

ENTROPY

STARSHIP REPAIR MANUAL

FRIGATE - GYPSY

INTRODUCTION

The Gypsy class starship was first designed and built well over a thousand years ago along the rim of Solomani space. Although far outclassed by other vessels of its era technologically, the Gypsy class did maintain an advantage through its ease of manufacture. Being assembled almost entirely from pre-stellar components, this vessel can be built in just about any rundown shipyard or drydock. It would not be uncommon to see a few of the non-critical components being made from sheet metal or even wood.

The lower technological quality of these vessels has lead to a prejudicial view of them as old junkers. There is not much defense to be had against the accusation of a vessel's age. But under proper leadership, a Gypsy class can punch far above its weight.

By reading this manual, you will gain an understanding of the technical limitations and specifications of the Gypsy class, as well as the methods for proper operation and maintenance of your starship. A vessel schematic has been included in this manual to assist you.

Vessel Registration

Civilian Registration ----- Armed Freighter
Military Registration ----- Frigate

Production Tech Level ----- TI-10
Shipyard Requirements ----- 5,000 Tons, Jump Capable

Vessel Maximum Occupancy ----- 24 Crewmen
Minimum Crew Requirement ----- 3 Crewmen

Where can I obtain a Gypsy Class Starship?

Although it is still completely feasible to commission the construction of a brand new starship, most Gypsy class vessels are well over a hundred years old, and some of the original production run are probably still in service along the outer reaches of civilized space.

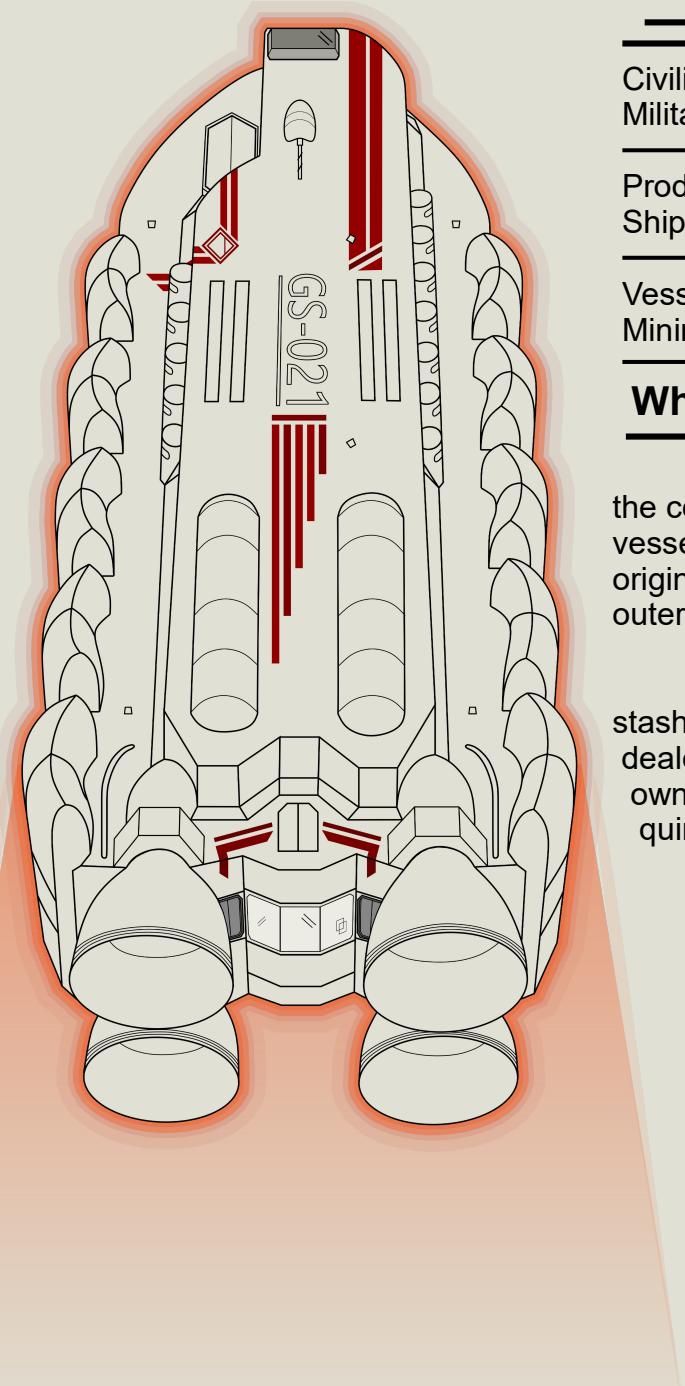
As such you can often find an old Gypsy class stashed away at some of the larger pre-owned starship dealers. Mind you, pre-owned starships tend to have their own little quirks, or as we like to call it "character". These quirks can be determined using the following roll table.

Roll once for every 15 years of vessel age up to 8 rolls. (2D6)

| | | |
|----|-------------------------|--|
| 2 | Infested with Vermin | DM+1 to Repair Time |
| 3 | Busted Fuel Tank ** | -10% Fuel Capacity |
| 4 | Damaged Radio | DM-1 to Electronics(Comms) Checks |
| 5 | Contains Old Cargo | Referee's Choice, Optional Table on Page - 8 |
| 6 | Busted Rear Thruster ** | -1 to Maximum Thrust |
| 7 | Hull Corrosion ** | -5% to Current Hull Points |
| 8 | Damaged Heat Shield | Atmospheric Re-entry Deals 1D6 Damage |
| 9 | Comes with Pet | Referee's choice, Can be no larger than a dog. |
| 10 | Damaged Grav Plating | Non-Functional Grav Plating on Deck-3 |
| 11 | Startup Music | A national anthem of the Referee's choice plays over the ship's intercom upon computer startup for 3 minutes, making communication impossible. |
| 12 | Contains Pocket Nuke | Fused to a wall panel inside the barracks. Timer Reads: 00:01 |

Replaces Default Roll Table for Old Ships.

*** Repeatable up to 4 times.*



Gypsy Class Starship – Deck Plan

TL-10

- 1.) Pilot's Seat
 - 2.) Astrogator's Seat
 - 3.) Captain's Seat
 - 4.) Sensor Operator's Seat
 - 5.) Engineer's Seat
 - 6.) Emergency Power System
 - 7.) Mass Driver Bay – Hatch
 - 8.) Deck 3 – Hatch
 - 9.) Captain's Quarters

10-20.) Crew Quarters

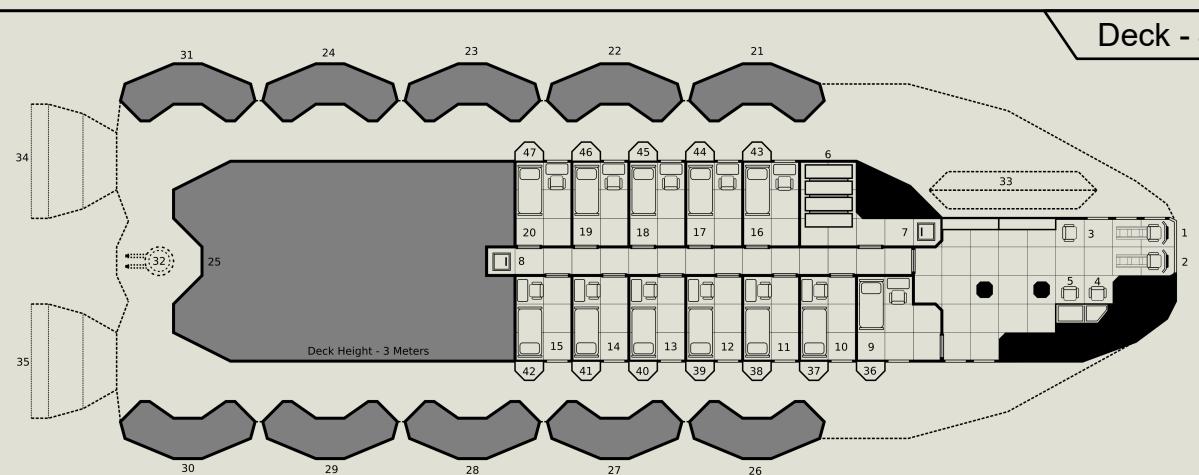
21-31.) Fuel Tanks

32.) Rear Double Turret – Cover

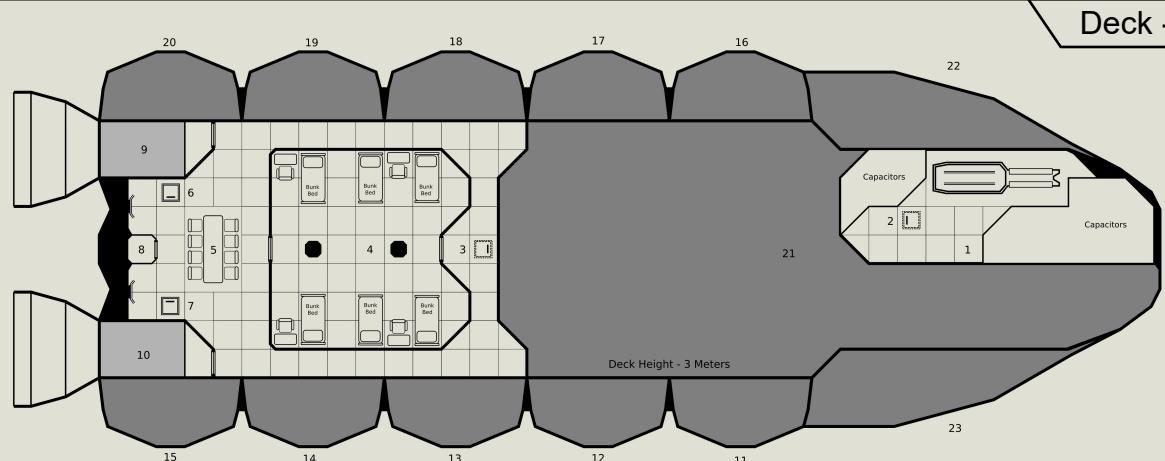
33.) Mass Driver Bay – Cover

34-35.) Deck 3 – Engine Outlines

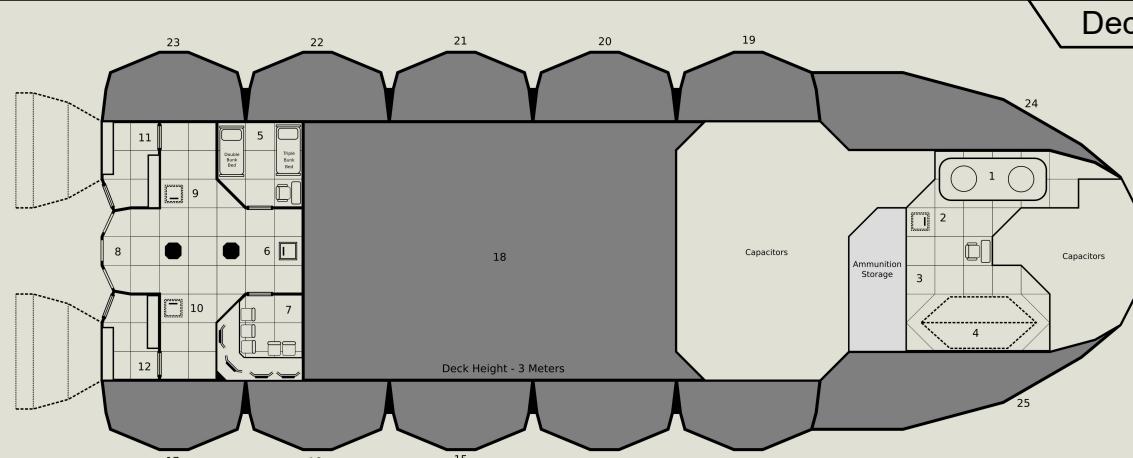
36-43.) Assault Capsules



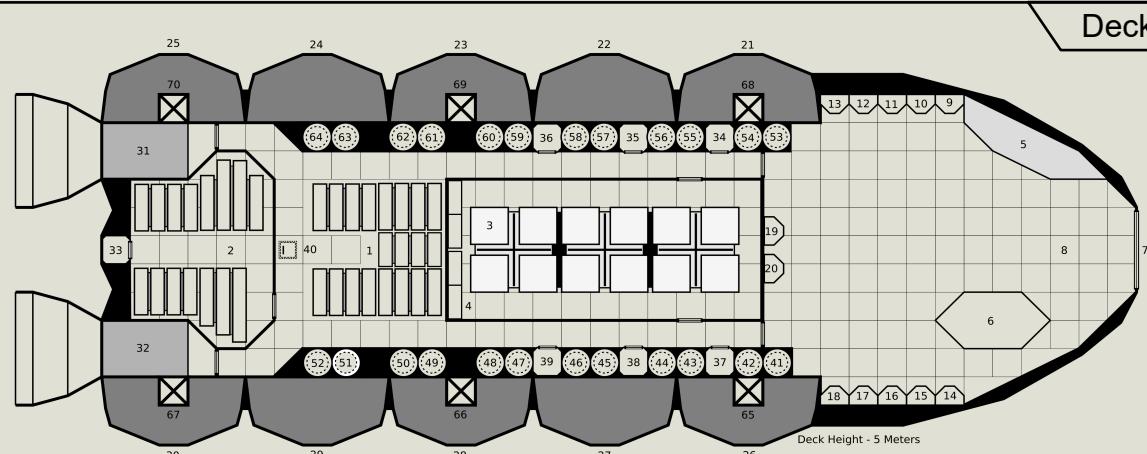
- 1.) Upper Mass Driver Bay
 - 2.) Deck 2 – Passthrough
 - 3.) Deck 4 - Hatch
 - 4.) Barracks
 - 5.) Common Area
 - 6-7.) Deck 2 - Hatch
 - 8.) Pop-up Turret Access
 - 9-10.) Reaction Drives
 - 11-23.) Fuel Tanks



- 1.) Mass Driver
 - 2.) Deck 4 – Hatch
 - 3.) Mass Driver Bay
 - 4.) Deck 1 – Cargo Hatch
 - 5.) Medical Bay
 - 6.) Deck 1 – Hatch
 - 7.) Briefing Room
 - 8.) Common Area
 - 9-10.) Deck 3 – Hatches
 - 11-12.) Airlocks
 - 13-25.) Fuel Tanks



- 1.) Power Plant – Section 1
 - 2.) Power Plant – Section 2
 - 3.) Jump Drive
 - 4.) Sensor Module
 - 5.) Fuel Processor
 - 6.) Deck 2 – Cargo Hatch
 - 7.) Cargo Bay Door
 - 8.) Cargo Bay
 - 9-20.) Assault Capsules
 - 21-30.) Fuel tanks
 - 31-32.) Reaction Drives
 - 33-39.) Pop-down Turret Access
 - 40.) Deck 2 - Hatch
 - 41-64.) Reaction Drives – VTOL
 - 65-70.) Landing Gear Ducts



Gypsy Class Starship – Specifications

Total Cost – 755,000,000 Credits

Hull Configuration – Standard – Atmospheric Flight Capable – Total HP – 334

Monthly Maintenance – 66,000 Credits

| | | | |
|---------------------------|------------|-------------------------|-----------------------------|
| Gravitic Hull – Light | 530 – Tons | Power Requirement – 106 | 190 – Hull Points |
| Non-Gravitic Hull – Light | 400 – Tons | Power Requirement – 80 | 144 – Hull Points |
| Heat Shielding | Integrated | No Power Requirement | Permits Atmospheric Reentry |

Drive Configuration

| | | | |
|----------------|-----------|-------------------------|-------------------------------------|
| Reaction Drive | 75 – Tons | No Power Requirement | Very Advanced – Fuel Efficient – x2 |
| Jump Drive | 47 – Tons | Power Requirement – 186 | Prototype – Late Jump |

Power Plant Configuration

| | | | |
|--------------------|-----------|------------------------|-------------------------------------|
| Fusion Power Plant | 31 – Tons | Power Production – 380 | Very Advanced – Size Efficient – x2 |
|--------------------|-----------|------------------------|-------------------------------------|

Fuel Tank Configuration

| | | | |
|--------------------|------------|----------------------|-------------------|
| Standard Fuel Tank | 400 – Tons | No Power Requirement | 285 Thrust Points |
|--------------------|------------|----------------------|-------------------|

Armor Configuration

| | | | |
|-------------|-----------|----------------------|------------------|
| Crystaliron | 12 – Tons | No Power Requirement | Armor Points – 1 |
|-------------|-----------|----------------------|------------------|

Control Systems Configuration

| | | | |
|------------------------|------------|-----------------------|---------------------------------------|
| Bridge | 20 – Tons | No Power Requirement | |
| Computer/10 | Integrated | No Power Requirement | Hardened, Jump Control Specialization |
| Military Grade Sensors | 2 – Tons | Power Requirement – 2 | Jammers, Lidar, Radar |

Hard Points and Weapons Configuration

| | | | |
|--------------------------------|------------|------------------------|---------------------------------|
| Triple Pulse Laser Turret – x6 | 12 – Tons | Power Requirement – 78 | Advanced – High Yield |
| Double Sandcaster Turret – x2 | 4 – Tons | Power Requirement – 2 | |
| Medium Mass Driver Bay | 100 – Tons | Power Requirement – 25 | Very Advanced – Very High Yield |

Crew Quarters and Habitation

| | | | |
|------------------|-----------|----------------------|--|
| State Room – x12 | 48 – Tons | No Power Requirement | |
| Barracks – x12 | 24 – Tons | No Power Requirement | |
| Common Areas | 22 – Tons | No Power Requirement | |

Auxiliary Module Configuration

| | | | |
|------------------------|------------|------------------------|--|
| Emergency Power System | 4 – Tons | Power Production – 342 | Lasts for 5 Rounds – Resets After 8 Hours. |
| Fuel Scoop | 0 – Tons | No Power Requirement | |
| Fuel Processor | 5 – Tons | Power Requirement – 5 | Can Refine Up To 100 Tons of Fuel per Day |
| Airlock – x3 | 3 – Tons | No Power Requirement | |
| Medical Bay | 4 – Tons | No Power Requirement | |
| Briefing Room | 4 – Tons | No Power Requirement | |
| Assault Capsule – x24 | 12 – Tons | No Power Requirement | |
| Cargo Bay | 100 – Tons | No Power Requirement | |

Propulsion and Fuel Consumption

Fuel is a critical resource for both interstellar and local travel. This is even more important for vessels utilizing reaction drives. Unlike gravitic drives which cause a controlled “fall” of a mass inside the ship to generate thrust, a reaction drive produces its thrust by expelling a reaction mass in the opposite direction you intend to accelerate. In the case of the reaction drives onboard a Gypsy class starship, each drive module utilizes a self sustained fusion reaction to provide the energy necessary to expel hydrogen plasma from its thrusters at roughly 6% the speed of light. Although this allows for an impressive level of sustained thrust, it does come with one caveat: Reaction drives consume fuel.

How much fuel a reaction drive consumes is directly related to a starship’s mass, as well as the size and efficiency of its drive. And while it is interesting to measure the potential of a reaction drive by using its maximum change in velocity or Delta-V, there are far better methods for managing your fuel reserves. In this manual we will be subscribing to the Thrust-Point system listed in the *Highguard* supplementary guide.

Each thrust point represents 1-G of acceleration for 6 minutes, and a standard Gypsy class starship has 285 thrust points with 3 fuel held in reserve for life support and basic control systems. This means that if you were to expend all of these thrust points you would be traveling at over one million meters per second. While traveling at these speeds allows for exceptionally short transit times, it comes at the cost of increased fuel usage. There is a balance to be found when deciding what speed to travel at, and how long you are willing to wait to get to your destination. Remember, if you spend more than half your fuel accelerating, you won’t have enough left to slow down.

It is also worth noting that for each parsec you intend to traverse using the jump drive, you will need to expend 67 thrust points. This includes in-system jumps which are less than 1-parsec. This allows for 2 separate 2-parsec jumps with 17 thrust points remaining if you start with a full tank.

If you find yourself continually running low on fuel, it may be worth the effort to invest in a collapsible fuel tank for your cargo bay. This can allow you to augment your fuel reserves by up to 25% of its default capacity.

If you intend to travel at a constant thrust to a given destination, you can find a suitable transit times table in the core rule book. Included below are the equations for calculating travel times for non-constant thrust maneuvers, as well as a pre-calculated table with much of the math already done.

Total Thrust Points Expended at a Thrust Score of 4

| Distance | 1 | 2 | 3 | 4 | 10 | 40 | 100 | 140 |
|-----------------|-----------------|---------------|---------|---------|---------|----------|---------|---------|
| 1,000km | 10m 12s | 6m 13s | 5m 24s | - | - | - | - | - |
| 10,000km | 1h 40m | 48m 44s | 33m 45s | 26m 37s | 16m 57s | - | - | - |
| 400,000km | 2d 15h | 1d 8h | 21h 2m | 15h 47m | 6h 25m | 2h 4m | - | - |
| 45,000,000km | 295d 4h | 147d 15h | 98d 10h | 73d 19h | 29d 13h | 7d 10h | 3d 0h | 2d 5h |
| 255,000,000km | 4y 213d | 2y 107d | 1y 193d | 1y 53d | 167d 7h | 41d 19h | 16d 17h | 11d 23h |
| 600,000,000km | 10y 287d | 5y 143d | 3y 217d | 2y 254d | 1y 29d | 98d 10h | 39d 8h | 28d 3h |
| 900,000,000km | 16y 65d | 8y 33d | 5y 143d | 4y 16d | 1y 226d | 147d 14h | 59d 2h | 42d 5h |

Red listed times are not valid orbital transfers.

Dashes indicate times when a constant burn is more efficient.

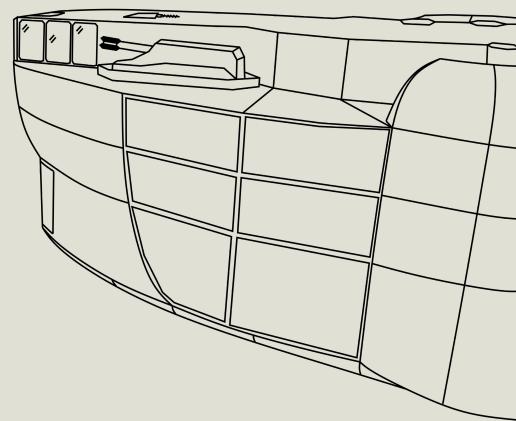
Thrust-Point-to-Transit-Time Equation

$$\text{Transit Time} = \frac{\text{(Total Distance in Meters)} - 9.8 \left[\frac{360 \text{ (Thrust Points)}}{(\text{Thrust Score})} \right]^2 + \frac{360 \text{ (Thrust Points)}}{(\text{Thrust Score})}}{1764 \text{ (Thrust Points)}}$$

Armaments and Ammunition

A Gypsy class starship can maintain a substantial compliment of weapons using its nine available hardpoints. Typically there are two primary configurations to chose from during construction, the military variant or the civilian variant.

The primary difference between these two configurations is the lack of a mass driver bay on the civilian variant. Instead of a mass driver bay, the civilian variant of the Gypsy class comes will 100 additional tons of cargo capacity. You can find the entire list of armaments for the military variant and their specifications below.



Sand Casters – Double Turrets – x2

The Aft-Section of the Gypsy Class starship contains two pop-up sandcaster turrets. Each of the sandcaster turrets can hold 24 sand canisters to help protect against incoming enemy laser-fire. Being pop-up turrets, enemy sensors which rely solely upon exterior scanning are unable to detect them while they are retracted. Typically all pop-up turrets are retracted during atmospheric reentry. Sandcasters are primarily used to disperse sand between vessels to reduce the damage from incoming laser-fire, but these can also be used at close range to cause devastating amounts of damage to enemy boarders.

| Damage-Type | Range | Damage / Mitigation | Power-Usage |
|-------------|-------------|--|-------------|
| Special | Reactionary | 1D + Effect → Single Shot (Disperse) 1D + Effect + 1 → Double Shot (Disperse) 8D (Personal Scale) → Against Boarders | 1 1 1 |

Pulse Lasers – Triple Turrets – x6

The underside of the Gypsy Class starship contains six pop-up pulse laser turrets. Each of the pulse lasers equipped to these turrets have been upgraded to their advanced version which allows them to function at a higher yield. The high yield capability of these turrets means than any 1s which are rolled during damage calculation are instead treated as 2s. Pulse Lasers do not use ammunition. Being pop-up turrets, enemy sensors which rely solely upon exterior scanning are unable to detect them while they are retracted. Typically all pop-up turrets are retracted during atmospheric reentry.

| Damage-Type | Range | Damage | Power-Usage |
|-------------|-------|---|--------------|
| Laser | Long | 2D + Effect → Single Shot 2D + Effect + 2 → Double Shot 2D + Effect + 4 → Triple Shot | 5 9 13 |

Mass Driver – Medium Bay

Mounted on the bow of a Gypsy class starship is a single medium weapon's bay containing a mass driver. This mass driver has been upgraded to its very advanced version, which allows it to operate at a very high yield. The very high yield trait on this weapon means that any 1s or 2s which are rolled during damage calculation are instead treated as 3s. The mass driver bay itself contains enough ammunition for six shots and requires two crew to operate it effectively. Only one of these crew will make the Gunner(Ortillary) check when firing. Additional ammunition for the mass driver can be stored in the cargo bay while consuming 4-tons of space per shot. This ammunition is not readily available and needs to be loaded into the bay using a reload action prior to use. The mass driver is typically retracted during atmospheric reentry.

| Damage-Type | Range | Damage | Power-Usage |
|-------------|-------|--|-------------|
| Destructive | Short | 2DD + Effect → Single Shot <i>(2D x 10) + Effect – Armor = Damage</i> | 25 |

Primary Ship Systems

Model-2 Ship's Computer



The Computer system onboard a Gypsy class starship is fairly rudimentary. Due to its limited bandwidth, it is essential to put some focus towards program management to ensure that you have enough processing power left for critical operations.

The default computer compliment is a Model-2 standard ship's computer with systems hardening and jump control specialization built in. This computer has a normal bandwidth of 10 with an additional 5 bandwidth dedicated exclusively for Jump Control programs. This computer's bandwidth limitations mean than most system automation programs are completely incompatible with the onboard computer system.

The basic software package installed on this computer includes a Library program, a Maneuver program, and a Jump Control-2 program.

Military Grade Sensors

All Gypsy class starships are fitted with military grade sensors by default. These sensors come with three primary capabilities: Jamming, Lidar based scanning, and Radar based Scanning. At least 2 units of spare power are required in order to operate Military Grade Sensors. Without sufficient power, these sensors are completely non-functional. This sensor system does not provide a dice modifier to anyone operating it.

| Operation | Difficulty | Duration |
|---------------------|----------------------------------|-------------------|
| Jamming Enemy Comms | Opposed Electronics(Comms) (INT) | (1D) Minutes |
| Perform Sensor Scan | (6+) Electronics(Sensors) (INT) | (1D x 10) Minutes |
| Analyze Sensor Data | (8+) Electronics(Sensors) (INT) | (1D) Hours |

Fusion Power Plant

The compact fusion power plant onboard a Gypsy class starship packs a lot of power into a small space. At full power, the primary power plant can power the Life Support, Artificial Gravity, Sensors, and Jump drive all at once. The power plant requires a steady supply of fuel in order to remain functional and will burn through that fuel at a rate of 4-tons per month.

| Operation | Difficulty | Duration |
|----------------------|--------------------------------------|-----------|
| Overload Power Plant | (10+) Engineering(Power Plant) (INT) | (1) Round |

Jump Drive

The most expensive part of a Gypsy class starship is undoubtedly the overbuilt Jump Drive. This Jump Drive is capable of Jump-2 and can do so twice in a row if your fuel tank permits it. The Jump Drive, being a prototype, has less of a tolerance for gravitational interference. As such, the drive has the trait Late-Jump. This means that in order to safely perform a jump maneuver, you will need to be at least 150-Diameters from the strongest gravitational influence acting upon the vessel.

| Operation | Difficulty | Duration |
|---------------|------------------------------------|-------------------|
| Standard Jump | (4+) Engineering(Jump Drive) (EDU) | (1D x 10) Minutes |
| Combat Jump | (4+) Engineering(Jump Drive) (EDU) | (1D) Minutes |

Auxiliary Ship Systems

Assault Capsule

Each Gypsy class starship comes fully equipped with enough escape pods to allow all 24 potential passengers to abandon ship in the event of emergency. These escape pods take the form of 24 assault capsules. Each of these capsules has an armor rating of 20, and inflicts a (-2) dice modifier upon anyone trying to detect it with sensors. The assault capsule is fully capable of atmospheric reentry and will propulsively land on any planet within range. Using an assault capsule in deep space is not recommended as the difficulty of detection will make any rescue attempts more difficult.

Medical Bay

The medical bay on each Gypsy class starship, although cramped, is capable of supporting the treatment of up to 5 patients as long as it is staffed by a medic or autodoc. While using the medical bay, all Medic checks receive a (+1) dice modifier.

Briefing Room

Like most military vessels, each Gypsy class starship contains a briefing room to allow for easy mission planning and private tactical discussions. This briefing room provides a (+1) dice modifier to any Tactics(Military) checks when planning missions. When not being used for mission planning, the briefing room makes for a nice quiet room to relax in.

Fuel Scoop

Along the bottom of each Gypsy class starship there are a series of ducts which can take in atmospheric gasses and store them in the fuel tank. When this is done in an atmosphere that is rich in hydrogen, such is the case for most gas giants, you can fill your fuel tank with unrefined fuel. Rules regarding fuel scooping can be found in the core rule book.

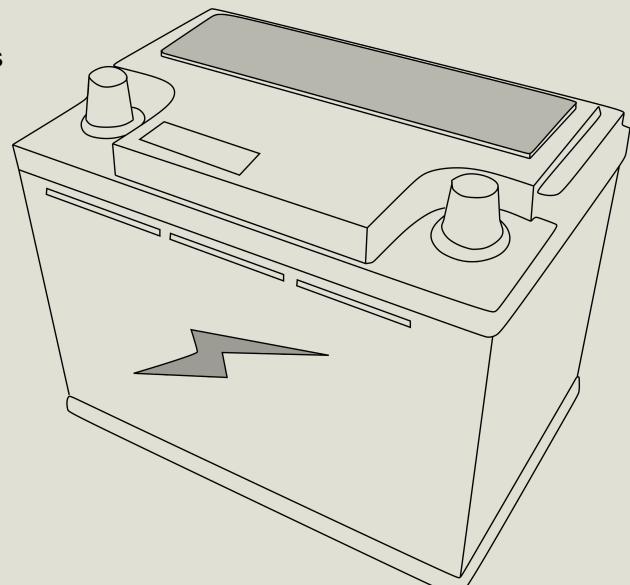
Fuel Processor

Accessible from the maintenance hatch in the cargo bay, the Gypsy class starship's fuel processor is capable of refining up to 100 tons of jump-grade fuel per day. This means that a fuel tank filled with unrefined fuel will take 4 days to fully process.

While there is a risk involved with using unrefined fuel in a jump drive, your reaction drive can run off unrefined fuel just fine. This means that for trips where you don't need the jump drive, it is much better to buy unrefined fuel and save on 80% of the fuel cost.

Emergency Power System

Gypsy class starships are equipped with an emergency power system which is designed to provide the majority of the vessel's power needs for up to thirty minutes. The emergency power system is capable of providing up to 90% of the power of the primary reactor, and automatically activates when it detects a primary reactor failure. After 30 minutes of operation, the emergency power system is drained and will take at least 4 hours to recharge using the primary reactor, once the primary reactor comes back online.

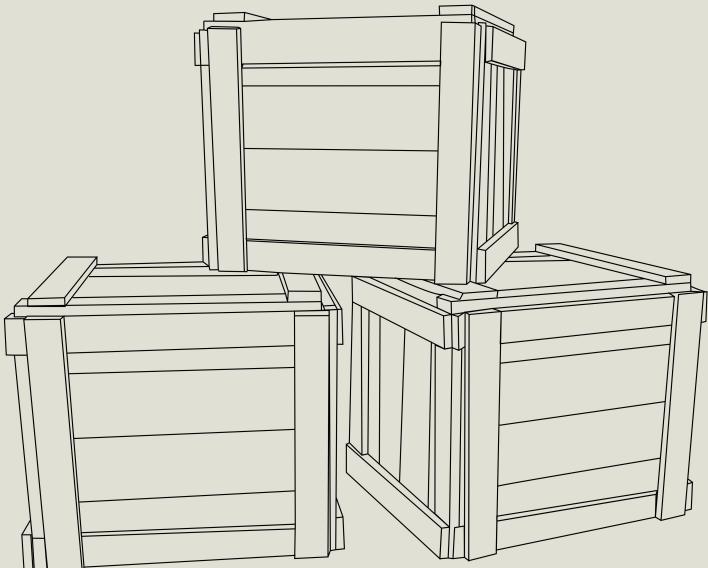


Additional Information

Additional Tasks and Operations

| Description | Skill | Extra Modifiers | Cost | Difficulty | Time |
|--|-------------------------|----------------------------------|-------------------------|------------|-------------------------|
| Forcing open an airlock door | Athletics (Strength) | +2 for each Traveller that helps | N/A | 18+ | (1D) Minutes |
| Forcing open the cargo bay door | Athletics (Strength) | +2 for each Traveller that helps | N/A | 22+ | (1D + 5) Minutes |
| Repairing a busted rear thruster | Engineering (Maneuver) | N/A | 10,000cr Per attempt | 8+ | (1D) Hours |
| Repairing a busted fuel tank | Mechanic | N/A | 500cr Per attempt | 6+ | (1D) Hours |
| Repair damaged radio | Electronics (Comms) | N/A | 2000cr Per attempt | 8+ | (1D) Hours |
| Repair damaged gravity plating | Engineer (Maneuver) | N/A | 30,000cr Per attempt | 10+ | (1D) Days |
| Repair damaged heat shield | N/A | N/A | 2,000,000cr | N/A | (1D) Days In drydock |
| Change startup song | Electronics (Computers) | N/A | N/A | 10+ | (1D) Hours |
| Remove the pocket nuke in the barracks | Explosives | N/A | N/A | 14+ | (1D) Minutes |
| Remove the vermin infestation | Animals | +2 for each Traveller that helps | N/A | 16+ | (1D + 10) Days |

Optional Cargo Roll Table



| D66 | Possible Cargo List |
|---------|---------------------------------------|
| 11 - 13 | Cryoberth – 1 |
| 14 - 16 | Combat Drugs – 16 Doses |
| 21 - 23 | Personal Safe Containing a Pistol – 1 |
| 24 - 26 | Black Powder Cannon – 1 |
| 31 - 33 | TL10 Translator – 1 |
| 34 - 36 | Armoured Van with Flat Tires – 1 |
| 41 - 43 | Dirigible (Stowed) – 1 |
| 44 - 46 | Cargo Lifter – 1 |
| 51 - 53 | Forgetful Utility Droid (Driver) – 1 |
| 54 - 56 | Illegal Drugs – 1 Ton |
| 61 - 63 | Lumber – 40 Tons |
| 64 - 66 | Textiles (Rugs) – 20 Tons |

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Mongoose Traveller – 2e
(Highguard Compatible)