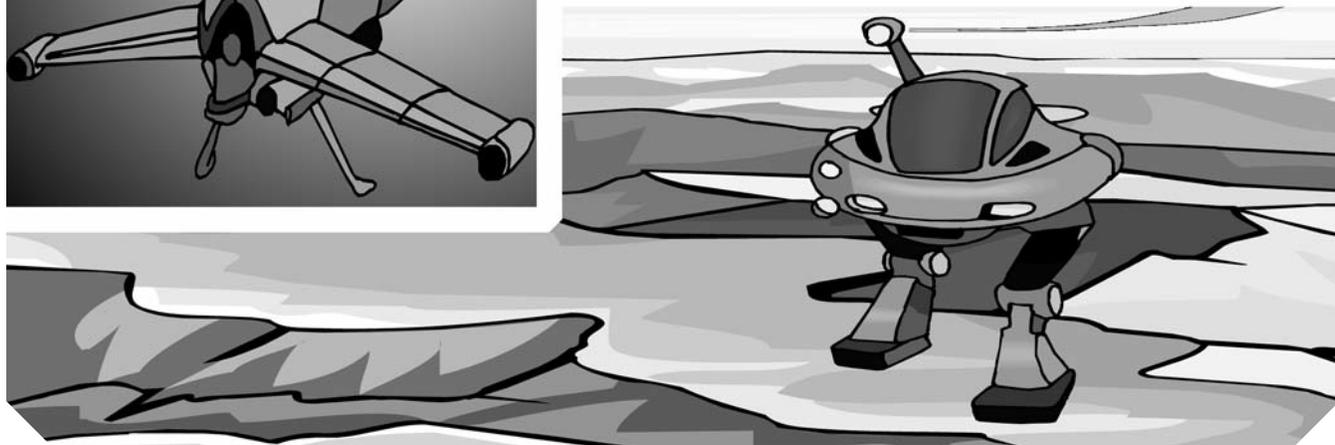
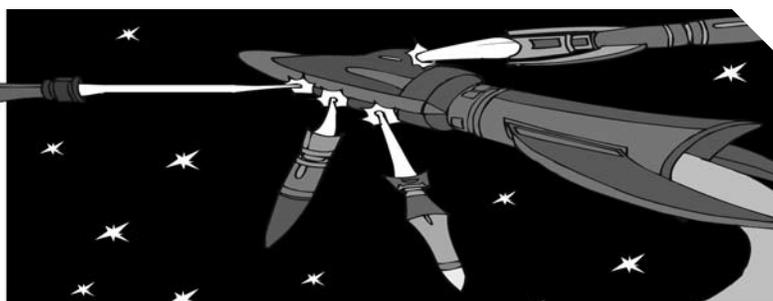
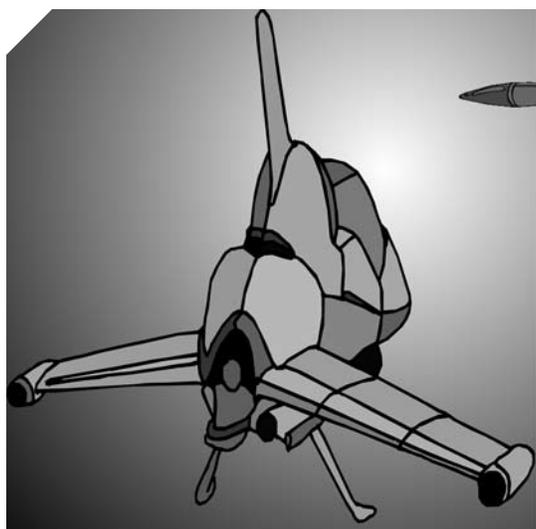


GURPS

Fourth Edition

SPACESHIPS 4

FIGHTERS, CARRIERS, AND MECHA™



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An e23 Sourcebook for GURPS®

STEVE JACKSON GAMES

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CONTENTS

INTRODUCTION	3	Valkyrie-Class Drop Ship (TL9)	16	2. CINEMATIC ACTION . . .	30
<i>About the Series</i>	3	Alexander-Class Drop Ship (TL10 [^])	17	CINEMATIC PILOTING	30
Publication History	3	Banshee-Class Drop Ship (TL11 [^])	17	Closing Strategy: Reversal	30
About the Author	3	Tungusku-Class Drop Ship (TL12 [^])	18	Hugging the Enemy	30
<i>About GURPS</i>	3	<i>Search-and-Rescue Craft</i>	18	Landing on a Spacecraft	31
1. SHIPS AND MECHA	4	FLEET CARRIERS	18	Sacrificial Dodge	31
AEROSPACE FIGHTERS		Yamamoto-Class Fleet Carrier (TL10)	19	Space Piloting Techniques	31
AND GUNSHIPS	5	Alliance-Class Fleet Carrier (TL10 [^])	19	LARGE SPACE BATTLES	32
Red Arrow Aerospace Fighter (TL9)	5	<i>Other Vessels as Carriers</i>	20	CINEMATIC CLICHÉS	32
Meteor Aerospace Fighter (TL9 [^])	5	Thor-Class Fleet Carrier (TL10 [^])	20	2D Thinking	32
Shrike Aerospace Fighter-Bomber (TL10)	6	God of War-Class Fleet Carrier (TL11 [^])	21	Accidental Collisions	
Dragon Orbital Gunship (TL10 [^])	6	Continent-Class Super Carrier (TL11 [^])	21	While Dodging	32
<i>The Utility of Fighters</i>	7	GRAPPLER SHIPS AND BOARDING CRAFT	22	<i>Fuel and Ammunition Transfers</i>	32
ASSAULT CARRIERS	7	Ahab-Class Boarding Cutter (TL9)	22	Airplane-Style Dogfights	33
Overlord-Class Assault Carrier (TL10)	7	Corvus Assault Boat (TL11 [^])	23	Cockpit Multitasking	33
Ranger-Class Assault Corvette (TL10 [^])	8	Samson-Class Grappler Ship (TL9)	23	Exploding Spacecraft and Fireballs	33
Warrior-Class Assault Carrier (TL10 [^])	9	Beowulf-Class Grappler Ship (TL10 [^])	24	Exploding Instrumentation	33
Viking-Class Planetary Assault Carrier (TL11 [^])	9	LIGHT CARRIERS	24	Force Screen Options	33
DEEP SPACE FIGHTERS	10	Mithra-Class Light Carrier (TL9)	24	Improvised Weapons	33
Nova Space Fighter (TL9)	10	Inferno-Class Strike Carrier (TL10)	25	<i>Crash Landings in Hangar Bays</i>	34
Panther Heavy Fighter (TL10)	11	Nebula-Class Light Carrier (TL10 [^])	26	Relative Target Size	35
Lancer Deep Space Fighter (TL10 [^])	11	Tarot-Class Light Carrier (TL11 [^])	26	ENVIRONMENTAL EFFECTS	35
Typhoon Space Fighter (TL11 [^])	11	SPACE MECHA	27	Fighting in Low Orbit	35
Starhawk Star Fighter (TL11 [^])	12	Spartan Space-Assault Mecha (TL9)	27	Nebulas, Ion Storms, and Gas Clouds	35
Wyvern Star Fighter (TL11 [^])	12	Hades Battle Mecha (TL9 [^])	27	Unpredictable Debris Fields	35
Mirage Star Fighter (TL12 [^])	13	Black Knight Space Mecha (TL10 [^])	28	3. SMALL CRAFT, SPACE MECHA, AND MISSILE DESIGN	37
DOGFIGHT DRONES	14	Ariel Transformable Fighter (TL10 [^])	28	NEW SYSTEMS	37
ASAT Interceptor (TL8)	14	Galaxy Striker Super Mecha (TL12 [^])	29	Robot Leg (TL9) [Hull!]	37
Assegai Dogfight Drone (TL9)	14			New Design Features	37
Nightgaunt Dogfight Drone (TL10 [^])	15			BUILDING SMALL SPACECRAFT	38
Hornet Drone Star Fighter (TL11 [^])	15			Spacecraft Hull	38
DROP SHIPS	16			System Descriptions	38
Bolide Assault Pod (TL8)	16			MISSILES	40

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INTRODUCTION

Fast, deadly, and expendable, swarms of one- or two-man space fighters are as much an icon of space opera as lumbering interstellar battleships! This book provides examples of these and other tactical craft (such as drop ships and space mecha) along with the carriers that transport them into action. New cinematic combat options suitable for ships of all sizes have been added, as well as design rules, systems, and features for small craft (including tiny SM +4 vessels), carriers, and missiles.

PUBLICATION HISTORY

Some of the rules for cinematic space combat are derived from those in *GURPS Space, Third Edition* by Steve Jackson, William Barton, and David Pulver.

ABOUT THE AUTHOR

David L. Pulver is a freelance writer and game designer based in Victoria, British Columbia. He is the co-author of the

About the Series

GURPS Spaceships 4: Fighters, Carriers, and Mecha is one of several books in the *GURPS Spaceships* series. It supports *GURPS Space* campaigns by providing ready-to-use spacecraft descriptions and rules for space travel, combat, and operations. Each volume offers vessel descriptions and supplementary mechanics. GMs need the core book, *GURPS Spaceships*, to use this one.

This book doesn't cover all combat vessels. For battleships, frigates, space fortresses, and other fighting ships, see *GURPS Spaceships 3: Warships and Space Pirates* (which also covers hex-grid combat).

GURPS Basic Set, Fourth Edition and author of *Transhuman Space*, *GURPS Spaceships*, *GURPS Banestorm: Abydos*, and numerous other RPGs and supplements.

About GURPS

Steve Jackson Games is committed to full support of *GURPS* players. Our address is SJ Games, P.O. Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! We can also be reached by e-mail: info@sjgames.com. Resources include:

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much more. To discuss *GURPS* with our staff and your fellow gamers, visit our forums at forums.sjgames.com. You can find the web page for *GURPS Spaceships 4: Fighters, Carriers, and Mecha* at www.sjgames.com/gurps/books/spaceships/spaceships4.

Bibliographies. Many of our books have extensive bibliographies, and we're putting them online – with links to let you buy the resources that interest you! Go to each book's web page and look for the "Bibliography" link.

Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata pages for all *GURPS* releases, including this book, are available on our website – see above.

Rules and statistics in this book are specifically for the *GURPS Basic Set, Fourth Edition*. Page references that begin with B refer to that book, not this one.

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CHAPTER ONE

SHIPS AND

MECHA

A crushing 4G presses Lieutenant Mikhail Kryukov – call sign Sword Two – into his pilot's couch like a giant's hand as, nuclear engine blazing like a star, his Su-72 Meteor races on an intercept course toward the first Martian strike carrier.

Mikhail knows he has to get that vessel. In less than six minutes, it will be in its drop position, launching its boarding craft, dropping a company of Martian colonial marines on the lunar mining complex. Their objective is the mass driver. If they can capture it, they'll hold Earth's space stations and satellites hostage to a rain of rocks from the moon.

Nyet. That Martian carrier may be faster than his fighter in deep space, but now that it's decelerated, it's as slow as a snail. Mikhail's fighter can easily outmaneuver it. A quick burn, a change of direction, and a second burn bring his ship onto a close pass where it fires a long, raking burst into its midsection. The tungsten slugs smash into the vessel's tactical array and its secondary battery, ripping out its eyes and fangs.



Mikhail grins like a wolf. Now it's time for the kill. (Two more and you'll make ace, his inner voice whispers.) But there's no time for that now. Focus on the target.

"Sword Two, bandits at seven o'clock high!" The warning from Lunar Control is nearly unnecessary. The high-energy rocket engines of the Martian escort fighters are brighter than magnesium flares, and they're dropping like hawks from lunar orbit, out of the launch bays of the rebels' second carrier. The Martian ships are big MS-2 Nova strike fighters, the pride of the Free Mars Republic. They're 160 klicks distant, closing fast.

Mikhail doesn't care. He trusts his wingman Yulia to handle the bandits. His target is this carrier, which looks like it's maneuvering

to release its own brood. And with its defensive battery out, it can't fight back . . . as long as he doesn't get too close to its drive and get toasted, the way Ivan was at the Lagrange-4 battle. Better not go for its rear! Another punishing burn – getting low on fuel – but this time it's to kill his velocity. Now he's drifting beside the target, nose pointed at it, at point-blank range. On the passive scope, he can actually *see* its hangar bay doors opening, and the fat rebel drop ships packed inside about to emerge, getting ready to steal Mother Earth's moon.

Not if he can help it. His Meteor lacks the fancy lasers the Americans sold to the Martian colonials, but at close range, that doesn't matter. His cannon are firing now, his Su-72 Meteor jerking from the recoil as he sends salvos of tungsten slugs ripping up into the carrier's guts! He imagines what that does to the marines jammed inside.

But Mikhail has committed the cardinal sin of the fighter pilot: He's lost track of the big picture. Two of those Martian fighters from the other carrier have gotten onto an attack vector; they're on his flank! The Novas are boosting at high G and missiles are leaping from each one's launchers. Too late, Mikhail realizes his wingman is gone – Yulia is either out of position or out of fuel, and multiple Martian missiles are closing fast!

He tries to recover. He spins his ship about on its axis as three missiles race toward him. He fires the cannon, kills one missile, dodges a second . . . the last explodes! The grin freezes on his face; that's not a kill, it's the missile warhead fragmenting. Mikhail yanks the fighter into a bone-crushing jink one second too late. A two-pound tungsten rod traveling at two miles per second slams through his fighter's armor, right through the Meteor's fuel bay.

A silent detonation; an expanding globe of light.

Sword Two – Mikhail Kryukov – has just made someone else an ace.

This chapter presents several fighters, carriers, and other small craft created using the **GURPS Spaceships** rules and the new design rules features on pp. 37-40 of this book. Since **GURPS** has no default interstellar background setting, these are a representative mix of hard-science (mostly at TL8-10) and superscience (mostly at TL10-12) vessels. The basic system in **GURPS Spaceships** is modular, so GMs should find it easy to swap out components, drives, and design features so details fit the campaign assumptions.

Note on Computers: The abbreviation "C" is used for Complexity when referring to control station computers, e.g., a "C8 computer" is one with Complexity 8.

AEROSPACE FIGHTERS AND GUNSHIPS

These are fighters and other small combat craft optimized for transatmospheric missions and operations in and around planetary gravity wells. This may be the most “realistic” type of space fighter, since such vessels would require design assumptions different from deep space warships, and this role tends to favor small, specialized craft.

Fighter and gunship pilots are either senior enlisted personnel or junior officers (Rank 2-3). It takes a special kind of person to fly a tiny warship against much larger vessels, and many space-fighter jocks cultivate a fatalistic, daredevil attitude.

RED ARROW AEROSPACE FIGHTER (TL9)

This fighter design is intended to take off like a jet aircraft and then use its rocket engines to fly a hypersonic suborbital trajectory with intercontinental range. It lacks the delta-V to reach orbit on its own, but may serve as the upper stage of a separate space-launch system. Though fast, it's not stealthy.

*Last one to kill a bad guy buys
the beer.*

– Major Don West,
Lost in Space (1998)

It flies too swiftly and too high to be intercepted by ordinary anti-aircraft missiles while over its target area, but its heat signature makes it impossible to hide. It uses a 90'-long, 100-ton streamlined hull (SM +6).

Front Hull System

- [1] Advanced Metallic Laminate Armor (dDR 5).
- [2] Tactical Array (comm/sensor 6).
- [3] Defensive ECM.
- [4] Control Room (C5 computer, comm/sensor 4, and two control stations).

[5] Medium Battery (three fixed mount 20cm missile launchers).

[6] Medium Battery (three fixed mount 20cm missile launchers).

[core] Fuel Tank (five tons rocket fuel with 0.18 mps delta-V).

Central Hull System

[1] Metallic Laminate Armor (dDR 3).

[2-6, core] Fuel Tanks (five tons rocket fuel with 0.18 mps delta-V each).

Rear Hull System

[1] Metallic Laminate Armor (dDR 3).

[2-3] Jet Engines (each provides 1G acceleration in atmosphere).

[4] Chemical Rocket Engine (3G acceleration).

[5-6] Fuel Tanks (each has five tons jet fuel providing a total of one hour's endurance).

It is winged and has emergency ejection. The crew consists of a pilot and a co-pilot.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL9 (AEROSPACE)

9	Red Arrow	30	0/4	12	3G/1.26 mps*	100	0.2	+6	2SV	5/3/3	0	\$7.27M
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* When not using jet engines. In atmosphere, acceleration is 5G and top air speed is 5,600 mph with both the jet engines and the rocket (2G and 3,500 mph with jets alone).

METEOR AEROSPACE FIGHTER (TL9^)

This is a tough little single-seat fighter, armed with cannon and missiles for close-combat engagements and ground support. Almost a retrotech design, it is lightly armored with high acceleration. Its primary function is to intercept missiles and fighters attacking its carrier or base, but it also performs local space patrol, anti-shipping, deep-strike, and escort missions. Its main maneuver drive is a dirty but efficient nuclear saltwater rocket, augmented by jet engines for quieter (and less polluting) atmospheric flight. It uses a 60'-long, 30-ton streamlined hull (SM +5).

Front Hull System

[1-2] Advanced Metallic Laminate Armor (total dDR 6).

[3] Major Battery (fixed mount with 25mm very rapid fire conventional gun).

[4-5] Medium Batteries (three fixed mount 16cm missile launchers each).

[6] Control Room (C4 computer, comm/sensor 3, and one control station).

Central Hull System

[1-2] Metallic Laminate Armor (total dDR 4).

[3-4] Fuel Tanks (1.5 tons of jet fuel; powers both jet engines for 1 hour).

[5] Defensive ECM.

Central Hull	System
[6, core]	Fuel Tanks (1.5 tons uranium-saltwater fuel with delta-V 2.5 mps each).
Rear Hull	System
[1-2]	Metallic Laminate Armor (total dDR 4).
[3-4]	Nuclear Saltwater Rocket Engines (2G acceleration each).

Rear Hull	System
[5-6]	Jet Engines (1G acceleration each in atmosphere).
[core]	Fuel Tank (1.5 tons of uranium-saltwater fuel with delta-V 2.5 mps).

It has wings and emergency ejection. Typical crew is a single pilot.

TL *Spacecraft* **dST/HP** **Hnd/SR** **HT** **Move** **LWt.** **Load** **SM** **Occ** **dDR** **Range** **Cost**

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9 [^]	<i>Meteor</i>	20	0/4	12	4G/7.5 mps*	30	0.1	+5	1SV	6/4/4	0	\$2.65M
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* When not using jet engines. In atmosphere, Hnd//SR is +4/5, acceleration is 6G, and top air speed is 6,100 mph with both the jet engines and the rockets (2G and 3,500 mph with jets alone).

SHRIKE AEROSPACE FIGHTER-BOMBER (TL10)

This vessel is intended to be launched by spacecraft in low orbit to engage orbital defenses and to strike ground targets. It can then land, or it can dive into the atmosphere to release ordinance and skip back up to a higher orbit. It uses a 100-ton (SM +6) 90'-long streamlined hull.

Front Hull	System
[1-2]	Nanocomposite Armor (total dDR 14).
[3]	Tactical Array (comm/sensor 7).
[4!]	Major Battery (fixed mount 30 MJ improved laser).
[5]	Secondary Battery (10 fixed mount 16cm missile launchers).
[6]	Control Room (C7 computer, comm/sensor 5, and two control stations).
Central Hull	System
[1]	Nanocomposite Armor (dDR 7).
[2]	Fuel Cell (one Power Point with 24-hour endurance).
[3-6, core]	Fuel Tanks (five tons antimatter-catalyzed hydrogen with 1.08 mps delta-V each).

Rear Hull	System
[1]	Nanocomposite Armor (dDR 7).
[2-6]	High-Thrust Antimatter Thermal Rockets (0.4G each).
[core]	Fuel Tank (five tons antimatter-catalyzed hydrogen with 1.08 mps delta-V).

It has wings and emergency ejection. The crew consists of a pilot and co-pilot.



TL *Spacecraft* **dST/HP** **Hnd/SR** **HT** **Move** **LWt.** **Load** **SM** **Occ** **dDR** **Range** **Cost**

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10	<i>Shrike</i>	30	0/4	12	2G/6.48 mps	100	0.2	+6	2SV	14/7/7	0	\$8.13M
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In atmosphere, Hnd//SR is +4/5 and top air speed is 3,500 mph.

DRAGON ORBITAL GUNSHIP (TL10[^])

This "flying tank" is a massively armored war machine built for orbital and planetary battles, although it can serve as a credible deep space fighter if necessary. The *Dragon* has a 100-ton (SM +6), 60', streamlined hull. Its main armament is a powerful plasma gun in a rotating turret, backed up by a Gauss gun and vertical-launch rear missile batteries. It uses a

standard reactionless drive for thrust, augmented by contra-gravity lifters, minimizing emissions and allowing safe operation in built-up population centers.

Front Hull	System
[1-5]	Hardened Nanocomposite Armor (total dDR 35).
[6]	Defensive ECM.
[core]	Control Room (C7 computer, comm/sensor 5, and two control stations).

Central Hull System

- [1-3] Hardened Nanocomposite Armor (total dDR 21).
- [4!] Major Battery (turret with 30 MJ plasma beam).
- [5!] Major Battery (turret with 3cm very rapid fire electromagnetic gun).
- [6] Secondary Battery (10 fixed mount 16cm missile launchers).
- [core!] Contragravity Lifter.

Rear Hull System

- [1-2] Hardened Nanocomposite Armor (dDR 14).
- [3-4!] Standard Reactionless Engines (0.5G acceleration each).
- [5-6] Fusion Reactors (two Power Points each).

It has stealth and dynamic chameleon hull options. The crew consists of a pilot/commander and a gunner/sensor operator.

The Utility of Fighters

Fighters are best employed in situations where large numbers of small, relatively expendable craft offer an advantage. For example, if the technological background is such that a single nuclear or high-velocity missile can conceivably destroy any target regardless of size, it may make sense to split combat power into a swarm of smaller targets. Fighters are a defense to counter enemy fighters, drones, or missiles. They also provide flexibility since a wing of several dozen breaks into smaller squadrons, pairs, or individual vessels as needed.

Many fighters have higher accelerations than larger warships, and use maneuver drives with plenty of thrust but relatively poor fuel efficiency, such as chemical or fission rockets. They lack long-term accommodations and onboard maintenance facilities, and so are based at spaceports or aboard larger ships.

Even a small group of fighters can be useful in situations where having a fast vessel is important. For example, a patrol ship might carry a couple in its hangar so they can overtake vessels that outrun the mother ship.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10[^] Dragon 30 0/4 12 1G/c 100 0.2 +6 2SV 35/21/14* 0 \$17.05M

* Hardened.

In atmosphere, Hnd//SR is +2/5 and top air speed is 2,500 mph.

ASSAULT CARRIERS

An *assault carrier* (or assault ship) transports invasions or raiding forces of troops and equipment across interplanetary or interstellar distances. A typical ship is home to a detachment of space marines or other specially trained assault troops, which has its own integral squadron of drop ships (pp. 16-18) and boarding craft (pp. 22-24). To support these, an assault carrier may have extensive maintenance, docking, and repair facilities. They are not optimized for ship-to-ship battles, but some designs have respectable protection and fire-power for self-defense and planetary bombardment.

These vessels are not just used by navies: a mercenary company, warrior clan, or feudal warlord may have their own assault carrier, serving as a mobile base for mercenary operations or planetary raiding.

The crew and combat troops aboard an assault carrier may come from different military services, e.g., navy and marines. If so, parts of the ship may be divided into “spacer country” and “trooper country,” with a certain social distance between the two contingents. Even so, unlike soldiers carried as passengers on a transport, an assault carrier’s troops are permanent residents. They work closely with the crew, and have duties like providing shipboard security, boarding parties, and auxiliary damage control. They may also help man a ship’s weapons and small craft.

In a full-scale war, one or more assault carriers serve as the centerpiece of an invading task force, escorted by battleships, cruisers, or frigates. In conflicts where one side has space superiority, they may deploy unescorted assault carriers as independent raiders. In peacetime or small colonial wars, single assault carriers serve as excellent platforms for peacekeeping, punitive expeditions, and disaster-relief operations.

OVERLORD-CLASS ASSAULT CARRIER (TL10)

It can take many months to travel through space, and supplying an interplanetary invasion can be a crippling logistics problem. Rather than shipping troops and supplies, the 1,000'-long *Overlord*-class functions as an entire mobile military-industrial complex! If necessary, it can combine onboard ultra-tech components with locally mined resources (e.g., from an asteroid belt) to build a complete battle fleet and army. This takes time and it is much more efficient to simply use those factories to support an existing invasion force or occupation, manufacturing munitions, spare parts, and replacement units as necessary. The vessel’s large sickbay also lets it double as a hospital ship. *Overlord*-class ships are built with a 300,000-ton (SM +13) unstreamlined hull.

Front Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 100).
[2]	Habitat (six briefing rooms, 1,560 cabins, five gyms, two labs, 100 luxury cabins, two ops centers, and 200-bed sickbay).*
[3]	Tactical Array (comm/sensor 14).*
[4]	Hangar Bay (10,000 tons).*
[5]	Tertiary Battery (30 turrets with 48cm missile launchers).*
[6!]*	Chemical Refinery (5,000 tons/hour).*
[core]	Control Room (C10 computer, comm/sensor 12, and 30 control stations).*

Central Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 100).
[2!]	Secondary Battery (10 turrets each with 10 GJ UV lasers).*
[3!]	Robofac (\$30M per hour production).*
[4]	Hangar Bay (10,000 tons).*

Central Hull	System
[5]	Cargo Hold (15,000 tons).
[6!]	Mining (1,500 tons/hour).*
Rear Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 100).
[2-3]	Fusion Rocket Engines (0.005G acceleration each).*
[4-6]	Fuel Tanks (15,000 tons hydrogen providing 60 mps delta-V each).
[core]	Fusion Reactor (two Power Points).*

* 30 workspaces per system.

It has spin gravity (0.7G) and exposed radiators.

Typical crew (per shift) is 30 bridge operators (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, communication officer, tactical officer, and laser gunners), 40 gunners, 390 technicians, 20 medics, and 20 ops-center crew, plus whatever personnel are required for the mix of small craft carried aboard.

TL	Spacecraft	dSTI/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
PILOTING/TL10 (LOW-PERFORMANCE SPACECRAFT)												
10	Overlord-class	500	-5/5	14	0.01G/180 mps	300,000	35,332	+13	3,320ASV	100	0	\$58.692B

RANGER-CLASS ASSAULT CORVETTE (TL10^)

This sleek, 3,000-ton (SM +9) 400' streamlined starship is a well-armored and well-armed multipurpose warship intended to carry a mechanized platoon or company across interstellar space to a hostile battlefield. Its small size makes it most suitable for commando raids and mercenary operations rather than major invasions.

Thanks to its fusion torch drive, the *Ranger* has enough thrust and delta-V to take off from or land on a planet – there's no need to carry drop ships, and it can deploy armored vehicles, battlesuits, fighting robots, or trucks directly out of its hangars. Its delta-V is modest, but it uses its star drive for any long voyages. In addition, it can rely on its fusion ram rockets to operate indefinitely (without consuming fuel) in a planetary atmosphere, serving as a flying carrier ship.

Front Hull	System
[1-2]	Nanocomposite Armor (total dDR 40).
[3]	Tactical Array (comm/sensor 10).
[4-5]	Hangar Bays (100 tons each).
[6!]	Major Battery (fixed mount 20cm electromagnetic gun).
[core]	Control Room (C8 computer, comm/sensor 8, and six control stations).

Central Hull	System
[1-2]	Nanocomposite Armor (total dDR 40).
[3]	Secondary Battery (four turrets with 3.5cm very rapid fire conventional guns, six turrets with 28cm missile launchers).
[4]	Habitat (eight cabins, eight bunkrooms, and four-bed automated sickbay).
[5]	Habitat (20 bunkrooms).
[6!]	Stardrive Engine (FTL-1).
Rear Hull	System
[1]	Nanocomposite Armor (dDR 20).
[2-3]	Fuel Tanks (150 tons hydrogen providing 7.5 mps delta-V each).
[4-5]	High-Thrust Fusion Torch Engines (ram rockets, 1G acceleration each).
[6]	Engine room (two workspaces).
[core]	Fusion Reactor (two Power Points).

Mercenaries praise this versatile ship.

The typical complement is six bridge crew (pilot, captain, navigator/sensor officer, major battery gunner, engineering officer, and comm officer), 10 gunners, and two technicians.

TL	Spacecraft	dSTI/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)												
10^	Ranger-class	100	-1/5	13	2G/15 mps	3,000	212.8	+9	128ASV	40/40/20	1x	\$331M

Top air speed is 3,500 mph.

WARRIOR-CLASS ASSAULT CARRIER (TL10[^])

This lightly armed troop carrier is designed to transport a reinforced battalion across interplanetary or interstellar space. It is built with a 30,000-ton (SM +11) 300' unstreamlined hull. A *Warrior* has no planetary landing and takeoff capability, relying entirely on shuttles or drop ships. Spin gravity is provided to ensure the landing force can be properly acclimated to the target.

Front Hull System

- [1] Advanced Metallic Laminate Armor (dDR 50).
- [2] Cargo Hold (1,500 tons).
- [3-4] Hangar Bays (1,000 tons each).*
- [5] Secondary Battery (10 fixed mounts with 40cm missile launchers).*
- [6] Habitat (170 cabins and 30-bed sickbay)*.
- [core] Control Room (C9 computer, comm/sensor 10, and 15 control stations).*

Central Hull System

- [1] Advanced Metallic Laminate Armor (dDR 50).
- [2-3] Habitats (20 cabins and 180 bunkrooms each).*

Central Hull System

- [4!] Secondary Battery (five turrets each with 1 GJ UV lasers, and five turrets each with 10cm rapid-fire electromagnetic guns).*
- [5-6] Fuel Tanks (1,500 tons of hydrogen providing 15 mps delta-V each).

Rear Hull System

- [1] Advanced Metallic Laminate Armor (dDR 50).
- [2] Fuel Tank (1,500 tons hydrogen providing 15 mps delta-V).
- [3-4] Fusion Torch Engines (0.5G acceleration each).*
- [5-6!] Stardrive Engines (FTL-1 each).*
- [core] Fusion Reactor (two Power Points).*

* Three workspaces per system.

It has spin gravity (0.3G).

Typical crew (per shift) is 15 bridge operators (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, communication officer, and tactical officer), 39 technicians, and one medic, plus whatever crews are required for the mix of small craft carried.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10 [^]	Warrior-class	200	-2/5	13	1G/45 mps	30,000	3,686	+11	1,860ASV	50	2x	\$2.769B
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VIKING-CLASS PLANETARY ASSAULT CARRIER (TL11[^])

These gigantic vehicles are designed for power projection and planetary siege operations. Each can transport an entire mechanized army across interstellar distances and land it directly onto a planetary battlefield. A single ship is all that is needed to conquer a colonial planet, while a *Viking* squadron can mount a credible invasion of a civilized, high-population world. Although not a battleship, this assault carrier is heavily armored and equipped with a missile array that rivals a destroyer squadron. This enables it to defeat space defense platforms and provide orbital artillery support.

Its most distinctive feature is its three cavernous loading bays (two for hangars, one for cargo), one under the vessel and one on either side of its rim. Missile ports and gun batteries are also spaced along the ship's equator. When it lands, it rests on six gigantic landing legs. It uses a 3,000,000-ton (SM +15) 2,000' unstreamlined hull.

Front Hull System

- [1-2] Diamondoid Armor (total dDR 1,000).
- [3!] Heavy Force Screen (dDR 1,000, or dDR 2,000 with two Power Points).*
- [4] Habitat (500 cabins and 9,500 bunkrooms with total life support).*
- [5] Habitat (200 luxury cabins and 8,800 cabins with total life support, 4,000 tons cargo, 50 briefing rooms, 25 gyms, four large ops centers, and 300-bed hospital sickbay).*

Front Hull System

- [6] Tertiary Battery (30 fixed mounts with 64cm missile launchers).*

Central Hull System

- [1-2] Diamondoid Armor (total dDR 1,000).
- [3] Hangar Bay (100,000 tons).*
- [4-5!] Stardrive Engines (FTL-1 each).*
- [6!] Tertiary Battery (20 turret mounts with very rapid fire 300 MJ improved UV lasers, and 10 turret mounts with 16cm rapid-fire grav guns).*
- [core] Control Room (C12 computer, comm/sensor 15, and 60 control stations).*

Rear Hull System

- [1-2] Diamondoid Armor (total dDR 1,000).
- [3!] Super Reactionless Engine (50G acceleration).*
- [4-5] Cargo Holds (150,000 tons each).
- [6] Hangar Bay (100,000 tons).*
- [core] Super Fusion Reactor (four Power Points).*

* 300 workspaces per system.

It has artificial gravity and gravitic compensators.

Typical crew includes 60 bridge operators (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, communication officer, and tactical officer), 3,600 technicians, 30 medics, and any crew for the small craft. It has room for over 50,000 troops, supply personnel, and planning staff to support operations.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11^ *Viking-class* 1,000 -2/5 13 50G/c 3,000,000 509,700 +15 57,000ASV 1,000* 2x \$558.6B

* Plus dDR 1,000 force screen (dDR 2,000 if reinforced with second Power Point).

Top air speed is 1,800 mph.

DEEP SPACE FIGHTERS

These vessels are unstreamlined fighters designed primarily for space combat. Those used at TL8-9 are sometimes referred to as orbital fighters. They're housed aboard space stations or carriers, or in bases on asteroids and small moons. They have better armor than atmospheric fighters since their shapes are not compromised by the need for streamlining.



In order to be cost-effective, deep space fighters require the GM to make certain design assumptions. Space fighters are obvious analogs to the naval aircraft carried by modern wet-navy carriers. However, those exist because airplanes and ships operate in different mediums (air and water) and so complement one another. Airplanes are faster than seagoing ships, but ships have much greater endurance and range. For deep space fighters to be practical, there must be similar useful design differences between big and small warships. For instance, the fighters may be designed with drives optimized for high accelerations, while larger vessels are built for high delta-V or faster-than-light travel. This tweak is easier to justify with superscience technologies; if realistic drives are used, a deep space fighter is significantly inferior to unmanned drones or missiles, since the latter don't have to worry about carrying the fuel to return to base!

Superscience not only makes deep space fighters more practical, it merges the "aerospace" and "deep space" classes with drives powerful enough that they can perform both roles with little loss of capability.

In some settings, stardrives are small enough to fit into fighters, giving them long-range strike, scouting, and patrol capabilities. Star fighters usually lack the habitats of larger ships and so are only practical if the technology permits interstellar flights that are instant or last only a few days.

Deep space fighter pilots are typically Rank 2-3 senior enlisted personnel or junior officers.

NOVA SPACE FIGHTER (TL9)

This is a two-seat chemical-rocket engine space fighter. It's intended for launch by carrier spacecraft that have high delta-V but low-thrust drives. It uses a 100-ton (SM +6) 50' unstreamlined hull. While its own delta-V is mediocre, it can burn it very rapidly. The high thrust provided by its rocket engines gives it great maneuverability, although the HEDM fuel used is more volatile than many crews would like. The fighter's usual tactic is to deliver kinetic-kill weapons while on an intercept course, then break off and return to rearm. With its limited fuel supply, there's a risk of drifting in space, especially if its own side's carriers are destroyed or retreat.

Front Hull System

- [1-2] Advanced Metallic Laminate Armor (total dDR 14).
- [3-4] Major Batteries (one fixed mount 24cm missile launcher each).
- [5!] Major Battery (fixed mount 30 MJ laser).
- [6] Tactical Array (comm/sensor 6).
- [core] Control Room (C5 computer, comm/sensor 4, and two control stations).

Central Hull System

- [1] Advanced Metallic Laminate Armor (dDR 7).
- [2-5] Fuel Tanks (five tons HEDM fuel with 0.6 mps delta-V each).
- [6!] Major Battery (turret with 3 MJ rapid fire laser).
- [core] MHD Turbine (two Power Points).

Rear Hull System

- [1] Advanced Metallic Laminate Armor (dDR 7).
- [2-3] Two HEDM Rocket Engines (2G acceleration each).
- [4-6] Fuel Tanks (five tons HEDM fuel with 0.6 mps delta-V each).

The crew consists of a pilot and a co-pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9 *Nova* 30 0/4 12 4G/4.2 mps 100 0.2 +6 2SV 14/7/7 0 \$5.31M

PANTHER HEAVY FIGHTER (TL10)

This heavily armored but short-ranged fighter is built for close-range slugging matches. It uses antimatter thermal rockets for propulsion, which provide it with superior delta-V to ships using chemical engines, but offer higher thrust than fusion rockets. It is built on a 60' unstreamlined hull massing 100 tons (SM +6).

Front Hull System

[1-4]	Nanocomposite Armor (total dDR 40).
[5-6!]	Major Batteries (fixed mount 30 MJ particle beam each).

Front Hull System

[core]	Control Room (C7 computer, comm/sensor 5, and two control stations).
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Central Hull System

[1-3]	Nanocomposite Armor (total dDR 30).
[4-6]	Fuel Tanks (five tons antimatter-catalyzed hydrogen with 1.8 mps delta-V each).

Rear Hull System

[1-2]	Nanocomposite Armor (total dDR 20).
[3-5]	Three Antimatter Thermal Rockets (0.2G each).
[6]	Defensive ECM.
[core]	Fusion Reactor (two Power Points).

The crew consists of a pilot and a co-pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10	<i>Panther</i>	30	-1/4	12	0.6G/5.4 mps	100	0.2	+6	2SV	40/30/20	0	\$9.49M
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LANCER DEEP SPACE FIGHTER (TL10^)

This long-range interplanetary space fighter is designed to boost to high speed, to catch and kill high-velocity threats before they reach its carrier or base. It uses a 100-ton (SM +6), 60' unstreamlined hull. Its forward hull is heavily armored, as it relies on head-on attacks using its lethal spinal mount.

Front Hull System

[1-4]	Hardened Nanocomposite Armor (total dDR 40).
[5!]	Spinal Battery (100 MJ particle beam).
[6]	Tactical Array (comm/sensor 7).
[core]	Control Room (C7 computer, comm/sensor 5, and two control stations).

Central Hull System

[1-2]	Hardened Nanocomposite Armor (total dDR 20).
[3-5]	Fuel Tanks (five tons fuel and 5 mps delta-V each).
[6!]	Major Battery (turret with 30 MJ improved laser).
[core!]	Spinal Battery (central system).

Rear Hull System

[1-2]	Hardened Nanocomposite Armor (total dDR 20).
[3-4]	Fusion Torch Engines (water reaction mass, 1.5G each).
[5!]	Spinal Battery (rear system).
[6]	Antimatter Reactor (four Power Points).

The crew consists of a pilot and a co-pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10^	<i>Lancer</i>	30	0/4	12	3G/15 mps	100	0.2	+6	2SV	40/20/20*	0	\$17.39M
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* Hardened.

TYPHOON SPACE FIGHTER (TL11^)

This is a small but effective 20-foot long, single-seat, space-superiority fighter. It's designed for maximum agility and heavy forward firepower. It uses a 10-ton (SM +4) hull. The *Typhoon* might be suitable for mass production by an interstellar empire. Despite its lack of streamlining the tremendous acceleration of its super fusion torch gives it a decent air speed, so in a pinch it can also be used as an aerospace fighter.

Front Hull System

[1-3]	Hardened Nanocomposite Armor (total dDR 15).
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Front Hull System

[4-5!]	Major Batteries (3 MJ X-ray laser each).
[6]	Tactical Array (comm/sensor 6).
[core]	Control Room (C7 computer, comm/sensor 4, and one control station).

Central Hull System

[1-2]	Hardened Nanocomposite Armor (total dDR 10).
[3-4]	Defensive ECM.
[5-6]	Super Fusion Reactors (four Power Points each).
[core]	Fuel Tank (0.5 tons hydrogen with 450 mps delta-V).

<i>Rear Hull</i>	<i>System</i>
[1-2]	Hardened Nanocomposite Armor (total dDR 10).
[3-6!]	Super Fusion Torch Engine (50G acceleration each).

It has emergency ejection and gravitic compensators. Typical crew is a single pilot.

The Y-Wing is the workhorse of the Rebel fleet.

*– General Rieekan,
Star Wars: Rogue Squadron*

<i>TL</i>	<i>Spacecraft</i>	<i>dST/HP</i>	<i>Hnd/SR</i>	<i>HT</i>	<i>Move</i>	<i>LWt.</i>	<i>Load</i>	<i>SM</i>	<i>Occ</i>	<i>dDR</i>	<i>Range</i>	<i>Cost</i>
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PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11 [^]	<i>Typhoon</i>	15	+2/4	12	200G/450 mps	10	0.1	+4	1SV	15/10/10*	0	\$3.483M
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* Hardened.

Air speed is 3,500 mph.

STARHAWK STAR FIGHTER (TL11[^])

This small space-superiority interstellar fighter is a fast, agile design intended for dogfights and strafing. It is thin-skinned but heavily protected by a defensive force screen. However, its reliance on screens and energy weapons strain its power-generation capability; it can't operate every system at once! Unusual for fighters, it has an engine room (often manned by a robot) for repairs. The *Starhawk's* 45' streamlined hull masses 30 tons (SM +5).

<i>Front Hull</i>	<i>System</i>
[1]	Hardened Nanocomposite Armor (dDR 5).
[2]	Major Battery (fixed mount 20cm missile launcher).
[3-6!]	Major Batteries (fixed mount 10 MJ X-ray laser each).

Central Hull *System*

[1]	Hardened Nanocomposite Armor (dDR 5).
[2]	Tactical Array (comm/sensor 7).
[3]	Fuel Tank (1.5 tons hydrogen with 450 mps delta-V).
[4]	Engine Room (one workspace).
[5!]	Light Force Screen (dDR 20).
[6]	Defensive ECM.
[core]	Control Room (C7 computer, comm/sensor 5, and one control station).

Rear Hull *System*

[1]	Hardened Nanocomposite Armor (dDR 5).
[2-5]	Super Fusion Torch Engines (50G acceleration each).
[6!]	Stardrive Engine (FTL-1).
[core]	Super Fusion Reactor (four Power Points).

It has wings and gravitic compensators. Typical crew is a single pilot.

<i>TL</i>	<i>Spacecraft</i>	<i>dST/HP</i>	<i>Hnd/SR</i>	<i>HT</i>	<i>Move</i>	<i>LWt.</i>	<i>Load</i>	<i>SM</i>	<i>Occ</i>	<i>dDR</i>	<i>Range</i>	<i>Cost</i>
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PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11 [^]	<i>Starhawk</i>	20	+2/4	13	200G/450 mps	30	0.1	+5	1SV	5*	1x	\$9.115M
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* Hardened; add dDR 20 if force screen is powered up.

In atmosphere, Hnd//SR is +5/5 and top air speed is 35,000 mph.

WYVERN STAR FIGHTER (TL11[^])

This is a heavily armored, long-range, interstellar fighter-bomber built for raiding and deep-strike missions. It is fast and well-protected with a mix of armor and force screens, as well as a defensive turret. It uses a 60-foot long, 100-ton (SM +6) unstreamlined hull. Despite the lack of aerodynamics, its powerful fusion engines provide sufficient thrust to blast off from a terrestrial world. Unlike most fighters, it has a habitat with a cabin to provide additional comfort and life support on long missions.

Front Hull *System*

[1-2]	Hardened Nanocomposite Armor (total dDR 20).
[3-4!]	Major Batteries (fixed mount 30 MJ improved UV laser each).
[5]	Control Room (C8 computer, comm/sensor 6, and two control stations).
[6]	Medium Batteries (three fixed mount 20cm missile launchers).

Central Hull *System*

[1]	Hardened Nanocomposite Armor (dDR 10).
[2]	Habitat (one cabin).

Central Hull System

- [3!] Stardrive Engine (FTL-1).
- [4] Tactical Array (comm/sensor 8).
- [5!] Major Battery (turret with 30 MJ improved UV laser).
- [6!] Stardrive Engine (FTL-1).
- [core] Super Fusion Reactor (four Power Points).

Rear Hull System

- [1] Hardened Nanocomposite Armor (dDR 10).
- [2-3] Super Fusion Torch Engines (using water; 150G acceleration each).
- [4-5] Fuel Tanks (five tons water with 150 mps delta-V each).

Rear Hull System

- [6] Defensive ECM.
- [core!] Light Force Screen (dDR 30).

It has gravitic compensators. The crew consists of a pilot and a gunner.

One ship, you, me, and that's it?
*– Alex Rogan, **The Last Starfighter***

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

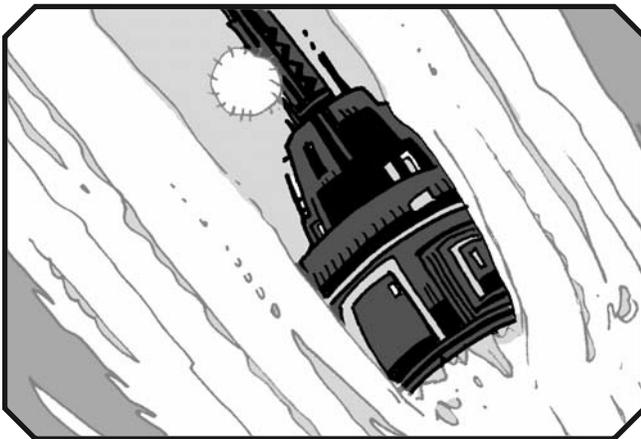
11^ *Wyvern* 30 +2/4 12 300G/300 mps 100 0.2 +6 2ASV 20/10/10* 2x \$23.36M

* Hardened; add dDR 30 if force screen is powered up.

Top air speed is 4,300 mph.

MIRAGE STAR FIGHTER (TL12^)

This is a tiny egg-shaped fighter whose hull is constructed largely of solid force fields. It gets its name from its cloaking device, which lets it vanish entirely from most sensors. When visible, it has the unearthly appearance of shimmering layers of multicolored lights through which can be glimpsed vague hints of the interior. It bristles with superscience weaponry and technology, and its maneuverability is outstanding thanks to a drive that flies rings around adversaries whose mobility is constrained by conventional physics. However, power restrictions



limit how many high-energy systems it can use at once. It has a 10-ton (SM +4) unstreamlined hull about 20 feet long.

Front Hull System

- [1!] Spinal Mount (fixed mount 10 MJ disintegrator beam).
- [2-3] Defensive ECM.
- [4] Multipurpose Array (comm/sensor 7).
- [5-6!] Major Battery (16cm warp missile launcher each).

Central Hull System

- [1-2!] Stardrive Engines (FTL-1 each).
- [3] Control Room (C8 computer, comm/sensor 5, and one control station).
- [4] Defensive ECM.
- [5] Cloaking Device.
- [6!] Major Battery (turret with 3 MJ gamma-ray laser).
- [core!] Spinal Mount (central system).

Rear Hull System

- [1!] Spinal Mount (rear system).
- [2-3] Total Conversion Reactors (five Power Points each).
- [4-6!] Subwarp Drive (500G acceleration each).
- [core!] Heavy Force Screen (dDR 20, or dDR 40 with two Power Points).

It is equipped with artificial gravity and gravitic compensators. Typical crew is a single pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL12 (HIGH-PERFORMANCE SPACECRAFT)

12^ *Mirage* 15 +3/4 12 1,500G/c 10 0.1 +4 1SV 0* 2x \$3.49M

* dDR 20 (dDR 40 if using two Power Points) if force screen is powered up.

Top air speed is 9,700 mph.

DOGFIGHT DRONES

These are small, unmanned space combat vehicles. They are similar to aerospace or deep space fighters except they use automated controls. The lack of a living pilot gives them several advantages.

First, they're expendable; even if AIs are "people," they may be backed up aboard the mother ship or back at base. As they have no parents to weep for them, they are freely sent on suicide missions or even used as kamikazes to ram and destroy valuable targets. A warship that could shrug off a hit from a 10-ton missile will be destroyed if rammed by a fighter massing 30 to 300 tons!

Second, a robot doesn't have to worry about life support, crew fatigue, etc. Automated fighters may be used for any task where persistence is required (e.g., long blockades, or left behind as "booby traps") A retreating force could conceal them in caves or craters on asteroids or airless moons to avoid detection.

The Complexity of a spacecraft's computer system governs how powerful an AI it can use. See pp. 25-28 of *GURPS Ultra-Tech* for detailed AI software rules. In some universes, robot fighters have intelligence comparable or even superior to biological pilots. If so, there's not much point in bothering with other types of fighters! However, in most traditional science fiction the key disadvantage of such spacecraft is the AIs that pilot them lack the creativity and skill of their human counterparts, following preprogrammed, standardized tactics and not deviating from orders. GMs may simulate this by ensuring all AI software capable of running in a small vessel's computer is limited to programs with the Automaton meta-trait – and perhaps lowering their skills relative to average human pilots. The weak, dedicated AI and non-volitional AI (*GURPS Ultra-Tech*, pp. 27-28) are examples of such limited intelligences; the same pages also describe more sophisticated systems.

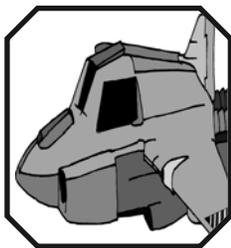
TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL8 (HIGH-PERFORMANCE SPACECRAFT)

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
8	ASAT	15	-1/3	12	3G/1.89 mps	10	0	+4	0	2	0	\$687K

ASSEGAI DOGFIGHT DRONE (TL9)

This heavily armored combat drone features an unstreamlined hull massing only 10 tons (SM +4) and 25 feet long. Intended for close encounters, it has high acceleration at the expense of top speed. Like many dogfight drones, it is designed as a recoverable fighter vs. smaller targets but to intercept and ram larger foes.



Front Hull System

- [1-4] Hardened Advanced Metallic Laminate Armor (total dDR 12).
- [5!] Major Battery (turret with 8cm electromagnetic gun).

ASAT INTERCEPTOR (TL8)

This small, 10-ton (SM +4) anti-satellite (ASAT) interceptor can't get into space on its own. It is launched from another spacecraft or carried up aboard a shuttle or booster rocket. Some ASATs are assigned to escort friendly satellites; others are launched into orbital paths that intercept high-value enemy satellites or space stations. Its high-G chemical rocket engine only has enough delta-V to adjust its orbit a few times and perform some final combat maneuvers; the rest of its operation relies on a barrage of missiles and (if necessary) ramming. Its body is an unstreamlined hull about 30 feet long.

Front Hull System

- [1] Metallic Laminate Armor (dDR 2).
- [2-4] Major Batteries (16cm missile launcher each).
- [5] Defensive ECM.
- [6] Tactical Array (comm/sensor 3).
- [core] Control Room (C2 computer, comm/sensor 1, and no control station).

Central Hull System

- [1] Metallic Laminate Armor (dDR 2).
- [2] Major Battery (16cm missile launcher).
- [3-6] Fuel Tanks (0.5 tons rocket fuel with 0.21 mps delta-V each).

Rear Hull System

- [1] Metallic Laminate Armor (dDR 2).
- [2] Chemical Rocket Engine (3G acceleration).
- [3-6, core] Fuel Tanks (0.5 tons rocket fuel with 0.21 mps delta-V each).

Computer-controlled with no crew.

Front Hull System

- [6!] Major Battery (turret with 3 MJ laser).
- [core] Control Room (C4 computer, comm/sensor 2, and no control stations).

Central Hull System

- [1-2] Advanced Metallic Laminate Armor (total dDR 6).
- [3-6] Fuel Tanks (0.5 tons of antimatter-catalyzed water with 0.72 mps delta-V each).
- [core] MHD Turbine (two Power Points).

Rear Hull System

- [1-2] Hardened Advanced Metallic Laminate Armor (total dDR 6).
- [3-4] Fuel tanks (0.5 tons of antimatter-catalyzed water with 0.72 mps delta-V each).
- [5-6] Antimatter Thermal Rocket Engines (using water, 0.3G each).

Computer-controlled with no crew.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9 *Assegai* 15 -1/4 12 0.6G/4.32 mps 10 0 +4 0 12/6/6* 0 \$618K

* Front and rear armor is hardened.

NIGHTGAUNT DOGFIGHT DRONE (TL10^)

This is a compact limited-superscience combat drone with tough armor and a high-G fusion drive that provides outstanding maneuverability. It relies on its powerful particle beam for close combat. It uses a 10-ton (SM +4) unstreamlined hull 30 feet long.

Front Hull System

[1-4] Hardened Nanocomposite Armor (total dDR 20).

[5!] Spinal Battery (10 MJ particle beam).

[6] Tactical Array (comm/sensor 5).

[core] Control Room (C6 computer, comm/sensor 3, and no control stations).

Central Hull System

[1-2] Nanocomposite Armor (total dDR 10).

[3-5] Fuel Tanks (0.5 tons fuel and 2.5 mps delta-V each).

Central Hull System

[6] MHD Turbine (two Power Points).

[core!] Spinal Battery (central system).

Rear Hull System

[1-2] Hardened Nanocomposite Armor (total dDR 10).

[3-4] High-Thrust Fusion Torch Engines (water reaction mass, 3G each).

[5!] Spinal Battery (rear system).

[6] MHD Turbine (two Power Points).

Computer-controlled with no crew.

*Out of what crypt they crawl,
I cannot tell . . .*

– H.P. Lovecraft, “Night-Gaunts”

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10^ *Nightgaunt* 15 0/4 12 6G/7.5 mps 10 0 +4 0 20/10/10* 0 \$1.389M

* Front and rear armor is hardened.

HORNET DRONE STAR FIGHTER (TL11^)

This is an inexpensive robotic star fighter equipped with a faster-than-light drive. Its SM +5 unstreamlined hull masses 30 tons and is 30 feet long. Despite the lack of streamlining, its high thrust allows it to operate easily in atmosphere.

Front Hull System

[1-3] Hardened Nanocomposite Armor (total dDR 21).

[4] Tactical Array (comm/sensor 7).

[5-6!] Major Batteries (fixed mount 10 MJ X-ray laser each).

Central Hull System

[1-2] Nanocomposite Armor (total dDR 14).

[3!] Light Force Screen (dDR 20).

[4] Defensive ECM.

[5-6] Fuel Tanks (1.5 tons hydrogen with 225 mps delta-V each).

[core] Control Room (C7 computer, comm/sensor 5, and no control stations).

Rear Hull System

[1-2] Nanocomposite Armor (total dDR 14).

[3-5] High-Thrust Super Fusion Torch Engines (100G acceleration each).

[6!] Stardrive Engine (FTL-1).

[core] Antimatter Reactor (four Power Points).

It has a stealth hull. Computer-controlled with no crew.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11^ *Hornet* 20 +2/4 12 300G/450 mps 30 0 +5 0 21/14/14* 1x \$7.63M

* Front armor is hardened; add dDR 20 if force screen is powered up.

Top air speed is 4,300 mph.

DROP SHIPS

Drop ships are armored pods or shuttlecraft intended to transport troops, military vehicles, and supplies between orbit and a planetary surface. Some also carry weapons, for self-defense or to secure a landing zone. Drop ships have good maneuverability and high acceleration. They demand the best from their pilots, who train to make dangerous maneuvers in both space and atmosphere, performing combat assaults, close support, and rescue missions. Their crews think of themselves as an elite, with a “hotshot” attitude similar to that of fighter jocks.

Drop ships are based aboard assault carriers (pp. 7-10) or other warships that have a troop contingent. Noncommissioned officers or lieutenants (Rank 2-3) command them and they have only small-craft crew members. In some military forces, drop ships are owned and crewed by marines or other ground-force organizations rather than naval personnel.

BOLIDE ASSAULT POD (TL8)

Built using an unstreamlined 10-ton (SM +4) hull 50 feet long, this is a well-armored pod equipped with heat shields and parachutes. It is released from a hangar bay as part of an orbital assault. It has no propulsion system and is intended for one-way “kick in the door” assaults. (For rules on using its

soft-landing system, see *Atmospheric Landings*, **GURPS Spaceships**, p. 40.) The craft carries seven troops and a half-ton of supplies or weapons. There’s no pilot – the *Bolide* is under computer control for the trip down. It carries two soft-landing systems, one for redundancy. It is unarmed but stealthy and fitted with extensive ECM systems.

Front Hull System

[1-2]	Metallic Laminate Armor (total dDR 4).
[3-4]	Soft Landing System.
[5-6]	Passenger Seats (one passenger each).
[core]	Control Room (C2 computer, comm/sensor 1, and no control stations).

Central Hull System

[1-2]	Metallic Laminate Armor (total dDR 4).
[3]	Defensive ECM.
[4-6, core]	Passenger Seats (one passenger each).

Rear Hull System

[1-2]	Metallic Laminate Armor (total dDR 4).
[3]	Passenger Seat (one Passenger).
[4]	Cargo Hold (0.5 tons capacity).
[5-6]	Defensive ECM.

It has a stealth hull. Computer-controlled with no crew.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL8 (HIGH-PERFORMANCE SPACECRAFT)

8	<i>Bolide</i>	15	–	12	0	10	1.2	+4	0+7SV	4	0	\$580K
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VALKYRIE-CLASS DROP SHIP (TL9)

This drop ship is an armed assault shuttle designed to carry a single armored vehicle. It uses a winged, streamlined hull massing 300 tons (SM +7) and is 150 feet long. An HEDM chemical rocket supplies propulsion, with an auxiliary jet engine for long-range atmospheric cruising.

Front Hull System

[1]	Advanced Metallic Laminate Armor (dDR 7).
[2]	Medium Battery (turret with 3cm very rapid fire conventional gun, and two fixed mounts with 24cm missile launchers).
[3-4]	Hangar Bays (10 tons capacity each).
[5]	Defensive ECM.
[6]	Fuel Tank (15 tons jet fuel, for 1 hour).

Front Hull System

[core]	Control Room (C5 computer, comm/sensor 5, and three control stations).
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Central Hull System

[1]	Metallic Laminate Armor (dDR 5).
[2-6]	Fuel Tanks (15 tons HEDM fuel with 0.7 mps delta-V each).

Rear Hull System

[1]	Metallic Laminate Armor (dDR 5).
[2]	Jet Engine (1G acceleration).
[3]	HEDM Chemical Rocket (2G acceleration).
[4-6, core]	Fuel Tanks (15 tons HEDM fuel with 0.7 mps delta-V).

It is winged and has a stealth hull.

Typical complement is three bridge crew (a command pilot, a co-pilot, and a gunner). Passengers ride strapped into the vehicle it carries.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL9 (AEROSPACE)

9	<i>Valkyrie-class</i>	50	-1/5	12	2G*/6.3 mps	300	20.3	+7	3SV	7/5/5	0	\$13.76M
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* In atmosphere, may add jet engine’s +1G.

Top air speed is 4,300 mph with both jet and rocket, or 2,500 mph with jet alone. In atmosphere, Hnd/SR is +3/6.

ALEXANDER-CLASS DROP SHIP (TL10[^])

This is a heavy drop ship intended to transport a company-sized landing force. It uses a streamlined hull massing 1,000 tons (SM +8) and is 200 feet long. Its triple-size hangar bay is large enough to carry a heavy tank or a platoon of lighter vehicles, although some of its capacity is often used for non-vehicular cargo (weapons, supplies, etc.). A fusion torch engine is used for propulsion. It uses an auxiliary jet engine for stealthy operations.

Front Hull System

[1-2]	Advanced Metallic Laminate Armor (total dDR 20).
[3-5]	Hangar Bays (30 tons capacity each).
[6]	Secondary Battery (10 fixed mounts with 24cm missile launchers).
[core]	Control Room (C8 computer, comm/sensor 7, and four control stations).

Central Hull System

[1]	Advanced Metallic Laminate Armor (dDR 10).
[2-5]	Fuel Tanks (50 tons water with 2.5 mps delta-V each).
[6, core]	Passenger Seating (60 seats each).

Rear Hull System

[1]	Advanced Metallic Laminate Armor (dDR 10).
[2]	Jet Engine (1G acceleration).
[3]	High-Thrust Fusion Torch Engine (water reaction mass, 3G acceleration).
[4]	Defensive ECM.
[5-6]	Fuel Tanks (each has jet fuel for 1 hour).

It is winged and has stealth and dynamic chameleon hull options.

It has four bridge crew (a command pilot, a co-pilot, a comm/sensor operator, and gunner).

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL10 (AEROSPACE)

10 [^]	Alexander-class	70	-1/5	12	3G/10 mps*	1,000	102.4	+8	4+120SV	20/10/10	0	\$67.2M
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* In atmosphere, may add jet engine's +1G.

Top air speed is 5,000 mph with jet and fusion torch, or 2,500 mph with jet alone. In atmosphere, Hnd/SR is +3/6.

BANSHEE-CLASS DROP SHIP (TL11[^])

Designed with fusion-powered reactionless drives, this compact but powerful drop ship can rapidly transport a section of troops and supplies, plus a light armored vehicle, to and from a planetary surface. It is capable of longer-ranged flights as well, limited only by its lack of a habitat. It uses a streamlined hull massing 100 tons (SM +6) and is 80 feet long.

Front Hull System

[1]	Diamondoid Armor (dDR 10).
[2!]	Major Battery (turret with 30MJ plasma beam).
[3-4]	Passenger Seating (six seats each).
[5]	Defensive ECM.
[6]	Control Room (C8 computer, comm/sensor 6, and two control stations).

Central Hull System

[1]	Diamondoid Armor (dDR 10).
[2-6]	Hangar Bays (3 tons capacity each).
[core!]	Light Force Screen (dDR 30).

Rear Hull System

[1]	Diamondoid Armor (dDR 10).
[2-3]	Cargo Holds (five tons each).
[4-6!]	Super Reactionless Drives (50G acceleration each).
[core]	Super Fusion Reactor (four Power Points).

It has the stealth and chameleon hull options, and gravitic compensators.

There are two bridge crew (a command pilot and a co-pilot/gunner).

Well, we've gotta get the other dropship from the Sulaco. There has to be some way of bringing it down on remote.

— Ripley, Aliens

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11 [^]	Banshee-class	30	+2/4	12	150G/c	100	26.4	+6	2+12SV	10*	0	\$12.16M
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* Add dDR 30 if force screen is powered up.

Top air speed is 31,000 mph.

TUNGUSKU-CLASS DROP SHIP (TL12[^])

Even at high TLs, there is still some need to take and hold ground. This drop ship accelerates at high velocity (often

Search-and-Rescue Craft

Fighter carriers typically assign a couple of vessels to the important duty of rescuing pilots who ejected, ran out of reaction mass, were crippled, or crash-landed. S&R craft are typically drop ships (pp. 16-18), boarding craft and grappler ships (pp. 22-24), or even space mecha (pp. 27-29); the last two designs make good use of robot arms for recovery operations. Drop ships may be stock designs, or modified with an external clamp, robot arm, or tractor beam that replaces another system or weapon.

Search-and-rescue crews include or cross-train as medics, and they have ground-combat training (or marines or special-ops soldiers) for missions behind enemy lines. They rarely need to pay for their own drinks when carousing in fighter-pilot bars.

greater than escape velocity). It approaches, activates its stasis web, and crashes into the planet. The field is then deactivated and the troops emerge into the resulting crater. The vessel can also be used as a flying armored personnel carrier. It uses an unstreamlined SM +5 hull (30 tons) that is 40 feet long.

Front Hull System

[1-2] Exotic Laminate Armor (total dDR 30).

[3-6] Passenger Seats (two passengers each).

[core] Control Room (C8 computer, comm/sensor 6, and one control station).

Central Hull System

[1-2] Exotic Laminate Armor (total dDR 30).

[3-4] Passenger Seats (two seats each).

[5] Major Battery (turret with 2.5cm very rapid fire grav gun).

[6] Light Force Screen (dDR 30).

[core!] Stasis Web.

Rear Hull System

[1-2] Exotic Laminate Armor (total dDR 30).

[3-4] Cargo Hold (1.5 tons capacity each).

[5] Super Reactionless Engine (100G acceleration).

[6] Fusion Reactor (two Power Points).

Typical crew is a single pilot.

It has the stealth and dynamic chameleon hull options, and gravitic compensators.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL12 (HIGH-PERFORMANCE SPACECRAFT)

12 [^]	<i>Tungusku</i>	20	+2/4	12	100G/c	30	4.3	+5	1+12SV	30*	0	\$7.28M
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* Add dDR 30 if force screen is powered up.

Top air speed is 2,500 mph.

FLEET CARRIERS

These vessels are giant mother ships whose role is to transport smaller combatant spacecraft and serve as the primary strike force of a space navy. Equipped with enough fighters or other vehicles to turn the tide of a major battle, they are the pride of their fleet and represent a doctrinal commitment to carrier operations (often at the expense of battleships).

Fleet carriers devote a large fraction of their mass to hangar bays. Armament is defensive: multiple secondary, tertiary, and missile batteries for shooting down incoming fighters and missiles. They are cheaper to manufacture than equivalent-sized space battleships, but their overall cost is higher if they carry small craft.

Their large hangar spaces mean they are also effective assault carriers. By removing some or all of its fighters, a carrier can transport a contingent of drop ships, armored vehicles, and other supplies. Some have room in their habitats for a large force of ground troops as well.

Cinematic space opera portrays carriers as actual analogs of wet-navy ships, launching space fighters the size of conventional fighter or bomber aircraft (10 to 100 tons). However,

while real wet-navy carrier airplanes are limited in weight (since an aircraft that is too heavy can't take off without a ridiculously long runway), spacecraft have no such restrictions. There's no reason they can't carry large vessels if they have the hangar capacity. For instance, a 100,000-ton carrier might easily transport several frigate-sized 1,000- to 3,000-ton "rider ships" internally, or even carry a few larger vessels on its hull in external clamps.

Unlike wet-navy craft that rely on fighters for striking power, many science-fiction versions are hybrid "battle carriers" with the firepower of a cruiser and the ability to carry a squadron of embarked small craft. They aren't quite as powerful as a purpose-designed battleship, and they carry a smaller force than a true fleet carrier, but they are versatile. Their main advantage is the ability to operate safely without significant escorts, which means they're suited for armed reconnaissance into uncharted space or deep penetration raids into enemy territory. They're also useful if budgetary, personnel, or time considerations limit a stellar power to using only *one* major carrier ("We must build a super warship to save the Earth").

In major actions, commanders struggle with a tactical dilemma: Do they launch their squadrons from a safe distance, or go into battle with them (but risk serious damage)?

Even if they are capable of doing so, however, fleet carriers should not operate alone! Navies prefer to have one or two at the center of a large task force, escorted by frigates or cruisers, and sometimes by other vessels such as battleships, assault carriers, or auxiliaries carrying ammunition and fuel.

Captains of Rank 6 command individual fleet carriers and an admiral of Rank 7 or 8 may use one as a flagship.

YAMAMOTO-CLASS FLEET CARRIER (TL10)

This spaceship is the size of a modern super-carrier, with a 100,000 ton (SM +12) unstreamlined hull 600 feet long and a rotating central section. It uses economical fusion rocket engines for interplanetary and local space cruising. Much of its payload is devoted to hangar decks for fighters, but it has an effective defensive armament as well. It carries 15,000 tons of small craft.

Front Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 70).
[2-5]	Hangar Bays (3,000 tons capacity each).*
[6]	Tactical Array (comm/sensor 13).*
Central Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 70).
[2!]	Secondary Battery (10 turrets with 3 GJ particle beams).*

Central Hull	System
[3]	Habitat (100 cabins and 100 bunkrooms with full life support, and 1,000 tons cargo).*
[4]	Fuel Tank (5,000 tons hydrogen with 60 mps delta-V).
[5]	Habitat (100 cabins and 100 bunkrooms with full life support, 50-bed sickbay, 10 fabricator minifacs, and 700 tons cargo).*
[6]	Hangar Bay (3,000 tons capacity).*
[core]	Control Room (C10 computer, comm/sensor 11, and 20 control stations).*
Rear Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 70).
[2-3]	Fuel Tanks (5,000 tons hydrogen with 60 mps delta-V each).
[4!]	Secondary Battery (six turrets with 48cm missile launchers, and four turrets with 30 MJ very rapid fire UV lasers).*
[5-6]	Fusion Rocket Engines (0.005G acceleration each).*
[core]	Fusion Reactor (two Power Points).*

* 10 workspaces per system.

It has spin gravity (0.5G).

Typical crew (per shift) is 20 bridge personnel (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, two communication officers, and a tactical officer), and 140 technicians. A second shift is also carried. Extra personnel include small-craft crews up to 400 people. A company- to battalion-sized unit may be carried for landing and boarding operations.

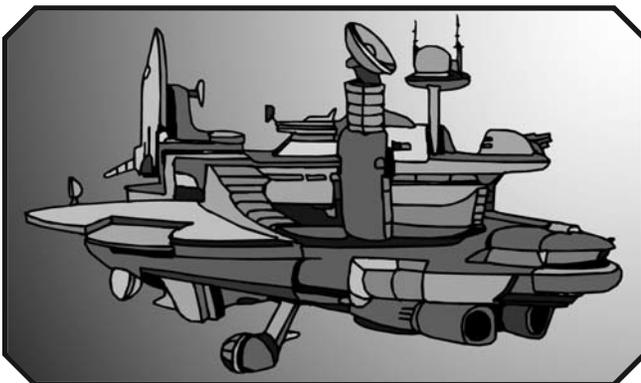
TL *Spacecraft* dSTIHP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (LOW-PERFORMANCE SPACECRAFT)

10 *Yamamoto-class* 300 -4/5 13 0.01G/180 mps 100,000 16,820 +12 1,200ASV 70 0 \$6.355B

ALLIANCE-CLASS FLEET CARRIER (TL10^)

This huge interstellar warship is built on an unstreamlined 300,000-ton (SM +13) hull. It is a limited-superscience design with no artificial gravity, so part of the center section spins for crew comfort. It is fast, especially at FTL speeds; well armored; and carries 30,000 tons of small craft. Its large beam battery is



intended for defensive and counter-missile fire, but may be used offensively where necessary.

Front Hull	System
[1]	Nanocomposite Armor (dDR 150).
[2-4]	Hangar Bays (10,000 tons capacity each).*
[5]	Fuel Tank (15,000 tons hydrogen with 15 mps delta-V).
[6]	Tactical Array (comm/sensor 14).*
[core]	Control Room (C10 computer, comm/sensor 12, and 30 control stations).*
Central Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 100).
[2!]	Tertiary Battery (25 turrets with 300 MJ rapid improved lasers, and five turrets with 48cm missile launchers).*
[3-5]	Fuel Tanks (15,000 tons hydrogen with 15 mps delta-V each).
[6]	Habitat (1,200 cabins, 300 bunkrooms, 100-bed hospital sickbay, two gyms, two briefing rooms, ops center, 10 fabricator minifacs, lab, and 1,860 tons cargo).*

<i>Rear Hull</i>	<i>System</i>
[1]	Advanced Metallic Laminate Armor (dDR 100).
[2-3]	Fusion Torch (0.5G acceleration each).*
[4-5!]	Stardrive Engines (FTL-1 each).*
[6!]	Tertiary Battery (30 turrets with 300 MJ rapid fire improved lasers).*
[core]	Fusion Reactor (two Power Points).*

* 30 workspaces per system.

It has spin gravity (0.7G).

Typical crew is 10 bridge operators (captain, executive officer, pilot, engineering officer, navigator, sensor operator,

three communication officers, and a flight operations officer), 30 gunners, 390 technicians, and 10 medics, plus crew for small craft carried aboard. Multiple shifts are carried, as is a company-sized or larger unit of space marines or other combat troops.

Other Vessels as Carriers

Fighters and other small craft are often carried in the hangar decks of cruisers, battleships, monitors, and military space stations.

<i>TL</i>	<i>Spacecraft</i>	<i>dST/HP</i>	<i>Hnd/SR</i>	<i>HT</i>	<i>Move</i>	<i>LWt.</i>	<i>Load</i>	<i>SM</i>	<i>Occ</i>	<i>dDR</i>	<i>Range</i>	<i>Cost</i>
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PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10 [^]	<i>Alliance-class</i>	500	-3/5	13	1G/60 mps	300,000	32,220	+13	3,600ASV	150/100/100	2×	\$31.126B
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THOR-CLASS FLEET CARRIER (TL10[^])

This torch-drive starship is built on an SM +12 unstreamlined hull massing 100,000-tons and is 600 feet long. Major features include three forward hangar bays and a rotating hull for spin gravity. Although designed as a carrier, its powerful weapon batteries and tough all-around armor give it considerable combat ability in its own right.



Front Hull *System*

[1-2]	Nanocomposite Armor (total dDR 200).
[3-5]	Hangar Bays (3,000 tons capacity each).*
[6!]	Medium Battery (two turrets with 10 GJ particle beams, and one turret with 14cm rapid fire electromagnetic gun).

Central Hull *System*

[1-2]	Nanocomposite Armor (total dDR 200).
[3!]	Secondary Battery (10 turrets with 3 GJ improved lasers).*
[4]	Habitat (two luxury cabins, 98 cabins, 250 bunkrooms, 40-bed clinic sickbay, briefing room, gym, five cells, and 1,000 tons cargo).*
[5-6]	Fuel Tanks (5,000 tons hydrogen with 15 mps delta-V each).
[core]	Control Room (C10 computer, comm/sensor 11, and 20 control stations).*

Rear Hull *System*

[1-2]	Nanocomposite Armor (total dDR 200).
[2-3!]	Stardrive Engines (FTL-1 each).*
[5-6]	Fusion Torch Engines (0.5G acceleration each).*
[core]	Fusion Reactor (two Power Points).*

* 10 workspaces per system.

Spin gravity provides 0.5G. Typical crew is 10 bridge personnel (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, tactical officer, and two communication officers), 120 technicians, four medics, and 13 gunners. A second shift might include 200 small-craft crew and a few companies of troops for boarding operations or commando raids.

<i>TL</i>	<i>Spacecraft</i>	<i>dST/HP</i>	<i>Hnd/SR</i>	<i>HT</i>	<i>Move</i>	<i>LWt.</i>	<i>Load</i>	<i>SM</i>	<i>Occ</i>	<i>dDR</i>	<i>Range</i>	<i>Cost</i>
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PILOTING/TL10 (LOW-PERFORMANCE SPACECRAFT)

10 [^]	<i>Thor-class</i>	300	-2/5	13	1G/30 mps	100,000	10,122	+12	1,220ASV	200	2×	\$11.6B
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GOD OF WAR-CLASS FLEET CARRIER (TL11^)

Using a 1,000,000-ton (SM +14) unstreamlined hull that is 1,500 feet long, these gigantic warships are suitable for both ship-to-ship combat and mother-ship operations. They have mixed beam and missile armaments. Offensive action is facilitated by excellent frontal armor backed up by a force screen. The sizable hangar capacity and excess habitat space for troops means a single *God of War* vessel can perform power-projection tasks such as space invasions without supporting ships. When used in this fashion, the rear hangar bay carries landing craft and ground vehicles while the forward bays deploy fighters, rider ships, or space combat mecha.

Front Hull System

[1]	Nanocomposite Armor (dDR 200).
[2]	Diamondoid Armor (dDR 300).
[3]	Tactical Array (comm/sensor 16).*
[4-5]	Hangar Bays (30,000 tons capacity each).*
[6!]	Major Battery (300 GJ X-ray laser).*
[core]	Control Room (C12 computer, comm/sensor 14, and 40 control stations).*

Central Hull System

[1]	Nanocomposite Armor (dDR 200).
[2]	Habitat (250 luxury cabins and 2,000 cabins with total life support, 100-bed hospital sickbay, two briefing rooms, 20 minifac fabricators, gym, 10 cells, and 4,330 tons cargo).*
[3!]	Secondary Battery (10 turrets with 30GJ X-ray lasers).*

Central Hull System

[4!]	Heavy Force Screen (dDR 700, or dDR 1,400 with two Power Points).*
[5-6!]	Stardrive Engines (FTL-1 each).*

Rear Hull System

[1]	Nanocomposite Armor (dDR 200).
[2-3!]	Super Reactionless Engines (50G each).*
[4]	Defensive ECM*
[5]	Secondary Battery (10 turrets with 64cm missile launchers).*
[6]	Hangar Bay (30,000 tons capacity).*
[core]	Super Fusion Reactor (four Power Points).*

* 100 workspaces per system.

We must meet this threat with our courage, our valor, indeed with our very lives to ensure that human civilization, not insect, dominates this galaxy now and always!

– Sky Marshal Dienes,
Starship Troopers

The carrier has artificial gravity, a stealth hull, and gravitic compensators.

Typical crew is 10 bridge operators (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, communication officer, and tactical officer), 1,600 technicians, 10 medics, plus any small-craft crew. Multiple crew shifts provide redundancy. It can also carry a force of several hundred troops.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11^ God of War-class 700 -1/5 13 100G/c 1,000,000 94,784 +14 4,540ASV 500/200/200* 2x \$180.51B

* Add dDR 700 (dDR 1,400 if using two Power Points) if force screen is powered up.

Top air speed is 2,500 mph.

CONTINENT-CLASS SUPER CARRIER (TL11^)

Built on a 3,000,000-ton (SM +15) unstreamlined hull 2,000 feet long, this armored city in space is large enough to contain an entire village inside one hangar bay. Its total hangar capacity is 500,000 tons, enabling it to deploy 5,000 heavy fighters! In addition to myriad small craft, it is fast and well protected, with tough armor augmented by a force screen and dozens of high-power laser turrets.

Front Hull System

[1-2]	Nanocomposite Armor (total dDR 600).
[3]	Tactical Array (comm/sensor 17).*
[4-5]	Hangar Bays (100,000 tons capacity each).*
[6!]	Heavy Force Screen (dDR 1,000, or dDR 2,000 with two Power Points).*

Central Hull System

[1]	Nanocomposite Armor (dDR 300).
[2]	Habitat (20 luxury cabins, 3,000 cabins, and 3,000 bunkrooms with total life support, 300-bed hospital sickbay, four briefing rooms, 30 fabricator minifacs, five gyms, two ops centers, 10 cells, six labs, and 37,670 tons cargo).*
[3-5]	Hangar Bays (100,000 tons capacity each).*
[6!]	Tertiary Battery (20 turrets with 3 GJ improved rapid fire UV lasers, and 10 turrets with 30 GJ tractor beams).*
[core]	Control Room (C12 computer, comm/sensor 15, and 60 control stations).*

Rear Hull System

[1]	Nanocomposite Armor (dDR 300).
[2!]	Super Reactionless Engines (50G).*

Rear Hull System

[3-6!]	Stardrive Engines (FTL-1 each).*
[core]	Super Fusion Reactor (four Power Points).*

* 300 workspaces per system.

It has artificial gravity and gravitic compensators.

Typical crew is 10 bridge operators (the captain, executive officer, pilot, engineering officer, navigator, sensor operator, two communication officers, and two tactical officers), 4,800 technicians, and 30 medics. Two shifts of space crew are carried plus small-craft crew, who number 4,000 to 8,000 more. A company-sized or larger body of troops may be assigned to it.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
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PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11^	Continent-class	1,000	-2/5	13	50G/c	3,000,000	539,478	+15	18,080ASV	600/300/300*	4x	\$511.521B
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* Add dDR 1,000 (dDR 2,000 if using two Power Points) if force screen is powered up.

Top air speed is 1,800 mph.

GRAPPLER SHIPS AND BOARDING CRAFT

Space battles may be fought at distances of hundreds or thousands of miles but once an enemy ship has surrendered or been crippled, securing the prize requires a boarding party to take control. The easiest method is to physically dock with a vessel or, if it's small enough, take it inside a hangar bay, but this approach carries several risks.

There is a chance of coming under fire at zero range (if the enemy still has functional weapons) and counterattack by opposing parties . . . and the even worse possibility of a catastrophic self-destruction that consumes both ships. Space captains prefer not to dock their ships with a vessel unless they have strong reason to believe no such suicidal technique is likely. Examples of situations where it's safe to dock include a routine inspection of a merchant ship or the interception of a diplomatic yacht carrying an important dignitary.

The recommended doctrine in these cases is to stand off at a distance of several miles and dispatch a space-suited boarding party equipped with thruster packs or, for more speed and greater safety, a team in a smaller vessel. Any shuttle or ship's boat can be pressed into service, but warships and pirates who expect to carry out boarding operations carry specialized, heavily-armored assault craft.

Boarding craft are tough, ugly, and small enough to be expendable. They carry a squad- to platoon-sized boarding party; large assaults may involve a swarm of such vessels. Their drives are designed for high acceleration (for quick approaches or getaways) at the expense of delta-V or range (since they don't need to cross vast distances of space). The target's airlocks or hangar bays may be damaged, guarded, or booby-trapped, so prudent boarders use explosives, cutting tools, lasers, or plasma beams built into the craft, to blast or cut their way inside. Most boarding craft have external clamps to attach themselves to the vessel they assault, and some have robot arms to force their way into the target.

Military boarding craft are sometimes owned and operated directly by space marines (or mercenaries) rather than by naval personnel, while enlisted men command them (a non-commissioned or petty officer, Rank 2-3).

Grappler ships are a cinematic alternative. Significantly larger and longer-ranged than most boarding craft, they're favored by pirates and paramilitary patrol forces and used as search-and-rescue craft (p. 18). Multiple, powerful robotic arms grab hold of and force their way into large vessels, or physically capture smaller vehicles. Some are even designed to wrestle with enemy spacecraft in close combat! Grappler ships are rarely used if tractor beam technology is available.

AHAB-CLASS BOARDING CUTTER (TL9)

This is a small, tough boarding ship. It's designed to be rugged, inexpensive, and relatively easy to replace. It has no weapons but its arm can use cutting tools to force entry into another vessel. It has room for its command crew and eight troops (or pirates). It uses a 30-ton unstreamlined hull (SM +5), and is 30 feet long.

Front Hull System

[1-4]	Metallic Laminate Armor (total dDR 12).
[5]	External Clamp.
[6]	Robot Arm.
[core]	Control Room (C4 computer, comm/sensor 3, and one control station).

Central Hull System

[1-2]	Metallic Laminate Armor (total dDR 6).
[3]	Cargo Hold (1.5 tons).
[4-6, core]	Passenger Seating (two seats each).

Rear Hull System

[1-3]	Metallic Laminate Armor (total dDR 9).
[4-5]	Fuel Tanks (1.5 tons rocket fuel providing 0.15 mps delta-V each).
[6]	Chemical Rocket Engine (3G acceleration).

Typical crew is a single pilot. It has a stealth hull.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (AEROSPACE)

9 Ahab-class 20 0/4 12 3G/0.3 mps 30 2.4 +5 1+8SV 12/6/9 0 \$0.953M

Top air speed is 430 mph.

CORVUS ASSAULT BOAT (TL11^)

This is a lightly armed and well-armored small craft intended to close and force entry, transporting a platoon of space marines or other combat personnel. It is built to resist small arms and (maybe) minor defensive weapons, at least from the front. It uses a 60'-long, 100-ton unstreamlined hull (SM +6).

Front Hull	System
[1-3]	Advanced Metallic Laminate Armor (total dDR 21).
[4!]	Major Battery (fixed mount 30 MJ plasma beam).
[5]	External Clamp.

Front Hull	System
[6]	Defensive ECM.
[core]	Control Room (C8 computer, comm/sensor 6, and two control stations).
Central Hull	System
[1]	Advanced Metallic Laminate Armor (dDR 7).
[2-6]	Passenger Seats (six seats each).
Rear Hull	System
[1-2]	Advanced Metallic Laminate Armor (total dDR 14).
[3-4]	Passenger Seats (six seats each).
[5!]	Hot Reactionless Drive (2G).
[6]	Cargo Hold (five tons).
[core]	MHD Turbine (two Power Points).

It has a stealth hull. Typical crew is a pilot and a gunner.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11^ Corvus 30 0/4 12 2G/c* 100 9.4 +6 2+42SV 21/7/14 0 \$3.92M

* Actual speed limited by MHD turbine endurance.

Top air speed is 350 mph.

Summary execution is the usual punishment for boarding a Federation ship without authority. What are you doing on my ship?

– Del Tarrant, Blake's 7 #3.1

SAMSON-CLASS GRAPPLER SHIP (TL9)

This heavily armored close-combat craft is essentially a space mecha with four arms and no legs. It is designed for combat engineering and military salvage tasks, such as forcing its way into an enemy space station or capturing orbital satellites. It has a small hangar bay for delivering battlesuited troopers during boarding actions or picking up small capsules or captured satellites. It uses an unstreamlined hull massing 100 tons (SM +6), and is 60 feet long.

Front Hull	System
[1-2]	Advanced Metallic Laminate Armor (total dDR 14).
[3-4]	Robot Arms.
[5]	Control Room (C5 computer, comm/sensor 4, and two control stations).
[6!]	Major Battery (fixed mount with 30 MJ laser).

Central Hull	System
[1-2]	Advanced Metallic Laminate Armor (total dDR 14).
[3-4]	Robot Arms.
[5]	Fuel Tank (five tons HEDM rocket fuel with 0.5 mps delta-V).
[6]	Hangar Bay (three tons capacity).
[core]	Fuel Cell (one Power Point, 12 hours endurance).
Rear Hull	System
[1-2]	Advanced Metallic Laminate Armor (total dDR 14).
[3-5]	Fuel Tanks (five tons HEDM rocket fuel with 0.5 mps delta-V each).
[6]	HEDM Chemical Rocket Engine (2G acceleration).

The crew consists of a pilot and co-pilot (in charge of the arms and weapons).

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9	Samson-class	30	0/4	12	2G/2 mps	100	3.2	+6	2SV	14	0	\$6.48M
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Top air speed is 350 mph.

BEOWULF-CLASS GRAPPLER SHIP (TL10[^])

A frigate-sized vessel equipped with two folding arms for close combat, it is built on a 1,000-ton (SM +8) streamlined hull, and is 150 feet long.

Front Hull System

[1-2]	Nanocomposite Armor (total dDR 30).
[3!]	Medium Battery (three fixed mount 100 MJ improved lasers).
[4-5]	Medium Batteries (three fixed mount 28cm missile launchers each).
[6]	Tactical Array (comm/sensor 9).
[core]	Control Room (C8 computer, comm/sensor 7, and four control stations).

Central Hull System

[1]	Nanocomposite Armor (dDR 15).
[2-3]	Robot Arms.
[4]	Hangar Bay (30 tons capacity).
[5]	Habitat (four cabins, one-bed automated sickbay, and five tons cargo).
[6!]	Stardrive Engine (FTL-1).

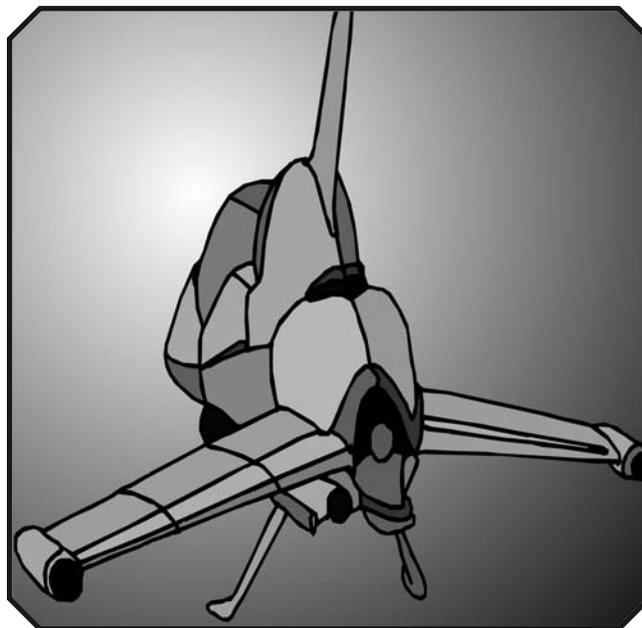
Rear Hull System

[1]	Nanocomposite (dDR 15).
[2-3]	Fuel Tanks (50 tons hydrogen with 15 mps delta-V each).
[4-5]	Fusion Torch Engine (0.5G acceleration each).

Rear Hull System

[6]	Engine Room (one control station).
[core]	Fusion Reactor (two Power Points).

Typical crew is four bridge members (pilot, captain, navigator/gunner, engineering officer) and an engine-room mechanic. Some boarding specialists may also be carried.



TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10 [^]	Beowulf-class	70	-1/5	13	1G/30 mps	1,000	35.8	+8	8ASV	30/15/15	1x	\$132.1M
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Top air speed is 2,500 mph.

LIGHT CARRIERS

These are small carriers no larger than cruisers, some only the size of frigates. These are built instead of big fleet carriers (pp. 18-22) to save money or construction time. They also provide greater flexibility for tasks where deploying a small squadron of fighters is helpful but hundreds are overkill. Such missions include raiding and convoy escort (light carriers are often referred to as “escort carriers” or “strike carriers”), or transporting aerospace fighters to provide air cover for a small invasion force. They are rarely assigned solo missions, but a carrier may be the command vessel of a small frigate or cruiser task force. Light carrier captains are Rank 4-6.

MITHRA-CLASS LIGHT CARRIER (TL9)

This mother ship relies on magnetic sails for interplanetary cruising and solar panels for power. This gives it excellent endurance and decent velocity for a TL9 vessel, though at the price of only minimal thrust and little ability to defend itself if foes get past its fighter screen. It is too vulnerable for a warship, but a carrier may hope to keep opponents at a distance.

Its glacial acceleration takes a long time to boost to cruising speed or even maneuver out of port (though it might use small craft as tugs).

The reaction mass in its tanks is for its fighters, and varies depending on which types are carried. At 1,000 tons (SM +8) and 140 feet long (excluding its sail), it is small for a carrier but still moves 150 tons of fighters or other craft, plus the fuel tanks to supply them. It operates between deep space ports such as high-orbit stations or asteroid bases.

Front Hull System

- [1] Metallic Laminate Armor (dDR 10).
- [2-4] Hangar Bays (30 tons capacity each).
- [5] Fuel Tank (50 tons of reaction mass).
- [6] Tactical Array (comm/sensor 8).
- [core] Control Room (C6 computer; comm/sensor 6, and four control stations).

Central Hull System

- [1] Metallic Laminate Armor (dDR 10).
- [2-4] Magsails (0.001G acceleration each).
- [5!] Secondary Battery (turret with four 3 MJ rapid fire lasers, and 30 tons cargo).

Central Hull System

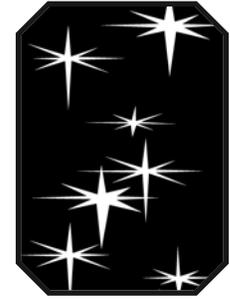
- [6] Engine Room (one workspace).
- [core] Habitat (six bunk rooms).

Rear Hull System

- [1] Metallic Laminate Armor (dDR 10).
- [2-3] Hangar Bays (30 tons capacity each).
- [4] Fuel Tank (50 tons reaction mass).
- [5] Habitat (one cabin, four-bed automed sickbay, and fabricator minifac).
- [6] Solar Panel Array (one Power Point).

It has spin gravity (0.1G).

Typical bridge crew is a captain, pilot, tactical officer, a navigator/sensor operator, and a communications officer. The vessel also has a mechanic ("rigger"), a second mechanic for the small craft, two gunners, and the small-craft crews (often five pilots). If it carries drop ships or boarding craft, it may also carry a squad of space marines or other troops.



TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (LOW-PERFORMANCE SPACECRAFT)

9	Mithra-class	70	-4/5	13	0.003G	1,000	182.6	+8	26ASV	10/10/10	0	\$56.8M
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INFerno-CLASS STRIKE CARRIER (TL10)

This interplanetary warship is propelled by fusion rocket engines. Since these have low acceleration, it also carries multiple fast fighters in bays fore and aft, for close combat. Its 10,000-ton (SM +10) unstreamlined hull is 300 feet long; the forward section is devoted to hangar bays and weaponry, while the central hull spins to provide gravity for crew comfort. The rear houses engines and an extra hangar bay. It has decent armor but light arms, relying on its squadron for defense, and though acceleration is modest it can reach high interplanetary speeds.

Front Hull System

- [1-2] Advanced Metallic Laminate Armor (total dDR 60).
- [3-5] Hangar Bays (300 tons capacity each).*
- [6] Tactical Array (comm/sensor 11).*
- [core] Control Room (C9 computer; comm/sensor 9, and 10 control stations).*

Central Hull System

- [1] Advanced Metallic Laminate Armor (dDR 30).
- [2!] Secondary Battery (10 turrets with 300 MJ improved lasers).*
- [3] Habitat (20 cabins, 20 bunkrooms, 10-bed sickbay, and 50 tons cargo).*

Central Hull System

- [4] Fuel Tank (500 tons hydrogen with 60 mps delta-V).
- [5-6] Hangar Bays (300 tons capacity each).*

Rear Hull System

- [1] Advanced Metallic Laminate Armor (dDR 30).
- [2-4] Fuel Tanks (500 tons hydrogen with 60 mps delta-V each).
- [5-6] Fusion Rocket Engines (0.005G acceleration each).*
- [core] Fusion Reactor (two Power Points).*

* One workspace per system.

A warship for transporting fast fighters to other planets in a solar system.

It has spin gravity (0.2G).

Typical crew is five bridge operators (captain, pilot, engineering officer, navigator/sensor operator, and tactical officer), 10 gunners, 12 technicians, a doctor, and the small-craft crew. Two crew shifts are carried. It also carries a few squads and their officers for security and boarding.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (LOW-PERFORMANCE SPACECRAFT)

10	Inferno-class	150	-4/5	13	0.01G/240 mps	10,000	1,562	+10	120ASV	60/30/30	0	\$588M
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NEBULA-CLASS LIGHT CARRIER (TL10[^])

This is a very small, streamlined carrier starship designed for both space and atmospheric combat. Built on a 3,000-ton (SM +9) hull, this 300-foot-long vessel is intended for assaults on planets and large space colonies. Weaponry is optimized for close-range combat and anti-missile or anti-fighter defense. Its torch drives give it sufficient thrust and delta-V to land on a planet and to maneuver using fusion ram-rocket engines.

Front Hull System

[1-2]	Advanced Metallic Laminate Armor (total dDR 30).
[3]	Habitat (eight cabins, eight bunkrooms, and four-bed sickbay).
[4-6]	Hangar Bays (100 tons capacity each).
[core]	Control Room (C8 computer, comm/sensor 8, and six control stations).

Central Hull System

[1]	Advanced Metallic Laminate Armor (dDR 15).
[2]	Tactical Array (comm/sensor 10).
[3!]	Secondary Battery (10 turrets with 10 MJ rapid fire improved lasers).
[4]	Hangar Bay (100 tons capacity).
[5]	Engine Room (two workspaces).
[6!]	Stardrive Engine (FTL-1).

Rear Hull System

[1]	Advanced Metallic Laminate Armor (dDR 15).
[2-4]	Fuel Tanks (150 tons hydrogen with 7.5 mps delta-V each).
[5-6]	High-Thrust Fusion Torch Engines (ram rockets, 1G acceleration each).
[core]	Fission Reactor (one Power Point).

Typical crew is five bridge officers (pilot, captain, navigator, communications operator, engineering officer), two gunners, two technicians, and the small-craft pilots (with any techs they require).

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10[^] Nebula-class 100 -1/5 13 2G/22.5 mps 3,000 404.8 +9 48ASV 30/15/15 1x \$723.2M

Top air speed is 3,500 mph.

TAROT-CLASS LIGHT CARRIER (TL11[^])

This is a far-ranging interstellar carrier for transporting fighters and other small craft. It uses a 30,000-ton (SM +11) unstreamlined hull 400 feet long. It relies on its onboard squadrons for both striking and protection – backed up by decent armor, its force screen, and two batteries of beam weapons for self-defense. The *Tarot*-class carries 4,000 tons of small craft in its four hangar bays. An unusual choice is the provision of onboard manufacturing capability, freeing it from the need to return to base to repair itself or its fighters (as long as the fabricator is undamaged). This makes the *Tarot*-class especially useful for lengthy armed-exploration missions of hostile space or long-term operations behind enemy lines.

Front Hull System

[1]	Nanocomposite Armor (dDR 70).
[2!]	Light Force Screen (dDR 200).*
[3]	Tactical Array (comm/sensor 13).*
[4-5]	Hangar Bays (1,000 tons capacity each).*
[6!]	Fabricator (\$1.5M/hour production capacity).*

Central Hull System

[1]	Nanocomposite Armor (dDR 70).
[2-3!]	Secondary Batteries (10 turrets with 1 GJ improved UV laser each).*
[4]	Habitat (50 cabins and 25 bunkrooms with total life support, 20-bed sickbay, and 150 tons cargo).*
[5-6]	Hangar Bays (1,000 tons capacity each).*
[core]	Control Room (C10 computer, comm/sensor 11, and 15 control stations).*

Rear Hull System

[1]	Nanocomposite Armor (dDR 70).
[2-3!]	Super Reactionless Engines (50G each).*
[4-6!]	Stardrive Engines (FTL-1 each).*
[core]	Super Fusion Reactor (four Power Points).*

* Three workspaces per system.

It has artificial gravity and gravitic compensators.

Typical crew is 10 bridge operators (including captain, executive officer, pilot, engineering officer, navigator, sensor operator, communication officer, and carrier operations officer), 20 gunners, 51 technicians, and one medic, plus small-craft pilots and flight crews. Multiple crew shifts are carried.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

11[^] Tarot-class 200 0/5 14 100G/c 30,000 4,170 +11 200ASV 70* 3x \$5.512B

* Add dDR 200 if force screen is powered up.

SPACE MECHA

These are piloted, anthropomorphic “giant robots” like those appearing in Japanese mecha anime shows. Despite having arms and legs, many are built for space battles and can be thought of as space fighters with an auxiliary ground-combat mode. Some are fairly hard SF designs with reaction engines and realistic weaponry, while others have exotic technology like stardrives and force fields. Most space-combat mecha are controlled by one or two pilots and mass 30 to 300 tons. Spaceworthy designs are rarely built if reactionless drives or other gravity-control technology is in common use, since if it is available “walking tanks” are superseded by “grav tanks.”



SPARTAN SPACE-ASSAULT MECHA (TL9)

This is a 30-foot-tall humanoid spacecraft. Equipped with powerful but short-ranged weapons, it is designed for assaulting

lunar bases or the interiors of giant space stations, where an attacker may need to transition from space to land combat in a matter of moments! Its limited reaction mass forces it to operate from a mother ship or base. It can't achieve orbit from an Earth-sized planet, but has enough thrust to take off from a small moon or asteroid. It is built using a 30-ton (SM +5) unstreamlined hull.

Front Hull System

- [1-4] Advanced Metallic Laminate Armor (total dDR 20).
- [5] Defensive ECM.
- [6] Major Battery (fixed mount with 2.5cm very rapid fire conventional gun).

Central Hull System

- [1-2] Advanced Metallic Laminate Armor (total dDR 10).
- [3-4] Robot Arms.
- [5!] Major Battery (turret with 1 MJ rapid fire laser).
- [6] Fuel Tank (1.5 tons chemical rocket fuel with 0.15 mps delta-V).
- [core] Control Room (C4 computer; comm/sensor 3, and one control station).

Rear Hull System

- [1-2] Advanced Metallic Laminate Armor (total dDR 10).
- [3] Chemical Rocket Engine (3G acceleration).
- [4-5!] Robot Legs (Move 10; requires only one Power Point for both legs).
- [6] Fuel Tank (1.5 tons chemical rocket fuel with 0.15 mps delta-V).
- [core] MHD Power Plant (two Power Points).

Typical crew is a single pilot.

TL *Spacecraft* *dSTI/HP* *Hnd/SR* *HT* *Move* *LWt.* *Load* *SM* *Occ* *dDR* *Range* *Cost*

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9	<i>Spartan</i>	20	0/4	12	3G/0.3 mps	30	0.1	+5	1SV	20/10/10	0	\$2.45M
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Top air speed is 430 mph. On the ground, it has Move 10 and Hnd/SR +3/3.

HADES BATTLE MECHA (TL9^)

This is a typical space-combat mecha for inexpensive mass production. It is humanoid, standing 60 feet tall. It is equipped with fission rocket thrusters for space maneuverability, two legs for ground movement, and a soft-landing system that lets it drop from orbit. It uses a 100-ton (SM +6) unstreamlined hull.

Front Hull System

- [1-3] Hardened Advanced Metallic Laminate Armor (total dDR 21).

Front Hull System

- [4!] Major Battery (fixed mount with 6cm rapid fire electromagnetic gun).
- [5] Secondary Battery (10 fixed mount 16cm missile launchers).
- [6] Soft Landing System.
- [core] Control Room (C5 computer; comm/sensor 4, and only one control station).

Central Hull System

- [1-2] Hardened Advanced Metallic Laminate Armor (total dDR 14).
- [3-4] Robot Arms.

Central Hull System	
[5]	Major Battery (turret mount with 3cm very rapid fire conventional gun).
[6]	Fuel Tank (five tons uranium saltwater with 2.5 mps delta-V).
Rear Hull System	
[1-2]	Hardened Advanced Metallic Laminate Armor (total dDR 14).

Rear Hull System	
[3]	Nuclear Saltwater Rocket Engine (2G acceleration).
[4-5!]	Robot Legs (Move 10; requires only one Power Point for both legs).
[6]	Defensive ECM.
[core]	MHD Turbine (two Power Points, six hours endurance).

Typical crew is a single pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL9 (HIGH-PERFORMANCE SPACECRAFT)

9^	<i>Hades</i>	30	0/4	12	2G/2.5 mps	100	0.1	+6	1SV	21/14/14*	0	\$10.48M
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* Hardened.

Top air speed is 350 mph. On the ground, it has Move 10 and Hnd/SR +2/3.

BLACK KNIGHT SPACE MECHA (TL10^)

This is an expensive space battle mecha – an ace pilot is equipped with one of these, giving him an impressive kill ratio against opponents who use lower-TL designs! Its fusion torch engines give it exceptional mobility for a mecha. It uses a 100-ton (SM +6) unstreamlined hull, and is 60 feet long.

Front Hull System	
[1-3]	Hardened Nanocomposite Armor (total dDR 30).
[4!]	Major Battery (fixed mount with 30 MJ particle beam).
[5]	Defensive ECM.
[6]	Fuel Tank (five tons water with 5 mps delta-V).
Central Hull System	
[1-2]	Hardened Nanocomposite Armor (total dDR 20).

Central Hull System	
[3-4]	Robot Arms.
[5]	Major Battery (turret mount with 3cm very rapid fire conventional gun).
[6]	Fuel Tank (five tons water with 5 mps delta-V).
[core]	Control Room (C7 computer; comm/sensor 5, and only one control station).
Rear Hull System	
[1-2]	Hardened Nanocomposite Armor (total dDR 20).
[3-4]	Fusion Torch Engines (with water, 1.5G acceleration each).
[5-6!]	Robot Legs (Move 10; requires only one Power Point for both legs).
[core]	Fusion Reactor (two Power Points).

It has a dynamic chameleon hull. Typical crew is a single pilot.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT)

10^	<i>Black Knight</i>	30	0/4	12	3G/10 mps	100	0.1	+6	1SV	30/20/20*	0	\$18.76M
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* Hardened.

Top air speed is 430 mph. On the ground, it has Move 10 and Hnd/SR +2/3.

ARIEL TRANSFORMABLE FIGHTER (TL10^)

This is a large, capable, transformable fighter spacecraft, manufactured using limited superscience technology. Its super fusion torch drives give it enough delta-V and thrust to achieve orbit from an Earth-sized world and perform high-speed

pursuit or interception. The *Ariel* uses a 30-ton (SM +5) streamlined hull, and is 50 feet long.

Front Hull System	
[1-3]	Hardened Nanocomposite Armor (total dDR 15).
[4]	Tactical Array (comm/sensor 6).
[5-6!]	Major Batteries (fixed mount 10 MJ UV laser each).

Central Hull System

- [1] Hardened Nanocomposite Armor (dDR 5).
- [2-3] Reconfigurable System (Robot Arms to Medium Batteries with three fixed mount 16cm missile launchers each).
- [4] Control Room (C6 computer; comm/sensor 4, and one control station).
- [5-6, core] Fuel Tanks (1.5 tons hydrogen with 7.5 mps delta-V each).

Rear Hull System

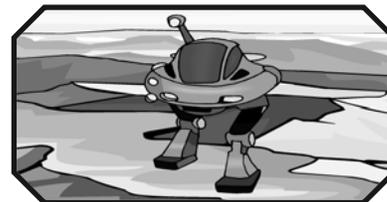
- [1] Hardened Nanocomposite Armor (dDR 5).
- [2-3!] Reconfigurable System (Robot Legs, Move 10,* to High-Thrust Fusion Torches, 1G each).

Rear Hull System

- [4-5] High-Thrust Fusion Torches (1G acceleration each).
- [6] Defensive ECM.
- [core] Fusion Reactor (two Power Points).

* Only one Power Point needed for both legs.

It is winged and has emergency ejection. Typical crew is a single pilot.



TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT)

10^ *Ariel* 20 0/4 12 4G/22.5 mps* 30 0.1 +5 1SV 15/5/5† 0 \$10.04M

* Acceleration assumes legs are configured as engines; 2G otherwise.

† Hardened.

Top air speed is 5,000 mph with legs configured as engines, 3,500 mph otherwise. Hnd/SR is +4/5 in atmosphere. On the ground, it has Move 10 and Hnd/SR +2/2.

GALAXY STRIKER SUPER MECHA (TL12^)

This is a powerful and versatile humanoid mecha with a potent mix of offensive and defensive weaponry, and a few superscience gadgets such as a tough force screen. Its teleport projector beams the pilot and gunner directly into the cockpit and is useful for emergency escapes if all else fails! The *Galaxy Striker* has a 300-ton (SM +7) unstreamlined hull, standing 100 feet tall.

Activate Super-Duper-Mecha-Ultra-Assault Mode.

– Rikku, Final Fantasy X-2

Front Hull System

- [6!] Major Battery (turret with 10 MJ improved rapid fire antiparticle beam).

Central Hull System

- [1-2] Exotic Laminate (total dDR 60).
- [3-4] Robot Arms.
- [5!] Heavy Force Screen (dDR 70, or dDR 140 with two Power Points).
- [6] Habitat (two teleport projectors).
- [core] Control Room (C9 computer; comm/sensor 8, and only two control stations).

Rear Hull System

- [1] Exotic Laminate (dDR 30).
- [2-3] High-Thrust Super Conversion Torch Engines (100G acceleration each).
- [4] Fuel Tank (15 tons of hydrogen with 5,000 mps delta-V).
- [5-6!] Robot Legs (Move 10).*
- [core] Total Conversion Reactor (five Power Points).

* Only one power point needed for both legs.

It is equipped with gravitic compensators. It is operated by a pilot and gunner/co-pilot.

Front Hull System

- [1-3] Exotic Laminate Armor (total dDR 90).
- [4] Defensive ECM.
- [5!] Major Battery (fixed mount with 100 MJ conversion beam).

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL12 (HIGH-PERFORMANCE SPACECRAFT)

12^ *Galaxy Striker* 50 +1/5 12 200G/5,000 mps 300 0.2 +7 2SV 90/60/30* 0 \$160.25M

* Add dDR 70 (dDR 140 if using two Power Points) if force screen is powered up.

Top air speed is 3,500 mph. On the ground, it has Move 10 and Hnd/SR +1/3.

CHAPTER TWO

CINEMATIC ACTION

These rules are intended to give the feel of space opera. They are modular, allowing GMs to decide which are used in the campaign, and they aren't just for fighters. They may be used for any spacecraft.

Although intended for cinematic play, many of these rules can be used in realistic games if the GM believes they are a good fit. In particular *Cockpit Multitasking*, *Relative Target Size*,

Improvised Weapons, *Fuel and Ammunition Transfer*, and *Crash Landings in Hangar Bays* are suitable for any situations.

A few are noted as usable only in the basic space-combat system in *GURPS Spaceships*. Otherwise, rules that require modification for hex-based tactical combat (see *GURPS Spaceships 3: Warships and Space Pirates*) have extra *Tactical Combat* notes.

CINEMATIC PILOTING

These feats let pilots pull off stunts. If the GM wishes to give players an advantage, restrict them to the PCs and perhaps a few major NPCs.

*How did that pompous old man
hold off an entire Jem'Hadar fleet
with only one ship?*

– General Martok, *Star Trek:
Deep Space Nine*, #7.7

CLOSING STRATEGY: REVERSAL

This is an alternative closing strategy (*GURPS Spaceships*, p. 51) that lets you turn a foe's advantage against him, e.g., by looping up, around, and behind him, or suddenly decelerating so he overshoots in front of you.

You can only use this strategy against a target you're not engaged with, and which, on its last turn, was Closing on your vessel, *and* achieved an attack vector or collision course against you. You can't attempt a Reversal against a foe who successfully used the defensive tactics Space Tactics task against your vessel this turn.

Resolve this as a normal Closing maneuver, except you use your opponent's Acceleration Bonus or your own, whichever is *better*. (Choosing a high Acceleration Bonus isn't useful for this

maneuver but is helpful should foes attempt maneuvers against you on their upcoming turns.) You take a -2 penalty when performing a Reversal (it's a tricky maneuver); you suffer a further -2 if you already used it vs. this target (or a foe in formation with it) during this battle.

If you succeed you *must* opt to be advantaged, and if you succeed by 10+, you *must* combine advantaged with an attack vector.

Tactical Combat: Not usable.

HUGGING THE ENEMY

Small vessels gain an advantage over larger foes by maneuvering in close with them. A spaceship at zero range (*GURPS Spaceships*, p. 57) with a target whose SM exceeds its own by at least three may declare it is "hugging" the larger vessel. This means it is using it as terrain it can hide behind.

The smaller craft is so close to the larger vessel, the normal bearing rules do not apply. Instead, only *turrets* in batteries on the hull section facing the smaller vessel can attack. Moreover, weapons in major batteries are at -6, medium batteries are at -4, and secondary batteries are at -2.

Fire against the smaller vessel by another craft is at -3, and a shot that misses or is dodged has a chance (the larger vessel's Size Modifier minus 3 on 3d) of hitting the larger vessel it was hugging.

These effects persist only until the smaller vessel's next turn. To continue hugging its target, it must maneuver to retain zero range.

Tactical Combat: Hugging the enemy may be used in tactical combat when in the same hex as the larger vessel. Declare it when the smaller vessel maneuvers.

LANDING ON A SPACECRAFT

A small spacecraft may actually land *on* a larger vessel, even if that vehicle lacks external clamps or hangar bays, and/or is uncooperative! This can only be performed on a spacecraft whose SM exceeds your own by eight or more. Thus, an SM +4 fighter can land on a craft with SM +12 or more. (The GM is free to rule that a ship's unique geometry precludes available landing space, however.) It requires a Rendezvous, followed by a Piloting roll for the actual landing. Use the same rules as for entering a hangar, but with an extra -4 penalty. All landings (and subsequent takeoffs) are assumed to use low-powered attitude thrusters (as incorporated into the spacecraft's control system) and do not damage either vessel.

Tactical Combat: This rule can be used if the spacecraft have matched velocities (with their vector counter and position counter in the same location).

SACRIFICIAL DODGE

Your spacecraft can defend another by flying into the path of an attack against it! To do so, your ship must be flying in formation or rendezvoused with the ally you are protecting. Announce a sacrificial dodge *after* the enemy makes his attack roll but *before* your friend attempts his defense roll. Use the ordinary rules for a dodge. If you succeed, *you* are hit by the attack. If you fail, you didn't move in time, but your ally still gets his normal defense roll. In either case, since you moved, you cannot retreat if *you* are attacked before your next turn. This is a cinematic rule if dodging beam weapons, but reasonably realistic for dodging ballistic attacks.

Tactical Combat: This defense can be used if the allied spacecraft are in the same hex. Ignore the references to retreating, but otherwise the procedure is identical.

SPACE PILOTING TECHNIQUES

GMs may allow space pilots to learn particular techniques – for example, a smuggler might practice evasive maneuvering. Individuals often give them flashy names such as “Reverse Cobra” or “Freda's Feint.”

Tactical Combat: These techniques are usable only with the basic space combat system.

Aggressive Maneuvering

Average

Default: prerequisite skill.

Prerequisite: Piloting (High-Performance Spacecraft); cannot exceed prerequisite skill+2.

You are skilled at offensive space-combat maneuvers. If you know this technique above default, you may use it instead of the underlying Piloting skill when you take the Closing maneuver option, except for Closing maneuvers that use the Ambush or Reversal strategies.

Ambush Maneuver

Average

Default: prerequisite skill.

Prerequisite: Piloting (any type); cannot exceed prerequisite skill+3.

You are skilled at carefully timed ambushes. If you know this technique above default, you may use it instead of the underlying Piloting skill when you take a Closing maneuver using the Ambush strategy.

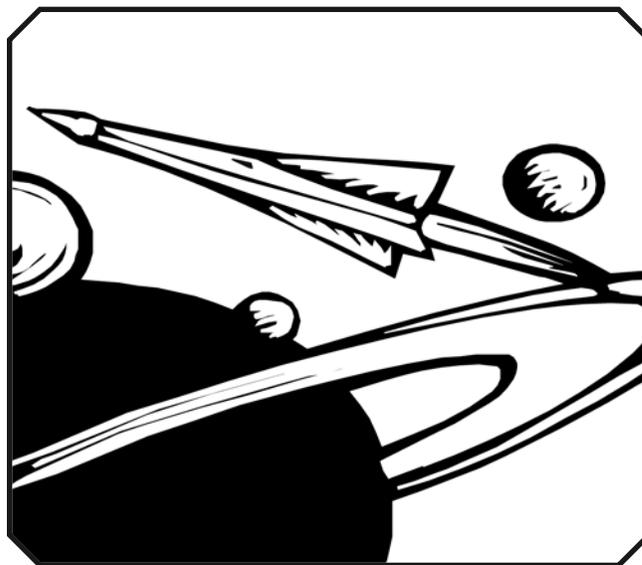
Escape Maneuver

Average

Default: prerequisite skill.

Prerequisite: Piloting (High-Performance Spacecraft); cannot exceed prerequisite skill+4.

You are familiar with space-combat maneuvers designed to break off from combat. If you know this technique above default, you may use it instead of the underlying Piloting skill if your last movement option was Retreat and a foe is Closing against you.



Evasive Maneuvering

Average

Default: prerequisite skill.

Prerequisite: Piloting (High-Performance Spacecraft); cannot exceed prerequisite skill+4.

You are skilled at performing evasive space-combat maneuvers. If you know this technique above default, you may use it instead of the underlying Piloting skill if your last movement option was Evasive Action and a foe is Closing against you.

Reversal Maneuver

Average

Default: prerequisite skill.

Prerequisite: Piloting (High-Performance Spacecraft); cannot exceed prerequisite skill+3.

You are skilled at sudden direction changes. If you know this technique above default, you may use it instead of the underlying Piloting skill when you take a Closing maneuver using the Reversal strategy.

LARGE SPACE BATTLES

An epic battle may involve hundreds or thousands of ships sprawling over a vast area of space. In such a situation, the GM need only resolve that part of the fight closest to the player characters' own craft.

The GM may opt to treat their actions as a microcosm of the greater conflict. Have the odds against them reflect those facing the rest of the force. For example, if 200 Federation star fighters (including the PCs' ship) engage 430 Imperial fighters and supporting vessels, the odds are about two to one. So if there are three fighters piloted by the heroes plus two NPC allies, have them face off against 10 enemy vessels.

Should both fleets vary widely in tonnage and composition, determine odds based on the total tonnage of ships involved. Thus, if seven billion tons of enemy ships engage five billion tons of allied vessels, odds are about seven to five. If the party has a 300-ton patrol ship and two 30-ton fighters, send about $360 \times 7/5 = 500$ tons of enemy vessels against them.

GMs may wish to pepper the micro-level ship-to-ship action with descriptions of how the larger battle is faring, including

inspiring or panicked orders from any superiors. Other events add spice, such as a badly damaged allied vessel suddenly appearing, pursued by an enemy ship, or drifting survivors calling for rescue.

It's up to the GM how to resolve the larger conflict. He can handle this by fiat, with the PCs' actions immaterial against the course of events. They can "win the skirmish but lose the battle" if that suits the overall plot of the campaign. However, he may choose to have the ebb and flow of the fight reflect the fate of the team's spacecraft. Thus, if the heroes' ship destroys half their foes; takes only minor damage; and forces the rest to retreat, the GM might assume their side wins with only a few losses, and half the enemy fleet is wiped out. A critical battle can be divided into phases, each fought against different opponents. If the team commands an important vessel, they may have a chance to strike a decisive blow, such as attacking an enemy flagship (or defending their own); destroying a key target; or landing a commando force to seize a critical port or defense headquarters.

Fuel and Ammunition Transfers

Spacecraft that have rendezvoused may transfer fuel, armament, or cargo "in flight." See *Fuel Transfers* (*GURPS Spaceships*, p. 46) and *Cargo Handling* (*GURPS Spaceships*, p. 44) for transfer rates.

Ammunition Transfer: This is covered in the rules for *Cargo Handling* (*GURPS Spaceships*, p. 44).

Fuel Transfer: The time required to set up the fuel transfer is one minute if the vehicle is inside the hangar bay, and 10 minutes if the vessels connect externally (which requires sending crew outside if they cannot employ robot arms). Roll against Spacer skill; failure means another attempt is needed. Once set up, the fuel-transfer speed in tons is $1/30$ the smaller craft's total fuel tank capacity per

minute (see *Fuel Transfers*, *GURPS Spaceships*, p. 46). This is doubled if the smaller vessel is in a hangar bay.

In routine circumstances, extra time (p. B346) is used to increase safety. In stressful situations (e.g., combat), a critical failure while transferring material or fuel means an accident occurs. One of the systems involved in the transfer (roll randomly) is disabled with possible crew casualties (*GURPS Spaceships*, p. 62) among those workers. If volatile material or fuel is involved (antimatter, missiles, etc.), use the rules for disabled *Volatile Systems* and *Halt Catastrophe* (*GURPS Spaceships*, pp. 62, 64) to see if the spacecraft explodes!

CINEMATIC CLICHÉS

Some are silly, some not . . . but they can all add to the cinematic feel of a space battle.

Stabilize your rear deflectors.

– *Gold Five,*
Star Wars IV: A New Hope

2D THINKING

The GM may provide a +2 bonus to Tactics rolls in space combat for commanders who have the 3D Spatial Sense

advantage. Everyone else "thinks two-dimensionally" and thus is astounded when a more astute captain demonstrates otherwise.

ACCIDENTAL COLLISIONS WHILE DODGING

If a spacecraft is part of a formation, the GM may rule that a *critical failure* on any dodge roll means that it suffers an immediate low-speed collision (typically at about 0.1 mps velocity) with another craft in that formation. The other ship's pilot may dodge to avoid this. If a spacecraft is hugging the enemy, a critical failure on a dodge roll results in an immediate low-speed collision with the vessel it is hugging.

AIRPLANE-STYLE DOGFIGHTS

In some cinematic settings, spacecraft seem to maneuver as if they were aircraft flying in atmosphere. The GM may require pilots follow these three restrictions:

1. You may not choose a Controlled Drift maneuver – you have to pick a maneuver that requires acceleration or use Uncontrolled Drift.
2. You may not choose a Closing maneuver against an enemy spacecraft if the target was, on its last turn, Advantaged against you, *and* the target’s pilot decided that vessel’s rear hull faced toward them.
3. Fast passes should not be allowed.

Tactical Combat: Use this only with basic combat. For tactical combat, GMs may get a similar feel by not allowing spacecraft to exceed a “top speed” (from position to vector counter) over 12 times the thrust rating in combat (even if they have the delta-V to do it).

COCKPIT MULTITASKING

Multitasking (*GURPS Spaceships*, p. 50) is much easier on very small (SM +4-6) spacecraft where all the controls are within easy reach of a single operator. The skill penalty is only -1 per added task of the same *or* different category.



EXPLODING SPACECRAFT AND FIREBALLS

If a volatile system on a spacecraft (excluding one with PCs aboard) is destroyed, roll against the vessel’s HT. Any failure means it explodes *immediately!*

Any spacecraft at zero range to the enemy, or point-blank range and on an attack vector or collision course, may also be caught in the fireball. Its pilot may dodge to veer away from or outrun the explosion. He rolls at +3 if he was at point-blank range but gets no bonus at zero range. Failure means he is caught in the fireball. His spacecraft suffers damage to its front hull section based on the SM of the exploding foe and the range; see the *Fireball Damage Table* (below).

Fireball Damage Table

SM	+4	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Point-blank	1d-3	1d-2	1d-1	1d	1d+1	1d+2	2d	2d+1	2d+2	3d	3d+1	3d+2
Zero	1d+2	2d	3d	4d	5d	7d	5d×2	5d×3	2d×10	3d×10	5d×10	7d×10

Tactical Combat: This only applies if the victim rendezvoused with the exploding foe (use zero-range damage) or was in the same hex in 10-mile scale (use Point-Blank damage).

EXPLODING INSTRUMENTATION

In cinematic space opera, fuses haven’t been invented! If the dDR of the control room’s hull section is penetrated by any attack with the Surge damage modifier, roll 1d. On a 6 an electromagnetic surge explodes one control station console (GM’s choice or roll randomly), doing 3d-2 burning damage to the operator.

FORCE SCREEN OPTIONS

These design switches for force screens can convey a cinematic feel.

Kinetic Transfer: This is intended for battles fought during 20-second turns. The screens convert some of the energy from all attacks – even beams – into kinetic energy. A single attack on a powered-up screen that exceeds half the screen’s dDR makes the protected ship shake! Crewmembers may fall down or out of their chairs (if not wearing seatbelts) and all tasks (other than by sapient computer programs) take a -1 penalty until the end of the ship’s next turn.

Prismatic Screens: In some classic space operas, force screens change color as they absorb energy, glowing red to orange to yellow and so on up the spectrum, eventually flaring violet and overloading. Replace the rules for screen ablation with the following: A screen that takes more damage than half its dDR in one hit gains one energy level and shifts one color up the spectrum. Screens go from transparent through red, orange, yellow, green, blue, indigo, violet, and finally ultraviolet. If a screen passes ultraviolet, it overloads and its generator is automatically disabled (as if knocked out by enemy fire). Using this variation, screens recover energy levels at a steady rate set by the GM. One level every combat round (whatever the usual turn scale is) is a convenient number.

IMPROVISED WEAPONS

Even an unarmed spacecraft can be a powerful weapon. These offenses are sometimes realistic, but usually opponents in non-cinematic settings are clever enough not to fall for these tricks.

Reaction Drives as Weapons

Reaction drives produce a lot of power and radiation but they are not focused, so unless a target is directly behind them they aren’t much use as weapons. Someone in line with an ion drive’s exhaust or anyone within a few thousand yards of the rear of a spaceship using external pulsed plasma gets hurt, but the drive can’t be directed as a beam over any distance.

However, some drives *are* both hot and coherent enough to be usable as weapons, or can be focused to work as such with little effort. Treat each of these sails or engines as having the same effect as a fixed mount weapon in a rear-facing medium battery of the same SM. All engine-weapons must be aimed at the same target.

The pilot must use a Move maneuver and an Aim and Attack task; in basic combat, he must also select the Evasive Action or Retreat option. All fire is at a -4 penalty and uses the lower of the firing pilot's Piloting or appropriate Gunner skill.

<i>Engine</i>	<i>Weapon Equivalent</i>
Antimatter Pion or Pion Torch	Particle beam but (2) armor divisor
Fusion Torch, Antimatter Plasma Torch	Plasma beam but (0.5) armor divisor
Fusion Rocket, Antimatter Plasma Rocket	Plasma beam but (0.2) armor divisor
Mass Driver	Electromagnetic Gun*
Super Fusion or Super Antimatter Plasma Torch	Plasma beam, no armor divisor
Total Conversion Torch	Graser

* If firing cargo rather than simple dust.

Tactical Combat: As above, except the pilot does not select an Evasive Maneuver or Retreat option. Instead, he must have used the drive to accelerate by at least enough to produce one hex/turn of thrust.

Lightsails as Weapons

A lightsail may focus light into a wide but hot beam if it is *not* being used for propulsion that turn. Each sail functions as a single heat-beam turret with the output of a medium-battery weapon for a spacecraft of the same SM. The lightsail beam has a (0.1) armor divisor, but otherwise uses the normal rules for heat beams.

Tactical Combat: Use the same rules.

Stardrive Engines as Weapons

Stardrive technologies may be hazardous depending on their exact capabilities and limitations. For example, in some science-fiction settings activating a hyperspace drive in close proximity to another spacecraft is disastrous, leaving both vessels lost in space or destroyed. Such an action requires powering and activating a stardrive while at zero range to another vehicle.

Tactical Combat: This is only effective when vessels have rendezvoused with each other, or when both are positioned in the same hex using a 10-mile scale.

Sensor Arrays as Weapons

A comm/sensor array's active ladar and laser communicators may be tightly focused as laser weapons if not being used for sensor or communication tasks that turn.

Only tactical or multipurpose arrays on SM +7 or larger vessels are powerful enough. Treat each comm/sensor array used in this fashion as a *single* laser with the output of a tertiary

battery beam *and* the option to use either rapid fire (at 10% output) or very rapid fire (at 1% output).

The weapon type depends on the TL: At TL8, treat it as a heat ray. At TL9, as a laser. At TL10, a UV laser. At TL11-12, an improved UV laser. For example, a TL11 spacecraft with SM +8 using a tactical array as a weapon fires as a single 10 MJ improved UV laser turret (1 MJ if rapid fire, or 100 KJ if used for very rapid fire). Otherwise, all normal rules for beam weapons apply to them.

Improvised Missiles

It may be possible to dump material into the path of an enemy spacecraft; if the foe moves too fast, it may collide with the obstacles. Potential improvised missiles include cargo, fuel that freezes (such as water), and solids (like rock dust).

This tactic can be used by spacecraft at zero or point-blank range to their opponents. Either or both vessels must be performing a fast pass. (If not, they can easily avoid the improvised missile.) A Quick Contest of Tactics between the captains determines if the timing is right. The dropping ship gets a +3 bonus if the scale is Close but a -3 if it is Distant. Victory means the loads are on target; any other result means they were dropped too early or too late.

Since improvised missiles are unpowered and unguided, hitting with one is strictly a matter of luck. Roll 3d against the SM-3 of the target vessel. Add +1 for a ton of dispersed debris or reaction mass; each tenfold increase in tonnage adds an extra +1. The margin of success is the number of impacts.

The target gets a Dodge roll to avoid each impact. Treat each collision as a 2cm conventional warhead, adjusting damage for relative velocity.

Tactical Combat: This tactic may be used if both spacecraft are positioned in the same hex but their vector counters are in different hexes.

Crash Landings in Hangar Bays

Piloting skill rolls are required to recover spacecraft in hangar bays (see *GURPS Spaceships*, p. 65); normally a failed roll means an "abort" as detailed in those rules. However, if a pilot does not wish to abort he may instead crash-land into the hangar bay, treating it as a 0.1 mps collision with the vessel; the carrier's armor doesn't protect it. If a vehicle is badly damaged (dHP 0 or less) it can't abort and must crash-land on a failed recovery roll!

A crew chief supervising a hangar deck can rig emergency landing procedures (capture nets, fire-fighting gear, etc.) to recover a single damaged vessel. If no other landings are going on that turn, he may roll against Spacer skill. Preparation takes one minute but extra time modifiers can be applied. Success halves any collision damage from a failed roll; it does not modify damage from a critical failure (which usually means he missed the hangar bay entirely).

RELATIVE TARGET SIZE

Weapons and targeting systems on vessels are optimized for attacking craft of similar or larger size. The heavier weapons and batteries on large warships may have trouble zeroing in on lesser craft. (“Those gnats are too small to track! Launch our fighters and destroy them ship to ship!”)

Oh, I see. “No registered vessel should attempt to traverse an asteroid belt without deflectors.”

– Kryten, *Red Dwarf* #6.1

ENVIRONMENTAL EFFECTS

The following rules add extra “terrain effects” to the basic space combat system.

FIGHTING IN LOW ORBIT

If a fight takes place in low orbit around a planet or other celestial body, vessels move at several miles per second. The assumption is they all orbit the same direction and so their speed is ignored – the craft are effectively at the same speed relative to one another unless they maneuver. However, any vessels orbiting in different directions can be treated as if making fast passes (*GURPS Spaceships*, p. 54) at up to twice the world’s orbital velocity. The GM may similarly rule that ground stations involved in the battle can only participate for one turn (as per the Fast Pass status rule) before they vanish over the horizon.

A vessel that meets the requirements for landing (see *GURPS Spaceships*, Chapter 3) may do so in combat. Functionally, reentry or landing is equivalent to a taking a Hold Course maneuver (or series of maneuvers) for the time required to land. A landing spacecraft cannot change facing.

Cinematic Cliché: Spacecraft crippled while in orbit do not remain there, but fall into a decaying orbit and burn up within 2d turns!

Tactical Combat: Use the rules for celestial bodies in *GURPS Spaceships 3: Warships and Space Pirates* (pp. 33-34).

NEBULAS, ION STORMS, AND GAS CLOUDS

A real nebula is highly diffuse and has no effect on a realistic battle (except forcing ramscoops to operate at reduced speeds). In contrast, cinematic nebulas are depicted as thick enough to impede vision or sensors! If they’re the wave fronts of recent supernovas, they’re filled with dramatic electrical and plasma discharges or “ion storms” that further degrade a vessel’s capabilities. These conditions could also describe the upper reaches of a gas giant’s atmosphere.

In such circumstances, the following guidelines apply.

A spacecraft with this design switch that fires a spinal weapon, major battery, or medium battery at a smaller, maneuvering target suffers a -1 penalty per SM difference. If firing a secondary or tertiary battery, it suffers a -1 for every two SM difference. A maneuvering target is one that can dodge; thus this penalty does not apply when firing against incoming missiles, since they do not dodge.

All spacecraft are treated as if they have a powered-up cloaking device. (The energies disrupt actual cloaking devices, so vessels that already have them get no extra benefit!)

Beam weapon ranges degrade as they pass through clouds of gas. Assume that all lasers, X-ray lasers, and grasers, and optionally any type of superscience beam (such as disintegrators), are reduced from range class 2 or 3 to range class 1 (i.e., the same range as a particle beam). Thick storms limit *all* beam weapons to range class 0 (i.e., the same range as plasma beams).

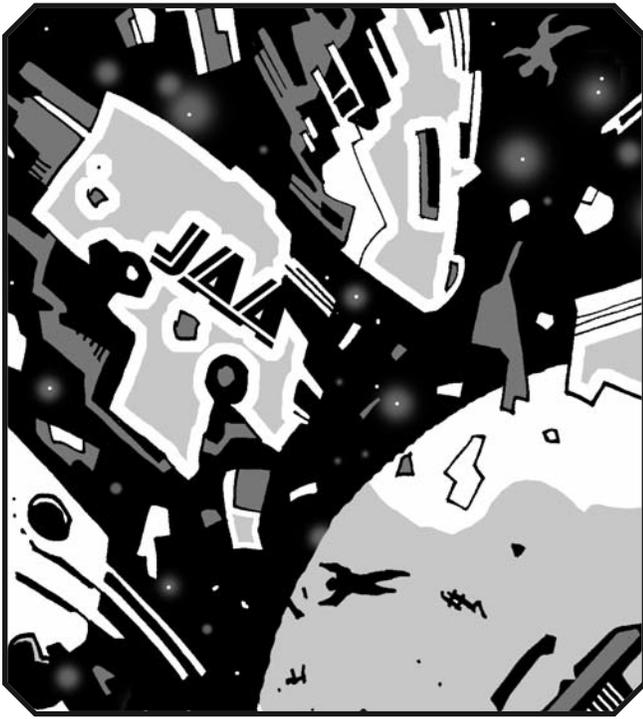
Cinematic teleport projectors stop working. Optionally, the same effect prevents stardrive from operating, or reduces the acceleration of subwarp drives from their normal 500G to a “mere” 50G per engine.

UNPREDICTABLE DEBRIS FIELDS

A debris field is any dense cluster of asteroids, ice chunks, giant boulders, or other space junk: multiple large objects, all moving unpredictably. These include cinematically dense asteroid fields, comet tails, a gas giant’s rings, a tight cluster of space stations and satellites, and the not-yet-dispersed wreckage of a recent battle. A vessel that proceeds slowly and cautiously through a field should have no problems, but high-speed combat maneuvers within one can be perilous!

In the basic combat system, the GM may rule that the entire fight takes place in a debris field. A spacecraft exits a field by performing a Retreat maneuver (or successfully pursuing another retreating vessel) and leaves the engagement. Alternatively, one may be close to the engagement area but the combatants might not begin within it. If so, spacecraft can choose to enter it using a retreat maneuver. They and any pursuers may then use the rules for evasive action and fast passes through a debris field as long as they remain.

Tactical Combat: The GM should decide on the extent of the field and mark those hexes that are part of it. Debris-field hexes can form a continuous belt or scatter here and there across the map.



Cover in a Debris Field

A debris field is dense enough to give a spacecraft a cover bonus! Ships in a field are at -2 to be hit if the fragments are larger than they, or -1 if they are of equal size (GM's call). This does not apply to ghost particle beam fire, but the same modifiers do apply to all detection rolls.

Tactical Combat: This only applies if the line of fire passes into or through a debris-field hex or, in the case of missiles or guns, if the target is inside a debris hex.

Risking Collision

In the basic combat system, *any* spacecraft that used a Closing Maneuver, Evasive Action, or Retreat with an acceleration bonus of +3 or more, or that performed a fast pass, risks crashing into something. Roll 3d at the end of the vehicle's Piloting tasks step. On a roll less than or equal to the vessel's $(SM+3)/2$ (rounded up) the spacecraft is on a collision course with a chunk of debris. Roll 3d-3 to determine the Size Modifier of the object and see *Resolving Debris Collisions* (below).

Tactical Combat: Debris-field hexes should be marked on the map and spacecraft should attempt to maneuver around them. If a ship's course from its placeholder to its position intersects these hexes traveling two or more hexes per turn, it is fast enough to be at risk. Roll at the end of the vessel's vector movement step (with the same chance as described above) to determine if a collision occurs.

Resolving Debris Collisions

If a collision is indicated, find the SM of the object as detailed above. Then consult the *Object Table* (below) to determine its dHP and dDR.

Object Table

SM	dHP	dDR	SM	dHP	dDR
0	6	0	+8	140	7
+1	10	0	+9	200	10
+2	14	1	+10	300	15
+3	20	1	+11	400	20
+4	30	2	+12	600	30
+5	40	2	+13	1,000	50
+6	60	3	+14	1,400	70
+7	100	5	+15	2,000	100

Facing: If a spacecraft made a fast pass or closed, the object collides with its front hull. If it took evasive action, roll 1d: 1-3 = front hull, 4-5 = central hull, 6 = rear hull.

Base Relative Velocity: Use the *Base Relative Velocity Table* (*GURPS Spaceships*, p. 59), treating the object as if it were closing. If the ship performed a fast pass, use the moving vessel's actual velocity instead.

Point Defense: The colliding spacecraft may attempt Point Defense attacks if it meets the criteria to do so (see *GURPS Spaceships*, p. 59). However, it's harder to stop a big inert object than a small missile! It requires reducing the object to $-5 \times dHP$ or less; bringing it to 0 dHP won't stop it in time, but it results in smaller, more diffuse chunks of rubble. Treat the fragment's SM as two less when it strikes. (An object reduced to SM -1 has dHP 4; at SM -2 it has dHP 3).

Dodging: If the spacecraft is eligible, it may attempt to dodge the object (or fragments); otherwise it is struck.

Impact: Determine damage using the *Collisions and Conventional Warheads* rule (*GURPS Spaceships*, p. 61), treating the object as a ramming spacecraft with the SM and dHP shown on the *Object Table* (above).

Like everyone else, my pilots have lost their families, their friends, everyone they ever cared about; but on top of that they're asked to put their lives on the line every single day, for a fleet that seems more interested in what they do wrong than in what they do right. They're not asking for your pity, but they damn well deserve your respect.

– Captain Lee “Apollo” Adama, *Battlestar Galactica* (2004) #2.8

CHAPTER THREE

SMALL CRAFT, SPACE MECHA, AND MISSILE DESIGN

This chapter provides additional design rules and components especially suitable for carriers and mecha, as well as options for custom design of missiles and small spacecraft.

These rules add to or modify the ones found in *GURPS Spaceships*.

NEW SYSTEMS

Robot Leg and *Handheld* can be added to any spacecraft to create mecha and other walking vehicles. *Area Jammer* is suitable for any craft, while *Optimized Hangar Bay* can enhance carriers. (Entries for SM +4 are for use with the smaller-craft rules on pp. 38-39.)

ROBOT LEG (TL9) [HULL!]

Spacecraft designed as mecha that move on the ground require one or more robot leg systems, representing a mechanical leg and associated motors. Two legs are typical, but one or more than two legs are possible.

One-legged craft are slower. Those with three or more are less maneuverable but faster and more stable. Robot legs are only practical on SM +4 to +7 vessels.

Although a high-energy system, only one Power Point is required *regardless* of the number of leg systems installed.

Robot Leg Table

SM	+4	+5	+6	+7
Workspaces	0	0	0	0
Cost (\$)	100K	300K	1M	3M

Repair Skill: Mechanic (Mecha or Robotics).

Ground Performance

Craft with robot legs have a ground Move and Speed as well as a ground Hnd/SR.

Move: Determine both Acceleration and Top Speed, in yards/second (see *GURPS Basic Set*, p. 463; double this to get mph). Acceleration and Top Speed are 5 for one leg or 10 for two legs. For craft with three or more legs, Acceleration is 10; Top Speed is 5 times the number of legs, e.g., four legs would give the vehicle 10/20.

Ground Hnd/SR: This depends on SM and the number of legs. The table shows the ground Handling and Stability Rating, e.g., SM +5 with two legs is Hnd +3 and SR 3.

SM	+4	+5	+6	+7
One leg	+4/1	+3/1	+2/1	+1/1
Two legs	+4/3	+3/3	+2/3	+1/3
Three legs	+3/4	+2/4	+1/4	0/4
Four or more legs	+3/5	+2/5	+1/5	0/5

Apply a -1 modifier to Handling if the craft is either streamlined or winged; apply a -1 modifier to SR if it is both.

NEW DESIGN FEATURES

These options can be added to spacecraft systems.

Area Jammer (TL7)

For Defensive ECM

This feature can be attached to a Defensive ECM system. It gives it an area-jamming mode, protecting nearby vessels as well as itself.

In area-jammer mode, it has half its effect (-1 per system) but protects both itself and other friendly spacecraft within its jamming radius. Those whose SM exceeds that of the jamming vessel by three or more are not protected, as they are too large to mask.

Area-jammer mode is not cumulative with a spacecraft's own defensive ECM, nor with the effects of other jammers. Use

only the best modifier. Switching modes counts as an Electronics Operation task.

In the basic space combat system, an area jammer protects all spacecraft in formation with the jamming ship (see *Formations*, **GURPS Spaceships**, p. 65). In the tactical system, depending on the scale, it protects a radius around the jamming vessel as shown in the *Area Jam Radius Table* (below).

Area Jam Radius Table

SM	+4	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
10-mile	5	7	10	15	20	30	50	70	100	150	200	300
100-mile	1	1	1	2	2	3	5	7	10	15	20	30
1,000-mile	0	0	0	0	0	0	1	1	1	2	2	3

Handheld

For Major Batteries

A major battery may be designated as a "handheld weapon" for a spacecraft with a robot arm. A handheld weapon is attached to the hull with a folding bracket or cable that transmits targeting data and electrical power. The cable is equal in length to the ship's length. When not held, it folds flush against the spacecraft's side or clamps onto it.

A handheld weapon can only be fired if the spacecraft has one or two arms free. Treat the arm as a turret mount for determining bearing and arc of fire. Using *two* arms braces the weapon: Add +1 to hit (compared to +2 for a fixed mount).

Besides bracing, handheld weapons have another advantage: They can easily be swapped for other weapons. It takes 20 seconds to remove a handheld device and replace it with another of similar size.

Extra handheld weapons may be carried as cargo: Each masses 1/20th the loaded mass of the ship it's designed for. Thus, a weapon for an SM +5 ship masses 1.5 tons.

Handheld weapons are *not* protected by a vessel's dDR. However, they are rugged and protected with the same dDR as one system of US metallic laminate armor: dDR 2 (SM +4), 3 (SM +5), 5 (SM +6), 7 (SM +7), and so on. They can be targeted using the same rules for targeting other specific systems; any damage that penetrates the weapon's integral dDR destroys it.

Optimized Hangar Bay (TL7)

For Hangar Bays

Hangar bays on an SM +8 or larger vessel may be optimized to carry a particular size of craft: That SM must be at least 3 levels smaller than the carrier's. Record this along with its capacity, e.g., "Hangar Bay (300 tons, optimized for SM +6 craft)." Optimized bays have double the listed launch and retrieval rates (see **GURPS Spaceships**, p. 18) for that SM of craft, but the rates are halved for all other ships. There is no extra cost.

BUILDING SMALL SPACECRAFT

These guidelines detail how to use the **GURPS Spaceships** rules to create SM +4 spacecraft massing about 10 tons. This size is suitable for smaller fighters and drones, as well as probes, shuttles, and the upper stages of rockets.

SPACECRAFT HULL

This table expands the spacecraft hull table (**GURPS Spaceships**, p. 9) to cover SM +4 craft.

Hull Size Table

SM	Loaded Mass	Length	dST/HP	Hnd/SR
+4	10 tons	10 yards (30 ft)	15	0/4

SYSTEM DESCRIPTIONS

For small spacecraft, some systems need modifications to fit in a tinier ship. In certain cases, the systems cannot be scaled down or are otherwise inappropriate for small ships, and are thus may not be included when designing a SM +4 space vessel.



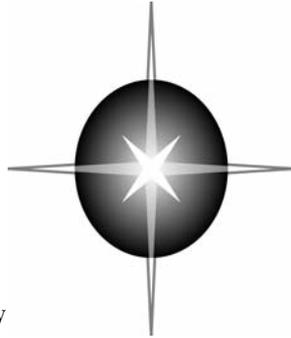
Commander, one of our fighters is under attack from the formation approaching the fleet!

– Colonel Tigh, *Battlestar Galactica* (1978) #1.1

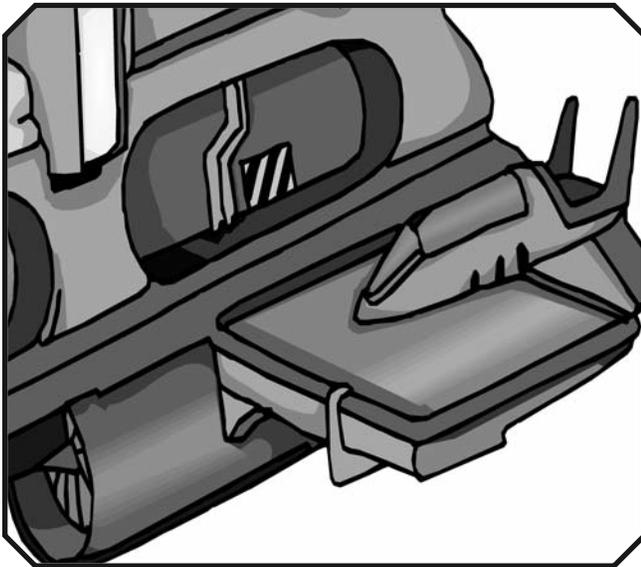
Unavailable Systems

Most systems can be installed in SM +4 spacecraft; the exceptions are listed here.

Armor, Stone
 Armor, Steel
 Engine Room
 Factory
 Habitat
 Hangar Bay
 Jump Gate
 Open Space
 Upper Stage*
 Weapons, Medium Battery
 Weapons, Secondary Battery
 Weapons, Tertiary Battery



* SM +4 spacecraft may *be* an upper stage but may not have an upper stage.



System Statistics

For most systems, scaling them down to SM +4 is just a matter of looking up the relevant table in *GURPS Spaceships* and reducing the cost as detailed below.

Cost: An SM +4 system is 10% of the cost of an SM +6 system. Exceptions: Passenger seats, stasis webs, and soft landing systems are 50% of the cost of an SM +5 system. For example, a diamondoid armor system for an SM +4 spacecraft would cost \$100K. The costs of spinal and major batteries are shown in the table below.

Workspaces: Systems have no workspaces.

Other Statistics such as dDR and cargo capacity may vary at SM +4, as detailed in the tables below.

Armor at SM +4

Type	US dDR	SL dDR
Light Alloy	1	1
Metallic Laminate	2	1
Advanced Metallic Laminate	3	2
Nanocomposite	5	3
Organic	1	0
Diamondoid	7	5
Exotic Laminate	10	7

Weapons Battery Statistics at SM +4

Battery Size	Spinal	Major
Beam output	10MJ	3MJ
D-damage	4d	3d
Gun caliber	10cm	8cm
Launchers	20cm	16cm
Missile Shots	5	5
Gun Shots	50	50
Cost (\$)	150K	100K

Other System Statistics at SM +4

System	Statistics
Cargo Hold	0.5 tons capacity
Control Room	C6 computer, comm/sensor TL-7, and one control station*
Enhanced Comm/Sensor Array†	array level TL-5
Force Screen	dDR 15 (at TL11) or dDR 20 (at TL12)
Fuel Tank	0.5 tons capacity
Hangar Bay	0.3 tons capacity
Mining	0.05 tons/hour
Passenger Seating	one seat
Refinery	0.15 tons/hour

* The discount for removing the control station from an SM +4 vessel is only \$10K, compared to the usual \$50K.

† And multipurpose, science, and tactical arrays.

Design Feature Costs at SM +4

Feature	Cost	Feature	Cost
Artificial Gravity	\$10K	Stealth	\$125K
Emergency Ejection	\$50K*	Dynamic Chameleon	\$90K
Gravitic Compensators	\$10K	Winged	\$50K

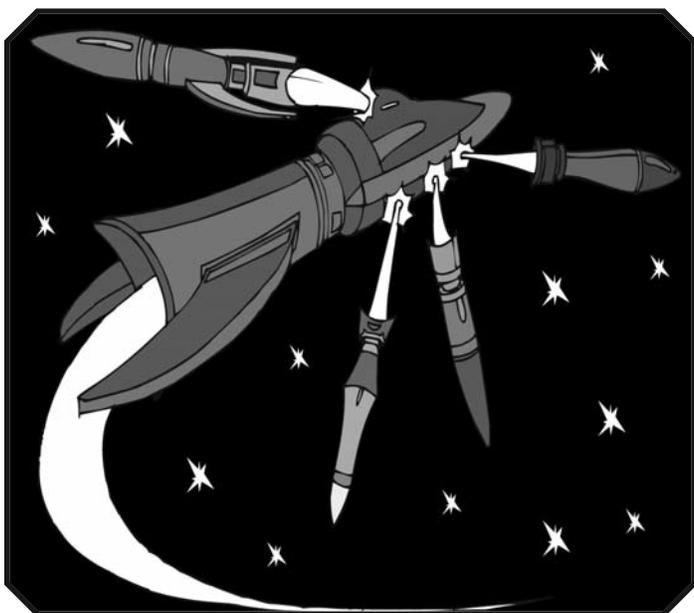
* An ejection seat, not a full lifepod; pilot depends upon the life support of his suit. It has a built-in large air tank appropriate to the TL (see *GURPS Ultra-Tech*, p. 177).

MISSILES

The standard missiles in *GURPS Spaceships* only cover some of the possible types. This section provides additional rules for customization. Any spacecraft – not just fighters, mecha, and carriers – can use them.

BOMBS

Spacecraft may replace some or all of their missile load with *bombs*. Bombs are precision-guided munitions, similar to intercontinental ballistic missile reentry vehicles. Launchers may load three bombs in place of a single missile. They lack propulsion systems but have small maneuver thrusters (for vacuum) and steering fins (for atmosphere), permitting terminal guidance.



Statistics

Bombs mass one-third as much as an equivalent missile and are one SM smaller. They cost \$100K per ton. They may have conventional or unconventional warheads.

Bombing

Bombs may be used against space or ground targets. For ground targets, bombs up to 28cm have space accuracy (sAcc) of TL-8, while those of 32cm or more have sAcc of TL-7. All sizes of bombs have only sAcc -11 vs. space targets.

In the basic combat system, bombs have range P vs. space targets and range S vs. surface targets. They have no minimum velocity. In the tactical combat system, bombs are used like missiles but lack a thrust rating or burn points.

When dropped on surface targets, bombs rely on targeting data from the launching spacecraft. However, a forward observer on the ground with line of sight on the target can communicate with the firing vessel or paint the target with a laser designator to guide the bombs. Roll against his Forward Observer skill. Success adds +2 to the roll to hit.

CUSTOMIZED MISSILE WARHEADS

A missile may have one of these warhead options instead of a conventional or nuclear warhead.

X-Ray Laser Warheads (TL10)

This is a targeting system and set of lasing rods wrapped around a nuclear bomb. X-ray laser warheads are available for missiles and 16cm+ guns. As it approaches the target, the warhead aligns itself and detonates. The explosion pumps multiple powerful (but short-ranged) X-ray laser beams.

Equipped missiles and shot do not make ballistic attack rolls – instead they make beam-fire attacks. The X-ray laser warhead has a RoF equal to its diameter in cm/2, *not* modified by turn length (since it fires all shots at once). It detonates far enough from the target that the small nuclear blast does not inflict damage.

In the basic space combat system, the X-ray laser has the same range as a missile (of whatever type), but attacks only once, as if it were a beam weapon.

In the tactical space combat system it attacks in the beam fire phase (self-destructing as it does so). Roll against the missile gunner's Gunner (Beams) skill instead of Artillery (Guided Missile). Each beam that hits inflicts 10d(5) burning damage (radiation and surge damage modifiers). Range is 300/1,000 miles: 0/1 hex for 1,000-mile scale, 3/10 in 100-mile scale, or 30/100 in 10-mile scale.

X-ray laser warheads have the same cost and LC as anti-matter warheads.

Devourer Warheads (TL11)

This warhead spreads a swarm of hungry microbots or nanomachines over the target, which eats through the armor and enters the vessel. These warheads cannot penetrate force screens! Otherwise, a successful hit inflicts corrosion damage depending on the time scale, shown in the following table.

Scale	d-Damage
20-second	1d(10) corrosion
1-minute	3d+1(3) corrosion
3-minute	10d corrosion
10-minute	20d(0.5) corrosion

The effect burns out after 10 minutes. Devourer warheads have the same cost and LC as nuclear warheads.

Eagle Two-Nine approaching asteroid, commander. Eagle Ten descending with nuke.

– Paul Morrow, *Space: 1999* #1.3

INDEX

2D thinking, 32.
3D Spatial Sense advantage, 32.
About the series, 3.
Accidental collisions while dodging, 32.
Aerospace fighters and gunships, 5-7;
 benefits, 7.
Aggressive Maneuvering technique, 31.
Ahab-class boarding cutter, 22-23.
Airplane-style dogfights, 33.
Alexander-class drop ship, 17.
Alliance-class fleet carrier, 19-20.
Alternate carriers, 20.
Ambush Maneuver technique, 31.
Ammunition transfers, 32.
Area jammer design feature, 37-38.
Ariel transformable fighter, 28-29.
Armor at SM +4, 39.
ASAT Interceptor, 14.
Assault carriers, 7-10.
Assegai dogfight drone, 14.
Banshee-class drop ship, 17.
Beowulf-class grapppler ship, 24.
Black Knight space mecha, 28.
Boarding craft, 22-24.
Bolide assault pod, 16.
Bombs, 40.
Building small spacecraft, 38-39.
Carriers, 7-10, 18-22, 24-26.
Cinematic, *actions*, 30-36; *clichés*, 32-35;
 piloting, 30-31.
Closing strategy, new, 30.
Cockpit multitasking, 33.
Continent-class super carrier, 21-22.
Corvus assault boat, 23.
Cover in a debris field, 36.
Crash landings in hangar bays, 34.
Customized missile warheads, 40.
Debris fields, 35-36.
Deep space fighters, 10-13.
Design features, *costs at SM +4*, 39; *new*,
 37-38.
Devourer warheads, 40.
Dodging, 31-36.
Dogfight drones, 14-15.
Dogfights, airplane-style, 33.
Dragon orbital gunship, 6.
Drop ships, 16-18.
Engines as weapons, 33-34.
Environmental effects, 35-36.
Escape Maneuver technique, 31.
Evasive Maneuvering technique, 31.
Exploding, *instrumentation*, 33;
 spacecraft, 33.
Fighters, 5-7, 10-15, *benefits*, 7.
Fighting in low orbit, 35.
Fireball Damage Table, 33.
Fleet carriers, 18-22.
Force screen options, 33.
Fuel transfers, 32.
Galaxy Striker super mecha, 29.

Gas clouds, 35.
God of War-class fleet carrier, 21.
Grapppler ships, 22-24.
Ground performance of robot legs, 37.
Gunships, 5-7.
GURPS, 4; *Basic Set*, 37; *Space*, 3;
 Spaceships, 3, 4, 16, 30, 32-40;
 Spaceships 3: Warships and Space
 Pirates, 3, 30, 35; *Ultra-Tech*, 14, 39.
Hades battle mecha, 27-28.
Handheld design feature for weapons, 38.
Hangar bays, 34, 38.
Hornet drone star fighter, 15.
Hugging the enemy maneuver, 30.
Hulls at SM +4, 38.
Improvised, *missiles*, 34; *weapons*, 33-34.

*Pretty soon the Defiant will be going into
battle, Worf will be happy, and the rest of us will
be miserable.*

– Chief Miles O'Brien,
Star Trek: Deep Space Nine #7.1

Inferno-class strike carrier, 25.
Ion storms, 35.
Kinetic transfer force screen option, 33.
Lancer deep space fighter, 11.
Landing on a spacecraft, 31.
Large space battles, 32.
Light carriers, 24-26.
Lightsails as weapons, 34.
Mecha, 27-29.
Meteor aerospace fighter, 5-6.
Mirage star fighter, 13.
Missiles, 34, 40.
Mithra-class light carrier, 24.
Nebula-class light carrier, 26.
Nebulas, 35.
New design features, 37-38.
Nightgaunt dogfight drone, 15.
Nova space fighter, 10.
Object Table for debris fields, 36.
Optimized hangar bay design feature, 38.
Orbital fighters, 10.
Other vessels as carriers, 20.
Overlord-class assault carrier, 7-8.
Panther heavy fighter, 11.
Pilots, 5, 10, 16, 22.
Prismatic screen option, 33.
Publication history, 3.
Ranger-class assault corvette, 8.

Reaction drives as weapons, 33-34.
Red Arrow aerospace fighter, 5.
Relative target size, 35.
Rescue craft, 18.
Reversal Maneuver technique, 31.
Risking collision, 36.
Robot leg, 37.
S&R craft, 18.
Sacrificial dodge maneuver, 31.
Samson-class grapppler ship, 23-24.
Search-and-rescue craft, 18.
Sensor arrays as weapons, 34.
Shrike aerospace fighter-bomber, 6.
Space battles, large, 32.
Space mecha, 27-29.
Space piloting techniques, 31.

Spacecraft hull at SM +4, 38.
Spartan space-assault mecha, 27.
Stardrive engines as weapons, 34.
Starhawk star fighter, 12.
Systems for spacecraft, *at SM +4*, 38-39;
 new, 37.
Tactical combat and cinematic actions,
 30-31, 33-36.
Target size and weapons, 35.
Tarot-class light carrier, 26.
Thor-class fleet carrier, 20.
Tungusku-class drop ship, 18.
Typhoon space fighter, 11-12.
Unavailable systems at SM +4, 39.
Unpredictable debris fields, 35-36.
Utility of fighters, 7.
Valkyrie-class drop ship, 16.
Viking-class planetary assault carrier,
 9-10.
Warheads, customized, 40.
Warrior-class assault carrier, 9.
Weapon equivalents of engines, 34.
Weapons and target size, 35.
Weapons battery statistics at SM +4, 39.
Wyvern star fighter, 12-13.
X-ray laser warheads, 40.
Yamamoto-class fleet carrier, 19.

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