

**CORTEX**

**SHIPYARDS**

**VOLUME 2**

The image is a technical manual page for 'Cortex Shipyards Volume 2'. It features a central collage of diagrams and 3D models. The diagrams are organized into several sections: 'Fuel Panks' (top left), 'Pulse Drive' (top center), 'Rocket' (top right), 'Thruster Pods' (middle right), 'Gravity Hubs' (middle left), 'Air Systems' (middle right), 'Waste Systems' (bottom right), and 'Fusion Reactor' (bottom left). Each diagram is a complex flowchart or schematic with various components and connections. The 3D models are rendered in a reddish-brown color and show different parts of a ship, including a hull section, a jet engine, and a large cylindrical structure. The text 'CORTEX', 'SHIPYARDS', and 'VOLUME 2' is written in large, green, 3D-style letters across the collage.

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## 153632-C (by Frewfrux)

Man's best friend may be his dog, but a bounty hunter relies on his tools not his emotions. The 153632-C model will get the job done. Think of it as an extension of yourself, a tool to enhance your ability to both capture fugitives, and a form of self discipline. There is no luxury here with just enough room in the cockpit to allow you to do your morning exercises. Each of the three cells has a one-way viewing, reinforced, polysteel door allowing you to keep an eye on your captives but preventing them from seeing you.

The ship itself has just enough speed to keep up with most wanted criminals and an extra boost when it's needed most. There is enough agility to land the 153632-C on the hull of a vessel without making a sound. The size is small enough that any other ship on auto-pilot will assume you are just space debris, if they see you at all. And while the computer keeps you from prying eyes, it also monitors your prisoners for you while you are away and auto-locks its controls if an escape is ever detected.

This is truly a bounty hunter's best friend. Oh, did I mention the previous owner had a run-in with the law?

### Stats

Agility: d8  
Strength: d2  
Vitality: d6  
Awareness: d6  
Intelligence: d6  
Willpower: d2

Initiative: d8 + d6  
Life Points: 4  
Speed Class: 4

### Measurements

Length: 21  
Beam: 16  
Height: 12

Body Type: 0.25  
Total Tonnage: 10  
Hull, subsystems, etc: 2.8  
Engines: 2  
Free Tonnage: 5.2 (rounded to 5)

### Traits

Branded (Major)  
Fast Throttle (Major)

### Skills

Collision Avoidance Systems (Athletics): d2  
Autopilot / Autonav (Pilot): d2  
Stealth Programming (Covert): d4  
Sensor Routine / Internal Security (Perception): d4

### Gear

Escape Pods: 1  
Fuel Tanks: 1 (600 hours endurance)  
4' x 3' x 8' Cells: 3

Complexity: 30 (low)  
Purchase Price: Cr 340  
Yearly Maintenance: Cr 12  
Monthly Maintenance: 1

## Acorn Class Resource Hauler (by Price)



Tonnage: 634 tons (sleek\athletic) profile  
Tonnage Free: 349 tons  
Cargo Capacity: 215.5 tons

Speed: 2 cruise, 4 Hard Burn

Crew Quarters: 2 Plush Singles, 2 Decent Singles  
Passenger: None as standard

Fuel Capacity: 24 Unit(s) in 2 Tank(s) (1200 hours)

### Ship Attributes

Agility: D4  
Strength: D4  
Vitality: d6  
Alertness: D2  
Intelligence: D2  
Willpower: D2

Initiative: ?  
Life Points: ?

Assets: (None)

Complications:  
Slow Throttle (Minor)  
Short Range

Complexity: Generator Value of "16" Low, Medium Low?  
Price: 2536

## Armadillo class armored transport (by Dalfly)

The Armadillo was manufactured 50 years ago by a visionary but short-lived company (Remington Li Shipwrights), with the intended market niche being upscale precious cargo and VIP transport on the frontier (prior to the Alliance takeover, the rim was plagued by pirates and wreckers, which justified the unusual degree of armaments and armor sported by this boat). It had only moderate success, due to its high price tag and ungainly appearance, and just a few hundred were produced. For obvious reasons, many of these boats were commandeered by the Browncoats during the war, and today there's only a couple dozen still in service (which makes them Memorable when encountered, especially if one approaches with hostile intent...).



### Specifications

Dimensions (LxWxH): 270 x 180 x 90  
Tonnage: 6000 tons  
Speed Class: 4 cruise/7 hard burn  
Crew Quarters: 5 double berths + captain's cabin  
Fuel Capacity: 260 tons  
Cargo Capacity: 1200 tons (on 1 and ½ cargo decks)  
Passenger Capacity: 5 state rooms  
Gear: 2 shuttles standard (with room for a third)  
Complexity: Average  
Cost: 28700 Credits (including original guns, but not missile or shell costs)  
Maintenance: 2000 Credits/month

Agility: d8  
Strength: d6

Vitality: d6  
Alertness: d6  
Intelligence: d4  
Willpower: d10  
Life Points: 18  
Armor: 4W, 2S  
Armaments: 1 2-lb. autocannon (d8 vehicle scale, 100-rnd magazine), 2 100-lb. cannon (d6, 5-round magazines), 1 200-lb. missile launcher (d8, Long Range, 3-missile magazine)

Skills: Heavy Weapons: d6, Pilot/Nav (Auto): d2

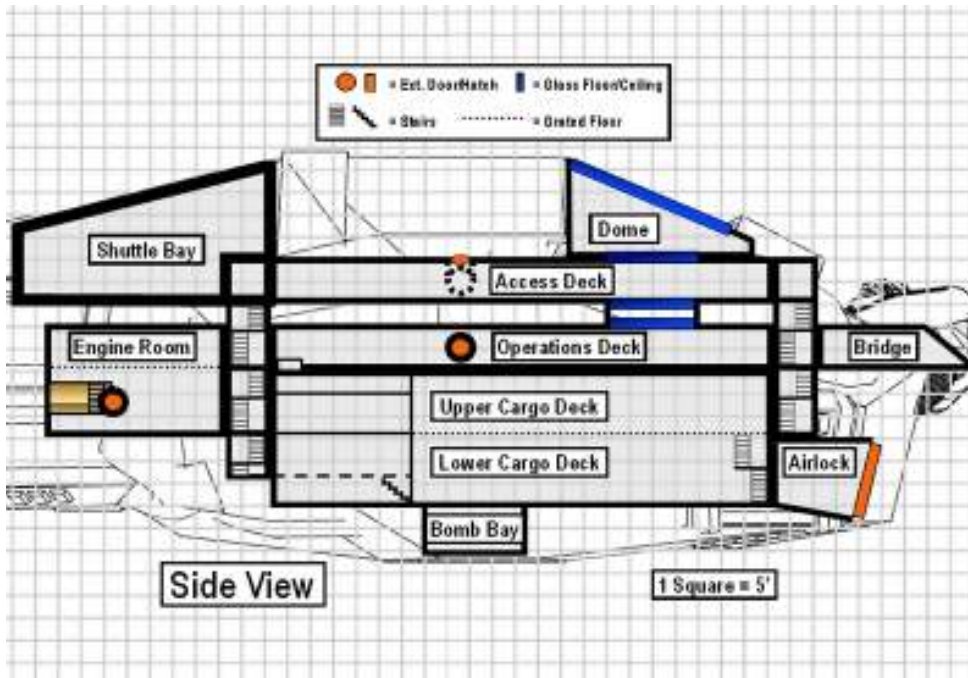
Assets: Tough as Nails – minor, Fast Throttle – minor

Complications: Gas Guzzler – minor, Memorable – minor, Seen Better Days – major, Ugly As Sin – minor

The Armadillo has 4 reaction pods instead of the usual 2, which was done to ensure stability of the bulky hull, but also provides higher than average acceleration and maneuverability for a boat of its size (at a cost of greater fuel consumption). The pods are connected with patented "duraflex" joints, which are extremely robust, while also allowing a full range of motion. These joints can extend a few yards (beyond what's shown in the photos) for added stability.

Internally, the decks are compartmentalized, and there are redundant backups for vital systems, as exemplified by the high Willpower and Life Point ratings. The bridge, observation dome, and pulse drive have retractable armored shields, and the enclosed shuttle bay (which can hold up to 3 standard-sized shuttles) is also protected by armored double doors.

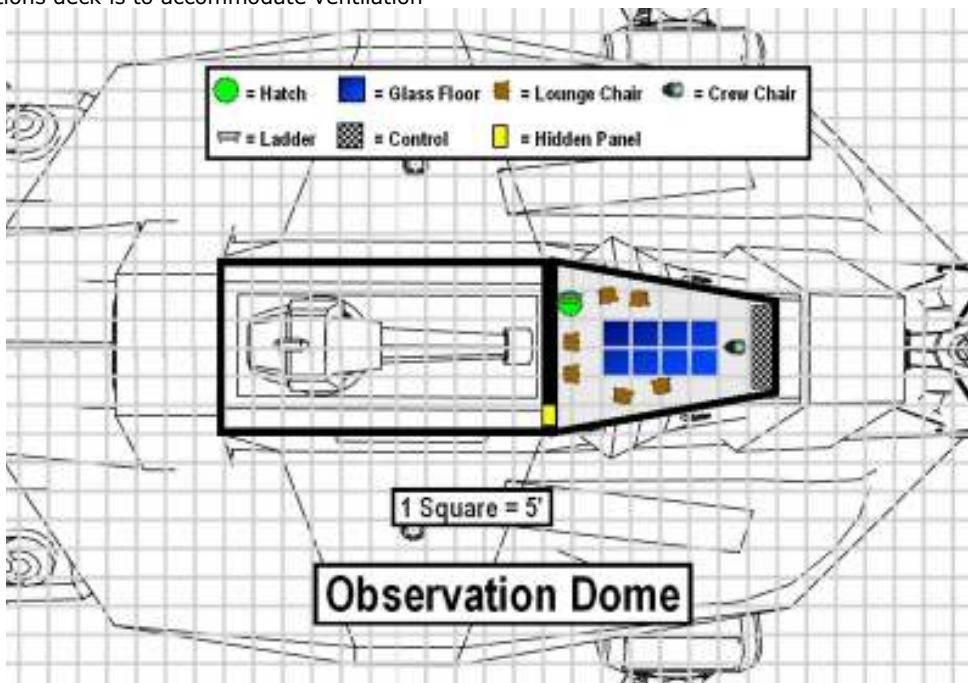
The Armadillo's weapons can be withdrawn into concealed compartments (in the photos, I've discolored the doors to these compartments for illustrative purposes – they are not actually this obvious). The manufacturer's (stated) intent for this was to avoid a threatening profile when approaching twitchy frontier ports or traversing more civilized space - not to conceal them from law enforcement. Post war, this has of course become the primary purpose, and most owners have taken the extra step of concealing *internal* access to the weapons and reload magazines as well, just in case the feds make an inspection (as is the case on the deck plans I've created).



SIDE VIEW

I didn't include the weapon compartments on this view, as they are technically not part of the interior. The gap between the Access Deck and Operations deck is to accommodate ventilation

shafts, plumbing, wiring, etc., as necessitated by living quarters (the infirmary and lab on the Upper Cargo Deck also have dropped ceilings for the same reason). DOGA tends to distort the scale a bit on its rendering, which is why this doesn't line up exactly with the boat outline, but the scale *is* consistent with the rest of the deck plans...

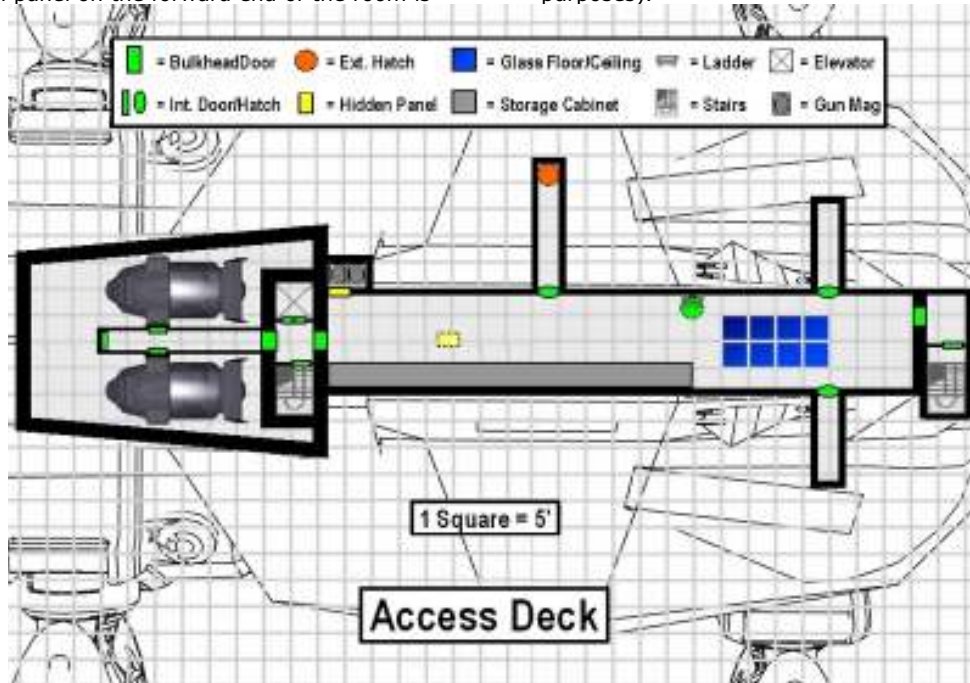


OBSERVATION DOME

This is a room at the top of the boat with a large window in the ceiling that provides a nice view

of the Black. There's also a clear fiberglass panel in the floor that allows natural light to pass to the Access Deck below (and ultimately the crew lounge on the Operations Deck). The control panel on the forward end of the room is

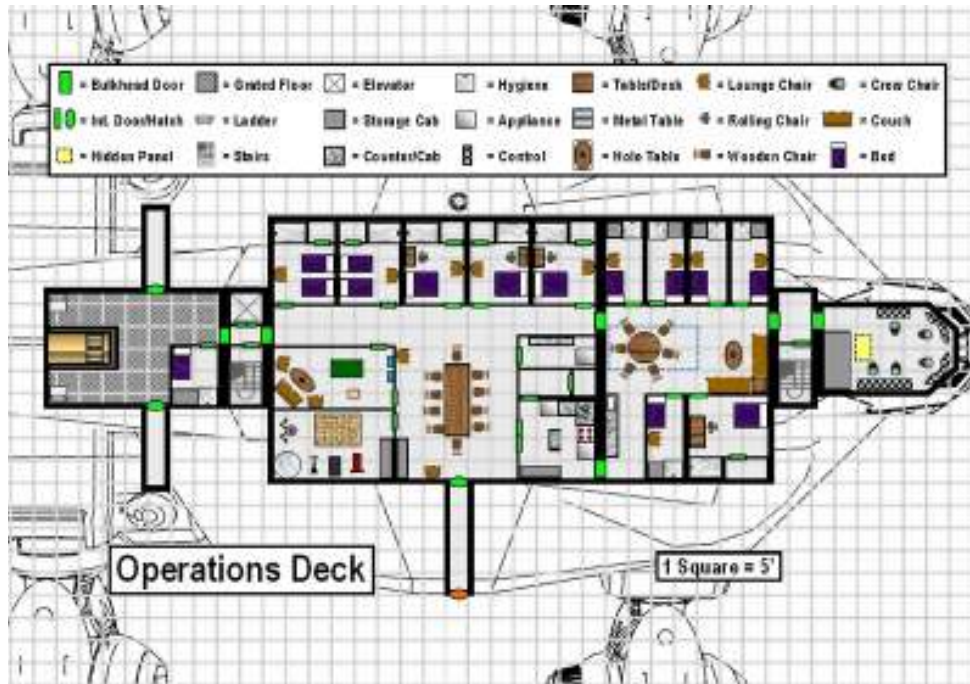
"officially" used for fine tuning the sensors, but can act as a backup gunnery station. There's a hidden panel on the aft wall that accesses the top cannon (for repair and maintenance purposes).



#### ACCESS DECK

This is a broad hallway that accesses the shuttle bay, and has a ladder leading up to the Observation Dome. The short perpendicular conduits in the fore are "jeffries tubes" for maintenance access to the water storage and reclamation units (not shown), and the perpendicular hallway in the middle is an emergency exit tunnel. There's a long set of lockers along the starboard wall for storing vac suits, survival kits, etc. The small hidden room

on the port side just fore of the shuttle bay holds 2 "reload magazines" for the top cannon. These are 10' tall cages with motorized wheels on the bottom, which can be rolled into place under another hidden panel in the ceiling. A hidden button opens the panel and lowers a connection to the cage, allowing the shells to be automatically fed into the cannon's built-in magazine (if the built-in mag is still full, this basically extends the gun's capacity to 10; if it is empty, it takes about 2 turns for the new shells to be fed into the built-in mag). Once reloaded, the empty cage can be rolled aside and replaced with another.



OPERATIONS DECK

Going from fore to aft:

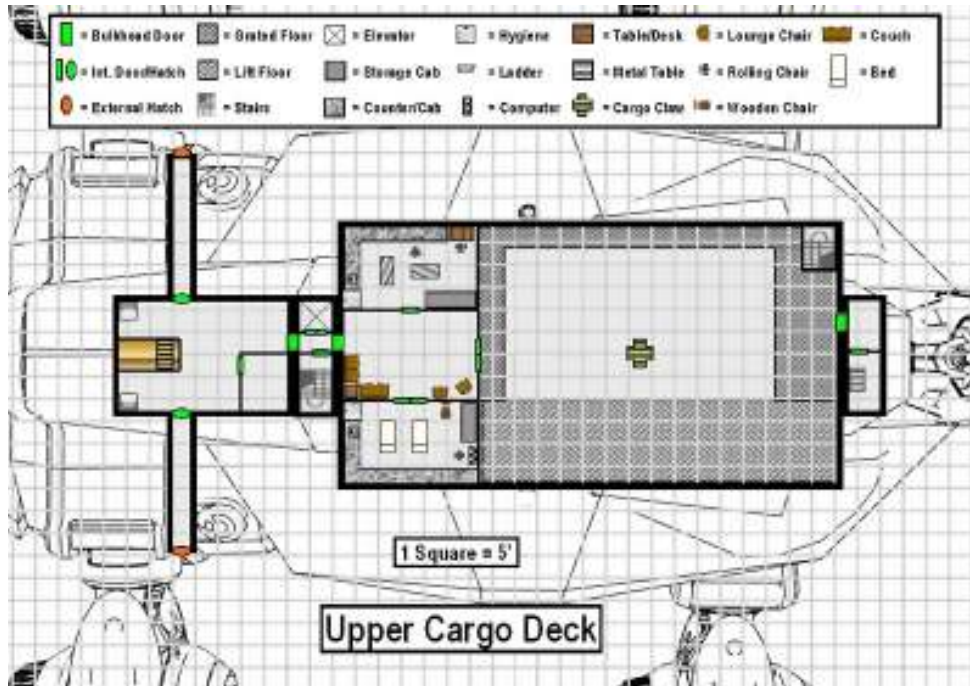
The bridge has a pilot and co-pilot station, a navigation/communications station (port), and 2 gunnery stations (starboard). There's hidden panel in the floor used for reloading the ammo drum of the autocannon (the storage locker on the aft wall is large enough to hold 2 extra drums, which can be rolled out directly into the reload chute – but a full drum weighs 500 lbs., so it would likely take several people).

The section just aft of the bridge and forward stairwell is the crew quarters. Each room has its own "hygiene unit" – this is basically a shower stall that also has a fold-out toilet and sink (the larger units in the captain and passenger cabins can also be used as bathtubs). All the crew beds except the captain's are double bunks. There's a lounge in the middle with a skylight in the ceiling (ultimately leading up to the Observation Dome). A hallway runs starboard

that leads to the kitchen, and there's a counter/cabinet along the aft wall with small cooking appliances (microwave, coffee pot, etc.).

The connected room just port of the kitchen (which should be obvious), is a larder, with a walk-in freezer on the forward end. The room just port of that is a laundry room with a stacked washer/dryer unit. Aft of that is the main dining hall, and aft of *that* is a rec room (with pool and fuseball tables, video games, dart board, and a holo projector) and an exercise room (with sparring mat, weight bench, treadmill, stationary bike, nautilus machine, and jacuzzi!).

The aft-most section is the upper floor of the engine room, which includes a smaller room that serves as the engineers' quarters. There are perpendicular jeffries tubes port and starboard that access the atmo processing units (not shown), and ladders on the port and starboard walls that lead to the lower floor of the engine room.

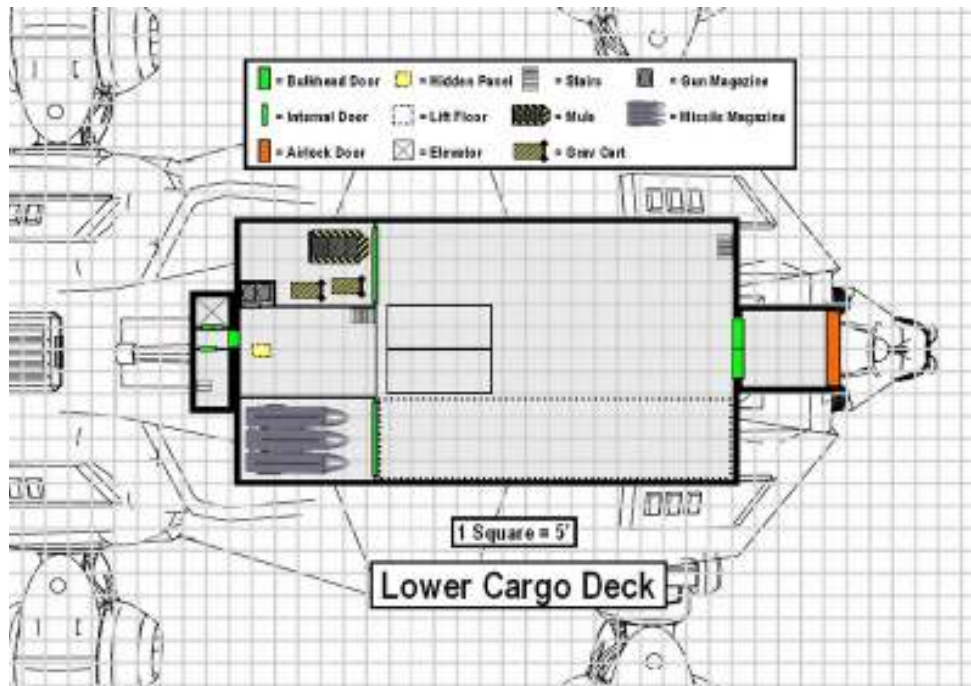


#### UPPER CARGO DECK

A gridded walkway runs along the fore, port, and aft walls of the cargo area, and there's a stairway in forward port corner that leads to the Lower Cargo Deck. Along the starboard wall is a "lift floor", which can be lowered to the Lower Cargo Deck for loading, or raised to the ceiling to maximize space. On the ceiling is an extendable "cargo claw", which can lift up to 5 tons and runs on a gridded track that allows it to move to any part of the cargo area.

The section aft of the cargo area houses the infirmary (starboard), and a generic workshop/laboratory (port). In between is a broad access hallway, which I've set up as another lounge/waiting room (but could also be used for additional storage).

The aft-most section is the lower floor of the engine room, which includes a smaller room that can be used for a workshop and/or parts storage. The perpendicular port and starboard tunnels are combination jeffries tubes/emergency exits. The fusion reactor (not shown) resides directly below this room and can be accessed via removable panels in the floor.

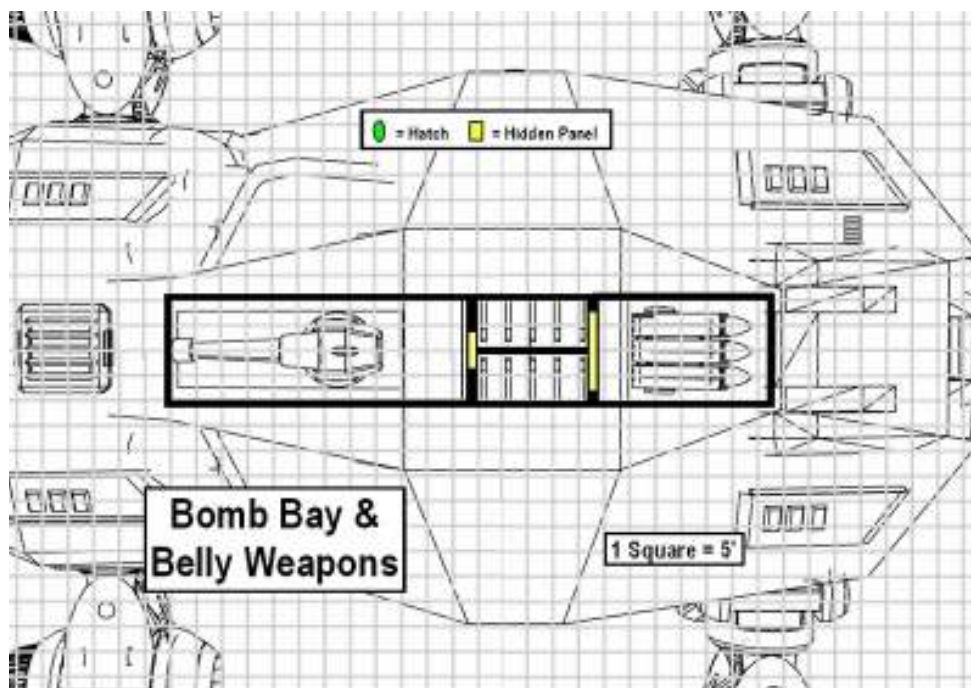


LOWER CARGO DECK

In the middle aft floor of the cargo area are the inner doors to a large bomb bay. At the aft end, there are "garages" with rolling large doors port and starboard. We're using the starboard garage to house a reload cage for the missile rack. The cage holds 6 missiles (2 rows of 3), and has motorized wheels. To reload, the cage is wheeled to the forward edge of the bomb bay. Pressing a hidden button causes 2 lift arms to swing up from the foreword wall of the bay, and lock parallel to the floor. The arms are tracked, and the missile cage is rolled onto them, and then lowered to the floor of the bomb bay. Another hidden panel in the foreword wall of the bomb bay opens, and the missiles on the bottom row of the cage are automatically fed into the empty missile rack, and the upper row drops down for the next reload (the rack has to be withdrawn into its compartment in order to

reload). The reload process takes a minimum of 3 turns, and that's assuming that the reload cage is already in position in the bomb bay. Obviously, missiles of this size are very difficult to hide. In case of Alliance inspection we plan to either have the reload cage already placed in the bomb bay, and then hidden with cargo crates, or keep the cage in the starboard garage, but stack full cargo crates in front the door. This could be avoided altogether by ditching the reload cage, I suppose (but once the missile rack is empty, that's it pal)

The space between the garage is elevated 5' above the floor of the cargo area (to accommodate the belly cannon compartment). Off the port side is another hidden room (which also has an elevated floor) that holds the reload cages for the belly cannon. The reload process is the same as described for the top cannon, only the panel and reload feeder is in the floor instead of the ceiling.



BOMB BAY & BELLY WEAPONS

This just shows the access to the belly weapon compartments from the bomb bay.

## Bi Class Orbital Tug (by Limerickcot)



Builder: Delphium Yards of Boros

Dimensions:  
Length: 150 ft  
Width: 175 ft  
Height: 175 ft

Space between booms: 100 ft in normal mode.  
Can take larger craft by fitting them between booms.

Speed: 5 (no hard burn)  
Fuel Capacity: 500 tons (3200 hours) in 4 tanks  
Engine Size: 282 tons each, modular

10 Life pods  
Crew: 6  
Crew Quarters: 6 first class, 1 Luxurious  
Passenger Quarters: None  
Cargo Capacity: 40 tons (10 reserved for long term food supplements and disaster relief supplies)  
Gear: Specialist Life Support  
Armour: 5% of mass

Agility: d8  
Str: d6  
Vit: d4  
Ale: d4  
Int: d6  
Wil: d4

Armour 1pt

Traits:  
Slow Throttle (major)  
Memorable (min)  
Dull Sense – radar and other aft sensors when hooked up (min)  
Full Efficient – only applies in free flight (min)

Complexity: Very Low

Cost: 73172. [As there is no pulse drive on this ship the cost is somewhat lower than

normal. ]  
Maintenance: 3613 cr per annum, 278 cr every 4 weeks

The Bi (or Billy Goat) is a commercial tug, a type used by most large starports across the `Verse.

Although it only has a limited space directly between its engine `legs` the Bi can re-orientate itself to accommodate much larger vessels, or even `push` if needed.

It's software is sufficient to allow it calculate this (it has a specialised program for which the design parameters of most vessels are fed in and can be adjusted for variations in mass, that it encounters once the vessel is latched on).

In normal, unattached flight, the Bi is fuel efficient. It loses this ability when attached to any vessel that masses as least as much as itself. It also at that stage normally loses sensors that are blocked by the mass of that vessel. This may require that one of the crew boards the towed vessel and ensconces himself on that bridge to report on sensor readouts from that ship, by radio.

Because of its duties, the Bi also carries a great deal of fuel and is used by most dockyards as an interim tanker where needed. Most of the time a Bi will be routed to clearing debris or pulling/pushing objects/vessels into place in orbit where needed. Quite a number of these vessels are routed to service the Cortex relay stations and thus the shape and sight of these vessels is well known not only to regular crews in the `Verse, but also to many of the passengers who travel along the main routes.

Its other capability, yet again making it a common scene on that type of news report, is its continuing use as a slow but capable disaster relief vessel. It carries enough supplies to provide basic food, water and life support to nearly any stricken vessel. This allows it to dock and hook up its own Life Support system to the other ship and the Bi's capacity allows it to provide air and scrubbers capable of dealing with any short-term (2 weeks) system failure.

Although slow and without a hard-burn capability the Bi will be found around any busy planet, and out to very wide orbits from those planets. Those along the cortex relay routes will be found deeper into the Black.

## Bull class Mid-Bulk Transport (by Darren)

Model: Bull  
Class: Tramp Mid bulk Freighter

Dimensions (L200xB120xH60):  
Tonnage:2720  
Speed Class: 6/10  
Fuel Capacity/Tonnage 75 tons {375 volume}  
1600 Hours: 21.33 hours per ton  
Crew Quarters: 4 x 8 tons  
Passenger Quarters: 2 x8 tons 2nd class cabins  
Cargo Capacity: 600 tons in loose cargo or 24 standard 25 ton cargo container

Attributes: total 30  
Agility D2  
Strength D6  
Vitality D10  
Alertness D2  
Intelligence D2  
Willpower D10  
Armour none  
Initiative D4+D2  
Life 20

Traits 14

Assets:  
Fuel Efficient {Minor}  
Fast Throttle {major}  
Good Name {minor}  
Healthy as a Horse {Minor}  
Tough as nails {major}

Complications: 12  
Memorable {minor}  
Ugly as Sin {Major}  
seen better days {major}  
Skills:  
Mechanical engineering D4  
Complexity: 30 low {x0.6}  
Price: New - 97,920 seen better days major 4,896  
Maintenance Cost:  
New per year 3,264- 272 per month seen better days 6,528- Per month 544  
Armaments: None  
Craft: 2 x 20 ton shuttles  
Gear : Large container fork lift

The official name for this old craft is the "Frontier 500 ton / 24 container self unloading Freighter 01" named by its maker who can build a good ship but were not sales man. Fortunately the control group of captains reported that it had the quark of bucking and groaning on reentry, a groan that "kinda-sorta sounds like a bulls roar". Thus it was marketed under the name "Bull" much to the PR department's relief.

Many ships are named after famous rodeo bulls such as White Magic , Big Bucks , Voodoo and Troubadour

The ships deign has been built for 50 years and come from a time were a full space port was a rare thing on the border worlds and most of the rim worlds just had a cleared bit of dirt. The "Bull" comes as standard with a 35 ton container lift in a dedicated vehicle hold which also has room for a small machine shop. This enables it to load and unload cargo and containers up to and including the 40 foot 25 ton standard container from its secondary hold. This secondary hold is equipped with cargo lift up to the main hold which itself has a ceiling mounted cargo container crane controlled from a dedicated station in the bow. This combination allows a bull to fully load or unload containers or other cargo types without any assistance from the landing site.

Many folk on the rim and border worlds buy they equipment, even buildings in kit form from the core. These kits are shipped in containers and it's a good chance a "Bull" will be the ship to deliver. As advertising brochure say :-

A "bull" is mostly likely the 1st transport ship to make a deliver to a newly opened world. Landing in a patch of dirt. It Cargo a space port in a box, A space port other ships need but the 'Bull' does not."

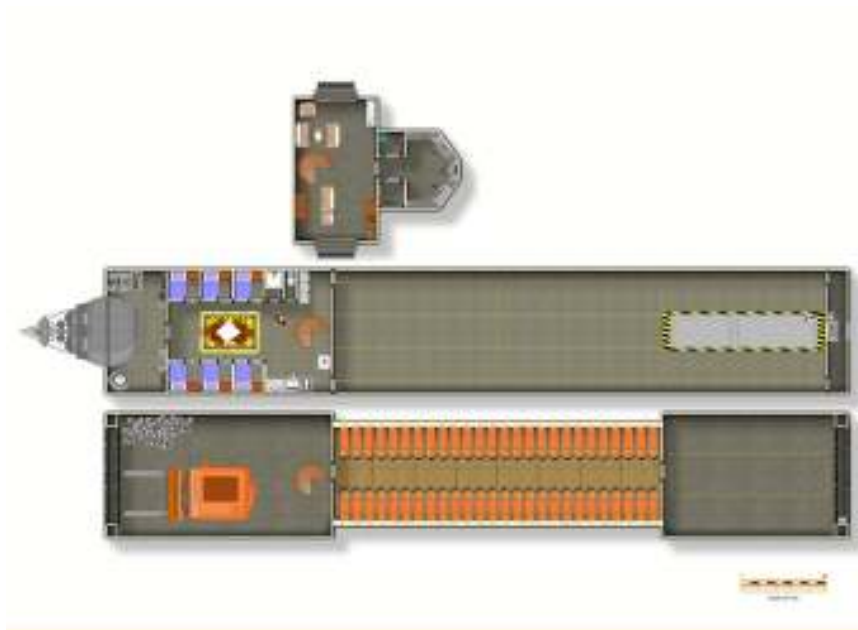
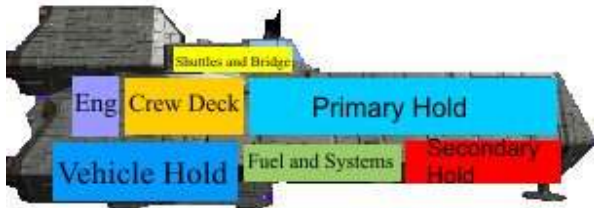
Being a old deign a Bull is a robust over engineered craft built from old bulky reliable and easy to find parts. Not that it needs new parts often as the old tech was built to last.

A bull has five engines which is generally thought to be two more than it needs. However it is these two extra engines that allow a bull to run all five engines at there most economical setting yet maintain a respectable cruise speed. These extra engines also give a Bull an amazingly fast hard burn speed at the expense of fuel economy.

In addition a bull carries twice the standard load of fuel for a ship of this size coming as it does from a age were refueling stations were few and far between.

But it is not all good news the Bull as the saying go's "is a small ship for its size". The four crew cabin accommodation is cramped and poorly equipped. The two passenger cabins are identical two the crew's cabins and it would be generous man who describes then as 2nd class. It also should be noted that all these cabins contain only a narrow single bed. They is no sitting room only a large table and six chairs in the crew area. One the upper level behind the Bridge is a large area containing the two shuttle bocking rings. This area is fairly large and many captains place sofas and chairs here but the main stair well placed in the center and space needing to be left to get to the shuttles makes this a cramped area.

However all in all a Bull is a reliable tough and economical vessel.

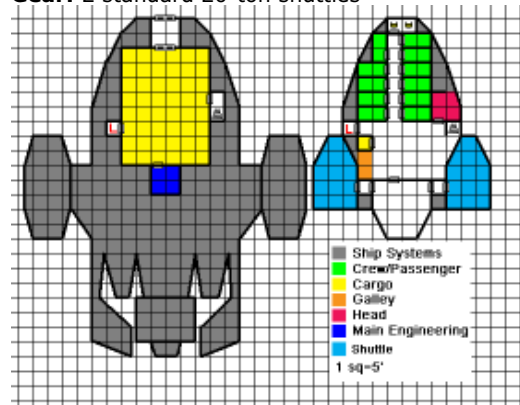


## Cambridge Class Mid-Bulk Transport (by LynnLeFey)



**Dimensions:** 115x95x30  
**Tonnage:** 820 tons  
**Speed Class:** 6 / 8 full burn  
**Crew Quarters:** 3  
**Fuel Capacity:** 20.5 tons (600 hours of operation)  
**Cargo Capacity:** 100 tons  
**Passenger Capacity:** 8  
**Price** 29,520 credits new (7380 with minor 'Seen Better Days')

**AGI** d6, **STR** d4, **VIT** d8, **ALE** d2, **INT** d2, **WIL** d8  
 Pilot d2, Perception d2  
 Seen Better Days (Minor)  
**Complexity:** Low  
**Maintenance Cost:** 984 credits per year (1476 with minor 'Seen Better Days')  
**Life Points:** 12  
**Gear:** 2 standard 20-ton shuttles



## Castle Class Prospector

(by Paul Reese)

Tons 500  
Speed 4/8  
AG 6  
ST 4  
VI 4  
AL 4  
IN 4  
WP 4

SKILLS: PERC(4) ATHLET (4)  
LIFE : 8  
ARMOR: 10w

COMPLEXITY 0.6  
ENGINE 100  
SUBSYSTEMS 131  
CREW 0.2 (196 MINUTES MAINT PER DAY)  
FUEL 10 (1600 HOURS)  
CARGO 203 (4560 thrust tons/ round)  
FACILITIES 1x16 SUITE

COST : 12020 / 600 PER YEAR

FAST THROTTLE (Major)  
FUEL EFFICIENT  
HEAVY LIFTER (Major)  
EVERYBODY HAS ONE (Major)

Designed for the cantankerous old speculators out on the rim, the Castle is designed to be a one man mine in the black. So many were made that its pointless to go over all the modifier versions, so only the original standard model is presented here. It was built to operate long term withing the belt, it has good collision avoidance and agiliity, decent sensors and survey software, and simply amazing armor. The key to the castle's success as a miner was the MAGOTS system (detailed later) and its specialized gravity units. The Castle can competantly locate and identify high mineral asteroids. It then takes one of two approaches, for small 'roids', it nudges them into less crowded orbits, then deploys the MAGOTS, or for larger targets, it deploys the system to make a suitable Castle-sized hole then wedges itself in and starts shifting the targets orbit. Shaped like a big cylinder with eight 'anchors' that are designed to penetrate and afix to targets ( It looks like a chess rook with pointed teeth.) After touching contact with the target asteroid is achieved, the anchors deploy swinging out up to ninety degrees and thus 'docking'.

DM NOTE : The MAGOTS(Modular Automated Gravity Operated Tunneler and Smelter ) system is a set of 10T 'ships', that link together and work as a cohesive unit. Individually they look

like spheres with a 'pucker' on top, and three 'hitch' joints at the base. Linked it looks like a , wellll, what its named for. The forward unit 'head' uses a modified drive class gravity system to literally suck the contacted portion into dust. (The fast rate, variable intensity grav field literally pulverizes matter, as well as keeping the 'mag' secured to the target. The second module heats the dust and seperates out the heavy Helium ( no, I don't mean hydrogen, its stage two fusion that is easier to produce and He# is plentiful on any planetary body w/o a natural atmosphere. ) that the system uses for fuel. Modules three and four are low temp and high temp metal seperators that can each extract elements/compounds with similar melting points. (In theory you can have any number or secondary funace units, each getting a couple of target metals each. They use a fluctuating grav field to induce heat and hold materials in place. ) Next to last is the cooling and storage unit, where the Lastly is the drive unit that powers the whole shebang. After four to six hours of mining, the MAGOTS goes into standby and produces ingots of semi-refined metals , another four hours and the whole thing starts again until its all storage units are full or the vein runs out. All unwanted materials are expelled back to the verse, no muss, no fuss. Each pod can be purchased seperately, for a mere 1000c and when linked can swivel twenty degrees from its mate (sixty degrees in standby) to bend and follow deposits. (Put together the MAGOTS (I'm estimating ) has stats of two-all, 5 ARMOR and 4LIFE. It needs to be guided by telepresence, but can run auto for a bit if needbe. It uses PILOT skill like any ship.

## Colossus Transport (by

ElectricBadger)



The Colossus was made by the now-defunct Engmart Construction. It was produced cheaply, sold with the hope of a quick profit to boost plummeting margins but resulted in one of the most complete bankruptcies in the last three decades.

A design said to compare to a flying brick -- both in looks and maneuvering -- was the result of a complete refusal to specially produce any parts whatsoever, resulting in a boat made completely out of generic components. Both owners and detractors agree the only beauty of the model is the repair bill, and this stands as the only reason any are still flying the black.

Agi: d4  
Int: d2  
Ale: d4  
Str: d6  
Will: d8  
Vit: d10

Ugly as Sin (-2), Nuthin' Fancy (-4), Smuggler's Hold (+2), Healthy as a Horse (+2)  
Tonnage: 1,690 gross tons  
-912 Engines, fuel & Subsystems (1200 hours of fuel)  
-6 Minimal quarters  
-15 ton Shuttle  
-700 Cargo  
Complexity: Low (x0.5)  
Speed Class: 2  
Skills: Autopilot d4  
Minimum Crew: 2  
Life Points: 14  
Armor: 3  
Keel: 100', Beam: 50', Height: 50'  
Cost: 16,900  
Maintenance: 1,690 yearly (140 monthly)

## Cricket Mk 1 (by ElectricBadger)

The Cricket Mk. I was designed originally as a surveying and prospecting vehicle. With its extensive sensor arrays, impressive maneuvering, tremendous range and cost effective size, the Cricket has proven an ongoing success with both independent prospectors and corporate fleets.

Although originally marketed as a one person vehicle, relying heavily on automation, many have been used for two people: either sharing the bedroom, making for slightly cramped quarters, or by converting the small cargo hold (originally intended for supplies during long hauls, and then to be taken up by cored samples as the supplies were diminished).

During the war, the Cricket saw quite a bit of use as an unarmed listening patrol boat, modified with extensive stealth capabilities and an upgraded engine. Some of these models still exist, both in the hands of private citizens and captured prizes operated by the Alliance. Models of this sort were also used by Dust Devils in a recent terrorist attack on Persephone, and in many special operations missions during the war, depositing a small force of four to six people in well guarded locations.

The ventral communications booms, which enable communications at much greater distances than typical systems, rotate backwards for landing or tight maneuvering.

### Civilian Model: Cricket Mk. I

Agi d10  
Str d4  
Vit d6  
Int d8  
Ale d10  
Wil d4

Slow Throttle (-4), Fuel Efficient (+2), Acute Sense: Cortex Link (+2)



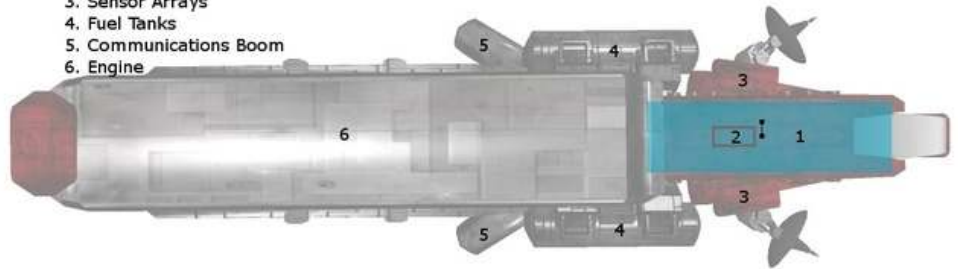
Complexity: Above Average (x1.5)

Speed Class: 4 (no hard burn)  
Life Points: 8  
Armor: 2  
Skills: Autopilot d6, Perception d6, Mechanical Engineering d4  
Dimensions: 65' keel, 40' beam, 40' height  
Tonnage: 119  
-24 Fuel (1600 Hours, 2.5 tons)  
-24 Engines  
-33 Subsystems  
2 Escape Pods  
1 Spacious Crew Quarters  
Cargo: 20 g.t.  
Lift: 20 tons mass  
  
Cost: 7,140 credits  
Maintenance: 357 annually (30 Monthly)

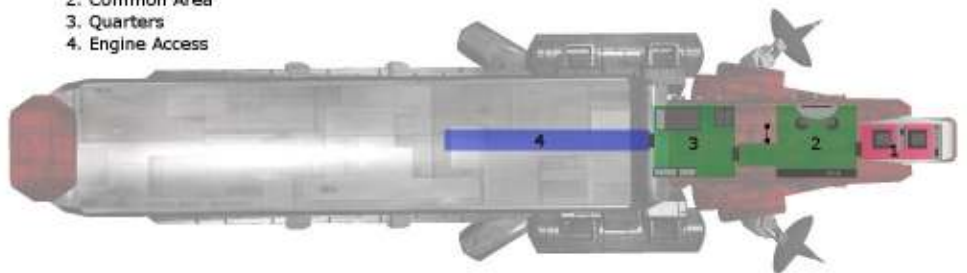
**Military Model: SR-12**

Agi d10  
Str d4  
Vit d6  
Int d8  
Ale d10  
Wil d4  
  
Covert (+4)  
Complexity: Very Complex (x2.0)  
Speed Class: 6 (Hard burn: 8)  
Life Points: 8  
Armor: 2  
Skills: Autopilot d6, Perception d6, Mechanical Engineering d4  
Dimensions: 65' keel, 40' beam, 40' height  
Tonnage: 119  
-24 Fuel (1200 Hours, 2.5 tons)  
-36 Engines  
-33 Subsystems  
2 Escape Pods  
1 Minimal Crew Quarters  
Cargo: 16 g.t.  
Lift: 16 tons mass  
  
Cost: 14,280 credits  
Maintenance: 714 annually (60 Monthly)

- 1. Cargo Hold
- 2. Ramp
- 3. Sensor Arrays
- 4. Fuel Tanks
- 5. Communications Boom
- 6. Engine



- 1. Bridge
- 2. Common Area
- 3. Quarters
- 4. Engine Access



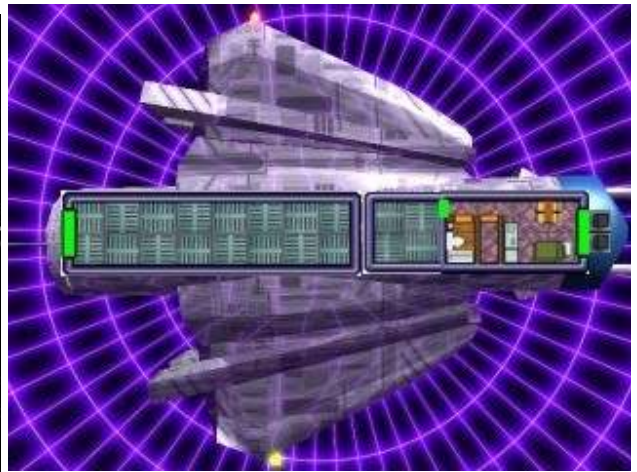
## Fruit Fly Fast Light Transport [mail ship] (by Darren)

Build by LeFey Shipyards for the mail courier Mail service mainly to use up the large number of heavy fighter engine sets they had left after the war. each of they ships has two engine set for a total of four engines and two reactors. These are keep synchronized by a fighter fly by wire system and suto pilot that just manages to keep the ship from trying to go in two differant diretions at the same time. But she is fast , scary fast and they are many 'fly boy' pilots willing to risk flying one for the thrill of it. The

Crew 2 in 2x 8 ton crew space  
Cargo 42 tons {40 tons cargo and 2 tons for the container its in }  
Complexity Average  
Gear NONE

Assets  
Fast throttle Major

Complecations  
Hooked - she runs hot and needs coolant after each pulse  
Memorable - you dont forget a spip this fast  
Things dont go smooth Major. This ship is right on the edge of what the systems can stand.



Cost 10,000

courier Mail companys love them as they will get the mail thought on time for those with the shinny to pay.

Mataince 200 a year or 16.6 per month

The name Fruit Fly come from a Journalist who reviewed the ship for the Magazine "Ships of the 'verse". in which he said the ship was fast all righth but the cargo was so small it was only good for shipping strawberries across the 'verse. Under the headline "The Fruit Fly" what a cargo ship should not be.

Fruit Fly

Stats

AGILITY D6  
STRENGTH D2  
VITALITY D4  
ALERTNESS D4  
INTELLIGENCE D8  
WILLPOWER D4

L 90' W 50' H 10' {landing gear up}

Tons 100  
Speed class 10-14 {major fast throttle}  
Fuel 2 ton in a 10 ton tank {one tone needed 2x range}

## Hanover Class Salvage Vessel

(by Lynn LeFey and Treybor)



**Dimensions:** (LxBxH): 500 x 265 x 120 feet.

**Tonnage:** 18,000 tons.

**Speed Class:** 4 cruise/ No hard-burn

**Crew Quarters:** 9 single occupancy (or 4 single occupancy, 10 double occupancy)

**Fuel Capacity:** 360 tons (600 hours)

### **Cargo/Passenger Capacity:**

3,000 tons internal storage

48 second-class passengers (or 96 steerage passenger)

5800 tons of external cargo with no effect on speed

(or 16600 tons of external cargo at speed 2, or

38200 tons of external cargo at speed 1)

**Gear:** 14 escape pods

**Price:** 432,000 new (108,000 with Minor 'Seen Better Days')

**Stats:** Agi d6, Str d8, Vit d6, Ale d6, Int d2, Wil d2; Init d6+d6, Life 10

**Traits:** Slow Throttle (Major), Strong as an Ox, Seen Better Days (Minor)

**Skills:** Pilot d2, Perception d2.

**Complexity:** Low

**Maintenance cost:** 21,600 New (32,400 with minor 'Seen Better Days')

### **Description:**

The Hanover is a salvage ship designed to

recover mid-bulk transports. In this role, it is able to tow a ship more than twice its own size, although it is severely reduced in speed under such a burden. Smaller vessels, like a Firefly, pose no problem to the ship's powerful engines and grav screen.

### **Ship layout.**

Starting at the bottom of the ship, deck 7 is bulk cargo. Entry to the ship is usually through the main airlock. The ship is equipped with an extendable gantry to allow soft-seal with ships in tow. Oversized bomb-bay doors allow larger pieces of salvage to be brought aboard. Both deck 7 and deck 6 have 20' ceilings. Aft on deck 7 is Main Engineering.

Deck 6 also has bomb-bay doors that open onto deck 7. The aft-most cargo areas of deck 6 are usually used as the 'chop shop', where larger pieces are broken down. Store rooms off either of these areas can be used for tool storage or for sorting scrapware.

Deck 5 is the Passenger Deck. Forward is the Mess hall and Galley. Aft is the sizable passenger dorms. The large capacity is to accommodate the rescue of passengers from small cruise liners and the like. Some crews convert a good deal of this area to cargo space. When not used by a large number of passengers, most crews use the mess hall as a recreational area.

Deck 4 is ship's stores. It is occasionally converted into passenger space, but with the large amount already available, this is not the norm.

Deck 3 is the crew quarters.

Deck 2 and 1 are both part of a 'life boat' with independent systems from the main ship. In the event of catastrophic failure, decks 1 and 2 can be sealed off, and have all required systems for self sufficiency, if not comfort. Forward of deck 1 is the ship's bridge.





## Havoc-Wolf Fast Light Transport (by Darren)



The Havoc-Wolf was the love child of a Navy officer class raised on a diet of navy history from the earth that was. Especially the submarine warfare of WW2 and other wars. Once it was seen that the Unification war was coming. They convinced high command to build a class of ship that was small, stealthy, needs a small crew and was heavy armed with mid sized missiles and could be cheaply mass procured. High command jumped at the change and the Havoc-wolf was rushed in to production.

Unfortunately, the ship proved to be a total disaster. They were fast but turned poorly, which coupled with that fact that to install four missile launchers in such a small frame the engineers had to fix mount them in the bow of the ship. The space for turrets not being available. As such the whole ship had to be turned to aim the missiles to launch for the best fire solution. This in a ship with a slow turn rate. The ship's stealth coming from its angler shape and uncluttered surface's did not work as well as hoped but well enough that when the first major battle was fought 3/4 of the ships were lost many to friendly fire who did not see the other Havoc-wolf in-between them and the target among the chaos of so many wolf packs attacking so few targets. The high command concluded that the wolf pack's day was over.

To save face the Navy needed to find a user for the several hundred surviving ships it had. It was suggested that if the missile launchers were pulled out the ship could haul 55 tons of cargo not a huge amount but its fast speed and long range together with reasonable stealth would make it a good courier or covert ops ship.

After the war the few surviving Havoc-Wolfs were quietly sold off. However the Alliance customs service was not happy at all when they found out about this as a Havoc-wolf is a

smugglers dream.

Havoc=Wolf



Main Deck

Conning Tower



Stats

Havoc-Wolf Light Transport

Agl D4  
Stg D4  
Vit D4  
Alt D8  
Int D2  
Wil D2

Life points 6

Length 110  
beam 12  
Height 19

200 tons total  
Cargo 55 tons

speed 8 no hard burn

Fuel 8 tons for 800 hours, 100 hours per ton

Crew quarter two{2} dinky 16tons  
Passengers quarter two{2} class 16tons {were crew in the missile boat version}

Assits  
Fuel Efficient Minor

**Complications**

Branded Major {Customs just know who ever has one of these must be a smuggler}  
 Slow Throttle Major {No Hard burn}  
 Light weight Minor {its what they call a tight degien. ie it's a pig to mataine either you have the custem made angled spanner or you best have an exsta joint in your arm. As such matinance get sloppy and wear and tear increases}

**Skills**

covert D6  
 Heavy wepons D4  
 Auto pilot D2

**Quirkies**

Has a habit of switching to emergence Red Lighting at random times  
 Groans and shakes when entering atmo  
 Condensation forms on the inside of the hull making every thing damp.  
 Little personal storage space results in food stuffs and other ships supplies being hang in nets or piles on the floor of the ships passage ways.

Complexity Very Low

Cost 6,400 C  
 Matinance 160 per year , 13.3 per month

## Houndog Covert Surveillance Craft

(by Limerickcot)



**Dimensions:** Length: 24ft, Beam: 14ft (not including wings or sensor suite), Height: 23 ft  
**Tonnage:** 41 tons  
**Speed:** 5 cruise, 7 Hard Burn  
**Crew Quarters:** 1 Single (Pilot)  
**Passenger:** 2 Single  
**Fuel Capacity:** 2 tons (600 hours)  
**Cargo Capacity:** 3 ½ tons  
**Gear:** 3000 lb hard points on wings  
 5% Armoured Hull  
 2% ECM protected Hull

**Ship Attributes**

Agi d8, Str d2, Vit d6, Ale d10, Int d12, Wil d4  
 Initiative: d8+d10  
 Life Points: d2+d4

Assets: (None)

**Complications:** Branded (major), Memorable

Complexity: High  
 Price: 3280€  
 Maintenance: 11€ per month  
 Complexity: High

**Programs**

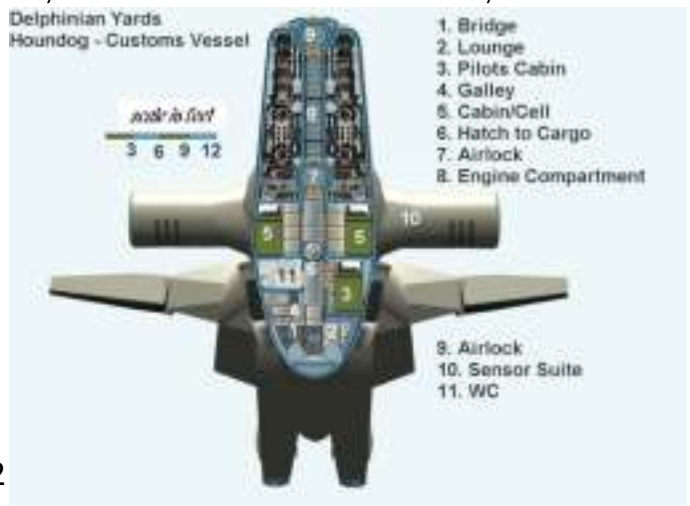
Athletics D4, Covert D10, Heavy Weapons D2, Mechanical engineering D2, Perception D6, Pilot D6

Builder: Delphinian Yards  
 Engines: Stellatrac 90's  
 Serial Number Series: DYAH-532

There are few ships in the `verse that are so universally recognised as to inspire apprehension as the Houndog. Its unique (and somewhat ungainly) shape is offset by the capabilities offered in such a small hull.

The Houndog was originally begun as a pre-war design used for independent surveillance and monitoring purposes. It was designed as a covert custom's vessel and, as such, was seen to need both a good surveillance package and the ability not to be tracked itself. It was this requirement that led to its being called the Houndog.

Utilising some of the most compact engines currently available, the Houndog's main achievement is the incorporation of a miniaturised pulse drive, capable of keeping up with the bulk of commercial smuggles. To help it deal with its task's, the vessel's skin coating allows it to absorb most electronic and other emissions directed against it, making it almost radar invisible. Its own emissions are usually always passive, using an extensive package of image and pattern recognition arrays to avoid using its own active radar and radio systems. Cortex transmissions are usually



made by a tight beam system utilising positional monitors of a quality not usually found outside of the military due to their expense (and the licenses needed to operate them legally).

Houndog's are not comfortable craft to occupy. The main cabin is tiny, containing a Bridge, cabin galley with fold up table, and cushioned seating (with stores underneath). A small bathroom sits opposite the pilots small cabin (store over and under).

The companionway has a lift up floor, underneath which is the access into the cargo space. An outside hatch is located underneath, between the 'legs' of the vessel.

Two minimal cabins are located at the end of the companionway. In the custom's model these are crew quarters, but they can be fitted out as cells, with a basic toilet unit and a one sided lock mechanism, ctv and security fields.

There are two airlocks. One, at the end of the companionway is just big enough for two individuals, side by side, to use. It is a tubular spin model giving access into the engine compartment as well as acting as a lift which exists below the living module of the craft. On the ground a tubular ladder extends downwards.

At the end of the Engine compartment another airlock is located. Access under this airlock gives direct access to the pulse drive (located under the atmospheric Thrusters.

The legs of the vessel are filled with fuel and most of the complex electronics in use in the craft. Mounting them here gives them the furthest distance (and most shielded) from both the engines and the bridge. However, the active sensor suites are mounted on the side of the ship.

As a custom's vessel, the 'wings' of the Houndog are fitted with hard points, capable of mounting up to 3000 lb in missile armament. Few such vessels in private hands are licensed to carry missiles. As a combat vessel, the Houndog carries a minimal amount of armour – useful in the more confrontational areas it may contend in.

In private hands, the vessel is mostly used by single operative bounty hunters. It is generally considered too small to be used by a team. In these cases, the two spare bunkrooms incorporate extra security features and are used as cells. One is outfitted for use as cryogenic unit (and works as an emergency pod if need be).

During Landing sequences, the segmented wings of the vessel are used as landing struts. Damage during combat means the vessels

cannot land correctly.

## Hull Crawler (by Lynn LeFey)

Self-mobile defensive auto-turret

**Dimensions** 10Wx20Lx10H

**Tonnage:** 10 tons

**Speed Class:** 1 cruise/ no hard-burn

**Crew:** 1

**Fuel Capacity:** 50 lbs. (60 hours of operation)

**Cargo Capacity:** 100 pounds (emergency survival supplies)

**Passengers:** none

Agi d10, Str d2, Vit d6, Ale d10, Int d6, Wil d6

Perception d4, Heavy Weapons d4, pilot d4

Initiative d10+d10

Life 8

Slow Throttle (Major)

**Price:** 1112 credits

**Maintenance Cost:** 20 credits annually

**Gear:** Armor 2W. 1-pound autogun, 1000 round magazine. 12 short-range missiles with 20-lb warheads (usually decoys).

**Cost of munitions;** 1000 credits for gun's ammo, 101 credits per missile. (2212 credits total)

This device was a modification on a light ground-based armored attack vehicle. Modified for operation in a vacuum, and outfitted with magnetic treads, the intent was to create a light self-contained defensive turret for unarmed freighters during the unification war. The design was intended to be enough firepower to repel only minimal attacks, but in some instances the missiles carried might also provide some counter-attack capability. Mostly, the light autogun was intended to intercept incoming missiles, and its own missiles carried decoy warheads.

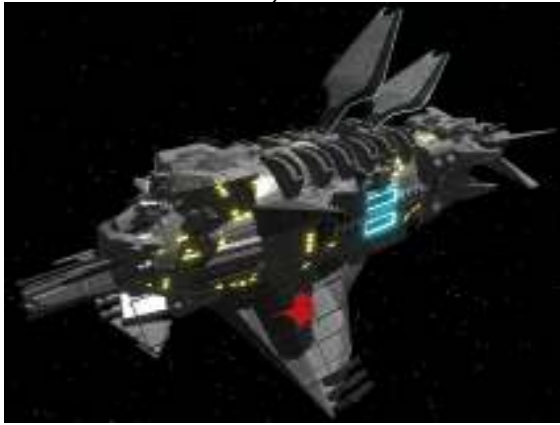
While it looks like any standard ground vehicle, the vessel is self-contained like any space ship, and the tread assemblies also have navigational thrusters, in the event of it being dislodged from its parent ship.

While not the intent, the hull crawler can be deployed unmanned. This option was rarely used due to a wartime tactic of hacking the turret's software and flipping its IFF (Identify Friend/Foe) routines, turning the gun on its owner. The turrets are almost always deployed with a skilled gunner in control.



## Ichthiya Class Cruiser (by

LGD2001 and Scifi Junkie)



Dimensions (LxBxH): 1521 x 476 x 465 feet  
Tonnage: 560,000 tons.  
Speed Class: 4 cruise / 5 hard-burn  
Crew Passenger Complement: Up to 2,000  
Minimum Crew: 4  
Fuel Capacity: 10,500 tons / two 26,250 ton tanks (900 hours or 38 days)  
Cargo Capacity: Lots  
Armament: None  
Gear: Five 59x24x? shuttle bays... That yields a scientific value of Lots.  
Price: 35,840,000 credits + gear  
Agi d4, Str d10, Vit d6, Ale d6, Int d4, Wil d8, Init d4 + d6, Life 18. Healthy as a Horse (Minor), Memorable (Minor), Slow Throttle (Minor). Aerial Transport Operations d2, Space Transport Operations d2, Pilot/AutoNav d2/Autopilot d2. Complexity: High. Maintenance costs: 149,334 credits a month, 1,792,000 per year.

These are the base stats for a standard Ichthiya. I did the scaling by assuming the bridge to be about 18 feet tall.



### Reaverized Ichthiya

Dimensions (LxBxH): 1552 x 546 x 465 feet

Tonnage: 561,000 tons.  
Speed Class: 4 cruise / 6 hard-burn  
Crew Passenger Complement: Up to 2,000  
Minimum Crew: 4  
Fuel Capacity: 10,500 tons / two 26,250 ton tanks (600 hours or 25 days)  
Cargo Capacity: Lots  
Armament: 27 Magnetic Grapplers, One 100 lb gun, three 50 lb guns, five 20 lb guns, seven 10 lb guns, three 200 lb missiles, four 100 lb missiles, one 50 lb missile, two 20 lb missiles, and nine 10 lb missiles, and Armor 1W  
Gear: Five 59x24x? shuttle bays... That yields a scientific value of Lots.  
Price: 5,610,000 credits + gear  
Agi d4, Str d10, Vit d4, Ale d6, Int d2, Wil d6, Init d4 + d6, Life 16. Cortex Specter (Major), Gas Guzzler (Minor), Memorable (Minor), Seen Better Days (Minor). Aerial Transport Operations d2, Space Transport Operations d2, Pilot/AutoNav d2/Autopilot d2. Complexity: Average. Maintenance costs: 140,250 credits a month, 1,683,000 per year.

These are the stats for one of the Ichthiya class ships acquired by Reavers when the Pax was used on Miranda. This particular ship has been raiding several major shipping lanes and has gotten a name for itself: The Black Annis, after a mythical hag from Earth-That-Was that liked to eat children. Of course, the Alliance has concealed the Miranda incident and it officially doesn't exist (Cortex Specter).

As one can tell, the Reavers have performed significant modifications. The tonnage has increased somewhat, what with all the spines and junk added on, although not as much as one might think, since they gutted some parts of the ship.

The first major modification made, obvious from the back end, is the removal of an engine. To make up for this, the Reavers shunted extra power and fuel to the remaining three. This upped the full burn from the standard Ichthiya full burn of 5 to 6; although the downside of this tinkering is that the amount of fuel used was increased. (Gas Guzzler.)

This engine modification also leads to the ship's major quirk: When the Reavers go to a full burn or abruptly switch direction, there is a 10% chance their engines overheat and parts burn out. This causes the emergency systems to shut them down, meaning the Reavers must use maneuvering thrusters only. Although they can swivel on their axis, the laws of physics cause them to continue in the original direction at the speed they were going, making the pursuit of prey impossible until the systems are overridden or the engines cool down. The replacement of burnt-out parts or the override of the safeties takes around 2d10+5 minutes, which is usually enough time for prey to make a getaway. This little quirk has allowed many spacers to escape over the Black Annis's lifetime, making it a relatively famous Reaver ship which lots of folk can readily describe (Memorable).

Last, but not least, all the poor maintenance and abuse the Reavers have heaped on the ship has drastically affected the ship's stats, as well as give it the Seen Better Days complication despite it being less than 20 years old. The Vitality and the Willpower have both dropped from a d6 to a d4 due to improper maintenance, and the Intelligence has gone from a d4 to a d2 since because the Reavers like to pilot their ships themselves and yanked most of the computers out of spite.

And one more lastly: The Black Annis is much more heavily armed than most Reaver ships, which has allowed it to attack big shipping lanes without being gunned down.

I am still working on a chart to explain how to figure these guns and missiles. The weapons being scattered across the ship means one can make piloting checks to see how many targeting sights they'e in at any one time. I actually made a chart yesterday, but my computer went wonky and it got lost.

Oh, and I was thinking of giving the Black Annis the Complication Branded, but how would that really affect the Reavers? They aren't going to concern themselves with the particulars in a social situation.

forest glen (waterfall included - see Eden Room in our brochure) or anything you can Imagine. All models come with a deluxe holosuite that will turn the dome room to a screen portraying the immediate outside or any preprogrammed images. The air filtration system includes a full complement of smells that can be programmed as well. The ship also comes with an interactive voice persona which can automatically deal with most common issues, and walk you through common maintenance, freeing its owner for other things. If desired as an optional upgrade the Island comes with a tele-crawler, which the computer can use to do the ships routine maintenance, for a mere 200c more. (DM Note: this is a redundant robot, stats 4 , mechanical 6 perception 6, which is auto- aided by the ships computer (d6+d4 for the ship, d4+d6 for the bot, take the best result) for doing routine maintenance. The ship keeps a running inventory of parts on hand and will nag rather badly to make sure it has what it thinks it needs. ) A companion owner need not know how to pilot nor do repairs, but hypno-classes are available on request, and recommended for all owners.

## Island Class Companion

### Vessel (by Paul Reese)

Tons 100  
Speed 7/-  
AG 6  
ST 2  
VI 6  
AL 4  
IN 6  
WP 4  
SKILLS: PILOT(4) PERC(4) MECH (4)  
LIFE :6  
ARMOR:1  
COMPLEXITY 0.6  
ENGINE 35  
SUBSYSTEMS 28  
CREW 0.04 (40 MINUTES MAINT PER DAY)  
FUEL 2 (600 HOURS)  
CARGO 3  
FACILITIES 1x32 GRAND SUITE  
COST : 4200 / 120 PER YEAR  
SLOW THROTTLE (Major)  
ATMOSPHERIC  
NAUTICAL  
SMUGGLERS HOLD

Designed for the Companion on the go, the Island is the ultimate "Boudoir". It offers a companion a place that can be anyplace from the expansive coral reefs of Newhall, to the jungles of Verbena, and Beyond (Location, location, location). At 450 a day the client can be entertained locally, but with the Island the verse has no limits. To further this the ship features a fully modular main area which can be sculpted to mimic a stateroom, a

## Komodo Class Blue Sun Modular Warship (by Frewfrux)

**Background** (This may conflict with canon, I don't know it well enough to say for sure. If it does, let me know and I will see what I can do to correct that)

While the idea was initially conceived in the spirit of cooperation, the ship was actually built in the spirit of desperation. The original idea for this modular ship has its roots in the pre-war era. Before all this nonsense about unification came about the idea was put forth to gather the rim worlds, and some of the border worlds, together and have them each build a piece of the ship. None of the worlds asked to participate had the capacity to build anything over 100,000 tons at that time, but together they would each be able to build smaller pieces and then it could be assembled in deep space.

However, the idea came to naught, at least initially. The rim worlds really just wanted to be left alone and had no interest in the politics of the rest of the 'verse. That is, until the Unification War. Suddenly, this idea began to make a whole lot of sense. Facing a vastly superior foe, and having only limited resources, made the idea of a ship that had the potential to take on multiple configurations for a variety of different missions very attractive. In fact, it was seen by many as the only possible way to counter the vast numbers of the Alliance.

Each module was built on a different world and then towed to a secret, deep space location where the parts were assembled in the vacuum of space. While the first was being assembled, more modules were being created both for the variety of missions the ship would need to perform and for a second ship. Before the second ship could be finished, however, three of the participating worlds fell into enemy hands causing production to cease.

With only one of the ships completed, the largest ever to be built by the Independent faction, the superiority of the Alliance fleet would be difficult to counter. Indeed it proved difficult to the extreme with all hope of any advantage in space disappearing when the ship was finally successfully boarded and captured by the Alliance.

Because of the modular nature of the vessel, the Alliance was able to keep it in operation only needing to replace the modules that were damaged beyond repair. Because the concept for the ship was conceived by the Independent faction, and the Alliance did not really have need of a modular ship due to their vast resources, another one of its kind was never built.

After the war, the Blue Sun Corporation purchased the ship from the Alliance military on the condition that it could be commandeered if needed by the Alliance. Because the ship had participated in many successful campaigns for the Independents, the Alliance was only too happy to see it go, and for a profit. Currently it mainly guards Beaumonde, but occasionally disappears on missions of which no one seems to talk about.

### Design Notes

The Komodo Class modular warship is essentially just a long, 2,200 foot spine with a bridge and command crew quarters at the front, and engines at the back. Up to 9 different, specially designed modules can be added along the spine (in addition to the bridge and engines). The exact nature of these modules varies based on the mission that the ship is to perform. If combat is expected there may be more missile modules or fighter modules, if on a salvage mission there might be more cargo modules, if on a journey into deep space that may last for several months then there could be several fuel modules. The exact configuration differs substantially based on what is expected.

The spine itself, onto which all the modules attach, is really just four enormous rail guns (two facing forwards and two backwards) along with some very fast transport tubes for getting from one end to the other. The rail guns take up twice the normal tonnage due to the added length of the rails (more than normal) but gain accuracy up to short range (as opposed to point-blank).

The modules, though all very different in most of their characteristics, do share certain traits in common. Each module:

- Has common access points and transportation tubes that facilitate movement from one to the other, in addition to those provided by the spine of the ship.
- Contains an escape pod for every person expected to work and/or live in that module (which doubles up when a person works in one but lives in another).
- Usually contains living quarters for every worker at 10 tons per person. The exceptions to this are the engine (which contains no living quarters), the bridge section (which contains command quarters at 30 tons per person), and the crew module (which contains 10 tons living per person, plus 20 for common area shared by those from other modules).
- Has ~24% of its tonnage used for hull and sub-systems.
- Has 10% of its tonnage used for armour.
- Usually totals 60,800 tons, with 40,160 available after hull, sub-systems, and armour. (Actual tonnage may vary depending on the module itself.)

### The Bridge and Spine Module

While not really a module, this section of the ship is often referred to as either the Bridge module or the Command module. It includes the spine of the ship (33,440 tons), the main bridge, a secondary bridge, and enough quarters (at 30 tons each) and escape pods for 216 officers.

### The Engine Module

Again, this is not really a module as it is an integral part of the ship; however, it is still often referred to as such. At any given time there is upwards of 120 engineers working through out this section (and, not surprisingly, 120 escape pods). The engines themselves are rated at a speed class of 4, but this is only attainable with a bare minimum of modules and the normal speed class is actually 1 (see speed class table).

### Maximum Tonnage

Most of the modules for the Komodo Warship are designed to allow ships to dock and be carried by the large vessel. As a result, while the ship itself comes in at 668,800 tons, the maximum tonnage that the engines can handle is actually 800,800, a difference of 132,000 tons. Whether this is reached by externally carried craft, or very dense cargo, this total can not be exceeded without damage to the engines.

### Speed Class Table

Designer's Note: If the concept of varying speed classes do not fit within your Serenity universe, then you can easily just say that the engine portion of the ship is, in fact, a module that is capable of being replaced by other engine modules which are rated for the higher speed classes. However, because the characteristics are the same regardless, I have just determined that the speed class can be a variable based on what the original intent for the engines was (ie, you can't exceed the speed class that the engine was initially designed to manage).

<u>Actual Tonnage</u>	<u>Speed Class</u>
200K tons or less	4
201K - 266K tons	3
267K - 400K tons	2
401K - Max* tons	1

\*Maximum tonnage is 800,800.

### A Module's Shape

While the modules come in a variety of shapes and sizes, certain common traits exist:

- Fuel modules tend to be spherical to maximize internal volume while minimizing the overall size.

- Passenger and crew modules tend to be squares or rectangles to maximize the usable, internal space while keeping the overall size down.
- Missile and defence modules tend to extend out a bit more than the others in order to give the weapons a decent firing arc.
- Fighter modules tend to be shaped like sideways "E's" with even more protruding sections than just three in order to maximize surface area along one side while keeping the other side flat. This is in order to allow smaller vessels to dock on the side with the greater surface area and larger ships to dock on the flat side.
- Cargo modules which carry internal cargo tend to be square for the same reason as the passenger modules, while those that carry external cargo can be of quite a variety of shapes.
- All modules, while sticking out of the sides of the overall ship to varying degrees, will have the same length (from the perspective of the ship, not the module), or will have it's length be a multiple of the common length, in order that all the modules will fit. The common length per module is 200 feet, while the average breadth and height is around 400 feet.
- Despite the above statement about the dimensions of the modules, it is also possible to have modules that are themselves made up of modules. None such modules have been included here, however.

### Designer's Note on Armour

10% of the total tonnage (800,800, not 668,800) has been put aside for armour. If you are ignoring mass in your ship calculations, then this can be 10 points of any combination of wound or stun armour. If you are counting the greater of either mass or volume as the tonnage, then this is either 2 points W armour, 10 points S armour, or 1 W and 5 S. I will leave it up to you to decide which suits your universe best.

### Komodo Class Warship

Some items may vary depending on what modules are attached. These are noted with an asterisk (\*). The following ship configuration is 1 fuel module, 3 crew modules, 2 missile modules, 2 fighter module, and 1 cargo/refuelling module.

### Stats

Agility d2  
Strength d10  
Vitality d8  
Awareness d10  
Intelligence d12  
Willpower d10  
  
Initiative d2 + d8

Life Points 24  
Speed Class 1\*

Length 2,200 feet  
Beam 400 feet\*  
Height 400 feet\*  
Body Type 0.19\*  
(Dimensions and body type are averages)

Tonnage 706,240\*  
Hull, etc. 160,160\*  
Engines 40,040  
Crew 9,651\*  
(216 in bridge module, 3,885 in crew modules, 558 in missile modules, and 4,992 in fighter modules.)

### Traits

Good Name (Independents only): Minor Asset  
- Due to the many successful missions against the Alliance, this ship has earned a good reputation with the Independents faction..  
Memorable: Minor Complication  
Tough as Nails: Major Asset

### Skills

Collision Avoidance Systems (Athletics) d6  
Autopilot / Autonav (Pilot) d6  
Automatic Targeting (Heavy Weapons) d6  
Interactive Maintenance Manual (Mechanical Engineering) d6  
Internal Encyclopedia / Database (Knowledge) d6  
Sensor Routine / Internal Security (Perception) d6

### Gear

2 fuel tanks for 1,200 hours endurance  
1 fuel tank for fighters to refuel from  
2 points W armour (10 if ignoring mass)  
4 short range rail guns with 150 200 lb. warheads each and an extra 600 rounds not in the magazine.  
30 missile launchers with long range, 500 lb. warheads.  
50 missile launchers with long range, 100 lb. warheads.  
30 missile launchers with medium range, 500 lb. warheads.  
50 missile launchers with medium range, 200 lb. warheads.  
60 missile launchers with medium range, 100 lb. warheads.  
20 missile launchers with short range, 1000 lb. warheads.  
46 missile launchers with short range, 200 lb. warheads.  
All missile launchers have 45 missiles each with an additional 45 in the missile module's cargo area.  
49,920 tons worth of fighters (crew estimated at 1 per 10 tons), 37,440 tons (three quarters) carried externally and 12,480 (one quarter) are

carried in internal hangers. Assuming 40 tons per fighter this is a total of 1,248 fighters. 20,119 tons of cargo

Complexity Extreme (66)  
Purchase Price 30 million + ammo and armour (based on your setting)  
Yearly Maintenance 7.2 million  
Monthly Maintenance 0.6 million

### Modules

#### Bridge Module

Not really a module, but often called such, this section of the ship includes the command quarters, bridges, and the spine of the ship.

Length (total, inc. spine) 2,200 feet  
Length (bridge portion) 200 feet  
Beam (spine) 44 feet  
Beam (bridge portion) 112 feet  
Height (spine) 44 feet  
Height (bridge portion) 48 feet

Total Tonnage 60,800 tons

#### Gear

Command Quarters (30 tons each) x216  
Escape Pods x216  
Primary and Secondary (backup) Bridges (part of subsystems)  
4 short range rail guns (two facing the bow, two the stern) with 150 200lb. warheads each  
600 rounds ammo to reload the cannons

#### Engine Module

Not really a module, but often called such, this section of the ship includes the engines for the ship as a whole. Between 80 and 100 engineers should be working here at any given time; up to 120 for optimum performance.

Length 200 feet  
Beam 350 feet  
Height 350 feet

Tonnage 60,800 tons

#### Gear

Engines 40,040 tons  
Escape Pods x120

#### Fuel Module

You won't get very far without a module that includes at least some fuel. This particular module is devoted entirely to fuel.

Length 200 feet  
Beam 250 feet  
Height 250 feet

Tonnage 60,800 tons

#### Gear

Fuel Tanks x2 (total tonnage of 40,040)

#### **Crew Module**

The more modules that are attached, the more crew you will need to perform regular maintenance. While most modules include space for their own crew, that space is usually minimal. In addition to the extra common area, these modules also carry troops in case a boarding party needs to be formed or fought off.

Length 200 feet  
Beam 350 feet  
Height 350 feet

Tonnage 60,800 tons

#### Gear

Crew Quarters (30 tons each\*) x1,295  
Escape Pods x1,295

\*For crew quarters, 10 tons are for the quarters themselves (minimal) and the other 20 is for common area.

## Leeway Class Jollyboat (by Lynn LeFey)



**Dimensions:** 50L x 14H x 20B

**Tonnage:** 80 tons

**Speed Class:** 4 (6 Hard Burn)

**Crew quarters:** None in standard configuration

**Fuel Capacity:** 1 tons (300 hours of operation)

**Cargo Capacity:** 20 tons

**Passenger Capacity:** None in standard configuration

**Price:** 1,280 credits new

**AGI** d10, **STR** d2, **VIT** d6, **ALE** d2, **INT** d2,

**WIL** d2

Perception d4

Everybody has One, Strong as an Ox\*, No Pulse Drive, Healthy as a Horse

**Complexity:** Very Low

**Maintenance Cost:** 64 credits per year

**Life Points:** 4

\*'Strong as an Ox' allows this ship to carry up to twice its standard cargo capacity at a maximum speed of 2

**Description:** The Leeway is a fair example of a common ship's launch, or jollyboat. There are maybe fifteen manufacturers making ships so similar that parts are almost completely interchangeable.

It is little more than a flying box. The front is a ramp with inset hatch, allowing with soft-seal docking to other vessels without opening the ramp. Once open, the ship is simply a twenty by ten by ten cargo area, with ladder leading up to the pilot's seat. The ship has ventral cargo latches for attaching and hauling loads larger than will fit inside the cargo hold.

While it has a 300 hour operating capacity, it has very sparse amenities for the pilot, so actual operating times usually do not exceed 8 hours.

Aside from standard shuttles, this ship or ones very much like it may be the most common vessels in the 'Verse. Most bulk transports have a handful of them for ferrying small cargo loads or passengers planetside. If you manage to get past the swarm of fighters escorting a Tohoku Cruiser, you must then navigate the cloud of ship's launches moving about.

A ship's launch is usually also licensed as an escape vehicle, saving bulk freighters from having to carry escape pods they largely consider a waste of money-making space. Most are outfitted with a small supply chest with emergency supplies, and fold-down seats made of cargo webbing.

Because they are so common, and often very reliable, it is not unusual to see older models used by settlers as starter homes on new worlds, or in any number of other interesting ways.

## Lion Mk 1 (by ElectricBadger)



The Lion Mk I is an older design by New Vienna Shipyards, but has proven successful and still sees a large amount of production. The ship bridges the gap between shuttle and transport, providing a convenient and cost effective option for interplanetary hops or rendezvous with ships in transit -- generally trips of 2-3 days at most.

Equipped with a pulse drive, the Lion is technically capable of longer hauls, but the minimal, cramped quarters make this an uncomfortable experience and few crews attempt such a task -- most live planetside themselves, and only have temporary bunks on the boat itself.

The Lion also represents one of the first uses of what was, at the time, the innovative NV-1 engine design, which burned hotter and more efficiently but sacrificed acceleration. Although few miss the speed in a glorified shuttle, it has been remarked that the savings on fuel for such a small, short range craft is fairly negligible.

Agi: d6  
Ale: d4  
Int: d2  
Str: d4  
Vit: d6  
Will: d4

Traits: Atmospherical (2), Slow Throttle (-2), Fuel Efficient (2)  
Complexity: Very Low (.5)  
Speed Class: 4 (5 hard burn)  
Life Points: 8  
Armor: 2  
Skills: Autopilot d4  
Dimensions: Keel: 75', Beam: 30' (wings 70'), Height: 20'  
Tonnage: 216  
-110 Engines, Subsystems and Fuel (2.2 tons fuel, 400 hours)  
Quarters: 14 Steerage Quarters (2 crew, 12 passengers)  
Cargo: 50 tons Cargo (modular; a quick-change prefab kit -- included with purchase -- provides bunks for another 12 passengers)

Lift: 50 tons mass

Cost: 5,184

Maintenance: 259 yearly (22 monthly)

## Mercury-Class Fast Courier (by renfield007)



Designation: MCY-SP-mk.v  
Classification: Fast Courier/Sprinter  
Manufacturer: Mercury Stellar Industrial  
Dimensions: 33x18x12  
Tonnage: 600  
Speed Class: 8 (12 Fast Burn)  
Crew: 2  
Fuel Capacity: 50 Tons  
Cargo Capacity: 100 Tons  
Armament: n/a  
Armor: n/a  
ATTRIBUTES: (30 points)  
Agility D10 Strength D4 Vitality D4  
Alertness D4 Intelligence D4 Willpower D4  
Initiative D10+D4 Life Points 8 W:  
S: \_\_\_\_\_  
Skills (Int x2) Athletics - d2 / Perception - d2 / Mech Engineer - d2 / Pilot - d2  
Assets: Fast Throttle (major)  
Complications: Gas Guzzler (minor), Seen Better Days (minor)

## Mjolnir Corvette (by Lynn LeFey)



**Dimensions:** (LxBxH): 535 x 170 x 110 feet.

**Tonnage:** 23,000 tons.

**Speed Class:** 4 cruise/7 hard-burn

**Crew Quarters:** 28 (10 single occupancy, 8 double occupancy)

**Fuel Capacity:** 920 tons (1,200 hours)

### Cargo/Passenger Capacity:

**Deck 1:** Three 350-ton bays for cargo or secondary craft (50'x35'x20' ea.)

**Deck 2:** 200 tons cargo, 120 tons for weapons systems.

**Deck 2 Forward:** 320 tons cargo OR 60 tons cargo and ship admin.

**Deck 3:** 1100 tons cargo OR 48 first-class OR 96 second-class OR 192 steerage passengers.

**Deck 3 Forward:** 485 tons cargo OR 28 first-class OR 50 second-class passengers.

**Deck 4:** 960 tons cargo OR 64 first-class OR 192 steerage passengers.

**Deck 4-6 Forward:** Crew Quarters

**Deck 5:** 530 tons cargo or Weapon Systems OR 32 first-class OR 64 second-class OR 128 steerage passengers.

**Deck 6:** 120 tons cargo OR Weapon Systems.

### Standard Configuration:

Deck one cargo bays used for secondary craft. (about 4 small craft per bay)

28 first-class, 96 second-class Passengers

1750 tons cargo

240 tons for weapons systems

See the [Addendum](#) posted below for possible weapon configurations.

**Gear:** Two 20-ton passenger shuttles, Armor 4W, 353 2-man escape pods.

**Price:** €1002,260 + Weapon Systems.

**Stats:** Agi d6, Str d8, Vit d6, Ale d6, Int d4, Wil d10; Init d6+d6, Life 18

**Traits:** Poor Atmo Flier (AGI -2 step in atmo, minor), Dull Sense (Internal sensors, minor), Misc Design Issues (See ship description for details, minor), Fast Throttle (Minor)

**Skills:** Pilot d4, Perception d4.

**Complexity:** Average

**Maintenance costs:** €46,000 annually

**Description:** When mega-corps want to move VIPs in relative safety, or when a rim-world robber-barron wants his own personal pleasure craft/armed naval vessel, or when pirates can afford it, they acquire the Mjolnir. Small by military standards, it is even occasionally used by the Alliance as a cutter on small worlds.

The ship was built to handle military service, fully capable of withstanding small-scale ship to ship combat. It is fast for its size, allowing it to fulfil an enforcement role against pirates, or perform blockade duty. The ship's toughness makes it less than ideally suited for strictly transport duty, since unarmored ships could perform the same function more cost-effectively, but the vessel is perfect for transporting VIPs or sensitive cargo safely.

While capable of atmospheric insertion, the ship performs sluggish inside atmosphere. It is designed to perform primarily in the black.

**Misc. Design Issues:** the Mjolnir has two design issues that each by themselves wouldn't warrant a Complication, but taken together are problematic. First, the seals for the large deck-1 cargo bays tend to fail, and need regular replacement. If not replaced, the areas are not airtight, and can only be used for cargo that can withstand exposure to space. Second, the design of small chambers internally makes a strong vessel, but slows cargo loading and off-loading. Cargo operations take twice as long as normal with this ship.

### Weapon systems

**Standard weapon systems for Hardpoints** (4 ventral, 4 dorsal)

A) Interceptor Turret; 1 lb. (d6 vehicle-scale) gun with 1000 round magazine  
Price: 340 credits each

OR

B) Interceptor Battery; 150 short-range missiles with 20-lb (d2 ship scale) warheads.

Price: 3150 credits.

### Standard weapon system on the 6 dorsal turret towers:

C) Ship gun; Turret with 10 lb. (d0 starship scale) gun with 500 round magazine

Price: 15,000 credits

OR

D) Medium Range Battery: 30 medium range missiles with 100-lb (d6 ship scale) warheads.

Price: 3,300 credits

OR

E) Long Range Battery: 15 long range missiles with 100-lb. (d6 ship scale) warheads.

Price: 1800 credits

OR

F) Docking Slips for up to 20 tons in small craft  
Price: Nil, except cost of small craft.

OR

G) Assault Battery: 6 medium-range missiles with 500-lb (d10 starship scale) warheads.

**Deck 5 used for weapon systems**

H) Capital Battery; 52 Long-range missiles with 500-lb (d10 ship-scale) warheads.

Price: 31,200 credits

**Standard Configurations:**

Patrol:

4 Interceptor Turrets, 4 interceptor batteries, 2 medium range batteries, and 4 additional docking slips.

Secondary Craft: 8 light interceptor fighters (10 tons each), 8 assault shuttles (20 tons each), one deck-one bay open for secondary craft repair.

Picket:

8 interceptor batteries, 4 medium range batteries, 2 long range batteries

Secondary Craft: 4 light interceptor fighters (10 tons each), 4 assault shuttles (20 tons each), one deck-one bay open for secondary craft repair.

Assault:

4 interceptor turrets, 4 interceptor batteries, 6 Assault batteries, and deck 5 converted to Capital Battery

Secondary Craft: none. Cargo space used for additional missile storage.

Notes on Secondary Craft:

For BSG, use Vipers for interceptor fighters, and Raptors for Assault Shuttles. In Serenity, you can use [Warhammers](#) for interceptor fighters and armed [Gold-diggers](#) for assault shuttles.

Intelligence D2

Willpower D2

Length 60 feet Beam 50 feet Hight 10 feet

Total tonnage 100 Tons

Speed Class 10/14

Fuel 5 tons for a total of 400 hours {80 hours per ton}

Crew quarters 2 Dinky 16 tons {and I mean Dinky}

Cargo 25 tons

Quirks

Has a very strange sound when flying in Atmo. Most folk say it sounds like a small Buy hence the name "Mosquito" but the more read of the people say it sounds more like the Formula one racing card from the 21st Century earth that was.

Assets

Fast Throttle {Major} this thing moves faster than god meant man to go

Complications

Memorable {minor} No one forgets that weird sound it makes nor its tiny tiny size

Gas Guzzler {minor} Going this fast cost fuel lots and lots of fuel

Complexity Low {26 points}

Cost

16,700.00 {rounded up from 16,666.66667}

Maintenance

120 per year

10 per month

## Mosquito Light Transport

(by Darren)



STATS

Agility D10

Strength D2

Vitality D4

Alertness D4

## Narwhal (by renfield007)

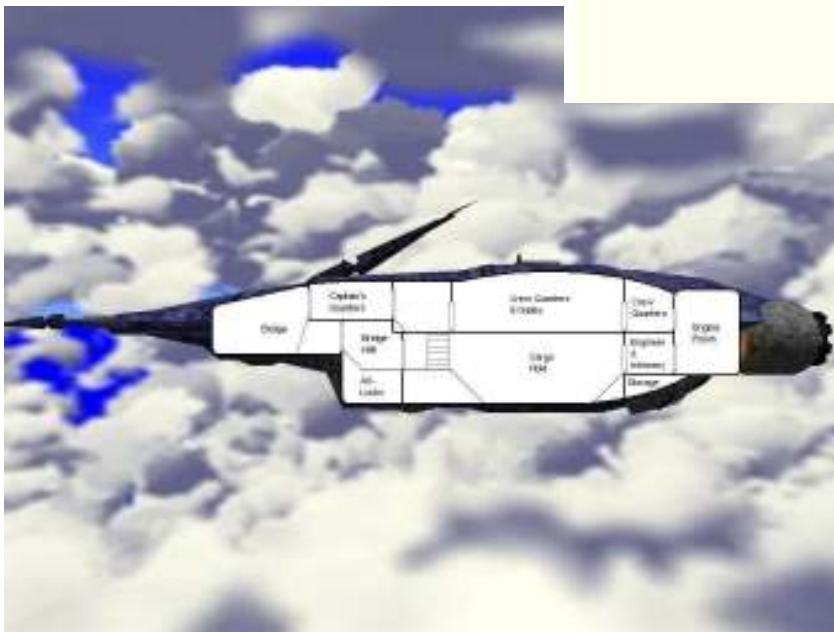
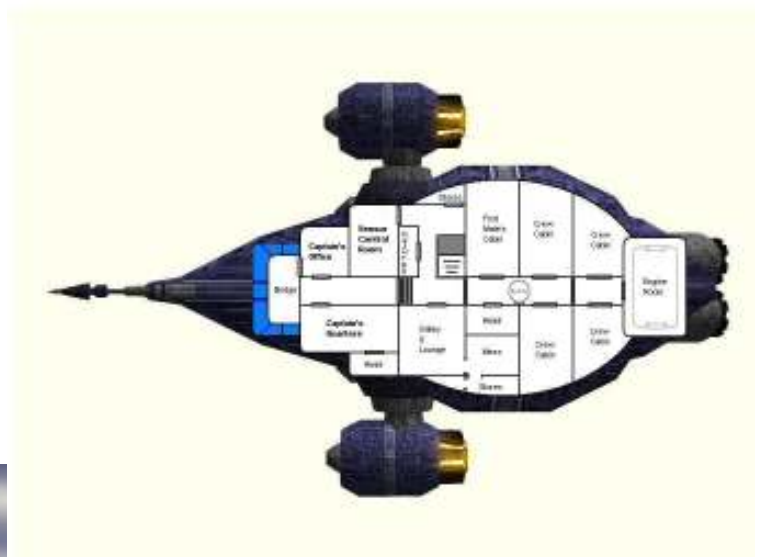
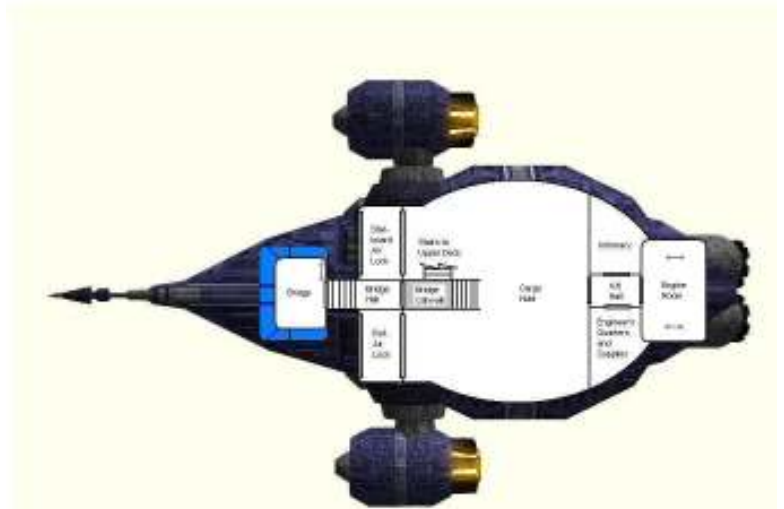
Name: Narwhal Class  
 Designation: NAWL-420  
 Classification: Light transport  
 Manufacturer: Shan-Gho technologies  
 Dimensions: 130lg x 25ht x 50wd(80wd to engines)  
 Tonnage: 1400  
 Speed Class: 6/8  
 Crew: 2  
 Fuel Capacity: 100tons  
 Cargo Capacity: 200  
 Armament: n/a  
 Armor: n/a

### ATTRIBUTES:

Agility D6 Strength D6  
 Vitality D6  
 Alertness D4 Intelligence D4 Willpower D4  
 Initiative D6+D4 Life Points 10 W:  
 S:  
 Skills: Athletics - d4 / Mech Engineer - d2 / Perception - d4 / Pilot - d2  
 Assets: n/a  
 Complications: n/a

### NOTES:

The pointy bit out front is an extended sensor-array. This model was designed to be used by inexperienced pilots and has a lot of safety-features design to minimize collisions and is an ideal training vessel and first-time buyer's ship. The model is very forgiving but experienced pilots may get frustrated by the sometimes mushy controls, though many an owner has long since learned to tweak the systems to their liking and otherwise come to appreciate the speed of this small vessel. There was a brief attempt to convert some for use during the war as a Medevac ships due to their ease-of-use, but



the ship's systems proved to be too easily overloaded by excessive input (ie lots of cannon fire, missiles etc.) and the project was scrapped. Now it's primary use is as a core-worlds passenger transport or a small-goods smuggling vessel.

## Raptor/Ripper class (by mait, ravenoracle, and Jank Falcon)

The history of Raptor Class light transports begins when a borderworld small-scale shipwright and genius designer Isaiah Ming managed to acquire the production license of an out-dated military engine from the Mirage Inc Shipping Laboratories.

The Mirage Inc had been the primary designer and producer of military engines in the 'Verse from 2430-s until 2480-s when the Blue Sun corporation decided to enter that market. The short struggle between the corporations ended with the bankruptcy of the Mirage. By that time the Mirage engine designs were already outdated - although they had been the first to built truly miniaturized fusion plants combined with energy efficient pulse drives - by 2480-s new generation of miniaturization was already leaving competitors laboratories and entering production.

One of the last military engine systems widely produced by Mirage Inc was BSC-SIL 109K-50 Vulcan, which entered market in 2468. Although based on the 1st generation miniaturization, which made it rather "dated" in comparison to other engines already available on the market, the Vulcan had some very desirable traits for a military engine:

It allowed for carefree operation, whereas a 2nd generation engines required much more care during their operation; its maintenance was vastly simplified, and most engine parts were modular and could be changed when necessary not after a given amount of hours of operation, which did cut down on maintenance costs. It was a simple engine in general, based on much-tested and reliable technology, having simplified stators and less moving parts than it's competitors. But most important of all - it was pilot friendly, free of operational restrictions, which is extremely important in combat.

By the time Mirage Inc went bankrupt many BSC-SIL 109K-50 Vulcans were already sold on the black market where it was one of the racing enthusiasts favourites. Usually the old Vulcans were salvaged from junkyards, a working model was clobbered together from available parts and it was installed on some light ship. While the Vulcan might have been too weak for mid-weight military vehicles, it worked wonders on light civilian vessels.

In 2488 Isaiah Ming Shipwrights Co bought the license of the engine, together with blueprints and some production tooling from the Mirage bankruptcy estate holders. The owner of buyer was a well-known architect and shipdesigner, who for most of his career had worked for

Greyscale Ship Technologies. Some years before



I. Ming had established his own small-scale shipyard on the Shadow, building limited edition fast- and luxury boats, most with unique designs including lot of handcraft leather and wood furnishings.

With the bought of Vulcan Isaiah Ming Shipyards started it's first serial-produced ship project. The basic idea of the Raptor class was to build a very fast light carrier, a direct competitor for Hornet in the 'Verse's mail carriers procurements.

Around the Vulcan engine I. Ming built a sleek and sporty ship with long wings to give the ship very good aerial maneuverability. The aerodynamic body had a slender neck with slightly down-turned cockpit. The ship carried one short-range shuttle on it's back, had one airlock on it's port side and unlike it's later versions had only small built-in cargo bay under it's living quarters (which gave it the nickname "flatbelly").

The Raptor Flatbelly was not a marketing success at the beginning - it left the drawing boards a little too late to successfully enter the competition for the next generation Alliance mail carrier, which put the Isaiah Ming Shipwrights financially in a tight spot. Approximately two dozen Raptors were sold to racing enthusiasts and wealthier spacetravellers, but the earnings were much short of the productions costs and the Isaiah Ming's bankruptcy was imminent. The help came from the previous employer of mr. Ming - Greyscale bought the control package of Isaiah Ming Shipwright's stocks, made it a subsidiary and gave financial aid needed to start the production Raptor on the larger scale.

During the next 14 years approximately 150 Raptors in slightly different versions were built:

**Raptor Mail (Flatbelly)** - original version, small cargo space.

**Raptor Cargo** - the most popular version. This ship could carry either double 100 or single 200 series UCM containers under its belly. The production of that model started after the investments by Greyscale. It quickly found a market niche.

**Raptor Luxury Yacht** - only 10 were built and not all of them sold. This version had luxurious furnishings, higher quality electronic systems, navigational aids and state-of-the-art security system. The most peculiar feature was the underbelly glass-walled swimmingpool (the slogan in the Cortex commercial of the class said "Come, swim among the Stars.") As all Raptors are quite noisy (due to too powerful engines) and strongly vibrating during the accelerations, the luxury yacht version never became popular.

**Ripper** - The Independents used modified Raptors as light raiders against Alliance shipping. Those ships had no container capacity, but they did have some military additions: underbelly autocannon, 2 missile launchers with 3 reloads each, light armor and slightly updated engines. Only 30 were built before the Shadow factory was destroyed.

Some Raptors were used as blockade runners and staff transport ships by Independents during the Unification War.

The production of Raptors continued well into the Unification War and was only ended by Alliance bombing of the Shadow factories. During the years the Raptor has earned a good reputation among the admirers of simple, sturdy, fast ships with good looks.

Nowadays the Raptor is a much-sought ship, most that survived the war a still kept in flying condition and some borderworld factories even produce unauthorized spare parts for them. Allegedly the Greyscale Ship Technologies is considering the option to restart the production of slightly updated Raptors in its Sinhon factory.

### Raptor Cargo ("Potbelly")

Dimensions: 165 x 127 x 27 feet  
 Tonnage: 962 tons  
 Speed Class: 8 cruise/10 hard-burn  
 Crew Quarters: 1 captain's (double) cabin, 2 single cabins  
 Fuel Capacity: 20 tons (400 hours) in 100 ton tank  
 Cargo Capacity: 240 tons in detachable containers  
 Passenger Capacity: None  
 Price: €46,176

Agi d10, Str d4, Vit d8, Ale d2, Int d2, Will d4;  
 Initiative d10+d4, Life Points: 8;  
 Traits: Allure (minor), Gas Guzzler (minor)  
 Skills: Perception d2, Pilot d2  
 Complexity: low  
 Maintenance Costs: € 1,152 per year.

### Raptor Mail ("Flatbelly")

Fuel Capacity: 50 tons (900 hours) in 250 ton tank  
 Cargo Capacity: 60 tons in cargo hold

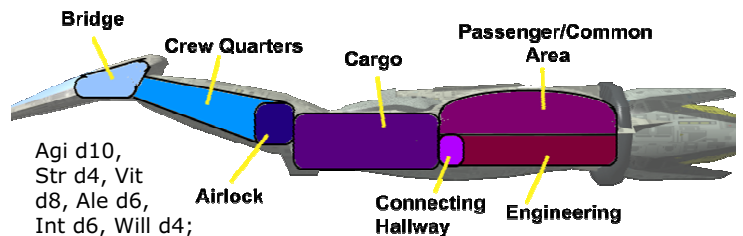
### Raptor Luxury Yacht

Crew Complement: 1 captain, 1 steward  
 Fuel Capacity: 30 tons (500 hours) in 150 ton tank  
 Cargo Capacity: 24 tons in onboard compartments  
 Passenger capacity: 2 double luxury cabins  
 Price: €123,136

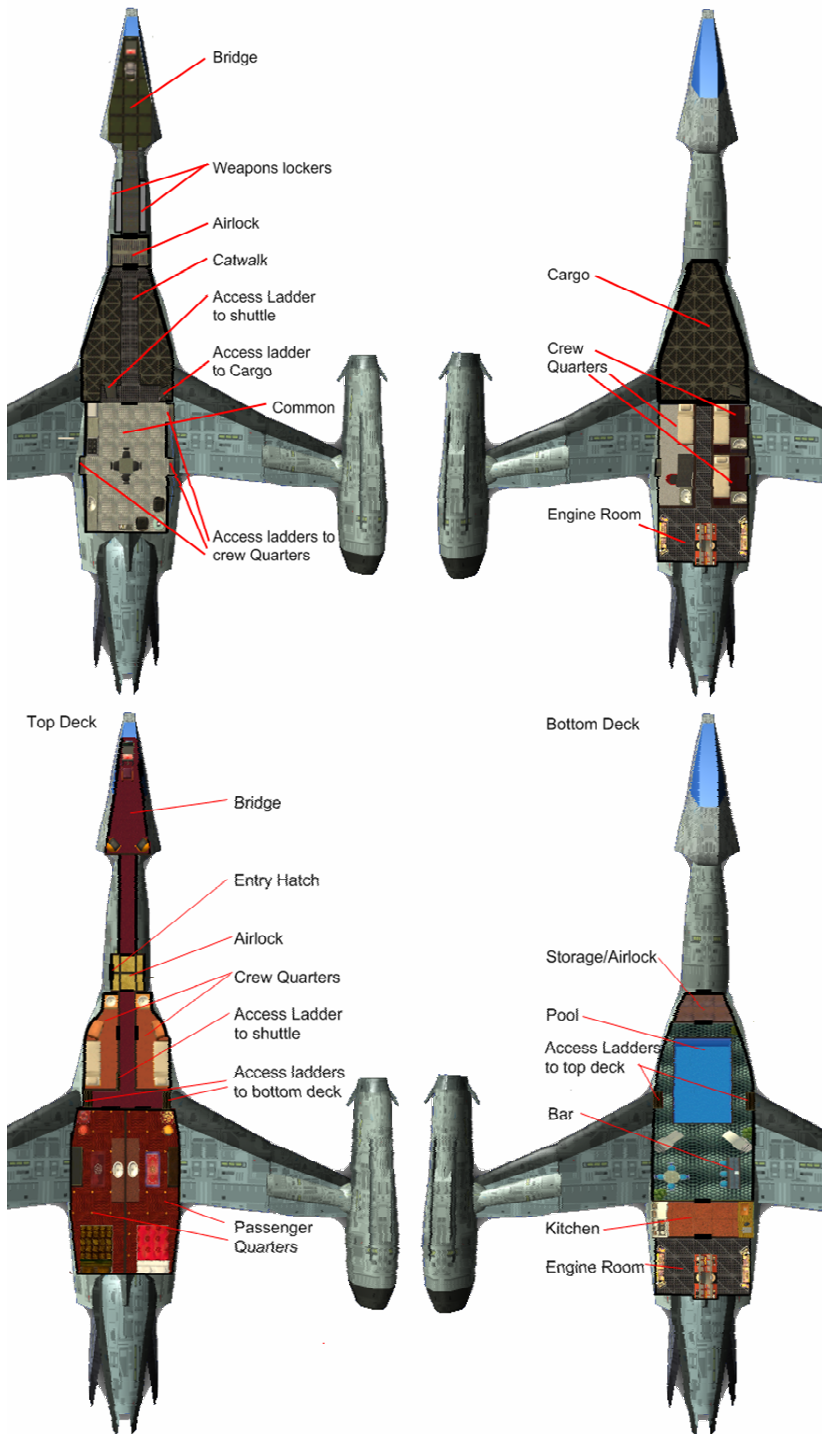
Agi d10, Str d4, Vit d8, Ale d4, Int d6, Will d4;  
 Initiative d10+d4, Life Points: 8;  
 Traits: Allure (minor), Gas Guzzler (minor)  
 Skills: Athletics d4, Perception d6/ Internal security d8, Pilot d6  
 Complexity: high  
 Maintenance Costs: € 3,078 per year.

### Ripper

Crew Complement: 1 officer, 4 space hands  
 Crew Quarters: 1 captain's cabin, 2 double bunks  
 Fuel Capacity: 50 tons (900 hours) in 250 ton tank  
 Cargo Capacity: None  
 Passenger Capacity: None  
 Price: € 252,704, plus ammunition (€ 5,600 per full load)  
 Armament:  
 8 underwing 50 pound short range missiles  
 20 pound cannon in underbelly revolving gun turret (160 rounds)  
 Armor (1W)

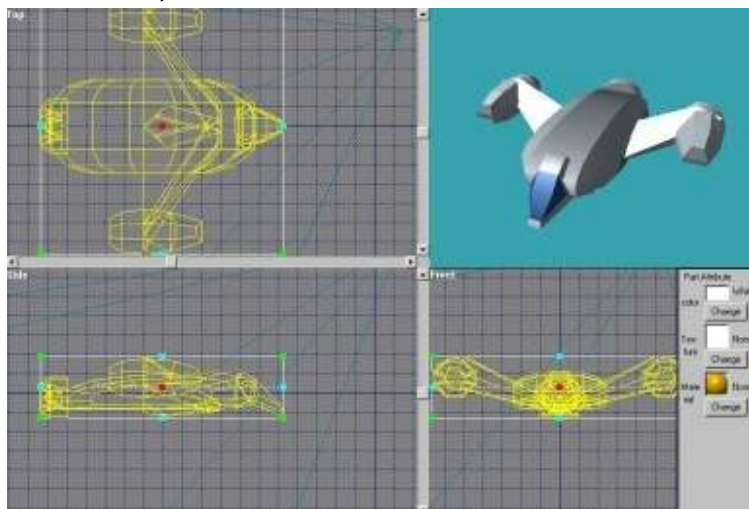


Agi d10, Str d4, Vit d8, Ale d6, Int d6, Will d4;  
 Initiative d10+d6, Life Points: 8;  
 Skills: Athletics d6, Covert d6, Perception d6, Pilot d4,  
 Complexity: very high  
 Maintenance Costs: € 4,608 per year.



## PEREGRINE CLASS TRANSPORT

(by Jank Falcon and  
maxvale76)



upon a small, but notable ship-builder named Jankin Selk. Selk came up with a design that drew its inspiration from a Falcon in flight, and dubbed it the "Peregrine".

The Peregrine is a 2,000 ton Transport with a crew complement of about 6. The design features 6 cabins, which typically are split evenly between larger double cabins with queen-sized beds, and smaller cabins with double bunks. While individual ships vary, typically 3-4 of these cabins are used by the crew and the remaining cabins are used for passengers. The Peregrine has a small infirmary and a docking port for a standard 20 ton short range shuttle on the center of its top hull.

The Peregrine has a very broad wingspan which are angled diagonally up from the main body of the vessel to give it extra lift to help deal with the strong winds and frigid cold of St. Albans and similiar harsh

worlds and moons. In addition, the transport was designed to be very low-maintenance and responsive to its pilots touch; making the Peregrine a true pleasure to fly. With the addition of the highly-regarded VM-44 "Viking" Engine, the Peregrine is slightly faster than many transports flying the Black, but they also tend to be less fuel-efficient than many transports out there. The distinctive Hawk-like appearance also makes the Peregrine an easy vessel to spot and recognize.

About a hundred of these vessels were built in the 5 years leading up to the War, most of them on St. Albans. When the war broke out, a couple dozen of these vessels were employed by the Independents as small troop transports and landing/extraction craft due to thier quick speed, atmospheric agility and easy-to-learn handling characteristics. With the end of the war, these vessels had gained something of a bad reputation by many larger pro-Alliance ship building companies, and so the small St. Albans based "Falcon Ship Building" company was shut down and no new Peregrines have been built in the last 5 or so years. These vessels are highly prized by those who are lucky enough to own/crew them.

Agility: d8  
Strength: d6  
Vitality: d6  
Alertness: d2  
Intelligence: d4  
Willpower: d4

Life Points: 10

Speed: 5/7 Hard Burn

Traits: Healthy as a Horse, Gaz Guzzler, Memorable

Skills: Aerial Transport Ops: d4, Space Navigation: d4, Perception: d4, Mechanical Engineering: d4

Dimensions: 180ft. Length x 195 ft. Beam x 45 ft Height

Notable Gear: 1 20 ton shuttle on center top

Complexity: Average

Maintenance cost: 334 credits a month (333.3 repeating)

Crew/Passengers: 6 total cabins; 3 double, 3 with 2 bunks

**BACKGROUND/HISTORY:** The Peregrine class Transport originated in the mind of a business man from the Border planet of Beaumonde when he visited the frigid Rim World of St. Albans to inspect thier mines. Understanding the potential that lay in the ores of St. Albans mountains and the problem of regularly flying ships through the planet's harsh, windy atmosphere, he called

## Sparrow Class Short-Range Shuttle (by Selek)



Dimensions (LxBxH): 35 x 20 x 12 feet  
 Tonnage: 30 tons.  
 Speed Class: 2 cruise/6 hard-burn (reaction thrusters only).  
 Crew: Pilot, Copilot.  
 Life support: 30 man-days.  
 Fuel Capacity: 1 ton (1,000 hours).  
 Cargo and Passenger Capacity: 15 tons, or up to 12 passengers on fold-down benches.  
 Price: 550CR  
 Agi d8  
 Str d2  
 Vit d6  
 Ale d2  
 Int d2  
 Wil d4;  
 Init d8+d2  
 Life 6.

Healthy as a Horse; Short Range; Fast Throttle (Major)  
 Aerial Transport Operations/Shuttle d2  
 Space Transport Operations/Shuttle d2.  
 Complexity: very low.  
 Maintenance costs 18CR per year.

## Stagecoach Class Freighter (by Frostwolf):

Type: Mid-bulk transport  
 Builder: Poseidon Shipyards, Boros  
 Tonnage: 2,600 tons  
 Speed: 5/6  
 Fuel: 52 t. (580 hrs)  
 Crew: Three singles, two doubles  
 Passengers: 10 second class cabins  
 Cargo: 610 t.  
 Cost: \$68,000  
 Maintenance: \$4,680/ yr., \$390/mo.  
 Gear:  
 -2 Short Range Shuttles w/ lifeboat conversion

Attributes:	Traits	Programming
STR: d6	Fuel Efficient (min)	Space
Transport Ops d2		
AGL: d6	Heavy Lifter (min)	Aerial
Transport Ops d2		
VIT: d8	Healthy as a Horse (min)	
ALT: d4	Nuthin' Fancy (min)	
INT: d2	Slow Throttle (min)	
WIL: d4		
LIFE: 10		
INI: d6+d4		

The Stagecoach Class midbulk transport, though a relatively new ship, is not a sleek liner such as one would find in the Core, or the Inner Planets. It is a child of the Border Worlds, built in the small, independent Poseidon Shipyards. Based upon the concept of a vehicle from old Earth That Was history, albeit heavily modified, the Stagecoach is a rugged freight hauler and small passenger liner all in one.

One of the best features of the Stagecoach is its engines. Two Stallion turbines have been heavily modified to allow the Stagecoach to travel just a bit faster than the Firefly. Unfortunately, the tweaking of these engines to improve fuel efficiency and overall top speed had the effect of reducing acceleration and hard burn speed. Rumors persist that the work crews could have improved the engines and not damaged these functions, but that pressure from the Alliance Military forced them to keep the problems. This tinkering also created a strange quirk in ship performance in atmo; the ship rocks noticeably rocks slightly, though not enough to be a problem, and the engines have a rumble to them that sounds, as one critic noted, "like a herd of horses at full gallop."

Other flaws exist as well. As a generalist, the Stagecoach doesn't do any one job particularly well; its passenger dorms are too cramped to make it a liner, and the cargo bay too small to make it a great freighter. Its simple design makes for a smuggler's hell; very little can be hidden from someone who knows the ship. Also, while the simplicity may be something for the mechanic to grin about, it also means that there is less space in the ship, and that ships systems fill more or less every available inch. The ship is also much less comfortable or spacious than a Firefly, meaning that richer passengers will pass this ship by. With more things in less space, every inch of the ship is used for something. Still, if you want a midbulk transport with space, speed, and easy maintenance, you could do worse than a Stagecoach.

## Stingray Mk I (by ElectricBadger)



The Stingray is a product of Ardis Alliance, a longstanding but little-known Beaumonde firm. Much larger than most independent transports, the Stingray is a niche vehicle -- able to ferry cargo on a greater scale than other boats, but also too expensive to maintain to compete for smaller contracts; nor is it large enough to compare to the super-heavy transports of the core.

Instead, most owners secure the majority of their contracts with businesses rather than individuals, working through intermediaries such as the Trader's Guild or brokers to ensure a quick turnaround.

Other than the size, the boat itself is fairly

unremarkable. It's a quality boat, but not exceptional, just like the shipbuilders who designed it.

### Ardis Alliance Stingray

Agi: d6, Ale: d4, Int: d6, Str: d6, Vit: d4, Will: d2

Traits: Heavy Lifter (2)

Complexity: Low (30) x.6

Speed Class: 4 (6 hard burn)

Life Points: 12, Armor: 3

Skills: Autopilot d6, Perception d6

Dimensions: Keel: 250', Beam: 150', Height: 50'

Tonnage: 10,000 gross tons

200 tons mass of fuel, 600 hours operation

Quarters: 1 Suite; 2 Spacious Double Quarters;

6 Spacious Quarters

Minimum Crew: 4

Cargo: 4,320 tons cargo; two 30-ton shuttle bays

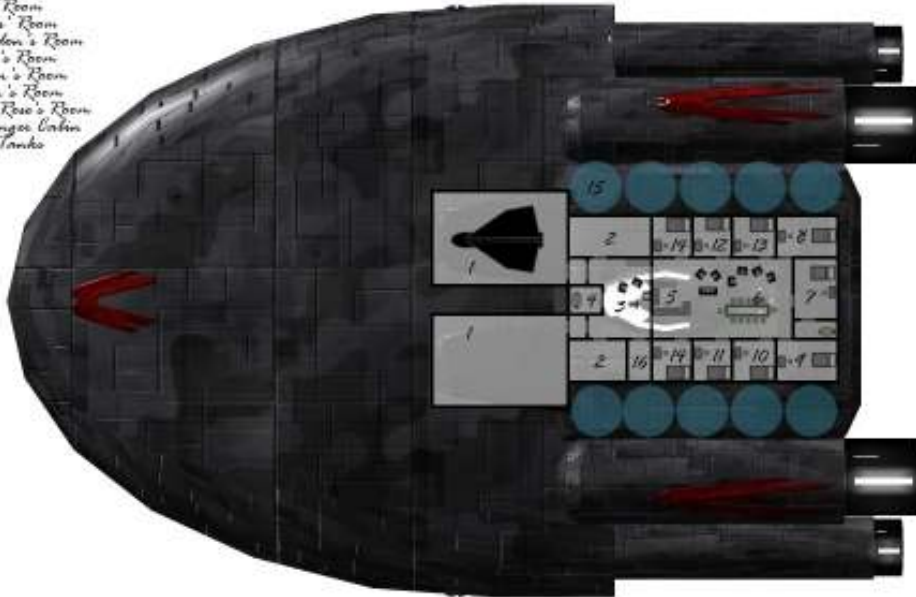
Lift: 21,600 tons mass

Cost: €240,000, Maintenance: €12,000 yearly (€1,000 monthly)

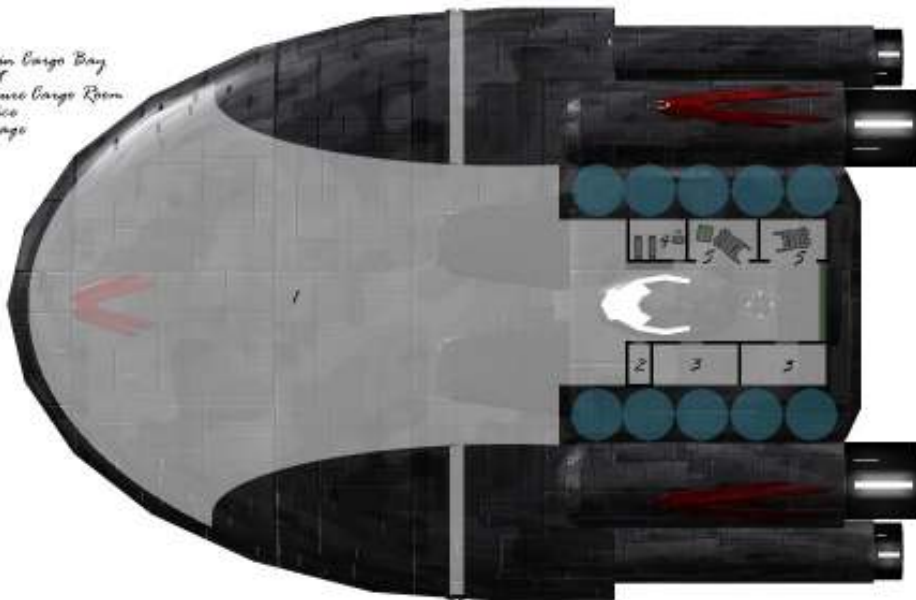
The shuttle bays open upwards, for vertical take off and ascent; there is no dedicated engine room on the boat, although the machinery rooms on the crew level allow access to banks of monitoring equipment and some critical systems (such as life support and back up power); the massive engines are accessed through a convoluted series of narrow tubes and vents. The passages to the side airlocks are part of this system, and are only slightly larger than the utility corridors. The bottom level (which is an impressive 30' high) includes garages for the care of loading vehicles, a foreman's office, and two securable cargo holds.



1. Shuttle Bay
2. Mechanical Room
3. Recreation Area
4. Common Ward
5. Kitchen
6. Living Area
7. Lin's Room
8. Dallas' Room
9. Brandon's Room
10. Max's Room
11. Shawn's Room
12. Moon's Room
13. Lily Rose's Room
14. Passenger Cabin
15. Fuel Tanks
16. Lift



1. Main Cargo Bay
2. Lift
3. Secure Cargo Room
4. Office
5. Garage



## Swan Vesta (by

Limerickcot)

Manufacturer: Abyssinian Inc

Mass: 1551 tons

Length 140ft

Beam 142ft

Height 52ft

Speed 5

Full Burn 7

Fuel Capacity 50 tons  
(600 hours)

Agility d6

Strength d6

Vitality d6

Alertness d4

Intelligence d6

Willpower d6

Initiative: d6+d4

Life Points 12

Healthy as a Horse (Major)

Dull Sense (minor)

Crew: 5

Passengers: 2 double  
second class quarters, 4  
tube bunks

Subcraft: None

Cost when new:

77,550

Cost bought second hand:

3877.50

Cargo Capacity: 540  
tons main hold,

8 tons personal

storage

Maintenance Cost: 218  
per month

Athletics D2

Covert nil

Heavy weapons nil

Knowledge nil

Mechanical engineering nil

Perception D4

Pilot D6

Background

The Swan Vesta (or just Vesta) Class was a deliberate attempt to make use of the Firefly's popularity by producing a copycat. Abyssinian Inc, rushed development of the Vesta just as soon as they got their hands on one of the early



Fireflys, hoping to recover from a series of recent corporate blunders that had seen them driven to the verge of liquidation.

In some ways they succeeded. At the start of its career, the Vesta could interchange over 50% of its parts with those of a Firefly. Despite being smaller, it could carry more cargo and at a faster speed, all in a smaller hull.

It also split out its Life Support into a dedicated system that didn't run off the main drive. These significant selling points came at a price though.

Both its crew and passenger quarters were understated and poor, with little shared space in the vessel. This cramped space led the vessel to be dropped for long tramp runs. To save costs and increase cargo capacity, the designers left out any shuttles, cutting down its use by independent hauliers and leaving take up from commercial enterprises instead. Abyssinian failed to crack the Firefly's market.

It's main design problem was undoubtedly the poor Atmospheric Thrusters. Rushed through production, the Abyssinian Delta IV was underpowered and prone to electrical failures on start-up, leaving numbers stranded whilst their crews and maintenance personnel worked to discover the fault – only to have it repeat itself in a few months time (the main cable housing was poorly conceived and prone to exposure to fuel leaks, deteriorating the conduit).

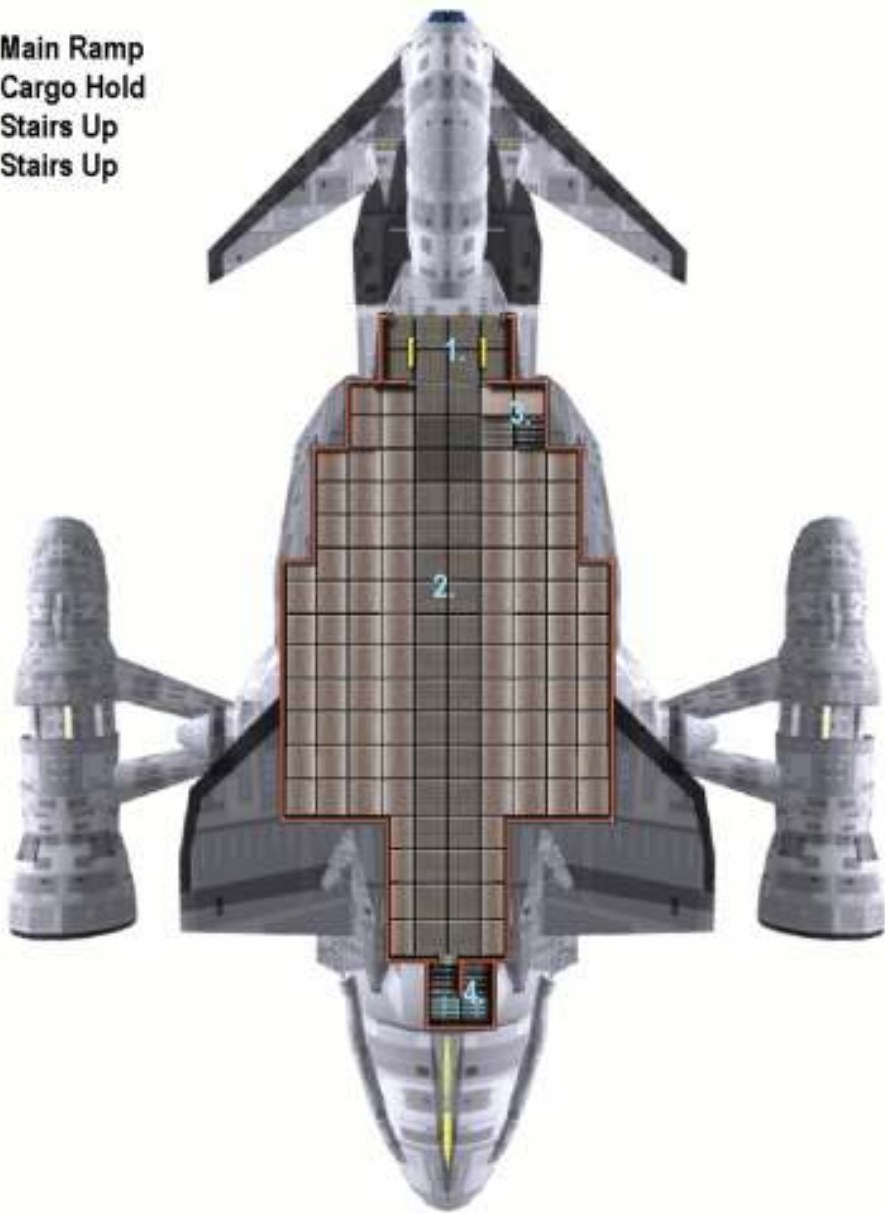
In the end all vessels then in service had their thrusters replaced with other makes – notably the Delphinium Kray MkIV, which proved reliable and easy to repair, although its different output directly interferes in the Upper Radar coverage of the ship class.

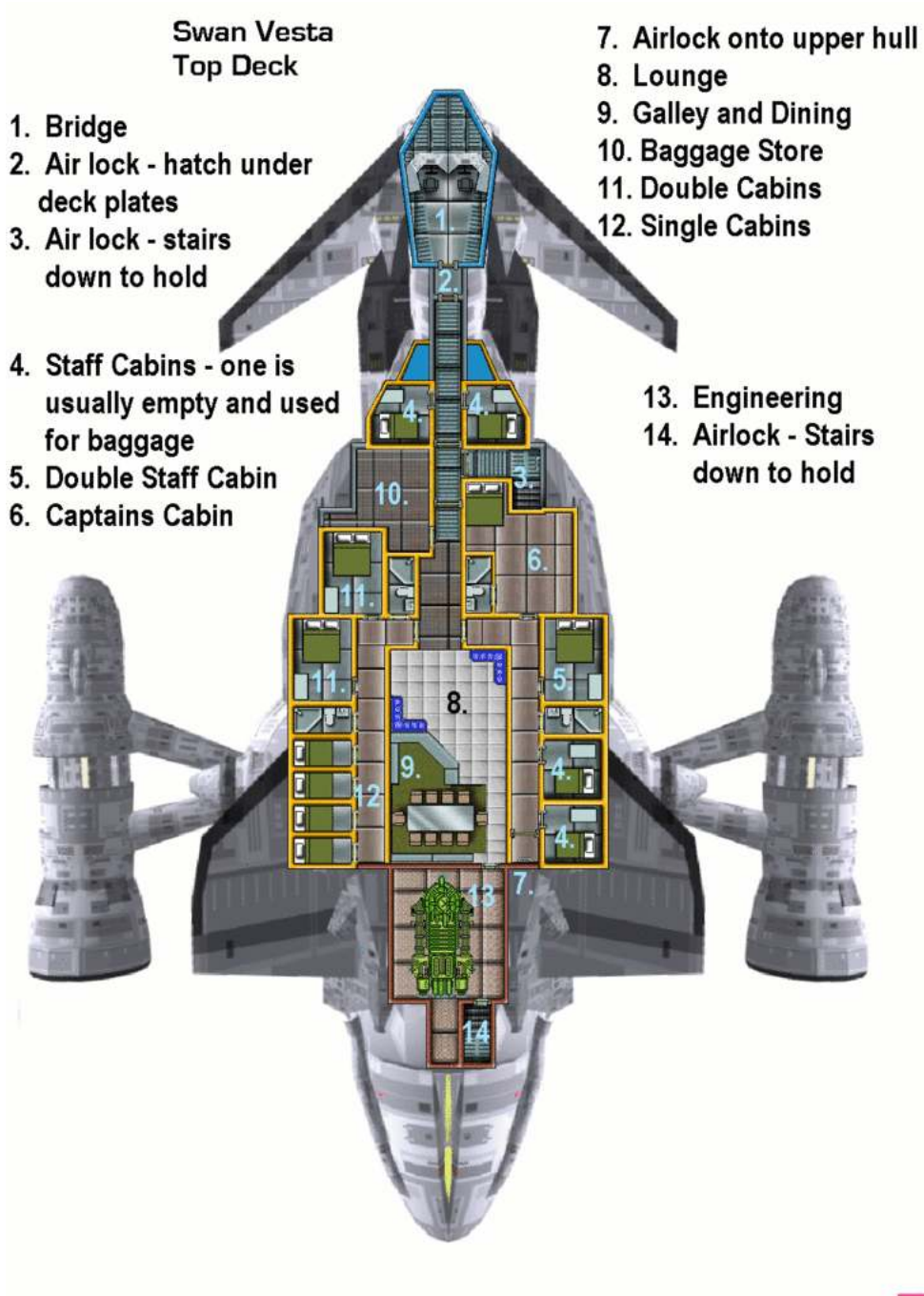
Abyssinian actually continued manufacture for at least twenty years before the shipyard closed down. The yard was eventually bought by Delphinium Yards of Boros, who still provide maintenance and parts for the Kray Thrusters. Other parts are not hard to get either, and the ship is now renowned for her ability to stay up in the black.

Floorplans:

### Swan Vesta Transport

1. Main Ramp
2. Cargo Hold
3. Stairs Up
4. Stairs Up

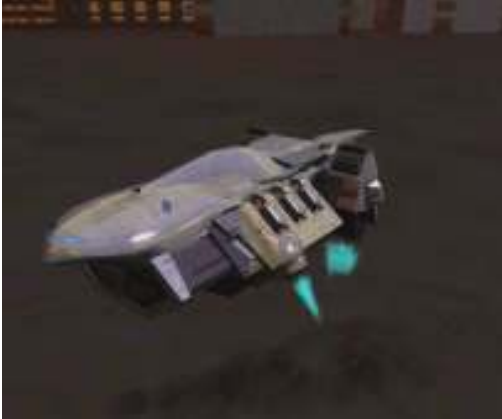




## Tarot Class (Mid-Bulk Transport)

(by Martillo)

'Queen of Swords'



Dimensions (L x B x H): 218x88x72

Tonnage: 5400 tons

Speed class: 5 (9 full burn)

Fuel Capacity: 800 tons (800 hours)

Crew: 4 Single cabins, 2 Double cabins (1 Captain)

Passengers: 4 first class cabins (singles)

Cargo Capacity: 1556 tons

Complexity: High (x1.6)

Price: 416000 (nearly new)

Maintenance: 1440/month

Agility: d8

Strength: d6

Vitality: d8

Alertness: d4

Intelligence: d4

Willpower: d6

Life Points: 12

Initiative: d8+d4

### Assets/Complications

Fast throttle (Major asset)

Fuel Efficient (Minor asset)

Hooked (Minor complication)

Memorable (Minor complication)

### Skills

Space Navigation: d4

Aerial Transport Operations: d4

### Gear

6 two-man escape pods (externally mounted)

Infirmiry- equipped with very basic medical devices (a dermal mender is the most advanced piece of kit)

'Bess' Unknown warhead long range missile

### History:

The Tarot class started out as a bunch of young, newly qualified engineers getting together to build a boat. They started with the design brief, to make an up-to-date mid bulk transport for everyman. Unfortunately they all had ideas as to what it should have, so it quickly degraded into 'wouldn't it be cool if...' and 'let's make this the

best ever!' And so the ship they began to design was nothing like what they had set out to make. When they had finished, the Tarot class was born. It had a fusion core that stuck out the back, more so than a firefly, attached to a pulse drive with a magnetic accelerator ring that required tons of coolant but made the ship run with amazing speed and efficiency. It had escape pods that were mounted externally and didn't feel like a coffin inside. It had an infirmary, although not a well equipped one (they were already far over-budget at this stage. Rear mounted high speed ram/scramjets with front mounted turboprop engines to lift the ship and any cargo it was carrying. It had a huge cargo bay and four nice, first class rooms. They took it to several companies with the clause that it must be built exactly as it was in the designs. All turned them down, so they asked if anyone would be interested in placing a reserve order. Only four came in, but it was enough, the team formed their own company and built the ships, with only a small profit margin, they wanted it as a technical exercise rather than to make money. More orders came in but the first four were named in honour of the four suits of Tarot each with a face card, they were, King of Coins, Queen of Swords, Jack of Cups and Knight of Wands

The Queen of Swords, currently owned by Quentin Lister, an alliance playboy-turned-renegade. He bought the ship on a whim, but once he had it flying he knew the freedom it would bring, not content with his lifestyle he sold off all his property and took to the stars, his crew consists of misfits he picked up along the way and decided he liked them. One thing that is unusual about the Queen of Swords is hanging up in the cargo bay. It is a missile that came into being when the half-mad engineer got drunk on industrial strength cleaning ethanol and built it out of spare parts. He had no idea what it would do if it ever went off, he suggests it would probably be pretty good though otherwise he wouldn't have built it. The crew have taken to calling it 'Bess'.

**Terraformer** (by Winged Cat)

Dimensions: 60000 ft diameter sphere  
Tonnage: 1.1 trillion tons  
Speed Class: 1  
Minimum Crew: 0  
Quarters: None  
Fuel Capacity: 25 billion tons/125 billion ton tank (600 hours endurance)  
Cargo: 100 billion tons internal capacity (not including data libraries & genetic warehouses), plus external gravity-directed capacity  
Armor: 10W 10S  
Weapons: gravity manipulators, surface manipulators (see notes for operation)  
Price: n/a - these can not be built nor sold (though hucksters can sell worthless fake deeds to them for any price they can get)  
Annual Maintenance: n/a - self-maintaining, and if it was not, it would be impossible for anything short of a city full of mechanics to maintain  
Complexity: Extreme

Agi d2, Str d12+d12, Vit d12, Ale d12, Int d12, Will d12

Good Name (major), Healthy As A Horse (minor), Memorable (minor), Slow Throttle (major)

Athletics d2, Knowledge d4, Heavy Weapons d2, Mechanical Engineering d4, Perception d2, Pilot d2, Scientific Expertise d4, Technical Engineering d4

Initiative d2+d12  
Life Points 36

Uneducated folk - really uneducated, like they didn't even grow up in the 'Verse or something - might mistake these for small moons at first, but they ain't. These are the still-working parts of the Exodus fleet - the self-contained, fully automated spaceships that terraformed Londinium, Shinon, and all the rest of the worlds upon which we live, and which continue to terraform worlds to this very day. The basics anyway - planting gravity generators so that a large world's surface is only 1 G, or even a moon can have 1 G and carry an atmosphere; adding geothermal, solar, or (as a last resort) long-lived fusion plants to power those generators for thousands of years (though a moon's power is sometimes beamed up from its planet, creating a zone of intense microwave energy inside which life can't live - if the planet itself is also being terraformed, the moon's placed in geosync orbit so's the corresponding planetside zone stays in one place); making a basic oxygen-nitrogen atmosphere; and seeding it with all kinds of starter life forms, most of which are intended to die off and let whatever samples can thrive on a given planet adapt to do so. Anything extra, like adding water (unless it started off as an iceball or otherwise had plenty of water once the basics were done, as happened on Newhall) and higher order animal

life (including and especially us homo sapiens), has to be done manually afterwards: it was figured we'd want to customize planets using stuff we learned well after these things were built, and possibly after we'd seen the results of a few terraformings.

Terraformers were constructed in layers. At the core is their giant fusion reactor - literally, a miniature sun, though not quite so miniature as are on most boats these days. Above that are the fuel tanks for said reactor, and for the thrusters. Above that are the 11-fold redundant data libraries and genetic warehouses, asymmetric and each one with its own design thought up by different teams back on Earth-That-Was, so as to minimize the chance for systemic faults that might take down the whole gorrain thing. Above that are the computer cores that run the terraformer, the massive cargo bays for holding raw minerals or spare parts, and the workshops - mostly mechanical, some biological - for processing ores into replacement parts for the terraformer, making gravity generators, or cloning basic organisms from the genetic libraries. Above that is some armor plating to shield the interior from whatever comes along, combined with countless manipulating robot arms and gravity generators intended to act as manipulators at a distance.

Now, the usual way these devices start to change a planet is to throw rocks at it or tear chunks off of it using their gravity manipulators. Alters the mineral composition, changes the mass a little bit, adds or removes spin, and other fun stuff. They're also competent asteroid miners, feeding off metal-rich rocks to make replacement parts or gravity generators and power plants intended for planetside emplacement. (This is, by the way, one reason why asteroid mining ain't near as profitable as it could be: the terraformers usually get to the good stuff long before any human-piloted boat could reach it. They don't take everything, though, and they tend to leave planet-side minerals alone.) Once they come in contact with something - like a rock - the surface manipulators tear it to pieces, then feed the pieces into the warehouses for processing.

Now, these giants ain't too careful when they're slinging rocks around, so normal space traffic avoids active terraforming operations like the Reavers - if it's near enough to inhabited space to avoid in the first place. In the unlikely and suicidal case that a boat ever tries to attack, here's how it will be.

The boat will find missiles almost useless. Anything fired from beyond short range, the gravity manipulators will automatically deflect - unless it's a kinetic warhead, in which case they might just slow down the missile enough to cause no damage, then eat it up like a tiny asteroid. Meanwhile, those same gravity

manipulators will drag the boat one range increment closer each round: long to medium, medium to short, short to point blank. If the boat manages to run fast enough to offset this, the terraformer might give chase to catch back up, or it might reverse polarity on the gravity manipulators and push them away. If the unfortunate boat closes to or gets pulled to point blank range, the surface manipulators will begin eating up the boat, which will take a number of rounds equal to the boat's Strength die. (While each step on the Strength die represents a 10-fold increase in volume, that's only roughly a 2-fold increase in each dimension, and two of the dimensions are spread across the terraformer's surface. While complete consumption might take a while longer, this represents the time until the ship is completely disabled.) Anyone foolish enough to still be on the boat while it's being broken up can head for the escape pods and hope the terraformer don't try to eat that too. If'n someone's really curious to see how much damage the boat takes, apply the rules from page 157 of the rulebook for someone taking a swim in the black with no spacesuit, but this time it's spaceship scale. Note that there are no rolls for any of this ('cept the damage), and so no opportunities for successes or Plot Points to change it, 'less they've some way to stop the terraformer before it finishes (good luck with that).

Now, you might've noticed these ain't exactly skilled technical professionals. They're giant robots, with the best artificial intelligence that Earth-That-Was could put on 'em - and that ain't much. Still, they can get the job done - eventually. Terraforming your standard world is an Impossible complex Intelligence+Technical Engineering action - a moon is only Ridiculous - with one roll per year, and you have to have the tools to do it to even attempt the task (which basically means: roll only if you are a terraforming boat, otherwise you automatically fail). Good thing is, botching twice doesn't mean failure, but just adds a large quirk to the result (freezing cold or scorching heat over most of the planet, for instance). Small quirks tend to get added in regardless, though they can be taken out by follow-up efforts - see the perfect skies and seas of Londinium and Shinon for the results of centuries of that type of effort. Terraformers spread out once the Core worlds were done - in fact, some define the Core worlds as any that two or more terraformers helped build - so they're too far apart to help each other these days.

## Tortoise class Mid-bulk transport (by WillfredHobbit)



L - 185, B - 115, H - 78

Displacement - 2930 tons  
Crew quarters - 4 medium, 2 doubles  
Speed Class - 3/ 4 hard burn  
Fuel Capacity - 74 tons, 800 hours  
Cargo - 1026 tons (35%.) Cargo is held in a detachable bay with a volume of 1300 tons.

Passenger space would depend on whether the crew was using the two double rooms. The only gear is likely to be some cry babies. No shuttles, though you could carry one in a cargo bay of the main cargo hold - I think.

Price is about 52000 to 54000 new.

Agi d6, Str d6, Vit d8, Ale d4, Int d4, Wil d2

Everyone has one, seen better days, slow throttle, Fuel efficient, healthy as horse, tough as nails.

Maintenance per year - 5,274

### Background:

The success of the firefly class sparked this ship's design. A fully detachable cargo pod was desirable, and one with a "drive on and drive off" arrangement so 20 standard cargo containers could be loaded inside (stacked 2 high and end to end). cargo access hatches are on the sides of the cargo pod, meaning the engines don't fold down like the firefly. It takes a bigger dock to handle this ship (than the firefly requires) but it can handle freight much more efficiently.

These ships were intended to fill a place in the hauling business between the smaller mid-bulks and the itinerant trampers: regular shipping routes with a predictable and steady bulk of goods (that fit in containers).

It is rather slow but costs little to operate as it uses four much smaller thrusters than a firefly and a smaller pulse engine, therefore it uses less fuel. (The two 'wing' thrusters aren't needed until lifting off from a planet.)

These ships see most of their service on the border worlds, and along certain routes among the space stations.

## Tug Boat (by Frewfrux)

Produced in mass quantities, at least one of these spherical ships is usually stationed at any given space-based station; several on larger stations. Designed to both tow in ships that have lost their ability to maneuver themselves and to help move around larger ships without needing to power them up, these little boats have the ability to pull / push up to 100 times their own tonnage.

This strength, however, come at a cost. In order to fit the required engines in the small space for the tug, the speed of the vessel had to be significantly reduced. The ship's speed class is only 0.1 and it can not benefit at all from using any throttle to increase its speed. While this may seem like a severe disadvantage, towing companies charge by the hour and have no incentive to up the speed of the boat. If time is of the essence, the tugs themselves can be carried by another ship to the location of the ship to be towed and go from there (they're small enough to do this).

Once at the location of the derelict ship, the tug(s) extract several grapples from their hull to attach to their target and usually push (instead of pulling) the ship to its destination. Usually, they also hook up to the vessels fuel system and use that ship's fuel for the long journey home. If the ship being towed is out of fuel, and the time it would take to get to the destination is greater than the tug's reserves, then external fuel tanks are used by attaching them to the exterior of the tug.

It should be noted that the tug only has enough fuel to run for 133 hours with a full load (over 14,000 without!) so longer trips need to be planned carefully. Usually, however, these vessels only operate within the protection of their main base of operation, whether it is a space port, ship building facility, or home world. The other thing to note is that the tug can not lift its full capacity from off a world's surface unless the ship being carried has operating anti-grav machinery. This last restriction tends to keep these boats limited to space based missions.

### Stats

Agility: d2  
Strength: d4  
Vitality: d6  
Awareness: d4  
Intelligence: d2  
Willpower: d4

Initiative: d2 + d4  
Life Points: 8  
Speed Class: 0.1  
Towing Tonnage: 100,000

Length: 58  
Beam: 58  
Height: 58  
Body Type: 0.5

Total Tonnage: 975  
Hull, subsystems, etc: 254  
Engines: 505  
Free Tonnage: 216

### Traits

Slow Throttle (major)  
Everybody Has One (minor)  
Healthy as a Horse (minor)  
Fuel Efficient (minor)

### Skills

Collision Avoidance Systems (Athletics): d2  
Autopilot / Autonav (Pilot): d2

### Gear

Escape Pods: 3  
20 Ton Crew Quarters: 3  
Fuel Tanks: 1 @ 43 tons (133 hours endurance with a full load, 14,333 hours endurance with no load)  
Cargo: 110 (+100,000 towing capacity)

Complexity: 20 (very low)  
Purchase Price: Cr 690  
Yearly Maintenance: Cr 780  
Monthly Maintenance: Cr 65

## Upsilon class Brigantine

(by Lynn LeFey)



**Dimensions:** (LxBxH): 710 x 340 x 170 feet.

**Tonnage:** 95,000 tons.

**Speed Class:** 3 cruise/5 hard-burn

**Crew Quarters:** 6 single occupancy and 30 double occupancy

**Fuel Capacity:** 1900 tons (600 hours)

### Cargo/Passenger Capacity:

15,000 tons external bulk cargo

10,000 tons internal cargo

Additional 12,000 tons internal cargo or passenger space, (usually divided up as 154 rooms and galley/mess and 9400 tons cargo space). Rooms are single occupancy first-class, double occupancy second-class, or 4 person steerage.

**Gear:** 16 standard 20-ton shuttles, 3 ship's launches, Armor 2W

**Price:** €1,710,000 new (57,000 with major 'Seen Better Days')

**Stats:** Agi d4, Str d8, Vit d6, Ale d2, Int d2, Wil d8; Init d4+d2, Life 16

**Traits:** Everybody Has One, Seen Better Days (Major)

**Skills:** Pilot d2, Perception d2.

**Complexity:** Low (new), Very Low ('Major Seen Better Days')

**Maintenance costs:** €114,000 New 152,000 with major 'Seen Better Days'

### Description:

Long before the U-war, the Upsilon was developed. The designers wanted to appeal to both civilian transporters and possibly get sales as a military ship, to some of the outer worlds that wanted navies on the cheap. The ship was a tad big for classification as a destroyer, so the company settled on a designation of Brigantine. It didn't sell well as a military vessel, but did sell well to folk who wanted a relatively large and sturdy transport capable of taking a few knocks. The ship has two engineering areas; one port, one starboard. One reactor on each side, so losing one won't cripple the ship. Bulk cargo is carried between the two 'legs' of the ship, aft of the main body. This is usually secured by means

of several cargo booms, but in some cases, specialized lattices are affixed to the ship permanently (as when the ship carries cargo containers). A number of military add-ons were created for the ship; a notable one being a outrigger pod that would carry a wing of small fighter craft. Another being a 'gun deck' carrying eight turrets with ship-scale guns that rested in the normal bulk cargo location between the two 'legs'.

More than a dozen of these ships have fallen to Reaver attack. It's a testament to the ship's durability that a few of them are still functioning at the hands of the beast-men.

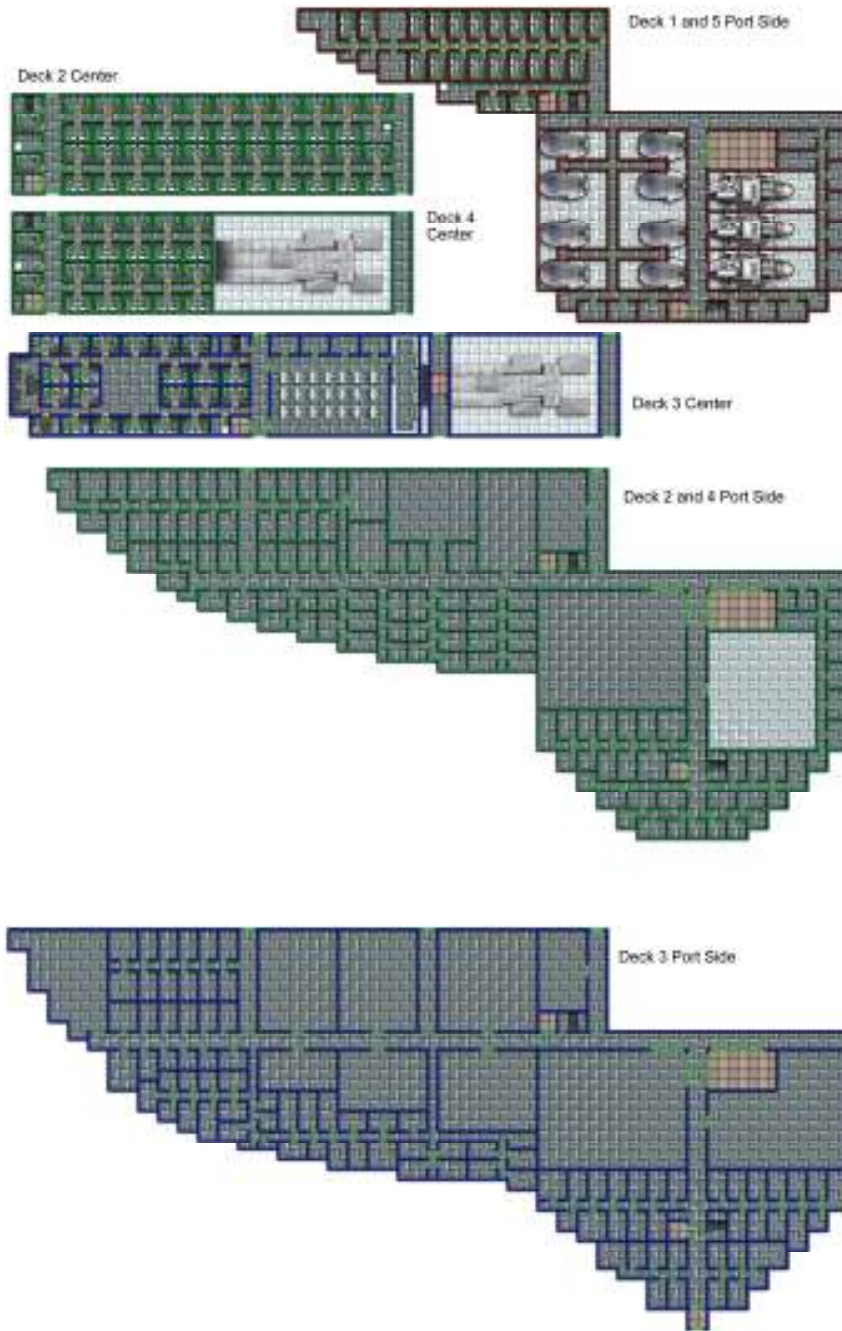
### Ship Layout and deck plans.

Decks are numbered from top deck (1) to bottom deck (5). The fore of the ship can be described as a flattened and elongated hemisphere. Aft of this is the docking area, and aft of that on either side is the engineering area. Main Airlock is on either side on deck 3. a major corridor leads into the ship from there. At the end of those corridors, just aft, is the cargo lift. It serves both internally to move large volumes of cargo and externally, being capable of lowering a platform to ground level when the ship is planetside. The docking area also has a smaller personnel lift and stairwell. Larger cargo store-rooms are found toward the core of the vessel, so that a hull piercing will only affect smaller volumes of the ship. The sole exception to this is deck 3 forward, where a large room was created in the event the ship needed a forward missile room.

Small craft dock on deck 5 (bottom deck) docking area, approaching from underneath. Each side of the ship has three slips for ships launches, and another area with docking catwalks capable of handling 8 standard shuttles. These are adjustable, and could possible handle fewer larger vessels than standard 20-ton shuttles. While Deck 1 is configured similarly, it usually foregoes secondary craft, replacing the area instead with cargo capacity (reflected in the stated stats). Otherwise, double the number of small craft, and reduce internal cargo capacity by 1260 tons.

The fore of the ship has 3 main cross-corridors on deck 3, 2 on decks 2 and 4, and no cross-ship access on decks 1 and 5. The central cross-corridor on deck 3 leads to the forward landing gear at the center of the ship (area is marked with paler tiles). When on the ground, there is a personnel lift that runs down the forward landing gear to ground level.

Aft of the foremost cross corridor on deck 3 is the mess hall. Just aft of this (and just fore of the landing gear) is the ship's galley, capable of holding 120 people at once. Forward of the foremost cross-corridor, center area is crew quarters and at the very fore, the ship's bridge.



## Articles

### ***Beyond Extreme Complexity***

(by Lynn LeFey)

I posted something similar to this on Waves in the Black, but I think it needs to be reiterated. Table 4.11 in the core rules covers Ship Complexity, but is not complete. Since we see cost jump every six points, the table ought to be extended to account for very large, very complex ships. Otherwise, people feel free to cram in every advantage, max out skill points, and give their d12 strength ship d12 agility as well, secure in the knowledge that they've maxed complexity, and all the extras are freebies.

Here's how I calculated it...

Jumping from Average to High is 160% increase. Jumping from High to Very High is 150% increase. Jumping from Very High to Extreme is 180%. HOWEVER, if you assume Extreme is an amalgum of 'everything above Very High', and calculate as each level being 150% increase, the next two categories above Very High would be x3.6 and x5.4, which average to x4.5. So, every category above Very High should be 150% what the last was. I rounded to the nearest tenths for simplicity.

So...

Attributes	Complexity	Cost
50-54	Extreme	x3.6
56-60	Severe	x5.4
62-66	Budget-Busting	x8.1
68-72	Bankrupting	x12.2
74-78	Wicked	x18.2
80-84	Foolish	x27.3
86-90	Agonizing	x41
92-96	Absurd	x61.5
98-102	Ludicrous	x92.3
104-108	Inconceivable	x138.4
110-114	Bistro-Math	x207.6

Yes, I gave the categories increasingly silly names, but the point remains; there should not be unchecked complexity in starships at the high end. If we assume a cap of d12 for attributes, this table ought to handle everything (maxing out attributes, assets, and skills). If not, feel free to add categories beyond the 114 range, with each one costing 150% what the previous cost.

### ***Cargo and Passenger Capacity***

(by Lynn LeFey)

This table is an extrapolation of the statement in the rules of ships' cargo capacity being between 25% and 80% depending on ship's strength. For example, a ship of d6 strength of 2000 tons

would have 1000 tons (50%) of its tonnage available for cargo and passenger space.

Ship Strength	Cargo tonnage percentage
d2	25%
d4	40%
d6	50%
d8	60%
d10	70%
d12	80%

### ***Keep Her Flying***

(by Buscadero)

The longer my crew travels the black, the more operational responsibility I hand over to the players and their characters. Currently, I'm pondering over the question of how the monthly maintenance rolls made by Yumei, our mechanic, to take care of the ship could be made more self-dependently. I also want to give her additional time in the spotlight because, frankly, my crew's ship isn't damaged often. The following variants were thought up by Davy Jones and yours truly.

If you want to add a little detail to the maintenance that's regularly performed by your crew's mechanic, you may now choose the set of rules you like better. If you don't want to include excessive detail, please carry on using the existing rules!

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#### **Variant Rule 1**

The ship requires constant upkeep - changing filters, replacing worn out or damaged parts, cleaning and lubricating and adjusting every moving piece. Maintaining a ship is a complex action. The Difficulty Threshold depends on the period of time that has elapsed since the last maintenance roll. The basic difficulty is EASY. However, every day after the first during which the mechanic does not roll the ship's Vitality + his own Mechanical Engineering / Maintenance to keep the ship in good condition, the Difficulty Threshold is increased by +2. Each roll reflects about one hour's work. Moreover, each roll consumes spare materials such as wire, metal sheeting, springs and lubricants. The cost of the spare parts that are consumed by each roll is determined by dividing the ship's monthly maintenance cost by 10<sup>1</sup>. As a matter of course, a botch rolled on this complex action does not count and increases the difficulty by one category. Rolling two botches results in automatic failure. Spare materials are consumed all the same.

*Example:* Hotaru has a monthly maintenance cost of 320 credits; that's 32 Credits per maintenance roll. After a three-week journey from Ariel to Persephone, she is in need of maintenance. The game master assesses the difficulty as HARD (55), and requires her mechanic, Bester, to roll Hotaru's d8 Vitality and to add his own d6 for Mechanical Engineering / Maintenance. After eight rolls (8 man-hours), Bester reaches the threshold. The cost of the spare materials he spent is 256 Credits.

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As you can see the mechanic's player may decide by himself when to make the maintenance rolls. If the character idles away

the days, however, the Difficulty threshold will increase and he will have a great deal to do at the end of the month. That is to say that the rules regarding missed maintenance do still apply.

### Variant Rule 2

This variant requires that either the mechanic's player or the GM keep a running tally over the course of play. Whenever the ship is dirtside for enough time to perform maintenance (as determined by the GM), the mechanic makes a daily roll, representing at least "a couple hours" worth of work, toward a Hard (55) complex difficulty threshold. At the end of the calendar month, the total of the mechanic's rolls are compared to the table. If the total is more than 20 points below the threshold, the next month's maintenance costs are doubled. If the total is less than the threshold, but more than 20 points below it, the next month's maintenance costs are multiplied by 1.5. A success indicates the next month's maintenance costs are as listed, and beating the threshold by 20 points indicates that the next month's costs are halved.

Total	Result
< Threshold-20	Cost x 2
< Threshold	Cost x 1.5
>= Threshold	Cost x 1
>= Theshold+20	Cost x 0.5

All the rules for complex actions apply, meaning if one day's rolls are botched, the difficulty goes up one category.

This means that Bester will usually need 8 days each month to keep up with maintenance. Twice a week isn't always possible out in the black.

<sup>1</sup> Obviously, dividing monthly maintenance cost by 10 is a simplification. As Davy Jones has pointed out below, you may want to divide monthly maintenance cost by 7 as this is more reflective of the final values determined when using the existing rules.

Because my crew just bought a new boat, I had to deal with one of the problems many of us face once again: *How much does it cost to repair a damaged ship?*

After long consideration, I have decided not to use the rules I posted almost a year ago because they only give a general idea and don't take each ship's distinct characteristics into account. Instead, I've tried to come up with a way to calculate the cost to repair a ship based on its attributes.

First off, allow me to spell out my basic assumptions:

- When a ship's Wound damage equals or exceeds a number that is double its total Life Points (that are based on its Strength + Willpower), the ship is basically a write-off. That is, it is so badly damaged that it is more cost-effective to buy a new boat.

- The Vitality attribute represents a ship's repair and maintenance status. The higher a ship's Vitality is, the easier it is to repair and the more cost-effective these repairs are.

To determine the cost to repair one Wound, divide the ship's purchase price by a number equal to twice its Life Points. Since repairing a ship that has a high Vitality is cheaper than repairing one that has a low Vitality, multiply the quotient as follows:

Vitality	Multiplier
d2 or less	x 2
d4	x 1.5
d6	x 1
d8	x 0.66
d10	x 0.5
d12	x 0.33
d12+d2 or more	x 0.25

$$\text{Purchase Price} / (2 \times \text{Life Points}) = A$$

$$A \times (\text{Multiplier}) = \text{Cost to repair 1 Wound}$$

*Example:*

Serenity has taken 3 Wounds. As per table 5:12: Healing Difficulty & Wounds, Kaylee must succeed at a complex action against an EASY Difficulty Threshold to repair her. The cost of spare parts is 726 credits:

- 3.872 credits (Serenity's purchase price) / 16 (twice her Life Points) = 242 credits
- 242 credits x 1 (Vit d6) = 242 credits
- 242 credits x 3 (Wounds taken) = 726 credits

Here are the rules with which my mechanic handles repairs. They differ slightly from the rules given in *Chapter 5: Keep Flyin'*.

### Damage and Repair Difficulty

Damage	Repair Difficulty
1 - 3	EASY
4 - 6	AVERAGE
7 - 9	HARD
10 - 11	FORMIDABLE
12 - 15	HEROIC
16 - 19	INCREDIBLE
20 - 23	RIDICULOUS
24 or more	IMPOSSIBLE

**Stun** damage interferes with a ship's electrical and computer systems, shorting them out, rather than cause physical damage. Whenever a ship suffers Stun damage, simply use the amount of Stun points dealt to determine the Difficulty of the Attribute + Technical

Engineering / Technical Repair Skill roll, as indicated on the table above. If this standard action is successful, all Stun points (and Shock points if the ship suffered Stun beyond its capacity) are repaired. Since no spare parts are spent, it does not cost money to repair Stun damage.

**Wounds** must be repaired manually. Whenever a ship suffers Wounds, use the amount of Wounds dealt to determine the Difficulty Threshold of the Attribute + Mechanical Engineering / Mechanical Repair Skill rolls, as indicated on the table above. This is a complex action with a time increment of one hour. If the Difficulty Threshold is reached, all the ship's Wounds are repaired. If there isn't enough time to finish repairs, assume that one Wound is repaired every time the skill rolls' result is increased by five. If a starship's total Wounds equal a number that is double its total Life Points, it cannot be repaired.

*Example:*  
Kaylee is engaged in a lengthy repair: Serenity has suffered 12 Stun and 10 Wounds. First off, Kaylee makes an Intelligence + Mechanical Engineering / Mechanical Repair Skill roll against a HEROIC Difficulty to repair the damage that was done to Serenity's electrical and computer systems. She succeeds and all 12 points of Stun damage are immediately repaired. Then she devotes herself to repair Serenity's Wounds. This is a complex action with a time increment of one hour. Since Serenity has suffered 10 Wounds, the Difficulty Threshold to repair her is FORMIDABLE. It takes Kaylee six Intelligence + Mechanical Engineering / Mechanical Repair Skill rolls to reach the threshold. She has worked for six hours and spent 2.420 credits worth of spare parts.

## ***Makin' Money and Getting'***

**By** (by Buscadero, based on the work of Shepherd Scott)

# 赚得财

## Makin' Money

Each character may make one roll to attract work to the ship. This roll represents their best effort at finding paying jobs. There are two types of work: taking on passengers and transporting cargo. The characters may assist one another indirectly. That is to say more than one character may make the same roll but only the best result is used. A smart captain makes sure that at least one person is assigned to

drum up each type of work.

The Difficulty of a roll to attract jobs depends on where the characters try to find customers:

- Core: EASY (3)
- Border: AVERAGE (7)
- Rim: HARD (11)

The PCs' Skills are modified by their destination, by how close they want to sail to the wind (i.e., the legality of the job), and by the PCs' or their ship's Traits:

### *Destination:*

- Goin' to the Core: +1 step Skill bonus
- Goin' to the Border: ±0 Skill step
- Goin' to the Rim: -1 Skill step

### *Job's Legality:*

- Drummin' up illegal cargo or passengers: -1 Skill step

### *Traits:*

- PC has the ALLURE (Minor / Major) Asset: +2 step Skill bonus
- PC has a GOOD NAME (Minor / Major): +2 step Skill bonus
- PC is a REGISTERED COMPANION (Minor / Major): +2 step Skill bonus
- PC is SWEET AND CHEERFUL (Minor): +2 step Skill bonus
- PC has a TRUSTWORTHY GUT (Minor / Major): +2 step Attribute bonus
- PC is BRANDED (Major): -2 step Skill penalty
- PC is CRUDE (Minor): -2 step Skill penalty
- PC has a LEAKY BRAINPAN (Minor / Major): -2 / -4 step Skill penalty
- PC is a STRAIGHT SHOOTER (Minor): -2 step Skill penalty
- PC is as UGLY AS SIN (Minor / Major): -2 step Skill penalty
- Ship has the ALLURE (Minor / Major) Asset: +2 step Skill bonus
- Ship has a GOOD NAME (Minor / Major): +2 step Skill bonus
- Ship is BRANDED (Major): -2 step Skill penalty
- Ship has SEEN BETTER DAYS (Minor / Major): -1 / -2 step Skill penalty
- Ship is as UGLY AS SIN (Minor / Major): -2 step Skill penalty

### **Takin' on Passengers**

Passenger fare usually brings in some easy money, but competition for passengers is often fierce. Whether somebody chooses your ship depends on your approach to recruiting, their personal tastes, and the destinations your ship can go. Different approaches to recruiting require different rolls, but the result is the same.

- *Willpower + Influence / Appropriate Specialty* for legal passengers.

- *Willpower + Influence* or *Covert / Streetwise* for illegal passengers

	<b>Legal Passengers</b>	<b>Illegal Passengers</b>
<b>Botch</b>	No Passengers	No Passengers, reported to the Feds
<b>Failure</b>	(0.25 x Passenger Capacity) passengers (d8) Credits per passenger per day	(0.25 x Passenger Capacity) passengers (d12) Credits per passenger per day
<b>Success</b>	(0.5 x Passenger Capacity) passengers (d10) Credits per passenger per day	(0.5 x Passenger Capacity) passengers (d12+d2) Credits per passenger per day
<b>Extraordinary Success</b>	(1 x Passenger Capacity) passengers (d12) Credits per passenger per day	(1 x Passenger Capacity) passengers (d12+d4) Credits per passenger per day

When determining passengers, round fractions down.

#### Transportin' Cargo

Hauling cargo is the bread and butter of most boats, but sometimes it is feast or famine. A captain always takes a risk, no matter what kind of cargo he deals with. Legal cargo is usually the reliably profitable but requires diplomatic talent. Illegal cargo is not always plentiful and always risky, especially because the value of the cargo is usually variable and fluctuating.

- *Willpower + Influence / Appropriate Specialty* for legal goods.
- *Willpower + Influence* or *Covert / Streetwise* for illegal goods.

	<b>Legal Cargo</b>	<b>Illegal Cargo</b>
<b>Botch</b>	No Cargo	No Cargo, reported to the Feds
<b>Failure</b>	(0.25 x Cargo Capacity) tons (d2/10) Credits per ton per day	(0.1 x Cargo Capacity) tons (d6/10) Credits per ton per day
<b>Success</b>	(0.5 x Cargo Capacity) tons (d4/10) Credits per ton per day	(0.25 x Cargo Capacity) tons (d8/10) Credits per ton per day

<b>Extraordinary Success</b>	(1 x Cargo Capacity) tons (d6/10) Credits per ton per day	(0.5 x Cargo Capacity) tons (d10/10) Credits per ton per day
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## 度过财

### Gettin' By

Crewmembers want a monthly salary because they have extra personal needs of their own beyond room and board. They need clothing, entertainment during shore leave, fresh fruit, etc. The GM may ask every character to make an AVERAGE (7) *Willpower + Discipline / Appropriate Specialty* roll to determine personal expenses per month.

<b>Botch</b>	Spendin' like there ain't no tomorrow: spend full pay
<b>Failure</b>	Splurgin' a mite more than you ought to: spend 0.75 x pay
<b>Success</b>	Livin' lean: spend 0.5 x pay
<b>Extraordinary Success</b>	A gorram model of self-restraint: spend 0.25 x pay

### Optional Rule: Starship Sensors (by Buscadero)

Operating starship sensors requires a roll using the ship's Alertness and the operator's Technical Engineering / Sensors.

All sensors have three modes: *passive*, *active*, and *search*.

If the sensors are set to *passive* mode and simply receive information about the immediate vicinity (out to Medium range), the operator's Skill is penalized by -1 step. Gathering data from sensors in *passive* mode is a free action. In *active* mode, sensors actively send out pulses in all directions to gather information about the ship's surroundings. Using sensors in *active* mode is an action.

A sensor in *search* mode sweeps a specific area (i.e., front, left, right, or rear) for information. This grants a +1 step Skill bonus and is also an action.

The Difficulty to locate an object with sensors depends on the object's size and the range from the ship.

### Size

Strength	Difficulty
d2	HARD (13)
d4	HARD (11)
d6	AVERAGE (9)

d8	AVERAGE (7)
d10	EASY (5)
d12	EASY (3)

### Range

Range Category	Difficulty Modifier
Point Blank	-2
Short	±0
Medium	+2
Long	+4
Extreme	+6

Moreover, special situations warrant special modifiers. Always remember that it's hard to be sneaky in the Black, though.

Situation	Difficulty Modifier
Target is running silent	+8
Target is concealed behind massive body	+4
Target is using passive sensors	±0
Target is using active sensors	-4

If the target has stealth programming (i.e., the Covert Skill), roll the Skill die type and add the result to the Difficulty to locate it.

If the sensor operator is extraordinarily successful, he is able to ferret out the ship's transponder code or its pulse beacon signature, and may be able to call up the ship's registry on the Cortex. That is, if he makes an AVERAGE Intelligence + Technical Engineering / Communication Systems Skill roll. However, many ships, especially undercover military vessels, will have falsified transponder identities.

## Turrets and magazines (by

Limerickcot)

My latest post for the Hounddog made me relook at turrets and magazines in Serenity. I had a look around but couldn't find a topic about this here (I don't know if there was on waves).

Anyway I came up with this:

### Magazines

The original magazine rules for Serenity state that the magazine weighs the total weight of all warheads, divided by 2000 with double that for electromagnetic rounds.

Conventional rounds weigh double the warhead weight (i.e a 50lb round weighs 100lb).

As the guns weigh the same, regardless of the type of round fired, there is something lacking here.

A recent extrapolation shows how ridiculous this

can get at lower levels.

Jubal Early's ship has been fitted with a 50lb electromagnetic cannon in a 3.5 ton cargo hold. The gun weighs in at 2 tons, leaving 1.5 tons (3000 lb's). If all that is devoted to a magazine, then the magazine mass would weigh 3000 / 2000 or 1.5 lb's. EM magazines weigh double so that makes 3lb's in weight – to shift a combined weight of 1.5 tons!

To make it more equitable, the solution is to use the same rules as for internal tonnage – 1/10th of the weight of the magazine's total rounds is taken up with the magazine machinery & racking. So in the example above, the magazine now weighs in at 300 lb's for conventional rounds & x 2 for EM rounds = 600 lbs. This fits in a lot more closely with real mechanics and still keeps it nice and simple for game mechanics.

### Turrets:

Guns (and missiles) can be mounted in turrets. However, there are mass penalties involved.

A turret has to be able to traverse from side to side and elevate its gun. Naval turrets weigh far more than the guns they house (they seem to be approximately massing at least 10 times the weight of the gun housed).

But we're talking about the future here, with stronger and lighter materials. So lets make it simple.

Base weight of a turret is double that of the gun(s) PLUS its magazine.

(Magazines or on mount ammo not included in the turret weight are restricted in their rate of fire due to the turret having to reset its original settings to match back up with the magazine feed, reload and then reaquire its target)

If a slaved radar control is attached to the gun (I suggest adding in step's to gunnery) then this weighs half the weight of the gun per step added.

These assume an automated turret. If you want to man your turret then assume an additional 4 tons per person. On really big guns with massive magazines you can drop the magazine weight from the turret weight by replacing them with crew to do the loading. Just remember you've got to find them crew quarters in the main part of the ship as well.

Armour: Instead of using up 5% of weight, wound armour adds 10% tonnage per point installed (armour plus the mechanisms needed to move the extra weight).

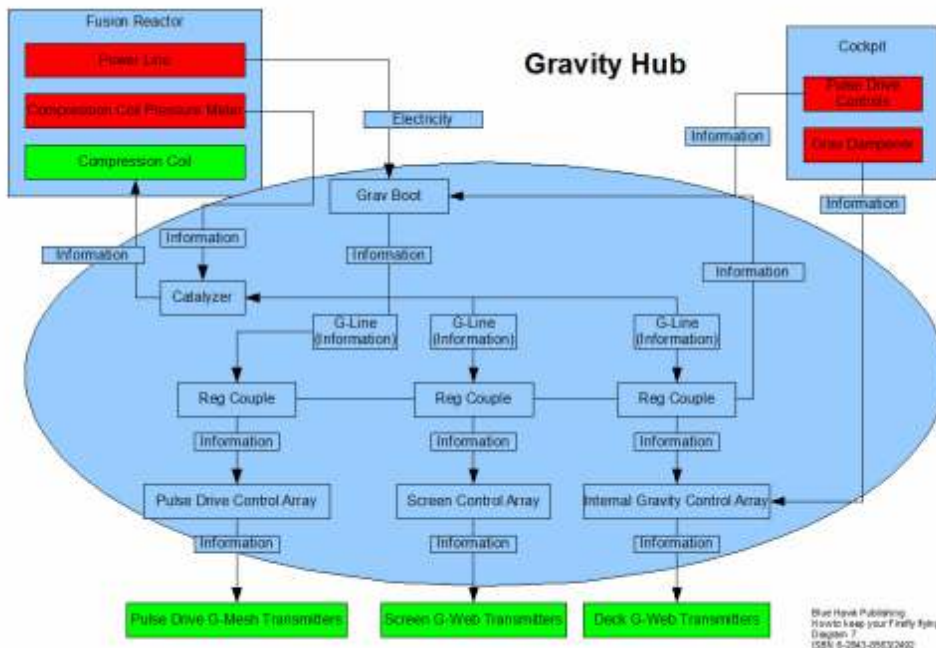
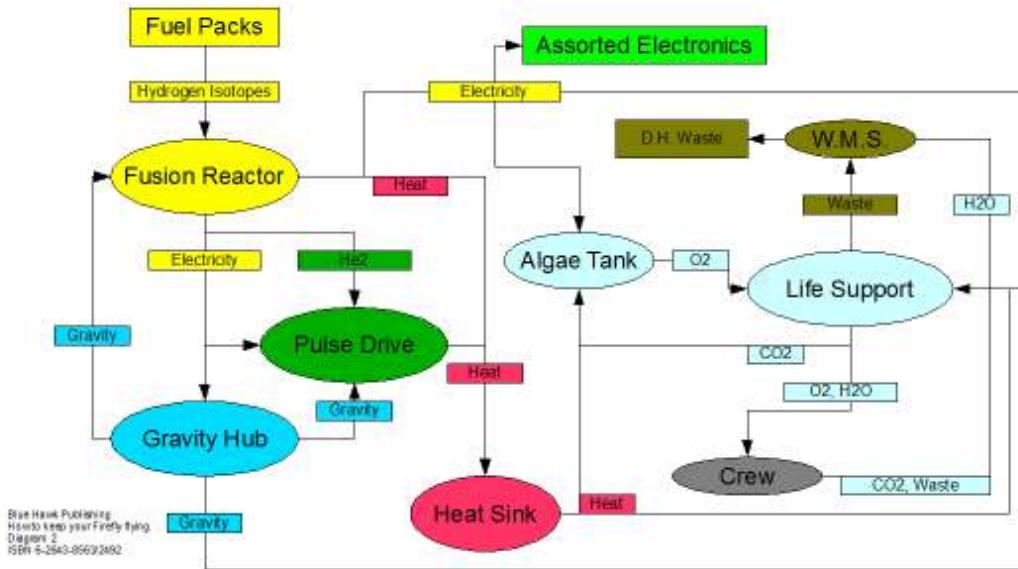
I'm sure some people will think that this makes

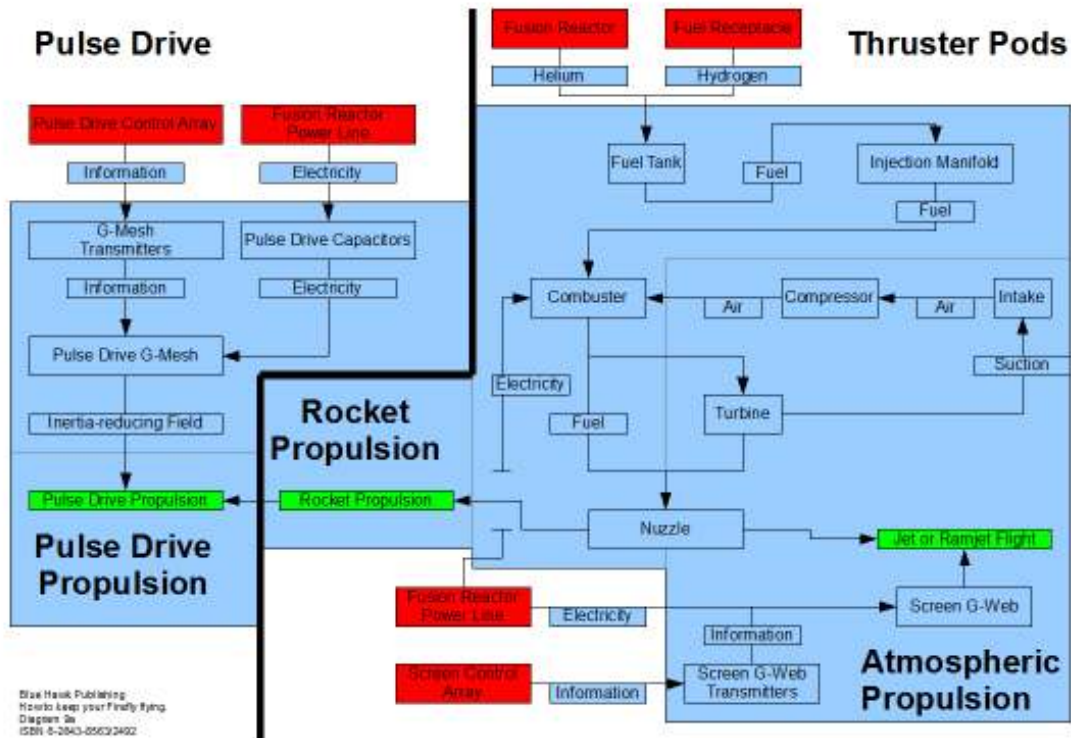
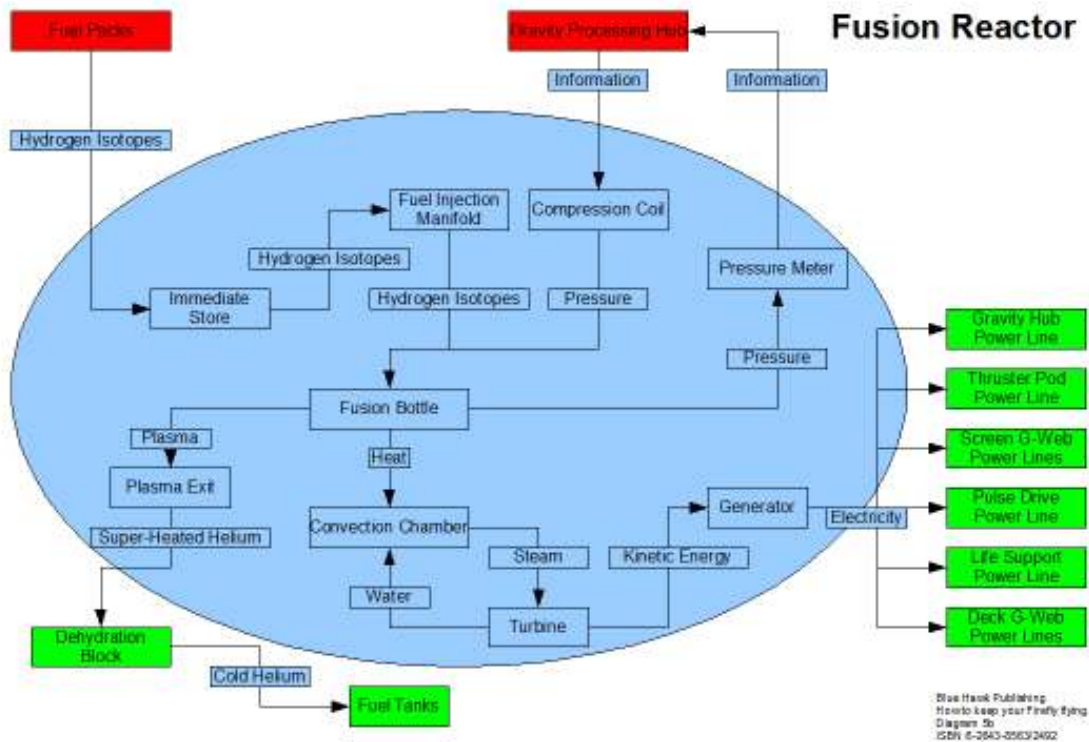
turrets far too heavy. For comparison therefore I'd refer them to the 76mm OTO Melara gun. Firing a total projectile weight of 14 lb's and carrying about 80 rounds, the whole lot weighs in at 8 tons (short).

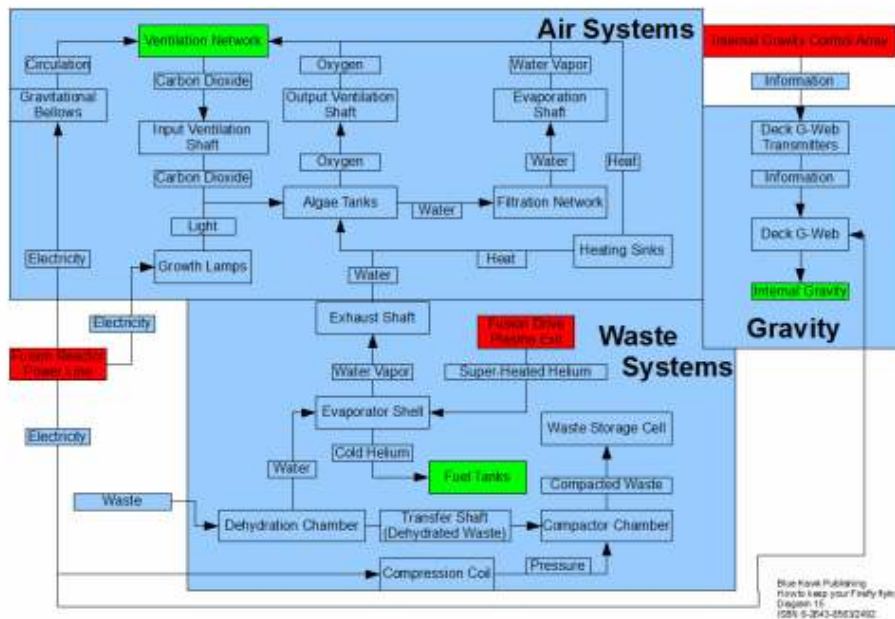
Just some very late night musings on my part. As usual I'm sure other folk have their own thoughts on this.

**Firefly Technical Prints** (by Rubberduck,

based on work by Pawlicki's Mechanics 101 ( <http://www.fireflyrpg.com/rpg/props.html> ) )







**What all these various parts do...**

**Artificial Gravity and Screening:** These two concepts both work off the basic concept that quantum gravitation (gravity between atoms) is based on magnetic polarities. Artificial gravity effects are producing by using arrays of electromagnets to influence these polarities. Screening is merely the use of artificial gravity to negate normal gravity. The hull and decks of modern ships are lined with electromagnets that, given the correct amount of power, can create gravitational fields both to counter existing ones (screening) and creating new ones (artificial gravity). The "gravity drive" found in small vessels is only a single major component of the entire system (which is distributed throughout the ship). This part is known as the gravity hub. It's primary purpose is to complete the complex mathematical calculations required to determine the pulses of energy that should be sent to each of the electromagnets throughout the ship. In theory, it can be engineered and modified to allow complete manual control of the gravitational fields in the ship, but most ships do not support this feature by default.

**Fusion Reactor:** The fusion reactor is the power source for the ship. By using a compressed artificial gravity field, it creates the pressure of a star and fires superheated hydrogen isotopes (specifically deuterium and tritium), which combine to form a helium atom and a free neutron that contains enormous energy (more than enough energy required to combine two more atoms). Ultimately, it's a self contained power generation system that requires hydrogen fuel and exhausts helium. This energy is used to superheat a plasmatic substance that is used as a medium (or a vector fluid) to heat up water in another chamber. The water evaporates, and the steam pressure turns a turbine that generates electricity. The hydrogen isotope fuel is provided by fuel cells which needs to be replaced every once in a while.

**Immediate Store:** Where a small store of hydrogen is kept for the immediate fuel needs of the fusion reactor. Rarely more than a few milligrams, and thus not enough to create any major explosion.

**Fuel Injection Manifold:** Where the hydrogen is injected into the fusion bottle. If the Injection Manifold breaks off, you'll have pressurized plasma spurting into the engine compartment. Not a very healthy thing for anyone that might get hit, and liable to start fires to boot.

**Fusion Bottle:** Where the actual fusion takes place.

**Compression Coil:** Wrapped around the fusion bottle, these temperature resistant coils provides the gravity field, which makes the fusion process possible. Without the gravity field of the compression coil there is no fusion, and thus no power.

**Pressure Meter:** Measures the fluctuating pressure of the fusion bottle, sending the information to the Catalyzer so that it can compensate. Without a pressure meter, the catalyzer will slowly decrease the pressure in the fusion bottle, shutting of the fusion process. Much more dangerous is a malfunctioning pressure meter, which may send false information to the catalyzer. See more about this under the catalyzer.

**Convection Chamber:** Wrapped around the fusion bottle, outside of the compression coil, in the convection chamber water is heated to steam, that is sent on to the turbine. A crack in the convection chamber will fill the engine compartment with blistering steam.

**Turbine:** The steam of the convection chamber, is used to drive a turbine, which in turn drives a generator. A malfunctioning turbine means no power. A cracked turbine produce the same blessings as a cracked convection chamber, though the steam won't be quite as hot.

**Generator:** The generator provides electricity to all of the ship's systems. A malfunctioning generator means no power. Failure in the wiring might make the entire engine housing a shocking hazard. And with the power levels we're talking about here, it's not just a gentle zap.

**Plasma Exit:** Fused helium is removed from the fusion bottle, through the plasma exit, and sent on to the evaporator shell of the dehydration block (see life support). If the plasma exit falls off, you suffer the same hazards as with the fuel injection manifold.

**Gravity Hub:** Many of the ship's systems are reliant on the screening effects and artificial gravity controlled from the gravity hub. In addition to providing artificial gravity on the ship, it creates the pressure necessary to create the fusion reaction, and the inertia-reducing effect necessary for the function of the pulse drive. This also sucks a huge amount of power, understandably. Without the gravity hub, the fusion reactor will shut off, and that results in losing all power, air ventilation, and further systems. The hub is extremely difficult to repair, being largely electronic and impossible to cold start without some form of power source. For this reason, a wise mechanic always keep a starter battery somewhere in the engine room.

**Grav Boot:** The grav boot is the main processor of the gravity hub, acting as the main hub for all information running through the gravity hub. A broken grav boot means no gravity, power, or interplanetary propulsion. You can pretty much forget fixing it yourself, unless you have a fully supplied workshop for working with microelectronics, and the skill to do so well.

**Catalyzer:** The catalyzer controls the compression coil, strictly controlling the fusion rate in the fusion reactor by varying the pressure within the fusion bottle. A broken catalyzer will cause the immediate shutdown of the compression coil, though the resulting loss of pressure can cause a "hick-up" in the fusion process. Such a hick-up will cause (expensive) damage to the fusion bottle, but isn't dangerous. On the other hand, if the catalyzer is malfunctioning (or fed false information) rather than broken, it may send false information to the compression coil, which might cause the pressure to rise high enough in the fusion bottle to pop either the plasma exit, or fuel injection manifold. Plasma hilarity ensues.

**G-Lines:** Three separate lines run to the reg couplers for the PDCA, SCA, and IGCA. A broken Gline means the shutdown of the relevant gravity control array.

**Reg Couple:** The reg couplers monitor the orders of the grav boot, double checking to make sure that the ordered gravity fields are not of a strength or composition that might damage the ship. The grav boot is rarely wrong however, and the reg couplers can be finicky, so some engineers remove them entirely. A malfunctioning reg couple means the shutdown of the relevant gravity control array.

**Pulse Drive Control Array:** This array translates the orders of the grav boot into separate orders to each of the transmitters in the pulse drive G-mesh. A broken PDCA merely means that the pulse drive doesn't function. A malfunctioning PDCA can cause all kinds of damage, as it rips the ship apart with the G-mesh's gravity fields. Though usually it simply stresses the ship's frame, increasing maintenance needs.

**Screen Control Array:** This array translates the orders of the grav boot into separate orders to each of the transmitters in the screening G-web. A broken SCA means that the ship has no anti-grav. A firefly can't land without a screen, though crashing is a possibility. A malfunctioning SCA usually just results in shaky (potentially very shaky) ride through the atmosphere.

**Internal Gravity Control Array:** This array translates the orders of the grav boot into separate orders to each of the transmitters in the deck G-web. A broken IGCA

means that there is no internal gravity. A malfunctioning IGCA can be even more fun.

**Grav Dampener:** Connected to the controls, the Grav Dampener analyses the maneuvers of the ship, and sends orders to the IGCA to compensate. When traveling at pulse drive speeds, the grav dampener is utterly important, since at those speeds the crew will suffer lethal G-forces, if any maneuver (including slowing) is attempted without it. The ship will automatically lock its controls, if it detects a broken or malfunctioning grav dampener.

**Thruster Pods:** The thruster pods, of which the Firefly has two, are four-part engines. In atmo, the basic propulsion is provided by bringing in air, compressing it, superheating it, then letting it out the back of the engine. Since hot materials expand, it leaves at a speed considerably greater than the speed at which it entered, producing a force which then, by Newton's Third Law of Motion, pushes the engine forwards. This concept is called a ramjet engine. Ramjet engines are extremely efficient, but will only work if you're already traveling at a certain speed roughly equal to half the speed of sound, and are inefficient unless going even faster. To get up to that speed, the also possesses a turbine. With the turbine rotating, air is sucked in at sufficient pressure to run a ramjet-like process on it and do the same thing. This requires a lot more fuel, and thereby should be used as little as possible. Once you get up to a sufficient speed, the turbine blades fold back and the ramjet process takes over.

Once you pass Mach 1 or so (depending on design), forces of compressed air start bouncing around inside the ramjet engine due to the compression, causing unwanted stress just about everywhere. The engines reconfigure somewhere within the transonic range to become scramjet engines. Scramjet engines are merely ramjet engines with a slightly different shape so as to allow supersonic air to pass through efficiently. They can usually get you up to Mach 28 or so, which is more than enough to break the gravitational pull of the planet. The final configuration of the thruster pods is a more optional use whilst in atmosphere. When in the rocket mode, the front of the engine closes, and superheated gases (primarily a hydrogen/oxygen mix) are shot out the back. This configuration works outside of atmo, but requires much more fuel than the previous three configurations.

**Intake:** When flying at sub-ramjet speeds, blades at the intake are driven by the turbine to suck in air. When changing to rocket mode, the intake closes.

**Compressor:** In the compressor chamber the air is compressed, before being forced into the combustion chamber.

**Combuster:** In the combustion chamber, the air is mixed with fuel, and ignited. Though this process works more or less by itself, it does require an electric spark to start.

**Turbine:** Placed behind the combustion chamber, the turbine is driven to turn by the superheated gases, thus drawing in more air through the intake.

The malfunction of any of the above causes a great decrease in, or even entire loss of, speed. The ship will not fall down, however, thanks to the Screening G-Web.

**Nuzzle:** From here the superheated gases are spurted out to provide thrust. The shape of the nuzzle can change slightly, to allow for minor correction changes without rotating the entire pod. A broken nuzzle may cause the ship to "drag" in a specific direction, requiring the pilot to compensate. An entirely broken nuzzle requires the pilot to rotate the entire pod to maneuver,

greatly reducing his ability to perform subtle maneuvers.

**Fuel Receptacle:** The receptacle through which the ship is refueled.

**Fuel Tank:** Here the various gases used by the thruster pods are stored.

**Injection Manifold:** The injection manifold spurts the fuel as a mist into the combustion chamber. The breakage of any of the following can cause the fuel to start escaping, and if that is followed by a spark or open flame, a great explosion follows that.

**Screening G-Web:** The screening g-web works to cancel out the gravity of bodies below the ship.

**Screen G-Web Transmitters:** Dozens of transmitters are distributed along the length and breadth of the ship. These receive orders from the SCA, and in turn order the individual electromagnets in the G-web.

**Screen G-Web:** The actual electromagnets are found along the bottom of the ship, and are arranged in groups around a G-web transmitter. Due to the generally uniform power of planetary gravity fields, all magnets in the same group run at the same power. The failure of one or more of the transmitters or electromagnets will put extra strain on the rest. If enough fail, the ship will start to fall, though unless the entire web has been lost, it will be at less than full gravity.

**Pulse Drive G-Mesh:** One half of the pulse drive, with the other half being the thruster pods. The pulse G-Mesh occupies the trademark bulb around the Firefly's engine.

**G-Mesh Transmitters:** There are 564 transmitters in the pulse drive's G-mesh, each sending separate orders to up to fifteen separate magnets of the G-mesh.

**Pulse Drive G-mesh:** The G-mesh is a precisely positioned mesh of roughly six thousand electromagnets, arranged in the Firefly's bulb in such a manner that their fields will be able to extend to the entire ship. When properly employed, the G-mesh produces an inertia-reducing field affecting the ship. Though there are service corridors inside the bulb, they should not be used or even opened while the mesh is active. The G-mesh produces heavy radiation while active, and while the rest of the ship is shielded to protect against this radiation, anyone inside the bulb would come out nice and crisp. Security measures makes it impossible to open the hatches while the mesh is active, and impossible to start the drive while the hatches are open.

**Pulse Drive Capacitors:** These capacitors stores the energy needed for the G-mesh's function. In addition to the immediate energy needs of the G-mesh, the capacitors store enough extra energy to allow for a gradual, 14 hour reduction of speed in case of loss of power, since an immediate loss of the inertia-reducing field, and following loss of speed, might have lethal consequences, if other gravity systems are broken. If this emergency breaking takes place, while the gravity systems are unable to compensate, the crew will suffer 5Gs of deceleration for the entire breaking period. Very uncomfortable, but survivable.

**Air systems:** The air systems replaces the old air, with fresh new air. It also serves to keep the ship's interior at a comfortable temperature.

**Ventilation Network:** The ventilation network runs throughout the ship, circulating the air.

**Gravitational Bellows:** The gravitational bellows create weak local gravity fields to draw the air through the ventilation network. Since the bellows always work

at the same power, they are not reliant on the gravity hub, though they do need power.

**Input Ventilation Shaft:** This ventilation shaft draws air from the ventilation system and deposits it in the algae tanks, to replace the carbon dioxide with oxygen.

**Algae Tanks:** In the algae tanks, algae transforms carbon dioxide, heat and light into oxygen and more algae. Every once in a while you'll need to remove some of the algae to avoid overcrowding. You can eat them, but most spacers prefer even protein paste. If the life support system goes offline, the algae can usually survive for two days on the carbon dioxide already in their tanks. However, without the ventilation network working, the oxygen produced will be inaccessible. If the algae should die, you'll need to introduce entirely new algae into the system, and let them grow to sufficient numbers, before you get a proper oxygen exchange going.

**Growth Lamps:** Set into the top of the algae tanks, they provide light for the algae.

**Heating Sinks:** The heating sinks both provide heat for the algae tanks and also heats the air of the ventilation network to comfortable levels.

**Output Ventilation Shaft:** This draws oxygen from the water, reintroducing it into the ventilation network.

**Filtration Network:** Draws water from the tanks, and uses it to give the air in the ventilation system a comfortable level of moisture.

**Waste Systems:** The waste systems draw the water out of the waste, and then compress it.

**Dehydration Chamber:** The waste is first introduced into the dehydration chamber, where a semipermeable membrane draws the water into the evaporator shell.

**Evaporator shell:** Positioned around the dehydration chamber, and encircled by pipes bearing super-heated helium from the fusion reactor, the water drawn from the dehydration chamber is evaporated, and introduced into the algae tanks.

**Compactor Chamber:** Waste is transferred from the dehydration chamber to the compactor chamber, where it is compressed, and sent into the waste storage cell.

**Compression coil:** A compression coil encircles the compactor chamber, compacting the waste. Since the compression coil is always used at the same power when it is on, it is not connected to the gravity hub.

**Waste Storage Cell:** The dehydrated, compacted waste is stored here, until it can be removed at a spaceport. Some captains avoid the waste disposal fees, and break alliance law by simply ejecting the waste into space where it becomes a navigational hazard.

**Internal Gravity:** What keeps you sticking to the deck.

**Deck G-Web Transmitters:** Every few feet there is a G-web transmitter in the deck, controlling the g-web electromagnets around it.

**Deck G-Web:** The electromagnets are embedded in the deck every few inches, and are arranged in groups around a G-web transmitter. Due to the gradient gravity fields that maneuvering can impose, the electromagnets in a same group can be ordered by the transmitter to gradate as well.

**Heat Sinks:** Many of the Firefly's systems produce heat, especially the fusion drive and engines. If the heat was allowed to simply spread throughout the ship, it would soon become dangerously hot. Luckily the heat can be stored in the ship's heat sinks, and released via superheated steam into the atmosphere when the ship is planet-side.

**Links to other resources**

The following are links to other websites outside of the [www.cortexsystemrpg.org](http://www.cortexsystemrpg.org) site, or links to articles available for download that are simply too large to include in the body of this work. Most are PDF files of some size in their own right.

**Jobs for Hire printout for players**

<http://cortexsystemrpg.org/index.php?action=download;topic=1695.0;attach=681>

**Josh Awtry's Firefly site**

<http://www.fireflyrpg.com/RPG/index.html>

**Sailing the Black, Ship design and Performance (by Electric Badger)**

<http://www.geocities.com/electricbadgeraccessories/SailingTheBlack.pdf>

**Scott Metz' RPG Central**

[http://www.geocities.com/scott\\_metz/](http://www.geocities.com/scott_metz/)

**Serenity Ship Yards (ship calculator)**

<http://www.webaspire.com/firefly/>