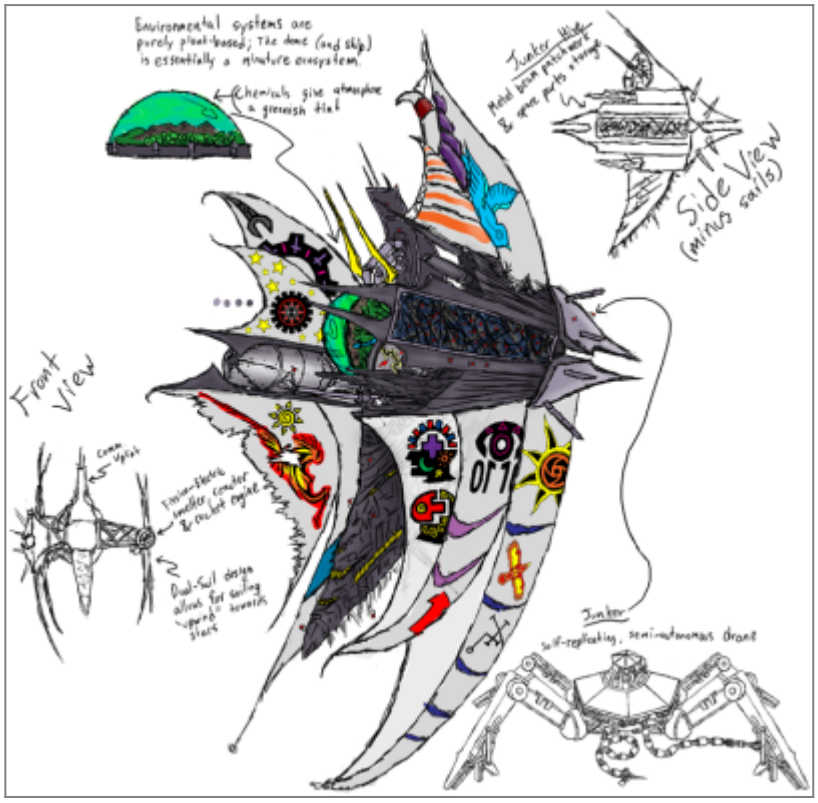
Gypsy-Class Industrial Ship



Overview

The Gypsy is a jack-of-all-trades vessel, capable of filling any role in the Free State outside of a military ship. With its hives of utility drones and fusion-electric smelters, it can easily repair and maintain itself for decades on end. Its advanced environmental systems and hydroponics bays allow its inhabitants to sustain themselves just as long, so long as water supplies are available. The longevity of this vessel is often attributed to the Free State philosophy of 'grin and bear it' against the hazards of the galaxy; the design is specifically engineered for rugged and reliable equipment much more basic – and therefore much easier to maintain – than the increasingly more complex and specialized equipment other races strive for. After all, the simplest solutions are always the best.

Though a cruiser-sized ship, the Gypsy is the closest thing to a “town” in Freespacer society. Anything smaller is usually a fully autonomous drone or a shuttle craft, unable of supporting life for extended periods of time. Anything larger than the Gypsy is usually a city-sized Mothership. Gypsies are the staple vessel of all Freespacer Freespacer Fleets, acting as the backbone of mining operations throughout the entire Free State.

History and Background

> “Our forerunners were the first of their kind to give up their planets for a life exclusively among the stars. Yet, after all this time, why are we still the only ones? These dirtdwellers still cling to their planets, like children to mothers. I must admit that there is some comfort in the idea of a homeworld; no poor ice harvests to wipe out tens of thousands of our kind. No lack of air, fruits of the harvest, or room for their growing population. However, like us, they must eventually realize that planets are merely the cradle of civilization; as comforting as it may be, you can never mature if you still cling to your cradle.” – Dockmaster Nine One 91-0541-8962 The Art of Never Again, Chapter 478: Home is Where You Make It

The Free State's communist practices coupled with its lack of foreign threats have produced little incentive for technological development. For example the Gypsy has been the staple of the Free State's Freespacer Fleets for nearly two centuries. However, engineers have not been idle during this time: generations of fine tuning, efficiency engineering, and design revision have shaped the Nevermore Gypsy into an extremely cheap and reliable vessel, without reducing ability significantly. So well-engineered are these vessels that its not uncommon to see them operate even decades without proper drydock maintenance. Modular design allows for rapid repair, or modification to better suit virtually any role outside of a combat vessel.

However, their design solely for ruggedness and ease of maintenance have not come without a price. The lack of threats and incentive to develop new technology have caused the Nevermore to forsake even the most basic of defensive technology save for simple meteor-resistant armor plating and thermal insulation. Though the Gypsy's cruise missiles may act as a deterrent, even the youngest and simplest of space faring races would have no trouble destroying them.

Dimensions and Crew

Organizations Using This Vessel: Fleets of the Free State

Type: Industrial ship; self-sustaining outpost Class: Gypsy v74.5.23.16 Designer: The Free State Manufacturer: Various Production: Full-scale production

Maximum Capacity: Freespacer population is totally reliant on available resources, rather than the systems of vessels themselves. Said systems can be modified to support any number of people.

Note: The design is modular rather than single-hulled, so span size may be misleading regarding the vessel's true volume.

Length: 475 m Width: 350 m Height: 550 m Decks: Three traditional decks, plus numerous separate equipment modules

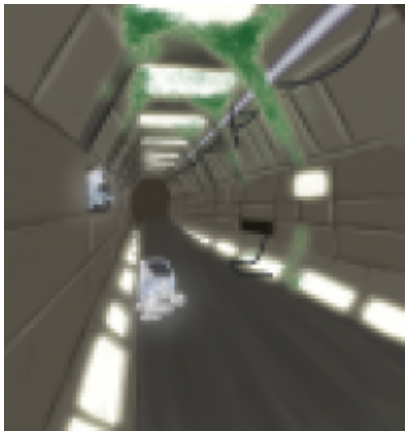
Crew

Synthetic Intelligence Entities: 2-6 Junkers (Utility Drones): 75-150 Automata (Humanoid Droids): 25-50 Freespacer Crew: 2-10 Freespacer Younglings: Maximum capacity is usually twice the current crew complement, but only necessary if the mission's duration spans at least a decade.

Performance Statistics

Speed (Solar sails): Varies on local solar energy. Standard average is 0.05c, reaching up to 0.2c when performing solar slingshot maneuvers. Speed (Nuclear Rockets): 0.025c Range (Distance): Unlimited Range (Support): Based on availability of ice deposits and raw ores Lifespan: 100+ years Refit Cycle: Minimum once every twenty years.

Inside the Gypsy



The overall design of the Gypsy emphasizes functionality over fashion. Hallways are generally smaller than most vessels, exposed machinery and circuits are common place. The occasional painted decal or run can be seen scattered throughout the bowels of the ship, and lichens grow in abundance in the nooks and crannies of the ship, processing the air and cleaning the circuitry.

Common Bay

As a highly communal society, they have little sense of personal space or property. The crew of a ship is commonly lives and sleeps inside a single common room instead of private quarters. The room itself is spartan, containing little more than a single square table, simple chairs, and Niches along the wall of the room.

Niches

Niches are hexagonal cells that are spaced along the room's wall, not unlike honeycombs. These cells are effectively padded tubes laid horizontal to the floor, which are large enough to accommodate a humanoid with minimal movement space. These containers have a lockable hatch designed for completely enclosing the cell and preventing the user from floating away during sleep (or recharge, should an Automata be using it) in microgravity. At the head of each container is also a ship network interface which can be used to access information networks or virtual reality programs using the MMI neural uplink.

Bathhouse

Adjacent to the common bay are the unisex showers and washroom facilities.

Biobay

This optional upgrade is commonly used by long-range trade and exploration vessels. Since the majority of Freespacer vessels are independent in terms of fuel, maintenance, and supplies, the ability to replace lost crew was the next logical step on the path to full self-sufficiency. This was even more important since missions commonly last years at a time, yet the Freespacer lifespan is less than one quarter that of most humanoids. The Nevermore Gypsy is equipped with three cloning vats, along with a genebank carrying genetic samples of the entire crew, plus a dozen spare samples to choose from should anyone feel the need to parent children during an extended mission.

Genebank

This is essentially a library of genetic samples stored in a cell not unlike that of sleeping alcoves. A computer interface is on the hatch where one may view several dozen prefabricated genetic samples, along with the different traits and appearance each one is estimated to have when grown. If a child is to be grown, a volunteer primary caretaker (parent) will select a genetic sample of their choosing. The Genebank will then automatically send the sample to a designated Vat Bay and begin the growing process.

Vat Bay

A number of cloning vats and incubators are housed in this room.

The Grinder

(See The Grinder for more technical details) The Grinder room acts as a connection between both the Biobay and the Workshop.

Workshop

The Assembly Bay is the heart of industrial operations aboard the ship. As it's name suggest, it's appearance is much like a workshop. Most notably an overwhelming number of Automata and starship components are usually scattered around the room, in various states of (dis)assembly. From the roof of the room hang an array of robotic arms, which are capable of performing a limited number of autonomous tasks under the guidance of the ship's computer. A number of alcoves line the wall, used for Automata maintenance.

Data Center

An off-shoot of the Workshop, this cramped room houses a considerable number of mainframes. These are used for the ship's internal networks, SI operations, long-range communications, and so on.

Hydroponics Bay

The Freespacers survive solely on algae, fruits, grains and vegetables, simply because autotrophs are a much more energy efficient means of producing foodstuffs than growing livestock, and they lack the technology to synthesis such things. The Nevermore Gypsy relies primarily on algae vats for foodstuffs, as well as a limited number of fruit and vegetable growing bays. Due to radiation and chemical contamination, these foods will likely cause illness among most non-Freespacer races.

The Hydroponics Bay has an appearance similar to a large garden, containing everything from trees to shrubs to algae-covered ponds. It commonly seconds as a recreational spot for those who care for a reprieve from the normally metallic environment of starships.

Ship Systems

> “In Freespacer shipbuilding, there are three ancient traditions that we must follow before launching a vessel into the great abyss. During construction we lay the body of a brave drone every two decks, to give courage to the ship; This completes the body. We then install a Synthetic Intelligence Matrix to give it discretion and brilliance; This completes the mind. Then we assign a Druidess to watch over the vessel, to give the machine spirit faith and loyalty. This completes the machine spirit, and therefore the ship. And only then can the ship can be launched. Other races may see this all as nothing but superfluous ceremony, but unto such naysayers I pose this question: How many decades can one of *your* vessels withstand the hazards of the galaxy, hmm?” – Foreman Error Three One 31-4672-2391 The Art of Never Again, Chapter 218: Back Into the Abyss, From Whence We Came

Hull

The outer hull is composed primarily of rolled tungsten, beneath which is a self-sealing liner to repair leaks. Buckypaper lines the inside of the hull in order help dissipate the kinetic energy of incoming micrometeors, or to shield the vessel's electronic systems from radiation.

The inside of the vessel possesses an intricate honeycomb of bulkheads, each reinforced with buckypaper and self-sealing liner. The Freespacer philosophy of “grin and bear it” was the primary inspiration for such a system, and indeed it can bear what the universe may throw at it. While low-tech, such a honeycomb combined with the lack of high-powered conduits (and other collateral-damaging systems) means this vessel can be even cut clean in half and will still maintain a large portion of it's functionality, if only for a while.

Defensive Rating: 6

Fast Breeder Reactor

This type of reactor, in addition to producing power, is designed to breed fuel by producing more fissile material than it consumes through nuclear transmutation. In addition to refueling the reactor itself, the excess fissile material can be used to power propulsion, industrial endeavors, or personal reactors for Automata.

Nuclear Thermal Rockets

This is a simple form of propulsion, the next technological step up from the chemical rockets used by the first space explorers, though it is actually several times more powerful. It uses a working fluid, usually hydrogen, by heating it in a high temperature nuclear reactor, which then expands through the rocket nozzle to create thrust. While other more advanced designs are available, only nuclear rockets take advantage of the ship's breeder reactor to produce theoretically limitless fuel. With the greater need for self-sufficiency than speed, nuclear thermal rockets are the natural choice of any Freespacer.

"Panic" Emergency Booster System

In several key locations along the outside of the hull are moderate-yield nuclear bombs. In the event an inbound threat is detected that cannot be escaped through traditional means the Panic system provides the means to make a last ditch evasion attempt. When one of the bombs is detonated the energy from the explosion will "jump" the ship in a certain direction, hopefully avoiding the threat. While this obviously can damage the structural integrity of a vessel, the logic is that such a system will only be used in the event that the incoming threat will do more damage than the Panic system.

Solar Sails

These are large membrane mirrors which reflect the light from sources, using the radiation pressure of reflected photons to produce thrust for the vessel. They are commonly believed to be the single slowest form of space travel currently in use, and suffer from agonizingly slow acceleration. However, there are three chief advantages to this system: Firstly, they utilize no fuel and have insignificant mass, making them very efficient in terms of cost and mass as a means of interstellar travel. Secondly, since they produce no energy signature and leave no fuel residue, making the vessel much harder to detect than it would other forms of propulsion. And finally, when inside a solar system they can take advantage of both intense solar radiation and gravity to 'slingshot' out of solar systems with a cruise speed even greater than that of nuclear rockets.

Junker Hive

The ship also carries a 'hive' of Junkers, autonomous drones with an insect-like behavioral programming. The Hive itself is controlled by any number of the starship's SI, which constantly monitors the ship's internal and external sensors. If hull damage is detected, on either the host vessel or a nearby one, the SI

will send Junkers to repair the damage. Targets can also be designated “hostile,” causing Junkers to attempt to disassemble and recycle the target vessel.

Junkers can only receive orders by plugging in to the Hive control grid, which they will automatically do if they have no standing orders. While this prevents the Queen from changing her orders in mid-operation, it also prevents signal hijacking and therefore the turning of Junkers against its own ship.

Synthetic Intelligence Matrix

All higher functions of the ship are tied into computer cores containing Synthetic Intelligence Entities.

Evanescent Wave Coupler

Each Nevermore Gypsy contains a evanescent wave coupler to facilitate FTL communications and information networks. By uplinking with Motherships and planets, all vessels interconnect in a massive pan-constellation network.

Environmental Systems

If there is one technology that truly shines aboard Freespacers ships, it is environmental and recycling technologies, due to the high priority such systems have for their survival. Using computers, environments are carefully shaped by calculating the average element production and consumption of each living creature on the ship. The number of plants and biofilters (literally biological, composed of aerobic and anaerobic digesting bacteria), are adjusted in accordance with such calculations, ensuring the net composition of the ship’s environment will be maintained without need for resource synthesis systems.

Combined Sensor Array

With the relatively frozen technological progress and no alien contact, there was little in the way of unknown technology in the isolated world that was the Free State. As such, the Nevermore Gypsy contains little more in scanning equipment than basic RADAR/LADAR, compositional scanners for survey, and IFF transponders for drones.

Network Node

The Free State's communalism does not simply extend to that of the physical world. The Network Node is a shipboard information network to which all equipment is connected: The Automata and Freespacer implant uplinks, the shipboard databanks, ship system and sensor feeds, and all equipment. The Synthetic Intelligence Entities also reside here, observing all system access and operations. When used in conjunction with the EVC, this node can join the thousands of others that compose the Free State's pan-

regional network.

Weapon Systems

"Inappropriate Response"

(Variable yield multistaged thermonuclear cruise missile)

Primary Role: Controlled demolition, asteroid capturing Secondary Role: Damage Rating Value: DR 3~7, depending on yield settings Range: 1 Ly Rate of Fire: Once every minute Payload 20 Cruise Missiles

Through the use of dampener gases or removing neutron reflectors an Inappropriate Response has the ability to vary it's yield over a great damage spectrum. Typically, they are used for large-scale demolitions during mining operations, or to shift the orbits of large asteroids so they may be captured and mined in the orbit of nearby planets. The Inappropriate Response possess a quasi-sentient SI, giving it the capacity to calculate its own firing solution; an important asset when one is attempting to control the normally erratic behavior of asteroids. An onboard nuclear reactor allows these missiles to remain in flight for months at a time, or provides it with the high power output needed to perform the agile maneuvers that qualify it as a cruise missile rather than a torpedo. Inappropriate Responses are usually launched directly from the docking bay of a vessel.

"Spacesweeper"

(Anti-projectile defense; point defense system)

Location: Launcher hardpoints Primary Purpose: Meteorite Defense Secondary Purpose: Missile Defense, Projectile Defense Damage: DR 4 Payload 500 rounds Rate of Fire: 600 rpm Notes: Awareness range of 6 km / 4 mi., reaction time of 0.05 sec. Interception probability depends on target speed.

The Spacesweeper usually comes in the form of a removable modular equipment set. This includes an electronics package and a pair of launch tubes mounted on several starship hardpoints. Millimeter-wavelength Doppler radar is used to detect incoming threats, upon which the system will aim a launch tube towards the threat. A cluster projectile is then launched, detonating in proximity of its target and spraying a 45-degree arc with depleted uranium shards. Even if the target is not destroyed, the shrapnel spray will often have enough energy to deflect the target's trajectory.