

"Shugo-Seirei" Medical Evacuation Shuttle

The Shugo-Seirei is a non-combative medical evacuation shuttle.

About the Ship

The Shugo-Seirei, or "Guardian Spirit" has been designed to serve as a military and civilian means of medical evacuation for ambulatory patients, or as a means of rendering medical aid in the event of an emergency.

Key Features

The key features of the Shugo-Seirei consist of several features which centralize around safety and the delivery of medical aid. The primary features include; thick hull structure, high traveling speed, top-of-the-line defensive systems, and an internal compartment complimented with a wide range of medical equipment.

Mission Specialization

The Shugo-Seirei is intended to serve as a medical transport and aid delivery shuttle.

Appearance

The Shugo-Seirei is a rather bulbous craft, designed in a largely spherical manner to provide optimal structural integrity for the passenger compartment. Along with the spherical central hull portion, the Shugo-Seirei includes four rather large thrusters.



History and Background

The Shugo-Seirei was developed during the late portion of the year [YE 30](#) by the [United Manufacturing Cooperative](#). The design was requested by the United Outer Colonies by the Prime Minister Ayana. The reason for the design was quite simple, to provide a better grade of medical coverage for the people of the UOC, both in and out of a military context.

Statistics and Performance

Statistical Data

General

- Class: UMC-NCS-MED-01¹⁾
- Type: Medical Shuttle
- Designers: United Manufacturing Cooperative
- Manufacturer: United Manufacturing Cooperative, Lorath Matriarchy, United Outer Colonies, United Manufacturing Cooperative Affilates
- Production: Mass Production
- Fielded by: United Outer Colonies, United Manufacturing Cooperative, Lorath Matriarchy, United Outer Colonies Peacekeeper Force, [Star Army of Yamatai](#)

Passengers

Crew:

- Pilots: 1
- Assistant Pilot: 1
- Medical Technicians: 2

Maximum Capacity:

- Bed-Bound Patients: 6
- Passengers: 12.
- Total: 22

Dimensions

Length: 23 Meters Width: 20 Meters Height: 21 Meters) Decks: 1.5

Propulsion and Range

Lorath Subspace Drive System: 7500c **Hyperspace Fold Drive:** .5 LY a Minute **Gravitic Drive:** .25c
Lorath Magneto-Plasma Drive: .40c Range: 100 LY Lifespan: 10 Years Refit Cycle: Whenever upgrades are available and ship is able to spend time in dock.

Inside the Ship

Deck Layout

Forward Section	Middle 'Bulb'	Rear
Cockpit	Passenger Seating	Loading Hatch
Crew Seating & Computer Access	Medical Treatment Area	Decontamination System

Compartment Layouts

Cockpit

The cockpit of the shuttle is a single seat space. Control interfaces are located to the left and right of the pilot seat, and on the arm-rests of the pilot seat. A display & control panel is located in front of the pilot seat, placed upon a pedestal which extends from the pilot seat. The forward portion of the cockpit is comprised of transparent [Duremium Alloy](#) and includes an internal and external shutter system to protect the cockpit area.

Crew Seating & Computer Access

The crew seating area consists of a three-seat compartment. The forward most seat is placed directly behind the cockpit and is placed to face forward, thus providing a view of the cockpit from behind. The seat includes a pair of armrest mounted control interface panels, and a retractable pedestal which can be extended from the base of the chair. When extended the pedestal can be locked into place in an upright position. The pedestal module includes a multi-configuration panel which can provide a secondary pilot interface or secondary computer interface and control.

The other two seats are placed behind the forward seat. The two seats are placed on a pivoting mount which allows for the occupants to rotate ninety-degrees. The left side seat is capable of rotating to the left, and the right side can rotate to the right. To the left and right sides of the compartment are wall-mounted computer access and monitoring panels. These panels can be configured to provide a wide range of interfaces spanning from shuttle control, engineering control, communications, computer data input & retrieval, and passenger/patient monitoring.

Passenger Seating

Located in the central portion of the middle compartment is the passenger seating area of the shuttle. The passenger seating area consists of two rows of six seats placed back-to-back. The seats are designed to include a basic communications and computer interface panel with minimal security access. These seats are primarily intended to provide comfort for long-term travel and to provide evacuees the capability to communicate and coordinate. Access to communications and computer data can be restricted by the shuttle crew. The seats can be removed to provide a greater area for equipment storage, or additional medical beds.

Medical Treatment Area

Located along the outer areas of the middle portion of the shuttle are six medical beds. Each medical bed is a self-contained treatment station. Along with the conventional bed equipment, a storage and supply cabinet system has been installed upon the bottom portions of each bed. Mounted above each bed is a pico-jelly and nanomachine dispenser device. Around each bed is a two-meter space which can be sectioned off by a retractable transparent polymer shell which can effectively separate the individual compartment from the other portions of the shuttle.

Loading Hatch

The rear of the shuttle includes the primary access point for the shuttle. The loading hatch consists of an airlock-style double-door system. One door is of a conventional hatch design, the second door is a loading-ramp style hatch which can be controlled from the cockpit, crew seating area, or access panel located on the interior side of the loading hatch.

Decontamination System Area

Located between the two doors of the loading hatchway is the decontamination portion of the shuttle. In this area an atmospheric seal can be established. Within this sealed area are a series of air purification and recycling devices, sanitizing fluid sprayers, plasma wash systems, and nanomachine sprayer systems.

Ship Systems

Hull

External Composition

Exterior hull components are comprised of [Nerimium](#) coated [Duremium Alloy](#).

Damage Rating

“Very Heavy” Mecha & Small Craft Type: SP 25, Duremium Modifier, SP 20

Internal Composition

Internal hull insulation materials are comprised of [Duremium Alloy](#) and boron carbide. Bulkheads are comprised of [Duremium Alloy](#).

Shield Systems

Primary Shield System

The shuttle utilizes [Lorath Shield System Technology](#), including electromagnetic, plasma, and gravitic varieties.

Damage Rating

Advanced: $0.8 \times \text{Base SP} = \text{Up To } 20$ **Tandem Shield Usage²⁾:** $1.0 \times \text{Base SP} = 25$ **Threshold:** 5

Remote Shield Module System

This shuttle includes the [Shield Module Deployment System](#). In this design, the shield modules are externally docked on the left and right sides of the shuttle. In this application the drones have been designed to interlock with each other to form a solid barrier.

Specifications

Remote Modules: 14

Max Space Between Drones	Four Meters
Application Size Class	Armor Medium
Damage Rating	0.8×15 (12)
Threshold	4

Propulsion Systems

Faster Than Light

Subspace Wave Drive

This shuttle includes an [Enhanced Subspace Wave Drive](#).

Hyperfold

This shuttle includes a hyperfold drive system for long-distance travel.

Sub-Light

This shuttle includes [Common Lorath Propulsion Systems](#) including plasma and gravitic systems. The plasma drive systems of the shuttle are self-contained and are located entirely outside of the crew-habitable portions of the shuttle. The four plasma drive engines can be accessed through interior crawl spaces.

Power Supply System

QNC

The primary systems of the shuttle are powered by a [QNC](#)

Plasma Systems

The plasma-related systems of the shuttle are powered by a combination of the QNC output and a [Lorath Plasma Gathering and Containment Systems](#) package.

Bacterial Power Supply

Secondary power, such as power for the medical equipment of the shuttle, is supplied by a shuttle integrated [Bacterial Charge Pack](#) system which is kept isolated from the medical refuge systems.

Cockpit & Interface Systems

Neural Interface

This shuttle includes the [Neural Interface System](#) as a means of hands-free telepathic control of the shuttle.

Multi-Configuration Interface & Display Panels

This shuttle includes interface and display panels which utilize volumetric display systems in tandem with [Pico-Jelly](#) supported tactile interfaces and displays. These panels allow for computer interaction & control, shuttle control, and other user-system input and output. Thanks to the Pico-jelly support, these panels provide multiple tactile configurations, and interactive displays.

OLED Pico-Jelly Displays

Placed upon the bulkheads and forward canopy of the cockpit is a thin layer of pico-jelly infused with OLED material. This coating is capable of providing interactive displays upon the surface of the cockpit. Additionally, in the event of the blast shutter of the cockpit canopy being closed the OLED display can offer the pilot a simulated cockpit view.

Emergency Manual Control

In the event of catastrophic control failure, a back-up control system can be pulled out from beneath a removable floor panel in the cockpit. This control system consists of a 'control stick', throttle control, and manual electronic digital data input system. This interface is hard-wired into the shuttle's systems, thus allowing for computer control to be bypassed in the event of complete computer shut-down.

Computer Systems

This shuttle utilizes the [MIKO Electronics Suite](#), and includes the Diplomatic and Science packages of the computer system.

Sensor Systems

The shuttles sensors include those found in the MIKO package, along with the full range of [Lorath Sensor Packages](#).

Communications Systems

The shuttle includes Conventional [Lorath Communications Systems](#).

Emergency Systems

Fire Suppression Systems

In the event of a fire within the cabin or within a system area of the shuttle a fire retardant system becomes active. Within the cabin a focused foam spraying system and forcefields are utilized to contain and suppress fires. Within internal systems, the shuttle utilizes a forcefield system to suppress the fire and deprive it of fuel.

Hull Breach Control Systems

In the event of hull breach, the shuttle utilizes a combined system to suppress the breach. Precision forcefields are utilized to supplement hull durability on the shuttle's interior and exterior. Along with the forcefields, a [Pico-Jelly](#) spray system is utilized which applies a layer of a mixed metallic, plastic, and organic pico-jelly compound to the breach, which effectively forms a temporary patch which the durementium can later seal over.

Life Support Failure Response Measures

In the event of life support failure, the shuttle has a number of available solutions to overcome the lack of oxygen recycling, or vacuum decompression.

Wind Powersuit Lockers

In the event of an emergency, or in a situation of potential hazard, the shuttle includes twenty-five '[Wind Armor Series](#)'. These suits can be utilized for personal life support, or for increased survivability. Each suit is stored in a vacuum decompressed bag which compresses the suits to promote optimal conservation of space.

Pico-jelly Suit Dispenser

In each seat, an automated pico-jelly spray system is included. In the event of sudden decompression, the system activates and coats the individual sitting in the seat with a layer of plastic [Pico-Jelly](#). Along with the coating, an oxygen recycling mask is provided in a ceiling compartment. This recycling mask is

capable of providing air for up to three days. This system can also be configured to activate upon the detection of harmful pathogens.

Emergency Communication

In the event of the shuttle sustaining heavy damage, going off course, or pilot error, the shuttle includes an automated emergency beacon system and communication transmitter. This self-contained system utilizes a QNC for power, and utilizes a subspace transmission system for general signal transmission, or subspace laser transmission. This system is capable of running for up to seven days of continued operation. The unit is contained within a large suitcase-sized box beneath the co-pilot seat.

Pilot Emergency Escape Capability

In the event of catastrophic damage to the shuttle, the piloting section of the shuttle can be separated from the rest of the ship and ejected through the use of compressed gas thrusters and low-power gravity manipulation devices. The pilot module separates itself and provides its own enclosed space by utilizing a durandium shutter which seals off the pilot section. The pilot section alone can provide life support to two individuals for up to one week. The pilot section also includes a general-area cryonic stasis system which can preserve individuals for up to fifteen years.

Passenger & Patient Emergency Escape Capability

In the event of destruction of the cockpit portion of the shuttle, or if there is a risk of engine melt-down, the passenger and medical treatment portion of the shuttle can effectively jettison all other portions of the shuttle. Upon jettisoning other portions of the shuttle, the central portion of the shuttle switches all systems to 'stand-by' mode to conserve power. Additionally, an automated distress beacon is activated to signal for aid. The central portion of the shuttle can provide life support for twenty individuals for up to a week. This function requires authorization to be initialized from either the pilot, the secondary pilot, or two of the medical technicians present.

Safe Self Destruct Module

In the event of potential capture, the shuttle includes a safe type of self destruct system. This system utilizes a simple over-load procedure which results in a high-power energy surge which is channeled throughout the key systems of the shuttle. This surge is designed to flash-melt systems which are meant to be kept as UOC, Matriarchy, and UMC secrets.

The self destruct module is a system which is separately controlled from the rest of the shuttle's systems, thus preventing external interface with the system to ensure crew safety. However, in the event of pilot termination, the system connects itself to allied networks to allow for remote detonation.

To activate the system, the pilot must give voice authorization consisting of their name, ID code, and

personalized passcode. The pilot can then provide a time duration for the countdown sequence.

Emergency Quarantine System

In the event of a harmful pathogen or alien presence being found aboard the shuttle, the emergency quarantine system can be put into effect. Upon activation, the shuttles hatches are sealed from inside and out, navigational computer systems prevent the plotting of a course to populated planets, and an automated beacon is activated which broadcasts a warning to nearby ships and planets indicating the threat found aboard. The emergency quarantine can only be deactivated when the threat which triggered the quarantine is eliminated.

The emergency quarantine can be activated by pilot command, medical technician command, or by automatic computer response to known harmful agents.

Remote Control System

In the event of pilot termination or emergency, the shuttle can be remotely controlled by allied networking systems. All systems are fully accessible except for the self-destruct system unless the pilot is confirmed dead by internal sensor systems.

Emergency Rations

Each shuttle is complimented with six [Lorath Standard Issue Canteen Kit](#), three months supply of preserved ration biscuits, and three months supply of [Nutritional Supply Pack](#) units.

Medical Systems

Medical Beds

The shuttle includes six KHI [Treatment and Examination Bed](#) units which are utilized as the primary feature of the shuttle. Additionally, much like the Wayfarer, the seats of the shuttle include medical bed functionality.

Equipment Cabinets

Located at the base of each bed are a set of cabinets which include basic aid equipment such as blankets, common medications, pillows, slings, exam equipment, and other such commonplace items.

Medical Equipment

The following is a list of medical equipment found aboard the shuttle

- [Nutritional Supply Pack](#)
- [Electro-Stimulant Pack](#)
- Medical Modified [Organic Tissue Culture Technology](#)³⁾
- Shuttle Integrated [Remote Medical Drones](#)
- [Memory Storage Service](#) interface
- [Lorath Medical Nanomachine Compounds](#) With Limited Manufacturing Systems & Full Range of Administration Tools
- Modified [Emfratec Cooking Technology](#) 'Zapper' model, Autoclave
- [Lorath First Aid Kit](#) Cabinets
- [Osmotic Patch](#) Fabricator & Dispenser
- [Pico-Jelly](#) Dispenser & Control Units
- Disposable Surgical Supply & Tool Kits⁴⁾
- Cybernetic Component Repair Kit⁵⁾
- Bed-Mounted Nutritional Supply System & Blood Filtering System
- Bed-Mounted Waste Extraction System
- Bed-Mounted Mechanical Arm System, Remotely Controlled via Neural Interface
- Internal Shuttle Integrated Sensor Package
- Bed-Integrated Cryo-storage Systems

Portable Equipment

- [Peacekeeper Pocket Medikit](#)
- [Lorath First Aid Kit](#) Varieties
- Two QNC Powered Portable [Treatment and Examination Bed](#) Units With Anti-Gravity Systems
- [Remote Medical Drones](#)
- Medical Grade [M37/38 Environmental Battledress Uniform](#) Attire
- [MedicaGel](#) Application and Dispenser Units

Decontamination Systems

Hatchway

Located between the two doors of the loading hatchway is the decontamination system for the shuttle hatchway. In this area an atmospheric seal can be established. Within this sealed area are a series of air purification and recycling devices, sanitizing fluid sprayers, plasma wash systems, and nanomachine sprayer systems. These systems when used in tandem theoretically would be able to exterminate any harmful pathogens. However, when patients and crew are traversing the hatchway, the function of the system is limited to sanitizing fluid spray systems, air purifiers, and nanomachine sprayer systems.

Passenger & Patient Area

Within the passenger and patient area of the shuttle a steady stream of medical nanomachines are pumped into the air supply to effectively neutralize a majority of harmful pathogens. To aid in maintaining surface sterilization, a sanitizing fluid spray system can be activated which washes all surfaces of the passenger area. Placed throughout the floor and ceiling of the passenger area are vacuum assisted drains which provide a means of draining the fluid utilized for sterilization, or for the removal of waste materials such as blood, urine, or other offending materials. In the event of a severe pathogen presence or harmful alien presence, a plasma wash system can be activated which is designed to incinerate known organic organisms.

Personal

Located at the forward section of the shuttle are two 'booths' which permit an individual to stand inside. A breathing mask is present within the booth and when the mask is placed onto the user and is activated, the user is submerged in a cleansing nanomachine and sanitizing fluid solution. Once the submersion is complete, the fluid is drained away and rapidly evaporates from the user's clothing and skin.

Additionally, conventional water and alcohol based washing basins are present.

Toilet

A single toilet is included in the shuttle, it consists of a small booth which includes a pair of tube-like systems which are designed to fit snug to waste orifices of the user. A low-intensity vacuum force is utilized to aid in the removal of waste. After use the tubes retract into an enclosure which submerges the tubes in a sanitizing fluid for one minute. After the sanitizing cycle the tubes are extended from the in-wall enclosure and are ready for use.

Life Support Systems

Air

The shuttle utilizes forced-air circulation systems to provide air circulation through the shuttle. Air is forcibly pumped into the compartment, and forcibly extracted. Upon extraction, the air is exposed to a plasma wash before being cycled through a filtration system which removes harmful chemical traces and replenishes the amount of oxygen present. The circulated air is also passed through a temperature regulator which permits adjustment to the ambient temperature within the shuttle.

Water

The water supply systems of the shuttle operate on a multi-branch system. Three systems are present; consumption, utility, and waste.

The consumption system consists of a drinkable supply of water. This supply can be accessed through taps located throughout the shuttle. This system follows up on the tail end of the consumption process by including a water recycling system which is attached to the liquid waste extraction system. All fluid put through the recycler system is double purified, first by filter, then by electrical separation into its base elements, then is re-condensed into drinkable water.

Food

Food is supplied to the passengers and crew through the use of an integrated [Organic Tissue Culture Technology](#) which delivers food in the form of a fine paste through several dispensers throughout the shuttle.

Gravitic Field Generator

The shuttle includes a gravitic field generator, this device is intended to prevent scalar damage, and provide gravity for the interior compartments of the shuttle.

Psionic Scrambler

[Psionics Scrambler Device](#)

Weapon Lock-box

This shuttle lacks a dedicated armory, however, located behind the pilot seat is a lock-box which contains four ['Arbitrator' Pistol](#), eight magazines, and six non-lethal 16 gauge [Lorath Solid Munitions](#). Lock-box keys are distributed throughout the shuttle crew.

Defensive Systems

- [Mi-Sized Countermeasure and Signaling Missile Launcher System](#): One twelve tube launcher system, Tripple-stacked payload 36 rounds, limited to non-offensive ordinance.

Small Unit Complement

Remote Medical Drones

[Remote Medical Drones](#) x 24 - Launched via independent missile launch system.

1)

United Manufacturing Cooperative - Non Combat Shuttle - Medical - Model 01

2)

Using EM, Grav, and Plasma

3)

Modified to produce functional organs, blood, skin tissue, etc.

4)

laser scalpel, metal scalpels, clamps, forceps, tweezers, medical-grade pliers, sponges, and other common-place surgical gear

5)

Diagnostic computer, precision tools, common-place replacement parts, battery powered hand-tools

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