Traveller Shuttle

The Traveller is a category more than a class: it groups under one name all the small shuttles built by the Free State for personnel transport over long distances. Every small, FTL-capable craft that can sustain a Freespacer-favorable environment for a long time (compared to its minute size) is called “a Traveller shuttle”.

About the Ship

Traveller shuttles are a diverse lot, but all have in common the capability of transporting a single or a small group of humanoid Freespacers at high speeds, over long distances, and for a long time. Those craft are usually extremely sturdy, but very lightly armed, if at all.

Key Features

A Traveller must be, first of all, self-sufficient. The condition of the craft is constantly kept in check by a non-volitional unit to ensure survivability: cultures of plants, lichens and microorganisms grow food and recycle oxygen and useful chemical substances, making the whole shuttle a small, carefully balanced ecosystem. Travellers usually have from one to several fission and fusion reactors, which us used for both powering the craft and providing the radiations necessary to Freespacer life. Most Travellers also have stasis chambers, in case of really long trips. “Long” by freespacer standards, obviously. Considering their closely-knit social culture, most Freespacers would consider spending an entire day completely alone and with nothing to do but wait like some sort of torture, and are likely to use the stasis cell for any trip longer than a few hours.

Mission Specialization

Even though Travellers are from time to time used as scout crafts, their main use lies in transporting people and allowing them to live for a comparatively long amount of time independently from their Mothership. This has proven especially important given the recent Free State / Neplesia interactions, providing humanoid Freespacers far from home with a “pocket” of friendly environment. Because of this, often, Travellers are radiation-shielded, and more than a few of them are designed with an universal docking clamp system, so that they can connect to other starships and provide a small “external crew quarter” for Freespacers.

Appearance

Traveller shuttles are ad-hoc crafts, custom built from whatever spare parts are available at the moment, and therefore there probably are no two Travellers alike. Most of them are asymmetrical and have a rather “improvised” look. Despite this, they are often extremely sturdy for ships of their size, even given

the usual far-above-average resilience of Freespacer vehicles.

History and Background

The concept of Traveller shuttles is a relatively new one, born after the first contacts with Neplesia: there was the need for a small, sturdy, efficient, semi-autonomous but inexpensive craft to allow humanoid Freespacers (merchants, diplomats, exchange crewmembers, scholars, etc) to move on their own without having to bring a whole fleet off-course or sending a large and valuable ship on a long and expensive solo trip. So, fleets shared their ideas over Polysentience, and the concept of the Traveller shuttle was born.

Statistics and Performance

Performances vary wildly between different Travellers, but, usually, a few things stay the same: Traveller shuttles are small, sturdy, easy to service and repair, self-sufficient for long periods of time, and unarmed or very lightly armed (with one significant exception, explained later). They also have very little in the way of comfort.

Statistical Data

General

Class: Traveller Type: Long-range Shuttle Designers: Polysentience Manufacturer: Free State Biomechatronics Production: Variable: they are built on an ad-hoc basis and, when not needed anymore, often cannibalized for resources and spare parts, so their numbers fluctuate wildly over time Fielded by: The Free State

Passengers

Crew: All Traveller shuttles can be operated by one crewmember, although some larger models might work best with a pilot and a navigator. Maximum Capacity: The smallest Travellers have barely the place for the pilot, while some can fit as many as a dozen passengers (in extremely cramped conditions). An average Traveller can fit up to three passengers.

Dimensions

Length: from 4 to 20 meters (from 13 to 66 feet) Width: from 2 to 10 meters (from 6 to 33 feet) Height: from 2 to 4 meters (from 6 to 13 feet) Decks: 1

Propulsion and Range

Continuum Distortion Drive: 1,000c (0.002 ly/m). After receiving basic CDD schematics and a couple of functioning drives from the Nepleslian Empire, Freespacer gearheads reverse-engineered them and came up with an alternative version, slower, but far more cost-efficient, requiring less maintenance, and with an astounding fuel-per-lightyear ratio, proving once again the Freespacer design philosophy of “minimum buck for maximum bang”. Advanced Solar Sails w/ Inertialess Drive: Varies on local solar energy. Standard average is 0.1c, reaching up to 0.3c when performing solar slingshot maneuvers. Range: The ecosystem can last for about three months before needing external supplies (water, oxygen, chemicals). Fissile fuel usually lasts for a year. Less than that if the shuttle uses a lot of power traveling long distances at FTL speeds. More than that if it relies on solar sails for movement, solar panels for energy, and keeps FTL and energy consumption at a minimum. Lifespan: Estimated 100 years Refit Cycle: None. All repairs can be carried out on the field, even in case of massive damage.

Inside the Ship

The inside of a Traveller shuttle is usually very cramped, and seldom consists of more than a seat with a neural interface for piloting the craft, a miniature hydroponic farm for growing edible plants and mushrooms and, possibly, a small stasis chamber for comparatively “long” trips. (“long” from a Freespacer's point of view, anyway.) Some larger-than-average Travellers can have additional systems: there are Scout Travellers (with additional sensors) used for reconnaissance and exploration, Courier Travellers (with a small cargo hold) which are, basically, “space trucks” for quick delivery, and Rescue Travellers (with a robotic arm for picking up survivors stranded in space or escape pods, and some medical equipment on-board), which are more or less “space ambulances”. There are also some Racing Travellers built specifically for solar sailing, and a few have been refitted with far heavier weapons than usual and are known as Combat Travellers, filling the role of small, inexpensive, expendable but fast and heavily armed fighter or bomber crafts for the Free State irregular self-defence forces. This refit, however, is far less common than the others.

Ship Systems

Armored Hull and Hull Integrated Systems

The outer hull is built according to standard Freespacer design philosophy: low-tech, inexpensive, sturdy, easy to service and to repair. It is composed primarily of tungsten, self-sealing liner (to repair leaks), and buckypaper shielding. Following the Way of the Failover, the Traveller shuttles are not designed to resist damage, but to function no matter how heavily damaged they are. HULL DR: 4

Computers and Electronics

All on-board systems are virtual, in direct contact with Polysentience. There are no physical commands,

no monitors, screens, levers, sticks or buttons at all, to save on materials and make the design as simple and streamlined as possible. In case the neural interface is damaged, there are other two emergency interfaces, plus enough spare parts to repair any damage to this important system. In case the pilot loses control of the craft anyway (all neural interfaces are destroyed, or the pilot loses consciousness), then any other Freespacer can fly the Traveller on remote via Polysentience, either through the craft's standard piloting interface or controlling directly and individually each individual system onboard, making Travellers very difficult to disable.

Emergency Systems

Most systems on-board are redundant, except, for obvious reasons, the pilot himself. However, like said before, a Traveller can be remote-controlled via Polysentience even if the pilot is taken out of commission. Onboard systems are constructed with simple, sturdy, low-tech parts, so that if some part of the ship is damaged, it can either be cannibalized for spare parts, or it can be repaired by cannibalizing other, less important systems. Often Travellers will have a partly-disassembled Junker stuffed in a maintenance hatch, in case the craft is damaged and the pilot needs help repairing it.

Life Support Systems

The finely-tuned micro-ecology of a Freespacer shuttle is a marvel of biology and genetic engineering. Lichens and unicellular algae thrive in the corners of the ship, filtering the air and keeping it breathable. All Travellers have miniature hydroponic farms for growing very simple but highly nutritious foods capable of sustaining them for long periods of time, and the fission reactors can be used to produce small quantities of several elements, should any be needed (especially heavy metals and the radioactive isotopes necessary to Freespacer biology). Travellers don't usually have artificial gravity.

Propulsion

The main mean of propulsion is an especially huge solar sail, developed from old Freespacer “racing” models (Solar sailing is one of the very few non-virtual sports and entertainments popular among Freespacers, mostly because of its usefulness). There are several of these “racing” models, but all discard the conventional circular “parachute” design in favor of more complex and multi-layered shapes that allow a far greater control and maneuverability, and a higher maximum speed and acceleration. In addition, multi-layered sails are still effective even if heavily damaged. Multi-layered sails are quite complex to deploy, and therefore would be extremely cumbersome if used on larger crafts. Some Gypsy-class Industrial ship have tried mounting them with some success, but larger ships still default to the more simple and straightforward circular single-layered sail. Combined with the brand-new introduction of the Inertialess Drive, Freespacer Travellers, especially if there are very active stars nearby, can achieve impressive speeds and a maneuverability almost on par with that of a fighter.

Shield Systems

Travellers usually have no shielding at all, mostly because shielding is in contrast with the Failover design philosophy: Shields are costly and require a lot of power, and, once they've been disabled, are useless. The Way of the Failover says that “Problems are gonna happen anyway, better be ready for em”, so Freespacer crafts are built to ABSORB and not to RESIST damage.

Weapons Systems

Coherent Beam Laser

The most common “weapon” found on Travellers, it's actually just a powerful multi-use cutting and welding tool. Almost all Travellers mount one of these.

- Location: Usually at the end of a multi-jointed robotic arm.
- Primary Role: Emergency repairs, salvage, mining
- Secondary Role: Anti-starship weapon
- Damage Rating Value: DR 3
- Range: 4 meters (13 feet)
- Rate of Fire: Constant
- Payload Unlimited

Pseudonova EMP/Nuclear Cruise Missile

Combat Travellers designed for bombing and anti-starship duty can usually mount one Pseudonova missile on an external pylon. One possible tactic could be staging massive swarm attacks against enemy capital ships, with numerous Travellers hyper-jumping into the battlefield as short range, launching missiles from different angles, and then hyper-jumping back out, thereby providing Pseudonova missiles with FTL capability without wasting resources to build a FTL drive only to be vaporized when the missile hits its target.

- Location: external hardpoint
- Primary Role: Anti-starship weapon
- Secondary Role: EMP weapon
- Damage Rating Value: DR 5, but can be toned down until DR 4
- Range: 2 AU (guided) / 80 AU (ballistic)
- Rate of Fire: Single shot
- Payload 1
- Max Velocity: 0.6c (guided) / 0.3c (ballistic)

Warding Rune Autocannon

An interesting tactic for Combat Travellers devised by the more defensive-minded Freespacer engineers is to outfit them with turreted Warding Rune Autocannons and employ them as an additional layer of anti-missile protection by surrounding a friendly ship and laying out interception fire against incoming missiles, adding their (highly mobile) firepower to the ship's own point-defense systems. By

synchronizing their efforts through Polysentience, the combined volume of fire of multiple, independent, coordinated starship-based and shuttle-based Warding Runes could prove an extremely effective way of shooting down missiles and small crafts. This combination tactic has been nicknamed “Warding Chant Nexus” by Freespacer thinkers.

- Location: External Turret
- Primary Role: Point-defense Weapon
- Secondary Role: Anti-fighter Weapon
- Damage Rating Value: DR 4
- Range: 0.1 AU
- Rate of Fire: 8000 rpm
- Payload 72000 rounds