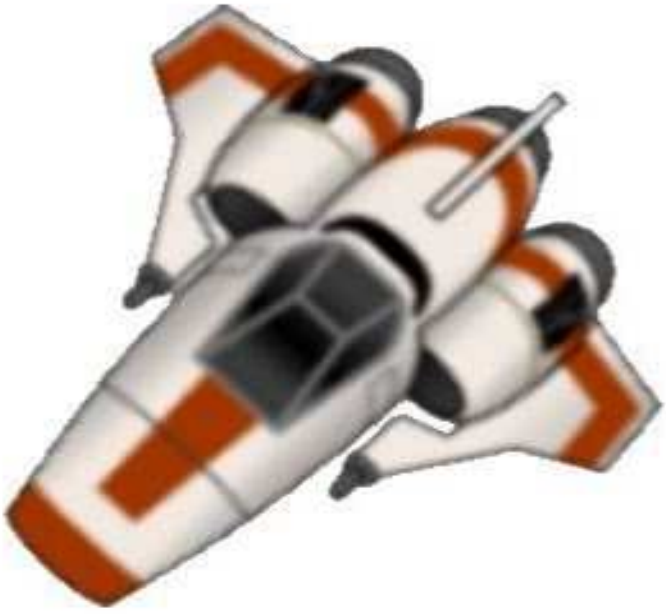
GURPS



Spaceships Design Spreadsheet

Version 2.0 Release Candidate 13

Alternate Systems

Version 2.0 Release Candidate 13

Armor: Spread dDR

This design feature spreads out the dDR of all installed armor systems across all three hull sections, giving extra points first to the Front, then Rear, then Center sections. Spread dDR is most useful for ships that are designed to be lightly armored; having only one or two armor systems for the entire ship. e.g. if a ship has one Steel Armor System giving dDR 5, with spread dDR it would have dDR 2/1/2 for Front/Center/Rear hull sections.

Armor: Semi-Ablative

Any Laminated Armor (including Nanocomposite, Diamondoid, and even Organic) can be designated as Semi-Ablative (p. B47); it has the same cost as standard Armor of its type but provides x4 the dDR. Semi-Ablative Armor must be the outermost layer of Armor if non-ablative armor is also used. Semi-Ablative Armor loses 1 dDR for every 10 points of d-damage it resists. Ablative Armor dDR heals at the same rate as ship dHP if the ship has Regeneration or Self-Healing (see p. SS7:22), otherwise it must be removed and replaced. Semi-Ablative is incompatiable with the Open-Frame option.

Armor: Unavailable SMs

Some Armor systems are listed as unavailable below a particular SM because the dDR value drops below 1. However, there's no reason multiple systems with a partial point of dDR can't be stacked and added together if desired. To compute how much dDR these Smaller SM armor systems have find the dDR value for a system six SM larger and divide it by 10, dropping fractions after you've added the dDR of all systems together. For example, SM+6 Stone Armor (p. SS11) would have 1/10 the dDR of SM+12, or 0.7 points. So two Stone Armor would dDR 1.4, rounded to 1, and three would have dDR 2.1, rounded to 2.

If using the Armor and Volume rules from Pyramid #3/34 don't drop fractions until after you multiply for volume. So if you have two Rear armor systems that provide dDR 0.7 each and a total of 10 Armor systems on the ship, giving a x1.5 multiplier, the total dDR would be 2x0.7x1.5 = 2.1, dropping fractions provides a final dDR of 2.

Cargo Hold - Collapsible Fuel Tank (TL6)

Cargo Holds may be fitted with a Collapsible Fuel Tank, allowing them to carry one specific kind of fuel. Capacity doesn't change, but the cost is $10k per ton of capacity. Fuel must be pumped into the ships normal Fuel Tanks before it may be used.

Any Fuel that is normally Volatile is considered Extremely Volatile in a Collapsible tank (-2 to HT rolls; see p. P3/40:7). Any maneuver of 1.5G greater than can't be compensated for with Gravitic Compensators will cause the tank to rupture on a failed HT roll, splilling the contents into the Cargo Hold.

Drop Capsule Launcher (TL8) [Hull]

These systems contain an integrated Launcher as well as a number of Drop Capsules. A launcher can fire one capsule ever 20-seconds. The system may contain either standard Drop Capsules or Stealth Capsules - standard capsules cost the listed amount and may each carry two people; stealth capsules have extra cost and can carry only one person. Based loosely on the Drop Capsules from the Spaceships Designers Notes: http://www.sjgames.com/pyramid/sample.html?id=6603

	+6*	+7*	+8	+9	+10	+11	+12	+13	+14	+15
Cost w/Standard	$250k	$500k	$500k	$1.5M	$5M	$15M	$50M	$150M	$500M	$1.5B
Cost w/ Stealth	$0.65M	$1.3M	$1.3M	$3.9M	$13M	$39M	$130M	$390M	$1.3B	$3.9B
Launchers	1	2	2	6	20	60	200	600	2,000	6,000
Capsules	10	20	20	60	200	600	2,000	6,000	20,000	60,000

*An SM+7 Launcher takes up 3 system slots. An SM+6 Launcher takes up 5 slots.

Drop Capsule (TL10)

A basic landing capsule; not reusable; it breaks open a mile up to allow occupants (or packages) to descend via parachute, parawing, grav belt, etc.

Stealth Capsule (TL10)

As above, but packed with countermeasures with a stealth hull. Either treat as if it had three Defensive ECM systems, or use the more detailed rules in Ultra-Tech. LC2.

Habitat

SM +4 or SM +5 craft may have Habitats; each Habitat in a SM +4 craft contains 0.1 slots; a SM +5 Habitat contains 0.3 slots. Multiple Habitat systems must be combined to allow for the installation of standard Cabins.

Helicopter Rotor

Helicopter Rotors aren't given an acceleration in Spaceships 7. Assume an Acceleration of 10 mph/s (5 yps/s) per installed Rotor system.

Jet Engine - Electric Turbofan (TL8) [Rear]

These operate similarly to standard Turbofans except they use electricity to heat the air and drive the turbine. They are somewhat less efficient than fueled jet engines, but have the advantage that they can work in any atmosphere. They produce 0.25G if provided with 1 Power Point or 0.5G if provided with 2 Power Points.

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Workspaces	0	0	0	0	0	1	3	10	30	100	300
Cost ($)	$400k	$1.2M	$4M	$12M	$40M	$120M	$400M	$1.2B	$4B	$12B	$40B

Jet Engine - Super Fusion Air-Ram (TL10^) [Rear]

A more advanced version of the Fusion Air-Ram (p. SS7:10). It produces 0.8G (TL10), 1.2G (TL11), or 2G (TL12) of acceleration for calculating atmospheric speed.

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Workspaces	0	0	0	0	0	1	3	10	30	100	300
Cost ($)	$2M	$6M	$20M	$60M	$200M	$600M	$2B	$6B	$20B	$60B	$200B

SM +3 Spaceships

Stats for SM+3 have been included for most ship systems, allowing either Smaller SM Systems in SM+4 ships or the creation of SM+3 ships.

SM+3 Control Rooms are not allowed to have Ejection Systems, however they can be added as a separate component, taking up a system slot, at a cost of $50k.

SM+3 Passenger Seating doesn't include any access space - halls, bathrooms, or other amenities. This is the difference between passenger seats in a commercial airplane or a bus and those in a car or van. They provide 0.5 seats; SM+3.5 seating provide 0.75 seats. To get full seats either combine multiple systems or use NBC Only or No Life Support options.

Intermediate SM (SM +0.5)

A ship of intermediate SM has twice the mass of a ship of the previous SM, but is treated as the next higher SM for purposes of being targeted or detected. So a SM +8.5 ship has a Loaded Mass of 2,000 tons (twice that of a SM +8 ship) but is considered SM +9 for purposes of attack and detection. All other statistics are extrapolated from the existing systems.

Modular Section (TL9) [Hull*]

Some ships are designed so that sections of their hull are modular self-contained pods. Standard and Large sized pods are attached externally to the rest of the ship, while Small and Tiny modules are mounted internally and thus protected by that sections armor (if it has any; some ships with many container pods may not have any armor in that section, essentially mounting them externally). These modules can be easily swapped in and out, allowing the ship to fulfill a wide variety of mission roles simply by installing a different module. Many times these modules are designed to be used on their own, independent of a ship, allowing a modular ship to take a module to a planet and drop it off or leave it in orbit for use there.

Each module should be designed as a ship of the appropriate SM. It can draw power from the ship it will be attached to (if available), but most power using modules should be designed to be completly self-sufficient, including their own power plant. Since larger modules are mounted externally they are not protected by the ships Armor, however this also means that they can mount weapons, sensors, and other "external" systems. Cost is $10k per ton of mass of the module.

A "Standard" module s designed as a ship -1 SM smaller than the ship it's attached to and takes up the entire Front Hull section, leaving the Center and Rear Core systems available.

A "Dual Standard" module takes up the entire Front and Center Hull sections, including one Core system, leaving the Rear Core system available (the extra mass is necessary for the latching clamps and umbilicals).

A "Large" module is -0.5 SM smaller than the ship and takes up the entire Front and Center Hull sections, including one Core system.

"Small" modules may be mounted in Front, Center, or Rear hull sections and are -1.5 SM, taking up 4 adjacent hull systems.

"Tiny" modules are -2 SM, taking up 2 adjacent hull systems.

Reactionless Engines

Reactionless Engines may have an "Afterburner" installed, allowing them to gain more thrust by increasing their energy usage (the name is a holdover from the days of fuel using engines). Afterburner Reactionless Engines cost x1.5 as much but can provide x1.5 as much thrust if an extra Power Point is applied.

Structural Reinforcement (TL0) [Any]

Some ships are designed with a great deal of structural reinforcement - supports, extra bulkheads, reinforced doors, etc. Each Structural Reinforcement installed doubles dHP (so two would give x4 HP, three x8 HP, etc). For Smaller SM Systems multiply by cube root of 2 for -1 SM systems (x1.26) and square root of 2 for half-sized system (x1.415), dropping fractions. Multiple systems must be spread evenly between the Front, Center, and Rear locations. This does not affect dST, however three or more systems installed gives +1 to a Ships HT.

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Cost ($)	$6k	$20k	$60k	$200k	$600k	$2M	$6M	$20M	$60M	$200M	$600M

Vehicle Dock (TL0) [Hull]

A vehicle dock is similar to a hangar bay, but it only accepts one specific *Class* of vehicle; "a SM +8 shuttle" is not specific enough, but "a Wilting Flower-class shuttle" is. This is not a true internal system -- it is a recessed area in the hull with which the smaller vehicle mates (think *Serenity* and its shuttles). As with hanger bays, vehicle docks may be combined to hold one large vehicle or split among multiple smaller ones. Docking time is the same for a vehicle dock as for a hanger bay, though there is no "launch rate" -- each dock can launch its vehicle in one minute.

If a vehicle dock is targeted in combat and no vehicle is present, use the dDR of the larger spaceship; a disabled system prevents future docking. If the carried vehicle is present, the spaceship's dDR does not protect it! Treat the attack as a general attack against the vehicle, usually against the front or central hull (work this out when designing the spaceship or roll randomly). The spaceship itself does not take any damage from this attack unless it overpenetrates.

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Capacity (Tons)	1.5	5	15	50	150	500	1,500	5k	15k	50k	150k
Workspaces	0	0	0	0	0	1	3	10	30	100	300
Cost ($)	$1k	$3k	$10k	$30k	$100k	$300k	$1M	$3M	$10M	$30M	$100M

Weapon Battery - Oversized [Hull]

This is essentially just a Major Battery built as a Larger System (see p. SS7:5) - it houses a single weapon the size of a Spinal Mount and takes up three System Slots.

Weapon Battery [Hull]

Seven new sizes of Weapon Mount have been made available. These mounts continue scaling at the same rates as the Major through Tertiary mounts do, with larger numbers of smaller weapons being available. Quaternary (SM+8 & 100 Mounts), Quinary (SM+9 & 300 Mounts), Senary (SM+10 & 1,000 Mounts), Septenary (SM+11 & 3,000 Mounts), Octonary (SM+12 & 10,000 Mounts), Nonary (SM+13 & 30,000 Mounts), and Denary (SM+14 & 100,000 Mounts).

Weapon Battery - Peripheral [Hull]

This system is only available for ships of SM +8 or larger. Very large ships sometimes mount a large number of relatively small weapons for anti-fighter or anti-missile defense. These weapons stay a constant size, equivalent in size to a SM +7 Tertiary Battery; the number of mounts depends on ship SM. Ships should normally be limited to one Peripheral Mount, due to surface area restrictions.

SM	+8	+9	+10	+11	+12	+13	+14	+15
Mounts	100	300	1,000	3,000	10,000	30,000	100,000	300,000

Weapon Battery - Mixed [Hull]

A mixed weapon battery contains weapons mounts of several different sizes. This is particularly useful for non-combat ships which may only need to mount a single mixed battery, giving it more weapon options taking up fewer ship systems, or for larger ships which may wish to flesh out their defense grid.

	Medium	Secondary	Tertiary
Mixed Med/Sec	2	3	—
Mixed Med/Tert	2	—	10
Mixed Med/Sec/Tert	1	3	11
Mixed Sec/Tert	—	5	15

Weapon Options

High-Thrust Missiles	Have twice the Accel but half the Delta-V.
Super Drone	A Sensor Drone using the Super Missile drive. Use all statistics of both warheads.
Quantum Warheads (TL11^)	Quantum missile warheads take advantage of one of several Quantum effects - Total Conversion, Zero Point Vacuum Energy, Micro-Singularities - to create an explosion even more devistating than similarly sized antimatter warheads are capable of producing. Whichever effect the warhead uses its explosive force is rated in kilotons or megatons just like Nuclear and Antimatter warheads. The primary advantage of Quantum Warheads is that they can fit in smaller missiles, while larger missiles can have a warhead with a larger effective yield. The other advantage is that they are not considered Volatile like antimatter.

TL	Warhead	Min. Size	Cost
11^	25 kiloton Quantum	7cm	$250k
11^	100 kiloton Quantum	10cm	$500k
11^	2.5 megaton Quantum	16cm	$2.5M
11^	10 megaton Quantum	24cm	$5M

Alternate Habitats

Teleport Projector (0.5)	Teleport projectors may be installed in 0.5 slot increments, each capable of transporting 1 person or 0.1 tons.
Teleport Projector - Cargo Only (0.5)	This projector cannot transport living matter; x0.5 cost of normal projector. Can be combined with Send Only or Receive Only options for x0.25 cost.
Bunkroom: Cramped (0.5)	A small bunkroom large enough for only two people. Uses 0.5 Habitat slots.
Cabin: Cramped (0.5)	A small cabin large enough for only one person. Uses 0.5 Habitat slots.
Super-Luxury Cabin (4)	The ultimalte in opulant suites. Uses 4 Habitat Slots.
Establishment: Holosuite (2)	A holosuite takes advantage TL10^ Super Holographic Projectors (Ultra-Tech, p. 52). The projectors add an additional $200,000 to the Habitat cost. By TL12^ they can incorporate force field and replicator technology to provide a full tactile and sensory simulation.
Establishment: Library (2)	A library with books, reference material, and computer terminals for up to 20 people.
Galley (1)	A small kitchen and dining area. Has a table for up to 8 people, refrigerator, stove, dishwasher, microwave, and other accoutrements. Note that larger ships automatically devote some space from each cabin for common areas such as a Galley; this module is intended for smaller ships that wish to install a larger common room than it might otherwise have available.
Hot Tub (1)	A hot tub capable of holding 10 people, contains about 600 gallons of water. The water is heavy, weighing almost 2.5 tons all by itself. Weighs about 5 tons, taking up 1 Habitat slot.
Small Swimming Pool (10)	A small swimming pool, typical of what an average family home might have. 4.5 feet deep and about 18 foot square or 20 foot diameter circle, or a diving pool 12 feet deep, 12x10 feet on the surface. Contains about 11,000 gallons of water, 10 people can comfortably swim at a time; uses 10 habitat slots.
Medium Swimming Pool (60)	A single lane of an Olympic Sized pool or a square pool 4.5 feet deep and 45x45 foot square, or 19x19 foot and 13 feet deep sutible for diving. 1-2 can swim laps or 60 people can swim. Contains about 73,000 gallons of water; uses 60 Habitat slots.
Olympic Sized Swimming Pool (600)	Ten lanes of swimming, measuring 2 meters deep (6.5 ft), 25m wide (82 ft) and 50m long (164ft). Contains approximately 660,000 gallons of water. 10 can race or up to 600 can swim in it. Uses 600 Habitat slots.
Steerage Cargo: Partial (0.05)	0.25 tons of steerage cargo. Uses 0.05 Habitat slots.
Life Pod (0.2)	An Escape Pod capable of carrying 4 people. Takes up 0.2 Habitat slots. Adapted from the Spaceships Designers Notes: http://www.sjgames.com/pyramid/sample.html?id=6603
Microfac (1)	Similar to the Minifac (p. SS1:18), but has the same cost and statistics as a SM+6 Factory. These require considerable power, so cannot function unless the ship is currently producing at least 1 Power Point.

Garage w/Vehicle (1)	This is a vehicle bay just large enough to fit one specific auxiliary craft - either a Utility Truck, Utility Helicopter, Air Car, Grav-Plane, or Grav-Sled. These vehicles are normally used as auxiliary craft onboard spaceships that are designed to land, so that the crew can travel around while planetside. Each of these vehicles has been designed using the Spacecraft design rules (see Saved Sheets 2) using a SM+3.5 vehicle frame and masses under 5 tons when unloaded. These vehicles can be stored in a Hangar Bay or they may be placed in a Garage which is sized specifically for the vehicle and takes up one Habitat slot. On smaller spacecraft (SM +9 and under) the Garage includes a hatch that opens and allows the auxiliary craft to exit. Much like Cargo Bay doors, the Garage doors do not act as an air lock; the Garage bay is opened to the outside elements when the auxiliary exits. On larger vehicles (SM+10 or larger) Garage bays normally open into Hangar Bays or Cargo Holds, and the auxiliaries must pass through to leave the spaceship. Each Vehicle is designed to use a Fuel Cell as its primary power plant. This provides a safe and cheap power source, but has a limited fuel duration and may be difficult to refuel on backwater worlds if the mothership doesn't have a Chemical Refinery capable of creating Hydrogen/Oxygen fuel. An -F variant is provided for each vehicle; these variants use a Fission Reactor at TL8-9 or a Fusion Reactor at TL10+. This allows them to operate for an extended duration without refueling. Fission Reactors are often deemed too dangerous for civilian use, but may be appropriate for some exploration vessels. Fusion is generally considered safe enough that it may be usable on civilian vehicles, however the cost is a bit higher than the Fuel Cell version. The Passenger Seats are all designed to be moduler, allowing them to be removed and the space to used as a Cargo Hold, storing 0.3 tons per seat (0.4 tons per seat on Grav-Plane and Grav-Sleds). Any Cargo Holds are also designed to be modular, allowing for modular systems to be installed providing for a great deal of versatility in the designs.
Utility Truck (TL8)	This heavy truck is similar in design to a modern military cargo truck such as the M35 "deuce and a half," capable of carrying up to 7 people as well as cargo. Designed for both settled worlds and wilderness, it has off-road as well as limited water capabilities, allowing it to ford rivers but not to travel on the open ocean particularly well. Its hull is sealed but it doesn't have full life support, only offering NBC protection; it can be assumed that it has enough air to last as long as the fuel-using version's Duration.
Utility Helicopter (TL8)	A heavy duty cargo Helicopter with folding rotors. It must be wheeled out of its Garage and its rotors extended before it can take off. Like the Utility Truck has a sealed hull with NBC protection only.
Air Car (TL8)	This small plane uses Electric Turbofans (see Alternate Systems, above) and is capable of flying on any world with an atmosphere. It has folding wings, and must be removed from the spacecraft and the wings unfolded before it can fly, requiring a relatively short but clear runway to take-off from; take-off may be difficult on completely wild worlds. The -F variant uses Fission Air Rams at TL8-9; at TL10 it uses a Fusion Reactor and Electric Turbofans.
Grav-Plane (TL10^)	This superscience plane uses Reactionless engines for propulsion and wings to stay aloft. It has a Vacuum Sealed Hull and is capable of independent operation in space.
Grav-Sled (TL10^)	Similar in design to the Grav-Plane, bit instead of wings it uses Contragravity Lifters to stay aloft. This allows it to float on and take off from planets with gravity up to 10 G, but if it loses power it loses all lift, so is likely to crash.

Auxillary Craft Table

TL	Name		dST/dHP	Hnd/SR	HT	Move	LWt.	Load†	SM	Occ	dDR	Duration	Cost
9	Life Pod	-Space	5	-5/1	13	0.1G / 0.3 mps	1	0.5	+2	4SV	2/10/2	—	$100k
10	Drop Capsule	-Space	5	—	13	—	1	0.5	+2	2SV	2/10/2	—	$10k
10	Stealth Capsule	-Space	5	—	13	—	1	0.5	+2	1SV	2/10/2	—	$50k
8	Utility Truck	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.0+0.3	+4	2+8S	1	18hr	$90.5k
		-Water		+0/4		1 / 10 (0.5 / 7)							
9	Utility Truck	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.2+0.15	+4	2+10S	1	36hr	$107.3k
10	Utility Truck	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.2+0.15	+4	2+10S	1	72hr	$107.3k
10^/11	Utility Truck	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.3+0.15	+4	2+11S	1	72hr	$116.5k
8	Utility Truck-Fi	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.1+0.3	+4	2+9S	1	25yr	$126.5k
		-Water		+0/4		1 / 10 (0.5 / 7)							
9	Utility Truck-Fi	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.3+0.15	+4	2+11S	1	50yr	$143.3k
10	Utility Truck-Fu	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.4+0.15	+4	2+12S	1	200yr	$167.3k
10^/11	Utility Truck-Fu	-Ground	12	-1/4	12	4 / 35 (2 / 28)	6	1.5+0.15	+4	2+13S	1	200yr	$176.5k
8	Utility Helicopter	-Air	12	+0/4	12	5 / 100	6	1.0+0.3	+4	2+8S	1	18hr	$136.3k
9	Utility Helicopter	-Air	12	+0/4	12	5 / 100	6	1.0+0.3	+4	2+8S	1	36hr	$136.3k
10	Utility Helicopter	-Air	12	+0/4	12	5 / 100	6	1.2+0.15	+4	2+10S	1	72hr	$169.1k
8	Utility Helicopter-Fi	-Air	12	+0/4	12	5 / 100	6	1.1+0.3	+4	2+9S	1	25yr	$170.3k
9	Utility Helicopter-Fi	-Air	12	+0/4	12	5 / 100	6	1.1+0.3	+4	2+9S	1	50yr	$170.3k
10	Utility Helicopter-Fu	-Air	12	+0/4	12	5 / 100	6	1.4+0.15	+4	2+12S	1	200yr	$229.1k
8	Air Car	-Air	12	+2/4	12	5.5 / 900	6	1.1+0.3	+4	2+9S	1	18hr	$208.3k
9	Air Car	-Air	12	+3/5	12	5.5 / 900	6	1.1+0.3	+4	2+9S	1	36hr	$208.3k
10	Air Car	-Air	12	+3/5	12	5.5 / 900	6	1.3+0.15	+4	2+11S	1	72hr	$277.1k
8	Air Car-Fi	-Air	12	+3/4	12	13.2 / 1,350	6	1.2+0.3	+4	2+10S	1	2yr	$364k
9	Air Car-Fi	-Air	12	+4/5	12	19.8 / 1,700	6	1.2+0.3	+4	2+10S	1	2yr	$364k
10	Air Car-Fu	-Air	12	+3/5	12	11 / 1,250	6	1.3+0.15	+4	2+11S	1	200yr	$435.1k
10^	Grav-Plane	-Air	12	+4/5	12	22 / 1,750	6	1.0+0.15	+4	2+8SV	1	72hr	$193.1k
		-Space		+0/4		2G/c							
11^	Grav-Plane	-Air	12	+4/5	12	22 / 1,750	6	1.1+0.3	+4	2+9SV	1	72hr	$183.3k
		-Space		+0/4		2G/c							
10^	Grav-Plane-Fu	-Air	12	+4/5	12	22 / 1,750	6	1.1+0.45	+4	2+9SV	1	200yr	$249.4k
		-Space		+0/4		2G/c							
11^	Grav-Plane-Fu	-Air	12	+3/4	12	22 / 1,750	6	1.1+0.6	+4	2+9SV	1	600yr	$209.4k
		-Space		+0/4		2G/c							
10^	Grav-Sled	-Air	12	+2/4	12	11 / 1,250	6	0.8+0.75	+4	2+6SV	1	72hr	$201.7k
		-Space		+0/4		1G/c							
11^	Grav-Sled	-Air	12	+2/4	12	22 / 1,750	6	0.8+0.75	+4	2+6SV	1	72hr	$201.7k
		-Space		+0/4		2G/c							
10^	Grav-Sled-Fu	-Air	12	+2/4	12	11 / 1,250	6	1.1+0.15	+4	2+9SV	1	200yr	$269.1k
		-Space		+0/4	12	1G/c							
11^	Grav-Sled-Fu	-Air	12	+2/4	12	22 / 1,750	6	1.1+0.15	+4	2+9SV	1	600yr	$269.1k
		-Space		+0/4		2G/c							

Mass Combat and Troop Strength

In the article from 'Pyramid 3/30: Spaceships' in the article 'Mass Combat in Space' the rules for calculating Troop Strength have a significant bias towards smaller Spaceships. The base multiplier for TS in the default rules is dDR + dST/dHP, but these values scale roughly with ship length while increasing size/mass/firepower does not. It gives larger ships a significantly lower TS when compared to smaller craft. As one example take two TL 12^ spaceships the Mirage Star Figher (SM+4) which has a calculated TS of 257,400 while the Intrepid-Class Frontier Cruiser (SM+12) has a TS of 2,640,000 - just over x10 the TS for a ship massing x10,000 times as much. This may be appropriate for a strictly realistic game (where a million dollar missile can easily take out a billion dollar naval ship) but it does not fit the expectation in most Sci-Fi universes.

To help correct this discrepancy the Alternate Troop Strength option multiplies the final TS by dHP/150, effectively scaling TS with ship surface area (rather than length). This still biases TS towards smaller ships, but not quite so drastically as the default rules. In the previous example the SM+4 ship has a TS 1/10th of the default rules while multiplying a SM+12's TS by 2, so now in the two ships have TS 25,740 and 5,280,000 - a difference of about x200 the TS. A large number of smaller ships still have an advantage, but at least a small squadron is not as powerful as a single large Cruiser.

SM:	**+4**	**+5**	**+6**	**+7**	**+8**	**+9**	**+10**	**+11**	**+12**	**+13**	**+14**	**+15**
TS Multiplier:	x0.1	x0.1333	x0.2	x0.3333	x0.4667	x0.6667	x1	x1.3333	x2	x3.3333	x4.6667	x6.6667

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Vorkosigan Saga Sourcebook | Pyramid #3/30 | Pyramid #3/34 | Pyramid #3/40 | Pyramid #3/64

Rules for using **GURPS Spaceships** with **GURPS Traveller** were adapted from Jason "RPK" Devine's MyGURPS: http://www.mygurps.com/t_spaceships.html

Spacecraft Design Table: Air Car/ 8

Version 2.0 RC 13

PILOTING/TL8 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Air Car/ 8	12	—	12	—	6	1.4 [1]	+3.5/+4	2+9S [3]	1	—	$208.3k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Air Performance #1: aAccel: 0.25Gs (5.5 mph/s) aSpeed: 1,300 mph Hnd/SR: +2/4 Air Performance #2: aAccel: 0.5Gs (11 mph/s) aSpeed: 1,800 mph Hnd/SR: +2/4

Ship Systems

	Front Hull Systems		Center Hull Systems		Rear Hull Systems
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations	[2-5]	**Passenger Seating** 4 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5]	**Passenger Seating** 1 Seats [4]				
[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]	[6]	**Fuel Tank** 0.3 Tons of Hydrogen-Oxygen	[6!!]	**Jet Engine - Electric Turbofan** 0.25 Gs / 0.5 Gs w/Extra Power Point [6,7]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 18 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 18 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.7 tons of Cargo Hold (3 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)
PERFORMANCE PROFILES: [6] Air Profile #1, [7] Air Profile #2

Spacecraft Design Table: Air Car/ 9

Version 2.0 RC 13

PILOTING/TL9 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Air Car/ 9	12	—	12	—	6	1.4 [1]	+3.5/+4	2+9S [3]	1	—	$208.3k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Air Performance #1: aAccel: 0.25Gs (5.5 mph/s) aSpeed: 1,300 mph Hnd/SR: +3/5 Air Performance #2: aAccel: 0.5Gs (11 mph/s) aSpeed: 1,800 mph Hnd/SR: +3/5

Ship Systems

	Front Hull Systems		Center Hull Systems		Rear Hull Systems
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations	[2-5]	**Passenger Seating** 4 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5]	**Passenger Seating** 1 Seats [4]				
[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]	[6]	**Fuel Tank** 0.3 Tons of Hydrogen-Oxygen	[6!!]	**Jet Engine - Electric Turbofan** 0.25 Gs / 0.5 Gs w/Extra Power Point [6,7]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.7 tons of Cargo Hold (3 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)
PERFORMANCE PROFILES: [6] Air Profile #1, [7] Air Profile #2

Spacecraft Design Table: Air Car/10

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Air Car/10	12	—	12	—	6	1.45 [1]	+3.5/+4	2+11S [3]	1	—	$277.075k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2
Air Performance #1: aAccel: 0.25Gs (5.5 mph/s) aSpeed: 1,300 mph Hnd/SR: +3/5 Air Performance #2: aAccel: 0.5Gs (11 mph/s) aSpeed: 1,800 mph Hnd/SR: +3/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen [4]
[2-4]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations [4]	[2-6]	**Passenger Seating** 5 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5-6]	**Passenger Seating** 2 Seats				
				[6!!]	**Jet Engine - Electric Turbofan** 0.25 Gs / 0.5 Gs w/Extra Power Point [6,7]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:
Refueling Cost: $360
SHIP OPTIONS: Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.3 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)
PERFORMANCE PROFILES: [6] Air Profile #1, [7] Air Profile #2

Spacecraft Design Table: Air Car-Fi/ 8

Version 2.0 RC 13

PILOTING/TL8 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Air Car-Fi/ 8	12	—	12	—	6	1.5 [1]	+3.5/+4	2+10S [3]	1	—	$364k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.)
Air Performance: aAccel: 1.2Gs (26.4 mph/s) aSpeed: 2,700 mph Hnd/SR: +3/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Passenger Seating** 3 Seats [4]	[2-6]	**Passenger Seating** 5 Seats [4]	[2-4]	**Jet Engine - Fission Air-Ram** 1.2 Gs / 2 yr Fuel [5]
[5-6, Core]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations			[5-6]	**Passenger Seating** 2 Seats [4]
				[Core]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors

User Notes: Passenger Seats are modular and can be removed to provide an extra 3 tons of Cargo Hold (3.3 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:
SHIP OPTIONS: Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.2 tons of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Fissionables

Spacecraft Design Table: Air Car-Fi/ 9

Version 2.0 RC 13

PILOTING/TL9 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Air Car-Fi/ 9	12	—	12	—	6	1.5 [1]	+3.5/+4	2+10S [3]	1	—	$364k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.)
Air Performance: aAccel: 1.8Gs (39.6 mph/s) aSpeed: 3,400 mph Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Passenger Seating** 3 Seats [4]	[2-6]	**Passenger Seating** 5 Seats [4]	[2-4]	**Jet Engine - Fission Air-Ram** 1.8 Gs / 2 yr Fuel [5]
[5-6, Core]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations			[5-6]	**Passenger Seating** 2 Seats [4]
				[Core]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors

User Notes: Passenger Seats are modular and can be removed to provide an extra 3 tons of Cargo Hold (3.3 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:
SHIP OPTIONS: Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.2 tons of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Fissionables

Spacecraft Design Table: Air Car-Fu/10

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE AIRPLANE) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Air Car-Fu/10	12	—	12	—	6	1.45 [1]	+3.5/+4	2+11S [3]	1	—	$435.075k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +4 / -4
Air Performance #1: aAccel: 0.5Gs (11 mph/s) aSpeed: 1,800 mph Hnd/SR: +3/5 Air Performance #2: aAccel: 1G (22 mph/s) aSpeed: 2,500 mph Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-6]	**Passenger Seating** 6 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-4]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations			[2-4]	**Passenger Seating** 3 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]			[5-6!!!!]	**Jet Engine - Electric Turbofan** 0.5 Gs / 1 G w/Extra Power Point [6,7]
		[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [5]	[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:
SHIP OPTIONS: Spread dDR, Streamlined, Winged, NBC Filters Only
[1] Load includes: 1.3 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen/Helium Isotopes
PERFORMANCE PROFILES: [6] Air Profile #1, [7] Air Profile #2

Spacecraft Design Table: Grav-Plane/10^

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Grav-Plane/10^	12	+0/4	12	1G/c	6	1.15 [1]	+3.5/+4	2+8SV [3]	1	—	$193.075k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance #1: sAccel: 1G Space Performance #2: sAccel: 1.5Gs

Air Performance #1: aAccel: 1G (22 mph/s) aSpeed: 2,500 mph (0.69 mps) Hnd/SR: +4/5 Air Performance #2: aAccel: 1.5Gs (33 mph/s) aSpeed: 3,100 mph (0.86 mps) Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-4]	**Passenger Seating** 2 Seats [4]	[2-5]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 3 Seats [4]
[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
		[6, Core‡]	**Power Plant - Fuel Cell** 2 Power Points / 72 hr Fuel [6]	[6!!]	**Reactionless Engine - Hot** 1 G / 1.5Gs w/Extra Power Point [5,7,8,9,10]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: Streamlined, Winged
[1] Load includes: 1 ton of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular, [5] Afterburner
FUEL USED: [6] Hydrogen-Oxygen (0.45 tons)
PERFORMANCE PROFILES: [7] Air Profile #1, [8] Air Profile #2, [9] Space Profile #1, [10] Space Profile #2

Spacecraft Design Table: Grav-Plane/11^

Version 2.0 RC 13

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11^	Grav-Plane/11^	12	+0/4	12	2G/c	6	1.4 [1]	+3.5/+4	2+9SV [3]	1	—	$183.3k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +1 / -1

Space Performance: sAccel: 2Gs Air Performance: aAccel: 2Gs (44 mph/s) aSpeed: 3,500 mph (0.97 mps) Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 3 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-5]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 3 Seats [4]
		[5-6, Core]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations		
[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]			[6!]	**Reactionless Engine - Hot** 2 Gs
				[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (4.2 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $180
SHIP OPTIONS: Spread dDR, Streamlined, Winged
[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.23 tons)

Spacecraft Design Table: Grav-Plane-Fu/10^

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Grav-Plane-Fu/10^	12	+0/4	12	1G/c	6	1.55 [1]	+3.5/+4	2+9SV [3]	1	—	$249.375k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance #1: sAccel: 1G Space Performance #2: sAccel: 1.5Gs

Air Performance #1: aAccel: 1G (22 mph/s) aSpeed: 2,500 mph (0.69 mps) Hnd/SR: +4/5 Air Performance #2: aAccel: 1.5Gs (33 mph/s) aSpeed: 3,100 mph (0.86 mps) Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 3 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-5]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 3 Seats [4]
		[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations		
[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]			[6!!]	**Reactionless Engine - Hot** 1 G / 1.5Gs w/Extra Power Point [5,7,8,9,10]
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (4.05 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, Streamlined, Winged

[1] Load includes: 1.1 tons of Crew & Passengers, 0.45 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular, [5] Afterburner

FUEL USED: [6] Hydrogen/Helium Isotopes

PERFORMANCE PROFILES: [7] Air Profile #1, [8] Air Profile #2, [9] Space Profile #1, [10] Space Profile #2

Spacecraft Design Table: Grav-Plane-Fu/11^

Version 2.0 RC 13

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11^	Grav-Plane-Fu/11^	12	+0/4	12	2G/c	6	1.7 [1]	+3.5/+4	2+9SV [3]	1	—	$209.375k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +1 / -1

Space Performance: sAccel: 2Gs Air Performance: aAccel: 2Gs (44 mph/s) aSpeed: 3,500 mph (0.97 mps) Hnd/SR: +4/5

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 3 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-5]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 3 Seats [4]
		[5-6, Core]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations		
[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]			[6!]	**Reactionless Engine - Hot** 2 Gs
				[Core]	**Smaller Systems - Half-Sized**
				[a†]	**Power Plant - Fusion Reactor** 1 Power Point / 600 yr Fuel [5]
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (4.2 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, Streamlined, Winged

[1] Load includes: 1.1 tons of Crew & Passengers, 0.6 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Hydrogen/Helium Isotopes

Spacecraft Design Table: Grav-Sled/10^

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Grav-Sled/10^	12	+0/4	12	1G/c	6	1.55 [1]	+3.5/+4	2+6SV [3]	1	—	$201.675k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Lift: 10Gs Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance: sAccel: 1G Air Performance: aAccel: 1G (22 mph/s) aSpeed: 2,500 mph (0.69 mps) Hnd/SR: +2/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-3]	**Cargo Hold** 0.6 Tons / SM-1.5 Bay Doors [4]	[2-5]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 3 Seats [4]
[4-6]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
		[6, Core‡]	**Power Plant - Fuel Cell** 2 Power Points / 72 hr Fuel [5]	[6!]	**Reactionless Engine - Hot** 1 G
				[Core!]	**Contragravity Lifter** 10 Gs Lift

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.4 tons of Cargo Hold (3.15 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: Streamlined
[1] Load includes: 0.8 tons of Crew & Passengers, 0.75 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Grav-Sled/11^

Version 2.0 RC 13

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11^	Grav-Sled/11^	12	+0/4	12	2G/c	6	1.55 [1]	+3.5/+4	2+6SV [3]	1	—	$201.675k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Lift: 10Gs Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance: sAccel: 2Gs Air Performance: aAccel: 2Gs (44 mph/s) aSpeed: 3,500 mph (0.97 mps) Hnd/SR: +2/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-3]	**Cargo Hold** 0.6 Tons / SM-1.5 Bay Doors [4]	[2-5]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 3 Seats [4]
[4-6]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations				
		[6, Core‡]	**Power Plant - Fuel Cell** 2 Power Points / 72 hr Fuel [5]	[6!]	**Reactionless Engine - Hot** 2 Gs
				[Core!]	**Contragravity Lifter** 10 Gs Lift

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.4 tons of Cargo Hold (3.15 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: Streamlined
[1] Load includes: 0.8 tons of Crew & Passengers, 0.75 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Grav-Sled-Fu/10^

Version 2.0 RC 13

PILOTING/TL10 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Grav-Sled-Fu/10^	12	+0/4	12	1G/c	6	1.25 [1]	+3.5/+4	2+9SV [3]	1	—	$269.075k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Lift: 10Gs Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance: sAccel: 1G Air Performance: aAccel: 1G (22 mph/s) aSpeed: 2,500 mph (0.69 mps) Hnd/SR: +2/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 3 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-5]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 3 Seats [4]
		[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations		
[6!]	**Contragravity Lifter** 10 Gs Lift			[6!]	**Reactionless Engine - Hot** 1 G
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (3.75 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, Streamlined
[1] Load includes: 1.1 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen/Helium Isotopes

Spacecraft Design Table: Grav-Sled-Fu/11^

Version 2.0 RC 13

PILOTING/TL11 (HIGH-PERFORMANCE SPACECRAFT) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11^	Grav-Sled-Fu/11^	12	+0/4	12	2G/c	6	1.25 [1]	+3.5/+4	2+9SV [3]	1	—	$269.075k

Length: 16 yd. (48 ft.) Effective SM: +4 [2] Lift: 10Gs Crush Depth: 4.7 Atmospheres (156 ft.) Power Points: +2 / -2

Space Performance: sAccel: 2Gs Air Performance: aAccel: 2Gs (44 mph/s) aSpeed: 3,500 mph (0.97 mps) Hnd/SR: +2/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 3 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-5]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 3 Seats [4]
		[5-6, Core]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations		
[6!]	**Contragravity Lifter** 10 Gs Lift			[6!]	**Reactionless Engine - Hot** 2 Gs
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 600 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (3.75 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, Streamlined
[1] Load includes: 1.1 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)
[4] Modular
FUEL USED: [5] Hydrogen/Helium Isotopes

Spacecraft Design Table: Utility Helicopter/ 8

Version 2.0 RC 13

PILOTING/TL8 (HELICOPTER)

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Utility Helicopter/ 8	12	—	12	—	6	1.3 [1]	+3.5/+4	2+8S [3]	1	—	$136.3k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [4]	[2-4]	**Passenger Seating** 3 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]	[5-6!!]	**Helicopter Rotor**	[5]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]
				[6]	**Fuel Tank** 0.3 Tons of Hydrogen-Oxygen [4]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 18 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 18 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.4 tons of Cargo Hold (2.7 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360

SHIP OPTIONS: Streamlined, NBC Filters Only

[1] Load includes: 1 ton of Crew & Passengers, 0.3 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Helicopter/ 9

Version 2.0 RC 13

PILOTING/TL9 (HELICOPTER)

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Utility Helicopter/ 9	12	—	12	—	6	1.3 [1]	+3.5/+4	2+8S [3]	1	—	$136.3k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [4]	[2-4]	**Passenger Seating** 3 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]	[5-6!!]	**Helicopter Rotor**	[5]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]
				[6]	**Fuel Tank** 0.3 Tons of Hydrogen-Oxygen [4]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.4 tons of Cargo Hold (2.7 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360

SHIP OPTIONS: Streamlined, NBC Filters Only

[1] Load includes: 1 ton of Crew & Passengers, 0.3 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Helicopter/10

Version 2.0 RC 13

PILOTING/TL10 (HELICOPTER) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Utility Helicopter/10	12	—	12	—	6	1.35 [1]	+3.5/+4	2+10S [3]	1	—	$169.075k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1	[a]	**Armor - Nanocomposite** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-4]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [4]	[2-6]	**Passenger Seating** 5 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]	[5-6!!]	**Helicopter Rotor**		
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3 tons of Cargo Hold (3.15 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

Refueling Cost: $360

SHIP OPTIONS: Streamlined, NBC Filters Only

[1] Load includes: 1.2 tons of Crew & Passengers, 0.15 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Helicopter-Fi/ 8

Version 2.0 RC 13

PILOTING/TL8 (HELICOPTER) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Utility Helicopter-Fi/ 8	12	—	12	—	6	1.4 [1]	+3.5/+4	2+9S [3]	1	—	$170.3k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]	[5-6!!]	**Helicopter Rotor**		
				[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]
		[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 25 yr Fuel [5]	[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 25 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.7 tons of Cargo Hold (3.0 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Streamlined, NBC Filters Only

[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Fissionables

Spacecraft Design Table: Utility Helicopter-Fi/ 9

Version 2.0 RC 13

PILOTING/TL9 (HELICOPTER)

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Utility Helicopter-Fi/ 9	12	—	12	—	6	1.4 [1]	+3.5/+4	2+9S [3]	1	—	$170.3k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1	[1]	**Armor - Metallic Laminate** dDR 1
[2-4]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5-6]	**Passenger Seating** 2 Seats [4]	[5-6!!]	**Helicopter Rotor**		
				[6]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [4]
		[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 50 yr Fuel [5]	[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 50 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.7 tons of Cargo Hold (3.0 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Streamlined, NBC Filters Only

[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Fissionables

Spacecraft Design Table: Utility Helicopter-Fu/10

Version 2.0 RC 13

PILOTING/TL10 (HELICOPTER)

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Utility Helicopter-Fu/10	12	—	12	—	6	1.55 [1]	+3.5/+4	2+12S [3]	1	—	$229.075k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 11.3 Atmospheres (373 ft.) Power Points: +2 / -2

Helicopter Performance: aSpeed: 250 mph (125 yps) aAccel: 20 mph/s (10 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Nanocomposite** dDR 2	[1-4]	**Passenger Seating** 4 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Nanocomposite** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-4]	**Passenger Seating** 3 Seats [4]			[2-6]	**Passenger Seating** 5 Seats [4]
[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations	[5-6!!]	**Helicopter Rotor**		
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (3.75 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, Streamlined, NBC Filters Only

[1] Load includes: 1.4 tons of Crew & Passengers, 0.15 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (1 Pilot, 1 Co-Pilot)

[4] Modular

FUEL USED: [5] Hydrogen/Helium Isotopes

Spacecraft Design Table: Utility Truck/ 8

Version 2.0 RC 13

DRIVING/TL8 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Utility Truck/ 8	12	—	12	—	6	1.3 [1]	+3.5/+4	2+8S [3]	1	—	$90.5k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Light Alloy** dDR 1	[1]	**Armor - Light Alloy** dDR 1	[1]	**Armor - Light Alloy** dDR 1
[2-4]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [5]	[2-4]	**Passenger Seating** 3 Seats [5]
[5-6]	**Passenger Seating** 2 Seats [5]	[5]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [5]	[5!!]	**Screw Propeller** 2 Power Points [4]
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6, Core‡]	**Power Plant - Fuel Cell** 2 Power Points / 18 hr Fuel [6]
		[Core]	**Fuel Tank** 0.3 Tons of Hydrogen-Oxygen		

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.4 tons of Cargo Hold (2.7 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship. Dropping Power Use to 1 Power Point doubles fuel duration but results in reduced performance: gSpeed: 56 mph (28yps) gAccel 4mph/s (2 yps/s) wSpeed: 14 mph (7 yps) wAcced: 1 mph/s (0.5 yps/s)

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: NBC Filters Only
[1] Load includes: 1 ton of Crew & Passengers, 0.3 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular
FUEL USED: [6] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Truck/ 9

Version 2.0 RC 13

DRIVING/TL9 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Utility Truck/ 9	12	—	12	—	6	1.35 [1]	+3.5/+4	2+10S [3]	1	—	$107.275k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [5]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-3]	**Passenger Seating** 2 Seats [5]	[2-5]	**Passenger Seating** 4 Seats [5]	[2-5]	**Passenger Seating** 4 Seats [5]
[4-6]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations				
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6!!]	**Screw Propeller** 2 Power Points [4]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [6]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 36 hr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3 tons of Cargo Hold (3.15 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship. Dropping Power Use to 1 Power Point doubles fuel duration but results in reduced performance: gSpeed: 56 mph (28yps) gAccel 4mph/s (2 yps/s) wSpeed: 14 mph (7 yps) wAcced: 1 mph/s (0.5 yps/s)

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: NBC Filters Only
[1] Load includes: 1.2 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular
FUEL USED: [6] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Truck/10

Version 2.0 RC 13

DRIVING/TL10 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Utility Truck/10	12	—	12	—	6	1.35 [1]	+3.5/+4	2+10S [3]	1	—	$107.275k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [5]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-3]	**Passenger Seating** 2 Seats [5]	[2-5]	**Passenger Seating** 4 Seats [5]	[2-5]	**Passenger Seating** 4 Seats [5]
[4-6]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6!!]	**Screw Propeller** 2 Power Points [4]
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [6]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3 tons of Cargo Hold (3.15 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship. Dropping Power Use to 1 Power Point doubles fuel duration but results in reduced performance: gSpeed: 56 mph (28yps) gAccel 4mph/s (2 yps/s) wSpeed: 14 mph (7 yps) wAcced: 1 mph/s (0.5 yps/s)

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: NBC Filters Only
[1] Load includes: 1.2 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular
FUEL USED: [6] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Truck/11

Version 2.0 RC 13

DRIVING/TL11 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11	Utility Truck/11	12	—	12	—	6	1.45 [1]	+3.5/+4	2+11S [3]	1	—	$116.475k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -2

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-3]	**Passenger Seating** 2 Seats [4]	[2-6]	**Passenger Seating** 5 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[4-6]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations				
				[6]	**Reconfigurable System - Dual Systems**
				[a!!]	**Screw Propeller** 2 Power Points
				[b!!]	**Off-Road Wheeled Drivetrain** 2 Power Points
		[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]	[Core†]	**Power Plant - Fuel Cell** 1 Power Point / 72 hr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship. Dropping Power Use to 1 Power Point doubles fuel duration but results in reduced performance: gSpeed: 56 mph (28yps) gAccel 4mph/s (2 yps/s) wSpeed: 14 mph (7 yps) wAcced: 1 mph/s (0.5 yps/s)

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: NBC Filters Only
[1] Load includes: 1.3 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Truck-Fi/ 8

Version 2.0 RC 13

DRIVING/TL8 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
8	Utility Truck-Fi/ 8	12	—	12	—	6	1.4 [1]	+3.5/+4	2+9S [3]	1	—	$126.5k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Light Alloy** dDR 1	[1]	**Armor - Light Alloy** dDR 1	[1]	**Armor - Light Alloy** dDR 1
[2-4]	**Control Room** Comp: C2 / Comm/Sensor: 1 / 2 Stations	[2-4]	**Passenger Seating** 3 Seats [5]	[2-5]	**Passenger Seating** 4 Seats [5]
[5-6]	**Passenger Seating** 2 Seats [5]	[5]	**Cargo Hold** 0.3 Tons / SM-1.5 Bay Doors [5]		
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6!!]	**Screw Propeller** 2 Power Points [4]
		[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 25 yr Fuel [6]	[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 25 yr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 2.7 tons of Cargo Hold (3 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: NBC Filters Only

[1] Load includes: 1.1 tons of Crew & Passengers, 0.3 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (2 Drivers)

[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular

FUEL USED: [6] Fissionables

Spacecraft Design Table: Utility Truck-Fi/ 9

Version 2.0 RC 13

DRIVING/TL9 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
9	Utility Truck-Fi/ 9	12	—	12	—	6	1.45 [1]	+3.5/+4	2+11S [3]	1	—	$143.275k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Advanced Metallic Laminate** dDR 2	[1-5]	**Passenger Seating** 5 Seats [5]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Advanced Metallic Laminate** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [5]
[2-3]	**Passenger Seating** 2 Seats [5]			[2-5]	**Passenger Seating** 4 Seats [5]
[4-6]	**Control Room** Comp: C4 / Comm/Sensor: 2 / 2 Stations				
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6!!]	**Screw Propeller** 2 Power Points [4]
		[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 50 yr Fuel [6]	[Core†]	**Power Plant - Fission Reactor** 1 Power Point / 50 yr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, NBC Filters Only

[1] Load includes: 1.3 tons of Crew & Passengers, 0.15 tons in Cargo Hold

[2] Effective SM based on SM Rounded up

[3] Crew Requirement: 2 Control Stations (2 Drivers)

[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular

FUEL USED: [6] Fissionables

Spacecraft Design Table: Utility Truck-Fu/10

Version 2.0 RC 13

DRIVING/TL10 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10	Utility Truck-Fu/10	12	—	12	—	6	1.55 [1]	+3.5/+4	2+12S [3]	1	—	$167.275k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -4 [4]

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Advanced Metallic Laminate** dDR 2	[1-5]	**Passenger Seating** 5 Seats [5]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Advanced Metallic Laminate** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [5]
[2-4]	**Passenger Seating** 3 Seats [5]			[2-5]	**Passenger Seating** 4 Seats [5]
[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
		[6!!]	**Off-Road Wheeled Drivetrain** 2 Power Points [4]	[6!!]	**Screw Propeller** 2 Power Points [4]
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [6]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.6 tons of Cargo Hold (3.75 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, NBC Filters Only
[1] Load includes: 1.4 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Insufficient Power Points to run all ship systems simultaneously, [5] Modular
FUEL USED: [6] Hydrogen/Helium Isotopes

Spacecraft Design Table: Utility Truck-Fu/11

Version 2.0 RC 13

DRIVING/TL11 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
11	Utility Truck-Fu/11	12	—	12	—	6	1.65 [1]	+3.5/+4	2+13S [3]	1	—	$176.475k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -2

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Advanced Metallic Laminate** dDR 2	[1-6]	**Passenger Seating** 6 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Advanced Metallic Laminate** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-4]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 4 Seats [4]
[5-6, Core]	**Control Room** Comp: C7 / Comm/Sensor: 4 / 2 Stations				
				[6]	**Reconfigurable System - Dual Systems**
				[a!!]	**Off-Road Wheeled Drivetrain** 2 Power Points
				[b!!]	**Screw Propeller** 2 Power Points
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 600 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.9 tons of Cargo Hold (4.05 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, NBC Filters Only
[1] Load includes: 1.5 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Modular
FUEL USED: [5] Hydrogen/Helium Isotopes

Spacecraft Design Table: Utility Truck/10^

Version 2.0 RC 13

DRIVING/TL10 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Utility Truck/10^	12	—	12	—	6	1.45 [1]	+3.5/+4	2+11S [3]	1	—	$116.475k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -2

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**	[1]	**Smaller Systems - Half-Sized**
[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1	[a]	**Armor - Advanced Metallic Laminate** dDR 1
[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen	[b]	**Fuel Tank** 0.15 Tons of Hydrogen-Oxygen
[2-4]	**Passenger Seating** 3 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]	[2-5]	**Passenger Seating** 4 Seats [4]
[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
		[6, Core‡]	**Power Plant - Fuel Cell** 2 Power Points / 72 hr Fuel [5]	[6]	**Reconfigurable System - Dual Systems**
				[a!!]	**Screw Propeller** 2 Power Points
				[b!!]	**Off-Road Wheeled Drivetrain** 2 Power Points

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.3 tons of Cargo Hold (3.45 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.
Dropping Power Use to 1 Power Point doubles fuel duration but results in reduced performance: gSpeed: 56 mph (28yps) gAccel 4mph/s (2 yps/s) wSpeed: 14 mph (7 yps) wAcced: 1 mph/s (0.5 yps/s)

Design Switches, Features, & Notes:

Refueling Cost: $360
SHIP OPTIONS: NBC Filters Only
[1] Load includes: 1.3 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Modular
FUEL USED: [5] Hydrogen-Oxygen (0.45 tons)

Spacecraft Design Table: Utility Truck-Fu/10^

Version 2.0 RC 13

DRIVING/TL10 (HEAVY WHEELED) p.1

TL	Name	dST/dHP	Hnd/SR	HT	Move	LWt.	Load	SM[2]	Occ	dDR	Range	Cost
10^	Utility Truck-Fu/10^	12	—	12	—	6	1.65 [1]	+3.5/+4	2+13S [3]	1	—	$176.475k

Length: 6.7 yd. (20 ft.) Effective SM: +4 [2] Crush Depth: 22.6 Atmospheres (746 ft.) Power Points: +2 / -2

Wheeled Ground Performance: gSpeed: 70 mph* (35 yps*) gAccel: 8 mph/s (4 yps/s) Hnd/SR: -1/4 Screw Prop. Surface Performance: wSpeed: 20 mph (10 yps) wAccel: 2 mph/s (1 yps/s) Hnd/SR: +0/4

Ship Systems

Front Hull Systems		Center Hull Systems		Rear Hull Systems	
[1]	**Armor - Advanced Metallic Laminate** dDR 2	[1-6]	**Passenger Seating** 6 Seats [4]	[1]	**Smaller Systems - Half-Sized**
				[a]	**Armor - Advanced Metallic Laminate** dDR 1
				[b]	**Cargo Hold** 0.15 Tons / SM-2.5 Bay Doors [4]
[2-4]	**Passenger Seating** 3 Seats [4]			[2-5]	**Passenger Seating** 4 Seats [4]
[5-6, Core]	**Control Room** Comp: C6 / Comm/Sensor: 3 / 2 Stations				
				[6]	**Reconfigurable System - Dual Systems**
				[a!!]	**Screw Propeller** 2 Power Points
				[b!!]	**Off-Road Wheeled Drivetrain** 2 Power Points
				[Core‡]	**Power Plant - Fusion Reactor** 2 Power Points / 200 yr Fuel [5]

User Notes: Passenger Seats are modular and can be removed to provide an extra 3.9 tons of Cargo Hold (4.05 tons total). Cargo Holds are designed to accept Modular systems, allowing for a great deal of customization of the ship.

Design Switches, Features, & Notes:

SHIP OPTIONS: Spread dDR, NBC Filters Only
[1] Load includes: 1.5 tons of Crew & Passengers, 0.15 tons in Cargo Hold
[2] Effective SM based on SM Rounded up
[3] Crew Requirement: 2 Control Stations (2 Drivers)
[4] Modular
FUEL USED: [5] Hydrogen/Helium Isotopes