*: (Total: 24 Active Cost, 11 Real Cost) Eidetic Memory (Real Cost: 5) **plus** Sight Group Images 1" radius, +/-1 to PER Rolls, Reduced Endurance (0 END; +½) (19 Active Points); OAF (-1), Set Effect (Only To Capture/Display 2D Images; -1) (Real Cost: 6)
28	**Total Cost**

Wireless Data System

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
10	DEX	0	11-	OCV 3 DCV 3
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: -2

Abilities & Equipment

Cost	Power	END
	Talents	
3	*Computer Clock*: Absolute Time Sense	
3	*GPS Tracking System*: Bump Of Direction	
5	*Computer Memory*: Eidetic Memory	
3	*Computer CPU*: Lightning Calculator	
	Programs	
1	*Internet Browser*: Search and Display Internet Sites	
1	*Firewall*: Monitor Ports For Unauthorized Attacks	
1	*Scheduler*: Schedule Programs and Utilities	
1	*Program*: Operate Wireless E-mail and Phone Systems	
1	*Program*: Play Entertainment Files	

Cost	Skills
1	Computer Programming 8-
2	Systems Operation (Cellular and Digital, Telephone Communications) 11-
2	KS: Corporate Data 11-
2	*Scheduler*: KS: Personal and Business Events 11-
	Optional Modules
3	1) *World Maps Module*: KS: World Geography (choose world) 12-
1	2) *Downloaded Entertainment*: KS: Games, Music, and Media 8-
	Notes: *Represents the limited music and video files downloaded or e-mailed to the device.*

Total Abilities & Equipment Cost: 30
Total Computer Cost: 28
Total Cost: 28/5 = 6

BATTLE COMPUTER

A man-portable battle-coordination computer system that can sort through intelligence reports, provide approximations of enemy forces, and suggest various tactics.

TL: 9
Cost: 10,000 Cr
Mass: 15 kg

Cost	Battle Computer
7	*Computer*: Battle Computer (see below); OAF (-1)
5	*Communication Module*: Radio Perception/ Transmission (Radio Group) (10 Active Points); OAF (-1)
	Note: *Contains Cell Phone And Walkie-Talkie*
6	*Radio Linkup System:* High Range Radio Perception (Radio Group) (12 Active Points); OAF (-1)
62	*Camouflaged AV Sensor Arrays*: Clairsentience (Sight And Hearing Groups), x4 Range (1,560"), +2 to PER Roll, 4 Perception Points, Targeting, Reduced Endurance (0 END; +½) (93 Active Points); IAF (-½)
80	**Total Cost**

Battle Computer

Val	Char	Cost	Roll	Notes
15	INT	5	12-	PER Roll 12-
15	DEX	15	12-	OCV 5 DCV 5
3	SPD	5		Phases: 4, 8, 12
				Total Characteristic Cost: 25

Abilities & Equipment

Cost	Power	END
	Talents	
3	*Computer*: Absolute Time Sense	
5	*Computer*: Eidetic Memory	
3	*Computer*: Lightning Calculator	
3	*Computer Compass*: Bump Of Direction	
	Skills	
7	*Analyze*: Intelligence Data 14-	
7	Computer Programming 14-	
3	Cryptography 12-	
5	*Combat Tactics Database*: KS 14-	
3	Navigation (Land, Marine) 12-	
4	Systems Operation (Communications Systems, Sensors) 12-	
3	Tactics 12-	

Total Abilities & Equipment Cost: 71
Total Computer Cost: 71
Total Cost: 71/5 = 14

COMPUTER, HAND

Called the "Traveller's Assistant", the Hand Computer provides the services of a super computer in a small handheld system.

TL: 11
Cost: 1000 Cr
Mass: 0.50 kg

Cost	Hand
25	*Computer*: Hand Computer (see below); OAF (-1)
5	*Communication Module*: Radio Perception/ Transmission (Radio Group) (10 Active Points); OAF (-1)
	Note: *Contains Short-Range Communicator*
6	*Long-Range Connection:* High Range Radio Perception (Radio Group) (12 Active Points); OAF (-1)

14	*Digital Movie Camera Module:* (Total: 32 Active Cost, 14 Real Cost) Eidetic Memory (Real Cost: 5) plus Sight and Hearing Groups Images 1" radius, +/-1 to PER Rolls, Reduced Endurance (0 END; +½) (27 Active Points); OAF (-1), Set Effect (Only To Capture/Display 2D Still or Moving Images and Sounds; -1) (Real Cost: 9)
55	**Total Cost**

Hand Computer

Val	Char	Cost	Roll	Notes
13	INT	3	12-	PER Roll 12-
12	DEX	6	11-	OCV 4 DCV 4
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 9

Talents

3	*Laser Rangefinder*: Absolute Range Sense
3	*Clock*: Absolute Time Sense
3	*GPS Compass*: Bump Of Direction
5	*Memory*: Eidetic Memory
3	*Calculator*: Lightning Calculator
6	*Data Scanner*: Speed Reading (x100)

Programs

1	Self-Diagnostic: Diagnose Computer Malfunctions
1	Self-Diagnostic: Diagnose Communication Malfunctions
1	Operate Communications
1	Scan and Enter Data
1	Schedule Appointments/Use of Resources
1	Search Reference Material for Information on a Topic
1	Send Emergency Call if Operator Incapacitated or Killed
1	Send Emergency Call if Specific Conditions Are Not Met
1	Search Planetary Data Nets For Information

Skills

3	Computer Programming 12-
2	Systems Operation (Communications Systems) 12-
3	Security Systems 12-
5	AK: Third Imperium 14-
5	AK: Sector Navigation and Planetary Data 14-
5	KS: Sector Library Data 14-
5	KS: Sector Races 14-

Usage Packages: Pick A Maximum Of 2 of the Software Packages Below

Business Software Package

7	1) Bureaucratics 11-
7	2) Trading 11-
3	3) KS: Imperial Customs Regulations 12-
2	4) KS: Cargo Handling 11-
2	5) KS: Cargo Brokering 11-
3	6) KS: Sector Trade and Financial Data 12-
3	7) KS: Current Financial News 12-
5	8) PS: Bookkeeping 14-

Field Scientist Software Package

3	1) Cryptography 12-
2	2) Navigation (Land) 12-
5	3) SS: Biology 14-
5	4) SS: Chemistry 14-
5	5) SS: Geology 14-
5	6) SS: Mathematics 14-
5	7) SS: Physics 14-
2	8) PS: Research Analysis 11-

Travel Software Package

6	1) AK: Sector Planetary Travel Maps 15-
6	2) CuK: Sector Culture Database 15-
5	3) CK: Sector Capital 14-
5	4) CK: Tourist City #1 14-
5	5) CK: Tourist City #2 14-
3	6) Streetwise 9-
2	7) Survival (Urban) 12-

Nonprofessional Software Package

5	1) KS: Contacts Database 14-
3	2) KS: Literary Database 12-
3	3) KS: Movies Database 12-
3	4) KS: Music Database 12-
3	5) KS: Local News Database 12-
3	6) KS: Personal Information Database 12-

Total Abilities & Equipment Cost (2 Software Pkgs): 124
Total Computer Cost: 133

Value	Disadvantages
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
5	Physical Limitation: Must Spend 4 Hours Recharging Every 4 Days of Use (Infrequently, Slightly Impairing)

Total Disadvantage Points: 10
Total Cost: 123/5 = 25

Sensors and Communications

Sensors

There are a wide range of sensor devices available in Traveller, ranging across many different tech levels. Sensors range from the lowly magnetic compass to the military sensor grids.

Navigation Devices

MAGNETIC COMPASS

Indicates the direction of the local magnetic north if the world has magnetic poles. It may give false readings in the vicinity of large deposits of iron.

TL: 3
Cost: 10 Cr
Mass: 0.10 kg

Magnetic Compass: *Detect Magnetic North 11- (Unusual Group), Range (8 Active Points); OAF (-1), Real Technology (-¼), Concentration (½ DCV; -¼).* **Total Cost**: *3 points.*

INERTIAL LOCATOR

Indicates the direction and distance traveled from any preset starting location, accurate to within 10% of the distance traveled.

TL: 9
Cost: 1200 Cr
Mass: 1.50 kg

Inertial Locator: *Detect Direction And Distance Traveled From The Starting Location 12- (Unusual Group), Range (9 Active Points); OAF (-1), Real Technology (-¼), Concentration (½ DCV; -¼).* **Total Cost**: *6 points.*

ELECTRONIC MAP

Displays an electronic map of a world with adjustable scale. Surveyed worlds have map clips available for 150 Cr each; unsurveyed worlds require 2 orbital passes to gather the required data to build an electronic map.

TL: 9
Cost: 2500 Cr
Mass: 1.00 kg

Electronic Map: *Sight Group Images 1" radius, +1 to PER Rolls, Reduced Endurance (0 END; +½) (19 Active Points); Limited Power Only To Display Map In Current Program Card (-2), OAF (-1), No Range (-½), Real Technology (-¼).* **Total Cost**: *4 points.*

INERTIAL NAVIGATOR

A small navigational computer (10cm x 6cm) that remembers movements and turns, enabling the user to backtrack his steps.

TL: 8
Cost: 1500 Cr
Mass: 0.15 kg

Inertial Navigator: *(Total: 14 Active Cost, 6 Real Cost) Detect Direction And Distance Traveled From The Starting Location 12- (Unusual Group), Range (9 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 4)* **plus** *Eidetic Memory (5 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 2).* **Total Cost**: *6 points.*

Visibility Devices

BINOCULARS

Magnifies images at a distance.

TL: 3
Cost: 75 Cr
Mass: 1.0 kg

Binoculars: *+5 versus Range Modifier for Sight Group (8 Active Points); OAF (-1), Concentration, Must Concentrate throughout use of Constant Power (½ DCV; -½), Real Technology (-¼).* **Total Cost**: *3 points.*

BINOCULARS, ELECTRONIC

These binoculars include light-enhancement and range-finding abilities.

TL: 8
Cost: 750 Cr
Mass: 2.0 kg

Binoculars, Electronic: *(Total: 16 Active Cost, 7 Real Cost) +5 versus Range Modifier for Sight Group (8 Active Points); OAF (-1), Concentration, Must Concentrate throughout use of Constant Power (½ DCV; -½), Real Technology (-¼) (Real Cost: 3)* **plus** *Nightvision (5 Active Points); IIF (-¼), Real Technology (-¼) (Real Cost: 3)* **plus** *Absolute Range Sense (3 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 1).* **Total Cost**: *16 points.*

BINOCULARS, PRIS

The portable radiation imaging system binoculars can be set to view the spectrum from infrared to gamma rays (although not radio waves). The headset also has a laser range-finder accurate to about 20 km, a clock, a gyrocompass, and magnification up to 225x.

TL: 12
Cost: 3500 Cr
Mass: 2 kg

Binoculars, PRIS: *(Total: 45 Active Cost, 17 Real Cost) +15 versus Range Modifier for Sight Group (23 Active Points); OAF (-1), Concentration, Must Concentrate throughout use of Constant Power (½ DCV; -½), Real Technology (-¼) (Real Cost: 8)* **plus** *Infrared Perception (Sight Group) (5 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 2)* **plus** *Ultraviolet Perception (Sight Group) (5 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 2)* **plus** *Absolute Range Sense (3 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 1)* **plus** *Absolute Time Sense (3 Active Points); OAF (-1), Real*

Technology (-¼) (Real Cost: 1) **plus** *Detect True North 14- (Unusual Group) (6 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 3).* **Total Cost***: 17 points.*

BINOCULARS, IMAGE CONVERTER

Image Converter Binoculars are sensitive to both infrared and ultraviolet light, and includes an automatic polarizer to prevent blindness from bright light sources and an automatic rangefinder. They can also interface with computers to transmit what the visor is seeing as well as take digital photographs of what the visor is seeing.

TL: 10
Cost: 12,000 Cr
Mass: 1.25 kg

Image Converter Binoculars*: (Total: 26 Active Cost, 11 Real Cost) IR Perception (Sight Group) (5 Active Points); OAF Fragile (-1 ¼) (Real* **Cost:** *2)* **plus** *UV Perception (Sight Group) (5 Active Points); OAF Fragile (-1 ¼) (Real* **Cost:** *2)* **plus** *+4 versus Range Modifier for Sight Group (6 Active Points); OAF Fragile (-1 ¼) (Real* **Cost:** *3)* **plus** *Sight Group Flash Defense (5 points) (5 Active Points); OAF Fragile (-1 ¼) (Real* **Cost:** *2)* **plus** *Transmit with Sight Group (5 Active Points); OAF Fragile (-1 ¼) (Real* **Cost:** *2).* **Total Cost***: 26 points.*

IR GOGGLES

IR Goggles enable the user to see heat and differentiate between varying levels of heat.

TL: 5
Cost: 500 Cr
Mass: 0.50 kg

IR Goggles*: Infrared Perception (Sight) (Sight Group) (5 Active Points); OAF (-1).* **Total Cost***: 2 points.*

LIGHT INTENSIFIER GOGGLES

Light intensifiers work in all but total darkness, viewing in the ultraviolet spectrum.

TL: 6
Cost: 500 Cr
Mass: 0.50 kg

Light Intensifier Goggles*: Nightvision (5 Active Points); OAF (-1).* **Total Cost***: 2 points.*

GOGGLES, COMBINATION IRLI

IRLI goggles give the user the ability to see in both the IR and UV spectrums.

TL: 9
Cost: 1250 Cr
Mass: 0.2 kg

IRLI Goggles*: (Total: 10 Active Cost, 4 Real Cost) Infrared Perception (Sight Group) (5 Active Points); OAF (-1) (Real Cost: 2)* **plus** *Nightvision (5 Active Points); OAF (-1) (Real Cost: 2).* **Total Cost***: 4 points.*

GAS OR OIL LAMP

Gas lamps and oil lamps use burning fossil fuel to produce light. The process requires oxygen, and so they are useless in airless environments.

TL: 2
Cost: 10 Cr
Mass: 0.50 kg

Gas or Oil Lamp*: Sight Group Images Increased Size (3" radius; +½), 1 Continuing Fuel Charge lasting 6 Hours (+¼) (17 Active Points); Only To Create Light (-1), OAF (-1), Real Technology (-¼).* **Total Cost***: 5 points.*

TORCH

Torches burn to produce light, and like oil lamps, are useless in airless environments.

TL: 1
Cost: 1 Cr
Mass: 0.25 kg

Torch*: Sight Group Images Increased Size (2" radius; +¼) (12 Active Points); Only To Create Light (-1), OAF (-1), 1 Continuing Fuel Charge lasting 20 Minutes (-¼), Real Technology (-¼).* **Total Cost***: 3 points.*

COLD LIGHT LANTERN

Cold light lanterns use a chemical process to produce light without heat.

TL: 6
Cost: 20 Cr
Mass: 0.25 kg

Cold Light Lantern*: Sight Group Images Increased Size (4" radius; +½), 3 Continuing Fuel Charges lasting 1 Day each (+1) (25 Active Points); Only To Create Light (-1), OAF (-1), Real Technology (-¼).* **Total Cost***: 8 points.*

ELECTRIC TORCH

Electric torches use electrical energy to produce light. A typical battery lasts for 6 hours of constant use.

TL: 6
Cost: 10 Cr
Mass: 0.50 kg

Electric Torch*: Sight Group Images Increased Size (4" radius; +½), 1 Continuing Fuel Charge lasting 6 Hours (+¼) (17 Active Points); Only To Create Light (-1), OAF (-1), Real Technology (-¼).* **Total Cost***: 5 points.*

Detection Devices

GEIGER COUNTER

Geiger counters detect ionizing radiation consisting of alpha and beta particles, but are not sensitive enough to detect gamma particles reliably. Geiger counters display either a current measurement (needle, lamp) or an audible click, with one click for each single particle detected.

TL: 5
Cost: 250 Cr
Mass: 1.00 kg

Geiger Counter*: Detect Radiation 12- (Unusual Group), Range, Sense, Telescopic (+6): +6 (14 Active Points); OAF (-1), Real Technology (-¼), Concentration (½ DCV; -¼).* **Total Cost:** *5 points.*

METAL DETECTOR

Metal detectors sense metal by the effect the presence of metal has on the magnetic field generated by the device.

TL: 5
Cost: 300 Cr
Mass: 1.0 kg

Metal Detector: *Detect Metal 11- (Unusual Group), Range (8 Active Points); OAF (-1), Real Technology (-¼), Concentration (½ DCV; -¼).* **Total Cost***: 3 points.*

HANDHELD DENSITOMETER-14

Using an object or area's natural gravitational attraction, the remote densitometer can easily classify an object's density.

TL: 14
Cost: 15000 Cr
Mass: 1.0 kg

Handheld Densitometer-14*: Detect A Single Thing 14- (Unusual Group), 1 Continuing Charge lasting 1 Day (+0) (6 Active Points); OIF Bulky Fragile (-1 ¼), Custom Modifier (Cannot Be Used In An Artificial Gravity Field; -½), Custom Modifier (Scan Penetration Of 1 Meter; -½), Concentration (½ DCV; -¼), Custom Modifier (Produces An Audible Hum When In Operation; -¼).* **Total Cost***: 2 points.*

PORTABLE BIO-SNIFFER-13

The biosniffer scans for evidence of biological, metabolic activity in the area with a sophisticated sampler/analyzer mechanism. All collected samples must be within close range (1 hex) of the sniffer.

TL: 13
Cost: 500000 Cr
Mass: 1.0 kg

Portable Bio-Sniffer-13*: Detect A Large Class Of Things 14- (Unusual Group), Discriminatory, Analyze, 1 Continuing Charge lasting 1 Day (+0) (23 Active Points); OIF Bulky Fragile (-1 ¼), Concentration (½ DCV; -¼).* **Total Cost***: 10 points.*

PORTABLE NEURAL ACTIVITY SENSOR-13

The portable neural activity sensor (NAS) detects the electrical activity of a life form's central nervous system and classifies it according to the power and complexity of the readings.

TL: 13
Cost: 15000 Cr
Mass: 1.0 kg

Portable Neural Activity Sensor-13*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Analyze, Range, Sense, 1 Continuing Charge lasting 1 Day (+0) (23 Active Points); OIF Bulky Fragile (-1 ¼), Gestures (-¼), Concentration (½ DCV; -¼).* **Total Cost***: 8 points.*

ATMOSPHERE TESTER

The atmospheric tester samples the atmosphere (or lack thereof), analyzes the components, and displays the percentage of elements present. It also has indicator lights to indicate whether the atmosphere is breathable or not.

TL: 7
Cost: 150 Cr
Mass: 1.0 kg

Atmosphere Tester*: Detect Atmosphere 16- (Unusual Group), Discriminatory, Analyze (18 Active Points); OAF (-1), Real Technology (-¼).* **Total Cost***: 8 points.*

BUGS

Bugs are near-microscopic monitoring devices which enable individuals at a remote location to hear conversations or record them for later review. A typical rod contains 50 bugs. By touching the rod to a wall joint, light switch, or other feature of a room, a bug can be planted to listen in on the area. Implanted bugs are not recoverable, but can be destroyed.

TL: 15
Cost: 500 Cr
Mass: .01 kg

Microscopic Bug*: Clairsentience (Hearing Group), x16 Range (1,600") (40 Active Points); IIF (-¼), Limited Power Real Technology (-¼).* **Total Cost***: 27 points.*

BUG DETECTORS

Bug detectors are calibrated to detect bugs as transmission devices, and to note their location. A bug detector can be set on one of three settings: Detect, Smother, or Destroy. Detect detects bugs; Smother prevents the bug from transmitting information, but does not destroy it; Destroy actually destroys the detected bug.

TL: 15
Cost: 500 Cr
Mass: 1.0 kg

64	**Bug Detector**: Multipower, 112-point reserve, (112 Active Points); all slots OIF (-½), Real Technology (-¼)
1u	*Detect Bugs*: Detect A Single Thing 16- (Radio Group), Discriminatory (13 Active Points); Lockout (-½), OIF (-½), Real Technology (-¼)
5u	*Smother Bug*: Suppress 15d6 (standard effect: 45 points), Reduced Endurance (0 END; +½) (112 Active Points); Lockout (-½), OIF (-½), Real Technology (-¼)
3u	*Destroy Bug*: Dispel Bugs 15d6 (standard effect: 45 points), Reduced Endurance (0 END; +½) (67 Active Points); Lockout (-½), OIF (-½), Real Technology (-¼)
73	**Total Points**

RADAR, FIELD SURVEILLANCE

These portable units are designed to provide radar when patrolling is impractical. The units must be attached to a vehicle or base power supply to function.

TL: 9
Cost: 5000 Cr
Mass: 20 kg

Field Surveillance Radar*: Radar (Radio Group), +3 to PER Roll, Increased Arc Of Perception (360 Degrees) (23 Active Points); OAF (-1), Real Technology (-¼).* **Total Cost***: 10 points.*

Sensor Jammers

BLIP ENHANCER

Blip Enhancer: *Radio Group and Detect Images 1" radius, +/-4 to PER Rolls (20 Active Points); OIF Immobile (-1 ½), Custom Modifier (only to increase the size and or shape of the sensor reading; -1), No Range (-½) . Total Cost: 5 points*

CHAFF DISPENSER

Chaff Dispenser: *Radio Group Images Increased Size (2" radius; +¼), +/-2 to PER Rolls, 12 Continuing Charges lasting 1 Turn each (+¼) (16 Active Points); OIF Bulky (-1), Dropped (-½). Total Cost: 6 points*

CHAFF ROCKETS

Chaff Rockets: *Radio Group Images Increased Size (4" radius; +½), -3 to PER Rolls, 8 Continuing Charges lasting 1 Turn each (+0) (21 Active Points); OIF Bulky (-1), Real Weapon (-¼). Total Cost: 9 points.*

COUNTER-BATTERY RADAR

Counter-Battery Radar: *Radar (Radio Group), +8 to PER Roll, Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Tracking, MegaScale (1" = 10 km; +½), Can Be Scaled Down (+¼) (75 Active Points); Custom Modifier (only used to track ballistic weapons and their flight paths; -1), Costs Endurance (-½), Requires A Skill Roll (-½), Crew-Served (2 people; -¼). Total Cost: 23 points.*

EM MASKING AND STEALTH CONSTRUCTION

EM Masking and Stealth Construction: *Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Immobile (-1 ½), No Range (-½). Total Cost: 16 points*

FLARE PODS

Flare Pod: *Sight Group and HRRP Images 1" radius, +3 to PER Rolls (22 Active Points); 1 Continuing Charge lasting 1 Turn (-1 ¼), Dropped (-½). Total Cost: 8 points*

LASER SENSORS

Laser Sensors: *Detect A Single Thing 14- (Unusual Group), Sense (8 Active Points); OIF Bulky (-1), Custom Modifier (only lets operator know he's been hit with a laser sensor; -1). Total Cost: 3 points*

PIXIE/NIXIE DECOY

Pixie/Nixie Decoy: *Hearing Group Images Increased Size (2" radius; +¼), +/-4 to PER Rolls, 8 Continuing Charges lasting 1 Turn each (+0), MegaScale (1" = 10 km; +½) (30 Active Points); Custom Modifier (affects sonar and hydrophones only; -1), Set Effect (mimics signature of launching vehicle; -1), OIF Bulky (-1), Dropped (-½) [Notes: sub or ship launched sonar decoy]. Total Cost: 7 points*

RADAR WARNING RECEIVER

Radar Warning Receiver: *Detect A Single Thing 14- (Unusual Group), Sense (8 Active Points); Custom Modifier (only lets operator know he's been hit with a radar; -1), OIF Bulky (-1). Total Cost: 3 points*

RADIO DIRECTION FINDER

Radio Direction Finder: *HRRP (Radio Group), +5 to PER Roll, Concealed (-1 with HRRP PER Rolls), Discriminatory, Targeting, Tracking, MegaScale (1" = 10 km; +½), Can Be Scaled Down (+¼) (66 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), Costs Endurance (-½), Requires A Skill Roll (-½), Crew-Served (2 people; -¼). Total Cost: 19 points*

SENSOR DECOYS

Sensor Decoys: *Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Immobile (-1 ½). Total Cost: 22 points*

SHORT RANGE RADAR JAMMER

Short Range Radar Jammer: *Suppress 4 ½d6, Area Of Effect Nonselective (2" Radius; +¾) (40 Active Points); Visible (-¼). Total Cost: 32 points*

WILD WEASEL DRONE

Wild Weasel Drone: *Dispel All Sensors and Communications 10d6, MegaScale (1" = 1,000 km; +1), Can Be Scaled Down (+¼), all [special effect] powers simultaneously (+2) (127 Active Points); OIF Bulky Fragile (-1 ¼), 4 Charges (-1), Requires A Skill Roll (-½), Crew-Served (2 people; -¼). Total Cost: 32 points*

Communications

Personal Devices

LONG RANGE COMMUNICATOR

Radio transceiver capable of a maximum range of 500 km.

TL: 9
Cost: 500 Cr
Mass: 1.50 kg

Long Range Communicator: *High Range Radio Perception (Radio Group), MegaScale (1" = 100 km; +¾),*

Can Be Scaled Down 1" = 2m (+¼) (24 Active Points); Limited Power Maximum Range of 500 km (-1), Real Technology (-¼), IIF (-¼). **Total Cost***: 10 points.*

MEDIUM RANGE COMMUNICATOR

Radio transceiver capable of a maximum range of 30 km.

TL: 9
Cost: 200 Cr
Mass: 0.50 kg

Medium Range Communicator*: High Range Radio Perception (Radio Group), MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 2m (+¼) (21 Active Points); Limited Power Maximum Range of 30 km (-1), Real Technology (-¼), IIF (-¼).* **Total Cost***: 8 points.*

SHORT RANGE COMMUNICATOR

Radio transceiver capable of a maximum range of 3 km.

TL: 9
Cost: 100 Cr
Mass: 0.30 kg

Short Range Communicator*: Radio Perception/ Transmission (Radio Group), MegaScale (1" = 1 km; +¼), Can Be Scaled Down 1" = 2m (+¼) (15 Active Points); Limited Power Maximum Range of 10 km (-1), Real Technology (-¼), IIF (-¼).* **Total Cost***: 6 points.*

PORTABLE LASERCOMM RELAY

Used for planet to orbit communications. Transmits along a tight-beam laser rather than radio, which provides a private mode of communication.

TL: 10
Cost: 2500 Cr
Mass: 1.5 kg

Portable Lasercomm Relay-10*: Mind Link , Machine class of minds, Specific Group of Minds, Number of Minds (x, 1 Continuing Charge lasting 1 Day (+0) (25 Active Points); OAF Bulky Fragile (-1 ¾), Only With Others Who Have Mind Link (-1), Custom Modifier (Range effected by atmospheric conditions; -¼), Visible (-¼).* **Total Cost***: 6 points.*

COMMUNICATOR, VIDEO

Transmits a voice and 2D video signal over a maximum distance of 500 km, and small enough to be carried in a pocket or on a belt. It can transmit and receive simultaneously.

TL: 10
Cost: 1000 Cr
Mass: 0.8 kg

Video Communicator*: High Range Radio Perception (Radio Group) (12 Active Points); OAF (-1), Limited Power Power loses about a fourth of its effectiveness (500 km Maximum Range; -¼).* **Total Cost***: 5 points.*

Medical Equipment

AUTOMED

An automed is a single-unit automated care facility that monitors vital signs, makes suggestions as to treatment options, and regularly injects prescribed medicines. It will initiate resuscitation on patients with failing vital signs.

TL: 9
Cost: 500,000 Cr
Mass: 6 metric tons
Size: 1.5 hexes long by 1 hex wide

Automed

Val	Char	Cost	Roll	Notes
13	INT	3	12-	PER Roll 12-
10	DEX	0	11-	OCV 3 DCV 3
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 3

Cost	Powers	END
21	*Vital Signs Monitor*: Detect Vital Signs 16- (Radio Group), Discriminatory, Analyze, Sense	0
	Talents	
3	Absolute Time Sense	
5	Eidetic Memory	
3	Lightning Calculator	
	Skills	
3	Paramedic 12-	
5	*Medical Programming*: KS: Medicine 14-	
1	*Program*: Monitor Vital Signs	
1	*Program*: Injects Scheduled Prescribed Medication	
1	*Program*: Initiate Emergency Treatment For Failing Vital Signs	

Total Powers & Skill Cost: 43
Total Cost: 46

SURGICAL INSTRUMENTS

This is the surgeon's "toolkit" for performing surgery.

TL: 7
Cost: 1000 Cr
Mass: 5 kg

Surgical Instruments*: +2 with SS: Surgery (4); OAF (-1). Total cost: 2 points.*

FIRST AID KIT

An individual first aid kit with bandages, antibiotics, and other first aid materials. It contains enough treatment for one use only.

TL: 7
Cost: 100 Cr
Mass: 0.2 kg

First Aid Kit*: +2 with Paramedics (4 Active Points); 1 Charge (-2), OAF (-1), Extra Time (Full Phase, -½). Total cost: 1 point.*

MEDICAL SCANNER, POCKET

The pocket medical scanner is a small device that detects and displays the target's vital signs after a 10-second scan. The pocket scanner must be touched to the target, and has no range.

The pocket medical scanner also has a memory where it can store readings taken at a point in time for later review. It can also be programmed to emit an alarm if the patient's vital signs fall below a programmed level. (For this to work, the pocket medical scanner must remain in physical contact with the patient.)

TL: 12
Cost: 10,500 Cr
Mass: 0.1 kg

Medical Scanner (Pocket)*: (Total: 37 Active Cost, 14 Real Cost) Detect Vital Signs 18- (Radio Group), Discriminatory, Analyze, Requires A System Operations Skill Roll (No Active Point penalty to Skill Roll; +0) (20 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OAF (Med Scanner; -1) (Real Cost: 6)* **plus** *Eidetic Memory, Requires A Systems Operation Skill Roll (No Active Point penalty to Skill Roll; +0) (5 Active Points); OAF (Med Scanner; -1) (Real Cost: 2)* **plus** *Hearing Group Images 1" radius, Requires A System Operations Skill Roll (No Active Point penalty to Skill Roll; +0), Reduced Endurance (0 END; +½), Trigger (Activating the Trigger is an Action that takes no time, Trigger resets automatically, immediately after it activates; Triggered when Vital Signs fall below programmed level; +1) (12 Active Points); OAF (Med Scanner; -1) (Real Cost: 6). Total cost: 37 points.*

MEDICAL SCANNER, COMPUTER

A hand-held version of the pocket medical scanner, it includes a complete expert systems diagnosis computer to aid in treating illness and injury.

TL: 12
Cost: 25,000 Cr
Mass: 1 kg

Medical Scanner, Computer

Val	Char	Cost	Roll	Notes
13	INT	3	12-	PER Roll 12-
10	DEX	0	11-	OCV 3 DCV 3
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 3

Cost	Powers	END
21	*Vital Signs Monitor*: Detect Vital Signs 16- (Radio Group), Discriminatory, Analyze, Sense	0
	Talents	
3	Absolute Time Sense	
5	Eidetic Memory	
3	Lightning Calculator	
	Skills	
3	Paramedic 12-	

5 *Medical Programming*: KS: Medicine 14-
1 *Program*: Diagnose Condition
1 *Program*: Suggest Treatment From Database

Total Powers & Skill Cost: 42
Total Cost: 45

MEDICINES

Vaccines

Vaccines provide immunity to a specific disease or group of closely related diseases for a one-year period. Vaccines typically cost 15 Cr. Below is an example of a Cold/Flu vaccine effect and write-ups.

Here's what the target gets:

Cold/Flu Vaccination: Life Support (Immunity: Common Cold/Flu). Total Cost: 2 points

Here's the vaccine:

Cold/Flu Vaccine, 1 Continuing Charge lasting 1 Year (+0), Usable As Attack (+1) (4 Active Points); OAF (Vaccine Bottle; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾). Total Cost: 1 point.

Antibiotics

Antibiotics are applied daily until the infection is dispelled.

TL: 6
Cost: 50 Cr per dose

Antibiotic: Dispel Infection 2d6, Cumulative (+½) (9 Active Points); 1 Charge (-2). Total Cost: 3 points

Metabolics

Metabolics are applied daily until the disease is dispelled.

TL: 8
Cost: 1000Cr per dose

Metabolic*: Dispel Disease 2d6, Cumulative (+½) (9 Active Points); 1 Charge (-2). Total cost: 3 points*

HEALING

Medical Slow Drug

Medical Slow Drug increases the body's healing power by 30-fold (to 1 BODY per 4 hours), but lasts only 24 hours, so multiple doses are often required over several days. The subject of the slow drug remains unconscious while healing, and there are no side effects.

TL: 10
Cost: 225 Cr

Medical Slow Drug: *Healing 1 BODY, Reduced Endurance (0 END; +½), Persistent (+½) (20 Active Points); Extra Time (Regeneration-Only) 4 Hours (Character May Take No Other Actions; -2 ¾), Self Only (-½), Limited Power One Dose lasts 24 hours (-¼). Total cost: 4 points.*

Smart Bandage

A box of 12 bandages with a healing chemical; each bandage can only be used once.

TL: 9
Cost: 100 Cr

Smart Bandage: *Healing BODY 2d6 (20 Active Points); OIF (Smart Bandage; -½), 12 Charges (-¼). Total cost: 11 points.*

ENHANCEMENT DRUGS

Enhancement Drugs are bought as Aid; the maximum effect of any stat-boosting aid is to raise a stat by 50% of its max for up to 5 minutes, or 25% of its max for up to an hour. Drugs are usually Cr 5 and 0.1 grams per active point. Drugs take one minute to take effect if ingested, immediate if injected. Aid may be used to give powers the target does not have. Multiple doses can be taken. Most drugs have side effects, usually 1d6 damage, no defense, per die of Aid, when the effect ends. Standard drugs include:

Combat Drug

Cost: 60 Cr per dose
Mass: 1.2 grams

Combat Drug*: Aid STR 1d6, Delayed Return Rate (points return at the rate of 5 per Minute; +¼), Trigger (Activating the Trigger requires a Zero Phase Action, Trigger requires a Turn or more to reset; Use Drug; +¼) (15 Active Points); OAF (Drug; -1), Side Effects, Side Effect occurs automatically whenever Power is used (Drain 1d6 CON, Recovers 5 per minute when Drug wears off; -½). Total cost: 6 points.*

Fast Drug

Fast drug slows down the metabolism of the patient, so that the perception of time is transitory.
Cost: 135 Cr per dose

Fast Drug*: Life Support (Eating: Character only has to eat once per week; Extended Breathing: 1 END per 20 Minutes), 1 Continuing Charge lasting 1 Week (+0) (5 Active Points); Extra Time (5 Minutes, -2), OAF (-1), Side Effects, Side Effect occurs automatically whenever Power is used (Character Is Asleep; -1). Total cost: 1 point.*

Slow Drug

Slow Drug speeds the character, effectively increasing the character's SPD by 2.

TL: 10
Cost: 200 Cr per dose

Slow Drug*: Aid SPD 7d6 (standard effect: 21 points), Delayed Return Rate (points return at the rate of 5 per Minute; +¼) (87 Active Points); OAF (-1). Total cost: 43 points.*

Anagathics

Anagathics slow down the effects of aging on a 1:8 ratio. Each dose lasts for 1 week. Anagathics are illegal in most of the Imperium.

TL: 15
Cost: 350 Cr per dose

Anagathic: *Life Support (Longevity: 800 Years), 1 Continuing Charge lasting 1 Week (+0) (3 Active Points); OAF (-1). Total cost: 1 point.*

Survival Gear

Vac Suits

When faced with extremes of temperature, pressure, and atmosphere, vac suits mean the difference between life and death. At lower tech levels, the suits are bulky and uncomfortable, but they become lighter and more flexible at each technological advance.

General Purpose

VAC SUIT

This basic vac suit provides 6 hours of life support, and is fitted with a basic radio communicator. Although the suit is rigid, it provides no armor value.

TL: 7
Cost: 10,000 Cr
Mass: 10.00 kg

Vac Suit (TL 7)*: (Total: 31 Active Cost, 22 Real Cost) Life Support (Safe in Intense Cold; Safe in Low Pressure/Vacuum) (4 Active Points); OIF (-½), Real Technology (-¼) (Real* **Cost:** *2)* **plus** *Life Support (Self-Contained Breathing), 1 Continuing Fuel Charge lasting 6 Hours (+0) (10 Active Points); OIF (-½), Real Technology (-¼) (Real* **Cost:** *6)* **plus** *Radio Perception/Transmission (Radio Group), MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 1km (+¼) (17 Active Points); Real Technology (-¼) (Real* **Cost:** *14). Total cost: 22 points.*

GENERAL PURPOSE VAC SUIT-8

At TL 8, the vac suit shell is made of sophisticated polymers that provide protective armor as well as protection from radiation, heat, cold, and pressure.

The suit requires a PLSS (Portable Life Support System) to provide power and oxygen for the suit.

TL: 8
Cost: 9000 Cr
Mass: 10 kg

General Purpose Vac Suit-8*: (Total: 23 Active Cost, 7 Real Cost) Armor (5 PD/5 ED) (15 Active Points); OIF Bulky (-1), Normal Mass (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Real Armor (-¼) (Real* **Cost:** *4) plus Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum) (8 Active Points); OIF Bulky (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾) (Real* **Cost:** *3). Total cost: 7 points.*

TL	Cost	Mass
9	7000 Cr	8 kg
10	7000 Cr	6 kg
11	7000 Cr	4 kg
12	7000 Cr	2 kg

Special Duty

LIGHT DUTY VAC SUIT-10

Light Duty vac suits are suitable for use in mildly hostile environments, and can be worn under clothes. The suits have negligible mass (1.5 kg), but require a PLSS for oxygen and power.

TL: 10
Cost: 10,000 Cr
Mass: 1.5 kg

Light Duty Vac Suit-10*: (Total: 14 Active Cost, 6 Real Cost) Armor (2 PD/2 ED) (6 Active Points); OIF Bulky (-1), Extra Time (Delayed Phase, Only to Activate, -¼) (Real* **Cost:** *3) plus Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum) (8 Active Points); OIF Bulky (-1), Extra Time (Delayed Phase, Only to Activate, -¼) (Real* **Cost:** *3). Total cost: 6 points.*

HOSTILE ENVIRONMENT VAC SUIT-12

Hostile environment vac suits are needed for extremely hostile environments, and provide greater armor to resist extremes as well as some combat. They are heavy and require a PLSS for oxygen and power.

TL: 12
Cost: 18,000 Cr
Mass: 40 kg

Hostile Environment Vac Suit-12*: (Total: 32 Active Cost, 11 Real Cost) Armor (8 PD/8 ED) (24 Active Points); OIF Bulky (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Real Armor (-¼) (Real Cost***:** *8)* **plus** *Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum) (8 Active Points); OIF Bulky (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾) (Real Cost: 3). Total cost: 11 points.*

TAILORED VAC SUIT-14

Tailored vac suits are a sign of status. They are form fitting, self-sealing, and of negligible mass.

The suit requires a PLSS (Portable Life Support System) to provide power and oxygen for the suit.

TL: 14
Cost: 15,000 Cr
Mass: 10 kg

Tailored Vac Suit-14*: (Total: 29 Active Cost, 9 Real Cost) Armor (7 PD/7 ED) (21 Active Points); OIF Bulky (-1), Normal Mass (-1), Real Armor (-¼), Extra Time (Delayed Phase, Only to Activate, -¼) (Real* **Cost:** *6) plus Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum) (8 Active Points); OIF Bulky (-1), Extra Time (Delayed Phase, Only to Activate, -¼) (Real Cost: 3). Total cost: 9 points.*

PLSS

Portable Life Support Systems are a necessity for vac suits, and come in three varieties. Type A consists of tanks of oxygen. Type B consists of oxygen and a battery-powered recycler to extend the air supply. Type C includes an integrated thruster pack in addition to the basic air supply.

PLSS[A]

The PLSS type A provides 4 hours of oxygen and power. At higher tech levels, the oxygen is compressed and fewer tanks are required.

TL: 9
Cost: 3000 Cr
Mass: 7 kg

PLSS[A]: *Life Support (Safe in Intense Cold; Self-Contained Breathing), 4 Continuing Charges lasting 1 Hour each (+0) (12 Active Points); OIF Bulky (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), OIHID (-¼), Custom Modifier (Real Equipment; -¼). Total cost: 4 points.*

TL	Cost	Mass
9	3000 Cr	7 kg
12	3000 Cr	4 kg
14	3000 Cr	0.5 kg

PLSS[B]

The PLSS type B provides 24 hours of oxygen and power.

TL: 9
Cost: 5000 Cr
Mass: 10 kg

PLSS[B]: *Life Support (Safe in Intense Cold; Self-Contained Breathing), 1 Continuing Charge lasting 1 Day (+0) (12 Active Points); OIF Bulky (-1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), OIHID (-¼), Custom Modifier (Real Equipment; -¼). Total cost: 6 points.*

TL	Cost	Mass
9	5000 Cr	14.5 kg
12	5000 Cr	11 kg
14	5000 Cr	2 kg

PLSS[C]

The PLSS type C is as Long Duration PLSS (48 hours of oxygen) with an integrated thruster package.

TL: 9
Cost: 8000 Cr
Mass: 10 kg

PLSS[C]: *(Total: 52 Active Cost, 14 Real Cost) Life Support (Safe in Intense Cold; Self-Contained Breathing), 2 Continuing Charges lasting 1 Day each (+0) (12 Active Points); Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), OIHID (-¼), Custom Modifier (Real Equipment; -¼) (Real* **Cost:** *5)* **plus** *Flight 20" (40 Active Points); 1 Continuing Charge lasting 1 Minute (-1), OIF Bulky (-1), Only In Straight Lines (-½), Requires A Skill Roll (-½), OIHID (-¼), Custom Modifier (Real Equipment; -¼) (Real* **Cost:** *9). Total cost: 14 points.*

TL	Cost	Mass
9	8000 Cr	29 kg
12	8000 Cr	28 kg
14	8000 Cr	3.5 kg

Hostile Environment Equipment

Air Supplies

OXYGEN TANKS

A basic set of oxygen tanks for independent breathing in dust, smoke, or exotic atmospheres.

TL: 9
Cost: 500 Cr
Mass: 5.00 kg

Oxygen Tanks: *Life Support (Self-Contained Breathing), 1 Continuing Fuel Charge lasting 6 Hours (+0) (10 Active Points); OIF (-½). Total cost: 7 points.*

UNDERWATER AIR TANKS

A basic set of oxygen tanks designed for the requirements of underwater and high pressure breathing.

TL: 9
Cost: 800 Cr
Mass: 5.00 kg

Underwater Air Tanks: *Life Support (Self-Contained Breathing), 1 Continuing Fuel Charge lasting 6 Hours (+0) (10 Active Points); OIF (-½), Only For Use Underwater (-½). Total cost: 7 points.*

Filters

ARTIFICIAL GILL

The artificial gill allows breathing in oxygenated water, but only functions on worlds where there is an atmosphere so that the water *is* oxygenated.

TL: 7
Cost: 4000 Cr
Mass: 4.00 kg

Artificial Gill: *Life Support (Expanded Breathing (Underwater)) (5 Active Points); OIF (-½), Functions Only On Worlds With Atmosphere 4-9 (-½). Total cost: 2 points.*

RESPIRATOR

A small compressor that allows breathing in very thin atmospheres.

TL: 5
Cost: 100 Cr
Mass: 0.5 kg

Respirator: *Life Support (Expanded Breathing (Very Thin Atmosphere [Type 3])) (5 Active Points); OIF (-½). Total cost: 3 points.*

FILTER MASK

A filter set that enables breathing in tainted atmospheres.

TL: 3
Cost: 10 Cr
Mass: 0.5

Filter Mask*: Life Support (Expanded Breathing (Tainted Atmospheres [4, 7, 9])) (5 Active Points); OIF (-½). Total cost: 3 points.*

FILTER-RESPIRATOR COMBINATION

A combination filter and respirator combination that enables breathing in very thin tainted atmospheres.

TL: 5
Cost: 150 Cr
Mass: 0.5

Filter-Respirator Combination*: Life Support (Expanded Breathing (Very Thin, Tainted Atmosphere [type 2])) (5 Active Points); OIF (-½). Total cost: 3 points.*

Suits

SWIMMING EQUIPMENT

The basic swimming gear, which includes swim fins, wet suit, and face mask.

TL: 5
Cost: 200 Cr
Mass: 1 kg

Swimming Equipment*: Swimming +2" (2"/4" total) (2 Active Points); OIF (-½). Total cost: 1 point.*

DIVING GEL SUIT

This is a skintight diving suit with a separate bubble helmet.

TL: 9
Cost: 5000 Cr
Mass: 10 kg

Diving Gel Suit*: Life Support (Eating: Character only has to eat once per week; Safe in High Pressure; Safe in Intense Cold; Self-Contained Breathing) (14 Active Points); OIF (-½), Custom Modifier (Capable of 100 meters depth safely at 1G; -½). Total cost: 7 points.*

COLD WEATHER CLOTHING

Provides protection in sub-zero temperatures.

TL: 7
Cost: 200 Cr
Mass: 3 kg

Cold Weather Clothing / Arctic Survival Suit: *Life Support (Safe in Intense Cold) (2 Active Points); OIF (-½). Total cost: 1 point.*

PROTECTIVE SUIT

Similar to spacesuits, this all-over suit provides protection from the effects of corrosive atmospheres.

TL: 7
Cost: 700 Cr
Mass: 5.00 kg

Protective Suit*: Life Support (Safe in Corrosive Atmosphere (type B)) (2 Active Points); OIF (-½). Total cost: 1 point.*

Wilderness Survival Equipment

Prefab Units

ADVANCED PRESSURIZED PREFAB

Modularized pressurized quarters for six individuals, with an airlock and life support. The unit is collapsible when not inhabited for easy transportation.

TL: 8
Cost: 50,000 Cr
Mass: 6000 kg

ADVANCED PRESSURIZED PREFAB

Val	Char	Cost	Notes
1	Size	2	Length 5.04", Width 2.52", Area 12.7" DCV -4
10	BODY	8	
8	DEF	18	
			Total Characteristic Cost: 28

Cost	Powers	END
18	*Prefab Life Support*: Life Support (Safe Environment: Zero Gravity; Safe in High Pressure; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing)	0
7	*Collapsible*: Shrinking (1 m tall, 12.5 kg mass, -2 PER Rolls to perceive character, +2 DCV, takes +3" KB), Reduced Endurance (0 END; +½) (15 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼)	0

Total Powers & Skill Cost: 25
Total Cost: 53

UNPRESSURIZED CABIN PREFAB

Modularized unpressurized quarters for six individuals. The unit is collapsible when not inhabited for easy transportation.

TL: 6
Cost: 10,000 Cr
Mass: 4000 kg

UNPRESSURIZED CABIN PREFAB

Val	Char	Cost	Notes
1	Size	2	Length 5.04", Width 2.52", Area 12.7" DCV -4
10	BODY	8	
8	DEF	18	
			Total Characteristic Cost: 28

Cost	Powers	END
7	*Collapsible*: Shrinking (1 m tall, 12.5 kg mass, -2 PER Rolls to perceive character, +2 DCV, takes +3" KB), Reduced Endurance (0 END; +½) (15 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼)	0

Total Powers & Skill Cost: 7
Total Cost: 45

Miscellaneous Equipment

Tools

CARPENTRY TOOLS SET

Basic set of tools for standard carpentry work.

TL: 5
Cost: 300 CR
Mass: 25.00 kg

Carpentry Tools Set*: +1 with Carpentry (5 Active Points); OAF (-1), Requires A Carpentry Skill Roll (-½), Real Technology (-¼).* **Total Cost***: 2 points.*

CHAINSAW

Basic fuel-powered chainsaw.

TL: 5
Cost: 500 CR
Mass: 8.0 kg

Chainsaw*: (Total: 80 Active Cost, 33 Real Cost) Killing Attack - Hand-To-Hand 1d6+1, Chainsaw Can Jam (i.e. Burnout; chance varies according to what is being cut through, normally it is a base 15-, Burnout (+0), +1 Increased STUN Multiplier (+¼), Reduced Endurance (0 END; +½), Continuous (+1) (55 Active Points); OAF (-1), No Knockback (-¼), Real Technology (-¼) (Real Cost: 22)* **plus** *Tunneling 1" through 5 DEF material, Chainsaw Can Jam (i.e. Burnout; chance varies according to what is being cut through, normally it is a base 15- 15-, Burnout (+0), Reduced Endurance (0 END; +½) (25 Active Points); OAF (-1), Real Technology (-¼) (Real Cost: 11).* **Total Cost***: 33 Points.*

DISGUISE KIT

Basic disguise kit for 1 person.

TL: 5
Cost: 1000 CR
Mass: 5.0 kg
Description:

Disguise Kit*: +1 with Disguise (5 Active Points); OAF (-1), Requires A Disguise Skill Roll (-½), Real Technology (-¼).* **Total Cost***: 2 points.*

ELECTRONIC TOOL SET

Standard electronics tool set for repair and hobby work.

TL: 9
Cost: 2000 CR
Mass: 5.0 kg

Electronic Tool Set*: +1 with all Electronic / High Tech Skills (5 Active Points); OAF Bulky (-1 ½), Real Technology (-¼).* **Total Cost***: 2 points.*

LOCKPICK SET

The character must specify whether they purchase the *mechanical* locks or *electronic* locks lockpicking set; each must be purchased separately.

TL: 6/9
Cost: 400 CR
Mass: 0.1 kg

Lockpick Set*: +1 with Lockpicking (5 Active Points); OAF (-1), Requires A Lockpicking Skill Roll (-½), Real Technology (-¼).* **Total Cost***: 2 points.*

MECHANICAL TOOL SET

Standard mechanical tool set for maintenance and repairs.

TL: 9
Cost: 1000 CR
Mass: 20.0 kg

Mechanical Tool Set*: +1 with all Construction / Mechanical Skills (5 Active Points); OAF Bulky (-1 ½), Real Technology (-¼).* **Total Cost***: 2 points.*

METALWORK TOOL SET

Contains saws, files, and other standard metalworking tools.

TL: 9
Cost: 1500 CR
Mass: 50.0 kg
Description:

Metalwork Tool Set*: +1 with Metalwork (5 Active Points); OAF (-1), Requires A Metalwork Skill Roll (-½), Real Technology (-¼).* **Total Cost***: 2 points.*

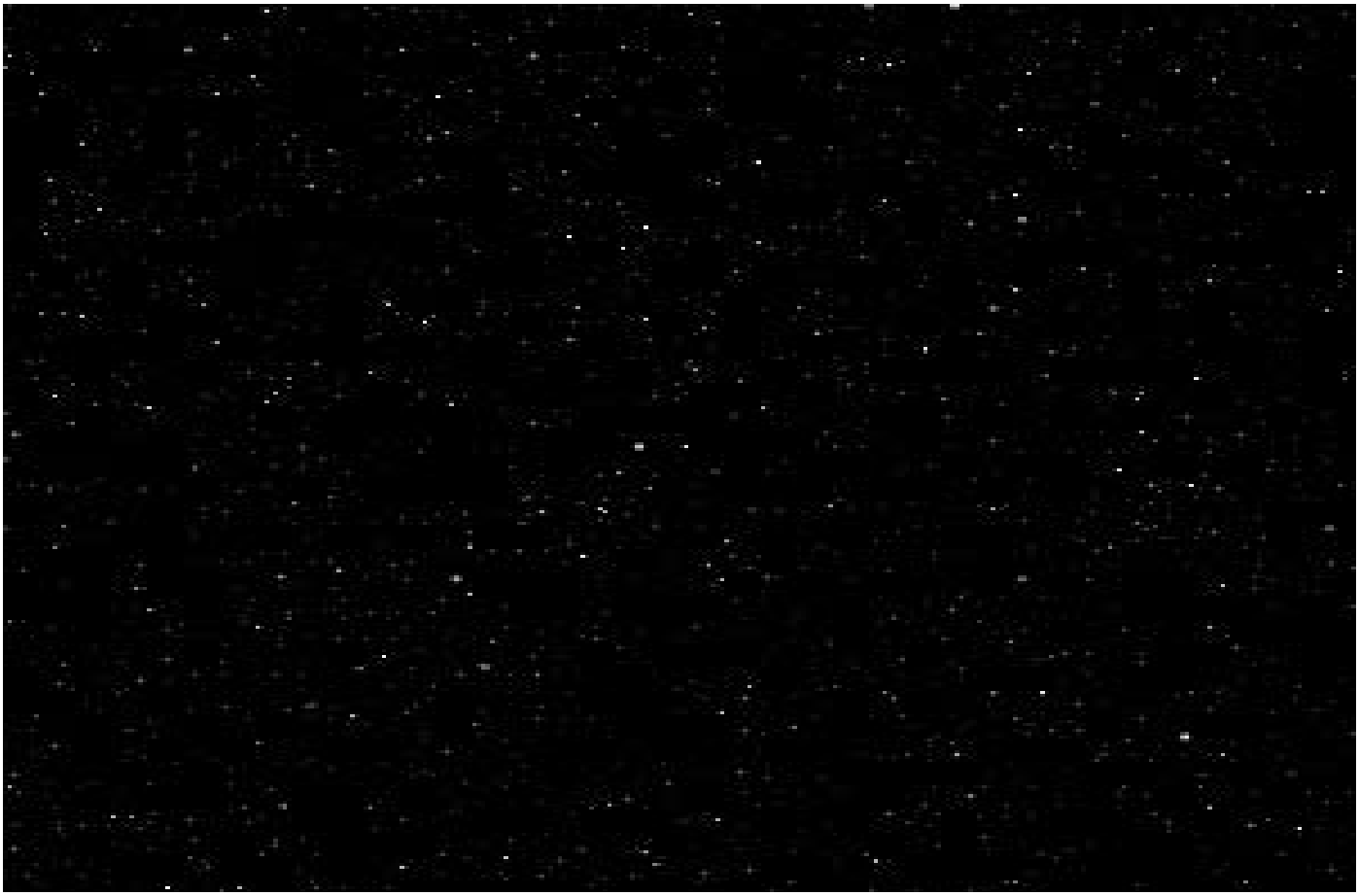
Personal Transport

GRAV BELT

The grav belt looks like a parachute harness. It weighs 10 kg when not activated. The maximum atmospheric velocity [non-combat flight] is 300kph, and the nap-of-the-earth velocity [combat flight] is 40kph. The TL12 version lasts 4 continuous hours; the TL15 version lasts 8 continuous hours.

TL: 12
Cost: 100,000 CR
Mass: 10 kg (when inactive)

Grav Belt*: Flight 20", x8 Noncombat, 1 Continuing Fuel Charge lasting 4 Hours (+¼) (62 Active Points); OIF (-½).* **Total Cost***: 41 points.*



Mechanical Men

Robots of Charted Space

Robots

Robots, like computers, are one of the basic elements of Traveller. Robots cover the range of utility, from automated menial labor (such as manufacturing robots at vehicle plants and shipyards) and servants (such as administrative robots) to industrial (mechanic robots) and military (war bots).

ROBOTIC DEVICES

Robotic devices are essentially computers with one or more appendages for performing work. Common robotic devices include frame lifters, spot welders, and assemblers at manufacturing plants. While many are immobile, or are programmed to remain in a particular location, others such as automated delivery 'bots have wheels or legs for delivering packages and cargo on a specified route or program-identified location.

The INT, DEX, and SPD of robotic devices is the same as for computers (see the *Computers and Electronics* chapter).

ROBOTS

Robots are complex systems that can perform programmable tasks, and can even learn in order to adjust and append to their preprogrammed data store. While not possessing true artificial intelligence until TL 15, robots of TL 11 and greater can include personality programs advanced enough to give the illusion of artificial intelligence.

Artificial Personality*: 5 EGO (10 points); Limited: Only To Simulate A Programmed Personality, No Self Will (-1). Total cost: 5 points.*

The INT, DEX, and SPD of robots conforms to that of computers of the same TL (see the *Computers and Electronics* chapter).

Robots can make use of many of the component enhancements that computer do (additional memory, multiprocessor boards, interfaces, and so forth). There are many other possible components, such as spot welders, that are dependent on the job the robot was created to do.

Robots have certain properties in common. They typically have at least a Voice Recognition System (Language: Galanglic) to understand commands spoken to them, and those who interact often have communication systems so they can verbally reply.

Sample robots in the HERO System books suitable for TL12 campaigns include: Cargo Loader/Heavy Labor Robot (*Star Hero,* page 166), Guardian Robot (*Star Hero,* page 167), Imperial Spy Bot (*Spacer's Toolkit,* page 31), House Android (*Spacer's Toolkit,* page 32), General Purpose Robot (*HERO System Bestiary,* page 208) and Hunter Seeker Drone (*HERO System Bestiary,* page 209). What follows are some robots converted from existing Traveller material.

Civilian Robots

STAR SERVANTS MECHANIC ROBOT

TL: 15

Cost: Cr 2,103,149

Val	Char	Cost	Roll	Notes
10	STR	0	11-	Lift 100.0kg; 2d6
10	DEX	0	11-	OCV: 3/DCV: 3
10	CON	0	11-	
10	BODY	0	11-	
15	INT	5	12-	PER Roll 12-
0	EGO	0	9-	ECV: 0
10	PRE	0	11-	PRE Attack: 2d6
10	COM	0	11-	
6+9	PD	15		Total: 6/15 PD (6/15 rPD)
6+9	ED	15		Total: 6/15 ED (6/15 rED)
3	SPD	10		Phases: 4, 8, 12
4	REC	0		
40	END	10		
				Total Characteristic Cost: 39

Movement: **Running: 0″**
Flight: 10″/20″

Cost	Powers	END
15	*Robot Body*: Does Not Bleed	0
45	*Robot Body*: (Takes No STUN (loses abilities when takes BODY))	0
18	*Robot Body*: Damage Resistance (6 PD/6 ED)	0
45	*Robot Body*: Life Support (Eating: Character does not eat; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing; Sleeping: Character does not sleep)	0
18	*Heavy*: Knockback Resistance -3″	0
25	*Ablative Armor*: Armor (9 PD/9 ED) (81 Active Points); OIF Bulky (-1), Ablative BODY or STUN (-1), Real Armor (-¼)	0
25	*Heavy Cutting/Welding Torch*: RKA 3d6+1, Armor Piercing (+½) (75 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼), Limited Range (-¼), Reduced By Range (-¼)	7
8	*Thrust Fan*: Flight 10″ (20 Active Points); OIF Bulky (-1), Custom Modifier (air breathing thrust fans, wont work in thin or less atmospheres; -½)	2
6	*Sensors and Commo*: Multipower, 15-point reserve, (15 Active Points); all slots OIF Bulky (-1), Costs Endurance (-½)	
1u	1) *Holorecorder*: Eidetic Memory, 2 Continuing Charges lasting 1 Hour each (+0) (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1

1u	2) *Radscanner*: Detect A Single Thing 14- (Unusual Group), Discriminatory (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	3) *Infrared Sensors*: IR Perception (Sight Group), +2 to PER Roll (7 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	4) *Microscopic Sensors*: Microscopic (x100) (x100) with Sight Group (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	5) *Radio System*: Radio Perception/ Transmission (Radio Group), MegaScale (1" = 1 km; +¼) (12 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	6) *Auditory Sensors*: Ultrasonic Perception (Hearing Group), +2 to PER Roll, Tracking (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1

Talents

3	*Onboard Computer*: Absolute Time Sense
3	*Onboard Computer*: Absolute Range Sense
3	*Onboard Computer*: Bump Of Direction
5	*Onboard Computer*: Eidetic Memory
3	*Onboard Computer*: Lightning Calculator

Skills

6	Computer Programming (Starship computers) 14-
7	Electronics 14-
7	Mechanics 14-
5	SS: Gravitics 14-
3	Security Systems 12-
6	Systems Operation (Communications Systems) 14-

Total Powers & Skill Cost: 262
Total Cost: 301

200+	**Disadvantages**
15	Physical Limitation: No Legs (All the Time, Slightly Impairing)
5	Physical Limitation: Must Spend 4 Hours Recharging Every 4 Days of Use (Infrequently, Slightly Impairing)
15	Physical Limitation: Heavy (800 kg mass) (Frequently, Greatly Impairing)
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
25	Psychological Limitation: Subject To Orders/Must Obey Programming (Very Common, Total)
10	Social Limitation: Robot (Frequently, Major, Not Limiting In Some Cultures)
26	Experience Points

Total Disadvantage Points: 301

ASLAN ADMINISTRATIVE ROBOT-12

TL: 12

Cost: Cr 1,800,000

Val	Char	Cost	Roll	Notes
12	STR	2	11-	Lift 132.0kg; 2d6 [1]
12	DEX	6	11-	OCV: 4/DCV: 4
10	CON	0	11-	
15	BODY	10	12-	
10	INT	0	11-	PER Roll 11-
0	EGO	0	9-	ECV: 0
10	PRE	0	11-	PRE Attack: 2d6
10	COM	0	11-	
5	PD	12		Total: 5 PD (5 rPD)
5	ED	12		Total: 5 ED (5 rED)
2	SPD	0		Phases: 6, 12
4	REC	0		
20	END	0		

Total Characteristic Cost: 32

Movement: Running: 3″/6″

Cost	Powers	END
15	*Robot Body*: Does Not Bleed	0
45	*Robot Body*: (Takes No STUN (loses abilities when takes BODY))	0
42	*Robot Body*: Life Support (Eating: Character only has to eat once per week; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Longevity: 200 Years; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing; Sleeping: Character only has to sleep 8 hours per week)	0
15	*Robot Body*: Damage Resistance (5 PD/5 ED)	0
	Talents	
3	*Onboard Computer*: Absolute Range Sense	
3	*Onboard Computer*: Absolute Time Sense	
3	*Onboard Computer*: Bump Of Direction	
5	*Onboard Computer*: Eidetic Memory	
3	*Onboard Computer*: Lightning Calculator	
2	*Scanner*: Eidetic Memory (5 Active Points); OIF Bulky Fragile (-1 ¼), 1 Continuing Charge lasting 1 Hour (-¼)	
2	*Scanner*: Speed Reading (x10) (4 Active Points); OIF Bulky Fragile (-1 ¼)	
	Skills	
7	Bureaucratics 13-	
5	High Society 12-	
4	KS: Interstellar Law 13-	
5	KS: Aslan Culture 14-	
0	Language: Aslan (idiomatic) (4 Active Points)	
4	Language: Galactic Standard (idiomatic)	
3	PS: Office Management 12-	
5	Systems Operation 12-	

Total Powers & Skill Cost: 171
Total Cost: 203

200+	Disadvantages
15	Physical Limitation: Cannot Heal Damage, must be repaired (Frequently, Greatly Impairing)
15	Physical Limitation: Advanced fuel cell power plant, must be refueled every 8 days (Frequently, Greatly Impairing)
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
15	Psychological Limitation: Cold Hard Logic (Common, Strong)
25	Psychological Limitation: Subject To Orders/Must Obey Programming (Very Common, Total)
20	Social Limitation: Robot, considered Property (Frequently, Severe)

Total Disadvantage Points: 203

TUKERA SM-232 MECHANIC ROBOT

TL: 12

Cost: Cr 1,839,130

Val	Char	Cost	Roll	Notes
25	STR	15	14-	Lift 800.0kg; 5d6 [2]
18	DEX	24	13-	OCV: 6/DCV: 6
10	CON	0	11-	
12	BODY	4	11-	
15	INT	5	12-	PER Roll 12-
0	EGO	0	9-	ECV: 0
10	PRE	0	11-	PRE Attack: 2d6
10	COM	0	11-	
5+5	PD	9		Total: 5/10 PD (5/10 rPD)
5+5	ED	12		Total: 5/10 ED (5/10 rED)
3	SPD	2		Phases: 4, 8, 12
7	REC	0		
40	END	10		
				Total Characteristic Cost: 76

Movement: **Running: 6″/12″**
Leaping: 2″/4″

Cost	Powers	END
15	*Robot Body:* Does Not Bleed	0
45	*Robot Body:* (Takes No STUN (loses abilities when takes BODY))	0
45	*Robot Body:* Life Support (Eating: Character does not eat; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing; Sleeping: Character does not sleep)	0
15	*Robot Body:* Damage Resistance (5 PD/5 ED)	0
15	*Ablative Armor:* Armor (5 PD/5 ED) (45 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1)	0
4	*Light Arms:* Extra Limbs (2) (5 Active Points); Limited Manipulation (-¼)	0
18	*Heavy:* Knockback Resistance -3″	0
9	*Sensors and Commo:* Multipower, 20-point reserve, (20 Active Points); all slots OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	
1u	1) *Holorecorder:* Eidetic Memory, 2 Continuing Charges lasting 1 Hour each (+0) (5 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	2) *Auditory Sensors*: Ultrasonic Perception (Hearing Group), +5 to PER Roll, Tracking (13 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	3) *Infrared Sensors*: IR Perception (Sight Group), +5 to PER Roll (10 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	4) *Radio System*: Radio Perception/ Transmission (Radio Group), MegaScale (1″ = 1 km; +¼) (12 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	5) *Microscopic Sensors*: Microscopic (x100) (x100) with Sight Group (10 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	6) *Auditory Sensors*: Active Sonar (Hearing Group), +2 to PER Roll (17 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	2

Talents

3	*Computer Dexterity:* Ambidexterity (-2 Off Hand penalty)
3	*Onboard Computer:* Absolute Time Sense
3	*Onboard Computer:* Absolute Range Sense
3	*Onboard Computer:* Bump Of Direction
5	*Onboard Computer:* Eidetic Memory
3	*Onboard Computer:* Lightning Calculator

Skills

6	Computer Programming (Starship Computers, Starship control systems) 13-
9	Electronics 15-
7	Mechanics 14-
3	SS: Gravitics 12-
3	Security Systems 12-
8	Systems Operation (Communications Systems, Environmental Systems) 14-

Total Powers & Skill Cost: 228
Total Cost: 304

200+	Disadvantages
15	Physical Limitation: Can Only Use Half Strength For Lifting (Frequently, Greatly Impairing)
10	Physical Limitation: Tracked Vehicle (Frequently, Slightly Impairing)
10	Physical Limitation: Must Recharge For 1 Hour Per Day (Frequently, Slightly Impairing)
15	Physical Limitation: Heavy (800 kg mass) (Frequently, Greatly Impairing)
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
25	Psychological Limitation: Subject To Orders/Must Obey Programming (Very Common, Total)
10	Social Limitation: Robot (Frequently, Major, Not Limiting In Some Cultures)
14	Experience Points

Total Disadvantage Points: 304

Combat Robots

PR-317 POLICE ROBOT

TL: 12

Cost: Cr 1,861,445

Val	Char	Cost	Roll	Notes
10	STR	0	11-	Lift 100.0kg; 2d6;
10	DEX	0	11-	OCV 3 DCV 3
10	CON	0	11-	
10	BODY	0	11-	
15	INT	5	12-	PER Roll 12-
0	EGO	0	9-	ECV: 0
10	PRE	0	11-	PRE Attack: 2d6
10	COM	0	11-	
4/13	PD	9		Total: 4/13 PD (4/13 rPD)
4/13	ED	9		Total: 4/13 ED (4/13 rED)
2	SPD	0		Phases: 6, 12
4	REC	0		
40	END	10		

Movement: **Flight: 10" / 20"**

Cost	Powers	END
15	*Robot Body:* Does Not Bleed	0
45	*Robot Body:* (Takes No STUN (loses abilities when takes BODY))	0
18	*Heavy:* Knockback Resistance -3"	0
45	*Robot Body:* Life Support (Eating: Character does not eat; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing; Sleeping: Character does not sleep)	0
12	*Robot Body:* Damage Resistance (4 PD/4 ED)	0
25	*Ablative Armor:* Armor (9 PD/9 ED) (81 Active Points); OIF Bulky (-1), Ablative BODY or STUN (-1), Real Armor (-¼)	0
10	*EMP Shielding:* Power Defense (10 points) (30 Active Points); Custom Modifier (only vs emp and radiation effects; -1), OIF Bulky (-1)	0
20	*Laser Rifle:* RKA 3d6+1 (50 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼)	5
5	*Paint Pellet Gun:* Sight Group Flash 2d6, 64 Charges (+½) (15 Active Points); OIF Bulky (-1), OIHID (-¼), Real Weapon (-¼), Reduced By Range (-¼)	[64]
13	*Tranq Dart Gun:* EB 4d6, NND ([Equally Common Defense]; hard armor, LS does not sleep; +½), 64 Charges (+½) (40 Active Points); OIF Bulky (-1), Limited Range (-¼), Real Weapon (-¼), Reduced By Range (-¼), Reduced Penetration (-¼)	[64]
8	*Thrust Fans:* Flight 10" (20 Active Points); OIF Bulky (-1), Custom Modifier (air breathing thrust fans, wont work in thin or less atmospheres; -½)	2
6	*Sensors and Commo:* Multipower, 15-point reserve, (15 Active Points); all slots OIF Bulky (-1), Costs Endurance (-½)	
1u	1) *Holorecorder:* Eidetic Memory, 2 Continuing Charges lasting 1 Hour each (+0) (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	2) *Microscopic Sensors:* Microscopic (x100) (x100) with Sight Group (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	3) *GPS System:* Navigation (Land) 14- (12 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	4) *Ultraviolet Sensors:* UV Perception (Sight Group), +2 to PER Roll (7 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	5) *Auditory Sensors:* Ultrasonic Perception (Hearing Group), +2 to PER Roll, Tracking (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	6) *Infrared Sensors:* IR Perception (Sight Group), +2 to PER Roll (7 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	7) *Auditory Sensors:* Active Sonar (Hearing Group) (15 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	8) *Radio System:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 1 km; +¼) (12 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
	Talents	
3	*Onboard Computer:* Absolute Time Sense	
3	*Onboard Computer:* Absolute Range Sense	
3	*Onboard Computer:* Bump Of Direction	
5	*Onboard Computer:* Eidetic Memory	
3	*Onboard Computer:* Lightning Calculator	
	Skills	
3	Criminology 12-	
3	Cryptography 12-	
3	Forensic Medicine 12-	
3	Security Systems 12-	
2	Systems Operation (Communications Systems) 12-	
2	WF: Handguns, Laser Rifles	

Total Powers & Skill Cost: 263

Total Cost: 280

200+	Disadvantages
15	Physical Limitation: No Legs (All the Time, Slightly Impairing)
15	Physical Limitation: No Fine Manipulation (Frequently, Greatly Impairing)
15	Physical Limitation: Must Spend 4 Hours Recharging Every 4 Days of Use (All the Time, Slightly Impairing)
15	Physical Limitation: Heavy (800 kg) (Frequently, Greatly Impairing)
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
10	Social Limitation: Robot (Frequently, Major, Not Limiting In Some Cultures)
5	Experience Points

Total Disadvantage Points: 280

ICAM AN-427 SECURITY ROBOT

TL: 12

Cost: Cr 1,810,623

Val	Char	Cost	Roll	Notes
15	STR	5	12-	Lift 200.0kg; 3d6; [1]
13	DEX	9	12-	OCV 4 DCV 4
10	CON	0	11-	
15	BODY	10	12-	
13	INT	3	12-	PER Roll 12-
0	EGO	0	9-	ECV: 0
15	PRE	5	12-	PRE Attack: 3d6
0	COM	-5	9-	
7/16	PD	4		Total: 7/16 PD (7/16 rPD)
6/15	ED	4		Total: 6/15 ED (6/15 rED)
2	SPD	0		Phases: 6, 12
5	REC	0		
50	END	15		
0	STUN	-28	Total Characteristic Cost: 17	

Movement: **Running: 6" / 12"**

Cost	Powers	END
15	*Robot Body*: Does Not Bleed	0
15	*Robot Body*: Automaton (Cannot Be Stunned)	0
45	*Robot Body*: Life Support (Eating: Character does not eat; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing; Sleeping: Character does not sleep)	0
6	*Robot Body*: Damage Resistance (7 PD/6 ED)	0
8	*Ablative Armor*: Armor (9 PD/9 ED) (27 Active Points); OIF Bulky (-1), Ablative BODY or STUN (-1), Real Armor (-¼)	0
8	*Heavy*: Knockback Resistance -4"	0
30	*Laser Rifle*: RKA 3d6+1, Reduced Endurance (0 END; +½) (75 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼)	0
5	*Paint Pellet Gun*: Sight Group Flash 2d6, 64 Charges (+½) (15 Active Points); OIF Bulky (-1), OIHID (-¼), Real Weapon (-¼), Reduced By Range (-¼)	[64]
13	*Tranq Dart Gun*: EB 4d6, NND ([Equally Common Defense]; hard armor, LS does not sleep; +½), 64 Charges (+½) (40 Active Points); OIF Bulky (-1), Limited Range (-¼), Real Weapon (-¼), Reduced By Range (-¼), Reduced Penetration (-¼)	[64]
10	*Sensors and Commo*: Multipower, 25-point reserve, (25 Active Points); all slots OIF Bulky (-1), Costs Endurance (-½)	
1u	1) *Holorecorder*: Eidetic Memory, 2 Continuing Charges lasting 1 Hour each (+0) (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	2) *GPS System*: Navigation (Land) 14- (12 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	3) *Ultraviolet Sensors*: UV Perception (Sight Group), +2 to PER Roll (7 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	4) *Auditory Sensors*: Ultrasonic Perception (Hearing Group), +2 to PER Roll, Tracking (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	5) *Infrared Sensors*: IR Perception (Sight Group), +2 to PER Roll (7 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	6) *Auditory Sensors*: Active Sonar (Hearing Group) (15 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	7) *Radio*: Radio Perception/Transmission (Radio Group), MegaScale (1" = 1 km; +¼) (12 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1

Talents

3	*Onboard Computer*: Absolute Time Sense
3	*Onboard Computer*: Absolute Range Sense
3	*Onboard Computer*: Bump Of Direction
5	*Onboard Computer*: Eidetic Memory
3	*Onboard Computer*: Lightning Calculator
3	*Onboard Computer*: Ambidexterity (-2 Off Hand penalty)

Skills

3	Bureaucratics 12-
16	+2 with All Combat
3	Criminology 12-
5	KS: Security and Legal Procedures 14-
5	Voice Recognition: KS 14-
7	Security Systems 14-
2	Systems Operation (Communications Systems) 12-
3	Tactics 12-
3	WF: Beam Weapons, Handguns

Total Powers & Skill Cost: 229
Total Cost: 246

200+	Disadvantages
15	Physical Limitation: Half Movement On Uneven Ground, Stairs, and Ladders (Frequently, Greatly Impairing)
15	Physical Limitation: Must Spend 4 Hours Recharging Every 4 Days of Use (All the Time, Slightly Impairing)
15	Physical Limitation: No fine manipulation (All the Time, Slightly Impairing)
15	Physical Limitation: Heavy (1600 kg mass) (Frequently, Greatly Impairing)
5	Physical Limitation: Affected By Cyberkinesis (Infrequently, Slightly Impairing)
25	Psychological Limitation: Subject To Orders/Must Obey Programming (Very Common, Total)
15	Reputation: Common Security Robot, 11- (Extreme)
10	Social Limitation: Robot (Frequently, Major, Not Limiting In Some Cultures)
0	Experience Points

Total Disadvantage Points: 246

H9 HEAVY COMBAT ROBOT

TL: 15

Cost: Cr 2,641,573

Val	Char	Cost	Roll	Notes
35	STR	25	16-	Lift 3200.0kg; 7d6; [3]
15	DEX	15	12-	OCV 5 DCV 5
10	CON	0	11-	
18	BODY	16	13-	
15	INT	5	12-	PER Roll 12-
0	EGO	0	9-	ECV: 0
15	PRE	5	12-	PRE Attack: 3d6
10	COM	0	11-	
15	PD	39		Total: 15 PD (15 rPD)
15	ED	42		Total: 15 ED (15 rED)
4	SPD	15		Phases: 3, 6, 9, 12
9	REC	0		
20	END	0		

Movement: **Running: 12" / 24"**
Leaping: 5" / 10"

Cost	Powers	END
15	*Robot Body*: Does Not Bleed	0
45	*Robot Body*: (Takes No STUN (loses abilities when takes BODY))	0
45	*Robot Body*: Damage Resistance (15 PD/15 ED)	0
45	*Robot Body*: Life Support (Eating: Character does not eat; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing; Sleeping: Character does not sleep)	0
6	*Robot Legs*: Running +6" (12" total), Reduced Endurance (0 END; +½) (18 Active Points); OIF Immobile (-1 ½), Only On Appropriate Terrain (Tracked Vehicle; -½)	
30	*Heavy (3200 kg)*: Knockback Resistance -5"	0
50	*5cm Fusion Rifle*: RKA 4d6, Armor Piercing (+½), Explosion (+½), Reduced Endurance (0 END; +½) (150 Active Points); OIF Bulky (-1), Extra Time (Full Phase, -½), Real Weapon (-¼), Reduced By Range (-¼)	0
40	*7mm MG*: RKA 2d6, Autofire (10 shots; +1), 500 Charges (+1) (90 Active Points); OIF Bulky (-1), Real Weapon (-¼)	[500]
10	*Sensors and Commo*: Multipower, 30-point reserve, (30 Active Points); all slots OIF Immobile (-1 ½), Costs Endurance (-½)	
1u	1) *Holorecorder*: Eidetic Memory, 2 Continuing Charges lasting 1 Hour each (+0) (5 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	1
1u	2) *GPS System*: Navigation (Land) 14- (12 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	1
1u	3) *Auditory Sensors*: Active Sonar (Hearing Group), +5 to PER Roll, Discriminatory, Increased Arc Of Perception (360 Degrees) (30 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	3
1u	4) *Infrared Sensors*: IR Perception (Sight Group), +5 to PER Roll, Increased Arc Of Perception (360 Degrees) (15 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	1
1u	5) *Ultraviolet Sensors*: UV Perception (Sight Group), +5 to PER Roll (10 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	1
1u	6) *Radio System*: Radio Perception/ Transmission (Radio Group), MegaScale (1" = 1 km; +¼) (12 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½)	1

Talents

3	*Onboard Computer*: Absolute Range Sense
3	*Onboard Computer*: Absolute Time Sense
3	*Onboard Computer*: Bump Of Direction
5	*Onboard Computer*: Eidetic Memory
3	*Onboard Computer*: Lightning Calculator

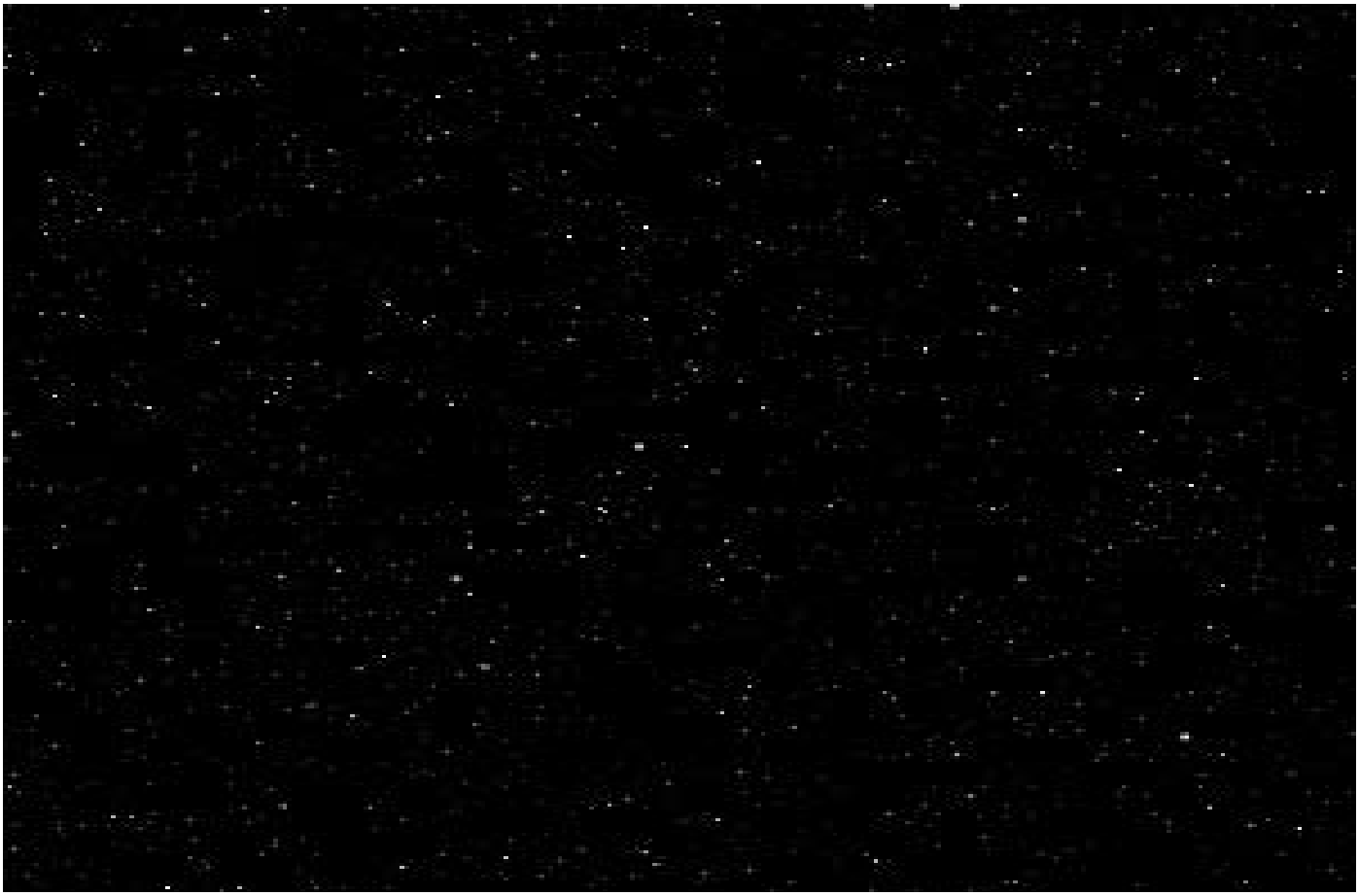
Skills

3	Climbing 12-
10	+2 with Ranged Combat
3	Security Systems 12-
3	Tactics 12-
4	WF: Grenade Launchers, Laser Pistols, Laser Rifles, Plasma Guns

Total Powers & Skill Cost: 332
Total Cost: 490

200+	Disadvantages
15	Physical Limitation: Extremely Massive (3200 kg) (Frequently, Greatly Impairing)
5	Physical Limitation: Affected by Cyberkinesis (Infrequently, Slightly Impairing)
15	Physical Limitation: No fine manipulation (All the Time, Slightly Impairing)
15	Physical Limitation: must spend 4 hours recharging every 4 days of use (All the Time, Slightly Impairing)
25	Psychological Limitation: Subject To Orders/Must Obey Programming (Very Common, Total)
10	Social Limitation: Robot (Frequently, Major, Not Limiting In Some Cultures)
205	Experience Points

Total Disadvantage Points: 490



Transportation

Vehicles of the Imperium

Vehicles

Traveller has a large number of personal and military vehicles. Presented here are some of the most common ones.

For a more extensive collection of vehicles, see *The Ultimate Vehicle*,

Commercial Vehicles

PERSONAL GRAV BIKE

Val	Char	Cost	Notes
3	Size	15	Length 2.00", Width 1.00", Area 2.00" Mass 800 kg KB -3
25	STR	0	Lift 800.0kg; 5d6
18	DEX	24	OCV 6 DCV 4
15	BODY	2	
6	DEF	3	
5	SPD	2	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 36

Movement: **Running: 2" / 4"**
Flight: 30" / 120"

Cost	Powers	END
23	*Contragrav Thruster Array*: Flight 30", Position Shift, x4 Noncombat (70 Active Points); OIF Bulky (-1), Fuel Dependent (Fuel Is Very Common; Must Refuel Once per 6 Hours; -¾), Custom Modifier (Real Equipment, Requires Frequent Maintenance; -¼)	0
7	+2 SPD (20 Active Points); OIF Bulky (-1), Fuel Dependent (Fuel Is Very Common; Must Refuel Once per 6 Hours; -¾), Linked (Contragrav Thruster Array; Greater Power is Constant or in use most or all of the time; -¼)	
2	*Light Ablative Armored Body Shell*: +3 DEF (9 Active Points); OIF Bulky (-1), Limited Coverage Nearly 360 Degrees (Coverage does not protect occupants; Hull/Frame Only; -¾), Ablative BODY Only (-½), Real Armor (-¼)	
9	*Radio:* HRRP (Radio Group), MegaScale (1" = 10 km; +½) (18 Active Points); OIF Bulky (-1)	0
5	*Basic Avionics Package*: Radar (Radio Group) (15 Active Points); OIF Bulky (-1), Custom Modifier (Terrain Following only; -1)	0
	Skills	
2	+2 with Combat Piloting (4 Active Points); OIF Bulky (-1)	
5	Navigation (Air) 14- (12 Active Points); OIF Bulky Fragile (-1 ¼)	

Total Powers & Skill Cost: 53
Total Cost: 89

200+	Disadvantages
10	Social Limitation: Requires Separate Licenses and Testing On Each Planet, Some Planets Ban Entirely (Frequently, Minor)
0	Experience Points
	Total Disadvantage Points: 89

TRAVELLER WHEELED ATV

Val	Char	Cost	Notes
3	Size	15	Length 2.00", Width 1.00", Area 2.00" Mass 800 kg KB -3
45	STR	0	Lift 12.8tons; 9d6
13	DEX	9	
20	BODY	3	
6	DEF	3	
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 60

Movement: **Running: 10" / 20"**
Swimming: 6" / 12"

Cost	Powers	END
2	*Wheeled Drivetrain*: Ground Movement +4" (10" total) (8 Active Points); OIF Bulky (-1), Only On Appropriate Terrain (-½), Costs Endurance (-½), Custom Modifier (Real System, requires maintenance; -¼)	2
1	*Auxiliary Water Propulsion Units*: Swimming +4" (6" total) (4 Active Points); OIF Bulky (-1), Custom Modifier (cannot submerge completely; -½), Cannot Move Backwards (-¼), Costs Endurance (Only Costs END to Activate; -¼)	
12	*Internal Life Support Systems*: Life Support (Immunity: All terrestrial diseases and biowarfare agents; Immunity: All terrestrial diseases and biowarfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Vehicle must be fully sealed ; -½), Custom Modifier (Real System, requires maintenance; -¼)	
15	*Power System:* Endurance Reserve (100 END, 10 REC) Reserve: (20 Active Points); OIF Bulky (-1)	
7	*Vehicle Sensors*: Multipower, 22-point reserve, (22 Active Points); all slots OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)	
1u	*1) Atmospheric Sensor*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Analyze (18 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)	
1u	*2) Programmable Science Scanner Array*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Analyze, Variable Special Effects (Limited Group of SFX; +¼) (22 Active Points); OIF Bulky (-1), Custom Modifier (uses switchable sensor probes, usually for specific sciences/experiments; -½), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)	

1u *3) Radscanner*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Analyze (18 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *4) Radio:* HRRP (Radio Group), MegaScale (1" = 100 km; +¾) (21 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *5) IR Sensors:* IR Perception (Sight Group) (5 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *6) Radar:* Radar (Radio Group), MegaScale (1" = 1 km; +¼) (19 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *7) Computerized Image Enhancement*: +3 versus Range Modifier for Sight Group (5 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *8) External Audio Pickups*: +3 versus Range Modifier for Hearing Group (5 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (-½), Crew-Served (2 people; -¼)

1u *9) Laser Comm Array*: Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x2) (20 Active Points); OIF Bulky (-1), Only With Others Who Have Mind Link (-1), Sense Affected As More Than One Sense [very common Sense] (-½), Costs Endurance (Only Costs END to Activate; -¼), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)

Optional Equipment

20 *1) Survey Drone Rack*: Clairsentience (Sight Group), x16 Range (2880"), +5 to PER Roll, Mobile Perception Point (can move up to 12" per Phase), Telescopic: +1, 2 Continuing Charges lasting 1 Hour each (+0) (56 Active Points); OAF Bulky Expendable (Difficult to obtain new Focus; -1 ¾)

6 *2) Mining Ore Sampler*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Analyze (18 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)

Powers Cost: 72

Cost	Skill
5	Navigation (Land) 14- (12 Active Points); OIF Bulky Fragile (-1 ¼)
2	+2 with Mechanics (4 Active Points); OIF Bulky Expendable (Easy to obtain new Focus; must restock used parts; -1)
2	+2 with Paramedics (4 Active Points); OIF Bulky Expendable (Easy to obtain new Focus; -1)

Skills Cost: 9

Cost	Talent
1	Absolute Range Sense (3 Active Points); OIF Bulky Fragile (Laser rangefinder; -1 ¼)

Total Character Cost: 142

200+	Disadvantages
10	Physical Limitation: Large Wheeled Vehicle (Frequently, Slightly Impairing)
0	Experience Points

Total Disadvantage Points: 10

ENCLOSED AIR RAFT

Val	Char	Cost	Notes
7	Size	35	Length 5.04", Width 2.52", Area 12.70" Mass 12.8 ton KB -7
45	STR	0	Lift 12.8tons; 9d6
10	DEX	0	OCV 3 DCV -1
19	BODY	2	
6	DEF	12	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 45

Movement: Flight: 15" / 30"

Cost	Powers	END
	Propulsion Systems	
15	*Power System*: Endurance Reserve (100 END, 10 REC) Reserve: (20 Active Points); OIF Bulky (-1)	0
14	*Antigrav:* Flight 15", Position Shift (35 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Operational Systems	
8	*Life Support System:* Life Support (Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (19 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	2
10	*Sensors and Communications:* Multipower, 30-point reserve, (30 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	
1m	*1) Radio Transceiver:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 1km (+¼) (17 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1u	2) *GPS and SatNav Computer :* Navigation (Air, Land, Marine) 14- (14 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	
1u	3) *Sensory Enhancement:* Nightvision (5 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1m	4) *Radar:* Radar (Radio Group), MegaScale (1" = 10 km; +½) (22 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1u	5) *Laser Comm*: Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x2) (20 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Limited Class Of Minds [Subset of a class] (another vehicle with a lasercomm unit; -½)	0

Total Powers & Skill Cost: 52
Total Cost: 97

Total Disadvantage Points: 97

OPEN AIR RAFT

Val	Char	Cost	Notes
7	Size	35	Length 5.04", Width 2.52", Area 12.70" Mass 12.8 ton KB -7
45	STR	0	Lift 12.8tons; 9d6
10	DEX	0	OCV 3 DCV -1
18	BODY	1	
5	DEF	9	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 41

Movement: Flight: 15" / 30"

Cost	Powers	END
	Propulsion Systems	
15	*Power System:* Endurance Reserve (100 END, 10 REC) Reserve: (20 Active Points); OIF Bulky (-1)	0
14	*ContraGrav Thruster Array:* Flight 15", Position Shift (35 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Operational Systems	
10	*Sensors and Communications:* Multipower, 30-point reserve, (30 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	
1m	1) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 1km (+¼) (17 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1u	2) *GPS and SatNav Computer :* Navigation (Air, Land, Marine) 14- (14 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	
1u	3) *Sensory Enhancement:* Nightvision (5 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1m	4) *Radar:* Radar (Radio Group), MegaScale (1" = 10 km; +½) (22 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1)	0
1u	5) *Laser Comm:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x2) (20 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Limited Class Of Minds [Subset of a class] (another vehicle with a lasercomm unit; -½)	0

Total Powers & Skill Cost: 44
Total Cost: 85

Total Disadvantage Points: 85

COMMERCIAL GRAV APC

Val	Char	Cost	Notes
7	Size	35	Length 5.04", Width 2.52", Area 12.70" Mass 12.8 ton KB -7
45	STR	0	Lift 12.8tons; 9d6
18	DEX	24	OCV 6 DCV 2
19	BODY	2	
5	DEF	9	
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 68

Movement: Flight: 56" / 224"

Cost	Powers	END
	Propulsion Systems	
14	*Power System:* Endurance Reserve (100 END, 10 REC) Reserve: (20 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
49	*Contragrav Thruster Array:* Flight 56", Position Shift, x4 Noncombat (122 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
69	*Rapid Pulse Fusion Gun:* RKA 5d6, MegaScale (1" = 1 km; +¼), Custom Modifier (can fire 1 or 2 shots ; +¼), Armor Piercing (+½), 64 Charges (Recovers Under Limited Circumstances; requires a base or reloading vehicle; +1) (225 Active Points); OAF Bulky (-1 ½), Real Weapon (-¼), Crew-Served (2 people; -¼), Reduced By Range (-¼) **Note:** Open Mount	[64]
37	*VRF Gauss Gun:* RKA 1 ½d6, 4000 Charges (+1), Autofire (80 shots; +2 ½) (112 Active Points); OAF Bulky (-1 ½), Real Weapon (-¼), Limited Arc Of Fire (180 degrees; -¼) **Note:** Open Mount	[4000]
7	*Advanced Fire Control Package:* (Total: 13 Active Cost, 7 Real Cost) Absolute Range Sense (Real Cost: 3) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 4)	0
11	*Thermal Superconducting Armor:* Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	0
	Operations	
13	*EM Masking and Stealth Construction:* Change Environment 1" radius, -2 to Radar PER Rolls, -2 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (32 Active Points); OIF Bulky (-1), No Range (-½)	0
11	*Sensors and Communications:* Multipower, 40-point reserve, (40 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	
2m	1) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (30 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	3
1u	2) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	1
2m	3) *Radar:* Radar (Radio Group), +5 to PER Roll, Increased Arc Of Perception (240 Degrees), Tracking, MegaScale (1" = 10 km; +½) (40 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	4
1u	4) *MaserComm:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x16) (35 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	3
1u	5) *GPS and SatNav Computer:* Navigation (Air, Land, Marine) 14- (14 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	1
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4
	Options For Equipment	

26	*Command Vehicle Package:* (Total: 73 Active Cost, 26 Real Cost) +3 with Cryptography (6 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** +2 with Systems Operation (Broadcast Communications, Cellular and Digital, Communications Jamming Equipment, Radio, Satellite Communications, Telephone Communications) (6 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 2) **plus** +3 with Tactics (6 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** Mind Link , Any Willing Target, Number of Minds (x256) (55 Active Points); Only With Others Who Have Mind Link (-1), Does Not Provide Mental Awareness (-¼), Costs Endurance (Only Costs END to Activate; -¼), Crew-Served (2 people; -¼) (Real Cost: 20) **Note:** replaces fusion gun	8
84	*80mm Electromag Mortar:* RKA 6d6, Explosion (+¼), Increased Maximum Range (7,300"; +¼), Indirect (Same origin, always fired away from attacker; +¼), 64 Charges (+½), Autofire (3 shots; +1 ¼) (315 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½), Custom Modifier (requires a forward observer; -½), Crew-Served (2 people; -¼) **Note:** Artillery Support Vehicle, replaces fusion gun	31
10	*Portable Shop:* (Total: 21 Active Cost, 10 Real Cost) +3 with Mechanics (6 Active Points); OIF Bulky (-1) (Real Cost: 3) **plus** +3 with Electronics (6 Active Points); OIF Bulky (-1) (Real Cost: 3) **plus** +2 with Weaponsmith (Energy Weapons, Firearms, Incendiary Weapons, Missiles & Rockets) (9 Active Points); OIF Bulky (-1) (Real Cost: 4) **Note:** replaces fusion gun	0
5	*Ambulance :* (Total: 8 Active Cost, 5 Real Cost) +3 with Paramedics (6 Active Points); OIF Bulky (-1) (Real Cost: 3) **plus** +2 with KS (Real Cost: 2) **Note:** replaces fusion and VRF gauss gun	0

Total Powers & Skill Cost: 356
Total Cost: 424

Total Disadvantage Points: 424

Military

ASTRIN APC

Val	Char	Cost	Notes
11	Size	55	Length 12.70", Width 6.35", Area 80.63" Mass 204.8 ton KB -11
65	STR	0	Lift 204.8tons; 13d6
10	DEX	0	OCV 3 DCV -4
24	BODY	3	
8	DEF	18	
4	SPD	20	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 82

Movement: Flight: 60" / 240"

Cost	Powers	END
	Propulsion Systems	
26	*Power System:* Endurance Reserve (250 END, 15 REC) Reserve: (40 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
52	*Contragrav Thruster Array:* Flight 60", Position Shift, x4 Noncombat (130 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
117	*Rapid Pulse Fusion-V Gun:* RKA 6d6, Increased Maximum Range (6,750"; +¼), Armor Piercing (+½), Autofire (5 shots; +½), 500 Charges (+1) (292 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼), Reduced By Range (-¼)	[500]
16	*Advanced Fire Control Package:* (Total: 33 Active Cost, 16 Real Cost) Absolute Range Sense (Real Cost: 3) **plus** +6 with Ranged Combat (30 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 13)	0
9	*Point Defense Fire Control Array:* Missile Deflection (Any Ranged Attack) (20 Active Points); OIF Bulky (-1), Real Armor (-¼)	0
11	*Thermal Superconducting Armor:* Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	0
	Operations	
27	1) *Sensor Decoys:* Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]
19	*EM Masking and Stealth Construction:* Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	0
18	*Sensors and Communications:* Multipower, 40-point reserve, (40 Active Points); all slots OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	
3m	1) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (30 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	3
1u	2) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
4m	3) *Radar:* Radar (Radio Group), +5 to PER Roll, Increased Arc Of Perception (240 Degrees), Tracking, MegaScale (1" = 10 km; +½) (40 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	4
1u	4) *Thermalgraphics:* Detect A Single Thing 14- (Unusual Group), Discriminatory, Telescopic (+2 versus Range Modifier): +2, MegaScale (1" = 1 km; +¼), Ranged (+½) (24 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	2
1u	5) *MaserComm:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x16) (35 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	3
1u	6) *GPS And SatNav Computer:* Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	1
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4

Total Powers & Skill Cost: 319
Total Cost: 401

Total Disadvantage Points: 401

ATTACK SPEEDER

Val	Char	Cost	Notes
9	Size	45	Length 8.00", Width 4.00", Area 32.00" Mass 51.2 ton KB -9
55	STR	0	HTH Damage 11d6 END [5]
23	DEX	39	OCV 8 DCV 2
19	BODY	0	
6	DEF	12	
6	SPD	27	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 109

Movement: Flight: 61"/244"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
17	Power System: Endurance Reserve (150 END, 10 REC) Reserve: (25 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	
53	*Contragrav Thruster Array:* Flight 61", Position Shift, x4 Noncombat (132 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	
	Tactical	
69	*5 MJ Plasma Cradle Gun:* RKA 5 ½d6, Increased Maximum Range (4,250"; +¼), Armor Piercing (+½), 64 Charges (+½) (191 Active Points); OIF Bulky (-1), Limited Arc Of Fire (180 degrees; -¼), Real Weapon (-¼), Reduced By Range (-¼)	[64]
60	*Tac Missiles:* RKA 6 ½d6, Explosion (+¼), Increased Maximum Range (5,000"; +¼), Indirect (Same origin, always fired away from attacker; +¼), Armor Piercing (+½) (225 Active Points); OIF Bulky (-1), 4 Charges (-1), Custom Modifier (requires a target lock or active designator; -½), Can Be Missile Deflected (-¼)	[4]
12	*Advanced Fire Control Package:* (Total: 23 Active Cost, 12 Real Cost) Absolute Range Sense (Real Cost: 3) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	
11	*Thermal Superconducting Armor:* Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	
	Operations	
19	*EM Masking And Stealth Construction*: Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	
27	*Sensor Decoys*: Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]
12	*Sensors and Communications:* Multipower, 40-point reserve, (40 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	
1	1) *GPS and SatNav Computer: And Navigation System:* Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	1
2	2) *Radar:* Radar (Radio Group), +5 to PER Roll, Increased Arc Of Perception (240 Degrees), Tracking, MegaScale (1" = 10 km; +½) (40 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	4
1	3) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	1
2	4) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (30 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	3
1	5) *MaserComm:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x16) (35 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	3
1	6) *Thermalgraphics:* Detect A Single Thing 14- (Unusual Group), Discriminatory, Telescopic (+2 versus Range Modifier): +2, MegaScale (1" = 1 km; +¼), Ranged (+½) (24 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (Only Costs END to Activate; -¼)	2
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4

Total Abilities & Equipment Cost: 301
Total Vehicle Cost: 410
Value Disadvantages
Total Disadvantage Points: 0
Total Cost: 410/5 = 82

RECON GRAV BIKE-12

Val	Char	Cost	Notes
3	Size	15	Length 2.00", Width 1.00", Area 2.00" Mass 800 kg KB -3
25	STR	0	Lift 800.0kg; 5d6
23	DEX	39	OCV 8 DCV 6
15	BODY	2	
4	DEF	6	
6	SPD	27	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 75

Movement: Flight: 50" / 200"

Cost	Powers	END
	Propulsion Systems	
9	*Power System:* Endurance Reserve (100 END, 5 REC) Reserve: (15 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
44	*Contragrav Thruster Array:* Flight 50", Position Shift, x4 Noncombat (110 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
45	*VRF Gauss Gun:* RKA 1 ½d6, 16000 Charges (+1), Autofire (80 shots; +2 ½) (112 Active Points); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (180 degrees; -¼) **Note:** vehicle can mount 1 weapon, if no passenger carried	[16000]
5	*Advanced Fire Control Package:* (Total: 8 Active Cost, 5 Real Cost) Absolute Range Sense (Real Cost: 3) **plus** +1 with Ranged Combat (5 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 2)	0
17	*Rocket Launchers:* RKA 3d6+1, Explosion (+½) (75 Active Points); OIF Bulky (-1), 4 Charges (-1), Limited Arc Of Fire (60 degrees; Only on same horizontal level; -¾), Cannot Use Targeting (-½), Can Be Missile Deflected (-¼) **Note:** Vehicle can mount one weapon if no passenger carried	[4]
	Operations	
19	*EM Masking and Stealth Construction:* Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	0
8	*Sensors and Communications:* Multipower, 30-point reserve, (30 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	
1u	1) *GPS and SatNav Computer:* Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	1
1m	2) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾) (26 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	3
1u	3) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	1
2m	4) *Radar:* Radar (Radio Group), +2 to PER Roll, Increased Arc Of Perception (240 Degrees), Tracking, MegaScale (1" = 1 km; +¼) (30 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	3
27	*Sensor Decoys:* Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]

Total Powers & Skill Cost: 179
Total Cost: 254

Total Disadvantage Points: 254

INTREPID GRAV TANK

Val	Char	Cost	Notes
10	Size	50	Length 10.08", Width 5.04", Area 50.80" Mass 102.4 ton KB -10
60	STR	0	Lift 102.4tons; 12d6
23	DEX	39	OCV 8 DCV 2
24	BODY	4	
8	DEF	18	
4	SPD	7	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 104

Movement: Flight: 56" / 224"

Cost	Powers	END
	Propulsion Systems	
26	*Power System:* Endurance Reserve (250 END, 15 REC) Reserve: (40 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
49	*Contragrav Thruster Array*: Flight 56", Position Shift, x4 Noncombat (122 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
131	*Rapid Pulse Fusion X Gun*: RKA 8d6, MegaScale (1" = 1 km; +¼), Custom Modifier (can fire 1 or 2 shots ; +¼), Armor Piercing (+½), 250 Charges (Recovers Under Limited Circumstances; requires a base or reloading vehicle; +1) (360 Active Points); OIF Bulky (-1), Real Weapon (-¼), Crew-Served (2 people; -¼), Reduced By Range (-¼)	[250]
45	*VRF Gauss Gun*: RKA 1 ½d6, 16000 Charges (+1), Autofire (80 shots; +2 ½) (112 Active Points); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (180 degrees; -¼)	[16000]
12	*Advanced Fire Control Package*: (Total: 23 Active Cost, 12 Real Cost) Absolute Range Sense (Real Cost: 3) plus +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	0
9	*Point Defense Fire Control Array*: Missile Deflection (Any Ranged Attack) (20 Active Points); OIF Bulky (-1), Real Armor (-¼)	0
11	*Thermal Superconducting Armor*: Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	0
	Operations	
19	*EM Masking and Stealth Construction*: Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	0
27	*Sensor Decoys*: Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]
16	*Sensors and Communication:* Multipower, 40-point reserve, (40 Active Points); all slots OIF Bulky (-1), Costs Endurance (-½)	
2m	1) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (30 Active Points); OIF Bulky (-1), Costs Endurance (-½)	3
1u	2) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
3m	3) *Radar:* Radar (Radio Group), +5 to PER Roll, Increased Arc Of Perception (240 Degrees), Tracking, MegaScale (1" = 10 km; +½) (40 Active Points); OIF Bulky (-1), Costs Endurance (-½)	4
1u	4) *Thermalgraphics*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Telescopic (+2 versus Range Modifier): +2, MegaScale (1" = 1 km; +¼), Ranged (+½) (24 Active Points); OIF Bulky (-1), Costs Endurance (-½)	2
1u	5) *MaserComm*: Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x16) (35 Active Points); OIF Bulky (-1), Costs Endurance (-½)	3
1u	6) *GPS and SatNav Computer:* Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4

Total Powers & Skill Cost: 367
Total Cost: 471

Total Disadvantage Points: 471

MRL ARTILLERY VEHICLE

Val	Char	Cost	Notes
11	Size	55	Length 12.70", Width 6.35", Area 80.63" Mass 204.8 ton KB -11
65	STR	0	Lift 204.8tons; 13d6
16	DEX	18	OCV 5 DCV -2
24	BODY	3	
8	DEF	18	
4	SPD	14	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 94

Movement: Flight: 20" / 80"

Cost	Powers	END
	Propulsion Systems	
20	*Power Systems:* Endurance Reserve (200 END, 10 REC) Reserve: (30 Active Points); OIF Bulky (-1)	0
20	*Contragrav Thruster Array:* Flight 20", Position Shift, x4 Noncombat (50 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
140	*30CM MRL*: Multipower, 400-point reserve, all slots Indirect (Same origin, always fired away from attacker; +¼), No Range Modifier (+½) (700 Active Points); Can Be Missile Deflected (-¼), Real Weapon (-¼), Crew-Served (2 people; -¼); all slots OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1), 32 Charges (Recovers Under Limited Circumstances; -¼)	
10u	1) *Remote Delivered Minefield [Anti-personnel]*: RKA 3d6+1, Trigger (Activating the Trigger requires a Zero Phase Action, Trigger requires a Turn or more to reset; +¼), Invisible to Sight Group (+½), Area Of Effect Nonselective (31" Radius; +¾), Autofire (20 shots; +2 ½), Lingering up to 1 Year (+3) (400 Active Points); OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1)	0
8u	2) *Chemical Smoke and Chaff*: Darkness to Sight and Radio Groups 8" radius, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Autofire (20 shots; +2 ½) (382 Active Points); OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1), Custom Modifier (high winds or rain dissipate quickly; -½)	0
9u	3) *Standard HE Rockets*: RKA 5d6+1, Explosion (+½), MegaScale (1" = 100 km; +¾), Autofire (20 shots; +2 ½) (380 Active Points); OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1)	0
9u	4) *Homing Submunition Dispenser*: RKA 5 ½d6, Armor Piercing (+½), Penetrating (+½), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Autofire (20 shots; +1 ½) (382 Active Points); OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1)	0
9u	5) *Remoted Delivered Minefield [Anti Armor]*: RKA 4d6, Armor Piercing (+½), Penetrating (+½), Invisible to Sight Group (+½), Area Of Effect Nonselective (27" Radius; +¾), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Autofire (10 shots; +2) (375 Active Points); OIF Bulky (-1), Extra Time (Extra Phase, Delayed Phase, -1), Custom Modifier (must have a valid commlink to designate, otherwise range is quartered; -1)	0
	Operations	
19	*EM Masking and Stealth Construction*: Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	0
9	*Decoy Dispensers*: Sight and Radio Groups Images 1" radius, 12 Continuing Charges lasting 1 Turn each (+¼) (19 Active Points); OIF Bulky (-1)	[12 cc]
14	*Sensors and Communications:* Multipower, 50-point reserve, (50 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	
1u	1) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 1km (+¼) (17 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	2
1u	2) *Sensory Enhancement:* IR Perception (Sight Group), +5 to PER Roll, MegaScale (1" = 1 km; +¼) (12 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	1
1u	3) *Battery Maser and Meson Commnet:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x4) (25 Active Points); Custom Modifier (300km max range, and target must also have comm; -1), OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½), Does Not Provide Mental Awareness (-¼) Note: 300km Max Range	2

1u	4) *Radar:* Radar (Radio Group), +5 to PER Roll, Tracking, MegaScale (1" = 10 km; +½), Can Be Scaled Down 1" = 1km (+¼) (44 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and commo; -1), Costs Endurance (-½)	4
	Personnel	
14	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Custom Modifier (Hull must be intact; -½), Costs Endurance (Only Costs END to Activate; -¼)	4

Total Powers & Skill Cost: 285
Total Cost: 379
Total Disadvantage Points: 379

PYRHUS SUPPORT SLED

Val	Char	Cost	Notes
8	Size	40	Length 6.35", Width 3.17", Area 20.16" Mass 25.6 ton KB -8
50	STR	0	Lift 25.6tons; 10d6
18	DEX	24	OCV 6 DCV 1
22	BODY	4	
6	DEF	12	
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 78

Movement: **Flight: 20" / 40"**

Cost	Powers	END
	Propulsion	
17	*Power System:* Endurance Reserve (150 END, 10 REC) Reserve: (25 Active Points); OIF Bulky (-1) Note: Compact fusion power plant	0
18	*Contragrav Thruster Array:* Flight 20", Position Shift (45 Active Points); OIF Bulky (-1), Custom Modifier (must have planetary gravity field to push against; -½)	0
	Tactical	
34	*7.5MJ Plasma Cradle Gun:* RKA 6d6+1 (95 Active Points); OIF Bulky (-1), Real Weapon (-¼), Reduced By Range (-¼), Crew-Served (2 people; -¼)	9
35	*7mm LMG:* RKA 2d6+1, Autofire (5 shots; +½), Armor Piercing (+½), 250 Charges (+1) (105 Active Points); OIF Bulky (-1), Limited Arc Of Fire (180 degrees; Only on same horizontal level; -½), Real Weapon (-¼), Crew-Served (2 people; -¼) Note: Co-axial mount in turret	[250]
8	*Reflective Shielding:* Energy Damage Reduction, Resistant, 50% (30 Active Points); OIF Bulky (Ablative thermal armor coating; -1), Ablative BODY or STUN (-1), Custom Modifier (only vs laser, plasma, fusion or flame weapons; -½)	0
	Operations	
10	*EMS Jammer:* Change Environment 2" radius, -4 to Radar PER Rolls, -2 to Infrared Perception PER Rolls, Multiple Combat Effects (25 Active Points); OIF Bulky (EMS Jammer; -1), No Range (-½)	2
11	*Sensors and Communications:* Multipower, 40-point reserve, (40 Active Points); all slots OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	
1u	1) *Sensory Enhancement:* Nightvision (5 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	1
1u	2) *GPS and SatNav Computer:* Navigation (Air, Land, Marine) 14- (14 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½) Note: GPS and Satnav Kit	1
1u	3) *Laser Comm:* Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x8) (30 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Custom Modifier (Target must also have laser comm; -½), Costs Endurance (-½)	3
1u	4) *Sensory Enhancement:* +3 versus Range Modifier for Sight Group (5 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	1
1u	5) *Radar:* Radar (Radio Group), +3 to PER Roll, Increased Arc Of Perception (240 Degrees), MegaScale (1" = 1 km; +¼) (25 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	2
1u	6) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (20 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	2
1u	7) *Sensory Enhancement:* IR Perception (Sight Group), +3 to PER Roll, Discriminatory, Increased Arc Of Perception (240 Degrees), MegaScale (1" = 1 km; +¼) (19 Active Points); OIF Bulky (-1), Custom Modifier (only for sensors and communications; -1), Costs Endurance (-½)	2
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact ; -½)	4

Total Powers & Skill Cost: 153
Total Cost: 231

200+	Disadvantages
10	Distinctive Features: (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses; Not Distinctive In Some Cultures)
15	Reputation: poor reputation as a cheap target, 11- (Extreme)
6	Experience Points

Total Disadvantage Points: 231

IMPERIAL MESON ARTILLERY VEHICLE

Val	Char	Cost	Notes
12	Size	60	Length 16.00", Width 8.00", Area 128.00" Mass 409.6 ton KB -12
70	STR	0	Lift 409.6tons; 14d6
16	DEX	18	OCV 5 DCV -3
22	BODY	0	
9	DEF	21	
4	SPD	14	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 113

Movement: Running: 6" / 12"
Swimming: 2" / 4"
Flight: 56" / 224"

Cost	Powers	END
	Propulsion Systems	
32	*Power Systems:* Endurance Reserve (350 END, 15 REC) Reserve: (50 Active Points); OIF Bulky (-1)	0
61	*Contragrav Thruster Array:* Flight 56", Position Shift, x4 Noncombat, Sideways Maneuverability half velocity (+¼) (152 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
127	*10 GJ Meson Gun*: RKA 9d6+1, Indirect (Same origin, always fired away from attacker; +¼), Explosion (+¼), No Range Modifier (+½), Invisible Power Effects, Source Only (Fully Invisible; +½), NND ([Standard]; Meson Screens or Forcefields; +1), MegaScale (1" = 1,000 km; +1), Can Be Scaled Down 1" = 1km (+¼) (665 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Limited Arc Of Fire (60 degrees; -½), Custom Modifier (requires a spotter with an active commlink; -½), Crew-Served (2 people; -¼), Real Weapon (-¼)	132
12	*Advanced Fire Control Package*: (Total: 23 Active Cost, 12 Real Cost) Absolute Range Sense (Real Cost: 3) plus +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	0
11	*Thermal Superconducting Armor*: Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	0
	Operations	
15	*GPS And Navigation System*: Navigation (Air, Land, Marine, Space) 14-	
27	*Sensor Decoys*: Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]
20	*Sensors and Communications:* Multipower, 50-point reserve, (50 Active Points); all slots OIF Bulky (-1), Costs Endurance (-½)	
1u	1) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	2) *Radar:* Radar (Radio Group), +5 to PER Roll, MegaScale (1" = 10 km; +½) (30 Active Points); OIF Bulky (-1), Costs Endurance (-½)	3
1u	3) *Thermalgraphics*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Telescopic (+2 versus Range Modifier): +2, MegaScale (1" = 1 km; +¼), Ranged (+½) (24 Active Points); OIF Bulky (-1), Costs Endurance (-½)	2
1u	4) *GPS And SatNav Computer*: Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
1u	5) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), +5 to PER Roll, MegaScale (1" = 100 km; +¾) (26 Active Points); OIF Bulky (-1), Costs Endurance (-½)	3
1u	6) *Laser/Maser/Meson Comm Arrays*: Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x8) (30 Active Points); OIF Bulky (-1), Custom Modifier (Target must also have working commlink; -½), Costs Endurance (-½), Does Not Provide Mental Awareness (-¼)	3
19	*EM Masking and Stealth Construction*: Change Environment 1" radius, -4 to Radar PER Rolls, -4 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (48 Active Points); OIF Bulky (-1), No Range (-½)	0
	Personnel	
13	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4

Total Powers & Skill Cost: 343
Total Cost: 456

Total Disadvantage Points: 456

ZHODANI Z-80 GRAV TANK

Val	Char	Cost	Notes
10	Size	50	Length 10.08", Width 5.04", Area 50.80" Mass 102.4 ton KB -10
60	STR	0	Lift 102.4tons; 12d6
18	DEX	24	OCV 6 DCV 0
22	BODY	2	
6	DEF	12	
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 86

Movement: Flight: 50" / 200"

Cost	Powers	END
	Propulsion Systems	
26	*Power System:* Endurance Reserve (250 END, 15 REC) Reserve: (40 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
44	*Contragrav Thruster Array*: Flight 50", Position Shift, x4 Noncombat (110 Active Points); OIF Bulky (-1), Custom Modifier (must have gravity to push against; -½)	0
	Tactical	
88	*Pulse Laser*: RKA 7d6+1, MegaScale (1" = 1 km; +¼), Autofire (3 shots; +¼), Armor Piercing (+½) (220 Active Points); OIF Bulky (-1), Real Weapon (-¼), Crew-Served (2 people; -¼)	22
37	*VRF Gauss Gun*: RKA 1 ½d6, 16000 Charges (+1), Autofire (80 shots; +2 ½) (112 Active Points); OIF Bulky (-1), Linked (-½), Real Weapon (-¼), Limited Arc Of Fire (180 degrees; -¼) **Note**: Coaxial Turret Mount	[16000]
37	*VRF Gauss Gun*: RKA 1 ½d6, 8000 Charges (+1), Autofire (80 shots; +2 ½) (112 Active Points); OIF Bulky (-1), Limited Arc Of Fire (60 degrees; Only on same horizontal level; -¾), Real Weapon (-¼) Note: fixed forward mount, fired by driver	[8000]
12	*Advanced Fire Control Package*: (Total: 23 Active Cost, 12 Real Cost) Absolute Range Sense (Real Cost: 3) plus +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	0
9	*Point Defense Fire Control Array*: Missile Deflection (Any Ranged Attack) (20 Active Points); OIF Bulky (-1), Real Armor (-¼)	0
11	*Thermal Superconducting Armor*: Energy Damage Reduction, Resistant, 50%, Hardened (+¼) (37 Active Points); Ablative BODY or STUN (-1), OIF Bulky (-1), Real Armor (-¼)	0
	Operations	
16	*EM Masking and Stealth Construction*: Change Environment 1" radius, -3 to Radar PER Rolls, -3 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (40 Active Points); OIF Bulky (-1), No Range (-½)	0
27	*Sensor Decoys*: Radio Group, Nightvision and IR Perception Images 1" radius, +/-3 to PER Rolls, 32 Continuing Charges lasting 1 Turn each (Recovers Under Limited Circumstances; requires base or ammo carrier; +1 ¼) (54 Active Points); OIF Bulky (-1)	[32 cc]
11	*Sensors and Communications*: Multipower, 30-point reserve, (30 Active Points); all slots OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	
1u	1) *MaserComm*: Mind Link , Machine class of minds, Any Willing Target, Number of Minds (x4) (25 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
2m	2) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), Tracking, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (30 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	3
1u	3) *Sensory Enhancement:* Nightvision, MegaScale (1" = 1 km; +¼) (6 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	1
1u	4) *Thermalgraphics*: Detect A Single Thing 14- (Unusual Group), Discriminatory, Telescopic (+2 versus Range Modifier): +2, MegaScale (1" = 1 km; +¼), Ranged (+½) (24 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1u	5) *GPS and SatNav Computer:* Navigation (Air, Land, Marine, Space) 14- (15 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	1
2m	6) *Radar:* Radar (Radio Group), +4 to PER Roll, Tracking, MegaScale (1" = 1 km; +¼) (30 Active Points); OIF Bulky (-1), Requires A Skill Roll (-½), Costs Endurance (Only Costs END to Activate; -¼)	3
	Personnel	
13	*Environmental Protection:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Hull must be intact; -½)	4

Total Powers & Skill Cost: 339
Total Cost: 425

Total Disadvantage Points: 425

Traveller Simplified Starship Tech

Ship Design and Construction

Space ships are constructed and sold at shipyards throughout the galaxy. Any class A starport has a shipyard which can build any kind of ship, including starships with jump drives; any class B starport can build small craft and ships which do not have jump drives.

The military procures vessels through these shipyards, corporations buy their commercial vessels from them, and private individuals can purchase ships that they have designed through them as well. The major restriction on the purchase of ships is money.

The words vessel, ship, starship, non-starship, and small craft are used with special significance when referring to space travel. A **vessel** is any interplanetary or interstellar vehicle. A **ship** is any vessel of 100 tons or more. A **starship** is a ship which has jump drives and can travel on interstellar voyages. A **non-starship** is a ship without jump drives. A **small craft** is any vessel under 100 tons; all small craft are incapable of jump.

Ship Design

Most vessels are constructed from standard design plans which use time-tested designs and combinations of features. Shipyards work from these plans which cover every detail of construction and assembly.

Small design corporations can produce design plans for any vessel type once given the details of what is desired. The design procedure is followed to determine what is available and allowed, and the results are presented to the naval architect firm. They produce a detailed set of design plans in about four weeks for a price of 1% of the final ship cost; they can be hurried to finish the job in two weeks if paid 1.5% of the final ship cost. Once the design plans are received, the shipyard may be commissioned to produce the vessel desired.

STANDARD DESIGNS

There are a number of standard design plans available; they have been in use for a long time, and are available for a nominal fee (Cr100 for the set).

Starship Designs

Standard starship plans available are:

Scout. 100 tons. Jump2, 2G, 40 tons fuel. Model/1bis. 4 staterooms, 1 hardpoint (double turret), Air/raft. 3 tons cargo. Streamlined, 1 crew. MCr29.43; 9 months.

Free Trader. 200 tons. Jump1, 1G. 30 tons fuel. Model/1, 10 staterooms, 20 low. 2 hardpoints. 82 tons cargo. Streamlined. 4 crew. MCr37.08; 11 months.

Safari Ship. 200 tons. Jump2, 1G. 60 tons fuel. Model/1bis. 11 staterooms. 1 hardpoint (double turret). Air/raft, launch. 6 tons cargo. 2 capture tanks; 1 lounge. Streamlined. 5 crew. MCr81.08; 11 months.

Yacht. 200 tons. Jump1, 1G. 50 tons fuel (allows two successive jump1). Model/1. 14 staterooms. 1 hardpoint. ATV, air/raft, ship's boat. 11 tons cargo. Unstreamlined. 4 crew. MCr51.057; 11 months.

Subsidized Merchant. 400 tons. Jump1, 1G. 50 tons fuel. Model/1. 13 staterooms, 9 low. 2 hardpoints. Launch. 200 tons cargo. Streamlined. 5 crew. MCr101.03; 14 months.

REVISED IMPERIUM SHIP CODES

The original Ship Type Codes from *High Guard* were confusing (FF could be Fleet Frigate or Fast Fighter, and Merchants could be A or M). The following revised system was influenced by that found in *Terran Empire, page 157*.

The Primary (first character) indicates the type of craft; the Qualifier (second character) represents the range; and the third indicates the tonnage.

Primary	Type	Notes
B	Battle	Warship to attack other vessels
C	Carrier	Vessel to carry smaller ships
D	Destroyer	Anti-fighter warship
E	Escort	Armed escort vessel
F	Fighter	Fighter, Intruder, Interceptor
G	Frigate	Patrol ship or cruiser
H	Support	Support ships or tenders
K	Cutter	
L	Lab	Scientific vessel
M	Merchant	Passenger or cargo vessel
O	Observation	Surveillance and Spy vessels
P	Station	Administrative complex
Q	Auxiliary	Auxiliary ships
R	Refinery	Industrial material processing vessel
S	Scout	Exploration vessel
T	Transport	Barge, Tanker, or Bulk-Cargo vessel
U	Unclassified	General-purpose vessel
X	Express	Mail or courier vessel
Y	Yacht	Personal use vehicle
Z	Experimental	Experimental vessel
Qualifier	**Type**	**Notes**
G	Gig	Planet-to-ship or ship-to-ship vessel
O	Orbital	Orbital vessel
M	Maneuver	Maneuver-only (interplanetary) vessel
J	Jump	Jump-capable (interstellar) vessel
Tonnage	**Value**	**Notes**
0	0-99	Gig, Pinnace, Shuttle, Cutter, etc.
1	100 -199	Scout/Courier, Planetary Shuttle
2	200-299	
3	300-399	

Tonnage rating continues as tonnage/100, rounded down

Using this system, a Pinnace or Ship's Boat would be QG-0; a Modular Cutter would be KM-0; a Subsidized Liner would be MJ-6, and a Mercenary Cruiser would be TJ-6.

Patrol Cruiser. 400 tons. Jump3, 4G. 160 tons fuel. Model/3. 12 staterooms, 4 low berths. 4 hardpoints (2 triple missile turrets, 2 triple laser turrets). Ship's boat, GCarrier. 10 crew. MCr221.04; 16 months.

Laboratory Ship. 400 tons. Jump2, 1G. 90 tons fuel. Model/2. 20 staterooms. 2 hardpoints. 2 air/rafts, 1 pinnace. 23 tons cargo. 85 tons lab space. Unstreamlined. 5 crew. MCr158.98; 14 months.

Subsidized Liner. 600 tons. Jump3, 1G. 210 tons fuel. Model/3. 30 staterooms, 20 low. 3 hardpoints. Launch. 129 tons cargo. Unstreamlined. 9 crew. MCr236.97; 22 months.

Mercenary Cruiser. 800 tons. Jump3, 3G. 318 tons fuel (48 tons reserve). Model/5. 25 staterooms. 8 hardpoints (8 triple turrets). Air/raft, 2 modular cutters (1 open module, 1 fuel module, 2 ATV modules), 2 ATVs. 80 tons cargo. Unstreamlined. 8 crew. MCr445.95; 25 months.

Small Craft Designs

Standard plans are also available for the following small craft:

Fighter: 10 tons. 6G, 1 ton fuel. Model/1, one weapon (one laser, up to three missile racks, or up to three sandcasters). 1 ton cargo. 1 crew. MCr18.

Launch: 20 tons. 1G, 1 ton fuel. Model/2bis. Weapon (missile racks or sandcasters; it may not mount lasers). The craft has 13 tons excess space available for custom use. 2 crew. MCr14.

Ship's Boat: 30 tons. 6G, 1.8 tons fuel. Model/2. Weapon (one beam or pulse laser). The craft has 13.7 tons of excess space available. 2 crew. MCr16.

Slow Boat: 30 tons. 3G, 1 ton fuel. Model/2. Weapon (one beam or pulse laser). The craft has 19.9 tons of excess space. 2 crew. MCr15.

Pinnace: 40 tons. 5G, 2 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 22.4 tons of excess space. 2 crew. MCr20.

Slow Pinnace: 40 tons. 2G, 1 ton fuel. Model/3. Weapon (one beam or pulse laser). The craft has 31.6 tons of excess space. 2 crew. MCr18.

Modular Cutter: 50 tons. 4G, 2 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 30 tons committed to special detachable modules; it has 2.5 tons excess space available for weaponry, computer, and possibly a couch for a third crew member. 2 crew. MCr28.

ATV Cutter Module: The ATV module (which includes an operational ATV) is 30 tons. It can land (and retrieve) an ATV on a world surface from orbit. The module can serve as an ATV storage location, if desired. It costs MCr1.8.

Fuel Skimming Cutter Module: The fuel module, with 30 tons of fuel tankage, serves as a fuel skimming vehicle and storage tank. It costs MCr1.

Frame Cutter Module: The open module is a customizable frame with 30 tons of excess space which can be allocated to passenger couches, fuel, cargo, cabin, or staterooms. It costs MCr2.

Shuttle: 95 tons. 3G, 2.85 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 71 tons of excess space. 2 crew. MCr33.

Other Plans

Other standard plans may be available at various localities. Standard designs are easier to produce; their prices reflect a 10% reduction in normal pricing.

Standard design vessels are often available used (10 to 40 years old) at reductions in price ranging from 10% to 40%, as indicated by the GM.

Construction Times: Time required for building any vessel depends primarily on the hull. As a rough estimate, construction time is 5 Displacement Tons per day, with a minimum time of one week. The standard hulls require shorter construction times; they are more familiar to the shipyard and easier to build.

Costs and Payments: A shipyard will insist upon a 20% down payment with the order for the vessel, as well as a demonstration that proper financing is available to cover the balance when due.

Required Starship Components

Starships are constructed on the foundation of a hull, into which are fitted the drives and power plants, the fuel tankage, life support equipment, computers, controls, armaments, and other fittings that adapt it to its intended function. The total tonnage of the installed fittings cannot exceed the tonnage of the hull.

The Hull

Hulls are identified by their mass displacements, expressed in tons. As a rough guide, one ton equals 2 HERO Hexes (the volume of one ton of liquid hydrogen).

When hulls are constructed, they are divided into an engineering section for the drives and the main compartment for everything else. All drives and power plants must be located in the engineering section, and only drives and power plants may be placed in that section. All other ship components, including fuel, cargo hold, living space, and computer, must be located in the main compartment.

The standard hulls table shows six standard hulls which are available at reduced prices and construction times. Any other hull must be produced on a custom basis at a cost of MCr0.1 per ton; minimum price MCr20. Construction times for custom hulls are 5DT per day, with a minimum of time of one week.

Standard Hulls

Tons	Hexes	Main	Drives	MCr	Time	STR	BODY	DCV	DEF
100	200	170	30	2	9	75	23	-8	8
200	400	340	60	8	11	85	25	-10	8
400	800	680	120	16	14	90	26	-10	8
600	1200	1020	180	48	22	95	27	-11	8
800	1600	1360	240	80	25	98	28	-12	8
1000	2000	1700	300	100	27	100	28	-12	8

Main and Drive areas given in Hexes.
Time in months.

The hulls listed above are standard sizes, readily available at the reduced prices or times shown. All others must be custom produced at MCr0.1 per ton.

Hulls vary in their requirements for drives and power plants based on tonnage. Any specific drive will be less efficient as the tonnage it must drive increases.

HULL MATERIALS

The standard ship hull is a hardened steel hull with a strength of DEF 8. Selecting a different hull material affects the BODY, DEF, and overall cost of the hull.

Hull Materials

Material	BODY	DEF	Hull Cost*
Titanium alloy	+1	+1	0.032
Light Composite	+2	+1	0.036
Composite Laminate	+2	+2	0.06
Crystal Iron	+1	+3	0.072
Superdense	+2	+4	0.070
Bonded Superdense	+5	+8	0.099
Coherent Superdense	+6	+12	0.195

* = Cost in MCr per DTon of Ship. Multiply the mass of the ship times the value in Hull Cost to find the total cost of the armor.

The Engineering Section

Drives and power plants are installed in the engineering section.

MANEUVER DRIVES

Maneuver Drives consist of the drive and the control hardware. The maneuver drive needs 3 Tons of Maneuver Drive to propel 100 Tons of vessel at 1G. Control hardware requires

an additional 1 Ton per 100 Tons of vessel. It takes 19 Tons (18 for Maneuver Drive, 1 for hardware) to propel a 100-Ton vessel at 6G. The maximum propulsion available regardless of the Maneuver Drive tonnage is 6G. The overall maneuver drive assembly costs MCr0.5 per Ton.

Maneuver Drives

Hull	Hdwr	1G	2G	3G	4G	5G	6G
		Tons	Tons	Tons	Tons	Tons	Tons
100	1	4	7	10	13	16	19
200	2	8	14	20	26	32	38
400	4	16	28	40	52	64	76
600	6	24	42	60	78	96	114
800	8	32	56	80	104	128	152
1000	10	40	70	100	130	160	190
2000	20	80	140	200	260	320	380
3000	30	120	210	300	390	480	570
4000	40	160	280	400	520	640	760
5000	50	200	350	500	650	800	950
TL		7	7	8	8	8	9
SPD		2	2	3	4	5	6
Flight		30”	60”	60”	60”	60”	60”
DEX		+0	+5	+8	+11	+13	+17
END/Turn		12	24	36	48	60	72

Hull Tons are for the vessel. The Tons for each Maneuver rating are for the Maneuver Drive **and** extra hardware. Cost is MCr0.5 per Ton of Maneuver Drive.

JUMP DRIVES

Jump Drives consist of the drive and the control hardware. The jump drive needs 1 Ton of Jump Drive moves 100 Tons of vessel at J1. Control hardware requires an additional 1 Ton per 100 Tons of vessel. It takes 7 Tons (6 for Jump Drive, 1 for hardware) to move a 100-Ton vessel at J6, with a cost of MCr28. The maximum jump possible regardless of the Jump Drive tonnage is J6. The overall jump drive assembly costs MCr4 per Ton.

Jump Drives

Hull	Hdwr	J1	J2	J3	J4	J5	J6
	Tons	Tons	Tons	Tons	Tons	Tons	Tons
100	1	2	3	4	5	6	7
200	2	4	6	8	10	12	14
400	4	8	12	16	20	24	28
600	6	12	18	24	30	36	42
800	8	16	24	32	40	48	56
1000	10	20	30	40	50	60	70
2000	20	40	60	80	100	120	140
3000	30	60	90	120	150	180	210
4000	40	80	120	160	200	240	280
5000	50	100	150	200	250	300	350
TL		9	11	12	13	14	15
END		12	25	36	48	60	72

Hull Tons are for the vessel. The Tons for each Jump rating are for the Jump Drive **and** extra hardware. Cost is MCr4 per Ton of Jump Drive. END is the power needed to ignite the hydrogen for Jump.

POWER PLANTS

In all cases, the power plant must equal or exceed the higher of the maneuver drive and the jump drive letter. For example, a ship that has 3G Maneuver Drive and J1 Jump Drive must have at least a P3 power plant; a ship that has a 1G Maneuver Drive and a J2 Jump Drive must have at least a P2 power plant.

Each Ton of Power Plant costs MCr3. The volume needed is based on the TL of the Power Plant (see below). A P1-100 Power Plant at TL 8 takes up 4 Tons, while the same plant at TL 15 only takes up 1 Ton.

Power Plants

Hull	Plant Tons	P1 Pwr	P2 Pwr	P3 Pwr	P4 Pwr	P5 Pwr	P6 Pwr
100	1	75	150	225	300	375	450
200	2	150	300	450	600	750	900
400	4	300	600	900	1200	1500	1800
600	6	450	900	1350	1800	2250	2700
800	8	600	1200	1800	2400	3000	3600
1000	10	750	1500	2250	3000	3750	4500
2000	20	1500	3000	4500	6000	7500	9000
3000	30	2250	4500	6750	9000	11250	13500
4000	40	3000	6000	9000	12000	15000	18000
5000	50	3750	7500	11250	15000	18750	22500

Hull Tons are for the vessel. The Tons for each Power rating are for the Power Plant; Pwr is the END and REC of the Power Plant. Cost is MCr3 per Ton of Power Plant. TL affects the size of the Power Plant.

TL of Power Plant is	7-8	9-12	13-14	15
Multiply Tons By	4	3	2	1

The Main Compartment

The ship’s main compartment contains all non-drive features of the ship, including the bridge, computer, staterooms, low passage berths, cargo hold, fuel tanks, armament, and other items.

THE BRIDGE

All ships must allocate 2% of their tonnage (minimum 20 DT) to basic controls, communications equipment, avionics, scanners, detectors, sensors, and other equipment for proper operation of the ship. The cost for this bridge is MCr0.5 per 100 tons of ship.

Bridge Systems Table

System	TL	END
Sensors	9	5
Communications	9	5
Flight Control	9	1
Navigation	9	1
Life Support	9	2/100DT
Gravity	9	8
Fire Control	9	1
Defense Control	9	1

COMPUTER

The basic controls do not include the ship’s computer, which is installed adjacent to the bridge. The computer is identified by its model number; the computer table indicates price, tonnage, capacity, and tech level available. In general, larger computers are better in combat situations. In addition, the model number indicates the highest level of jump possible for a ship. For example, a ship must have a Model/4 computer before it can perform jump-4, in addition to the jump drive rating installed.

CPU refers to the computer’s central processing unit, indicating the capacity to process programs; storage refers to the additional capacity available to hold programs in readiness for processing. Programs themselves are classified by size, using a point indicator to specify how much of the CPU or storage capacity is required for that program to fit into the computer. The number (and exact types) of which are on hand, in storage, or in the CPU is important in the operation of the starship, especially in combat.

There are two bis (meaning second or improved) models of

computer available. Each is treated as the next higher level for jump support, but as the next lower level for software selection. Thus, the Model/1 bis can support jump-2, but has a software package value of only MCr1.

Computers

Model	MCr	Tons	Capacity	TL	END	INT	DEX	SPD
1	2	1	2/4	5	5	13	12	2
1bis	4	1	4/0	6	5	16	12	2
2	9	2	3/6	7	5	16	14	2
2bis	18	2	6/0	8	5	18	15	2
3	18	3	5/9	9	5	19	16	2
4	30	4	8/15	A	5	22	18	3
5	45	5	12/25	B	5	25	20	4
6	55	7	15/35	C	5	28	22	4
7	80	9	20/50	D	5	31	24	4

Computer cost is indicated in MCr; tonnage required in tons. TL is the minimum tech level required to produce the equipment. Capacity is used to determine program holding capacity. Model number also indicates the largest jump which the computer can control. END is the energy required from the Power Plant to run the computer.

Computer software (programs) must normally be acquired separately by purchase (or they may be written by a character who has computer expertise). Each computer model as originally furnished includes a basic software package of commonly used programs. This package is selected by the purchaser from the list of available programs; the computer model (1 through 7) indicates the credit value which may be selected. For example, Model/1 allows a package with a value of MCr1, while Model/6 allows a value of MCr6.

FIRE CONTROL

Fire control equipment is required if weaponry is to be installed. Each installed turret requires one ton of displacement committed for fire control equipment. Original design plans for ships often include reserve tonnage for later use in installing fire control equipment, or for upgrading computers.

STATEROOMS

Quarters for the crew and passengers are provided in the form of staterooms containing sleeping and living facilities. Each stateroom is sufficient for one person, displaces 4 tons (8 HERO Hexes), and costs Cr500,000. In some starships (especially exploratory vessels, military ships, and privately owned starships), double occupancy is allowed in staterooms. No stateroom can contain more than two persons however, as it would strain the ship's life support equipment. A commercial ship must have one stateroom for each member of the crew.

LOW PASSAGE BERTHS

Facilities for carrying passengers installed in a ship. One low passage berth carries one low passenger, costs Cr50,000, and displaces one-half ton (one HERO Hex). Low berths also serve well in emergencies, in that they can provide suspended animation facilities for characters when medical care or rescue is not immediately available.

Emergency low berths are also available; they will not carry passengers, but can be used for survival. Each costs Cr100,000 and displaces one ton (2 HERO Hexes). Each holds four persons who share the same revival die roll,

FUEL

Total fuel tankage for a ship must be indicated in the design plans. There is no cost, but the capacity does influence how often the ship must refuel. At a minimum, ship fuel tankage must equal **0.1MJn+10Pn**, where *M* is the tonnage of the ship, *Jn* is the ship's jump number, and *Pn* is the ship's power plant rating. Power plant fuel under the formula (10Pn) allows routine operations and maneuver for four weeks. Jump fuel under the formula (0.1MJn) allows one jump of the stated level. Ships performing jumps less than their maximum capacity consume fuel at a lower level based on the jump number used.

CARGO HOLD

The design plan must indicate cargo capacity. There is no cost, but cargo carried may not exceed cargo capacity.

SHIP'S LOCKER

Every ship has a ship's locker. The actual cost of much of the equipment within the locker is inconsequential when compared to hull and drive costs; the GM should administer what is actually within the ship's locker based on the situation. Typical equipment carried aboard will include protective clothing, vac suits, weapons such as shotguns or carbines, pistols, ammunition, compasses and survival aids, and portable shelters.

Note: The GM may decide to assign **Resource Points** to the ship's locker (see *Dark Champions*), and have the players allocate those points at the beginning of the scenario or at starbases as appropriate.

ARMAMENTS

Any ship may have one *hardpoint* per 100 tons of ship. Designation of a hardpoint requires no tonnage, and costs Cr100,000. One turret may be attached to each hardpoint on the ship. Hardpoints may be left unused if desired.

SHIP CREWS

Each ship requires a crew. On small ships, the crew may be one person; on larger ships, the crew can be quite large. The following basic crew positions must be filled:

Pilot: Each starship and non-starship requires a pilot, who must have at least *Combat Pilot* skill, and *Transport Familiarity* with the appropriate class of vessel. Small craft require a pilot who must have at least *Transport Familiarity (Ship's Boat)*. Cr6,000 monthly salary.

Navigator: Each starship displacing greater than 200 tons must have a navigator, who must have *Navigation (Space)* for non-jump vessels, and *Navigation (Hyperspace)* for Jump-capable vessels. The pilot of a small craft or nonstarship can handle its navigation requirements. Cr5,000 monthly.

Engineer: Any ship with tonnage of 200 tons or more must have one engineer (with at least *SS: Starship Engineering*, *Mechanics*, and *Electronics* skills) per 35 tons of drives and power plant. If there is more than one engineer, then the most skilled (or the oldest) becomes chief engineer with 10% more pay. Ships under 200 tons and small craft do not require an engineer, although engineering skill may prove useful. Cr4,000 monthly salary.

Steward: If high passengers are carried, then a steward is required. There must be at least one steward (*PS: Steward 8-* or better) per eight high passengers on the ship. If there is more than one steward, the most skilled is designated chief steward (or purser) and draws 10% more salary. Cr3,000 monthly salary.

Medic: Each starship of 200 tons or more must have a medic (at least *Paramedic* skill and *SS: Medicine 8-*). In addition, there must be at least one medic per 120 passengers carried. If there is more than one medic, the most skilled is designated ship's doctor and draws 10% more pay. Non-starships and small

craft do not require medics. Cr2,000 monthly salary.

Gunner: One gunner (*Weapon Familiarity (Starship Weapons)* or *System Operations (Missiles)* or better required) may be hired per turret on a ship. Armed small craft require a gunner in addition to the pilot. If there is more than one gunner, the most skilled is designated the chief gunner and draws 10% more pay. The gunner position may be omitted if there is no major threat to the ship. Cr1,000 monthly salary.

One person may fill two crew positions, providing he or she has the skills needed for both jobs and has at least +1 with each skill for those positions. The individual draws total salary equal to 75% of each position. No person may assume the duties of more than two crew positions except in the case of an emergency.

Other crew positions may be created depending on the facilities of the starship: for example, a starship which carries a cutter could have a crew position for cutter pilot (and possibly for cutter gunner) in addition to its normal crew positions. Specific jobs or tasks (laboratory technician if the ship has a laboratory; contact specialist if the ship is assigned alien contact missions) require crew members to perform them.

For starships of greater than 1000 tons hull mass displacement, the crew should also include a commanding officer (or captain), his executive officer, and at least three administrative personnel. Extremely large starships should have at least 10 crew members for each 1000 tons of mass displacement.

Optional Components

The following are optional components. Where not present, they may be added to a standard design by the purchaser.

ATMOSPHERIC STREAMLINING

The hulls specified are rough deep space configurations incapable of entering atmospheres. They may be streamlined by so indicating in the design plans, at a cost of MCr1 per 100 tons of ship. This streamlining includes fuel scoops which allow the skimming of unrefined fuel from gas giants and the gathering of water from open lakes or oceans. Streamlining may not be retrofitted; it must be included at the time of construction.

WEAPONRY

The four commonly available weapons types are pulse lasers, beam lasers, missile launchers, and sandcasters.

Pulse Lasers fire short bursts of energy at targets and are more effective at inflicting damage than are beam lasers.

Pulse Lasers

Weapon	TL	Dmg	OCV	RMod	END	MCr
Laser, Single Turret	9	8d6+1	+0	+0	24	0.7
Laser, Double Turret	9	8d6+1	+0	+0	30@	1.5
Laser, Triple Turret	9	8d6+1	+0	+0	30@	2.5
Laser, Single Turret	12	9d6	+0	+0	17	0.7
Laser, Double Turret	12	9d6	+0	+0	20@	1.5
Laser, Triple Turret	12	9d6	+0	+0	20@	2.5
Laser, Single Turret	15	9d6+1AP	+0	+0	12	0.7
Laser, Double Turret	15	9d6+1AP	+0	+0	14@	1.5
Laser, Triple Turret	15	9d6+1AP	+0	+0	14@	2.5

Beam Lasers fire continuous beams of energy and are more effective in achieving hits than are pulse lasers.

Beam Lasers

Weapon	TL	Dmg	OCV	RMod	END	MCr
Laser, Single Turret	9	8d6	+2	+0	25	1.2
Laser, Double Turret	9	8d6	+2	+0	31@	2.5
Laser, Triple Turret	9	8d6	+2	+0	31@	4.0
Laser, Single Turret	12	8½d6	+2	+0	17	1.2
Laser, Double Turret	12	8½d6	+2	+0	20@	2.5
Laser, Triple Turret	12	8½d6	+2	+0	20@	4.0
Laser, Single Turret	15	9d6AP	+2	+0	13	1.2
Laser, Double Turret	15	9d6AP	+2	+0	14@	2.5
Laser, Triple Turret	15	9d6AP	+2	+0	14@	4.0

Missile Racks are launchers for small anti-ship missiles. The typical missile is a homing type which constantly seeks the target ship, ultimately being destroyed by the target's defenses, or exploding and doing damage to it. Such missiles may also be converted to planetary surface bombs, or to surveillance drones (mechanical and electronic skill should apply in such cases). Individual missiles weigh about 50 kg, and cost Cr5.000 each; one rack holds 12 missiles.

Missile Racks

Weapon	TL	Dmg	OCV	RMod	END	MCr
Missile, Single Turret	9	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	9	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	9	6½d6X	+10	+0	[36c]	3.25
Missile, Single Turret	12	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	12	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	12	6½d6X	+10	+0	[36c]	3.25
Missile, Single Turret	15	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	15	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	15	6½d6X	+10	+0	[36c]	3.25

Sandcasters are defensive weapons; they dispense small particles which counteract the strength of lasers and protect the ship. The specific particles used are similar to the material used in ablat personal armor; replacement canisters of this special sand weigh about 50 kg and cost Cr400.

Sandcaster

Weapon	TL	Effect	Duration	END	MCr
Sandcaster	9	50% Dmg Reduction	1 Turn	8	0.45
Sandcaster	12	50% Dmg Reduction	1 Turn	8	0.45
Sandcaster	15	50% Dmg Reduction	1 Turn	8	0.45

Mounts: One turret may be attached to each hardpoint on the ship. When it is attached, one ton (two Hexes) for fire control must be allocated. Turrets themselves are available in single, double, and triple mounts which will hold one, two, or three weapons respectively.

Turrets and weapons may be altered or retrofitted. For example, a single turret can have its pulse laser replaced by a beam laser when it becomes available; a single turret can be replaced by a triple turret when it becomes available.

SHIP'S VEHICLES

A ship may have one or more subordinate vehicles specified as part of the ship's equipment, and tonnage may be devoted to the permanent stowage or hangarage of the vehicles. The vehicles list indicates those vehicles and small craft commonly available.

Air/rafts, ATVs, GCarriers, and speeders are described in the chapter on Vehicles. In most cases, vehicles will have ports or bay doors opening to the outside; air/rafts, GCarriers, and speeders can reach orbit, and are often launched to a world surface from orbit. If an ATV is carried, provision must be made to move it to a world surface if the ship is not streamlined (unless the vehicle is intended for use only on worlds without atmospheres).

When small craft are carried on a ship, it must have sufficient tonnage to hold each small craft allocated as small craft hangars or compartments.

Small Craft Design

Vessels under 100 tons are considered to be small craft. There are eight standard designs available; each design plan is available for Cr100. All take approximately twelve months to build. All are streamlined, and can enter atmospheres. All can operate with unrefined fuel; they have fuel scoops which allow them to skim fuel from a gas giant. Each small craft design is intended to be as useful as possible. As a result, the description covers basic performance of the craft, and indicates price, crew, and other details. Each craft also has a feature called excess space: this interior tonnage may be used by the purchaser for a wide variety of purposes. In effect, when the craft is procured, it is customized by the purchaser for some specific use. Any fitting or combination of fittings shown on the fitting table may be specified for a standard design small craft. The prices, however, are ignored, and are considered to be included in the standard design price. For example, the launch, with 13 tons excess space, could utilize that space for 5 tons of fuel, 10 passenger couches, a small craft cabin, and one ton of cargo. As another example, the vessel could have all 13 tons allocated to cargo. In either case, the price of the launch remains MCr14.

Fittings: The fittings table indicates items which may be allocated to small craft. Staterooms, low berths, and emergency low berths are the same as those used in larger ships. The small craft cabin is a small, one-passenger stateroom for use on longer duration voyages. It can be used double occupancy on small craft which have no bridge, but the crew will become increasingly uncomfortable. Small craft couches are individual passenger seats; one is required for each passenger carried (if a stateroom or cabin is not provided). Each small craft except the fighter already has two small craft passenger couches installed (the fighter has one). Cargo and fuel tankage are simply allocated; one ton of cargo space carries one ton of cargo, while one ton of fuel tankage carries one ton of fuel. The fuel tankage listed for each small craft supports four weeks of operation. Each additional increment of fuel tonnage added supports an additional four weeks of operation.

Fitting Description	Tons	Cost (in Cr)
Stateroom	4.0	500,000
Low Berth	0.5	50,000
Emergency Low Berth	1.0	100,000
Small Craft Stateroom	2.0	50,000
Small Craft Couch	0.5	25,000
Cargo - as required		
Fuel - as required		

Listed crew for all small craft except the fighter is two: pilot and rider. The craft may be operated by one pilot if desired. The pilot must have *Transport Familiarity (Ship's Boat)* skill (or maybe *Combat Piloting* with the associated familiarity). The rider may be a gunner, a passenger, or a co-pilot. If the craft is armed, but carries no gunner, the pilot may fire the weapon with a DM of -1 on the weapon (with an additional -3 if he does not have the proper Weapon Familiarity).

Computers may be added to small craft, but such computers must be purchased normally. Specific computer restrictions are indicated in the small craft descriptions.

Weaponry may be added to small craft. Each small craft may allocate one ton to weaponry and install up to three weapons. The individual listings indicate specific weapons which are available for the small craft.

Below are eight standard small craft descriptions.

Launch/Lifeboat: Using a 20-ton hull, the launch is capable of 1G acceleration, carries 1 ton of fuel tankage, and has a crew of two. A launch may mount missile racks and sandcasters; it may not mount lasers. The maximum computer for the launch is the Model/2bis. The craft has 13 tons excess space available for custom use, and costs MCr14.

Ship's Boat: Using a 30-ton hull, the ship's boat is capable of 6G acceleration, carries 1.8 tons of fuel tankage, and has a crew of two. A ship's boat may mount one beam or pulse laser; remaining weapons must be missile racks and sandcasters. The maximum computer for the ship's boat is the Model/3; if the computer is Model/3, lasers may not be mounted. The craft has 13.7 tons of excess space available, and costs MCr16.

Slow Boat: Using a 30-ton hull, the slow boat is capable of 3G acceleration, carries 1 ton of fuel tankage, and has a crew of two. A slow boat may mount one beam or pulse laser; remaining weapons must be missile racks or sandcasters. The maximum computer for the slow boat is the Model/3; if the computer is Model/3 lasers may not be installed. The craft has 19.9 tons of excess space, and costs MCr15.

Pinnace: Using a 40-ton hull, the pinnace is capable of 5G acceleration, carries 2 tons of fuel, and has a crew of two. It may mount two lasers, and any remaining weapons must be missile racks or sandcasters. The maximum computer for the pinnace is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed, no lasers may be installed. The craft has 22.4 tons of excess space, and costs MCr20.

Slow Pinnace: Using a 40-ton hull, the slow pinnace is capable of 2G acceleration, carries 1 ton of fuel, and has a crew of two. It may mount one beam or pulse laser; remaining weapons must be missile racks or sandcasters. The maximum computer for the slow pinnace is the Model/3; if the computer is a Model/3, lasers may not be mounted. It has 31.6 tons excess space, and costs MCr18.

Modular Cutter: Using a 50-ton hull, the cutter is capable of 4G, carries 2 tons of fuel, and has a crew of 2. It has 30 tons committed to special detachable modules; the craft has 2.5 tons excess space available for weaponry, computer, and possibly a couch for a third crew member. The cutter may mount up to two lasers; remaining weapons must be missile racks or sandcasters. The maximum computer for the cutter is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed no lasers may be mounted. The cutter, without any modules, costs MCr28. Three interchangeable modules are routinely available for the modular cutter.

The ATV module (which includes an operational ATV) is 30 tons. It can land (and retrieve) an ATV on a world surface from orbit. The module can serve as an ATV storage location, if desired. It costs MCr1.8.

The fuel module, with 30 tons of fuel tankage, serves as a fuel skimming vehicle and storage tank. It costs MCr1.

The open module is a customizable frame with 30 tons of excess space which can be allocated to passenger couches, fuel,

cargo, cabin, or staterooms. It costs MCr2.

Shuttle: Using a 95-ton hull, the shuttle is capable of 3G acceleration, carries 2.85 tons of fuel, and has a crew of 2. It may mount up to two lasers; remaining weapons must be missile racks or sandcasters. The maximum computer for the shuttle is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed, no lasers are allowed. It has 71 tons of excess space, and costs MCr33.

Fighter: Using a 10-ton hull, the fighter is capable of 6G acceleration, carries 1 ton of fuel, and has a crew of one. It includes a computer Model/1 and can mount only one type of weapon: one laser, up to three missile racks, or up to three sandcasters. The maximum computer for the fighter is the Model/3; if a Model/3 is installed, then no lasers are permitted. It has one ton of excess space, and costs MCr18.

Traveller Starship Tech

This chapter contains information from the simplified construction chapter, and adds additional information, write-ups, more gadgets, and some alternatives GMs may use when building starships.

Ship Construction

Space ships are constructed and sold at shipyards throughout the galaxy. Any class A starport has a shipyard which can build any kind of ship, including starships with jump drives; any class B starport can build small craft and ships which do not have jump drives.

The military procures vessels through these shipyards, corporations buy their commercial vessels from them, and private individuals can purchase ships that they have designed through them as well. The major restriction on the purchase of ships is money.

The words vessel, ship, starship, non-starship, and small craft are used with special significance when referring to space travel. A **vessel** is any interplanetary or interstellar vehicle. A **ship** is any vessel of 100 tons or more. A **starship** is a ship which has jump drives and can travel on interstellar voyages. A **non-starship** is a ship without jump drives. A **small craft** is any vessel under 100 tons; all small craft are incapable of jump.

Ship Design

The Traveller approach to ship building is a modular one. It takes advantage of the concept that mass-produced designs can be built faster and cheaper than new designs. It's much cheaper to buy a ship based on the Far Trader shell, for example, than to build a similarly-sized and equipped vessel of a brand new design.

Most vessels are constructed from standard design plans which use time-tested designs and combinations of features. Shipyards work from these plans which cover every detail of construction and assembly.

Small design corporations can produce design plans for any vessel type once given the details of what is desired. The design procedure is followed to determine what is available and allowed, and the results are presented to the naval architect firm. They produce a detailed set of design plans in about four weeks for a price of 1% of the final ship cost; they can be hurried to finish the job in two weeks if paid 1.5% of the final ship cost. Once the design plans are received, the shipyard may be commissioned to produce the vessel desired.

STANDARD DESIGNS

There are a number of standard design plans available; they have been in use for a long time, and are available for a nominal fee (Cr100 for the set).

Starship Designs

Standard starship plans available are:

Scout. 100 tons. Jump2, 2G, 40 tons fuel. Model/1bis. 4 staterooms, 1 hardpoint (double turret), Air/raft. 3 tons cargo. Streamlined, 1 crew. MCr29.43; 9 months.

Free Trader. 200 tons. Jump1, 1G. 30 tons fuel. Model/1, 10 staterooms, 20 low. 2 hardpoints. 82 tons cargo. Streamlined. 4 crew. MCr37.08; 11 months.

Safari Ship. 200 tons. Jump2, 1G. 60 tons fuel. Model/1bis. 11 staterooms. 1 hardpoint (double turret). Air/raft, launch. 6 tons cargo. 2 capture tanks; 1 lounge. Streamlined. 5 crew. MCr81.08; 11 months.

Yacht. 200 tons. Jump1, 1G. 50 tons fuel (allows two successive jump1). Model/1. 14 staterooms. 1 hardpoint. ATV, air/raft, ship's boat. 11 tons cargo. Unstreamlined. 4 crew. MCr51.057; 11 months.

Subsidized Merchant. 400 tons. Jump1, 1G. 50 tons fuel. Model/1. 13 staterooms, 9 low. 2 hardpoints. Launch. 200 tons cargo. Streamlined. 5 crew. MCr101.03; 14 months.

Patrol Cruiser. 400 tons. Jump3, 4G. 160 tons fuel. Model/3. 12 staterooms, 4 low berths. 4 hardpoints (2 triple missile turrets, 2 triple laser turrets). Ship's boat, GCarrier. 10 crew. MCr221.04; 16 months.

Laboratory Ship. 400 tons. Jump2, 1G. 90 tons fuel. Model/2. 20 staterooms. 2 hardpoints. 2 air/rafts, 1 pinnace. 23 tons cargo. 85 tons lab space. Unstreamlined. 5 crew. MCr158.98; 14 months.

Subsidized Liner. 600 tons. Jump3, 1G. 210 tons fuel. Model/3. 30 staterooms, 20 low. 3 hardpoints. Launch. 129 tons cargo. Unstreamlined. 9 crew. MCr236.97; 22 months.

Mercenary Cruiser. 800 tons. Jump3, 3G. 318 tons fuel (48 tons reserve). Model/5. 25 staterooms. 8 hardpoints (8 triple turrets). Air/raft, 2 modular cutters (1 open module, 1 fuel module, 2 ATV modules), 2 ATVs. 80 tons cargo. Unstreamlined. 8 crew. MCr445.95; 25 months.

Small Craft Designs

Standard plans are also available for the following small craft:

Fighter: 10 tons. 6G, 1 ton fuel. Model/1, one weapon (one laser, up to three missile racks, or up to three sandcasters). 1 ton cargo. 1 crew. MCr18.

Launch: 20 tons. 1G, 1 ton fuel. Model/2bis. Weapon (missile racks or sandcasters; it may not mount lasers). The craft has 13 tons excess space available for custom use. 2 crew. MCr14.

Ship's Boat: 30 tons. 6G, 1.8 tons fuel. Model/2. Weapon (one beam or pulse laser). The craft has 13.7 tons of excess space available. 2 crew. MCr16.

Slow Boat: 30 tons. 3G, 1 ton fuel. Model/2. Weapon (one beam or pulse laser). The craft has 19.9 tons of excess space. 2 crew. MCr15.

Pinnace: 40 tons. 5G, 2 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 22.4 tons of excess space. 2 crew. MCr20.

Slow Pinnace: 40 tons. 2G, 1 ton fuel. Model/3. Weapon (one beam or pulse laser). The craft has 31.6 tons of excess space. 2 crew. MCr18.

Modular Cutter: 50 tons. 4G, 2 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 30 tons committed to special detachable modules; it has 2.5 tons excess space available for weaponry, computer, and possibly a couch for a third crew member. 2 crew. MCr28.

ATV Cutter Module: The ATV module (which includes an operational ATV) is 30 tons. It can land (and retrieve) an ATV on a world surface from orbit. The module can serve as an ATV storage location, if desired. It costs MCr1.8.

Fuel Skimming Cutter Module: The fuel module, with

30 tons of fuel tankage, serves as a fuel skimming vehicle and storage tank. It costs MCr1.

Frame Cutter Module: The open module is a customizable frame with 30 tons of excess space which can be allocated to passenger couches, fuel, cargo, cabin, or staterooms. It costs MCr2.

Shuttle: 95 tons. 3G, 2.85 tons fuel. Model/3. Weapon (one beam or pulse laser). The craft has 71 tons of excess space. 2 crew. MCr33.

Other Plans

Other standard plans may be available at various localities. Standard designs are easier to produce; their prices reflect a 10% reduction in normal pricing.

Standard design vessels are often available used (10 to 40 years old) at reductions in price ranging from 10% to 40%, as indicated by the GM.

Construction Times: Time required for building any vessel depends primarily on the hull. As a rough estimate, construction time is 5 Displacement Tons per day, with a minimum time of one week. The standard hulls require shorter construction times; they are more familiar to the shipyard and easier to build.

Costs and Payments: A shipyard will insist upon a 20% down payment with the order for the vessel, as well as a demonstration that proper financing is available to cover the balance when due.

Steps

The basic steps for starship (and spaceship) construction are given below, based on Traveller. These steps are provided to make sure you include all the basics, but should be used as an aid rather than a straightjacket.

STARSHIP CONSTRUCTION STEPS

1. Determine the Ship's Purpose
2. Determine the Tech Level of the shipyard that will be building the ship.
3. Select a hull size, material, and configuration. Select additional hull armor if required.
4. Select Maneuver drive
5. Select Jump drive if ship is a starship.
6. Select Power Plant
7. Determine fuel tank size; add fuel scoops, fuel purification plants, and drop-tanks as desired.
8. Select the bridge.
9. Select the computer.
10. Select weaponry.
11. Select ship's vehicles if appropriate.
12. Determine crew needs and quarters.
13. Determine additional requirements, such as cargo space, passenger accommodations, low berths, laboratories, special installations, and so forth.

Purpose

One of the most basic decisions is the purpose of the vessel. Is it a merchant vessel or military vessel, in-system (spacecraft) or interstellar (starship). The purpose is basic in deciding how to equip it.

Every ship is assigned a ship code based on its purpose, mission, and size. See the *Revised Imperium Ship Codes* section for more details.

REVISED IMPERIUM SHIP CODES

The original Ship Type Codes from *High Guard* were confusing (FF could be Fleet Frigate or Fast Fighter, and Merchants could be A or M). The following revised system was influenced by that found in *Terran Empire, page 157*.

The Primary (first character) indicates the type of craft; the Qualifier (second character) represents the range; and the third indicates the tonnage.

Primary	**Type**	**Notes**
B	Battle	Warship to attack other vessels
C	Carrier	Vessel to carry smaller ships
D	Destroyer	Anti-fighter warship
E	Escort	Armed escort vessel
F	Fighter	Fighter, Intruder, Interceptor
G	Frigate	Patrol ship or cruiser
H	Support	Support ships or tenders
K	Cutter	
L	Lab	Scientific vessel
M	Merchant	Passenger or cargo vessel
O	Observation	Surveillance and Spy vessels
P	Station	Administrative complex
Q	Auxiliary	Auxiliary ships
R	Refinery	Industrial material processing vessel
S	Scout	Exploration vessel
T	Transport	Barge, Tanker, or Bulk-Cargo vessel
U	Unclassified	General-purpose vessel
X	Express	Mail or courier vessel
Y	Yacht	Personal use vehicle
Z	Experimental	Experimental vessel
Qualifier	**Type**	**Notes**
G	Gig	Planet-to-ship or ship-to-ship vessel
O	Orbital	Orbital vessel
M	Maneuver	Maneuver-only (interplanetary) vessel
J	Jump	Jump-capable (interstellar) vessel
Tonnage	**Value**	**Notes**
0	0-99	Gig, Pinnace, Shuttle, Cutter, etc.
1	100 -199	Scout/Courier, Planetary Shuttle
2	200-299	
3	300-399	

Tonnage rating continues as tonnage/100, rounded down

Using this system, a Pinnace or Ship's Boat would be QG-0; a Modular Cutter would be KM-0; a Subsidized Liner would be MJ-6, and a Mercenary Cruiser would be TJ-6.

Technology Level

The technology level of the shipyard where the starship is built has several effects. The most obvious effect is that certain devices, such as meson guns, are only available at the higher tech level shipyards, if at all.

A secondary effect is that as the technology level of a manufactured component increases above the minimum tech level of that component, the volume used by that component decreases.

At the time of the *Third Imperium*, all civilian ships within the Third Imperium are built at the standard TL 12 level, and most military vessels are built at the TL 15 level.

In the time of *The New Era*, only the Regina sector is able to sustain the TL 12 shipyards; the Old Expanses build at TL 11-12, due to aid from the Hivers. Other worlds affected by Virus may be at any TL below 12, and only those who have crawled back up to at least TL 9-10 have any kind of space program.

Traveller Technology

Starship technology in the Traveller universe is somewhat different from the technology in Terran Empire or Star Trek. Below are some of the key differences to keep in mind when building starships in Traveller Hero.

Average Tech Level: Prior to *The New Era*, the average Imperial Tech Level is 12, and most Imperial worlds can sustain TL 12. Imperial military shipyards can support TL 15, while commercial shipyards typically support TL 12. During *The New Era*, there are few shipyards working, and those that are typically have TL 9 at best. The exception to this is the Regency, which maintains TL 12 shipyards.

Weapons Systems: Anti Matter Missiles are advanced tech +2, standard nuclear missiles are uncommon, however detonation laser nuclear warheads see common use in space combat.

Plasma/Fusion Weapons: In Traveller, Plasma and Fusion weapons have a considerable range advantage over those in Star Hero, and the turret weapons have a higher rate of fire.

FTL Communications: FTL Communications doesn't exist at all, even for theoretical applications.

Screens and Forcefields: Screens and forcefields don't exist on a personal level until very advanced tech levels. Ships and vehicles are limited to nuclear dampers and meson screens, and late TL-15 Black Globe Generators.

Artificial Intelligence (AI): Very Limited AI until TL-15, then true AI becomes feasible

Tractor Beams and Repulsors: Tractor Beams technology has very limited usage. Tractor beams don't appear until TL-15, while at TL-13 they become available as a defensive bay weapon called Repulsors.

Teleportation/Matter Transport: Advanced Tech, experimentation starting at Late TL-15, very short range and extremely bulky with a high power requirement even at high tech levels.

Required Starship Components

Starships are constructed on the foundation of a hull, into which are fitted the drives and power plants, the fuel tankage, life support equipment, computers, controls, armaments, and other fittings that adapt it to its intended function. The total tonnage of the installed fittings cannot exceed the tonnage of the hull.

One of the most important decisions in starship construction is to use a *standard design*, a *modified standard design*, or a *new design*. When selecting a *standard design* ship, such as a Far Trader, the purchase price is 75% of the normally calculated price due to the efficiencies of mass production. A *modified standard design* ship, such as a Far Trader with modified space allocations, costs 90% of the normally calculated price. *New designs* cost 100% of the calculated cost. New starship designs are specified by navies or corporations, while individuals require the services of a naval architect to prepare plans.

Ships of 5000 Displacement Tons or less can be built in 36 months or less by any competent shipyard. Ships over 5000 Displacement Tons require from 24 to 60 months to complete, based on conditions, other orders in progress at the shipyard, and any overtime put in to reduce the building time.

The Hull

Hulls are identified by their mass displacements, expressed in tons. As a rough guide, one ton equals 2 HERO Hexes (the volume of one ton of liquid hydrogen).

When hulls are constructed, they are divided into an engineering section for the drives and the main compartment for everything else. All drives and power plants must be located in the engineering section, and only drives and power plants may be placed in that section. All other ship components, including fuel, cargo hold, living space, and computer, must be located in the main compartment.

The standard hulls table shows six standard hulls which are available at reduced prices and construction times.

Standard Hulls

Tons	Hexes	Main	Drives	MCr	Time	STR	BODY	DCV	DEF
100	200	170	30	2	9	75	23	-8	8
200	400	340	60	8	11	85	25	-10	8
400	800	680	120	16	14	90	26	-10	8
600	1200	1020	180	48	22	95	27	-11	8
800	1600	1360	240	80	25	98	28	-12	8
1000	2000	1700	300	100	27	100	28	-12	8

Main and Drive areas given in Hexes.
Time in months.

The hulls listed above are standard sizes, readily available at the reduced prices or times shown. All others must be custom produced at MCr0.1 per ton; minimum price MCr20. See the Custom Hulls table below for details.

Hulls vary in their requirements for drives and power plants based on tonnage. Any specific drive will be less efficient as the tonnage it must drive increases.

Custom Hulls

Tons	Hexes	Main	Drives	MCr	Time	STR	BODY	DCV
10	20	17	3	1	1	50	18	-5
15	30	25.5	4.5	1.5	1.5	53	19	-5
20	40	34	6	2	2	55	19	-6
50	100	85	15	5	5	68	22	-8
100	200	170	30	10	9	75	23	-8
200	400	340	60	20	11	85	25	-10
400	800	680	120	40	15	90	26	-10
600	1200	1020	180	60	19	95	27	-11
800	1600	1360	240	80	23	98	28	-12
1000	2000	1700	300	100	27	100	28	-12
2000	4000	3400	600	200	47	108	30	-13
3000	6000	5100	900	300	67	110	30	-13
4000	8000	6800	1200	400	87	115	31	-14
5000	10000	8500	1500	500	107	118	32	-14
6250	12500	10625	1875	625	132	120	32	-14
10000	20000	17000	3000	1000	207	125	33	-15
16000	32000	27200	4800	1600	327	130	34	-16
25000	50000	42500	7500	2500	507	135	35	-16
40000	80000	68000	12000	4000	807	140	36	-17
62500	125000	106250	18750	6250	1257	145	37	-18
100000	200000	170000	30000	10000	2007	150	38	-18
160000	320000	272000	48000	16000	3207	155	39	-19
250000	500000	425000	75000	25000	5007	160	40	-20
400000	800000	680000	120000	40000	8007	165	41	-20
625000	1250000	1062500	187500	62500	12507	170	42	-20
1000000	2000000	1700000	300000	100000	20007	175	43	-21

Main and Drive areas given in Hexes.
Time in months per unit of project manpower applied. A 5000 Ton vessel takes 107 months for 1 project team to complete, but 36 months for 3 project teams working together to complete.

HULL MATERIALS

The standard ship hull is a hardened steel hull with a strength of DEF 8. While this is acceptable for low risk vessels, many space craft require a stronger material. Selecting a different hull material affects the BODY, DEF, and overall cost of the hull.

Hull Materials

Material	BODY	DEF	Hull Cost*
Titanium alloy	+1	+1	0.032
Light Composite	+2	+1	0.036
Composite Laminate	+2	+2	0.06
Crystal Iron	+1	+3	0.072
Superdense	+2	+4	0.070
Bonded Superdense	+5	+8	0.099
Coherent Superdense	+6	+12	0.195

* = Cost in MCr per DTon of Ship. Multiply the DTons of the ship times the value in Hull Cost to find the total cost of the armor.

HULL CONFIGURATION

The hull configuration is a rough description of the shape and design of the hull. Shapes like needle or wedge, cylinder or sphere, and so forth. One configuration option is hollowing out a planetoid and fitting it with equipment to serve as a spaceship or starship.

Selecting the hull configuration or shape also affects the BODY, Credit cost, and whether the ship can be streamlined to enter atmospheres.

Hull Configuration

Hull Type	BODY	DEF	Cost*	Notes
Dispersed/Open	+4	+0	x.75	1
Needle	+3	+0	x2	2, 3(+2)
Wedge	+2	+0	x1.5	2, 3(+2)
Cylinder	+1	+0	x1.25	2, 3(+1)
Box	+1	+0	x1	2
Sphere	+0	+0	x1	2
Dome/Disk	+2	+0	x1.25	2, 3(+1)
Closed Structure	+2	+0	x1.25	1
Slab	+2	+0	x1.5	2, 3(+1)

1. Cannot Enter Atmosphere
2. Can Enter Atmosphere
3. Highly maneuverable, adds to Piloting Skill Roll

* Cost Multiplier for the Base Hull

HULL ARMOR

Additional hull armor for vessels comes in two standard varieties: full armor and ablat armor.

Full Armor

Additional armor may be added to vessels, up to a maximum of +1 DEF per TL of the shipyard, at a cost of .03MCr per DTons of the vessel per +1 DEF.

TL 9 Hull Armor: The standard armor below is available for all ships at TL 9 and higher shipyards. Cost: 27MCr for a 100 DT hull; 270MCr for a 1000 DT hull.

> **TL 9 Hull Armor***: Armor (+9 PD/+9 ED) (27 Active Points); Limited Coverage (Hull/Frame Only; -¼). Total Cost: 22 points.*

Ablat Armor

Ships may also have ablative armor added to the outer armor (in addition to full armor), which provides additional protection but is destroyed as it takes damage. The maximum DEF of additional ablative armor is +2 DEF per TL of the shipyard, at a cost of 0.0075MCr per DTons of the vessel per +1 DEF

TL 9 Ablat: This ablative armor can be purchased and applied at any TL 9 or above shipyard. Cost: 13.5MCr for a 100 DT hull; 135MCr for a 1000 DT hull.

> **TL 9 Ablat***: Armor (+18 PD/+18 ED) (54 Active Points); Ablative (-½), Limited Coverage (Hull/Frame Only; -¼). Total Cost: 31 points*

The Engineering Section

Drives and power plants are installed in the engineering section.

Maneuver Drives

Maneuver Drives are the propulsion systems for normal space flight. Maneuver drives are rated in the number of Gs of acceleration, and range from 1G to 6G.

Traveller Maneuver Drives apply the limitation *Realistic END Cost: Requires STR/5 Additional END per phase (-½)* to represent the fact that it takes more energy to move larger masses, and it requires a larger engine to move that larger mass. For example, a 100-ton vessel has a STR of 75, which means it costs 6 + (75/5) = 21 END per phase for 2G drive; a 1000-ton vessel has a STR of 100, which means it costs 6 + (100/5) = 26 END per phase for a 2G drive.

Maneuver Drives consist of the drive and the control hardware. The drive needs 3 Tons of Maneuver Drive to propel 100 Tons of vessel at 1G. Control hardware requires an additional 1 Ton per 100 Tons of vessel. It takes 19 Tons (18 for Maneuver Drive, 1 for hardware) to propel a 100-Ton vessel at 6G. The maximum propulsion available regardless of the Maneuver Drive tonnage is 6G. The overall maneuver drive assembly costs MCr0.5 per Ton.

Maneuver Drives

Hull	Hdwr	1G Tons	2G Tons	3G Tons	4G Tons	5G Tons	6G Tons
100	1	4	7	10	13	16	19
200	2	8	14	20	26	32	38
400	4	16	28	40	52	64	76
600	6	24	42	60	78	96	114
800	8	32	56	80	104	128	152
1000	10	40	70	100	130	160	190
2000	20	80	140	200	260	320	380
3000	30	120	210	300	390	480	570
4000	40	160	280	400	520	640	760
5000	50	200	350	500	650	800	950
TL		7	7	8	8	8	9
SPD		2	2	3	4	5	6
Flight		30”	60”	60”	60”	60”	60”
DEX		+0	+5	+8	+11	+13	+17
END		6*	12*	12*	12*	12*	12*

Hull Tons are for the vessel. The Tons for each Maneuver rating are for the Maneuver Drive **and** extra hardware. Cost is MCr0.5 per Ton of Maneuver Drive.

* The mass of the vessel increases the END cost by 1 per 5 STR of the vessel. A 200-ton vessel has 85 STR, so the END cost increases by (85/5) = +17; thus it takes 6 +17 = 23 END per phase to move the vessel at full velocity.

1G Maneuver Drive: *Flight 30”, Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 20 points.*

2G Maneuver Drive: *(Total: 140 Active Cost, 43 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 38)* **plus** *+5 DEX (15 Active Points); OIF Bulky (-1), Linked (2G Maneuver Drive; -½), Real Equipment (-½) (Real Cost: 5)*

3G Maneuver Drive: *(Total: 159 Active Cost, 49 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 38)* **plus** *+8 DEX (24 Active Points); OIF Bulky (-1), Linked (3G Maneuver Drive; -½), Real Equipment (-½) (Real Cost: 8)* **plus** *+1 SPD (10 Active Points); OIF Bulky (-1), Linked (3G Maneuver Drive; -½), Real Equipment (-½) (Real Cost: 3)*

4G Maneuver Drive: *(Total: 178 Active Cost, 56 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 38)* **plus** *+11 DEX (33 Active Points); OIF Bulky (-1), Linked (4G Maneuver Drive; -½), Real Equipment (-½) (Real Cost: 11)* **plus** *+2 SPD (20 Active Points); OIF Bulky (-1), Linked (4G Maneuver Drive; -½), Real Equipment (-½) (Real Cost: 7)*

5G Maneuver Drive: *(Total: 194 Active Cost, 61 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 38)* **plus** *+13 DEX (39 Active Points); OIF Bulky (-1), Linked (5G Drive; -½), Real Equipment (-½) (Real Cost: 13)* **plus** *+3 SPD (30 Active Points); OIF Bulky (-1), Linked (5G Drive; -½), Real Equipment (-½) (Real Cost: 10)*

6G Maneuver Drive: *(Total: 216 Active Cost, 68 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 38)* **plus** *+17 DEX (51 Active Points); OIF Bulky (-1), Linked (6G Drive; -½), Real Equipment (-½) (Real Cost: 17)* **plus** *+4 SPD (40 Active Points); OIF Bulky (-1), Linked (6G Drive; -½), Real Equipment (-½) (Real Cost: 13)*

Maneuver Drives reached their maximum efficiency at TL 12. Maneuver drives of TL 9 and lower use double the fuel of TL 12 varieties. Above TL 12, reduce fuel usage by 5% per TL above 12, with a maximum reduction at TL15 of 15%.

JUMP DRIVES

Jump drives are a type of Displacement Drive (see *Terran Empire, page 160*). The jump travels through Hyperspace from the Jump Point to the Target Point, and all jumps take 1 week (7 days). Jump drives are the only FTL drives in Traveller.

Jump drives are quirky, and subject to misjumps. The jump drive pilot makes a *Combat Piloting* skill roll to initiate the jump, and won't know until the ship returns to normal space whether the jump was normal or missed.

Use the Piloting modifiers below to gauge the success of the jump. Modifier are added to the roll to determine whether the jump is successful or not.

Circumstance	Modifier
Jumping within 100 planetary diameters of world or star	+7
Jumping to an area with no planetary or solar masses	+2
Using unrefined or contaminated fuel	+4
Using refined fuel	-2
Operating beyond annual maintenance	+1/month cumulative
Jumping during starship combat	+4

Add the modifier to the pilot's roll to determine success. For example, Jovan rolls an 11 with his 12- Combat Piloting skill, but because the ship is using unrefined fuel, the modified roll is 11+4 = 15, which is a misjump.

Traveller Jump Drives apply the limitation *Realistic END Cost: Requires STR/5 Additional END per phase (-½)* to represent the fact that it takes more energy to move larger masses, and it requires a burst of power to move that larger mass. For example, a 100-ton vessel has a STR of 75, which means it costs 28 + (75/5) = 43 END for J2 Jump; a 1000-ton vessel has a STR of 100, which means it costs 28 + (100/5) = 48 END for a J2 jump.

Jump Drives consist of the drive and the control hardware. The jump drive requires 1 Ton of Jump Drive to move 100 Tons of vessel at J1. Control hardware requires an additional 1 Ton per 100 Tons of vessel. It takes 7 Tons (6 for Jump Drive, 1 for hardware) to move a 100-Ton vessel at J6, with a cost of MCr28. The maximum jump possible regardless of the Jump Drive tonnage is J6. The overall jump drive assembly costs MCr4 per Ton.

Jump Drives

Hull	Hdwr Tons	J1 Tons	J2 Tons	J3 Tons	J4 Tons	J5 Tons	J6 Tons
100	1	2	3	4	5	6	7
200	2	4	6	8	10	12	14
400	4	8	12	16	20	24	28
600	6	12	18	24	30	36	42
800	8	16	24	32	40	48	56
1000	10	20	30	40	50	60	70
2000	20	40	60	80	100	120	140
3000	30	60	90	120	150	180	210
4000	40	80	120	160	200	240	280
5000	50	100	150	200	250	300	350
TL		9	11	12	13	14	15
END		12*	25*	36*	48*	60*	72*

Hull Tons are for the vessel. The Tons for each Jump rating are for the Jump Drive **and** extra hardware. Cost is MCr4 per Ton of Jump Drive. END is the power needed to ignite the hydrogen for Jump.
* The mass of the vessel increases the END cost by 1 per 5 STR of the vessel. A 200-ton vessel has 85 STR, so the END cost increases by (85/5) = +17; thus it takes 12 +17 = 29 END for a J1 Jump.

Jump 1 Drive: *Teleportation 3", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (28 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 3 points*

Jump 2 Drive: *Teleportation 7", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (66 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 6 points*

Jump 3 Drive: *Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 9 points*

Jump 4 Drive: *Teleportation 13", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (123 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 12 points*

Jump 5 Drive: *Teleportation 16", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (152 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 15 points*

Jump 6 Drive: *Teleportation 20", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (190 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼). Total Cost: 18 points*

POWER PLANTS

Power Plants provide power to the ship's systems: maneuver and jump drives, life support, computers, sensors, weapons and defenses, and so forth. The bigger the ship, the larger its power usage.

Power Plants are rated from P1 to P6, which indicates the maximum drive they can support. In all cases, the power plant must equal or exceed the higher of the maneuver drive and the jump drive letter. For example, a ship that has 3G Maneuver Drive and J1 Jump Drive must have at least a P3 power plant; a ship that has a 1G Maneuver Drive and a J2 Jump Drive must have at least a P2 power plant.

Each Ton of Power Plant costs MCr3. The volume needed is based on the TL of the Power Plant (see below). A P1-100 Power Plant at TL 8 takes up 4 Tons, while the same plant at TL 15 only takes up 1 Ton.

Power Plants

Hull	Plant Tons	P1 Pwr	P2 Pwr	P3 Pwr	P4 Pwr	P5 Pwr	P6 Pwr
100	1	75	150	225	300	375	450
200	2	150	300	450	600	750	900
400	4	300	600	900	1200	1500	1800
600	6	450	900	1350	1800	2250	2700
800	8	600	1200	1800	2400	3000	3600
1000	10	750	1500	2250	3000	3750	4500
2000	20	1500	3000	4500	6000	7500	9000
3000	30	2250	4500	6750	9000	11250	13500
4000	40	3000	6000	9000	12000	15000	18000
5000	50	3750	7500	11250	15000	18750	22500

Hull Tons are for the vessel. The Tons for each Power rating are for the Power Plant; Pwr is the END and REC of the Power Plant. Cost is MCr3 per Ton of Power Plant. TL affects the size of the Power Plant.

TL of Power Plant is	7-8	9-12	13-14	15
Multiply Tons By	4	3	2	1

If the vessel has a large number of laser weapons or other devices requiring energy, a larger power plant is recommended to maintain power for all systems and weapons.

P2-100 Power Plant*: Endurance Reserve (150 END, 150 REC) Reserve: (165 Active Points); OIF Immobile (-1 ½), Only Powers Electrical Devices (-¼). Total Cost: 55 points.*

At TL 9 and below, the power plant uses twice as much fuel; at TL 13 and above, reduce the fuel consumption by 2% per TL above 12, to a maximum of 10% reduction.

The Main Compartment

The ship's main compartment contains all non-drive features of the ship, including the bridge, computer, staterooms, low passage berths, cargo hold, fuel tanks, armament, and other items.

THE BRIDGE

All ships must allocate 2% of their tonnage (minimum 20 DT/40 Hexes) to basic controls, communications equipment, avionics, scanners, detectors, sensors, and other equipment for proper operation of the ship. The cost for this bridge is MCr0.5 per 100 tons of ship.

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

Bridge Systems Table

System	TL	END
Sensors	9	5
Communications	9	5
Flight Control	9	1
Navigation	9	1
Life Support	9	2/100DT
Gravity	9	8
Fire Control	9	1
Defense Control	9	1

Sensors

Sensors in Traveller do not use a VPP (Variable Power Pool), as the sensor systems are fixed and not reconfigurable at will. Traveller sensor packages are divided into active and passive sets.

Active sensor arrays can have a range of anywhere from 3,000 to 480,000 kilometers and consists of a variety of active and passive sensor emitters, making it a much more sophisticated version of Radar (a combination of Radar, Lidar, and Sonar). The END Cost is 5 END per phase.

Cost	Power	END
17	**Active Sensor Array**: *Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)*	
17	**Active Sensor Array**: *Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)*	4
14	**Computer Enhancement**: *Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)*	1
35	**Long Range Sensors**: *MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)*	0
17	**Accurate Sensors**: *+12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)*	0
90	**Total Cost**	

Passive sensor arrays use large antennae to detect any electromagnetic emanations from a potential target. These are extremely sophisticated and precise sensors. (High Res Thermal, Densitometers, and Neural Activity Sensors are all passive.)

Cost	Power	END
17	**Passive Sensor Array**: *Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)*	
17	**IR Sensors**: *Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)*	0
17	**UV Sensors**: *Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)*	0
17	**Optical Telescopic Array**: *+10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)*	0
20	**Densitometer**: *Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)*	0
21	**Neutrino Scanner**: *Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)*	0
109	**Total Cost**	

Probes. Some vessels, especially scientific vessels, carry probes that can be launched to investigate. Each probe costs Cr25,000.

Sensor Probes and Recon Drones: *Clairsentience (Sight And Radio Groups), x2 Range (1,540"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 4 Continuing Charges lasting 6 Hours each (+¾), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (171 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight, Hearing] (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼). Total Cost: 38 points.*

Characters with appropriate skills and materials can add or alter senses available for the probes, such as adding Ultrasonic or Infrared sensors.

Communication

Radio and Lightwave communications systems are the only systems available until TL 15; meson communications becomes available at TL15. There are no FTL communication systems of any kind.

Radio Transceiver: *High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½). Total Cost: 12 points.*

Laser/Maser Comm System: *Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½),*

Costs Endurance (Only Costs END to Activate; -¼). Total Cost: 9 points

Meson Communicator: *Mind Link , Machine class of minds, Any Willing Target, No LOS Needed, Number of Minds (x32), Indirect (Same origin, always fired away from attacker; +¼), Difficult To Dispel (x2 Active Points; +¼) (75 Active Points); OIF Immobile (-1 ½), Only With Others Who Have Mind Link (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight; Hearing] (-½). Total Cost; 17 points*

Flight Control

The minimum flight control system (piloting system) is the Basic Flight Control station. It costs 1 END of ship's power every phase.

Basic Flight Control: *+2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½). Total Cost: 1 point*

Better flight control systems are available, up to a maximum of +6 with Combat Piloting. Each +1 above the Basic level costs an additional Cr50,000.

Navigation

The minimum navigational system is the Basic Navigation Station. It costs 1 END of ship's power every phase.

Basic Navigation Station: *+2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½). Total Cost: 3 points*

Life Support

The ship's life support system provides basic life support (air, temperature, etc.), but maintaining life support takes more energy in larger areas. The END Cost is 2 END for every 200 hexes of ship (100 DT).

Starship Life Support System: *Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼). Total Cost: 8 points*

The ship's food supply is made up of real food, and so requires storage and replenishment. The example below is food for 16 people for one month.

Food Supplies: *Life Support (Eating: Character does not eat), 16 Continuing Charges lasting 1 Month each (Easily Replaced From Source Outside Of Vehicle; +0) (3 Active Points); OIF Bulky (-1). Total Cost: 1 point*

Gravity

Traveller's Gravitics technology allows efficient artificial gravity within vessels. The Artificial Gravity system can maintain normal (1G) gravity, and offset up to 6 G's (6G Maneuver drive acceleration),

Artificial Gravity: *Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1). Total Cost: 26 points.*

Fire Control

Traveller's fire control systems are typically tied into the main computer. It costs 1 END of ship's power per phase the weapons are armed and ready.

Basic Fire Control: +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½). Total Cost: 4 points.

Better fire control systems are available for a higher price, up to a maximum of +6 OCV. Each +1 of additional OCV costs Cr50,000.

Defense Control

Traveller's defense control systems consist of computer-assisted evasive maneuvers, sandcasters, and at TL15 Black Globes become available.

Evasive Program 1: +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½). Total Cost: 4 points.

Better defense control systems are available for a higher price, up to a maximum of +6 DCV. Each +1 of additional DCV costs Cr50,000.

COMPUTER

The basic controls do not include the ship's computer, which is installed adjacent to the bridge. The computer is identified by its model number; the computer table indicates price, tonnage, capacity, and tech level available. In general, larger computers are better in combat situations. In addition, the model number indicates the highest level of jump possible for a ship. For example, a ship must have a Model/4 computer before it can perform jump-4, in addition to the jump drive rating installed.

CPU refers to the computer's central processing unit, indicating the capacity to process programs; storage refers to the additional capacity available to hold programs in readiness for processing. Programs themselves are classified by size, using a point indicator to specify how much of the CPU or storage capacity is required for that program to fit into the computer". The number (and exact types) of which are on hand, in storage, or in the CPU is important in the operation of the starship, especially in combat.

There are two bis (meaning second, or improved) models of computer available. Each is treated as the next higher level for jump support, but as the next lower level for software selection. Thus, the Model/1 bis can support jump-2, but has a software package value of only MCr1.

Computers

Model	MCr	Tons	Capacity	TL	END	INT	DEX	SPD
1	2	1	2/4	5	5	13	12	2
1bis	4	1	4/0	6	5	16	12	2
2	9	2	3/6	7	5	16	14	2
2bis	18	2	6/0	8	5	18	15	2
3	18	3	5/9	9	5	19	16	2
4	30	4	8/15	A	5	22	18	3
5	45	5	12/25	B	5	25	20	4
6	55	7	15/35	C	5	28	22	4
7	80	9	20/50	D	5	31	24	4

Computer cost is indicated in MCr; tonnage required in tons. TL is the minimum tech level required to produce the equipment. Capacity is used to determine program holding capacity. Model number also indicates the largest jump which the computer can control. END is the energy required from

the Power Plant to run the computer.

Computer software (programs) must normally be acquired separately by purchase (or they may be written by a character who has computer expertise). Each computer model as originally furnished includes a basic software package of commonly used programs. This package is selected by the purchaser from the list of available programs; the computer model (1 through 7) indicates the credit value which may be selected. For example, Model/1 allows a package with a value of MCr1, while Model/6 allows a value of MCr6.

Computers

Note: For other examples of Starship computers, see *Terran Empire, pages 167-168*.

Model 1

The Model 1 is the bare minimum computer hardware necessary to run a spaceship. It is slow, and can only run 2 programs at a time (so it turns off entertainment and non-essentials during landing, jumps, etc.)

Model 1

Val	Char	Cost	Roll	Notes
13	INT	3	12-	PER Roll 12-
12	DEX	6	11-	OCV 4 DCV 4
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 9

Abilities & Equipment

Cost	Power	END
3	*Fib Option*: Power Defense (10 points) (10 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs. EMP and radiation damage; -1)	
	Choose 1 Package Option	
14	*Merchant Skills Package*: (Total: 14 Active Cost, 14 Real Cost) +1 with Bureaucratics (Real Cost: 2) **plus** +1 with Trading (Real Cost: 2) **plus** KS: Imperial Customs Regulations 12- (Real Cost: 3) **plus** +2 with KS: Cargo Handling (Real Cost: 2) **plus** +1 with KS: Cargo Brokering (Real Cost: 1) **plus** KS: Sector Trade and Financial Data 12- (Real Cost: 3) **plus** Program: Search Planetary Data Nets For Public Financial Information (Real Cost: 1)	
25	*Scout/Courier Package*: (Total: 25 Active Cost, 25 Real Cost) SS: Astronomy 12- (Real Cost: 3) **plus** SS: Planetology 12- (Real Cost: 3) **plus** SS: Basic Planetary Survey 12- (Real Cost: 3) **plus** KS: Stellar Cartography 14- (Real Cost: 5) **plus** KS: Planetary Cartography 14- (Real Cost: 5) **plus** KS: Vessel ID 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3)	
15	*Survey Scout Package*: (Total: 15 Active Cost, 15 Real Cost) SS: Biology 11- (Real Cost: 2) **plus** SS: Geology 12- (Real Cost: 3) **plus** SS: Climatology 12- (Real Cost: 3) **plus** TF: Gig (Real Cost: 1) **plus** SS: Botany 12- (Real Cost: 3) **plus** SS: Zoology 11- (Real Cost: 2) **plus** Program: Gather Data From Remote Sensors, Report Anomalies (Real Cost: 1)	
23	*Military Package*: (Total: 23 Active Cost, 23 Real Cost) Tactics 12- (Real Cost: 3) **plus** Cryptography 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3) **plus** KS: Vessel ID 14- (Real Cost: 5) **plus** Program: Attack Target (Real Cost: 1) **plus** Program: Engage in Evasive Action (Real Cost: 1) **plus** Program: Locate Target (Real Cost: 1) **plus** Program: Engage Point Defense against incoming targets (Real Cost: 1) **plus** KS: Imperial Military Customs and Procedures 14- (Real Cost: 5)	
	Talents	
3	*Computer*: Absolute Range Sense	
3	*Computer*: Absolute Time Sense	
3	*Navigational Compass*: Bump Of Direction	
5	*Computer*: Eidetic Memory	
3	*Computer*: Lightning Calculator	
6	*Computer*: Speed Reading (x100)	
20	*CLT*: Universal Translator 12-	
	Program Routines	
1	1) Program: Diagnose Ship Malfunctions	
1	2) Program: Monitor Internal Monitor Systems, Report Anomalies	
1	3) Program: Monitor Communications Systems, Report Anomalies	
1	4) Program: Monitor Vehicle Functions, Report Anomalies	
1	5) Program: Operate Sensors to scan for designated Phenomenon/Object	
1	6) Program: Pilot Ship from Point A to Point B	
1	7) Program: Scan and Enter Data	
1	8) Program: Schedule Vehicle Events/Use of Resources	
1	9) Program: Search Reference Material for Information on a topic	
1	10) Program: Send Emergency Call if Operator incapacitated or Killed	
1	11) Program: Send Emergency Call if Specific Conditions are not met	
	Skills	
12	*Autopilot*: TF: Early Spacecraft, Commercial Spacecraft, Industrial Spacecraft, Military Spacecraft, Mobile Space Stations, Personal Use Spacecraft	
6	Systems Operation (Communications Systems, Environmental Systems, Sensors) 12-	
3	Security Systems 12-	
7	*Ships Administrative Functions*: Bureaucratics 11-	
2	+2 with SS: Starship Engineering **Notes**: *Database And Diagnostic Software For Specific Ship*	
5	AK: Sector Navigation and Planetary Data 14-	
5	KS: Sector Library Data 14-	
2	*Ships Lasers and Missiles*: WF: Vehicle Weapons, Vehicle Weapons **Notes**: *Automated Gunnery Functions*	
4	+1 with Navigation (Hyperspace)	

Total Abilities & Equipment Cost: 108
Total Computer Cost: 117

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 117/5 = 23

Model 2

The Model 2 is a somewhat better computer than the Model 1, able to run 3 programs at a time and with a slightly

higher agility.

MODEL 2 STARSHIP COMPUTER

Val	Char	Cost	Roll	Notes
16	INT	6	12-	PER Roll 12-
14	DEX	12	12-	OCV 5 DCV 5
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 18

Abilities & Equipment

Cost	Power	END
3	*Fib Option*: Power Defense (10 points) (10 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs. EMP and radiation damage; -1)	
	Select One Skills Package	
13	*Merchant Skills Package*: (Total: 13 Active Cost, 13 Real Cost) +1 with Bureaucratics (Real Cost: 2) **plus** +1 with Trading (Real Cost: 2) **plus** KS: Imperial Customs Regulations 12- (Real Cost: 3) **plus** +2 with KS: Cargo Handling (Real Cost: 2) **plus** +1 with KS: Cargo Brokering (Real Cost: 1) **plus** KS: Sector Trade and Financial Data 12- (Real Cost: 3)	
25	*Scout/Courier Package*: (Total: 25 Active Cost, 25 Real Cost) SS: Astronomy 12- (Real Cost: 3) **plus** SS: Planetology 12- (Real Cost: 3) **plus** SS: Basic Planetary Survey 12- (Real Cost: 3) **plus** KS: Stellar Cartography 14- (Real Cost: 5) **plus** KS: Planetary Cartography 14- (Real Cost: 5) **plus** KS: Vessel ID 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3)	
14	*Survey Scout Package*: (Total: 14 Active Cost, 14 Real Cost) SS: Biology 11- (Real Cost: 2) **plus** SS: Geology 12- (Real Cost: 3) **plus** SS: Climatology 12- (Real Cost: 3) **plus** TF (Real Cost: 1) **plus** SS: Botany 12- (Real Cost: 3) **plus** SS: Zoology 11- (Real Cost: 2) Notes: This Is added to the Scout/Courier Package	
19	*Military Package* : (Total: 19 Active Cost, 19 Real Cost) Tactics 12- (Real Cost: 3) **plus** Cryptography 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3) **plus** KS: Vessel ID 14- (Real Cost: 5) **plus** KS: Imperial Military Customs and Procedures 14- (Real Cost: 5)	

Talents

3	*Computer*: Absolute Range Sense
3	*Computer*: Absolute Time Sense
3	*Navigational Compass*: Bump Of Direction
5	*Computer*: Eidetic Memory
3	*Computer*: Lightning Calculator
6	*Computer*: Speed Reading (x100)
20	*CLT*: Universal Translator 12-

Program Routines

1	1) Program: Diagnose Ship Malfunctions
1	2) Program: Monitor Internal Monitor Systems, Report Anomalies
1	3) Program: Monitor Communications Systems, Report Anomalies
1	4) Program: Monitor Vehicle Functions, Report Anomalies
1	5) Program: Operate Sensors to scan for designated Phenomenon/Object
1	6) Program: Pilot Ship from Point A to Point B
1	7) Program: Scan and Enter Data
1	8) Program: Schedule Vehicle Events/Use of Resources
1	9) Program: Search Reference Material for Information on a topic
1	10) Program: Send Emergency Call if Operator incapacitated or Killed
1	11) Program: Send Emergency Call if Specific Conditions are not met

Skills

2	Autopilot: TF: Commercial Spacecraft & Space Yachts, Early Spacecraft, Industrial & Exploratory Spacecraft, Military Spacecraft, Mobile Space Stations, Personal Use Spacecraft, Spaceplanes
3	Systems Operation 12-
3	Security Systems 12-
7	Ships Administrative Functions: Bureaucratics 11-
2	+2 with SS: Starship Engineering Notes: Database and diagnostic software for specific ship
5	AK: Sector Navigation and Planetary Data 14-
5	KS: Sector Library Data 14-
2	Ships Lasers and Missiles: WF: Vehicle Weapons, Vehicle Weapons. Notes: Automated Gunnery Functions
4	+1 with Navigation (Hyperspace)

Total Abilities & Equipment Cost: 108
Total Computer Cost: 126

Value	Disadvantages
	None

Total Disadvantage Points: 0
Total Cost: 126/5 = 25

MODEL 3

The next step in hardware, the Model 3 provides improvements in processing ability and response time, as well as better combat-system control. It can run up to 5 programs simultaneously.

Val	Char	Cost	Roll	Notes
19	INT	9	13-	PER Roll 13-
16	DEX	18	12-	OCV 5 DCV 5
2	SPD	0		Phases: 6, 12
				Total Characteristic Cost: 27

Powers

3	**Additional Memory**: +5 INT (5); Only For Running 1 More Program Simultaneously (-1)

The Model 3 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 111
Total Computer Cost: 138

Value	Disadvantages
	None

Total Disadvantage Points: 0
Total Cost: 138/5 = 28

MODEL 4

Model 4 computers have enhanced performance of Model 3 computers, an can run up to 8 programs simultaneously.

Val	Char	Cost	Roll	Notes
22	INT	12	13-	PER Roll 13-
18	DEX	24	13-	OCV 6 DCV 6
3	SPD	2		Phases: 4, 8, 12
				Total Characteristic Cost: 38

Powers

10	**Additional Memory**: +20 INT (20); Only For Running 4 More Program Simultaneously (-1)

The Model 4 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 118
Total Computer Cost: 156

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 156/5 = 25

Model 5

The Model 5 can run 12 programs simultaneously.

Val	Char	Cost	Roll	Notes
25	INT	15	14-	PER Roll 14-
20	DEX	30	13-	OCV 7 DCV 7
4	SPD	10		Phases: 3, 6, 9, 12

Total Characteristic Cost: 55

Powers

17	**Additional Memory**: +35 INT (35); Only For Running 7 More Program Simultaneously (-1)

The Model 5 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 115
Total Computer Cost: 170

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 170/5 = 34

Model 6

The Model 6 can run 15 programs simultaneously.

Val	Char	Cost	Roll	Notes
28	INT	18	15-	PER Roll 15-
22	DEX	36	13-	OCV 7 DCV 7
4	SPD	10		Phases: 3, 6, 9, 12

Total Characteristic Cost: 64

Powers

25	**Additional Memory**: +50 INT (50); Only For Running 10 More Program Simultaneously (-1)

The Model 6 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 133
Total Computer Cost: 197

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 197/5 = 39

Model 7

The Model 7 can run 20 programs simultaneously.

Val	Char	Cost	Roll	Notes
31	INT	21	15-	PER Roll 15-
24	DEX	42	14-	OCV 8 DCV 8
4	SPD	6		Phases: 3, 6, 9, 12

Total Characteristic Cost: 69

Powers

35	**Additional Memory**: +70 INT (70); Only For Running 14 More Program Simultaneously (-1)

The Model 7 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 143
Total Computer Cost: 212

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 212/5 = 42

Model 8

The Model 8 can run 25 programs simultaneously.

Val	Char	Cost	Roll	Notes
34	INT	24	16-	PER Roll 16-
26	DEX	48	14-	OCV 9 DCV 9
4	SPD	4		Phases: 3, 6, 9, 12

Total Characteristic Cost: 76

Powers

45	**Additional Memory**: +90 INT (90); Only For Running 18 More Program Simultaneously (-1)

The Model 5 has the same software options as the Model 2.

Total Abilities & Equipment Cost: 153
Total Computer Cost: 229

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 229/5 = 46

Model 9

The Model 9 is the first artificially intelligent starship computer. It can run 30 programs simultaneously.

MODEL 9 STARSHIP COMPUTER

Val	Char	Cost	Roll	Notes
18	INT	8	13-	PER Roll 13-
13	EGO	6	12-	ECV: 4
19	DEX	27	13-	OCV 6 DCV 6
4	SPD	11		Phases: 3, 6, 9, 12
				Total Characteristic Cost: 52

Abilities & Equipment

Cost	Power	END
10	*Ships Internal Sensors*: Clairsentience (Sight And Hearing Groups), +5 to PER Roll (35 Active Points); OIF Immobile (-1 ½), No Range (-½), Only Through The Senses Of Others (-½)	3
3	*Fib Option*: Power Defense (10 points) (10 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs. EMP and radiation damage; -1)	
65	**Additional Memory**: +130 INT (130); Only For Running 26 More Program Simultaneously (-1)	
	Select One Skills Package	
13	*Merchant Skills Package*: (Total: 13 Active Cost, 13 Real Cost) +1 with Bureaucratics (Real Cost: 2) **plus** +1 with Trading (Real Cost: 2) **plus** KS: Imperial Customs Regulations 12- (Real Cost: 3) **plus** +2 with KS: Cargo Handling (Real Cost: 2) **plus** +1 with KS: Cargo Brokering (Real Cost: 1) **plus** KS: Sector Trade and Financial Data 12- (Real Cost: 3)	
25	*Scout/Courier Package*: (Total: 25 Active Cost, 25 Real Cost) SS: Astronomy 12- (Real Cost: 3) **plus** SS: Planetology 12- (Real Cost: 3) **plus** SS: Basic Planetary Survey 12- (Real Cost: 3) **plus** KS: Stellar Cartography 14- (Real Cost: 5) **plus** KS: Planetary Cartography 14- (Real Cost: 5) **plus** KS: Vessel ID 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3)	
14	*Survey Scout Package*: (Total: 14 Active Cost, 14 Real Cost) SS: Biology 11- (Real Cost: 2) **plus** SS: Geology 12- (Real Cost: 3) **plus** SS: Climatology 12- (Real Cost: 3) **plus** TF (Real Cost: 1) **plus** SS: Botany 12- (Real Cost: 3) **plus** SS: Zoology 11- (Real Cost: 2) Notes: This Is added to the Scout/Courier Package	
19	*Military Package* : (Total: 19 Active Cost, 19 Real Cost) Tactics 12- (Real Cost: 3) **plus** Cryptography 12- (Real Cost: 3) **plus** KS: Traffic Analysis 12- (Real Cost: 3) **plus** KS: Vessel ID 14- (Real Cost: 5) **plus** KS: Imperial Military Customs and Procedures 14- (Real Cost: 5)	
	Talents	
3	*Computer*: Absolute Range Sense	
3	*Computer*: Absolute Time Sense	
3	*Navigational Compass*: Bump Of Direction	
5	*Computer*: Eidetic Memory	
3	*Computer*: Lightning Calculator	
6	*Computer*: Speed Reading (x100)	
20	*CLT*: Universal Translator 12-	
	Program Routines	
1	1) Program: Automated Defensive Systems	
1	2) Program: Automated Weapons Fire	
1	3) Program: Calculate Jump from point A to Point B	
1	4) Program: Diagnose Ship Malfunctions	
1	5) Program: Monitor Communications Systems, Report Anomalies	
1	6) Program: Monitor Internal Monitor Systems, Report Anomalies	
1	7) Program: Monitor Ships external sensors	
1	8) Program: Monitor Vehicle Functions, Report Anomalies	
1	9) Program: Operate Sensors to scan for designated Phenomenon/Object	
1	10) Program: Pilot Ship from Point A to Point B	
1	11) Program: Preprogrammed Evasive Maneuvers	
1	12) Program: Scan and Enter Data	
1	13) Program: Schedule Vehicle Events/Use of Resources	
1	14) Program: Search Reference Material for Information on a topic	
1	15) Program: Send Emergency Call if Operator incapacitated or Killed	
1	16) Program: Send Emergency Call if Specific Conditions are not met	
1	17) Program: Ships Information Service	
	Skills	
3	Combat Piloting 13-	
3	Computer Programming 13-	
3	Navigation (Air, Space) 13-	
3	Paramedics 13-	
3	Security Systems 13-	
1	WF: Vehicle Weapons	
8	Systems Operation (Communications Systems, Environmental Systems) 15-	
1	TF: Commercial Spacecraft & Space Yachts, Grav Vehicles/ Hovercraft, Industrial & Exploratory Spacecraft, Personal Use Spacecraft, Spaceplanes	
3	Tactics 13-	

Total Abilities & Equipment Cost: 191
Total Vehicle Cost: 243

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 243/5 = 49

Combat Software and Programs

The following software is available for purchase in the commercial sector, and does not include software available only in the military sector.

Software Name	Effect	MCr
Predict 1	+1 CSL with all Weapons	2
Predict 2	+2 CSL with all Weapons	5
Predict 3	+3 CSL with all Weapons	8
Select 1	+1 PSL to offset Location Mods	0.5
Select 2	+2 PSL to offset Location Mods	0.8
Select 3	+3 PSL to offset Location Mods	1.0
Multi-Target	Rapid Attack: Ranged	3
Maneuver/Evade 1	+1 DCV	1
Maneuver/Evade 2	+2 DCV	2
Maneuver/Evade 3	+3 DCV	3

FIRE CONTROL

Fire control equipment is required if weaponry is to be installed. Each installed turret requires one ton of displacement committed for fire control equipment. Original design plans for ships often include reserve tonnage for later use in installing fire control equipment, or for upgrading computers.

STATEROOMS

Quarters for the crew and passengers are provided in the form of staterooms containing sleeping and living facilities. Each stateroom is sufficient for one person, displaces 4 tons (8 HERO Hexes), and costs Cr500,000. In some starships (espe-

cially exploratory vessels, military ships, and privately owned starships), double occupancy is allowed in staterooms. No stateroom can contain more than two persons however, as it would strain the ship's life support equipment. A commercial ship must have one stateroom for each member of the crew.

Stateroom: *Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1). Total Cost: 1 point*

Quarters do not cost END, but they cost money and do take up space. For the ultimate in closeness, one hex can hold 3 navy-style bunks, but this is not recommended for extended missions.

LOW PASSAGE BERTHS

A Low Berth is a suspended animation tube, providing an inexpensive berth during travel, as the passenger uses little space and resources while in suspended animation. Safely placing a passenger in suspended animation, and removing them from suspended animation, requires *Paramedic* and *Systems Operations: Medical* skills.

Facilities for carrying passengers installed in a ship. One low passage berth carries one low passenger, costs Cr50,000, and displaces one-half ton (one HERO Hex). Low berths also serve well in emergencies, in that they can provide suspended animation facilities for characters when medical care or rescue is not immediately available.

For a *Classic Traveller* feel, the medic must make a *Systems Operations: Medical* skill roll every time he places someone in or takes them out of suspended animation. A failed skill roll sends the passenger into shock, and the medic must succeed with a *Paramedic* roll to revive them from shock and stabilize them. Of course, a failed *Paramedic* skill roll results in death.

Cost: 50,000 Cr
Size: 1 hex

Low Berth (risky version): *Life Support (Longevity: 800 Years) (3 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½), Requires A Paramedic Skill Roll (-½), Side Effects (Side Effect only affects the recipient of the benefits of the Power; Target goes into shock, requires Paramedic roll to save; -¼). Total Cost: 1 point*

For those who expect more reliability of 51st century technology, low berths should be considered relatively safe. The medic should only be required to make a skill roll if the tubes are damaged (space combat), sabotaged, or story-based reasons.

Low Berth: *Life Support (Longevity: 800 Years) (3 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½). Total Cost: 1 point.*

As an option, each TL of the Low Berth above 9 gives the medic a +1 modifier to his skill roll, representing greater reliability of the low berth unit.

Emergency low berths are also available; they will not carry passengers, but can be used for emergency survival. Each costs Cr100,000 and displaces one ton (2 HERO Hexes). Each holds four persons who share the same revival die roll,

FUEL

Total fuel tankage for a ship must be indicated in the design plans. There is no cost, but the capacity does influence how often the ship must refuel. At a minimum, ship fuel tankage must equal **0.1MJn+10Pn**, where *M* is the tonnage of the ship, *Jn* is the ship's jump number, and *Pn* is the ship's power plant rating. Power plant fuel under the formula (10Pn) allows routine operations and maneuver for four weeks. Jump fuel under the formula (0.1MJn) allows one jump of the stated level. Ships performing jumps less than their maximum capacity consume fuel at a lower level based on the jump number used.

Fuel Scoops

Refined fuel can be purchased at most starports at a cost of 500 Cr per DT (or 100 Cr per DT for unrefined fuel). However this is not always practical, especially when traveling to areas lacking starports.

Ships fitted with fuel scoops can scoop hydrogen for fuel from gas giants or oceans on worlds having oceans. However this fuel is unrefined, and dramatically increases the chance of a misjump unless refined. Ships with fuel scoops should also install a Fuel Purification Plant.

Fuel Purification Plant

Fuel purification plants can purify 1000 DT of fuel per 6 hours. Ships with very large fuel tanks often have several purification plants installed. The size and cost of fuel purification plants varies by Tech Level.

Fuel Purification Plant

TL	DT	Cost (kCr)
8	50	200
9	45	190
10	40	180
11	35	170
12	30	160
13	25	150
14	20	140
15	15	150

Fuel Purification Plant: *Minor Transform 4d6 (Liquid Hydrogen or Water to usable fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Immobile (-1 ½), Custom Modifier (Real Equipment; -¼). Total Cost: 7 points*

CARGO HOLD

The design plan must indicate cargo capacity. There is no cost, but cargo carried may not exceed cargo capacity.

SHIP'S LOCKER

Every ship has a ship's locker. The actual cost of much of the equipment within the locker is inconsequential when compared to hull and drive costs; the GM should administer what is actually within the ship's locker based on the situation. Typical equipment carried aboard will include protective clothing, vac suits, weapons such as shotguns or carbines, pistols, ammunition, compasses and survival aids, and portable shelters.

Note: The GM may decide to assign **Resource Points** to the ship's locker (see *Dark Champions*), and have the players allocate those points at the beginning of the scenario or at starbases as appropriate.

ARMAMENTS

Any ship may have one *hardpoint* per 100 tons of ship. Designation of a hardpoint requires no tonnage, and costs Cr100,000. One turret may be attached to each hardpoint on the ship. Hardpoints may be left unused if desired.

SHIP CREWS

Each ship requires a crew. On small ships, the crew may be one person; on larger ships, the crew can be quite large. The following basic crew positions must be filled:

Pilot: Each starship and non-starship requires a pilot, who must have at least *Combat Pilot* skill, and *Transport Familiarity* with the appropriate class of vessel. Small craft require a pilot who must have at least *Transport Familiarity (Ship's Boat)*. Cr6,000 monthly salary.

Navigator: Each starship displacing greater than 200 tons must have a navigator, who must have *Navigation (Space)* for non-jump vessels, and *Navigation (Hyperspace)* for Jump-capable vessels. The pilot of a small craft or nonstarship can handle its navigation requirements. Cr5,000 monthly.

Engineer: Any ship with tonnage of 200 tons or more must have one engineer (with at least *SS: Starship Engineering*, *Mechanics*, and *Electronics* skills) per 35 tons of drives and power plant. If there is more than one engineer, then the most skilled (or the oldest) becomes chief engineer with 10% more pay. Ships under 200 tons and small craft do not require an engineer, although engineering skill may prove useful. Cr4,000 monthly salary.

Steward: If high passengers are carried, then a steward is required. There must be at least one steward (*PS: Steward 8-* or better) per eight high passengers on the ship. If there is more than one steward, the most skilled is designated chief steward (or purser) and draws 10% more salary. Cr3,000 monthly salary.

Medic: Each starship of 200 tons or more must have a medic (at least *Paramedic* skill and *SS: Medicine 8-*). In addition, there must be at least one medic per 120 passengers carried. If there is more than one medic, the most skilled is designated ship's doctor and draws 10% more pay. Non-starships and small craft do not require medics. Cr2,000 monthly salary.

Gunner: One gunner (*Weapon Familiarity (Starship Weapons)* or *System Operations (Missiles)* or better required) may be hired per turret on a ship. Armed small craft require a gunner in addition to the pilot. If there is more than one gunner, the most skilled is designated the chief gunner and draws 10% more pay. The gunner position may be omitted if there is no major threat to the ship. Cr1,000 monthly salary.

One person may fill two crew positions, providing he or she has the skills needed for both jobs and has at least +1 with each skill for those positions. The individual draws total salary equal to 75% of each position. No person may assume the duties of more than two crew positions except in the case of an emergency.

Other crew positions may be created depending on the facilities of the starship: for example, a starship which carries a cutter could have a crew position for cutter pilot (and possibly for cutter gunner) in addition to its normal crew positions. Specific jobs or tasks (laboratory technician if the ship has a laboratory; contact specialist if the ship is assigned alien contact missions) require crew members to perform them.

For starships of greater than 1000 tons hull mass displacement, the crew should also include a commanding officer (or captain), his executive officer, and at least three administrative personnel. Extremely large starships should have at least 10 crew members for each 1000 tons of mass displacement.

Optional Components

The following are optional components. Where not present, they may be added to a standard design by the purchaser.

ATMOSPHERIC STREAMLINING

The hulls specified are rough deep space configurations incapable of entering atmospheres. They may be streamlined by so indicating in the design plans, at a cost of MCr1 per 100 tons of ship. This streamlining includes fuel scoops which allow the skimming of unrefined fuel from gas giants and the gathering of water from open lakes or oceans. Streamlining may not be retrofitted; it must be included at the time of construction.

WEAPONRY

Starship lasers are the most common starship weapon in the Traveller universe. Although lasers first appear at TL7, they become usable as starship weapons at TL9.

Lasers are available in two styles: beam and pulse. Beam lasers fire a beam of energy, typically lasting about one second. Pulse lasers fire a pulse of energy, which is more like an energy bullet than beam. Pulse lasers do slightly more damage than beam lasers, but are less accurate because of the shorter pulse of energy.

Either laser can fire at short or long-distance targets. The maximum range is capped at about 600,000 kilometers, but any target beyond 300,000 kilometers must account for light-speed lag (see *Star Hero*, page 217).

Starship lasers can be mounted in turrets, which include single, double and triple turrets, as well as pop-up turrets and barbette.

On warships, lasers are also configured as spinal weapons, bays, etc.

Lasers come in 3 power levels: Low Tech (TL9), Medium Tech (TL12, Imperial Standard), and High Tech (TL15). Low Tech lasers are visible light lasers, and use a lot of energy. Medium Tech lasers are UV lasers, and are not wasteful of energy. High Tech lasers are high-spectrum lasers, invisible as are UV, and have a much greater penetration rate through armor (Armor-Piercing).

The four commonly available weapons types are pulse lasers, beam lasers, missile launchers, and sandcasters.

Pulse Lasers fire short bursts of energy at targets and are more effective at inflicting damage than are beam lasers.

Pulse Lasers

Weapon	TL	Dmg	OCV	RMod	END	MCr
Laser, Single Turret	9	8d6+1	+0	+0	24	0.7
Laser, Double Turret	9	8d6+1	+0	+0	30@	1.5
Laser, Triple Turret	9	8d6+1	+0	+0	30@	2.5
Laser, Single Turret	12	9d6	+0	+0	17	0.7
Laser, Double Turret	12	9d6	+0	+0	20@	1.5
Laser, Triple Turret	12	9d6	+0	+0	20@	2.5
Laser, Single Turret	15	9d6+1AP	+0	+0	12	0.7
Laser, Double Turret	15	9d6+1AP	+0	+0	14@	1.5
Laser, Triple Turret	15	9d6+1AP	+0	+0	14@	2.5

PULSE LASER, 250 MW SINGLE-TURRET

Effect: RKA 8d6+1
END: 24
Range: 600,000 kilometers
Description: This is the standard TL9 pulse laser in a single turret.

Cost	Powers	END
271	*TL9 Pulse Laser:* (Total: 641 Active Cost, 271 Real Cost) RKA 8d6+1 (125 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 42) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 125 Active Points of Laser, Reduced Endurance (0 END; +½) (516 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 229)	24

PULSE LASER, 250 MW TRIPLE TURRET

Effect: RKA 8d6+1, 3-shot autofire
END: 32 per shot
Range: 600,000 kilometers
Description: This is the standard TL9 pulse laser in a triple turret. The Active and Real Costs are the same for the Double and Triple Turret versions.

Cost	Powers	END
338	*TL9 Triple Turret Pulse Laser*: (Total: 799 Active Cost, 338 Real Cost) RKA 8d6+1, Autofire (3 shots; +¼) (156 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 52) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 156 Active Points of Laser, Reduced Endurance (0 END; +½) (643 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 286)	32

PULSE LASER, 250 MW TL12 SINGLE-TURRET

Effect: RKA 9d6, Invisible to Normal Sight
END: 17
Range: 600,000 kilometers
Description: This is the standard TL12 turreted pulse laser in a single turret.

Cost	Powers	END
378	*TL12 Pulse Laser*: (Total: 866 Active Cost, 378 Real Cost) RKA 9d6, Invisible to Single Sense (Normal Sight; +¼) (169 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 68) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 169 Active Points of Laser, Reduced Endurance (0 END; +½) (697 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 310)	17

PULSE LASER, 250 MW TL12 TRIPLE-TURRET

Effect: RKA 9d6, Invisible to Normal Sight, AF (3)
END: 20 per shot
Range: 600,000 kilometers
Description: This is the standard TL12 turreted pulse laser in a triple turret. The Real and Active Costs are the same for a double turret.

Cost	Powers	END
451	TL12 Triple Turret Beam Laser: (Total: 1034 Active Cost, 451 Real Cost) RKA 9d6, Autofire (3 shots; +¼), Invisible to Single Sense (+¼) (202 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 81) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 202 Active Points of Laser, Reduced Endurance (0 END; +½) (832 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 370)	20

PULSE LASER, 250 MW TL15 SINGLE-TURRET

Effect: RKA 9d6+1, Invisibility to Normal Sight, AP
END: 12
Range: 600,000 kilometers
Description: This is the standard TL15 laser in a single turret.

Cost	Powers	END
625	*TL15 Pulse Laser*: (Total: 1435 Active Cost, 625 Real Cost) RKA 9d6+1, Invisible to Single Sense (Normal Sight; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (280 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 112) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 280 Active Points of Laser, Reduced Endurance (0 END; +½) (1155 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 513)	12

PULSE LASER, 250 MW TL15 TRIPLE-TURRET

Effect: RKA 9d6+1, Invis. to Normal Sight, AP
END: 14 per shot
Range: 600,000 kilometers
Description: This is the standard TL15 laser in a triple turret; Active and Real Costs are same for double.

Cost	Powers	END
781	*TL15 Triple Turret Pulse Laser:* (Total: 1793 Active Cost, 781 Real Cost) RKA 9d6+1, Invisible to Single Sense (Normal Sight; +¼), Autofire (3 shots; +¼), Armor Piercing (+½), Reduced Endurance (½ END; +½) (350 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 140) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 350 Active Points of Laser, Reduced Endurance (0 END; +½) (1443 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 641)	14

Beam Lasers fire continuous beams of energy and are more effective in achieving hits than are pulse lasers.

Beam Lasers

Weapon	TL	Dmg	OCV	RMod	END	MCr
Laser, Single Turret	9	8d6	+2	+0	25	1.2
Laser, Double Turret	9	8d6	+2	+0	31@	2.5
Laser, Triple Turret	9	8d6	+2	+0	31@	4.0
Laser, Single Turret	12	8½d6	+2	+0	17	1.2
Laser, Double Turret	12	8½d6	+2	+0	20@	2.5
Laser, Triple Turret	12	8½d6	+2	+0	20@	4.0
Laser, Single Turret	15	9d6AP	+2	+0	13	1.2
Laser, Double Turret	15	9d6AP	+2	+0	14@	2.5
Laser, Triple Turret	15	9d6AP	+2	+0	14@	4.0

BEAM LASER, 250 MW SINGLE-TURRET

Effect: RKA 8d6
END: 25
Range: 600,000 kilometers
Description: This is the standard TL9 laser in a single turret.

Cost	Powers	END
264	*TL9 Beam Laser*: (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25

BEAM LASER, 250 MW TRIPLE TURRET

Effect: RKA 8d6, 3-shot autofire
END: 31 per shot
Range: 600,000 kilometers
Description: This is the standard TL9 laser in a triple turret. The Active and Real Costs are the same for the Double and Triple Turret versions.

Cost	Powers	END
329	*TL9 Triple Turret Beam Laser*: (Total: 778 Active Cost, 329 Real Cost) RKA 8d6, Autofire (3 shots; +¼) (150 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 50) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Laser, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 275) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	31

BEAM LASER, 250 MW TL12 SINGLE-TURRET

Effect: RKA 8 ½d6, Invisible to Normal Sight
END: 17
Range: 600,000 kilometers
Description: This is the standard TL12 turreted laser in a single turret.

Cost	Powers	END
365	*TL12 Beam Laser*: (Total: 839 Active Cost, 365 Real Cost) RKA 8 ½d6, Invisible to Single Sense (Normal Sight; +¼) (162 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 65) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 162 Active Points of Laser, Reduced Endurance (0 END; +½) (667 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 296) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	17

BEAM LASER, 250 MW TL12 TRIPLE-TURRET

Effect: RKA 8 ½d6, Invisible to Normal Sight, AF (3)
END: 20 per shot
Range: 600,000 kilometers
Description: This is the standard TL12 turreted laser in a triple turret. The Real and Active Costs are the same for a double turret.

Cost	Powers	END
439	*TL12 Triple Turret Beam Laser*: (Total: 1009 Active Cost, 439 Real Cost) RKA 8 ½d6, Autofire (3 shots; +¼), Invisible to Single Sense (+¼) (195 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 78) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 195 Active Points of Laser, Reduced Endurance (0 END; +½) (804 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 357) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	20

BEAM LASER, 250 MW TL15 SINGLE-TURRET

Effect: RKA 9d6, Invisibility to Normal Sight, AP
END: 13
Range: 600,000 kilometers
Description: This is the standard TL15 laser in a single turret.

Cost	Powers	END
607	*TL15 Beam Laser*: (Total: 1393 Active Cost, 607 Real Cost) RKA 9d6, Invisible to Single Sense (Normal Sight; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (270 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 108) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 270 Active Points of Laser, Reduced Endurance (0 END; +½) (1113 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 495) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	13

BEAM LASER, 250 MW TL15 TRIPLE-TURRET

Effect: RKA 9d6, Invis. to Normal Sight, AP
END: 14 per shot
Range: 600,000 kilometers
Description: This is the standard TL15 laser in a triple turret; Active and Real Costs are same for double.

Cost	Powers	END
757	*TL15 Triple Turret Beam Laser*: (Total: 1737 Active Cost, 757 Real Cost) RKA 9d6, Invisible to Single Sense (Normal Sight; +¼), Autofire (3 shots; +¼), Armor Piercing (+½), Reduced Endurance (½ END; +½) (337 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 135) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 337 Active Points of Laser, Reduced Endurance (0 END; +½) (1390 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 618) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	14

Laser Options

1200 MW TL15 HEAVY LASER SINGLE-TURRET

Effect: RKA 10d6, Armor-Piercing, Invisibility to Normal Sight
END: 14
Range: 375,000 kilometers
Description: This is a 1200 megawatt laser barbette.

Cost	Powers	END
62	*TL15 Heavy Beam Laser*: (Total: 1547 Active Cost, 674 Real Cost) RKA 10d6, Invisible to Single Sense (UV; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (300 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 120) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 300 Active Points of Laser, Reduced Endurance (0 END; +½) (1237 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 550) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	14

Turret Options

POPUP TURRET

Popup turrets are completely undetectable by visuals and sensors until the weapons they contain are powered up for use, at which time the turret pops up and becomes visible.

Cost	Powers	END
33	*Popup Turret*: Invisibility to Sight, Hearing and Radio Groups and Detect , Reduced Endurance (0 END; +½) (49 Active Points); Limited Power Weapon and Turret Undetectable Until Powered Up For Use (-½)	0

LASER BARBETTE

A laser barbette is a specially-built unmanned laser turret, using fire-control software rather than a live gunner.

BAY LASER

Bay Lasers have are *Crew-Served (2 people; -¼)* and have *Limited Arc Of Fire (60 degrees; Only on same horizontal level; -¾)*. This usually allows for more powerful lasers.
Effect: RKA 10d6, Armor-Piercing, Inv. to Normal Sight
END: 14
Range: 375,000 kilometers
Description: This is a high-power laser bay.

Cost	Powers	END
640	*TL15 Sniper Bay Laser*: (Total: 1547 Active Cost, 640 Real Cost) RKA 10d6, Invisible to Single Sense (Normal Sight; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (300 Active Points); OIF Bulky (-1), Limited Arc Of Fire (60 degrees; Only on same horizontal level; -¾), Beam (-¼), Real Weapon (-¼), Crew-Served (2 people; -¼) (Real Cost: 86) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 300 Active Points of Laser, Reduced Endurance (0 END; +½) (1237 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 550) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	14

SPINAL MOUNT LASER

Spinal Mount lasers can only be fired in the direction the ship is traveling. The trade-off is limited direction for greater damage.
Effect: RKA 12d6, Armor-Piercing
END: 16
Range: 375,000 kilometers
Description: This is a high-power Spinal Mount laser.

Cost	Powers	End
749	*TL15 Spinal Mount Laser*: (Total: 1855 Active Cost, 749 Real Cost) RKA 12d6, Invisible to Single Sense (Normal Sight; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (360 Active Points); OIF Bulky (-1), Crew-Served ([9-16] people; -1), Limited Arc Of Fire (One hex row; Direction ship is facing; -¾), Beam (-¼), Real Weapon (-¼) (Real Cost: 85) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 360 Active Points of Laser, Reduced Endurance (0 END; +½) (1485 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 660) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	16

Missile Racks are launchers for small anti-ship missiles. The typical missile is a homing type which constantly seeks the target ship, ultimately being destroyed by the target's defenses, or exploding and doing damage to it. Such missiles may also be converted to planetary surface bombs, or to surveillance drones (mechanical and electronic skill should apply in such cases). Individual missiles weigh about 50 kg, and cost Cr5.000 each; one rack holds 12 missiles.

Missile Racks

Weapon	TL	Dmg	OCV	RMod	END	MCr
Missile, Single Turret	9	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	9	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	9	6½d6X	+10	+0	[36c]	3.25
Missile, Single Turret	12	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	12	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	12	6½d6X	+10	+0	[36c]	3.25
Missile, Single Turret	15	6½d6X	+10	+0	[12c]	0.95
Missile, Double Turret	15	6½d6X	+10	+0	[24c]	1.5
Missile, Triple Turret	15	6½d6X	+10	+0	[36c]	3.25

Sandcasters are defensive weapons; they dispense small particles which counteract the strength of lasers and protect the ship. The specific particles used are similar to the material used in ablat personal armor; replacement canisters of this special sand weigh about 50 kg and cost Cr400.

Sandcaster

Weapon	TL	Effect	Duration	END	MCr
Sandcaster	9	50% Dmg Reduction	5 minutes	[12cc]	0.45
Sandcaster	12	50% Dmg Reduction	5 minutes	[12cc]	0.45
Sandcaster	15	50% Dmg Reduction	5 minutes	[12cc]	0.45

Sandcaster*: (Total: 60 Active Cost, 30 Real Cost) Physical Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15)* **plus** *Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15)*

Mounts: One turret may be attached to each hardpoint on the ship. When it is attached, one ton (two Hexes) for fire control must be allocated. Turrets themselves are available in single, double, and triple mounts which will hold one, two, or three weapons respectively.

Turrets and weapons may be altered or retrofitted. For example, a single turret can have its pulse laser replaced by a beam laser when it becomes available; a single turret can be replaced by a triple turret when it becomes available.

Point Defense Laser Array

Point Defense Lasers are not as powerful as the standard laser, but they are extremely accurate, since their main job is destroying incoming missiles.

POINT DEFENSE LASER ARRAY

Effect: RKA 5d6, AF (10 shots), +10 OCV, Missile Deflection
END: 17/shot
Range: 375,000 kilometers
Description: This is point defense laser array.

Cost	Powers	END
92	*Quadpulse Point Defense Laser Array*: (Total: 199 Active Cost, 92 Real Cost) RKA 5d6, MegaScale (1" = 1 km; +¼), Autofire (10 shots; +1) (169 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 75) **plus** +10 with any single attack with one specific weapon (Real Cost: 10) **plus** Missile Deflection (Any Ranged Attack) (20 Active Points); OIF Bulky (-1), Linked (RKA; -½), Real Armor (-¼) (Real Cost: 7)	17

Meson Guns

Meson Guns fire subatomic particles known as mesons, a characteristic which allows them to penetrate armor but not energy shields.

Meson Bay Weapons

50-TON MESON GUN BAY

Effect: RKA 8 ½d6, AVLD (Energy Screens)
END: 124
Range: 375,000 kilometers
Description: This is a 50-ton meson gun bay.

Cost	Powers	END
169	*50 Ton Meson Gun Bay*: (Total: 638 Active Cost, 169 Real Cost) RKA 8 ½d6, Area Of Effect (182" Line; +1), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), AVLD (Screens or Force Fields; +1 ½) (585 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Custom Modifier (Cannot be used in atmospheres; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 146) **plus** Suppress 4d6, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (40 Active Points); OIF Bulky (-1), Linked (Meson Beam; -½), Increased Endurance Cost (x2 END; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 10) **plus** +4 with any single attack with one specific weapon (Real Cost: 4) **plus** Penalty Skill Levels: +6 vs. Range Modifier with a single attack (Real Cost: 9)	124

100-TON MESON GUN BAY

Effect: RKA 10 ½d6, AVLD (Energy Screens)
END: 154
Range: 375,000 kilometers
Description: This is a 100-ton Meson Gun Bay.

Cost	Powers	END
205	100 Ton Meson Gun Bay: (Total: 783 Active Cost, 205 Real Cost) RKA 10 ½d6, Area Of Effect (224" Line; +1), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), AVLD (Screens or Force Fields; +1 ½) (720 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Custom Modifier (Cannot be used in atmospheres; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 180) **plus** Suppress 5d6, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (50 Active Points); OIF Bulky (-1), Linked (Meson Beam; -½), Increased Endurance Cost (x2 END; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 12) **plus** +4 with any single attack with one specific weapon (Real Cost: 4) **plus** Penalty Skill Levels: +6 vs. Range Modifier with a single attack (Real Cost: 9)	154

Spinal Meson Guns

LIGHT SPINAL MESON GUN

Effect: RKA 13d6, NND (Does BODY) plus 5d6 Suppress Electronics
END: 144
Range: 30 million kilometers
Description: Light Spinal Meson Gun.

Cost	Powers	END
148	*Light Spinal Meson Gun*: (Total: 728 Active Cost, 148 Real Cost) RKA 13d6, NND ([Standard]; Meson Screens or Black Globes; +1), MegaScale (1" = 10,000 km; +1 ¼) (634 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½), Beam (-¼) (Real Cost: 101) **plus** Suppress 5d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), NND ([Standard]; Meson Screens or Black Globes; +1), MegaScale (1" = 10,000 km; +1 ¼) (94 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 47)	144

MEDIUM SPINAL MESON GUN

Effect: RKA 15d6, NND (Does BODY) **plus** 6d6 Suppress Electronics
END: 148
Range: 30 million kilometers
Description: See below.

Cost	Powers	END
149	*Medium Spinal Meson Gun*: (Total: 750 Active Cost, 149 Real Cost) RKA 15d6, MegaScale (1" = 1,000 km; +1), Area Of Effect (180" Line; +1) (675 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½) (Real Cost: 112) **plus** Suppress 6d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), MegaScale (1" = 1,000 km; +1) (75 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 37)	148

HEAVY SPINAL MESON GUN

Effect: RKA 18d6, NND (Does BODY) plus 8d6 Suppress Electronics
END: 206
Range: 30 million kilometers
Description: See below.

Cost	Powers	END
215	*Heavy Spinal Meson Gun*: (Total: 1027 Active Cost, 215 Real Cost) RKA 18d6, NND ([Standard]; Meson Screens or Black Globes; +1), MegaScale (1" = 10,000 km; +1 ¼) (877 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½), Beam (-¼) (Real Cost: 140) **plus** Suppress 8d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), NND ([Standard]; Meson Screens or Black Globes; +1), MegaScale (1" = 10,000 km; +1 ¼) (150 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 75)	206

TYPE T SPINAL MESON GUN

Effect: RKA 13d6+1, NND (Does BODY)
END: 180
Range: 30 million kilometers
Description: See below.

156	*Type T Spinal Meson Gun:* RKA 13d6+1, NND ([Standard]; Force field or meson screen; +1), Does BODY (+1), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down (+¼) (900 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), Limited Arc Of Fire (One hex row; Only on same horizontal level; -1), OIF Bulky (-1), Crew-Served ([9-16] people; -1), Increased Endurance Cost (x2 END; -½)	180

Particle Accelerators

Particle Accelerator weapons fire subatomic particles at high speeds, but the speeds are only possible in space. They cannot be used in an atmosphere.

50-TON PARTICLE ACCELERATOR BAY

Effect: RKA 13d6+1, NND (Does BODY)
END: 180
Range: 30 million kilometers
Description: See below for various versions.

50 Ton PAW Bay*: (Total: 443 Active Cost, 120 Real Cost) RKA 8 ½d6, Area Of Effect (104" Line; +1), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (390 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Custom Modifier (Cannot be used in atmospheres; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 97) plus Suppress 4d6, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (40 Active Points); OIF Bulky (-1), Linked (Meson Beam; -½), Increased Endurance Cost (x2 END; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 10) plus +4 with any single attack with one specific weapon (Real Cost: 4) plus Penalty Skill Levels: +6 vs. Range Modifier with a single attack (Real Cost: 9)*

100 Ton PAW Bay*: (Total: 533 Active Cost, 143 Real Cost) RKA 10 ½d6, Area Of Effect (128" Line; +1), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (480 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Custom Modifier (Cannot be used in atmospheres; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 120)* **plus** *Suppress 4d6, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (40 Active Points); OIF Bulky (-1), Linked (Meson Beam; -½), Increased Endurance Cost (x2 END; -½), Custom Modifier (60 degree firing arc on same level; -½), Crew-Served (2 people; -¼), Real Weapon (-¼) (Real Cost: 10) plus +4 with any single attack with one specific weapon (Real Cost: 4) plus Penalty Skill Levels: +6 vs. Range Modifier with a single attack (Real Cost: 9)*

Particle Accelerator Barbette*: (Total: 328 Active Cost, 106 Real Cost) RKA 6 ½d6, Area Of Effect (80" Line; +1), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (300 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½),*

Custom Modifier (Cannot be used in atmospheres; -½), Real Weapon (-¼) (Real Cost: 92) **plus** *Suppress 2d6, MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼) (20 Active Points); OIF Bulky (-1), Linked (Meson Beam; -½), Increased Endurance Cost (x2 END; -½), Real Weapon (-¼) (Real Cost: 6)* **plus** *+2 with any single attack with one specific weapon (Real Cost: 2) plus Penalty Skill Levels: +4 vs. Range Modifier with a single attack (Real Cost: 6)*

Light Spinal Particle Accelerator*: (Total: 647 Active Cost, 121 Real Cost) RKA 13d6, MegaScale (1" = 1,000 km; +1), Area Of Effect (156" Line; +1) (585 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (180 degrees; Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½), Custom Modifier (cannot be used in atmospheres; -½) (Real Cost: 90)* **plus** *Suppress 5d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), MegaScale (1" = 1,000 km; +1) (62 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 31)*

Medium Spinal Particle Accelerator*: (Total: 780 Active Cost, 156 Real Cost) RKA 15d6, MegaScale (1" = 1,000 km; +1), NND (Meson Screens or Force fields; +1) (675 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (180 degrees; Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½), Custom Modifier (cannot be used in atmospheres; -½) (Real Cost: 104)* **plus** *Suppress 6d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), MegaScale (1" = 1,000 km; +1), NND (Meson Screens or Force fields; +1) (105 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 52) 154*

Heavy Spinal Particle Accelerator*: (Total: 987 Active Cost, 190 Real Cost) RKA 18d6, Area Of Effect (242" Line; +1), MegaScale (1" = 10,000 km; +1 ¼) (877 Active Points); OIF Immobile (-1 ½), Crew-Served ([17-32] people; -1 ¼), Limited Arc Of Fire (180 degrees; Only on same horizontal level; -1), Extra Time (1 Turn (Post-Segment 12), Only to Activate, -¾), Increased Endurance Cost (x2 END; -½), Custom Modifier (cannot be used in atmospheres; -½) (Real Cost: 135)* **plus** *Suppress 8d6, Variable Special Effects (Any SFX; All Unshielded Electronics; +½), MegaScale (1" = 10,000 km; +1 ¼) (110 Active Points); Custom Modifier (Linked to Spinal Meson Gun; -½), Increased Endurance Cost (x2 END; -½) (Real Cost: 55)*

Fusion Guns

Dual Fusion Gun Turret-12*: RKA 6 ½d6, Area Of Effect Nonselective (One Hex; +¼), Armor Piercing (+½), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Autofire (2 shots; +1 ¼) (400 Active Points); OIF Immobile (-1 ½), Crew-Served (2 people; -¼), Real Weapon (-¼), Reduced By Range (-¼). Total Cost: 123 points*

Plasma Guns

50 Ton Plasma Gun Bay-12*: RKA 9 ½d6, Area Of Effect Nonselective (One Hex; +¼), Armor Piercing (+½), MegaScale (1" = 1,000 km; +1), Can Be Scaled Down 1" = 1km (+¼) (435 Active Points); OAF Bulky (-1 ½), Extra Time (1 Turn (Post-Segment 12), -1 ¼), Increased Endurance Cost (x2 END; -½), Custom Modifier (Limited Arc of Fire, 2 Hexsides; -½), Crew-Served (2 people; -¼), Real Weapon (-¼), Reduced By Range (-¼). Total Cost: 79 points.*

Note: Maximum Range of 39,000 km

Missiles

MISSILE RACK

A missile rack contains 12 conventional missiles, which may be fired singly upon a successful target lock. Although highly accurate with non-moving targets, the travel time and physical nature of missiles makes them susceptible to interception before they can reach their target.
Effect: RKA 6½d6 Explosion
Shots: 12
Range: 1,500,000 kilometers

Missile Rack: (Total: 818 Active Cost, 371 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +10 with Ranged Combat (50 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 22)

5 TON MISSILE POD

Each pod takes up 5 displacement tons of space (10 Hexes) and contains 125 standard space combat missiles, with either kinetic energy (KE, treated as AP) or High Explosive (Explosion). The pods are mounted in cargo bays or small craft bays.
Effect: RKA 6½d6 Explosion, AF(5)
Shots: 125
Range: 1,500,000 kilometers

Five Ton Missile Pod: (Total: 2100 Active Cost, 954 Real Cost) RKA 6 ½d6, Explosion (+½), 125 Charges (Recovers Under Limited Circumstances; Base or Tender to Reload Pods, cannot be loaded from inside the ship; +1), Autofire (5 shots; +1 ½) (400 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), Can Be Missile Deflected (-¼), Crew-Served (2 people; -¼) (Real Cost: 107) **plus** Variable Advantage

(+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 400 Active Points of Missile, Reduced Endurance (0 END; +½) (1650 Active Points); OIF Bulky (-1) (Real Cost: 825) **plus** +10 with Ranged Combat (50 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 22)

SMALL MISSILE BAY

A small missile bay contains 1000 space combat missiles, either kinetic energy (KE, treated as AP) or High Explosive (Explosion).
Effect: RKA 8d6 Explosion, AF(20)
Shots: 1000
Range: 1,500,000 kilometers

Small Missile Bay: (Total: 3125 Active Cost, 1400 Real Cost) RKA 8d6, Explosion (+½), 1000 Charges (Recovers Under Limited Circumstances; Base or Tender to Reload Pods, cannot be loaded from inside the ship; +1), Autofire (20 shots; +2 ½) (600 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Crew-Served ([3-4] people; -½), Real Weapon (-¼), Can Be Missile Deflected (-¼), Limited Arc Of Fire (180 degrees; -¼) (Real Cost: 141) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 600 Active Points of Missile, Reduced Endurance (0 END; +½) (2475 Active Points); OIF Bulky (-1) (Real Cost: 1237) **plus** +10 with Ranged Combat (50 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 22)

SANDCASTER LAUNCHER

Effect: 50% Resistant Physical and Energy Damage Reduction
END: [12 cc]
Range: 600,000 kilometers

Sandcaster*: (Total: 60 Active Cost, 30 Real Cost) Physical Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15)* **plus** *Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15)*

MESON SCREEN

Meson Screen*: (Total: 120 Active Cost, 26 Real Cost) Physical Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from Meson weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13)* **plus** *Energy Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from Meson weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13)*

NUCLEAR DAMPERS

Nuclear Damper*: (Total: 120 Active Cost, 26 Real Cost) Physical Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13)* **plus** *Energy Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13)*

SHIP'S VEHICLES

A ship may have one or more subordinate vehicles specified as part of the ship's equipment, and tonnage may be devoted to the permanent stowage or hangarage of the vehicles. The vehicles list indicates those vehicles and small craft commonly available.

Air/rafts, ATVs, GCarriers, and speeders are described in the chapter on Vehicles. In most cases, vehicles will have ports or bay doors opening to the outside; air/rafts, GCarriers, and speeders can reach orbit, and are often launched to a world surface from orbit. If an ATV is carried, provision must be made to move it to a world surface if the ship is not streamlined (unless the vehicle is intended for use only on worlds without atmospheres).

When small craft are carried on a ship, it must have sufficient tonnage to hold each small craft allocated as small craft hangars or compartments.

Small Craft Design

Vessels under 100 tons are considered to be small craft. There are eight standard designs available; each design plan is available for Cr100. All take approximately twelve months to build. All are streamlined, and can enter atmospheres. All can operate with unrefined fuel; they have fuel scoops which allow them to skim fuel from a gas giant. Each small craft design is intended to be as useful as possible. As a result, the description covers basic performance of the craft, and indicates price, crew, and other details. Each craft also has a feature called excess space: this interior tonnage may be used by the purchaser for a wide variety of purposes. In effect, when the craft is procured, it is customized by the purchaser for some specific use. Any fitting or combination of fittings shown on the fitting table may be specified for a standard design small craft. The prices, however, are ignored, and are considered to be included in the standard design price. For example, the launch, with 13 tons excess space, could utilize that space for 5 tons of fuel, 10 passenger couches, a small craft cabin, and one ton of cargo. As another example, the vessel could have all 13 tons allocated to cargo. In either case, the price of the launch remains MCr14.

Fittings: The fittings table indicates items which may be allocated to small craft. Staterooms, low berths, and emergency low berths are the same as those used in larger ships. The small craft cabin is a small, one-passenger stateroom for use on longer duration voyages. It can be used double occupancy on small craft which have no bridge, but the crew will become increasingly uncomfortable. Small craft couches are individual passenger seats; one is required for each passenger carried (if a stateroom or cabin is not provided). Each small craft except the fighter already has two small craft passenger couches installed (the fighter has one). Cargo and fuel tankage are simply allocated; one ton of cargo space carries one ton of cargo, while one ton of fuel tankage carries one ton of

fuel. The fuel tankage listed for each small craft supports four weeks of operation. Each additional increment of fuel tonnage added supports an additional four weeks of operation.

Fitting Description	Tons	Cost (in Cr)
Stateroom	4.0	500,000
Low Berth	0.5	50,000
Emergency Low Berth	1.0	100,000
Small Craft Stateroom	2.0	50,000
Small Craft Couch	0.5	25,000
Cargo - as required		
Fuel - as required		

Listed crew for all small craft except the fighter is two: pilot and rider. The craft may be operated by one pilot if desired. The pilot must have *Transport Familiarity (Ship's Boat)* skill (or may *Combat Piloting* with the associated familiarity). The rider may be a gunner, a passenger, or a co-pilot. If the craft is armed, but carries no gunner, the pilot may fire the weapon with a DM of -1 on the weapon (with an additional -3 if he does not have the proper Weapon Familiarity).

Computers may be added to small craft, but such computers must be purchased normally. Specific computer restrictions are indicated in the small craft descriptions.

Weaponry may be added to small craft. Each small craft may allocate one ton to weaponry and install up to three weapons. The individual listings indicate specific weapons which are available for the small craft.

Below are eight standard small craft descriptions.

Launch/Lifeboat: Using a 20-ton hull, the launch is capable of 1G acceleration, carries 1 ton of fuel tankage, and has a crew of two. A launch may mount missile racks and sandcasters; it may not mount lasers. The maximum computer for the launch is the Model/2bis. The craft has 13 tons excess space available for custom use, and costs MCr14.

Ship's Boat: Using a 30-ton hull, the ship's boat is capable of 6G acceleration, carries 1.8 tons of fuel tankage, and has a crew of two. A ship's boat may mount one beam or pulse laser; remaining weapons must be missile racks and sandcasters. The maximum computer for the ship's boat is the Model/3; if the computer is Model/3, lasers may not be mounted. The craft has 13.7 tons of excess space available, and costs MCr16.

Slow Boat: Using a 30-ton hull, the slow boat is capable 1 of 3G acceleration, carries 1 ton of fuel tankage, and has a crew of two. A slow boat may mount one beam or pulse laser; remaining weapons must be missile racks or sandcasters. The maximum computer for the slow boat is the Model/3; if the computer is Model/3 lasers may not be installed. The craft has 19.9 tons of excess space, and costs MCr15.

Pinnace: Using a 40-ton hull, the pinnace is capable of 5G acceleration, carries 2 tons of fuel, and has a crew of two. It may mount two lasers, and any remaining weapons must be missile racks or sandcasters. The maximum computer for the pinnace is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed, no lasers may be installed. The craft has 22.4 tons of excess space, and costs MCr20.

Slow Pinnace: Using a 40-ton hull, the slow pinnace is capable of 2G acceleration, carries 1 ton of fuel, and has a crew of two. It may mount one beam or pulse laser; remaining weapons must be missile racks or sandcasters. The maximum computer for the slow pinnace is the Model/3; if the computer is a Model/3, lasers may not be mounted. It has 31.6 tons excess space, and costs MCr18.

Modular Cutter: Using a 50-ton hull, the cutter is capable of 4G, carries 2 tons of fuel, and has a crew of 2. It has 30 tons committed to special detachable modules; the craft has 2.5 tons excess space available for weaponry, computer, and possibly a couch for a third crew member. The cutter may mount up to two lasers; remaining weapons must be missile racks or sandcasters. The maximum computer for the cutter is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed no lasers may be mounted. The cutter, without any modules, costs MCr28. Three interchangeable modules are routinely available for the modular cutter.

The ATV module (which includes an operational ATV) is 30 tons. It can land (and retrieve) an ATV on a world surface from orbit. The module can serve as an ATV storage location, if desired. It costs MCr1.8.

The fuel module, with 30 tons of fuel tankage, serves as a fuel skimming vehicle and storage tank. It costs MCr1.

The open module is a customizable frame with 30 tons of excess space which can be allocated to passenger couches, fuel, cargo, cabin, or staterooms. It costs MCr2.

Shuttle: Using a 95-ton hull, the shuttle is capable of 3G acceleration, carries 2.85 tons of fuel, and has a crew of 2. It may mount up to two lasers; remaining weapons must be missile racks or sandcasters. The maximum computer for the shuttle is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed, no lasers are allowed. It has 71 tons of excess space, and costs MCr33.

Fighter: Using a 10-ton hull, the fighter is capable of 6G acceleration, carries 1 ton of fuel, and has a crew of one. It includes a computer Model/1 and can mount only one type of weapon: one laser, up to three missile racks, or up to three sandcasters. The maximum computer for the fighter is the Model/3; if a Model/3 is installed, then no lasers are permitted. It has one ton of excess space, and costs MCr18.

Starships

This chapter includes some of the standard Traveller starships, converted to HERO. For more information on these ships, see CT *Book 2 - Starships*.

Commercial Starships

TYPE A1 FREE TRADER

The A1 Free Trader is a standard 200 ton commercial vessel. It has Jump1 and 1G drives, with a capacity of 30 tons fuel. The computer is a Model/1. Accommodations include 8 staterooms and 8 low passenger berths. It is fitted with 2 hardpoints, and the version here has one single laser turret and one double turret with missiles and sandcaster. The Free Trader is streamlined, and requires 4 crew.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
10	DEX	0	OCV 3 DCV -7
29	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Leaping: 0"
Flight: 30" / 60"
Teleportation: 3" / 3"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
4	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
3	*Jump 1 Drive:* Teleportation 3", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (28 Active Points); Extra Time (1 Week For Full Journey, -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Costs Endurance (-½), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	12 +17
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6 +17
66	*P1-200 Power Plant:* Endurance Reserve (150 END, 150 REC) (165 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*2 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range **plus** Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	

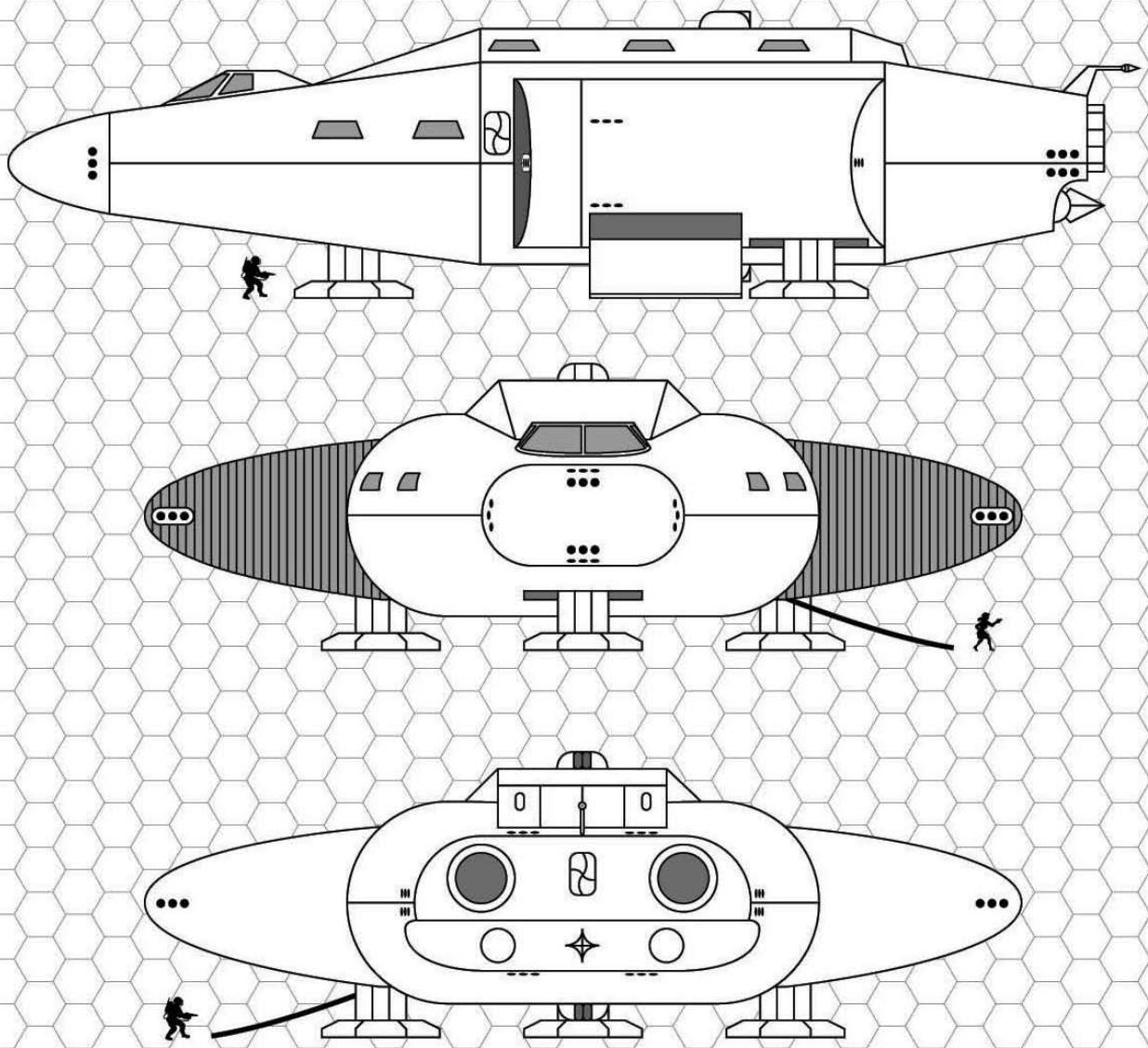
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
39	*Model 1 Computer:* Custom Power (39 Active Points)	4
	Personnel Section	
16	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1) (Notes: 8 Staterooms)	0
16	*Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½) (Notes: 8 Low Berths)	1
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
19	1) Closed Air Raft (19 Active Points)	0

Total Powers & Skill Cost: 1125
Total Cost: 1204

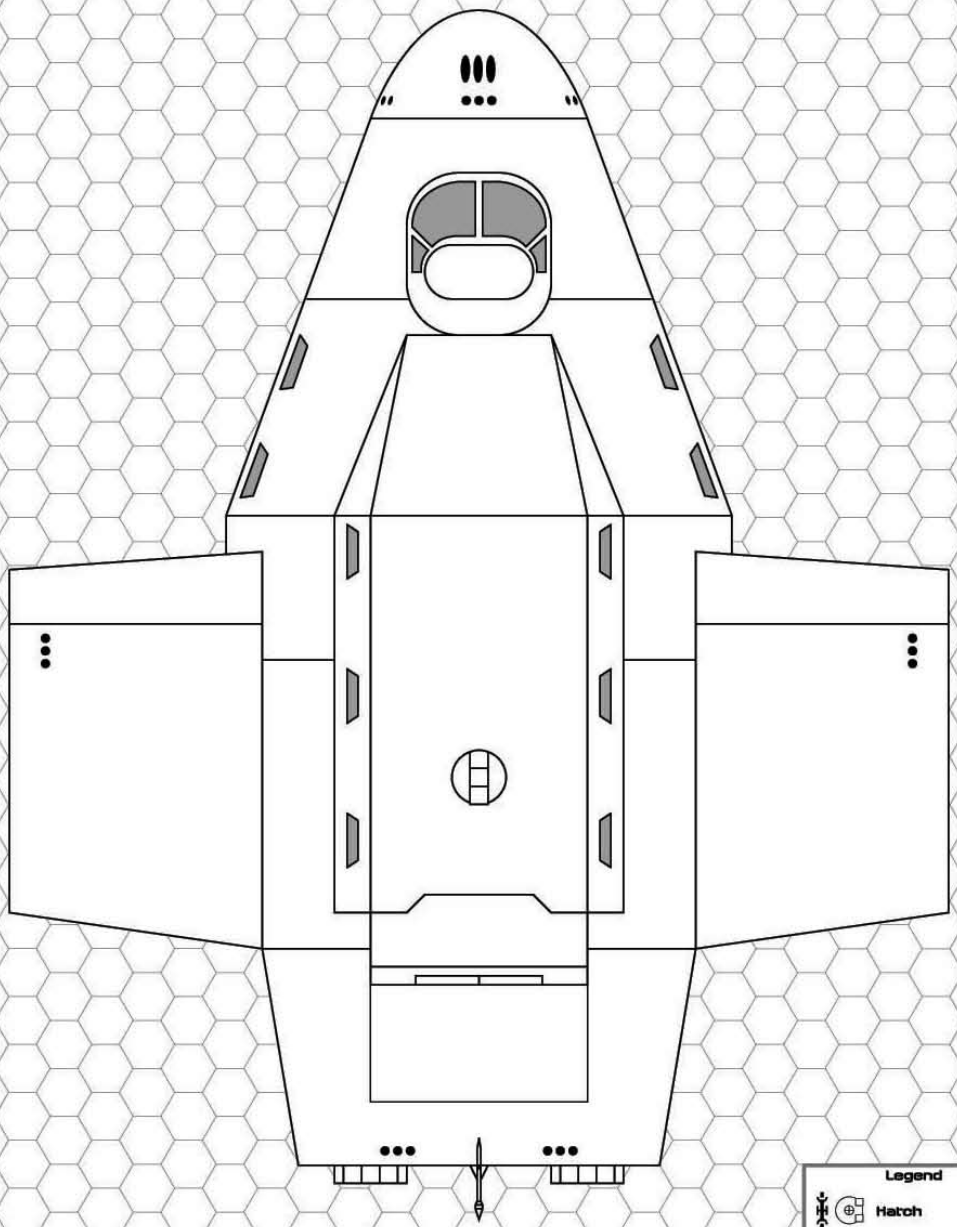
200+	**Disadvantages**
15	Distinctive Features: Standard Free Trader (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
981	Experience Points

Total Disadvantage Points: 1204

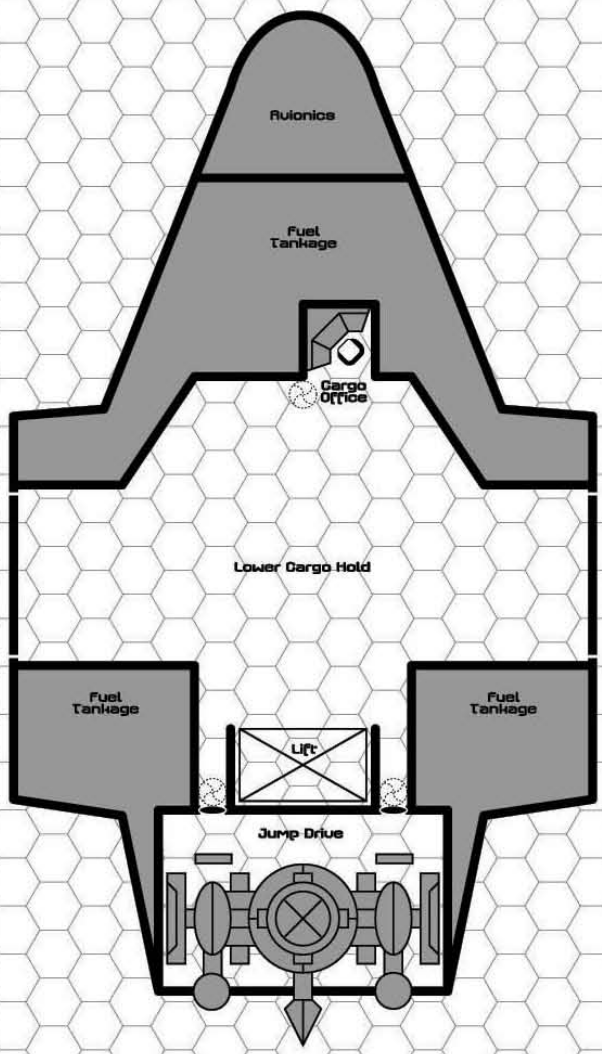
Beowulf class
Type A1 Free Trader

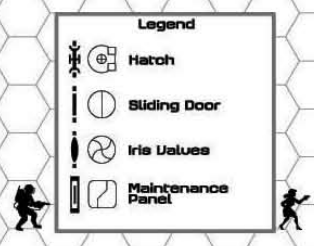


Beowulf class
Type A1 Free Trader



Beowulf class
Type A1 Free Trader

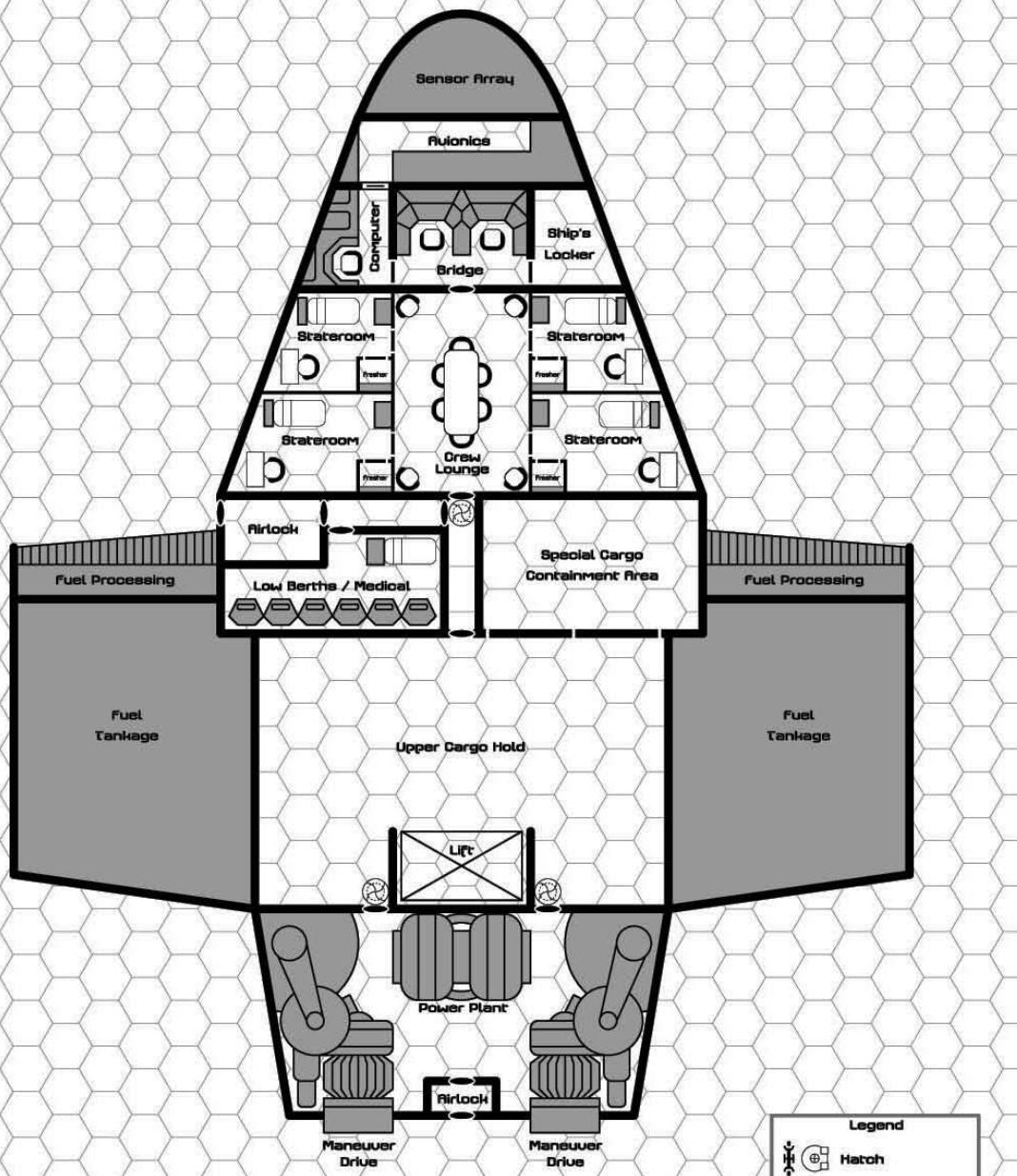




one hex = 2 meters

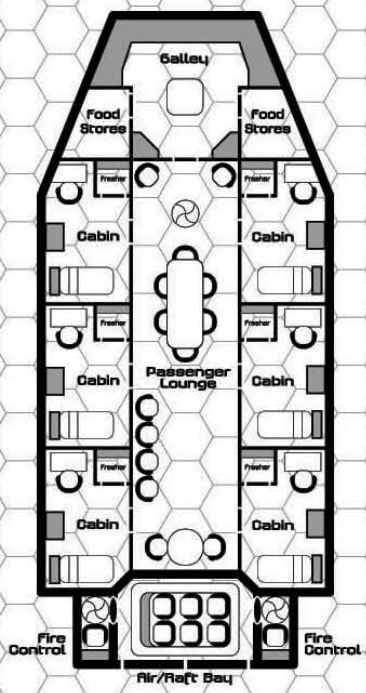
Lower Deck

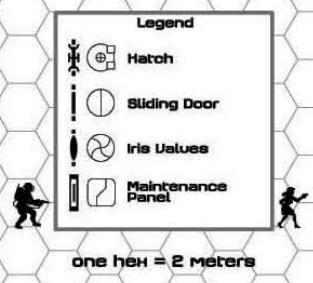
Beowulf class
Type A1 Free Trader



Main Deck

Beowulf class
Type A1 Free Trader





Upper Deck

TYPE A2 FAR TRADER

The Type A2 Far Trader is a TL11 commercial starship, built using a standard 200-ton displacement hull. The A2 is a common sight throughout Imperial space, designed as a small, compact merchant vessel.

Standard crew is 6 personnel (1 Command, 1 Engineering, 2 Gunnery, 1 Medical, and 1 Steward). The standard model has 8 large staterooms and 10 cold-sleep berths. It has a 51-ton cargo hold, and carries one 4-ton displacement Air/Raft in an internal compartment.

It's purchase value new is MCr82.8.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
10	DEX	0	OCV 3 DCV -7
29	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Leaping: 0"
Flight: 30" / 60"
Teleportation: 7" / 14"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
4	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
7	*Jump 2 Drive:* Teleportation 7", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (66 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) **Note:** Full distance is 6.52 LY (2 Parsecs)	0
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
132	*P2-200 Power Plant:* Endurance Reserve (300 END, 300 REC) (330 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*2 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	

12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
23	*Model 1bis Computer:* Custom Power (23 Active Points)	2
	Personnel Section	
16	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
21	*Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
19	1) Closed Air Raft (19 Active Points)	0

Total Powers & Skill Cost: 1184
Total Cost: 1263

200+	**Disadvantages**
15	Distinctive Features: Standard Far Trader (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
1048	**Experience Points**

Total Disadvantage Points: 1263

TYPE A3 FAT TRADER

The Fat Trader is a commercial vessel based on the standard 400 Displacement Ton hull. It has a crew of 10 (Captain, Pilot, Navigator, Sensor Op, Comm Op, Steward, 2 Medics, 2 Engineers), with 13 Staterooms and 8 Low Berths. It can carry 165 Tons of cargo.

Val	Char	Cost	Notes
16	Size	80	Length 40.32", Width 20.16", Area 812.75" Mass 6.6 kton KB -16
90	STR	0	Lift 6.6ktons; 18d6
10	DEX	0	OCV 3 DCV -7
30	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 84

Movement: Leaping: 0"
Flight: 30" / 60"
Teleportation: 3" / 6"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
4	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
3	*Jump 1 Drive:* Teleportation 3", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (28 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) **Note:** Full distance is 3.26 LY (1 Parsec)	0
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
132	*P1-400 Power Plant:* Endurance Reserve (300 END, 300 REC) (330 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*4 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4

14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
23	*Model 1bis Computer:* Custom Power (23 Active Points)	2

Personnel Section

21	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
16	*Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	

Vehicles

12	1) Launch (12 Active Points)	0

Total Powers & Skill Cost: 1182
Total Cost: 1266

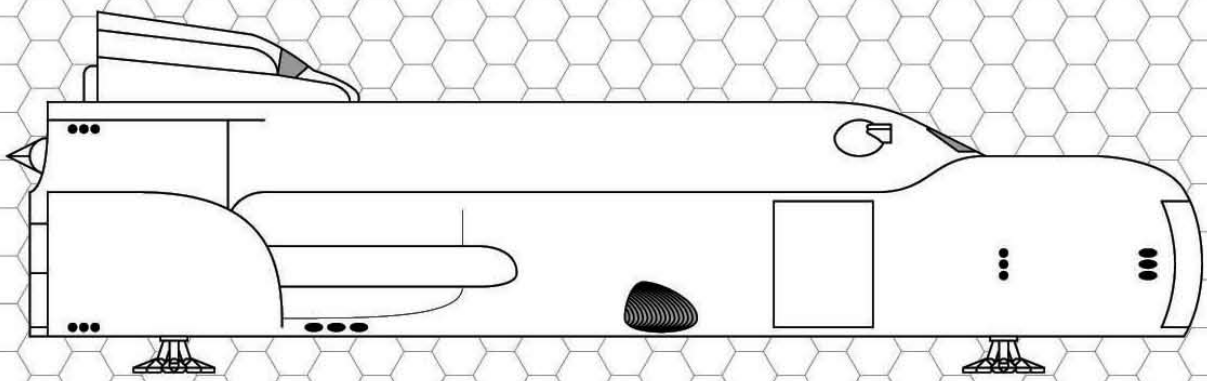
200+ Disadvantages

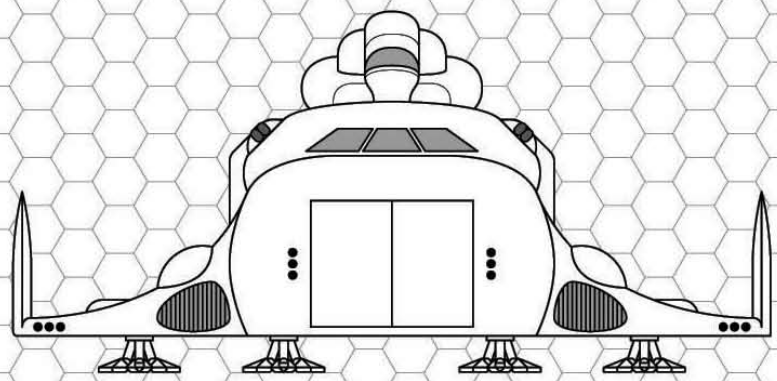
15 Distinctive Features: Standard Fat Trader (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)

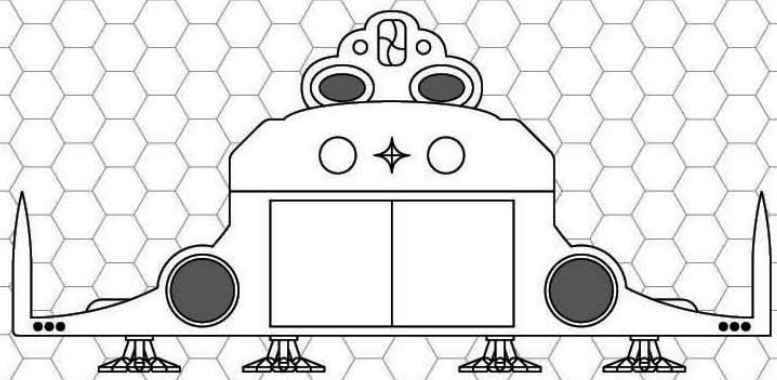
1051 Experience Points

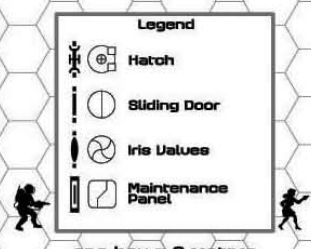
Total Disadvantage Points: 1266

Gyro Cadis class
Type A3 Fat Trader

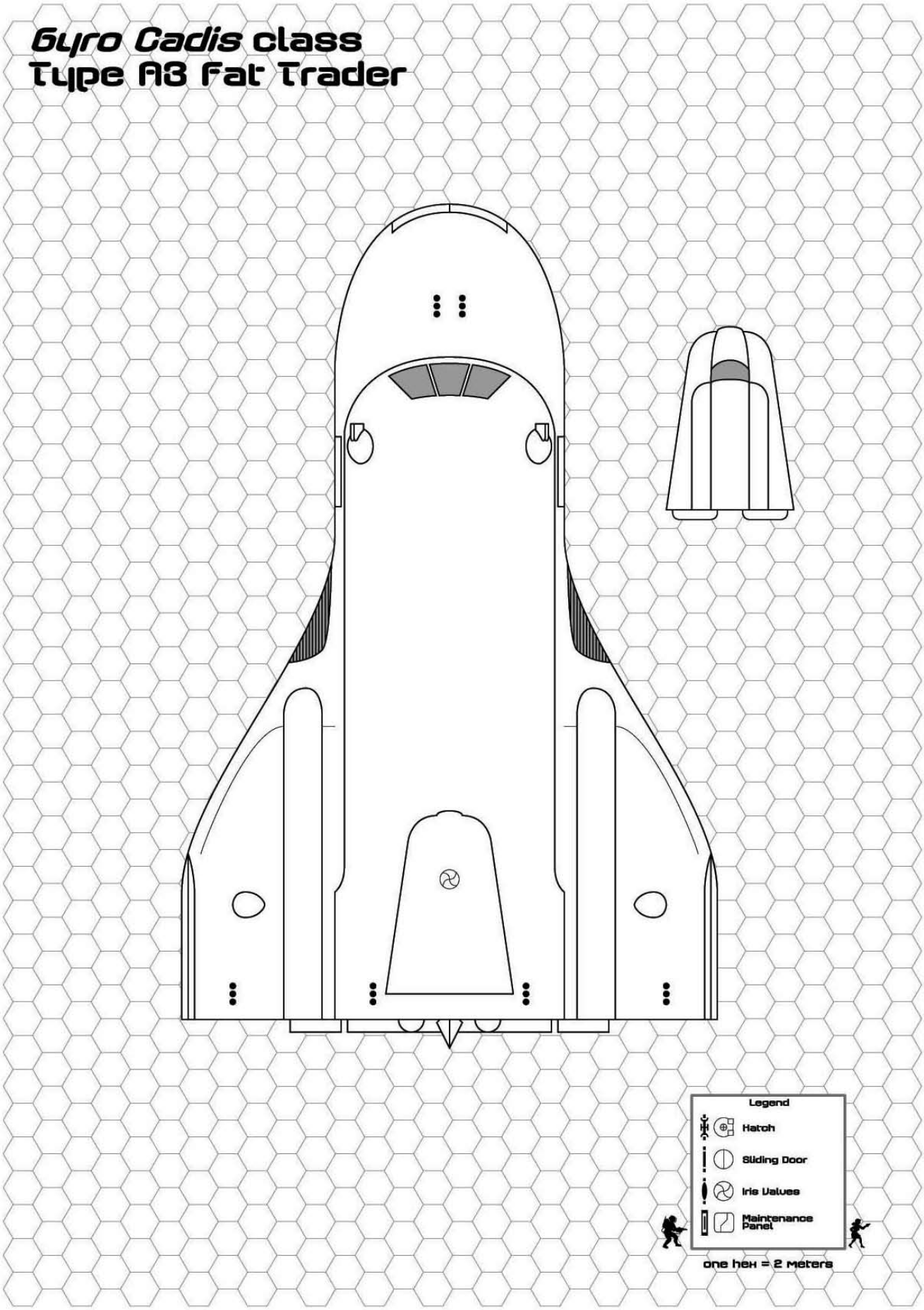




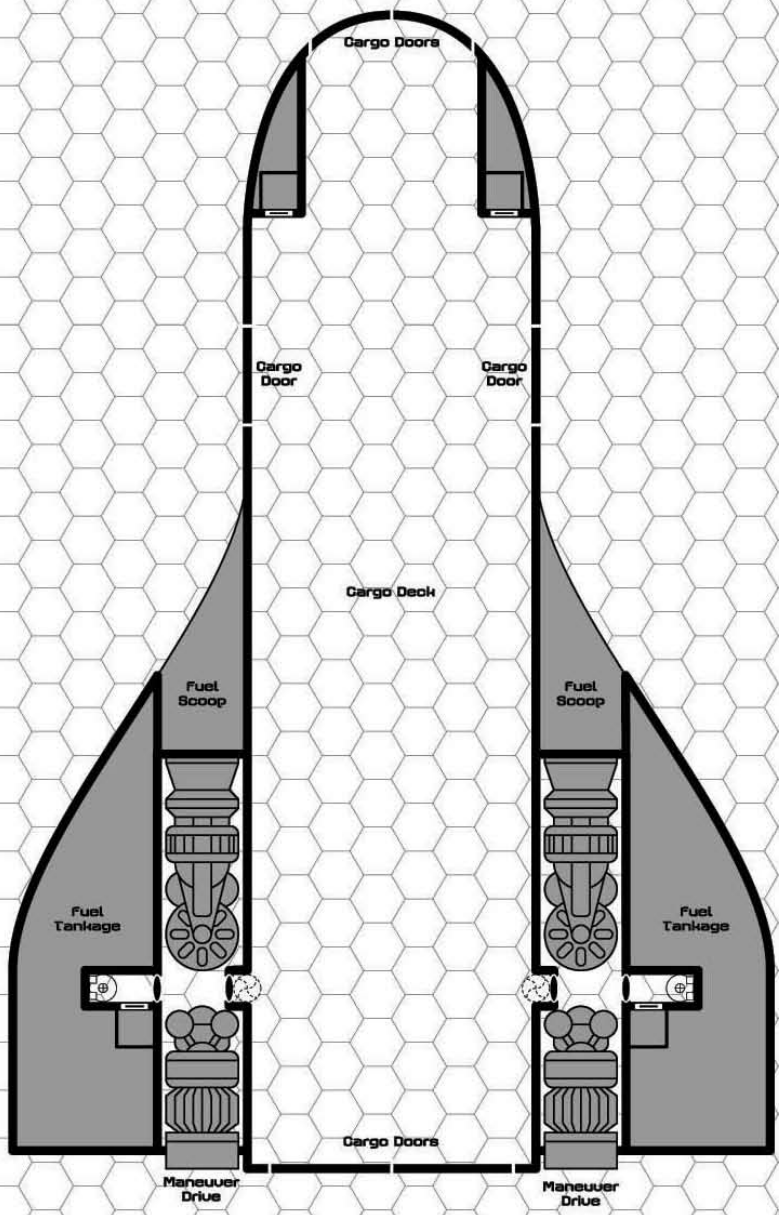




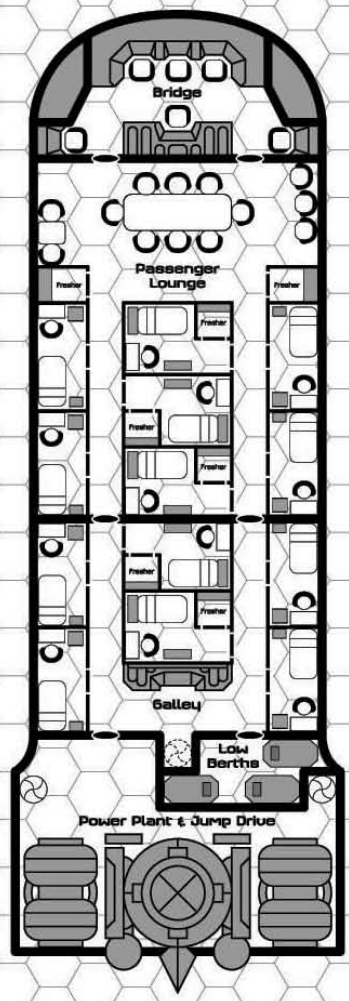
Gyro Cadis class
Type A3 Fat Trader



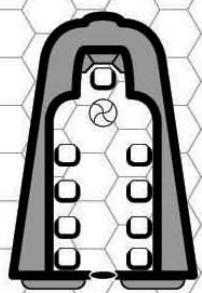
Gyro Cadis class
Type A3 Fat Trader



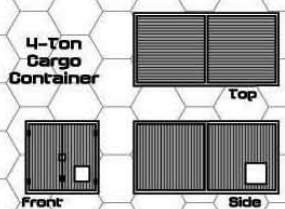
Main Deck

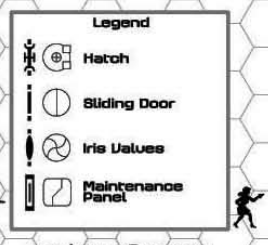


Upper Deck



Launch





LAB SHIP

Using a 400-ton hull, the laboratory ship is a mobile base for scientific analysis and investigation. It mounts a J2 jump drive, 1G maneuver drive, and P2-400 power plant-F. Fuel tankage for 90 tons supports the power plant and one J2 jump. Adjacent to the bridge is a model-2 computer. There are twenty staterooms and no low berths. The ship has four hardpoints and four tons allocated to fire control. No weapons are installed. There are three ship's vehicles: two air/rafts and one 40-ton pinnace. Cargo capacity is 22 tons. Laboratory space equals 85 tons. One ton is waste space. The ship is unstreamlined.

The laboratory ship requires a crew of five: pilot, navigator, two engineers, and medic. Gunners and scientific research personnel may be added. The pilot operates the pinnace; the engineers operate the air/rafts. The ship can carry 20 passengers (35 if double occupancy) on a noncommercial basis.

Val	Char	Cost	Notes
16	Size	80	Length 40.32", Width 20.16", Area 812.75" Mass 6.6 kton KB -16
90	STR	0	Lift 6.6ktons; 18d6
10	DEX	0	OCV 3 DCV -7
32	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 84

Movement: Flight: 30" / 60"
Teleportation: 7" / 14"

Cost	Powers	END
	Construction	
4	*Open Configuration:* +4 BODY (Modifiers affect Base Characteristic)	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
7	*Jump 2 Drive:* Teleportation 7", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (66 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) **Note:** Full distance is 6.52 LY (2 Parsecs)	0
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
264	*P2-400 Power Plant:* Endurance Reserve (600 END, 600 REC) (660 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*4 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	

12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
29	*Sensor Probes and Recon Drones:* Clairsentience (Sight And Radio Groups), x2 Range (1,190"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 1 Continuing Charge lasting 6 Hours (+0), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (131 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼)	[1 cc]
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
25	*Model 2 Computer:* Custom Power (25 Active Points)	2

Personnel Section

26	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	

Vehicles

24	1) Closed Air Raft (19 Active Points) x2	0
19	2) Pinnace (19 Active Points)	0

Skills

Labs

4	1) SS: choose 13-
4	2) SS: choose 13-
4	3) SS: choose 13-
4	4) SS: choose 13-
4	5) SS: choose 13-

Total Powers & Skill Cost: 1387
Total Cost: 1471

200+	**Disadvantages**
15	Distinctive Features: Standard Lab Ship (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
20	Physical Limitation: Unstreamlined - Cannot Enter Atmosphere (Frequently, Greatly Impairing)
1254	**Experience Points**

Total Disadvantage Points: 1471

SAFARI SHIP

Using a 200-ton hull, the safari ship is an excursion vessel intended for trophy-taking (real or photographic) expeditions to other worlds. It has J2 jump drive, 1G maneuver drive, and P2-200 power plant. Fuel tankage for 60 tons supports the power plant and one jump-2. Adjacent to the bridge is a computer Model/1 bis. There are eleven staterooms and no low berths. The ship has one hardpoint and one ton allocated to fire control. A double turret is installed, but no weapons are mounted. There are two ship's vehicles: an air/raft and a 20-ton launch. Cargo capacity is 6 tons. Two 7-ton capture tanks hold specimens, and a 7-ton trophy lounge serves as a hunter's recreation area. The hull is streamlined.

The safari ship requires a crew of five: pilot, navigator, engineer, steward, and medic. A gunner and additional expedition personnel may be added. The pilot operates the launch; the steward operates the air/raft. The ship can carry a party of six (or up to 8 if the crew goes to double occupancy) on expeditions; it does not engage in commercial passenger service. The ship costs MCr81.08 (including 10% discount for standard designs) and takes 11 months to build.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
10	DEX	0	OCV 3 DCV -7
29	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Flight: 30" / 60"
Teleportation: 7" / 14"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
4	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
7	*Jump 2 Drive:* Teleportation 7", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (66 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) **Note:** Full distance is 6.52 LY (2 Parsecs)	0
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
66	*P2-200 Power Plant:* Endurance Reserve (150 END, 150 REC) (165 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*1 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	

17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
25	*Model 2 Computer:* Custom Power (25 Active Points)	2
	Personnel Section	
21	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
13	*Capture Cages:* Entangle 4d6, 8 DEF (60 Active Points); 4 Charges (-1), Only To Form Barriers (-1), OIF Bulky (-1), No Range (-½)	[4]
7	*Holographic Movie Theater:* Sight and Hearing Groups Images 1" radius, +/-1 to PER Rolls (18 Active Points); IIF Bulky (-¾), No Range (-½), Real Equipment (-¼)	2
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
19	1) Closed Air Raft (19 Active Points)	0
36	2) Ship's Boat (36 Active Points)	0
	Skills	
6	*Animal Lab and Equipment:* +3 with Animal Handler	

Total Powers & Skill Cost: 1175
Total Cost: 1254

200+	**Disadvantages**
15	Distinctive Features: Standard Safari Ship (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
20	Physical Limitation: Unstreamlined - Cannot Enter Atmosphere (Frequently, Greatly Impairing)
1039	**Experience Points**

Total Disadvantage Points: 1254

STELLAR CLASS SUBSIDIZED LINER

Using a 600-ton hull, the subsidized liner is a passenger and freight carrier committed to long-haul routes. It has a J3 jump drive, 1G maneuver drive, and P3-600 power plant. Fuel tankage for 210 tons supports the power plant and allows one jump-3. Adjacent to the bridge are twenty low berths. The ship has three hardpoints and three tons set aside for fire control. No weapons are installed. There is one ship's vehicle: a 20-ton launch. Cargo capacity is 190 tons. The hull is unstreamlined.

The subsidized liner requires a crew of fifteen: pilot, navigator, three engineers, three stewards, and one medic, and six others. Up to three gunners may be added. The ship can carry 30 high or middle passengers and twenty low passengers. The pilot operates the launch. The ship costs MCr236.97 (including 10% discount for standard designs) and takes 22 months to build.

Val	Char	Cost	Notes
17	Size	85	Length 50.8", Width 25.4", Area 1,290.16" Mass 13.1 kton KB -17
95	STR	0	Lift 13.1ktons; 19d6
10	DEX	0	OCV 3 DCV -8
31	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 89

Movement: Flight: 30" / 60"
Teleportation: 10" / 20"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
4	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
9	*Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
594	*P3-600 Power Plant:* Endurance Reserve (1350 END, 1350 REC) (1485 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*6 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	

12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
28	*Model 3 Computer:* Custom Power (28 Active Points)	3

Personnel Section

26	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
12	*Holographic Theater and Entertainment:* Sight, Hearing, Smell/Taste and Touch Groups Images Increased Size (4" radius; +½) (37 Active Points); OIF Immobile (-1 ½), Requires A Computer Programming Skill Roll (-½)	4
26	*Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	

Vehicles

40	1) Gig (40 Active Points)	0
40	2) Grav Cargo Carrier/Passenger Truck (40 Active Points)	0

Skills

5	*Automated Kitchen*: KS: Cuisine 14-
4	*Electronics Shop:* +2 with Electronics
4	*Machine Shop:* +2 with Mechanics
2	*Steward's Area:* +2 with KS: Steward
7	*Casino:* Gambling 11-
7	*Lounge:* High Society 11-
7	*Lounge:* Trading 11-
4	*Baggage Handling Equipment:* PS: Cargo Handling 13-

Total Powers & Skill Cost: 1790
Total Cost: 1879

200+	**Disadvantages**
15	Distinctive Features: Standard Fat Trader (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
1659	**Experience Points**

Total Disadvantage Points: 1879

TYPE Y10 YACHT

Built on the 200-ton hull, the yacht is a noble's plaything used to entertain friends and undertake political or commercial missions. It mounts J3 jump drive, 1G maneuver drive, and P3-200 power plant-A. Fuel tankage of 50 tons supports the power plant and allows two successive J3 jumps. Adjacent to the bridge is a model/1 computer. There are fourteen staterooms (two have been combined into a suite for the owner) and no low berths. There are two hardpoints and two tons allocated for fire control. No weaponry is installed. There are three ship's vehicles: an air/raft, a 30-ton ship's boat, and an ATV. The ship's boat is fitted to ferry the ATV from orbit to surface and back. Cargo capacity is 4 tons. The yacht is unstreamlined.

The yacht requires a crew of four: pilot, engineer, medic, and steward. Additional stewards, gunners, navigators and other personnel may be added. The steward operates the ship's boat, the air/raft, and the ATV. The ship can carry up to 9 passengers in non-commercial service. The yacht costs MCr51.057 (including 10% discount for standard designs) and takes 11 months to build.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
10	DEX	0	OCV 3 DCV -7
27	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Flight: 30" / 60"
Teleportation: 10"

Cost	Powers	END
	Construction	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
9	*Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
20	*1G Maneuver Drive:* Flight 30", Position Shift (65 Active Points); OIF Bulky (-1), Costs Endurance (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼)	6
198	*P3-200 Power Plant:* Endurance Reserve (450 END, 450 REC) (495 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*2 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	

17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
28	*Model 3 Computer:* Custom Power (28 Active Points)	3
	Personnel Section	
21	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
36	1) Ship's Boat (36 Active Points)	0

Total Powers & Skill Cost: 1261
Total Cost: 1340

200+	**Disadvantages**
15	Distinctive Features: Standard Y10 Yacht (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
20	Physical Limitation: Unstreamlined - Cannot Enter Atmosphere (Frequently, Greatly Impairing)
1125	**Experience Points**

Total Disadvantage Points: 1340

TYPE Y12 YACHT

Built on the 200-ton hull, the yacht is a noble's plaything used to entertain friends and undertake political or commercial missions. It mounts J3 jump drive, 3G maneuver drive, and P3-200 power plant. Fuel tankage of 50 tons supports the power plant and allows two successive J3 jumps. Adjacent to the bridge is a model/1 computer. There are fourteen staterooms (two have been combined into a suite for the owner) and no low berths. There are two hardpoints and two tons allocated for fire control. No weaponry is installed. There are three ship's vehicles: an air/raft, a 30-ton ship's boat, and an ATV. The ship's boat is fitted to ferry the ATV from orbit to surface and back. Cargo capacity is 5 tons. The yacht is unstreamlined.

The Y12 yacht requires a crew of nine: pilot, navigator, sensors, 2 engineers, 2 medics, and 2 stewards. The stewards operates the ship's boat, the air/raft, and the ATV. The ship can carry up to 14 passengers in non-commercial service. The yacht takes 11 months to build.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
18	DEX	0	OCV 6 DCV -4
27	BODY	0	
8	DEF	18	
3	SPD	0	Phases: 4, 8, 12
			Total Characteristic Cost: 79

Movement: Flight: 60" / 120"
Teleportation: 10" / 20"

Cost	Powers	END
	Construction	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
9	*Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
56	*3G Maneuver Drive:* (Total: 159 Active Cost, 56 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Real Equipment (-¼) (Real Cost: 45) **plus** +8 DEX (24 Active Points); OIF Bulky (-1), Linked (3G Drive; -½), Real Equipment (-½) (Real Cost: 8) **plus** +1 SPD (10 Active Points); OIF Bulky (-1), Linked (3G Drive; -½), Real Equipment (-½) (Real Cost: 3)	0
198	*P3-200 Power Plant:* Endurance Reserve (450 END, 450 REC) (495 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*2 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	

17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
28	*Model 3 Computer:* Custom Power (28 Active Points)	3
	Personnel Section	
21	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
36	1) Ship's Boat (36 Active Points)	0

Total Powers & Skill Cost: 1297
Total Cost: 1376

200+	**Disadvantages**
15	Distinctive Features: Standard Y12 Yacht (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
20	Physical Limitation: Unstreamlined - Cannot Enter Atmosphere (All the Time, Greatly Impairing)
1141	**Experience Points**

Total Disadvantage Points: 1376

GA1 FAST COURIER

Using a 200-ton hull, the Fast Courier is a courier vessel, for delivering passengers and sensitive cargo.

It mounts J3 jump drive, 2G maneuver drive, and P3-200 power plant. Fuel tankage supports the power plant and 1 J3 jump. Adjacent to the bridge is a computer Model/3. There are 4 staterooms and 4 low berths.

The ship has 2 hardpoints and 2 tons allocated for fire control. There is one Launch. The hull is streamlined.

There are 12 tons of cargo space dedicated as a smuggler's hold, resistant to scans.

Val	Char	Cost	Notes
15	Size	75	Length 32", Width 16", Area 512" Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
15	DEX	0	OCV 5 DCV -5
29	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Flight: 60" / 120"
Teleportation: 10" / 10"

Cost	Powers	END
	Construction	
2	*Wedge Configuration:* +2 BODY (Modifiers affect Base Characteristic)	
6	*Wedge Configuration:* +2 with Combat Piloting	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
9	*Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
43	*2G Maneuver Drive:* (Total: 140 Active Cost, 43 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +5 DEX (15 Active Points); OIF Bulky (-1), Linked (2G Drive; -½), Real Equipment (-½) (Real Cost: 5)	12
198	*P3-200 Power Plant:* Endurance Reserve (450 END, 450 REC) (495 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*2 Hardpoints:* Custom Power	0
264	*TL9 Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
358	*Missile Rack*: (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
15	*Sandcaster:* Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1)	[12 cc]
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	

12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
28	*Model 3 Computer:* Custom Power (28 Active Points)	3
	Personnel Section	
11	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
11	*Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
13	*Smuggler's Hold:* Change Environment 2" radius, -4 to Normal Hearing PER Rolls, Reduced Endurance (0 END; +½), Persistent (+½) (32 Active Points); OIF Immobile (-1 ½)	0
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	
	Vehicles	
40	1) Launch (40 Active Points)	0
	Skills	
15	*Internal Security System:* Security Systems 14-	

Total Powers & Skill Cost: 1316
Total Cost: 1395

200+	**Disadvantages**
15	Distinctive Features: Standard Fast Courier (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
1180	**Experience Points**

Total Disadvantage Points: 1395

MODULAR CUTTER

Using a 50-ton hull, the cutter is capable of 4G, carries 2 tons of fuel, and has a crew of 2. It has 30 tons committed to special detachable modules; the craft has 2.5 tons excess space available for weaponry, computer, and possibly a couch for a third crew member. The cutter may mount up to two lasers; remaining weapons must be missile racks or sandcasters. The maximum computer for the cutter is the Model/4. If a Model/3 is installed, only one laser may be mounted; if a Model/4 is installed no lasers may be mounted. The cutter, without any modules, costs MCr28. Three interchangeable modules are routinely available for the modular cutter.

The ATV module (which includes an operational ATV) is 30 tons. It can land (and retrieve) an ATV on a world surface from orbit. The module can serve as an ATV storage location, if desired. It costs MCr1.8.

The fuel module, with 30 tons of fuel tankage, serves as a fuel skimming vehicle and storage tank. It costs MCr1.

The open module is a customizable frame with 30 tons of excess space which can be allocated to passenger couches, fuel, cargo, cabin, or staterooms. It costs MCr2.

Val	Char	Cost	Notes
12	Size	60	Length 16", Width 8", Area 128" Mass 409.6 ton KB -12
70	STR	0	Lift 409.6tons; 14d6
21	DEX	0	OCV 7 DCV -1
24	BODY	0	
8	DEF	18	
5	SPD	0	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 64

Movement: Flight: 60" / 120"

Cost	Powers	END
	Construction	
2	*Crystaliron Hull:* +2 BODY (Modifiers affect Base Characteristic)	
7	*Crystaliron Hull:* Armor (3 PD/3 ED) (9 Active Points); Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼)	0
	Engineering Section	
56	*4G Maneuver Drive:* (Total: 178 Active Cost, 56 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +11 DEX (33 Active Points); OIF Bulky (-1), Linked (4G Drive; -½), Real Equipment (-½) (Real Cost: 11) **plus** +2 SPD (20 Active Points); OIF Bulky (-1), Linked (4G Drive; -½), Real Equipment (-½) (Real Cost: 7)	12
44	*Standard Power Plant:* Endurance Reserve (100 END, 100 REC) (110 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
8	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Realistic END Cost: END Cost Is Per 200 Hexes (-½), Real Equipment (-¼)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0
20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0

21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
28	*Model 3 Computer:* Custom Power (28 Active Points)	3

Total Powers & Skill Cost: 410
Total Cost: 474

200+	**Disadvantages**
15	Distinctive Features: Standard Modular Cutter (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
259	**Experience Points**

Total Disadvantage Points: 474

Each of the following is an optional module. Only one optional module fits at any given time.

39	1) *Passenger and Cargo Module:* (Total: 39 Active Cost, 39 Real Cost) +20 STR (Real Cost: 20) **plus** Life Support (Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing) (Real Cost: 19)	2
20	2) *Assault Boat Module:* (Total: 20 Active Cost, 20 Real Cost) Tunneling 2" through 2 DEF material (Real Cost: 10) **plus** +10 STR (Real Cost: 10)	1
7	3) *Fuel Skimming and Refining Module:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
264	4) *Gunship Pod- Beam Laser:* (Total: 625 Active Cost, 264 Real Cost) RKA 8d6 (120 Active Points); OIF Bulky (-1), Increased Endurance Cost (x2 END; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 120 Active Points of Laser, Reduced Endurance (0 END; +½) (495 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 220) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	25
361	5) *Gunship Pod- Missile:* (Total: 788 Active Cost, 361 Real Cost) RKA 6 ½d6, 16 Charges (+0), Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), Can Be Missile Deflected (-¼) (Real Cost: 43) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[16]
30	6) *Zero G Mining Module:* (Total: 30 Active Cost, 30 Real Cost) Extra Limbs (4) (Real Cost: 5) **plus** Detect A Large Class Of Things 26-/14- (Unusual Group), Discriminatory, Analyze (Real Cost: 25)	0

Scout Starships

DONOSEV CLASS SURVEY SCOUT

The Donosev Class survey vessel is a TL15, 400 DT vessel. It has Jump 3 and 2G Maneuver, and a Model 5 computer.

The survey scout is a typical ship in service with the IISS. Its function is to continually re-survey the interior regions of the Imperium, updating maps and charts, and maintaining beacons and markers for astrogation hazards. Unarmed and inoffensive, the Donosev is a peaceful vessel. It does, however, mount four hardpoints and can be armed with a variety of weaponry if required. The Donosev class is named after famous scouts in the Imperial service.

Val	Char	Cost	Notes
16	Size	80	Length 40.32", Width 20.16", Area 812.75" Mass 6.6 kton KB -16
90	STR	0	Lift 6.6ktons; 18d6
15	DEX	0	OCV 5 DCV -5
28	BODY	0	
6	DEF	0	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 80

Movement: Flight: 60" / 120"
Teleportation: 10" / 20"

Cost	Powers	END
	Construction	
2	*Superdense:* +2 BODY	
12	*Superdense:* +4 DEF	
	Engineering Section	
9	*Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
44	*2G Maneuver Drive:* (Total: 140 Active Cost, 44 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +5 DEX (15 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 6)	12
330	*P3-400 Power Plant:* Endurance Reserve (900 END, 900 REC) (990 Active Points); OIF Immobile (-1 ½), Only To Power Electrical Devices (-¼), Real Equipment (-¼)	0
11	*Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	*Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
7	*Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Real Equipment (-½), Realistic END Cost END Cost Per 200 Hexes (-½)	2
26	*Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
	Tactical	
0	*4 Hardpoints:* Custom Power	0
	Operations and Command	
17	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
12	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½)	4
14	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
17	4) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1)	0
17	*Passive Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots OIF Bulky (-1)	
17	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1)	0
17	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1)	0

20	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
21	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½)	0
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	*Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
17	*Meson Communicator:* Mind Link , Machine class of minds, Any Willing Target, No LOS Needed, Number of Minds (x32), Indirect (Same origin, always fired away from attacker; +¼), Difficult To Dispel (x2 Active Points; +¼) (75 Active Points); OIF Immobile (-1 ½), Only With Others Who Have Mind Link (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight; Hearing] (-½)	7
38	*Sensor Probes and Recon Drones:* Clairsentience (Sight And Radio Groups), x2 Range (1,540"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 4 Continuing Charges lasting 6 Hours each (+¾), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (171 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼)	[4 cc]
1	*Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	*Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	*Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	*Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
35	*Model 5 Computer:* Custom Power (35 Active Points)	3

Personnel Section

21	*Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
9	*Sick Bay:* Paramedics 12-	
5	*Sick Bay:* SS: Medicine 11-	

Vehicles

65	*Modular Cutter:* Custom Power (65 Active Points)	0
29	*Closed Air Raft:* Custom Power (19 Active Points)	2

Skills

6	*Biology Lab:* +2 with any three related Skills (e.g. Biology, Botany, and Biochemistry)
2	*Geology Lab:* SS: Geology 11-
6	*Survey Lab:* +2 with any three related Skills (e.g. Cartography, Astronomy, Planetology)
8	*Machine Shop:* +4 with Mechanics
8	*Electronics Shop:* +4 with Electronics
20	*General Sciences Lab:* +4 with any science skill

Total Powers & Skill Cost: 954
Total Cost: 1034

200+	**Disadvantages**
15	Distinctive Features: Ubiquitous Survey Scout Ship Design seen everywhere (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses)
20	Physical Limitation: Unstreamlined - Cannot Enter Atmosphere (Frequently, Fully Impairing)
799	**Experience Points**

Total Disadvantage Points: 1034

TYPE S SCOUT/COURIER

Val	Char	Cost	Notes
15	Size	75	Length 32”, Width 16”, Area 512” Mass 3.3 kton KB -15
85	STR	0	Lift 3.3ktons; 17d6
15	DEX	0	OCV 5 DCV -5
27	BODY	0	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 79

Movement: Flight: 60” / 120”
Teleportation: 7” / 14”

Cost	Powers	END
	Construction	
8	1) *Wedge Hull Configuration:* (Total: 8 Active Cost, 8 Real Cost) +2 BODY (Real Cost: 2) **plus** +2 with Combat Piloting (Real Cost: 6) **Note:** Can Enter Atmosphere, Cost *1.5, Highly Maneuverable	0
0	2) *Bonded Superdense:* (Total: 0 Active Cost, 0 Real Cost) **Note:** Standard Cost, TL-14, Ships Body +20%, May Add TSA	0
	Engineering	
6	1) *Jump 2 Drive:* Teleportation 7”, MegaScale (1” = 1 lightyear; +3 ½), Can Be Scaled Down 1” = 1km (+¼) (66 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 6.52 LY (2 Parsecs)	28
44	2) *2G Maneuver Drive:* (Total: 140 Active Cost, 44 Real Cost) Flight 60”, Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +5 DEX (15 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 6)	12
110	3) *P2-100 Power Plant:* Endurance Reserve (300 END, 300 REC) (330 Active Points); OIF Immobile (-1 ½), Only To Power Electrical Devices (-¼), Real Equipment (-¼)	0
11	4) *Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	5) *Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
0	6) *Fuel Tankage:* Custom Power **Note:** 40 Tons	0
26	7) *Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
7	8) *Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Real Equipment (-½), Realistic END Cost END Cost Per 200 Hexes (-½)	2
1	9) *Food Supplies:* Life Support (Eating: Character does not eat), 16 Continuing Charges lasting 1 Month each (Easily Replaced From Source Outside Of Vehicle; +0) (3 Active Points); OIF Bulky (-1)	[16 cc]
	Tactical Section	
0	*4 Hardpoints:* Custom Power	0
607	1) *TL15 Beam Laser:* (Total: 1393 Active Cost, 607 Real Cost) RKA 9d6, Invisible to Single Sense (UV; +¼), Reduced Endurance (½ END; +¼), Armor Piercing (+½) (270 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 108) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 270 Active Points of Laser, Reduced Endurance (0 END; +½) (1113 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 495) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	13
358	2) *Missile Rack:* (Total: 788 Active Cost, 358 Real Cost) RKA 6 ½d6, Explosion (+½) (150 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000” per phase (-½), Real Weapon (-¼), 12 Charges (-¼), Can Be Missile Deflected (-¼) (Real Cost: 40) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[12]
30	3) *Sandcaster:* (Total: 60 Active Cost, 30 Real Cost) Physical Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15) **plus** Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1) (Real Cost: 15)	[12 cc]
	Defensive Section	
6	1) *Sensor Blip Enhancer:* Radio Group Images 1” radius, +/-5 to PER Rolls, 4 Continuing Charges lasting 5 Minutes each (+0) (20 Active Points); OIF Immobile (-1 ½), Set Effect (only to increase size of sensor returns up to 4 size classes; -1)	[4 cc]

21	2) *EMs Masking:* Change Environment 1" radius, -6 to Radar PER Rolls, -6 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (64 Active Points); OIF Immobile (-1 ½), No Range (-½)	0
5	3) *EMP shielding:* Power Defense (15 points) (15 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs. EMP and radiation effects; -½)	0
4	4) *Chaff and Flare Pod:* Sight and Radio Groups Images 1" radius, 8 Continuing Charges lasting 1 Turn each (+0) (15 Active Points); OIF Immobile (-1 ½), Set Effect (only to create images of ship; -1) **Note:** Mounted on the lower part of the tailfin in a standard socket	[8 cc]

Operations Section

25	1) *Model 2 Computer:* Custom Power (25 Active Points)	2
3	2) *Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
1	3) *Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
17	*Active Sensor Array:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	
17	1) *Active Sensor Array:* Detect Physical Objects 23-/11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½), Custom Modifier (Real Equipment; -¼)	4
20	2) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	1
20	3) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	4
52	*Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1)	0
20	*Passive Sensor Array:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Custom Modifier (Real Equipment; -¼)	
20	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Immobile (-1 ½), Custom Modifier (Real Equipment; -¼)	0
24	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1), Custom Modifier (Real Equipment; -¼)	0
24	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1), Custom Modifier (Real Equipment; -¼)	0
14	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Custom Modifier (Real Equipment; -¼)	0
14	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Custom Modifier (Real Equipment; -¼)	0

Personnel Section

11	1) *Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1)	0
9	2) *Sick Bay:* Paramedics 12-	
5	3) *Sick Bay:* SS: Medicine 11-	
0	4) *Cargo Hold:* Custom Power **Note:** 3 Tons	0

Small Craft

0	1) *Air Raft :* Custom Power	0

Skills

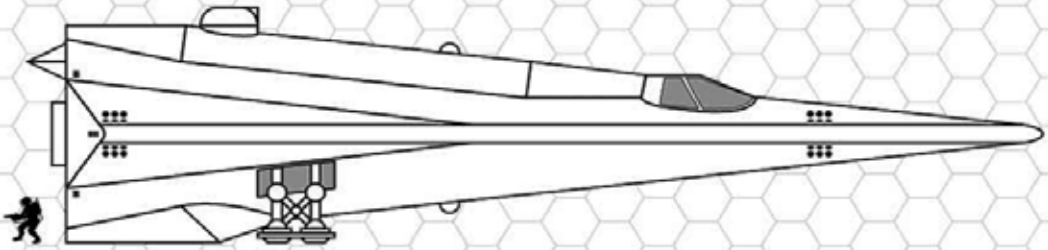
5	*Internal Security Systems:* Security Systems 14- (15 Active Points); Crew-Served ([17-32] people; -1 ¼), Costs Endurance (-½)
6	*Administrative System:* Bureaucratics 14- (15 Active Points); IIF Immobile Fragile (-1 ½)

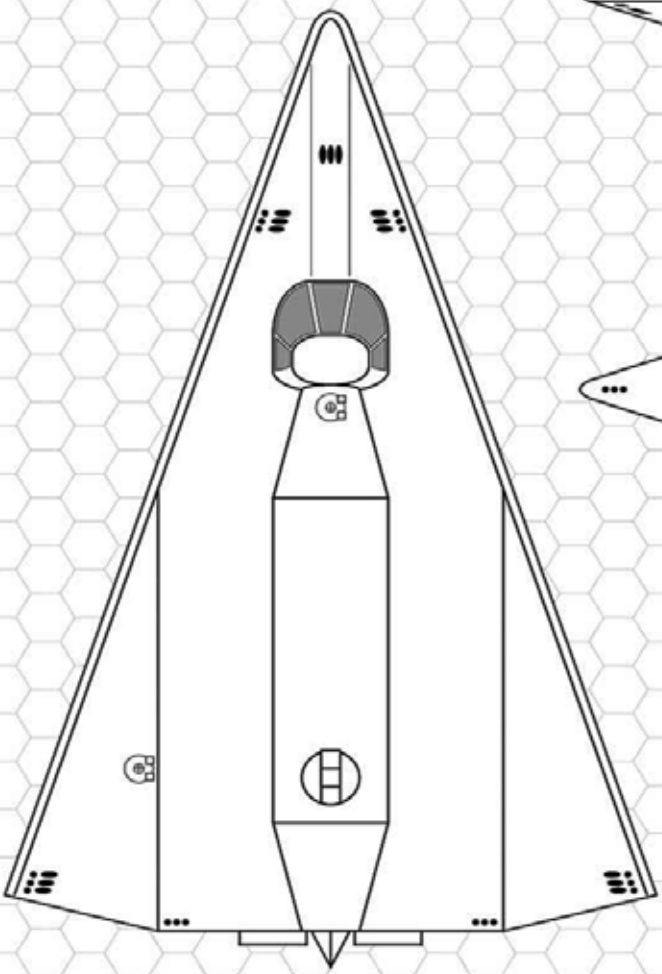
Total Powers & Skill Cost: 1558
Total Cost: 1637

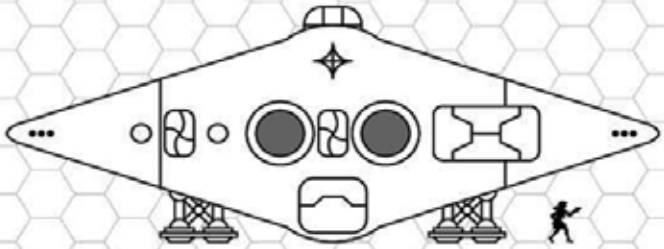
200+	**Disadvantages**
10	Distinctive Features: (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses; Not Distinctive In Some Cultures)
10	Physical Limitation: Poor Air Filtration System (Frequently, Slightly Impairing) **Note:** Air Filtration System needs frequent maintenance and filters need replacing weekly
20	Hunted: IISS Detached Duty Office 11- (Mo Pow, NCI, PC has a Public ID or is otherwise very easy to find, Watching)
1397	**Experience Points**

Total Disadvantage Points: 1637

Suleiman class
Type-S Scout/Courier

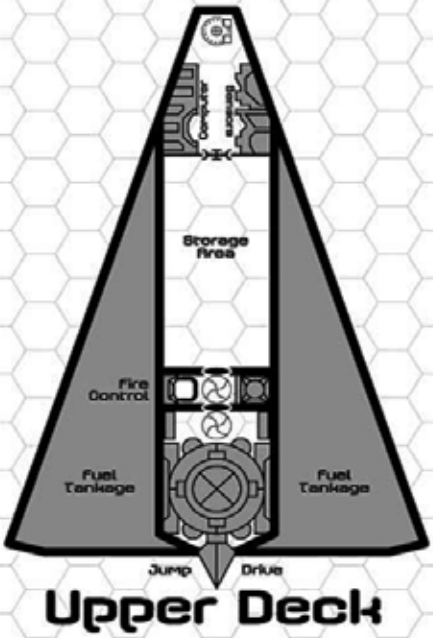




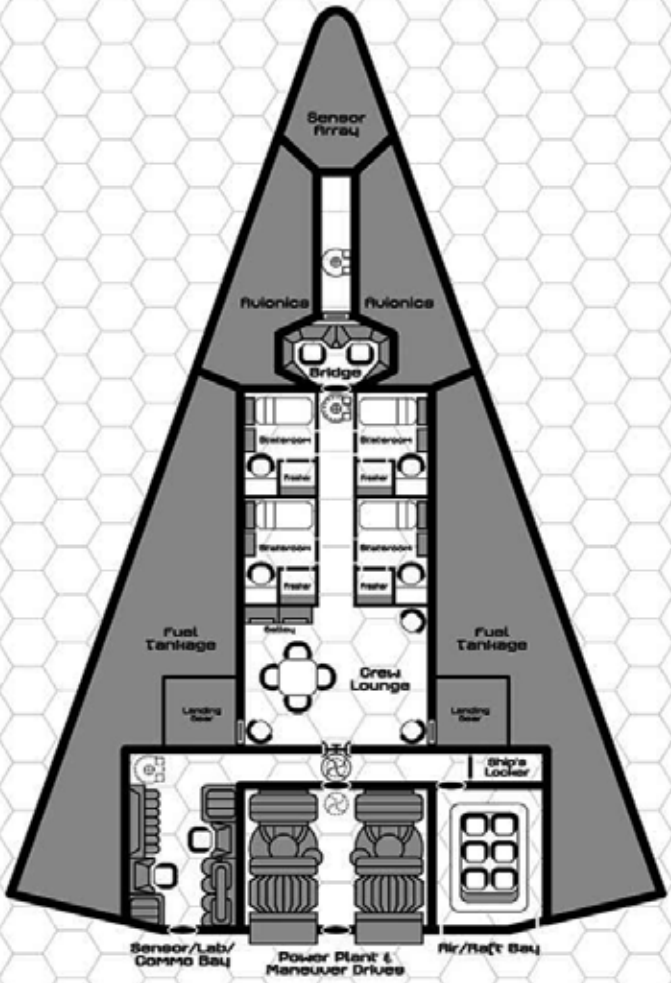


one hex = 2 meters

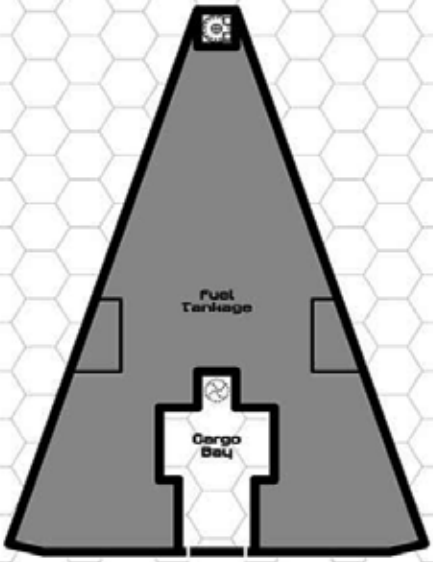
Suleiman class
Type-S Scout/Courier



Upper Deck



Main Deck



Lower Deck

one hex = 2 meters

Military Starships

AZHANTI HIGH LIGHTNING

Val	Char	Cost	Notes
29	Size	145	Length 812.75", Width 406.37", Area 330,280.74" Mass 53,687.1 kton KB -29
155	STR	0	Lift 53687.1ktons; 31d6
15	DEX	0	OCV 5 DCV -14
54	BODY	13	
8	DEF	18	
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 162

Movement: Flight: 60" / 120"
Teleportation: 16" / 32"

Cost	Powers	END
	Construction Section	
2	1) *Closed Structure Hull:* +2 BODY **Note:** Cannot Enter Atmosphere, Cost *1.25	
0	2) *Bonded Superdense:* (Total: 0 Active Cost, 0 Real Cost) **Note:** Standard Cost, TL-14, Ships Body +20%, May Add TSA	0
32	3) *Ablat Armor:* Armor (19 PD/19 ED) (57 Active Points); Ablative BODY Only (-½), Limited Coverage (Hull/Frame only) (-¼) **Note:** Armored to High Guard Factor 5	0
12	4) *Superconducting Armor Layer:* Energy Damage Reduction, Resistant, 50% (30 Active Points); OIF Bulky (-1), Ablative BODY Only (-½)	0
	Engineering Section	
15	1) *Jump 5 Drive:* Teleportation 16", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (152 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 16.3 LY (5 Parsecs)	60
44	2) *2G Maneuver Drive:* (Total: 140 Active Cost, 44 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +5 DEX (15 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 6)	12
367	3) *P5-100 Power Plant:* Endurance Reserve (1000 END, 1000 REC) (1100 Active Points); OIF Immobile (-1 ½), Only To Power Electrical Devices (-¼), Real Equipment (-¼)	0
11	4) *Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	5) *Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
0	6) *Fuel Tankage:* Custom Power **Note:** 33,000 tons	0
26	7) *Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
7	8) *Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Real Equipment (-½), Realistic END Cost END Cost Per 200 Hexes (-½)	2
1	9) *Food Supplies:* Life Support (Eating: Character does not eat), 16 Continuing Charges lasting 1 Month each (Easily Replaced From Source Outside Of Vehicle; +0) (3 Active Points); OIF Bulky (-1)	[16 cc]
	Tactical Section	
132	1) *Type 3 Spinal Particle Accelerator :* (Total: 980 Active Cost, 132 Real Cost) Killing Attack - Ranged 21d6+1, MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (800 Active Points); OIF Immobile (-1 ½), Crew-Served ([33-64] people; -1 ½), Increased Endurance Cost (x3 END; -1), Custom Modifier (Spinal Weapon; -1), Extra Time (1 Minute, Only to Activate, -¾), Real Weapon (-¼), Beam (-¼) (Real Cost: 110) **plus** Suppress 8d6, all [special effect] powers simultaneously (+2), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (180 Active Points); OIF Immobile (-1 ½), Crew-Served ([33-64] people; -1 ½), Increased Endurance Cost (x3 END; -1), Custom Modifier (Spinal Weapon; -1), Linked (Killing Attack - Ranged; Lesser Power can only be used when character uses greater Power at full value; -¾), Extra Time (1 Minute, Only to Activate, -¾), Real Weapon (-¼), Beam (-¼) (Real Cost: 22)	294
438	2) *TL12 Triple Turret Beam Laser:* (Total: 1009 Active Cost, 438 Real Cost) RKA 8 ½d6, Autofire (3 shots; +¼), Invisible to Single Sense (+¼) (195 Active Points); Crew-Served ([17-32] people; -1 ¼), OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 52) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 195 Active Points of Laser, Reduced Endurance (0 END; +½) (804 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 357) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4) **Note:** (x19 number of items)19 Batteries	20

861	3) *Small Missile Bay:* (Total: 3095 Active Cost, 861 Real Cost) RKA 8d6, Explosion (+½), 1000 Charges (Recovers Under Limited Circumstances; Base or Tender to Reload Pods, cannot be loaded from inside the ship; +1), Autofire (20 shots; +2 ½) (600 Active Points); Crew-Served ([17-32] people; -1 ¼), OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Real Weapon (-¼), Can Be Missile Deflected (-¼), Limited Arc Of Fire (180 degrees; -¼) (Real Cost: 145) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 600 Active Points of Missile, Reduced Endurance (0 END; +½) (2475 Active Points); Crew-Served ([33-64] people; -1 ½), OIF Bulky (-1) (Real Cost: 707) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9) **Note:** 24 Bays	[1000]
124	4) *Dual Fusion Gun Turret:* RKA 6 ½d6, Area Of Effect Nonselective (One Hex; +¼), Armor Piercing (+½), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Autofire (2 shots; +1 ¼) (400 Active Points); OIF Immobile (-1 ½), Crew-Served ([3-4] people; -½), Real Weapon (-¼), Reduced By Range (-¼) **Note:** (x4 number of items)4 Batteries	40
	Defensive Section	
14	1) *Type 2 Nuclear Damper:* (Total: 60 Active Cost, 14 Real Cost) Physical Damage Reduction, Resistant, 50% (30 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 7) **plus** Energy Damage Reduction, Resistant, 50% (30 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 7) **Note:** Equivalent to High Guard Ratings 4-6	6
7	2) *Type 2 Meson Screen:* Energy Damage Reduction, Resistant, 50% (30 Active Points); OIF Immobile (-1 ½), Custom Modifier (Only Affects Meson Weapons; -1), Costs Endurance (-½), Crew-Served (2 people; -¼), Real Armor (-¼)	3
27	3) *Point Defense Arrays:* Missile Deflection (Any Ranged Attack), Full Range (+1) (40 Active Points); OAF Immobile (-2), Real Armor (-¼)	0
14	4) *Active EMS Jammer:* Suppress 8d6, Area Of Effect Nonselective (8" Radius; +1) (80 Active Points); OIF Immobile (-1 ½), Requires A Skill Roll (Active Point penalty to Skill Roll is -1 per 5 Active Points, RSR Skill is subject to Skill vs. Skill contests; -1 ¼), Side Effects, Side Effect occurs automatically whenever Power is used (degrades ships own sensors by half amount suppressed; -1), No Range (-½), Crew-Served (2 people; -¼)	8
5	5) *EMP shielding:* Power Defense (15 points) (15 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs EMP and radiation effects; -½)	0
40	6) *Sandcaster:* (Total: 60 Active Cost, 40 Real Cost) Physical Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1), Crew-Served ([9-16] people; -1) (Real Cost: 10) **plus** Energy Damage Reduction, Resistant, 50%, 12 Continuing Charges lasting 5 Minutes each (+0) (30 Active Points); OIF Bulky (-1), Crew-Served ([9-16] people; -1) (Real Cost: 10) **Note:** (x13 number of items)13 Batteries	[12 cc]
4	7) *Chaff and Flare Pod:* Sight and Radio Groups Images 1" radius, 8 Continuing Charges lasting 1 Turn each (+0) (15 Active Points); OIF Immobile (-1 ½), Set Effect (only to create images of ship; -1) **Note:** Mounted on the lower part of the tail fin in a standard socket	[8 cc]
	Operations Section	
39	1) *Model 6 Computer:* Custom Power (39 Active Points)	4
1	2) *Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	3) *Basic Navigation Control:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
4	4) *Basic Fire Control:* +2 OCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
4	5) *Basic Defense Control:* +2 DCV with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
25	6) *Ships Repair and Maintenance Shops:* (Total: 25 Active Cost, 25 Real Cost) +2 with Electronics (Real Cost: 4) **plus** +2 with Mechanics (Real Cost: 4) **plus** +2 with SS: Starship Engineering (Real Cost: 2) **plus** +2 with KS: Emergency Damage Control (Real Cost: 2) **plus** +2 with Armorsmith (Real Cost: 6) **plus** +2 with Weaponsmith (Firearms, Missiles & Rockets) (Real Cost: 7)	0

10	7) *Holographic Theater and Briefing Areas:* Sight, Hearing, Smell/Taste and Touch Groups Images Increased Size (4" radius; +½) (37 Active Points); OIF Immobile (-1 ½), Requires A Skill Roll (Variable RSR, Active Point penalty to Skill Roll is -1 per 5 Active Points; SR to program or reset training parameters; -¾), Crew-Served (2 people; -¼)	4
17	*Active Sensor Array:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Crew-Served ([3-4] people; -½), Custom Modifier (Real Equipment; -¼)	
17	1) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½), Crew-Served ([3-4] people; -½), Custom Modifier (Real Equipment; -¼)	1
15	2) *Active Sensor Array:* Detect Physical Objects 11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½), Crew-Served ([3-4] people; -½), Custom Modifier (Real Equipment; -¼)	4
20	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Custom Modifier (Real Equipment; -¼)	0
1	*Passive Sensor Array:* Elemental Control, 10-point powers, (5 Active Points); all slots OIF Immobile (-1 ½), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	
13	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Immobile (-1 ½), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	5
15	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	5
3	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	1
21	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	11
22	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	11
22	6) *Sensor Probes and Recon Drones:* Clairsentience (Sight And Radio Groups), x2 Range (1,190"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 1 Continuing Charge lasting 6 Hours (+0), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (131 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Crew-Served ([3-4] people; -½), Costs Endurance (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼), Custom Modifier (Real Equipment; -¼)	13

Personnel Section

0	1) *Crew:* Custom Power **Note:** 62 Officers, 333 Ratings, 150 Marines, 80 Pilots, 310 Staterooms	0
41	2) *Low Berth (Safe Version):* Life Support (Longevity: 800 Years) (3 Active Points); OIF Bulky (-1), Costs Endurance (-½)	1
0	3) *Cargo Bay:* Custom Power **Note:** 400 Tons	0

13	4) *Ships Hospital Bay:* (Total: 36 Active Cost, 13 Real Cost) +3 with Paramedics (6 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 2) **plus** +3 with KS: Surgery (3 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 1) **plus** +2 with SS: Anatomy (2 Active Points); OIF Bulky (-1) (Real Cost: 1) **plus** +2 with SS: Medicine (2 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 1) **plus** Detect A Large Class Of Things 12- (Unusual Group), Discriminatory, Analyze (23 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 8)	
6	5) *Ships Tactical Operations Center:* (Total: 18 Active Cost, 6 Real Cost) +3 with Teamwork (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** +3 with Tactics (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** +3 with Analyze: Combat (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2)	0
14	6) *Fighter Ops Bridge:* (Total: 29 Active Cost, 14 Real Cost) +4 with Teamwork (14 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 7) **plus** +3 with Tactics (6 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 3) **plus** Systems Operation (Communications Systems, Air/Space Traffic Control Systems) 12- (9 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 4)	3

Small Craft

0	1) *Fighters:* Custom Power **Note:** 80 Light Fighters	0
0	2) *Fuel Shuttles:* Custom Power **Note:** 4 400 Ton Fuel Shuttles	0

Skills

5	Security Systems 14- (15 Active Points); Crew-Served ([17-32] people; -1 ¼), Costs Endurance (-½)
6	Bureaucratics 14- (15 Active Points); IIF Immobile Fragile (-1 ½)
4	+3 with SS: Emergency Damage Control
2	+2 with KS: Logistics
2	+2 with KS: Steward
4	+3 with KS: Cooking
5	SS: Stellar Cartography 12- (5 Active Points); OIF Immobile (-1 ½), Crew-Served (2 people; -¼), Custom Modifier (Real Equipment; -¼)
2	SS: Astronomy 12- (5 Active Points); OIF Immobile (-1 ½), Crew-Served (2 people; -¼), Custom Modifier (Real Equipment; -¼)

Total Powers & Skill Cost: 2543
Total Cost: 2705

Total Disadvantage Points: 2705

BROADSWORD MERCENARY CRUISER

Val	Char	Cost	Notes
20	Size	100	Length 101.59", Width 50.8", Area 5,160.64" Mass 104.9 kton KB -20
110	STR	0	Lift 104.9ktons; 22d6
18	DEX	0	OCV 6 DCV -7
34	BODY	0	
10	DEF	0	
3	SPD	0	Phases: 4, 8, 12
			Total Characteristic Cost: 86

Movement: Flight: 60" / 120"
Teleportation: 10" / 20"

Cost	Powers	END
	Construction	
0	1) *Sphere Hull:* +0 BODY **Note:** Cannot Enter Atmosphere, No Modifiers	
14	2) *Ablat Armor:* Armor (8 PD/8 ED) (24 Active Points); Ablative BODY Only (-½), Limited Coverage (Hull/Frame only) (-¼)	0
12	3) *Superconducting Armor Layer:* Energy Damage Reduction, Resistant, 50% (30 Active Points); OIF Bulky (-1), Ablative BODY Only (-½)	0
9	4) *Bonded Superdense Hull:* (Total: 28 Active Cost, 9 Real Cost) +4 BODY (4 Active Points); OIF Immobile (-1 ½) (Real Cost: 2) **plus** +8 DEF (24 Active Points); OIF Immobile (-1 ½), Ablative BODY Only (-½), Limited Coverage Nearly 360 Degrees (Hull/Frame Only; -¼), Real Armor (-¼) (Real Cost: 7)	0
	Engineering Section	
9	1) *Jump 3 Drive:* Teleportation 10", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (95 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 9.52 LY (3 Parsecs)	36
52	2) *3G Maneuver Drive:* (Total: 159 Active Cost, 52 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +8 DEX (24 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 10) **plus** +1 SPD (10 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 4)	12
110	3) *P2-100 Power Plant:* Endurance Reserve (300 END, 300 REC) (330 Active Points); OIF Immobile (-1 ½), Only To Power Electrical Devices (-¼), Real Equipment (-¼)	0
11	4) *Emergency Generator and Batteries:* Endurance Reserve (25 END, 25 REC) (27 Active Points); OIF Bulky (-1), Only Powers Electrical Devices (-¼), Real Equipment (-¼)	0
7	5) *Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
26	6) *Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
7	7) *Starship Life Support System:* Life Support (Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/ Vacuum; Self-Contained Breathing) (18 Active Points); Costs Endurance (-½), Real Equipment (-½), Realistic END Cost END Cost Per 200 Hexes (-½)	2
1	8) *Food Supplies:* Life Support (Eating: Character does not eat), 16 Continuing Charges lasting 1 Month each (Easily Replaced From Source Outside Of Vehicle; +0) (3 Active Points); OIF Bulky (-1)	[16 cc]
0	9) *Fuel Tankage:* Custom Power **Note:** 278 tons, no refining capacity	0
	Tactical Section	
734	1) *TL15 Triple Turret Beam Laser:* (Total: 1737 Active Cost, 734 Real Cost) RKA 9d6, Invisible to Single Sense (UV; +¼), Autofire (3 shots; +¼), Armor Piercing (+½), Reduced Endurance (½ END; +½) (337 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; 1 Gunner per Turret, turrets are remote stations; -½), Beam (-¼), Real Weapon (-¼) (Real Cost: 112) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 337 Active Points of Laser, Reduced Endurance (0 END; +½) (1390 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 618) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4)	14
10	2) *3 more triple Laser Turrets for a total of 4:* Custom Power (10 Active Points)	1

393	3) *Triple Missile Turret:* (Total: 938 Active Cost, 393 Real Cost) RKA 6 ½d6, 36 Charges (+¼), Explosion (+½), Autofire (3 shots; +1 ¼) (300 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Crew-Served ([3-4] people; 1 Gunner per Turret, turrets are remote stations; -½), Real Weapon (-¼), Can Be Missile Deflected (-¼) (Real Cost: 75) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 150 Active Points of Missile, Reduced Endurance (0 END; +½) (618 Active Points); OIF Bulky (-1) (Real Cost: 309) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[36]
10	4) *3 more triple Missile Turrets for a total of 4:* Custom Power (10 Active Points)	1
	Defensive Section	
6	1) *Basic Stealth and EMM:* Change Environment 1" radius, -2 to Radar PER Rolls, -2 to Infrared Perception PER Rolls, Multiple Combat Effects (16 Active Points); OIF Immobile (-1 ½), Custom Modifier (Real Equipment; -¼)	2
4	2) *Paradex C-31D2 Chaff and Flare Pod:* Sight and Radio Groups Images 1" radius, 8 Continuing Charges lasting 1 Turn each (+0) (15 Active Points); OIF Immobile (-1 ½), Set Effect (only to create images of ship; -1)	[8 cc]
14	3) *Active EMS Jammer:* Suppress 8d6, Area Of Effect Nonselective (8" Radius; +1) (80 Active Points); OIF Immobile (-1 ½), Requires A Skill Roll (Active Point penalty to Skill Roll is -1 per 5 Active Points, RSR Skill is subject to Skill vs. Skill contests; -1 ¼), Side Effects, Side Effect occurs automatically whenever Power is used (degrades ships own sensors by half amount suppressed; -1), No Range (-½), Crew-Served (2 people; -¼)	8
14	4) *Point Defense System:* Missile Deflection (Any Ranged Attack), Full Range (+1) (40 Active Points); OIF Immobile (-1 ½), Real Armor (-¼)	0
5	5) *EMP shielding:* Power Defense (15 points) (15 Active Points); OIF Immobile (-1 ½), Custom Modifier (only vs. EMP and radiation effects; -½)	0
	Operations Section	
34	1) *Model 5 Computer:* Custom Power (34 Active Points)	3
1	2) *Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	3) *Basic Navigation Station:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
12	4) *Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
9	5) *Laser/Maser Comm System:* Mind Link , Machine class of minds, Any Willing Target, Any distance, Number of Minds (x2) (25 Active Points); OIF Bulky (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Costs Endurance (Only Costs END to Activate; -¼)	2
17	6) *Meson Communicator:* Mind Link , Machine class of minds, Any Willing Target, No LOS Needed, Number of Minds (x32), Indirect (Same origin, always fired away from attacker; +¼), Difficult To Dispel (x2 Active Points; +¼) (75 Active Points); OIF Immobile (-1 ½), Only With Others Who Have Mind Link (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight; Hearing] (-½)	7
28	*Active Sensor Array:* Elemental Control, 70-point powers, (35 Active Points); all slots Crew-Served (2 people; -¼)	
13	1) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Costs Endurance (-½), Crew-Served (2 people; -¼)	1
31	2) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
15	3) *Accurate Sensors:* +12 PER with all Sense Groups (36 Active Points); OIF Bulky (-1), Crew-Served (2 people; -¼)	0
16	*Passive Sensor Array:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	
18	1) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	1
12	2) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	11

11	3) *Densitometer:* Detect A Single Thing [Density Of Objects] 21-/9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Sense Affected As More Than One Sense [Sight] (-½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	11
16	4) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	5
18	5) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	5
29	*Sensor Probes and Recon Drones:* Clairsentience (Sight And Radio Groups), x2 Range (1,190"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 1 Continuing Charge lasting 6 Hours (+0), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (131 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼)	[1 cc]
	Personnel Section	
26	1) *Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1) **Note:** (x19 number of items)13 Crew, 31 Troops	0
9	2) *Sick Bay:* Paramedics 12-	
5	3) *Sick Bay:* SS: Medicine 11-	
0	4) *Cargo Hold:* Custom Power **Note:** 80 Tons	0
	Small Craft	
0	1) *2 Cutters and 2 extra modules:* Custom Power **Note:** 4 Total Cutter Modules Carried	0
0	2) *2 ATV, Air Raft:* Custom Power	0
	Skills	
5	Security Systems 14- (15 Active Points); Crew-Served ([17-32] people; -1 ¼), Costs Endurance (-½)	
6	Bureaucratics 14- (15 Active Points); IIF Immobile Fragile (-1 ½)	
1	+2 with KS: Cooking and Food Prep (2 Active Points); OIF Immobile (-1 ½)	
1	+1 with Mechanics (2 Active Points); OIF Bulky (-1), Reduces Vehicle to ½ DCV (-¼), Custom Modifier (Real Equipment; -¼)	
3	+2 with Weaponsmith (Energy Weapons, Firearms, Missiles & Rockets) (8 Active Points); OIF Immobile (-1 ½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼)	

Total Powers & Skill Cost: 1787
Total Cost: 1873

200+	**Disadvantages**
20	Physical Limitation: Unstreamlined, Cannot Enter Atmosphere (Frequently, Greatly Impairing)
10	Physical Limitation: Cannot Switch Cutter Modules Inside Ship (Frequently, Slightly Impairing)
10	Distinctive Features: Common Mercenary Cruiser (Not Concealable; Noticed and Recognizable; Detectable By Commonly-Used Senses; Not Distinctive In Some Cultures)
1638	**Experience Points**

Total Disadvantage Points: 1873

TIGRESS CLASS DREADNOUGHT

Val	Char	Cost	Notes
34	Size	170	Length 2,580.32", Width 1,290.16", Area 3,329,021.29" Mass 1,717,986.9 kton KB -34
180	STR	0	Lift 1717986.9ktons; 36d6
27	DEX	0	OCV 9 DCV -13
52	BODY	8	
8	DEF	18	
6	SPD	-10	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 172

Movement: Flight: 60" / 120"
Teleportation: 13" / 26"

Cost	Powers	END
	Construction	
0	1) *Sphere Hull:* +0 BODY **Note:** Can Enter Atmosphere, No Modifiers	
0	2) *Bonded Superdense:* (Total: 0 Active Cost, 0 Real Cost) **Note:** Standard Cost, TL-14, Ships Body +20%, May Add TSA	0
84	3) *Ablat Armor:* Armor (49 PD/49 ED) (147 Active Points); Ablative BODY Only (-½), Limited Coverage (Hull/Frame only) (-¼) **Note:** Factor 15 Armored Hull	0
	Engineering	
12	1) *Jump 4 Drive:* Teleportation 13", MegaScale (1" = 1 lightyear; +3 ½), Can Be Scaled Down 1" = 1km (+¼) (123 Active Points); Extra Time (1 Week, For Full Journey; -4 ½), Increased Endurance Cost (x4 END; -1 ½), OIF Bulky (-1), Requires A Combat Piloting Skill Roll (-½), Cannot Be Safely Used Inside A Gravity Well (-½), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) **Note:** Full distance is 13.04 LY (4 Parsecs)	48
74	2) *6G Maneuver Drive:* (Total: 216 Active Cost, 74 Real Cost) Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Realistic END Cost: Requires STR/5 Additional END per phase (-½), Costs Endurance (-½), Real Equipment (-¼) (Real Cost: 38) **plus** +17 DEX (51 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 20) **plus** +4 SPD (40 Active Points); OIF Bulky (-1), Real Equipment (-½) (Real Cost: 16)	12
440	3) *P2-100 Power Plant:* Endurance Reserve (1200 END, 1200 REC) (1320 Active Points); OIF Immobile (-1 ½), Only To Power Electrical Devices (-¼), Real Equipment (-¼)	0
7	4) *Fuel Purification Plant:* Minor Transform 4d6 (Liquid Hydrogen or Water to Usable Fuel) (40 Active Points); Extra Time (6 Hours, -3 ½), OIF Bulky (-1), Real Equipment (-¼)	4
26	5) *Artificial Gravity:* Telekinesis (30 STR), Area Of Effect (One Hex; +½), Selective (+¼) (79 Active Points); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1)	8
1	6) *Food Supplies:* Life Support (Eating: Character does not eat), 16 Continuing Charges lasting 1 Month each (Easily Replaced From Source Outside Of Vehicle; +0) (3 Active Points); OIF Bulky (-1)	[16 cc]
	Tactical Systems	
205	1) *Type 4 Spinal Meson Gun:* (Total: 1512 Active Cost, 205 Real Cost) Killing Attack - Ranged 18d6+1, No Normal Defense ([Standard]; +1), Does BODY (+1), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (1237 Active Points); OIF Immobile (-1 ½), Crew-Served ([33-64] people; -1 ½), Increased Endurance Cost (x3 END; -1), Custom Modifier (Spinal Weapon; -1), Extra Time (1 Minute, Only to Activate, -¾), Real Weapon (-¼), Beam (-¼) (Real Cost: 171) **plus** Suppress 10d6, all [special effect] powers simultaneously (+2), No Normal Defense ([Standard]; Meson Screens or Force Fields; +1), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (275 Active Points); OIF Immobile (-1 ½), Crew-Served ([33-64] people; -1 ½), Increased Endurance Cost (x3 END; -1), Custom Modifier (Spinal Weapon; -1), Linked (Killing Attack - Ranged; Lesser Power can only be used when character uses greater Power at full value; -¾), Extra Time (1 Minute, Only to Activate, -¾), Real Weapon (-¼), Beam (-¼) (Real Cost: 34)	453
97	2) *TL-15 PAW Barbette:* (Total: 227 Active Cost, 97 Real Cost) Killing Attack - Ranged 6 ½d6, MegaScale (1" = 1,000 km; +1), Can Be Scaled Down 1" = 1km (+¼) (225 Active Points); OIF Bulky (-1), Custom Modifier (Half Value in Atmosphere; -½), Beam (-¼), Crew-Served (2 people; -¼) (Real Cost: 75) **plus** +2 with any single attack with one specific weapon (Real Cost: 2)	22
1417	*Small Missile Bay:* (Total: 3095 Active Cost, 1417 Real Cost) RKA 8d6, Explosion (+½), 1000 Charges (Recovers Under Limited Circumstances; Base or Tender to Reload Pods, cannot be loaded from inside the ship; +1), Autofire (20 shots; +2 ½) (600 Active Points); OIF Bulky (-1), Limited Power Must Have Viable Target Lock To Fire Missile (-½), Limited Power Must Travel To Target: Velocity 40,000" per phase (-½), Crew-Served ([3-4] people; -½), Real Weapon (-¼), Can Be Missile Deflected (-¼), Limited Arc Of Fire (180 degrees; -¼) (Real Cost: 141) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 600 Active Points of Missile, Reduced Endurance (0 END; +½) (2475 Active Points); OIF Bulky (-1) (Real Cost: 1237) **plus** +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Real Weapon (-¼) (Real Cost: 9)	[1000]

777	*TL15 Triple Turret Beam Laser:* (Total: 1737 Active Cost, 777 Real Cost) RKA 9d6, Invisible to Single Sense (UV; +¼), Autofire (3 shots; +¼), Armor Piercing (+½), Reduced Endurance (½ END; +½) (337 Active Points); OIF Bulky (-1), Beam (-¼), Real Weapon (-¼) (Real Cost: 135) **plus** Variable Advantage (+1 ½ Advantages; Limited Group of Advantages; MegaScale or Increased Maximum Range plus Reduced Range Mod only; +2 ¾) for up to 337 Active Points of Laser, Reduced Endurance (0 END; +½) (1390 Active Points); OIF Bulky (-1), Limited Power Range and Damage affected by media (-¼) (Real Cost: 618) **plus** +2 with Ranged Combat (10 Active Points); OIF Bulky (-1), Costs Endurance (-½), Real Weapon (-¼) (Real Cost: 4) **Note:** (x10 number of items)10 Batteries	14
84	*Dual Fusion Gun Turret:* RKA 6d6, Autofire (2 shots; +¼), MegaScale (1" = 1,000 km; +1) (202 Active Points); OAF Immobile (-2), Real Weapon (-¼), Beam (-¼), Reduced By Range (-¼)	20
0	*PAW Barbette-15:* (Total: 0 Active Cost, 0 Real Cost)	0
	Defensive Systems	
13	1) *Type 3 Meson Screen:* Energy Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (Only Affects Meson Weapons; -1), Costs Endurance (-½), Crew-Served (2 people; -¼), Real Armor (-¼)	6
26	2) *Type 3 Nuclear Damper:* (Total: 120 Active Cost, 26 Real Cost) Physical Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13) **plus** Energy Damage Reduction, Resistant, 75% (60 Active Points); OIF Immobile (-1 ½), Custom Modifier (only stops damage from nuclear weapons and radiation effects; -1), Crew-Served ([3-4] people; -½), Costs Endurance (-½) (Real Cost: 13) **Note:** Equivalent to High Guard Ratings 4-6	12
48	3) *Type 3 Sandcaster Launcher:* (Total: 150 Active Cost, 48 Real Cost) Energy Damage Reduction, Resistant, 75%, 12 Continuing Charges lasting 1 Turn each (+¼) (75 Active Points); OIF Immobile Fragile (-1 ¾), Ablative BODY or STUN (-1), Custom Modifier (only stops laser, plasma, or fusion fire; -1), Real Armor (-¼), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 14) **plus** Physical Damage Reduction, Resistant, 75%, 12 Continuing Charges lasting 1 Turn each (+¼) (75 Active Points); OIF Immobile Fragile (-1 ¾), Ablative BODY or STUN (-1), Custom Modifier (only stops laser, plasma, or fusion fire; -1), Real Armor (-¼), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 14) **Note:** (x10 number of items) mounted in turret, HG Factor 4-6 Equivalent	14
60	4) *Light Repulsor Bay:* Telekinesis (25 STR), MegaScale (1" = 100 km; +¾), Can Be Scaled Down 1" = 1km (+¼), Area Of Effect (16" Cone; +1), Selective (+¼) (122 Active Points); OIF Immobile (-1 ½), Crew-Served ([3-4] people; -½), Real Weapon (-¼), Reduced By Range (-¼) **Note:** (x22 number of items) 50 Ton Repulsor Bay	12
31	5) *Point Defense System:* Missile Deflection (Any Ranged Attack) (20 Active Points); OIF Immobile (-1 ½), Costs Endurance (-½), Crew-Served (2 people; -¼), Real Armor (-¼)	2
4	6) *Chaff and Flare Pods:* Radio Group and Infrared Perception Images 1" radius (10 Active Points); OIF Bulky (-1), 6 Continuing Charges lasting 1 Turn each (-¼), Custom Modifier (Real Gear; -¼)	[6 cc]
	Operations and Command Section	
8	1) *Flag Bridge:* (Total: 8 Active Cost, 8 Real Cost) +2 with KS: Fleet Tactics (Real Cost: 2) **plus** +2 with KS: Logistics (Real Cost: 2) **plus** +2 with Bureaucratics (Real Cost: 4)	0
15	2) *Fighter Ops Bridge:* (Total: 31 Active Cost, 15 Real Cost) +4 with Teamwork (16 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 8) **plus** +3 with Tactics (6 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 3) **plus** Systems Operation (Communications Systems, Air/Space Traffic Control Systems) 12- (9 Active Points); Crew-Served ([5-8] people; -¾), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 4)	4

6	3) *Ships Tactical Operations Center:* (Total: 18 Active Cost, 6 Real Cost) +3 with Teamwork (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** +3 with Tactics (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2) **plus** +3 with Analyze: Combat (6 Active Points); OIF Immobile (-1 ½), Custom Modifier (must have working commo and data links to other ships; -½), Crew-Served (2 people; -¼) (Real Cost: 2)	0
13	4) *Ship's Hospital Bay:* (Total: 36 Active Cost, 13 Real Cost) +3 with Paramedics (6 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 2) **plus** +3 with KS: Surgery (3 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 1) **plus** +2 with SS: Anatomy (2 Active Points); OIF Bulky (-1) (Real Cost: 1) **plus** +2 with SS: Medicine (2 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 1) **plus** Detect A Large Class Of Things 12- (Unusual Group), Discriminatory, Analyze (23 Active Points); OIF Bulky (-1), Crew-Served ([3-4] people; -½), Costs Endurance (Only Costs END to Activate; -¼) (Real Cost: 8)	5
45	5) *Model 9 Computer:* Custom Power (45 Active Points)	4
1	6) *Basic Flight Control:* +2 with Combat Piloting (4 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
3	7) *Basic Navigation Station:* +2 with Navigation (Air, Hyperspace, Space) (8 Active Points); OAF Bulky (-1 ½), Costs Endurance (-½)	1
16	*Active Sensor Array:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	
16	1) *Computer Enhancement:* Analyze with Detect (5 Active Points); OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Costs Endurance (-½), Custom Modifier (Real Equipment; -¼)	1
14	2) *Active Sensor Array:* Detect Physical Objects 11- (Unusual Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking (39 Active Points); OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Costs Endurance (-½), Sense Affected As More Than One Sense [Radio, Sight, Hearing] (-½), Custom Modifier (Real Equipment; -¼)	4
18	3) *Long Range Sensors:* MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) for up to 40 Active Points of Active Sensor Array, Reduced Endurance (0 END; +½) (105 Active Points); OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	0
16	*Passive Sensor Arrays:* Elemental Control, 110-point powers, (55 Active Points); all slots OIF Immobile (-1 ½), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	
16	1) *IR Sensors:* Infrared Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Immobile (-1 ½), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	0
18	2) *UV Sensors:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (55 Active Points); OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	0
18	3) *Optical Telescopic Array:* +10 versus Range Modifier for Sight Group (15 Active Points); OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Custom Modifier (Real Equipment; -¼)	0
11	4) *Densitometer:* Detect A Single Thing [Density Of Objects] 9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Sense, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (110 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Sense Affected As More Than One Sense [Sight] (-½), Custom Modifier (Real Equipment; -¼)	0
12	5) *Neutrino Scanner:* Detect A Single Thing [Neutrinos] 9- (Unusual Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Range, Rapid: x10, Targeting, Tracking, MegaScale (1" = 100,000 km; +1 ½), Can Be Scaled Down 1" = 1km (+¼) (113 Active Points); Extra Time (1 Turn (Post-Segment 12), -1 ¼), OIF Bulky (-1), Crew-Served ([5-8] people; -¾), Sense Affected As More Than One Sense [Sight] (-½), Custom Modifier (Real Equipment; -¼)	0

29	*Sensor Probes and Recon Drones:* Clairsentience (Sight And Radio Groups), x2 Range (1,190"), 2 Perception Points, Mobile Perception Point (can move up to 6" per Phase), Telescopic: +1, Tracking, Transmit, 1 Continuing Charge lasting 6 Hours (+0), MegaScale (1" = 10,000 km; +1 ¼), Can Be Scaled Down 1" = 1km (+¼) (131 Active Points); OIF Immobile (-1 ½), Fixed Perception Point (-1), Sense Affected As More Than One Sense [Sight; Hearing] (-½), Concentration (½ DCV; -¼), Probe Must Travel Intervening Space To Target (-¼)	[1 cc]
12	*Radio Transceiver:* High Range Radio Perception (Radio Group), MegaScale (1" = 1 million km; +1 ¾), Can Be Scaled Down 1" = 1km (+¼) (36 Active Points); OIF Bulky (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight, Hearing] (-½)	4
17	*Meson Communicator:* Mind Link , Machine class of minds, Any Willing Target, No LOS Needed, Number of Minds (x32), Indirect (Same origin, always fired away from attacker; +¼), Difficult To Dispel (x2 Active Points; +¼) (75 Active Points); OIF Immobile (-1 ½), Only With Others Who Have Mind Link (-1), Costs Endurance (-½), Sense Affected As More Than One Sense [Sight; Hearing] (-½)	7
	Other Ship Systems	
0	1) *Cargo Space:* Custom Power	0
	Personnel Systems	
66	1) *Stateroom:* Life Support (Sleeping: Character does not sleep) (3 Active Points); OIF Bulky (-1) **Note:** (x4200 number of items) 4,354 Crew	0
	Small Craft	
0	1) *300 Heavy Fighters:* Custom Power	0

Total Powers & Skill Cost: 3776
Total Cost: 3948

Total Disadvantage Points: 3948

RAMPART LIGHT FIGHTER

Val	Char	Cost	Notes
10	Size	50	Length 10.08", Width 5.04", Area 50.8" Mass 102.4 ton KB -10
60	STR	0	Lift 102.4tons; 12d6
27	DEX	0	OCV 9 DCV 3
25	BODY	5	
26	DEF	30	
6	SPD	-10	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 61

Movement: Flight: 60" / 120"

Cost	Powers	END
	Power Systems	
259	*Ships Fusion Power Plant:* Endurance Reserve (250 END, 250 REC) Reserve: (275 Active Points); OIF Bulky (-1), Custom Modifier (only to power electrical devices; -¾)	0
	Propulsion Systems	
80	*6G Maneuver Drive:* (Total: 216 Active Cost, 80 Real Cost) +4 SPD (40 Active Points); OIF Bulky (-1), Linked (-½), Crew-Served (2 people; -¼), Custom Modifier (Real Equipment; -¼) (Real Cost: 13) **plus** Flight 60", Position Shift (125 Active Points); OIF Bulky (-1), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼) (Real Cost: 50) **plus** +17 DEX (51 Active Points); OIF Bulky (-1), Linked (-½), Custom Modifier (Real Equipment; -¼), Crew-Served (2 people; -¼) (Real Cost: 17)	0
	Tactical Systems	
86	*Beam Laser:* RKA 8d6, Autofire (2 shots; +¼), MegaScale (1" = 1,000 km; +1), Can Be Scaled Down 1" = 1km (+¼) (300 Active Points); OIF Bulky Fragile (-1 ¼), Limited Arc Of Fire (60 degrees; Only on same horizontal level; -¾), Beam (-¼), Real Weapon (-¼) **Note:** 2 Fixed 250mw Beam Lasers	30
24	*Hull armor:* +14 DEF (42 Active Points); Ablative BODY Only (-½), Real Armor (-¼)	
6	*EMP shielding:* Power Defense (15 points) (15 Active Points); OIF Bulky (-1), Custom Modifier (only vs EMP and radiation effects; -½)	0
26	*EMs Masking:* Change Environment 1" radius, -6 to Radar PER Rolls, -6 to Infrared Perception PER Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½), Persistent (+½) (64 Active Points); OIF Bulky (-1), No Range (-½)	0
	Operations Systems	
15	*Sensors and Communications:* Multipower, 35-point reserve, (35 Active Points); all slots OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	
1u	1) *Radar:* Radar (Radio Group), MegaScale (1" = 10,000 km; +1 ¼) (34 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	3
1u	2) *Radio Transceiver:* Radio Perception/ Transmission (Radio Group), MegaScale (1" = 10,000 km; +1 ¼) (22 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	2
1u	3) *Sensory Enhancement:* IR Perception (Sight Group), Discriminatory, Telescopic (+1 versus Range Modifier): +1, Tracking, MegaScale (1" = 1,000 km; +1) (31 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	3
	Personnel Systems	
18	*Environmental Control:* Life Support (Immunity All terrestrial diseases and biowarfare agents; Immunity All terrestrial poisons and chemical warfare agents; Safe Environment: Zero Gravity; Safe in High Pressure; Safe in High Radiation; Safe in Intense Cold; Safe in Intense Heat; Safe in Low Pressure/Vacuum; Self-Contained Breathing), 1 Continuing Charge lasting 6 Hours (+0) (40 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	4
	Talents	
3	*Computer:* Absolute Range Sense	
3	*Computer:* Absolute Time Sense	
3	*Computer:* Bump Of Direction	
5	*Computer:* Eidetic Memory	
3	*Computer:* Lightning Calculator	
	Skills	
20	*Agile Spacecraft*: +6 with DCV (30 Active Points); Custom Modifier (Linked to ships maneuver drive; -½)	
9	*Targeting Computer*: +4 with Ranged Combat (20 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	
6	*GPS System:* Navigation (Air, Space) 14- (13 Active Points); OIF Bulky (-1), Costs Endurance (Only Costs END to Activate; -¼)	

Total Powers & Skill Cost: 569
Total Cost: 630

Total Disadvantage Points: 630

GM Vault: World Generation

Traveller has many existing supplements that contain information about subsectors, stars, and worlds of Known Traveller space. However, at times you may wish or need to generate your own subsectors and worlds. The information below comes from *Classic Traveller Book 3: Worlds and Adventure*.

In Traveller, the universe is mapped in convenient segments, called *subsectors*. Each subsector is an area of hexagonal cells measuring eight hexes by ten hexes. Since the recommended scale is one parsec (3.26 light years) per hex, the subsector covers an area ten parsecs by eight parsecs.

Sixteen subsectors (arranged in four rows of four subsectors each) form a *sector*, probably the largest size practical for a continuing Traveller campaign. Mapping subsectors consists of two sequences: *star mapping* and *world mapping*.

Star mapping examines each hexagon in the subsector grid and determines if there is a star system present. It also determines the presence or absence of starports, bases, and fuel for starships. All of this information is coded onto the subsector hexes, and serves as a guide to the referee and to the players during interstellar travel.

World mapping examines the single most important world in each system and determines the basic characteristics for it. This information is retained for use in adventures on the world surface.

Star Mapping

In order to create a subsector, the referee uses a blank subsector grid and dice to determine the presence of systems, starports, and bases. The system hex format table shows the coding and placement of information about worlds within a subsector. This format should be used to allow players and referees to note the information that would normally be available to them. The referee may elect to omit some information, and only allow it to be inserted after the players have determined it themselves.

World Occurrence: There is a basic one-half chance normally that a world (and its attendant stellar system) will be in a hex. Systematically check each hex, throwing one die and marking the hex with a circle if the result is a 4,5, or 6. This indicates that a world is present; otherwise, leave the hex blank.

The referee may elect to alter the normal chances of worlds, making them more frequent or less frequent to correspond to specific regions of the galaxy. This is easily accomplished by imposing a DM of +1 or -1 on the whole subsector, or on broad areas within a subsector.

STARPORT TYPE

Many worlds have starports, their presence being essential to interstellar trade and commerce. Each world must be checked for its starport type; throw two dice for each world in the subsector, and mark the world with the letter indicated on the *System Contents: Starports* table.

The *System Contents: Starports* table indicates one specific distribution of starports as a basis for starmapping. Just as the distribution of stars can be altered (as indicated in world occurrence), the referee is also free to create other starport distributions.

Starports are further described in the *System Contents: Starports* table. In many cases, starports will be accompanied by naval or scout bases, and will have a wide range of facilities. In nearly all cases, a planet will consider that a starport is extraterritorial, and not subject to local law, but will also enforce strict entrance and exit controls.

System Contents: Starports

Die Roll	Starport	Notes
2-4	A	Excellent quality installation. Refined fuel available. Annual maintenance overhaul available. Shipyard capable of constructing starships and non-starships present. Naval base and/or scout base may be present.
5-6	B	Good quality installation. Refined fuel available. Annual maintenance overhaul available. Shipyard capable of constructing non-starships present. Naval base and/or scout base may be present.
7-8	C	Routine quality installation. Only unrefined fuel available. Reasonable repair facilities present. Scout base may be present.
9	D	Poor quality installation. Only unrefined fuel available. No repair or shipyard facilities present. Scout base may be present.
10-11	E	Frontier installation. Essentially a marked spot of bedrock with no fuel, facilities, or bases present.
12	X	No starport. No provision is made for any ship landings.

BASES

Stellar systems may have bases for military forces, the navy, the scouts, or for other arms of interstellar government. The system contents table indicates the die throws for specific types of bases to be present at a world, depending on the starport type. If a base is present, it should be marked in the hex in accordance with the world format.

System Contents: Bases

Die Roll	Naval Base	Scout Base	Notes
2-7	no	no	
8-12	yes	yes	

Roll twice, once for each base.
Scout base: Apply DM -1 if starport C; -2 if starport B; and -3 if starport A. Do not roll if starport E or X.
Naval base: Do not roll if starport C, D, E or X.

GAS GIANTS

A star system may have one or more gas giant planets (similar to Jupiter or Saturn). The presence of a gas giant allows streamlined starships to refuel by skimming; this eliminates fuel cost for the vessel and increases profit. It also allows refueling at systems that do not have starports. Refueling in this fashion generally requires a week. Fuel gained by

skimming is unrefined.

Gas giants are relatively common. As indicated on the *System Contents: Gas Giants* table, throw 10+ for a gas giant not to be present in the system. If one is present, mark the system hex in accordance with the world format.

System Contents: Gas Giants

Die Roll	Gas Giant	Notes
2-9	yes	
10-12	no	

SYSTEM NAME

Each system is generally named for the primary world within. This name should be decided upon by the referee and placed in the hex for identification.

TRAVEL ZONES

Most worlds are assumed to be civilized, or at least amenable to travelers and visitors. Some, however, are caught in the throes of war, plagued by disease, or simply not ready for interstellar visitors. Such worlds are classified by travel zones to denote such status. In most cases, the referee should indicate travel zones based on the information available. Two such zone types exist: *amber* and *red*.

Amber travel zones indicate that travelers should exercise caution when visiting such worlds. The amber code may mean that the citizens of the world are xenophobic, that the political situation is chaotic, or that some other danger exists within the system.

Red travel zones usually indicates that a major danger exists within the system. This danger may be disease and the world is quarantined. The system may be involved in a war, and surface or space battles may be probable. Red travel zones are also used to show a government edict prohibiting entry to the system or world.

This may be to protect a local civilization which is still developing and not yet ready for interstellar contacts, or to protect valuable resources until the government can mine them.

Communications Routes: Within the subsector, local governments will have established communications or trade routes connecting some (but not all) worlds. These routes serve as a conduit for messages between businesses and between governments as well as between people. They also serve as the basic routes that liners and large freighters travel. The referee should examine the subsector map and connect key worlds with communications routes. If the subsector is an isolated community, the routes may not leave the map; if it is part of a larger confederation or empire, the routes will probably leave the edges to join with other parts of the sector.

Communications routes should be carefully drawn so as to avoid making all parts of the subsector accessible; a subsector should have some areas as backwaters for exploration and adventure. Communications routes are drawn as single lines connecting hexes on the subsector grid.

The star map, once generated, shows the distribution of star systems in space, and shows their relationships to each other in terms of relative distance and commercial space-lane connections.

World Creation

The term world refers to the various bodies that are contained in a stellar system; it encompasses planets, satellites, and asteroid belts. For example, the single most important world in a system may not be a planet; it could be a satellite of a gas giant, or it could be a planetoid within an asteroid belt.

The worlds contained in the star systems on the subsector map may be further classified in terms of their gross physical characteristics and their effects on persons living on them or traveling to them. These characteristics (starport, six basics, plus a technological index) indicate specific facts about a world through the use of single digits (the numbers 0 through 9) and letters (A through Z, omitting 0 and I as they may be confused with numbers). In most cases, the instructions below concentrate on numbers, reserving letters for use by the referee to describe extraordinary situations.

This world creation process applies only to the single most important world in a star system; additional planets in a system should be generated by the referee as necessary.

The six basic planetary characteristics are generated using two-dice throws, with modifiers applied based on other characteristics. After these six are established, a technological index is created from the information they contain and from the world's starport type. Starport type, the six basic characteristics, and tech level establish the basic identity of a world. Additional information can be generated, and should be, to more fully describe a world.

When originally generating a world, a subsector index containing world name, location, universal planetary profile, and other basic data should be compiled. This listing should be available to players who travel through the subsector.

In addition, each world should be allocated at least one (and preferably several) pages in a central notebook maintained by the referee. As characteristics are generated, they should be recorded along with the name of the world and its location (generally its subsector and hex number). In addition, the referee should generate other information which may be pertinent; this may include details of other planets in the star system, radiation characteristics of the star, the types of terrain present on the planetary surface; unique encounter tables (as prescribed by the section on animal encounters), data on flora and fauna, industrial or agricultural capacity, data on social structure and government, or possibly actual maps of the planetary surface.

Note: One such source to develop more information about the sectors and worlds is *Star Hero, pages 70-94*.

The individual characteristics for worlds are produced by six two-dice throws, modified by circumstances and by some previous characteristics. The specific throws are given in formula form below, and in the world generation checklist.

Starports (from starport table): The starport type has already been generated when the subsector was mapped, and the information should be noted from the map.

PLANETARY SIZE

Planetary Size (2D-2): The digit representing planetary size indicates the diameter of the planetary sphere stated in thousands of miles. This size is used in book 1 to compute varying gravitational strengths. It is used in book 2 for the creation of planetary templates for space combat using miniatures.

Size

Digit	Description/Diameter
0	Asteroid/Planetoid Belt
1	1000 miles (1600 km)
2	2000 miles (3200 km)
3	3000 miles (4800 km)
4	4000 miles (6400 km)
5	5000 miles (8000 km)
6	6000 miles (9600 km)
7	7000 miles (11200 km)
8	8000 miles (12800 km)
9	9000 miles (14400 km)
A	10000 miles (16000 km)

Note: World sizes greater than A may be created by the referee.

ATMOSPHERE

Planetary Atmosphere (2D-7+size; if size 0 then atmosphere 0): The digit indicating planetary atmosphere represents the type of atmosphere encountered on the world. Varying types of atmospheres require the use of protective clothing or masks.

Atmosphere

Digit	Description	Survival Notes
0	No atmosphere	Requires use of a vac suit
1	Trace	Requires use of a vac suit
2	Very thin, tainted	Requires a combination respirator/filter mask for survival
3	Very thin	Requires use of compressors to insure sufficient oxygen to breathe
4	Thin, tainted	Requires use of filter masks
5	Thin	Breathable without assistance
6	Standard	Breathable without assistance
7	Standard, tainted	Requires use of filter masks
8	Dense	Breathable without assistance
9	Dense, tainted	Requires use of filter masks
A	Exotic	Requires use of oxygen tanks, but protective suits are not required
B	Corrosive	Requires use of protective suits or vac suits
C	Insidious	Similar to corrosive atmospheres, but will defeat any personal protective measures in 2 to 12 hours

HYDROGRAPHICS

Hydrographic Percentage (2D-7+atmosphere; if size 0 then hydrographics 0, if atmosphere 0, 1, or A+, then apply DM -4): The digit indicating hydrographic percentage represents the percentage of planetary surface (in increments of 10%) covered by seas or oceans. For normal worlds, this will be water; on other worlds (with exotic, corrosive, or insidious atmospheres), it may instead be other liquids, such as ammonia.

It is possible for some worlds with vacuum atmospheres to have hydrographic percentages greater than 0. In such cases, the world has ice-caps present; the water will not be free-standing liquid.

Hydrographics

Digit	Description
0	No free standing water. Desert.
1	10% water
2	20% water
3	30% water
4	40% water
5	50% water
6	60% water
7	70% water
8	80% water
9	90% water
A	No land masses. Water World.

POPULATION

Population (2D-2): The digit indicating population is an exponent of 10. This may be viewed as the number of zeros following a one. Thus, a population digit of 6 indicates a population of approximately 1,000,000.

Population

Digit	Description
0	No inhabitants
1	Tens of inhabitants
2	Hundreds of inhabitants
3	Thousands of inhabitants
4	Tens of thousands
5	Hundreds of thousands
6	Millions of inhabitants
7	Tens of millions
8	Hundreds of millions
9	Billions of inhabitants
A	Tens of billions

GOVERNMENT

Planetary Government (2D-7+population): The digit representing planetary government indicates a range of possible ruling systems, from anarchy to totalitarianism.

The planetary government table gives a brief description of the general characteristics of each government type. Balkanization is a special result, and indicates that there is no world government; instead several rival territorial governments exist. In such cases, the referee should generate the specific qualities of each territory on the planet separately.

Government

Digit	Description
0	**No government structure**. In many cases, family bonds predominate.
1	**Company/Corporation**. Government by a company managerial elite; citizens are company employees.
2	**Participating Democracy**. Government by advice and consent of the citizens.
3	**Self-Perpetuating Oligarchy**. Government by a restricted minority, with little or no input from the masses.
4	**Representative Democracy**. Government by elected representatives.

5	**Feudal Technocracy**. Government by specific individuals for those who agree to be ruled. Relationships are based on the performance of technical activities which are mutually beneficial.
6	**Captive Government**. Government by an imposed leadership answerable to an outside group. A colony or conquered area.
7	**Balkanization**. No central ruling authority exists; rival governments compete for control.
8	**Civil Service Bureaucracy**. Government by agencies employing individuals selected for their expertise.
9	**Impersonal Bureaucracy**. Government by agencies which are insulated from the governed.
A	**Charismatic Dictator**. Government by a single leader enjoying the confidence of the citizens.
B	**Non-Charismatic Leader**. A previous charismatic dictator has been replaced by a leader through normal channels.
C	**Charismatic Oligarchy**. Government by a select group, organization, or class enjoying the overwhelming confidence of the citizenry.
D	**Religious Dictatorship**. Government by a religious organization without regard to the specific needs of the citizenry.

LAW LEVEL

Law Level (2D-7+ government): The digit representing law level indicates the relative force of law extant on the world. The level specifically states the restrictions in force concerning the possession and use of weapons by individuals.

Law level is an indication of the relative oppressiveness of the world. The digit is classified on the law level table to show prohibitions against weapons. It is also the throw (law level +) to avoid being harassed or arrested by local authorities.

Law Level

Digit	Description
0	No prohibitions.
1	Body pistols undetectable by standard detectors, explosives (bombs, grenades), and poison gas prohibited.
2	Portable energy weapons (laser carbine, laser rifle) prohibited. Ship's gunnery not affected.
3	Weapons of a strict military nature (machine guns, automatic rifles) prohibited.
4	Light assault weapons (submachine guns) prohibited.
5	Personal concealable firearms (such as pistols and revolvers) prohibited.
6	Most firearms (all except shotguns) prohibited. The carrying of any type of weapon openly is discouraged.
7	Shotguns are prohibited.
8	Long bladed weapons (all but daggers) are controlled, and open possession is prohibited.
9	Possession of any weapon outside one's residence is prohibited.

Note: *Law level is also the general throw for police or enforcement harassment for violations. Thus, on a world with law level 4, the throw to avoid arrest when encountering an enforcement agent such as a customs official or policeman is 4+.*

World Generation Notes

At times, the referee (or the players) will find combinations of features which may seem contradictory or unreasonable. Common sense should rule in such cases; either the players or referee will generate a rationale which explains the situation, or an alternative description should be made.

Finally, the referee should always feel free to create worlds which have been deliberately (rather than randomly) generated.

TECHNOLOGICAL LEVEL

Tech Level (1D + mods): The degree of technological expertise, and thus the capabilities of local industry, depends greatly on the basic characteristics of a world. This technological index is generated based on a one die throw, modified by DMs dependent on planetary characteristics.

Consult the tech level table and reference the appropriate planetary digits with the descriptions; note all DMs indicated, and sum them to form one total DM. Throw one die, and modify the result, thus determining the local technological level. Note the result in the appropriate records.

Technological index may vary from zero to 20, more commonly ranging from 4 through about 10. Higher numbers indicate greater capability.

The technological level is used in conjunction with the technological level table to determine the general quality and capability of local industry. The tables indicate the general types or categories of goods in general use on the world. In most cases, such goods are the best which may be produced locally, although better goods may be imported by local organizations or businesses when a specific need is felt. In most cases, local citizenry will not be armed with weapons of a type which cannot be produced locally, although police or military may be. Technological level also indicates the general ability of local technology to repair or maintain items which have failed or malfunctioned.

Tech Level Table

Digit	Starport	Size	Atm	Hyd	Pop	Govt
0		+2	+1	+0	+0	+1
1		+2	+1	+0	+1	+0
2		+1	+1	+0	+1	+0
3		+1	+1	+0	+1	+0
4		+1	+0	+0	+1	+0
5		+0	+0	+0	+1	+1
6		+0	+0	+0	+0	+0
7		+0	+0	+0	+0	+0
8		+0	+0	+0	+0	+0
9		+0	+0	+1	+2	+0
A	+6	+0	+1	+2	+4	+0
B	+4		+1			+0
C	+2		+1			+0
D	+0		+1			+0
E	+0		+1			+0
F						-2
X	-4					

TRADE CLASSIFICATIONS

The term trade classification is a general catch-all phrase that covers world attributes which influence trade and commerce, and other information that is of interest to travelers. Some trade classifications influence the trade and commerce table in *Classic Traveller Book 2*.

Agricultural worlds (A) have large portions of their economies devoted to agriculture. They must have an atmosphere of 4 through 9, hydrographic percentage of 4 through 8, and a population of 5 through 7.

Non-agricultural worlds (NA) must import much of their foodstuffs from off planet. While such a world may produce synthetic foodstuffs for local consumption, it probably imports quality foods as luxury items. A non-agricultural world must have an atmosphere of 3 or less, a hydrographic percentage of 3 or less, and a population of 6 or more.

Industrial worlds (I) have large production bases and can easily engage in the manufacture of finished goods. Such a world must have an atmosphere of 0,1,2,4, 7, or 9 (vacuum, trace, or tainted), and a population of 9 or greater.

Non-industrial worlds (NI) are forced to import much of their finished goods. Nonindustrial worlds must have a population of 6 or less.

Rich worlds (R) have good climates and environments and are sought after by most individuals as living places. A rich world must have government type 4 through 9, an atmosphere of 6 or 8, and a population of 6 through 8.

Poor worlds (P) are undeveloped and marginal backwaters. A poor world must have an atmosphere of 2 through 5 and a hydrographic percentage of 3 or less.

Water worlds (W) are totally covered by seas and oceans. Each has a hydrographic percentage of A.

Desert worlds (D) have no standing water. Each has a hydrographic percentage of 0.

Vacuum worlds (V) have no atmosphere. Each has an atmosphere of 0.

Asteroid belts (AB) are accumulations of small planetoids in a belt around the central star of the system. Each must have a size 0.

Ice-capped worlds (IW) have water present only in the form of ice caps; these are mostly vacuum worlds which would ordinarily have no water. Each must have an atmosphere of 0 or 1 and a hydrographic percentage of 1 or greater.

Subsector capital (SC) is the term given to the single most important world in the subsector, especially if the entire sector is under one interstellar government.

Capital (C) is the term given to a world which is the seat of an interstellar government.

If there are several interstellar governments within a subsector, each will probably have a capital. Capital designations are assigned by the referee.

World Data Format

When noting universal planetary profiles, the following format should be used in order to insure recording all necessary information. Information should include:

Name	Hex Location	UPP	Bases	Trade Classifications	Travel Zones	Gas Giant
Speer	0108	C432430 - 8	S	Poor. Non-industrial.	R	G

GM Vault: Cybernetics

Cybernetics is not a part of mainstream Traveller, although it does appear in *Fire, Fusion, and Steel* as a military option. The use of Cybernetics should be rare, and only allowed with GM approval.

Caution: The inclusion of cybernetics in a mainstream Traveller player team will have repercussions on how the Traveller universe behaves and possible playability issues regarding some of the cybernetic devices. Use with caution!

Notes on Cybernetics

Cybernetics are implants requiring surgery to add or remove, and may augment or replace existing limbs or organs. As such, they do not receive any kind of *Focus* limitation.

Cybernetics do have the *Restrainable* limitation, since arms can be held, eyes covered, and so forth.

Cybernetics are easily identifiable with a Perception roll. Cyber eyes and ears cannot appear normal; cyber subdermal armor gives the appearance of armor, with a change in skin hue.

Cybernetics are easily identified by metal detectors and X-Rays (starport security and medical scans, respectively). Those with cybernetics typically carry identification cards to be allowed to pass through security, and some types of cybernetics may not be allowed through.

Traveller Cybernetic Equipment

Limbs

POWER LEGS

Power legs increase the strength of the legs, affecting such factors as leaping distance and damage from kicks. The disadvantage is that their rigidity halves the running speed.

Notes: Available TL 10/13
Cost: 40,000 CR

Power Legs: *+5 STR (5 Active Points); Restrainable (-½), No Figured Characteristics (-½), Side Effects, Side Effect occurs automatically whenever Power is used (x1/2 Running; -½), Custom Modifier (strength only for tasks and damage using legs; -½). Total cost: 2 points.*

SPEED LEGS

Speed legs enhance the running speed of the legs.

Notes: Available TL 11/14
Cost: 60,000 CR

Speed Legs: *Running +3" (12" total) (6 Active Points); Restrainable (-½). Total cost: 4 points.*

DYNALEGS

Dynalegs combine Speed Legs and Power Legs using a non-rigid enhancement, adding to both the running speed and power of the legs.

Notes: Available TL 12/15
Cost: 70,000 CR

Dynalegs: *(Total: 11 Active Cost, 6 Real Cost) Running +3" (12" total) (6 Active Points); Restrainable (-½) (Real Cost: 4) plus +5 STR (5 Active Points); Custom Modifier (strength only for tasks and damage using legs; -½), Restrainable (-½) (Real Cost: 2). Total cost: 6 points.*

Optical

CHRONOMETER

Internal chronometer visible from within the cybernetic eye.

Notes: Available TL 11/12
Cost: 1,000 CR

Chronometer: *Absolute Time Sense (3 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

Audio

AMPLIFIED HEARING

Essentially an internal hearing aid, it amplifies sounds in the normal hearing range.

Notes: Available TL 8/10
Cost: 1,000 CR

Amplified Hearing: *+2 PER with Hearing Group (4 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 3 points.*

LOW FREQUENCY HEARING

This version amplifies only low frequency sounds.

Notes: Available TL 9/12
Cost: 20,000 CR

Low Frequency Hearing: *+2 PER with Hearing Group (4 Active Points); Custom Modifier (Low Frequencies only; -½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

HIGH FREQUENCY HEARING

This version amplifies only high frequency sounds.

Notes: Available TL 9/13, 2 Slots
Cost: 20,000 CR

High Frequency Hearing: *+2 PER with Hearing Group (4 Active Points); Custom Modifier (High Frequencies only; -½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

SOUND DAMPENING

The sound dampener gives the ability to focus on particular sounds and provides information about those sounds.

Notes: Available TL 9/11
Cost: 30,000 CR

Sound Dampening: *Discriminatory with Normal Hearing (5 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 4 points.*

AUDIO RECORDER

The audio recorder provides the ability to record and review up to 1 hour of continuous sound.

Notes: Available TL 10/13
Cost: 40,000 CR

Audio Recorder: *Eidetic Memory (5 Active Points); Custom Modifier (Audio only; -1), 1 Continuing Charge lasting 1 Hour (-¼), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

SONAR

Provides sonar superior to that of a bat.
Notes: Available TL 12/14
Cost: 100,000 CR

Sonar : *Ultrasonic Perception (Hearing Group), Discriminatory, Analyze (13 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 10 points.*

Other Senses

NEURAL ACTIVITY SENSOR

Detect neural activity within 5 meters, can recognize those scanned previously.
Notes: Available TL 15/17
Cost: 50,000 CR

Neural Activity Sensor: *Mind Scan 3d6 (Human and Additional Class Of Minds classes of minds) (25 Active Points); Neither Character nor Target Can Attack Through Link (-1), Custom Modifier (5 Meter range; -1). Total cost: 8 points.*

INERTIAL NAVIGATION SYSTEM

Provide internal navigation enhancement.
Notes: Available TL 11/12
Cost: 1,000 CR

Inertial Navigation System: *(Total: 7 Active Cost, 5 Real Cost) Bump Of Direction (3 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 2) plus +2 with Navigation (4 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 3). Total cost: 5 points.*

Nervous System

HYPERCHARGER

Cannot be used with Supercharger.
Notes: Available TL 12
Cost: 40,000 CR

Hypercharger: *(Total: 11 Active Cost, 8 Real Cost) +3 CON (6 Active Points); No Figured Characteristics (-½), Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 3) plus +9 END (Real Cost: 4). Total cost: 8 points.*

SUPERCHARGER

Cannot be used with Hypercharger.
Notes: Available TL 11
Cost: 30,000 CR

Supercharger: *(Total: 7 Active Cost, 4 Real Cost) +2 CON (4 Active Points); No Figured Characteristics (-½), Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 2)* **plus** *+6 END (3 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 2). Total cost: 4 points.*

Respiratory

FILTER LUNGS

Notes: Available TL 9/11
Cost: 300,000 CR

Filter Lungs: *Life Support (Expanded Breathing; Immunity All terrestrial poisons and chemical warfare agents; Immunity: All terrestrial diseases and biowarfare agents) (25 Active Points); Side Effects, Side Effect occurs automatically whenever Power is used (Needs double normal liquid intake in hostile environments; -½), Custom Modifier (only vs atmospheric taints and breathable gasses; -½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 11 points.*

GILL IMPLANT

Notes: Available TL 11/13
Cost: 300,000 CR

Gill Implant: *Life Support (Expanded Breathing) (5 Active Points); Custom Modifier (Requires installation of a hypercharger also; -½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 3 points.*

Circulatory

AQUATIC SKIN

Notes: Available TL 11/15
Cost: 1,000,000 CR

Aquatic Skin: *Life Support (Safe in High Pressure); Custom Modifier (must be kept moist ; -½). Total cost: 1 point.*

VAC SKIN

Notes: Available TL 15/18
Cost: 2,000,000 CR

Vacc Skin: *Life Support (Safe in Low Pressure/Vacuum). Total cost: 2 points.*

Armor

SUBDERMAL CHEST ARMOR

Notes: Same availability as Head Armor
Cost:

Subdermal Chest Armor: *Armor (2 PD/0 ED) (3 Active Points); Short Vest (Protects Locations 12-13; -2), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 1 point.*

SUBDERMAL CHEST ARMOR +1

Notes: Available TL 10/11
Cost: 250,000 CR

Subdermal Chest Armor +1: *Armor (4 PD/0 ED) (6 Active Points); Standard Vest (Protects Locations 11-13; -1 ½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

SUBDERMAL CHEST ARMOR +2

Notes: Available TL 12/13
Cost: 200,000 CR

Subdermal Chest Armor +2: *Armor (6 PD/0 ED) (9 Active Points); Standard Vest (Protects Locations 11-13; -1 ½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 3 points.*

SUBDERMAL HEAD ARMOR +1

Notes: Available TL 10/11
Cost: 250,000 CR

Subdermal Head Armor +1: *Armor (2 PD/0 ED) (3 Active Points); Limited Coverage [1-60] Degrees (-1), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 2 points.*

SUBDERMAL HEAD ARMOR +2

Notes: Available TL 12/13
Cost: 200,000 CR

Subdermal Head Armor +2: *Armor (4 PD/0 ED) (6 Active Points); Limited Coverage [1-60] Degrees (-1), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 3 points.*

SUBDERMAL HEAD ARMOR +3

Notes: Available TL 17/18
Cost: 150,000 CR

Subdermal Head Armor +3: *Armor (6 PD/0 ED) (9 Active Points); Limited Coverage [1-60] Degrees (-1), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 4 points.*

Tools

TENTACLE HAND

Notes:
Cost:

Tentacle Hand: *Stretching 2" (10 Active Points); Restrainable (-½), Cannot Do Damage (-½), Custom Modifier (-1 Dexterity with that hand only; -½), no Noncombat Stretching (-¼), No Velocity Damage (-¼). Total cost: 3 points.*

GRAPPLE HAND

Notes: Available TL 10/12
Cost: 2,000 CR

Grapple Hand: *(Total: 20 Active Cost, 10 Real Cost) Clinging (normal STR) (10 Active Points); Restrainable (-½), Custom Modifier (No manipulation; -½) (Real Cost: 5) plus Swinging 10" (10 Active Points); Restrainable (-½), Custom Modifier (No manipulation; -½) (Real Cost: 5). Total cost: 10 points.*

POWER HAND

Notes: Available TL 10/12
Cost: 10,000 CR

Power Hand: *Clinging (30 STR) (13 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 10 points.*

Weapons

POWER JAWS

Notes: Available TL 9/11
Cost: 5,000 CR

Power Jaws: *Killing Attack - Hand-To-Hand ½d6 (1d6+1 w/STR) (10 Active Points); Restrainable (-½). Total cost: 7 points.*

JAWS OF DEATH

Notes: Available TL 9/11
Cost: 5,000 CR

Jaws of Death: *Killing Attack - Hand-To-Hand 1d6+1 (2d6 w/STR) (20 Active Points); Restrainable (-½), Side Effects, Side Effect occurs automatically whenever Power is used (-2 COM due to appearance; -½). Total cost: 10 points.*

CHAINSAW HAND

Notes: Available TL 10
Cost: 2,000 CR

Chainsaw Hand: *Killing Attack - Hand-To-Hand 1d6+1 (2 ½d6 w/STR) (20 Active Points); Activation Roll 14-, Jammed (-1), Restrainable (-½), Custom Modifier (No manipulation; -½), Side Effects, Side Effect occurs automatically whenever Power is used (-2 COM due to appearance; -½), Real Weapon (-¼). Total cost: 5 points.*

HARDFIST

Notes: Available TL 9/10
Cost: 3,000 CR

Hardfist: *Hand-To-Hand Attack +2d6 (10 Active Points); Hand-To-Hand Attack (-½), Restrainable (-½), Side Effects, Side Effect occurs automatically whenever Power is used (-1 Dexterity with that hand only; -½), Real Weapon (-¼). Total cost: 4 points.*

KNUCKLE BLADES

Notes: Available TL 9/12
Cost: 10,000 CR

Knuckle Blades: *Killing Attack - Hand-To-Hand ½d6 (1d6+1 w/STR) (10 Active Points); Side Effects, Side Effect occurs automatically whenever Power is used (-1 Dexterity with that hand only; -½), Restrainable (-½), Real Weapon (-¼). Total cost: 4 points.*

PISTOL HAND

Notes: Available TL 9/13
Cost: 1,000 CR and cost of pistol

Pistol Hand: *Killing Attack - Ranged 1d6 (15 Active Points); 8 Charges (-½), Real Weapon (-¼), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 7 points.*

TORCH HAND

Notes: Available TL 11/13
Cost: 30,000 CR

Torch Hand: *Killing Attack - Hand-To-Hand 1d6+1, Continuous (+1) (40 Active Points); Fuel Dependent (fuel is Very Common; must refuel Once per Minute; -1 ¾), 2*

Charges (-1 ½), Restrainable (-½), No STR Bonus (-½), Side Effects, Side Effect occurs automatically whenever Power is used (-2 COM due to appearance; -½), Real Weapon (-¼). Total cost: 7 points.

Other Systems

COMMUNICATOR IMPLANT

There are a wide variety of systems available depending on model, TL, and price.

Notes: Available TL 8/9
Cost: 5,000 CR

Communicator Implant: *High Range Radio Perception (Radio Group), +3 to PER Roll (15 Active Points); Sense Affected As More Than One Sense [very common Sense] (-½), Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 8 points.*

NEURAL JACK

Notes: Available TL 9/10
Cost: 800,000 CR

Neural Jack: *(Total: 8 Active Cost, 4 Real Cost) Speed Reading (x10) (4 Active Points); Custom Modifier (only for scanning electronic data when connected to a computer via jack; -1), Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 2) plus +1 with Systems Operation (2 Active Points); Custom Modifier (only when connected to a computer via jack; -1), Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 1) plus +1 with Computer Programming (2 Active Points); Custom Modifier (only when connected to a computer via jack; -1), Restrainable (Only by means other than Grabs and Entangles; -¼) (Real Cost: 1). Total cost: 4 points.*

PSIONIC SHIELD

Notes: Available TL 13/14
Cost: 40,000 CR

Psionic Shield: *Mental Defense (17 points total) (15 Active Points); Restrainable (Only by means other than Grabs and Entangles; -¼). Total cost: 12 points.*

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