STARFLEET

GENERAL REFERENCE

2400 HANDBOOK 2

STARFLEET

ACADEMY

HANDBOOK

AH: 23809573

STARFLEET COMMAND

UNITED FEDERATION OF PLANETS

FEDERATION CLASSIFIED

STARFLEET COMMAND

Copyright and Distribution Permissions

THIS DOCUMENT IS NOT MADE, DISTRIBUTED, OR SUPPORTED BY PARAMOUNT PICTURES.

Copyright notices:

Version

This is Edition 1 version 0.3.

About this Document

This document was created to provide fans of the Star Trek franchise a general reference of the various equipments for Starfleet personnel and starships. It is a collection of available canon or semi-canon data. Conflicting or missing information have been adjusted, filled or marked by the author and are purely fictional. Many details in this document are purely fiction of the author.

Tricorder

Since the computer age, people have been wishing for a handy machine for everything. The tricorder is the modern day magic wand. I can do many things from taking measurements to complicated astrophysical calculations. The basic mission of the tricorder is to collect scientific information. Therefore, it has a vast general library and the most often used general analysis programs. However, the general tricorder does not have the most advanced special algorithm for each field and need to be uploaded for such special missions. The reason for the exclusion of such algorithm is for the tricorder to have as much memory available for a mission.

For ease of use the tricorder has a limited number of control buttons. In order to cope with the complex handling of sensor data, visual image recording, multichannel communications and other duties, the tricorder has one of the most advanced computerized management. It can determine the most probable needed function needed by the user and offer those for selection first.

The tricorder sensor suit consists of a number of mechanical, electromagnetic, and subspace devices mounted about the internal frame as well as embedded in the casing. Each sensor has a preprocessor for preparing data for analysis.

The tricorder has a subspace transceiver assembly (STA) for communications and exchange of data. The typical range is the same as with the personal communicator or other tools and instruments with STA. In an emergency the tricorder can dump the data to the ship by the push of a specially marked button. All memory sections are transmitted in sequence, including the libraries attached.

TR-560 Tricorder VI:

This the first tricorder design which is divided into sections. Two are connected by two hinges. The third section is a separate handheld.

Dimensions: Length 12 cm; width 8.5 cm; thickness 3 cm.
Mass: 353 g
Number of sensors: 235 (115 forward 0.25 degree; 120 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: rechargeable sarium crystal for 18 hours full use or 15.48 W.
Performance:
Production year: 2367
Production Base: Starfleet R&D San Francisco

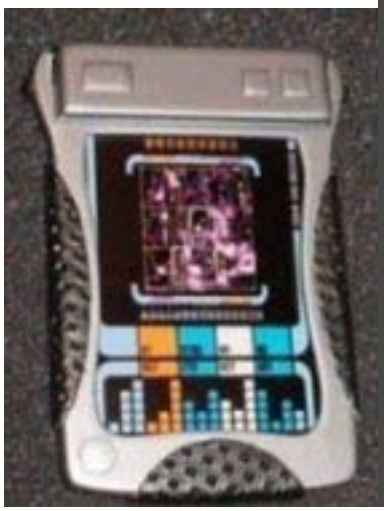
TR-580, TR-595H(P) Tricorder VII:

This is one of the first tricorder designs which are divided into sections. Two are connected by two hinges. The third section is a separate handheld. It has a micromilled duranium foam case, positive-feedback buttons and a 2.4 x 3.6 cm display. It has twenty-seven polled main computing segments (PMCS) rated at 150 GFP per second. Emergency Dump Mode transfer is 825 TFP. Memory storage consists of 0.73 kquads interim storage (14 nickel carbonitrium crystal), and 6.91 kquads (3 isolinear optical chips). Swappable library crystal chips with 4.5 kquads each.
Dimensions: Length 12 cm; width 8.5 cm; thickness 3 cm.
Mass: 353 g
Number of sensors: 235 (115 forward 0.25 degree; 120 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: rechargeable sarium crystal for 18 hours full use or 15.48 W.
Performance:
Production year: 2367
Production Base: Starfleet R&D San Francisco

TR-590 Tricorder X:

It has a gamma-strenghtened polyduranide case, positive-feedback buttons and a 2.4 x 3.5 cm display. It has five polled main computing segments (PMCS) rated at 275 GFP per second. Memory storage consists of 9.12 kquads interim storage (8 densified chromopolymer isolinear crystals). Except for the medical tricorder it has no hand held scanner.
Dimensions: Length 15.81 cm; width 7.62 cm; thickness 2.84 cm.
Mass: 298.3 g
Number of sensors: 315 (189 forward 52.3 arcs; 126 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: induction-rechargeable sarium crystal for 36 hours full use or 16.4 W.
Performance:
Production year: 2373
Production Base: Starfleet R&D San Francisco

TR-590 Tricorder XI:



It has a gamma-strenghtened polyduranide case, positive-feedback buttons and a 2.4 x 3.5 cm display. It has five polled main computing segments (PMCS) rated at 275 GFP per second. Memory storage consists of 9.12 kquads interim storage (8 densified chromopolymer isolinear crystals). Except for the medical tricorder it has no hand held scanner.
Dimensions: Length 15.81 cm; width 7.62 cm; thickness 2.84 cm.
Mass: 298.3 g
Number of sensors: 315 (189 forward 52.3 arcs; 126 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: induction-rechargeable sarium crystal for 36 hours full use or 16.4 W.
Performance:
Production year: 2375
Production Base: Starfleet R&D San Francisco

Tricorder:

Dimensions: Length 12 cm; width 8.5 cm; thickness 3 cm.
Mass: 353 g
Number of sensors: 235 (115 forward 0.25 degree; 120 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: rechargeable sarium crystal for 18 hours full use or 15.48 W.
Performance:
Production year: 24xx
Production Base: Starfleet R&D San Francisco

Tricorder:

Dimensions: Length 12 cm; width 8.5 cm; thickness 3 cm.
Mass: 353 g
Number of sensors: 235 (115 forward 0.25 degree; 120 omnidirectional); deployable hand sensor with 17 high-resolution devices (1 arc minute)
Power: rechargeable sarium crystal for 18 hours full use or 15.48 W.
Performance:
Production year: 29xx
Production Base: Starfleet R&D San Francisco

Medikit

Being in Starfleet often means facing crisis with injured people. Therefore, it is important to know how to use and apply emergency medical equipment. The standard Starfleet medical kit design has changed over the years, but the tools included have been the same. See medical and first aid manuals.

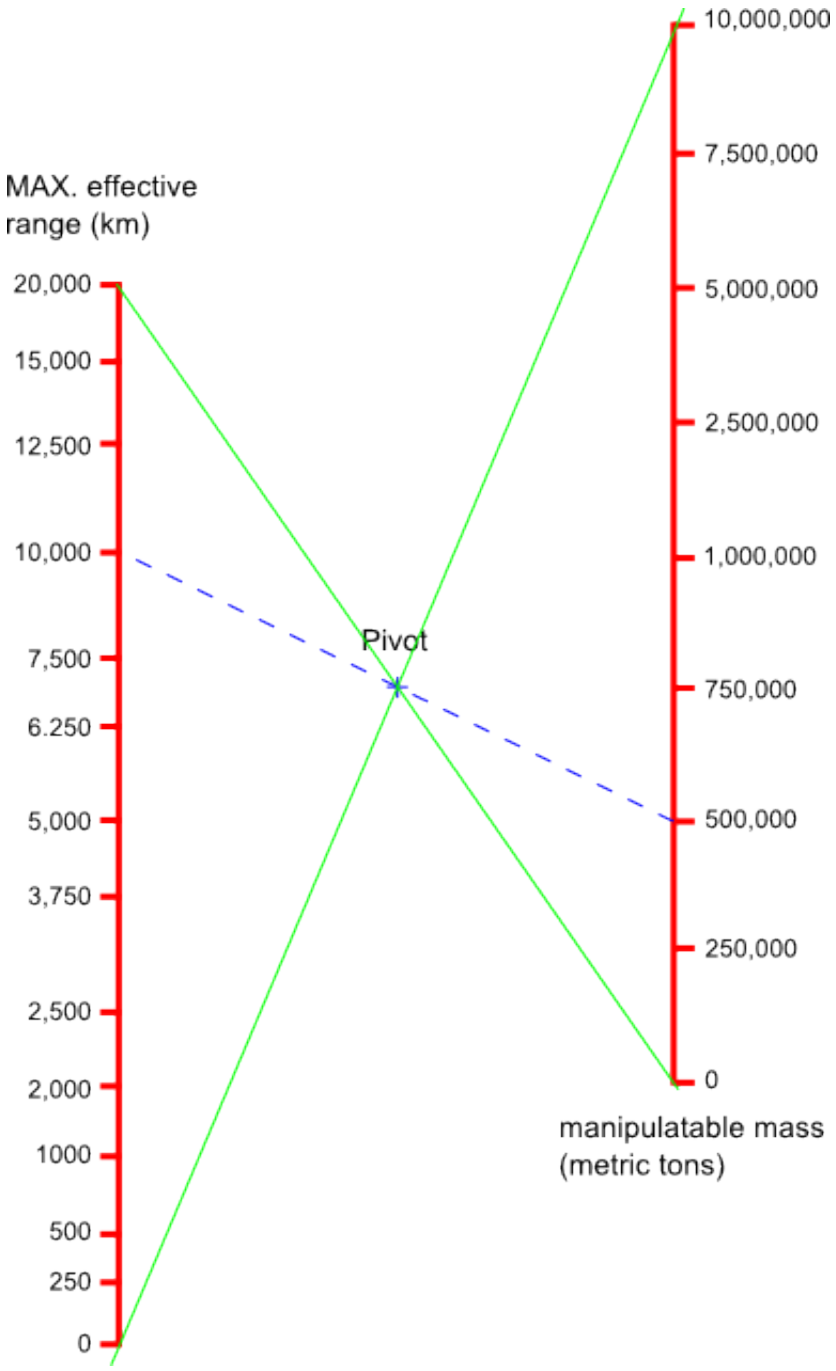
Tractor Beam

The tractor beam is one of the most important tools for starships and supply work. Familiarizing with the physics of the tractor beam is required for safe operation. In short the tractor beam is a rope less tool to bind or tow object. However, the torque forces are the same and bound to the tractor emitter. Therefore, the tractor emitter base must be able to handle such forces or be torn apart. Note that while the tractor beam is active the object being targeted and the emitter base form a two-system system. The gravity center will be in between. The laws of gravity, impulse and inertia will determine the actual movement of both relative to the universe.

In order to tow an object at warp the warp field of the ship has to be expanded to include the towed object within the same warp field gradient as the tractor beam emitter. The strength requirements are the same as at sublight. If the object can be towed at sublight it can be towed at warp as long as it is within the same warp field bubble. Warp velocity will be limited by the ability of the warp drive to maintain the strongest stable warp bubble covering both.

As the tractor beam is based on gravitons the range of effect is limited to 20000 kilometers by their short lifetime. This also means that the amount of mass a tractor beam can hold depends of the distance and vice versa. The effective strength of the tractor beam is usually given for a nominal delta-v of 5 m/s for a given mass and distance. For example the 32 MW main tractor beam emitter of the Galaxy class working at 450 millicochrane can manipulate a payload of 7500000 tonnes up to 1000 meters.

Usually a simple calculator is given in the manual for the tractor beam emitter as follows:



Graph applies to standard Federation tractor beam systems according to TO-2365-1GX-1

In order to use it certain values must be known. The most important value is tractor beam power and strength. Mark this value in the appropriate position. This point will serve as pivot point to calculate either the distance or mass to be manipulated. For this only the value or either the mass or the distance is needed. Draw a line from that value through the pivot point until it intersects with the mass or distance axis. That is where the other value is.

Tractor beam range has been limited by the short lifetime of artificial gravitons and focusing technology. Advanced aperture beam focusing technology currently under trial will double current range limits.

Grenade

Since the early days of modern warfare the grenade has been the weapon for tight situations for the infantry. This has not changed and won't change as long as there are infantries. The Federation uses photon grenades. The typical grenade is usually made into two parts. The top part has the safety ring which has to be pulled in order to arm the grenade. The bottom part has the setting mechanism and the locking mechanism to put the two parts together as well as the unlocking mechanism. The photon grenade has four possible settings: stun, kill, demolition, and incendiary. Usually, it's set to stun. The detonation energy is set according to the selected mode. To change the setting a ring at the bottom has to be pulled out and turned in place and locked by pushing back. When thrown the grenade detonates as soon as it lies still. When it is placed without the safety ring it will detonate after five seconds.

Dimensions: 10 x 5 x 5 cm
Mass: 190 g
Effect Radius: 15 m; (5 m demolition)
Production year: 2370

Torpedo

Torpedoes use warheads which are classified into yield classes.

Class 1: from 0 to 1 isoton. Artillery grenades and micro-torpedoes are in this category.
Class 2: from 1 to 2 isotons. Bombs.
Class 3: from 2 to 4 isotons. Old photon torpedo warheads.
Class 4: from 4 to 8 isotons. Old photon torpedo warheads.
Class 5: from 8 to 12 isotons. Old photon torpedo warheads.
Class 6: from 12 to 25 isotons. Standard photon torpedo warheads.
Class 7: from 25 to 50 isotons.
Class 8: from 50 to 100 isotons.
Class 9: from 100 to 150 isotons.
Class 10: from 150 to 200 isotons.

Further the standard warhead yield can be varied into 10 yield levels with level 10 violating a limit set by strategic arms limitation treaties.

Level 1: firework display.
Level 5: a standard one kilogram antimatter charge
Level 6:
Level 10:.

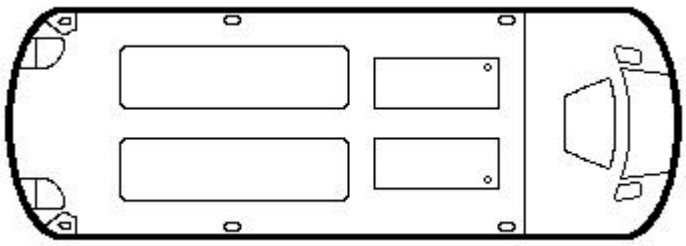
Twin-vortice Photon Torpedo MARK VIII

Maximum Range: 3500000 Km (midrange detonation yield)
Current Maximum Explosive Yield: 12 Isotons
Theoretical Maximum Yield: -
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 247.5 kg
Performance: 0.5c
Production year: 2292
Note: This was an experimental torpedo on spatial energy.

Transphasic Torpedo

Certain departments in Starfleet Command were not satisfied with the photon torpedo. In complete secrecy, old secret research projects were reopened for technology assessments. One was the forbidden research on phased cloaking technologies which resulted in the lost of the USS Pegasus (NCC-53847). The research combined findings with secretly attained Romulan molecular phase inverter technology. After a decade of research, a device was created allowing a temporary molecular phase shift, which circumvented the Treaty of Algeron. The device was redesigned to shift phase randomly and to fit into a torpedo. The first test firing occurred in 2400 in an undisclosed location. The successful test moved Starfleet Command to decide to include this new weapon into the Prestige class ship inventory.

Instead of a conventional warhead the torpedo uses a class 6 graviton warhead. The energy of an M/A warhead is channeled into a hollow chamber of anicium titanide 454 with a certain number of graviton emitters set in a certain arrangement. The tritium gas inside will be compressed into a micro blackhole within 10^{-7} s. 3 nanoseconds later the energy will be released when the torpedo has been crushed. The release occurs within 10^{-10} s resulting in a detonation equal to 200 isotons.



Transphasic Torpedo (standard MARK XXV casing)

Maximum Range: 4050000 Km (warp launch, midrange detonation yield)
Current Maximum Explosive Yield: 200 Isotons
Theoretical Maximum Yield: 250 Isotons
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 190 kg
Performance: 0.75c
Production year: 2375

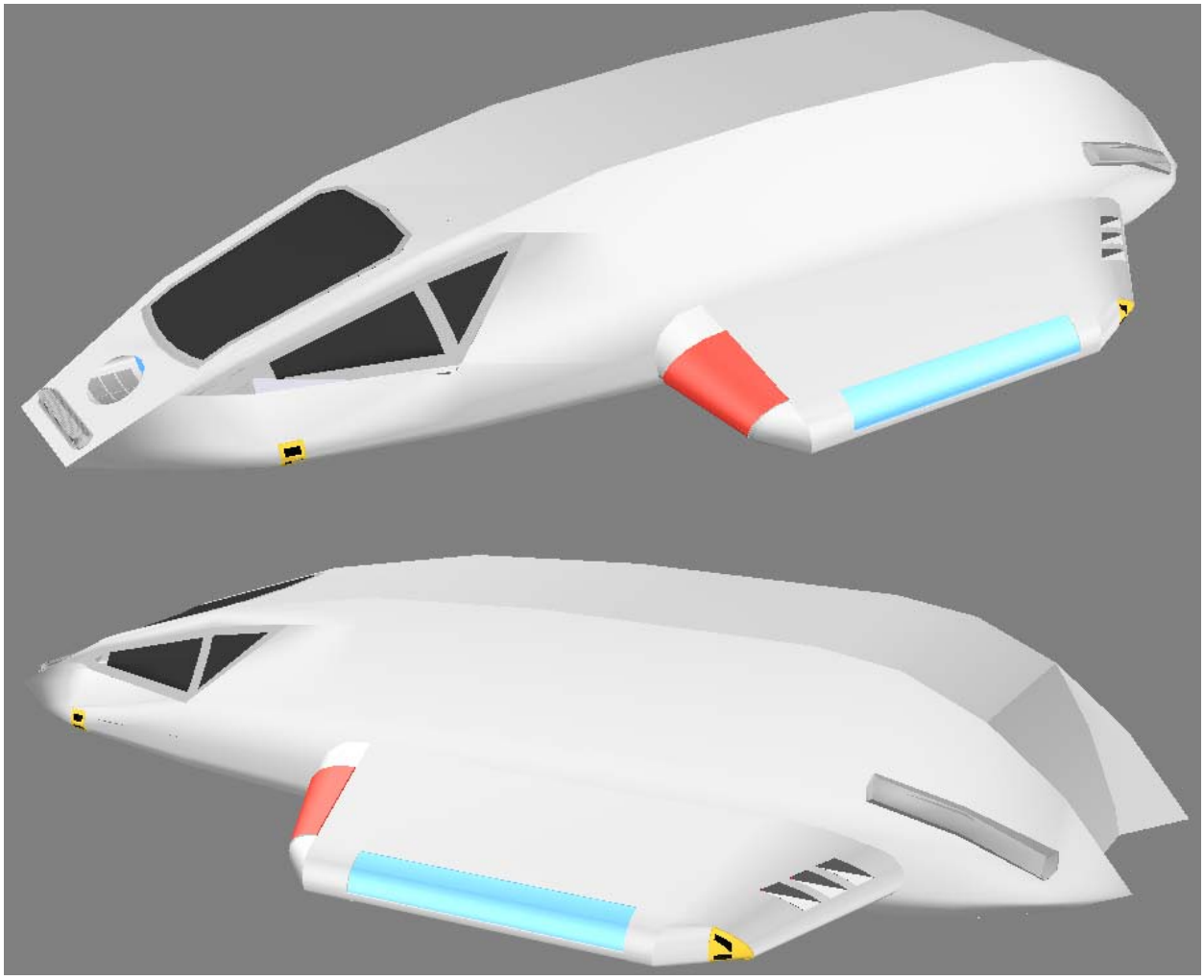
Trilithium Torpedo

The trilithium torpedo uses trilithuim, a byproduct of a warp drive, as explosive. Trilithium is highly volatile resulting in an extreme powerful explosion. When detonated inside a star the trilithium acts as catalysator as it travels with 10 km/s through the star matter. While it traverses the star it can cause one trillion fusion reactions per second. For a 3 kg warhead this would mean the star will burn an additional 3 billion tonnes of hydrogen. For a normal G star it would mean a nine times higher pressure or output than normal resulting in the expelling of the outer star shell and atmosphere equal to a level 12 shockwave.

Shuttlecraft

All Federation shuttles are space worthy, able to enter and fly within an atmosphere, and able to sustain a certain amount of pressure by either gas or fluid environment. Shuttles faster than Warp 5 have been upgraded with drives which do not harm space. Standard inventory includes shields, emergency beacon, pressure suits, medical kit, tool kit and surface survival packs. Shuttlepods don’t have transporter and pressure suits. From Type-5 onward shuttles have transporters for two persons.

SH-1A Magpie SOP shuttle



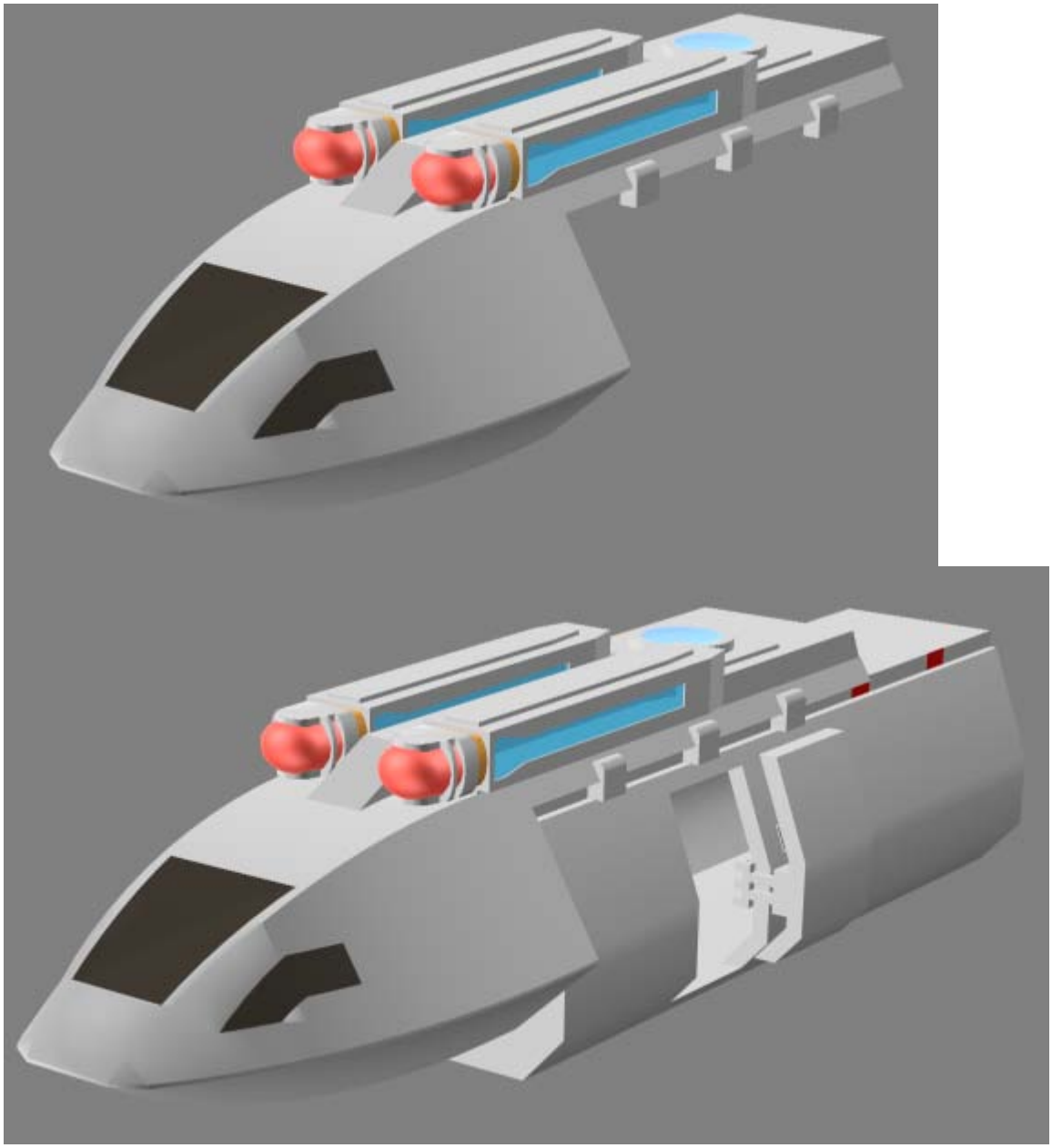
Type: Light special transport shuttles
Accommodation: Crew of 2-3; 16 passengers or 16 CASEVAC patients on stacked stretchers or 12 MEDEVAC patients plus 4 medics or 5 hoover bikes plus 12 passengers or 5x2x3 m vehicle plus 6 passengers
Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions: Length 18.242 m; height 3.5 m; beam 9.604 m.
Mass: 8 metric tonnes.
Performance:

- Full Impulse: 0.25c
- Cruise Speed: Warp 6
- Maximum Velocity: Warp 7 (for fourteen hours)

Armament: Three Type-IV phaser emitters.
Production year: 2370
Production Base: classified
Overview: In the late 2360's Starfleet Intelligence sought an alternative to the type 9A shuttle for fast long-range personnel deployment with stealth.

Hopper

DR-1 Husky



Type: Light Armored Transport
Accommodation: Crew of 2 + cargo specialist. LC type Narrow container with capacity for 26 passengers or 18 patients on triple stacked stretchers plus 2-4 medics.
Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions:

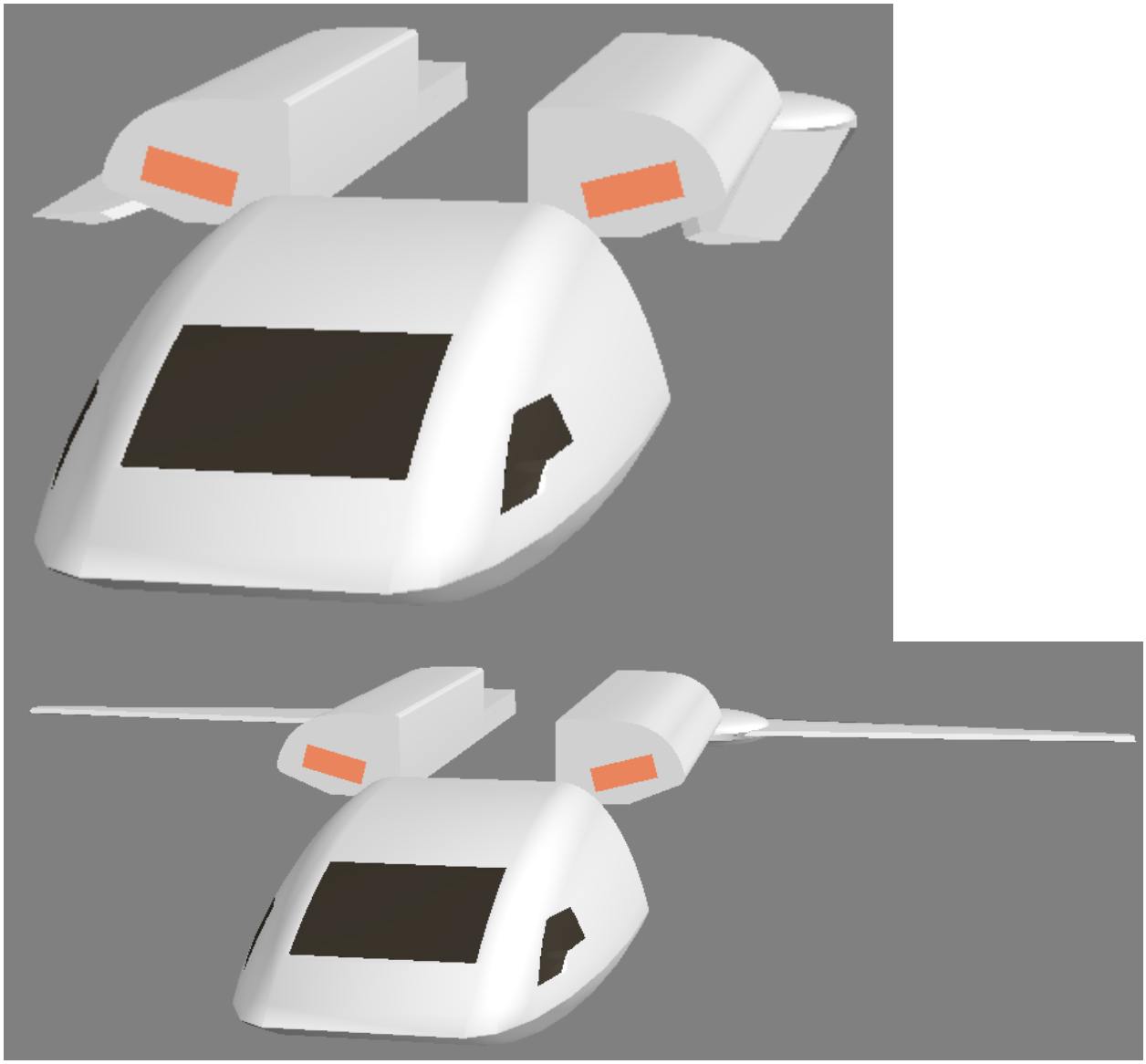
- Length: 12.009 m, Draft: 3.312 m, Beam: 4 m
- (With LC container) Length: 15.2 m, Draft: 3.85 m, Beam: 4.2 m

Mass: 7 metric tonnes
Performance:

- Full Impulse: 0.25c
- Cruise Speed: Warp 2
- Maximum Velocity: Warp 4

Armament: 1 Type IV phaser array forward.
Production year: 2360
Production Base:
Overview: Designed to deploy personnel under difficult conditions where transporter technology is unavailable. The DR-1 soon proved to be too limited in transport capacity.

DR-2 Pegasus



Type: Light Armored Transport

Accommodation: Crew of 2+ cargo specialist. LC type Wide container with capacity for 48 passengers or 42 patients on triple stacked stretchers plus 4-6 medics.
Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions:

- Length: 13.129 m, Draft: 3.359 m, Beam: 6.656-17.3 m
- (with LC type W container) Length: 15.329 m, Draft: 3.75 m, Beam: 7-17.3 m
- (with M-4) Length: 15.733 m, Draft: 3.479 m, Beam: 6.656-17.3 m
- (with M-4 & LC type N) Length: 18.725 m, Draft: 4.474 m, Beam: 9-17.3 m

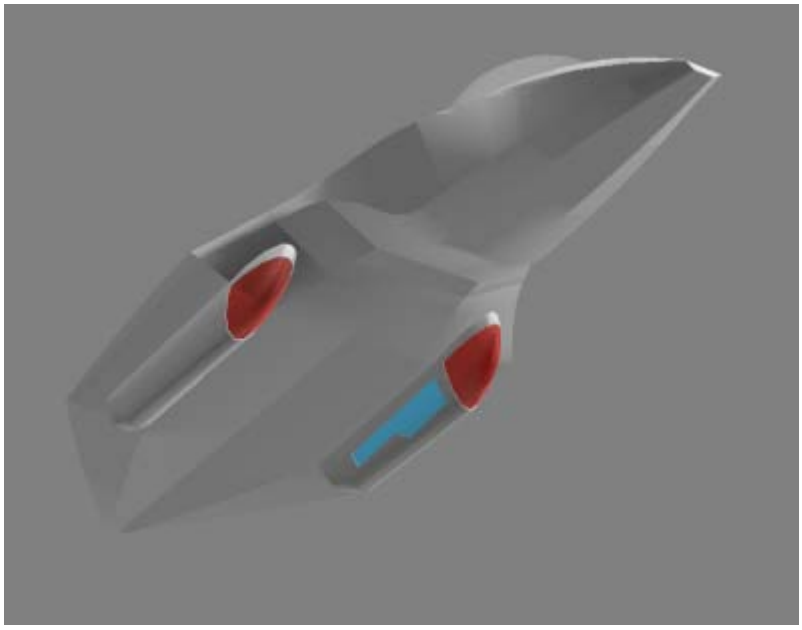
Mass: 8 metric tonnes
Performance:

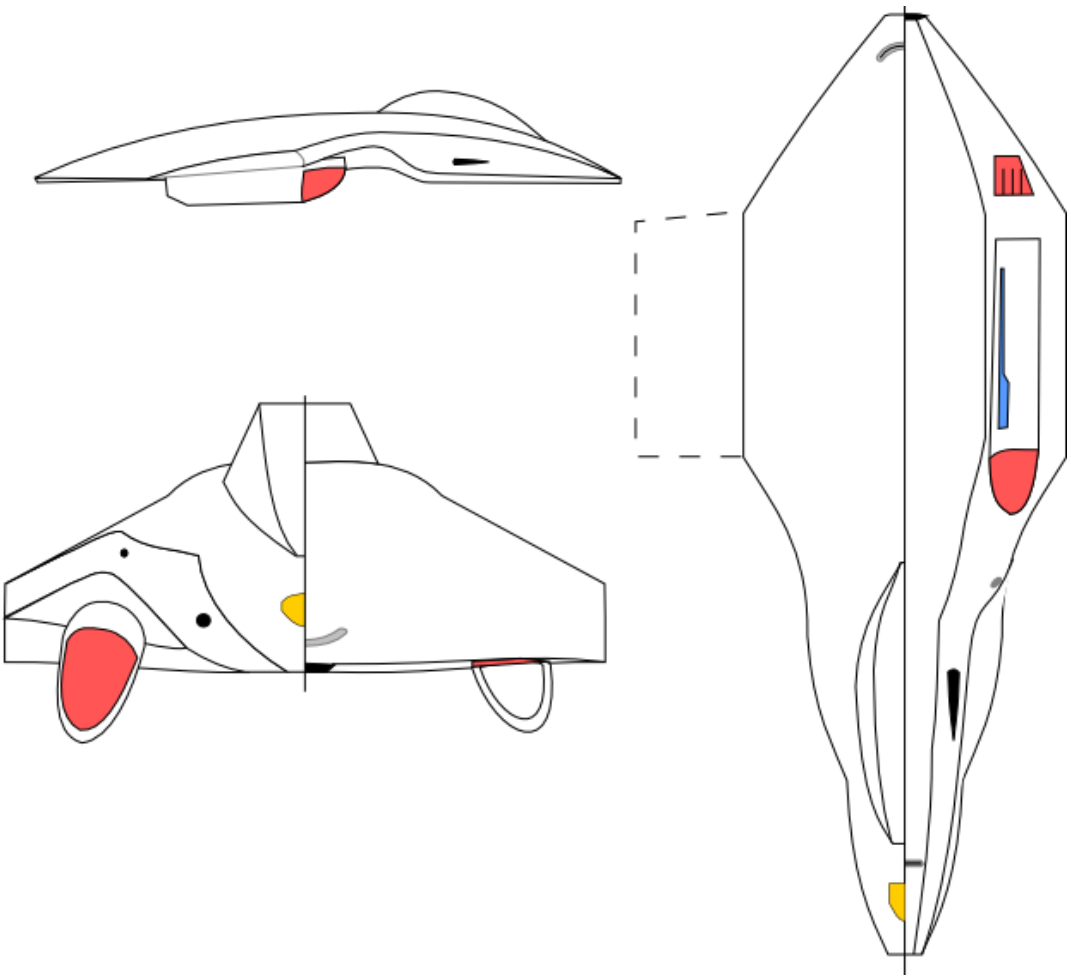
- Full Impulse: 0.25c
- Cruise Speed: Warp 2
- Maximum Velocity: Warp 4

Armament: 1 Type IV phaser array forward.
Production year: 2363
Production Base:
Overview: Designed to replace the DR-1 hoppers with improved planetary flight characteristics and much higher transport capacity. In theory it can transport an M-4 bot together with a LC type N container. There have been only rumors of such deeds, though.

Fighter

FX Shiki Type Fighter





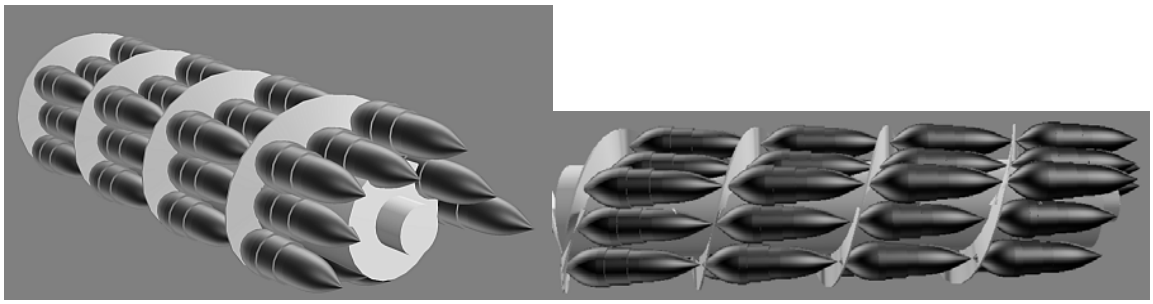
In the past few decades, the numbers of affordable space ships and small shuttle crafts have led to an unprecedented increase in space traffic 100 times compared to a century ago. As a result, the number of accidents and other operator related incidents have increased proportionally as well. In 2370 the Federation Council has passed a mandate for Starfleet to increase policing and SAR capability. Facing the numerical personnel problem, and after review of several analysis reports, Starfleet Research and Development was asked to develop a shuttle sized patrol craft: PATROL (PAtrol vessel for TRaffic safety and contrOL). However, the Dominion War diverted efforts in creating or modifying starships for the war and the project was frozen and maintained by a single engineer. The revelation of the Romulan Scorpion in 2379 and its use on mass by Reman forces during the war has piqued interest among Starfleet tacticians. Starfleet tacticians called for a smaller, cheaper but versatile fighter than the Valkyrie fighter. Starfleet Operations questions the practicality of such a specialized craft, as well as the opportunity of its use and proposed adding the fighter option to the patrol craft's design. The project was reclassified as a FX project.

Original based on a combination of a long range shuttle pod and workbee the design was changed to incorporate the fighter design aspects. Warp capability was added to allow deployment before reaching the battlefield. Despite skeptic's prediction of failure the project progressed at a fast pace and a prototype was produced within a year. An accident during

operational test, in which leaked plasma ignited the prefilled fuel within micro-torpedoes, led to the death of the project's engineer. Since then the real meaning of the fighters name has been lost and has caused a long running debate among its operators whether it's "to wipe" (up a mess) or "spirit of death."

The Shiki is a transformable wave rider design with an aerodynamic profile and extendable wings for planetary operations. The body follows the area rule for reduced drag and sonic boom, as well as using the shock wave as a lifting surface, hence, riding the wave.

The Shiki is armed with two Type-VI pulse phaser cannons and two Type-V phaser emitters. The Shiki has two internal bays that are equipped with a micro-torpedo launcher system. Each launcher is fed by a removable helical-drum magazine with 40 micro-torpedoes. The drum measures 67.5x17x17 cm and can be replaced by an automatic arming and refueling station within approximately. 16-20 seconds. The design allows the launchers to fire 5 micro-torpedoes within 3 seconds. However, to conserve ammunition the launchers are set to fire selective bursts of 3 or 5 shots. Manual overriding is necessary for firing unlimited numbers of shots.



The shield system is a modified high-recharging system transferred from the Valkyrie fighter project. It provides half as much protection, though.

Other features include an aft tractor emitter. The internal bays can mount grapplers or other similar tools developed for the classic workbee.

The flight crew is required to wear flight suits which provide limited life-support functions in case of damage to the cabin. A one-way emergency transporter suit (ETS) is available for short range escape. The nose section with the cabin can be separated from the main body and act as an escape pod.

Type: Space Fighter/Patrol Craft
Accommodation: Crew of 1.
Propulsion: One warpcore, two impulse drives, two RCS clusters.
Dimensions (estimated)

- Overall Length: 10.574 meters
- Overall Height: 2.05 meters
- Overall Beam: 3.64 meters

Mass (estimated): 4 metric tonnes
Performance

- Standard Impulse Configuration: 0.25c
- Maximum Sustainable Speed: Warp 4
- Cruising Speed: Warp 3

Armament

- 2 Type-VI pulse phasers (fore)
- 2 Type-V phaser emitters (ventral fore, aft)
- 2 micro quantum torpedo launchers (fore), 2x40 micro torpedoes
- Akira-class launch-able: 6 Mark VI/XXV Photon Torpedoes/Mark III Quantum Torpedoes on two railed external stations.
- 12 Mark VI/XXV Photon Torpedoes/Mark III Quantum Torpedoes vertically in a 6+4+2 arrangement

Production year: 2381+
Production Base: Antares Fleet Yards

Étendard Type Strike Fighter

The Étendard is one of a number of projects meant to replace the Peregrine while bringing along higher firepower than is commonly available to fighters.

In its current state the Étendard is slightly smaller than a Peregrine yet packs about double the firepower in terms of full-sized torpedoes. Phaser firepower has only been marginally increased due to limitations in power generation.

Type: Strike Fighter
Accommodation: Crew of 2.
Dimensions

- Overall Length: 19.80 meters
- Overall Height: 5.00 meters
- Overall Beam: 15.00 meters

Mass: 120 metric tonnes
Performance

- Standard Impulse Configuration:0.25c
- Maximum Sustainable Speed: Warp 6
- Cruising Speed: Warp 4

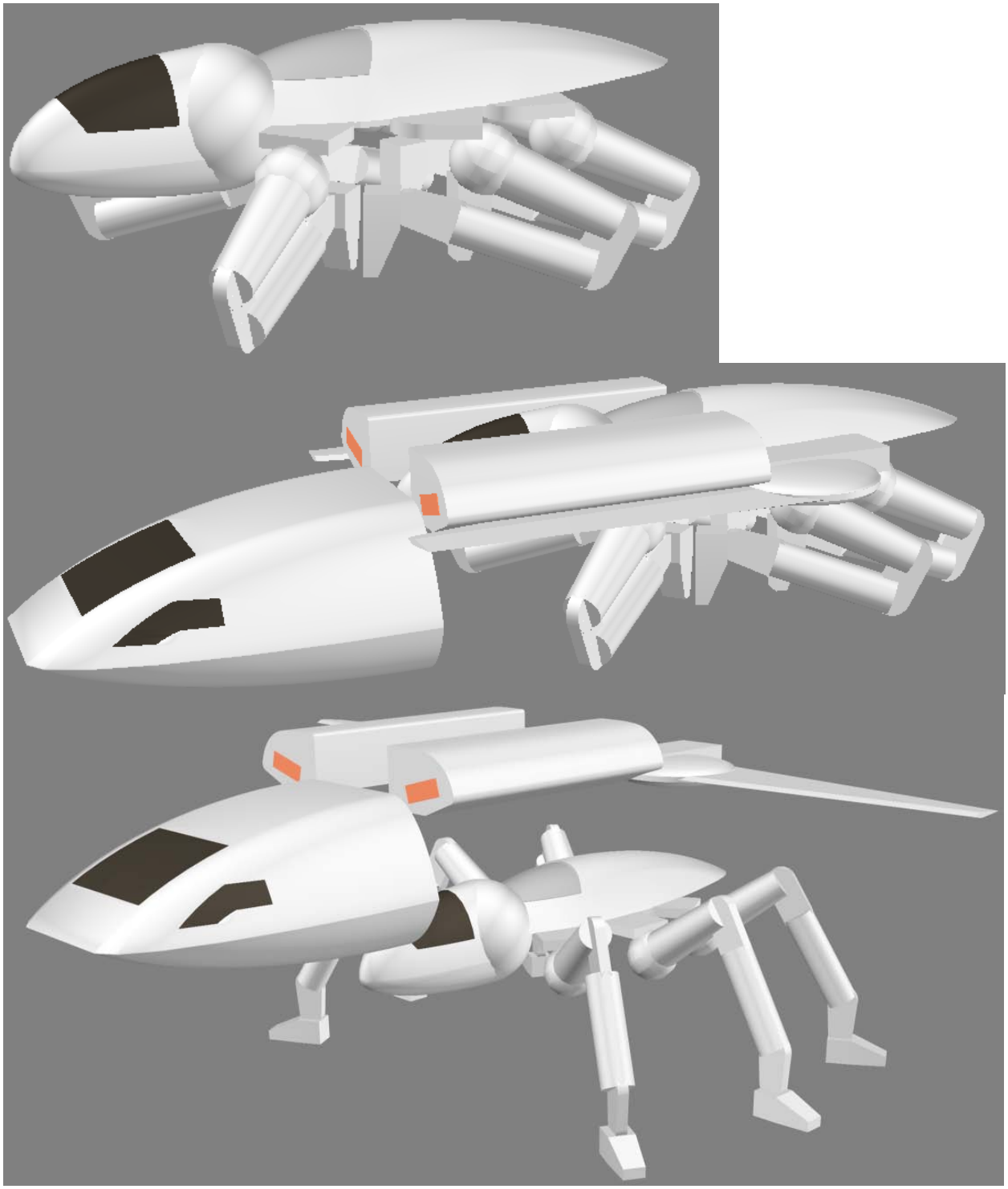
Armament

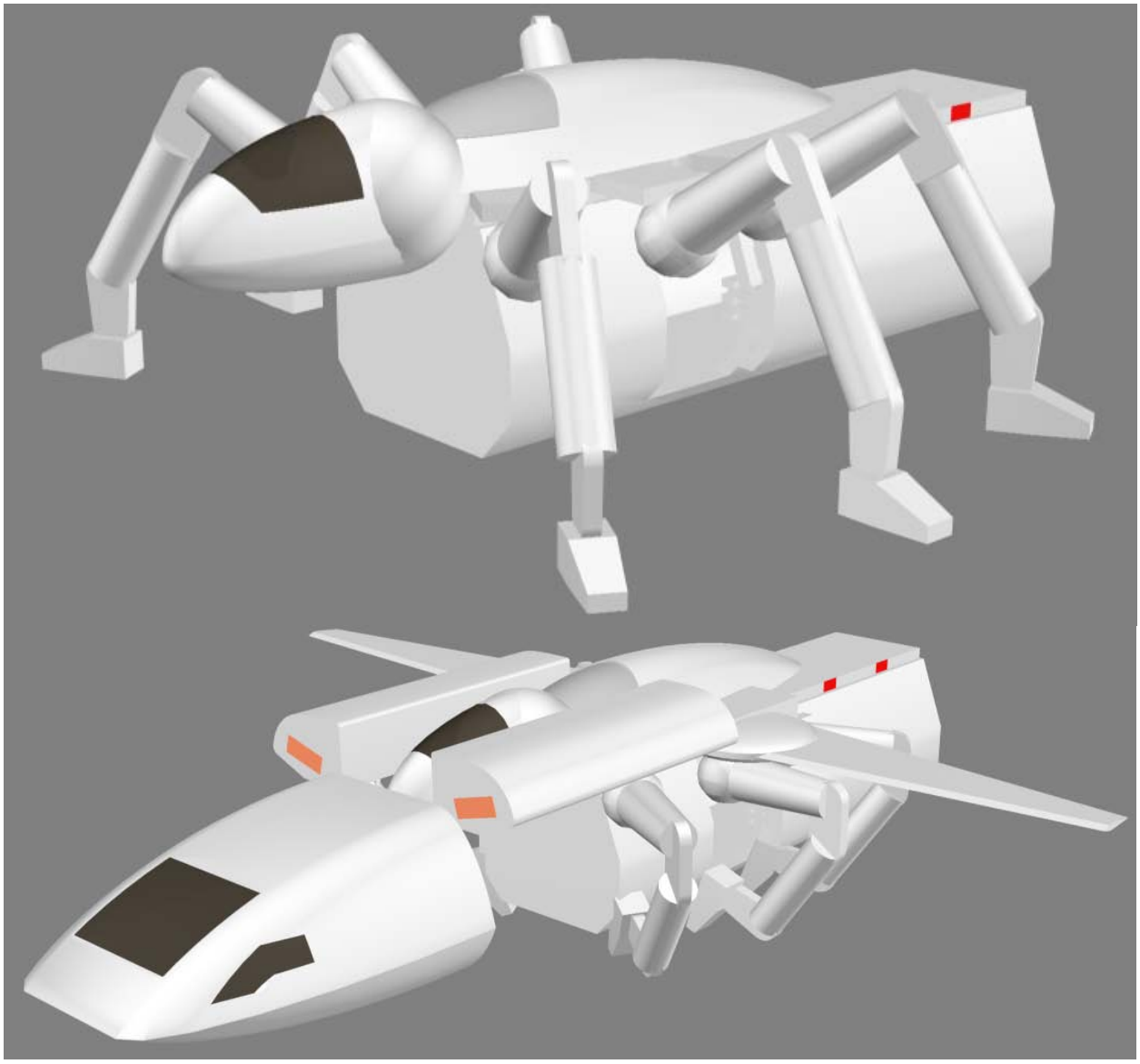
- 2 Type-VIII phaser cannon (forward firing arc)
- 4 micro photon torpedo launchers on wings, 160 micro torpedoes in drum magazines
- 12 Mark VI/XXV Photon Torpedoes in internal bay

Production year: 2380+
Production Base: Antares Fleet Yards

Ground Support

M-4 Support Bot





Type: Spider Support platform
Accommodation: Crew of 1.
Dimensions

- Overall Length: 10.204 meters
- Overall Height: 3.1 meters
- Overall Beam: 12.327 meters
- (space lifted transport) Length: 10.204 m, Height: 3.386 m, Beam: 6.096 m
- (with LC container) Length: 13.196 m, Height: 4.07 m, Beam: 12.327 m

Mass: 4 metric tonnes
Performance

- Walking: 7 kph
- Running: 70 kph
- Dash: 90 kph

- Flying: 240 kph
- Jump: 10 m high or 30 m

Armament

- Optional 2 photon cannon (forward firing arc) or grappling arms or sensor pods
- 1 Type-V phaser emitter array (top center 360° arc)
- 2 Type-IV pulse phaser plus 4 Type-III compression pulse phaser rifles in two side-turrets or grappling arms or sensor pods

Production year: 2363

Production Base: The M-4 combat support bot was designed to support personnel on worlds with difficult or hostile environment where a shuttle or transporters were either not available or unusable. The M-4 has limited anti-gravitic and atmospheric propulsion. It can be safely airdropped. However, an orbital drop is possible but not recommended due to being an easy target. The M-4 is equipped with a shuttle class shield. The shield system is certified for type-IV phaser shots but can be overwhelmed by numerous (7+) simultaneous hits. The M-4 can serve for engineering or construction purposes by mounting workbee compatible tools. LC type N containers can be transported but flight ability will be reduced to anti-gravitic only.

Logistic Container (LC)

The logistic container has been serving various purposes over many centuries in many shapes and sizes. Even in this modern day it is indispensable. Currently, Starfleet is using a myriad of different containers types in as many shapes and sizes. A standardization is yet to be seen.

LC type Narrow

This narrow container was originally designed for the DR-1 dropship. Although, it is big compared to past types it has proven to be too little for modern day use. It has a hinged-arm door on each side.

Accommodation: 26 passengers or 18 patients on triple stacked stretchers plus 2-4 medics

Dimensions

- Overall Length: 9.8 meters
- Overall Height: 2.9 meters (3.1 m with locking “hooks” if not available)
- Overall Beam: 4.2 meters

Useable volume: 9.4 m x 2(2.8) m x 2.3 m

Mass: 2 metric tonnes

LC type Wide

This wide container was designed for the DR-2 dropship. It has a hinged-arm door on each side and a large drop door in the back.

Accommodation: 48 passengers or 42 patients on triple stacked stretchers plus 4-6 medics.
Dimensions

- Overall Length: 9.8 meters
- Overall Height: 3 meters
- Overall Beam: 6.1 meters

Useable volume: 9.2 m x 5.6 m x 2.3 m
Mass: 3 metric tonnes

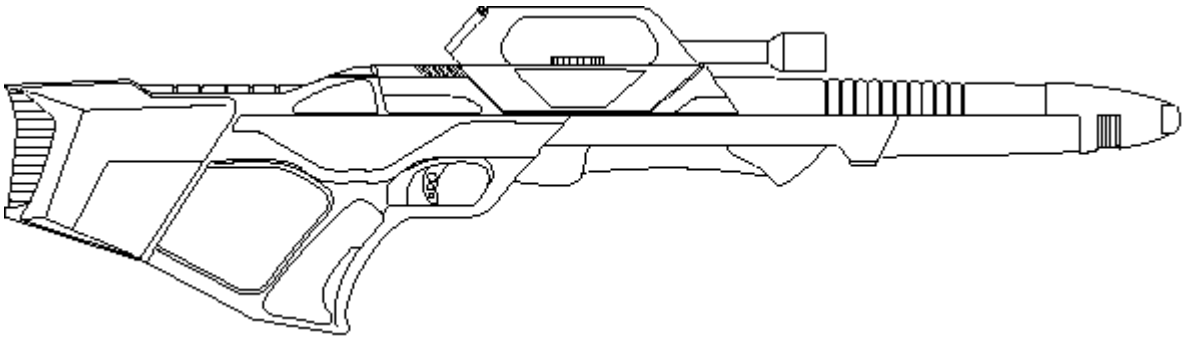
Phaser

The Federation classifies phaser systems according to output power. Technical manuals usually refer to the more relevant power usage. Type I to Type III are personnel weapons grade. Type IV is considered a heavy infantry weapon and a light auxiliary craft weapon. Type IV to Type V are auxiliary weapons. Type VI is an intermediate weapon for starships.

All personnel phasers are computer controlled with the option of a personal DNA lock. A subspace transceiver is included for authorized power settings within Starfleet installations or ships. A small sensor offers target lock at distances. A safety interlock prevents accidental triggered fire. The interface consists of a power setting/beam width indicator, beam width and power setting adjusting buttons, and a trigger. A power cell has to be attached for usage.

As phaser energy is not a subspace emission its use is limited to lightspeed physics. It also dissipates quickly in the vicinity of moving warp fields, whether that is at warp or not.

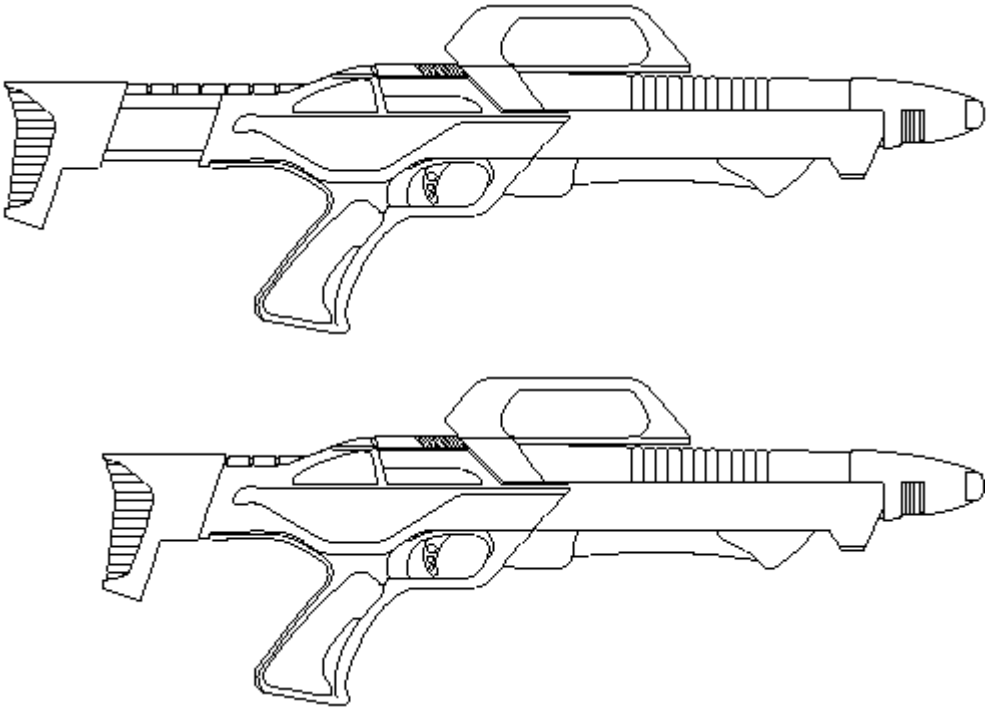
Type IIIsop



This is a modified type iii regenerative phaser for special operations. During the Dominion War Federation weapons have shown to be emanating a lot of light energy which are often used by enemy snipers to target their victims. For this the sniper usually uses vision enhancers without the need to give him away by using scanners. Although 400 personnel fell victim to ten Cardassian snipers in this fashion Starfleet did not see the need to change the circumstances as there aren't many snipers on the regular battlefield. Non-the-less Starfleet special operation saw the need to keep their personnel stealthy. The new modification comes with a flip-able polarizable semi-reflective holographic targeting sight. When flipped up a secondary sensory analysis screen will be visible in its place. This screen usually displays the surrounding and gives

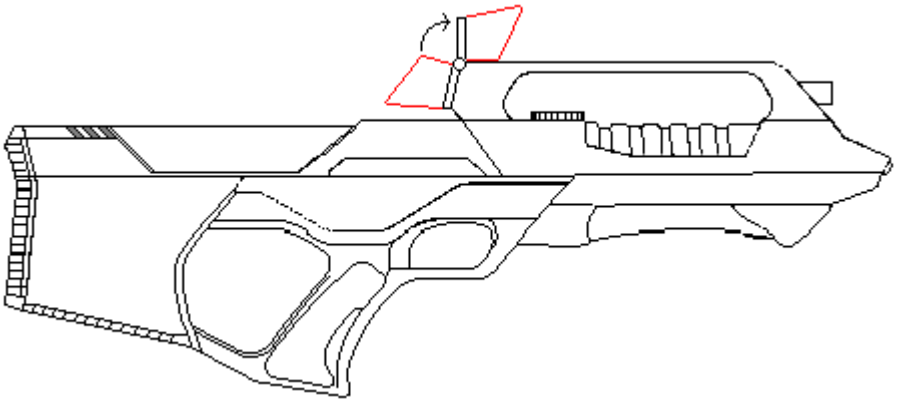
warnings to enemy threats. Whether in flipped up or down position the targeting sight will always show targets with bio-signature enhancement, distance, path tracking, and other relevant data. When the surrounding becomes darker the displays will change to colors of grey until fully monochromatic. An additional quick turn switch has been added for normal beam and pulse fire as well as intensity. A switchable four color flashlight has been added. The sensor systems have been remodeled into a handle for easy carriage. It is easier and more relaxing to carry the weapon in a near ready manner than shouldering the weapon.
Powersource: $345x10^6$ MJ (2373)
Dimensions: Length:
Mass: 3
Settings: 1 to 16

Type IIItr



This is the special operations tactical rifle. It has all the features the type iiisop has, but in a compacter form. The accelerator was shortened and the computer control was moved and spread below. The power cells have been rearranged in the stock. Because of the changes the rifle has less available energy and a slightly less efficiency. The targeting display and sensors have been made even more stealthy than the type IIIsop.
Powersource: $250x10^6$ MJ (2373)
Dimensions: Length:
Mass: 2.5
Settings: 1 to 16

Type IIIpd



This is the latest special operations tactical rifle based on the compression phaser rifle. It has all the features the type IIIa and IIIsop have, but in a shorten and compacter form. The targeting display and sensors have been made even more stealthy and can be used for quick action or sharpshooting.
Powersource: $345x10^6$ MJ (2373)
Dimensions: Length:
Mass: 1.5
Settings: 1 to 16

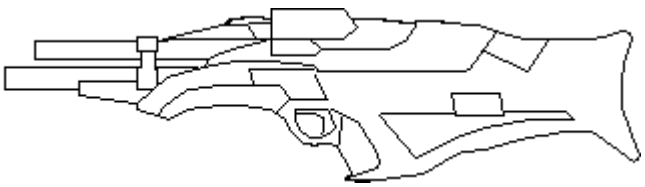
Type XIII

This is the phaser system introduced by the Prestige class project. It uses new crystals which are emanating 20% more nadion than an enhanced type X.
Power: 11 MW
Emitter Dimensions: classified
Mass: classified

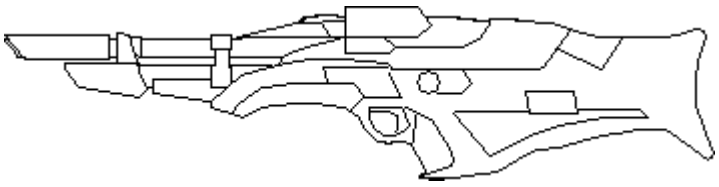
Projectile Weapons

This refers to weapons which shoot any form of projectiles. Whether it be arrows or a bullet.

TR-116

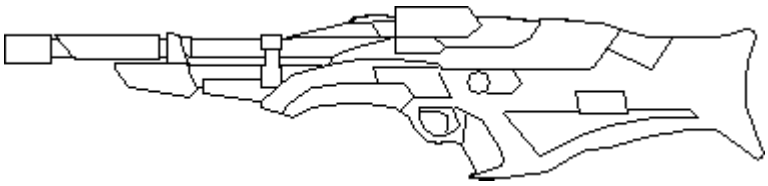


Original TR-116



Modified TR-116

Before the invention of regenerative phasers Starfleet personnel had been forced to battle on battle fields where subspace machinery and phasers could not work. In the 2360, the increased number of such battles caused Starfleet to request the development of an alternative weapon for such battle fields. The result was the TR-116 rifle in 2373 which fires a chemically propelled tritanium bullet. Although the hard tritanium bullets could penetrate armor, they were of simple design and could not be used for targets beyond 400 m. It has a magazine with twelve rounds. Soon after its development the regenerative phasers were invented which made it irrelevant. Henceforth, its replicator pattern was restricted to staff and command officers only. In 2374, misguided Vulcan science officer Lt. Chu'Lak customized the weapon with a micro-transporter and an exographic targeting sensor. The micro-transporter allowed the bullet to be transported just 8-9 centimeters from its target. The sensor allowed the user to scan through walls and target victims anywhere from his position. A control ball for the sensor was installed which worked for right and left hand users.



TR-116a

This modification intrigued Starfleet's special operations to adapt it for special operation. This resulted in the modified TR-116a. A flash suppressor and silencer were added as well as other stealth modifications. Additionally, the tritanium bullet were now ballistic optimized for longer ranges of up to 1 km. In theory the bullet could be beamed up to the maximum range from where it could travel another kilometer before hitting its target. However, weather conditions make this kind of shooting very inaccurate.

Communication

Sympathetic Fermion Transceiver

The Sympathetic Fermion Transceiver is a long-range communication device based on Quantum Entanglement in Fermionic Lattices. Fermions are the subatomic particles being used. They have been created in pairs with different quantum spins to create an entangle pair. A vibration of one particle will resonate in the other. This sympathetic phenomenon makes communication over long distances possible without conventional transmission of messages.

Optical Quantum Node Transceiver

The Optical Quantum Node Transceiver is a short range optimized communication device for high volume data transmission developed as part the Prestige-class project. It is based on Quantum Entanglement for transmitless communication. It is being used as part of an advanced ODN system, mainly reserved for a computer core. Due to its nature of transmission, there is virtually no transmission time between two ends. A computer core whose network topology is build with OQNTs can achieve faster than FTL speed while being less affected by damage to the ODN system.

Sensors

Multidimensional Wave-function Analysis

Multidimensional wave-function analysis makes it possible to detect things in passive mode by using any received transmission as a radar signal and tracing back their wave's path dispersion and interaction. This is a well known technique first employed by Earth's polynesians and later used in stealth warfare of the 20th century. For a time advanced subspace sensors made radar based wave-function analysis obsolete. However, as subspace sensors reached their limits in the 2370's this technique was rediscovered and reintroduced.

Glossary

Green: official data, but unrealistic or not conform with visual

Brown: other sources estimates/calculation

Blue: own estimates/calculation, generic info

Red: arbitrary chosen; can be higher or less