STARFLEET

GENERAL REFERENCE

2375 HANDBOOK 1

STARFLEET

ACADEMY

HANDBOOK

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STARFLEET COMMAND

UNITED FEDERATION OF PLANETS

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STARFLEET COMMAND

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Version

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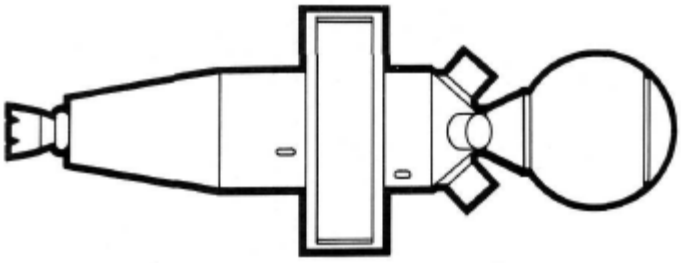
About this Document

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.

Instrumented Probes

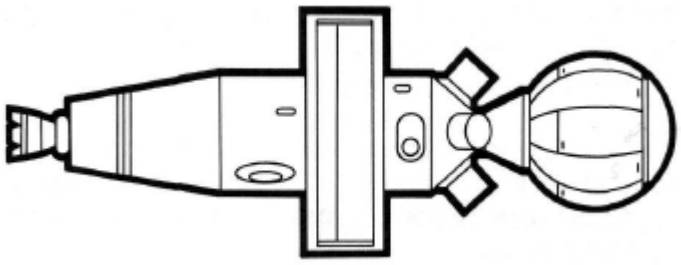
Under certain circumstances a ship cannot approach or be at a certain place in time to conduct scientific work. Such cases require the use of probes equipped with mission relevant instruments. There are nine different classes of probes for a variety of general missions. The frame generally consists of gamma molded duranium-tritanium and pressure-bonded lufium boronate, with triple layered transparent aluminum serving as sensor windows for internal sensors. All probes have a transceiver sensor suit for EM and subspace analysis, data transfer, remote control, and a molecular analyzer. All nine types are capable of atmospheric entry, but only three are designed for aerial maneuvering and soft landing.

A probe can be turned into a makeshift torpedo or mine by exchanging instruments for a warhead. A probe can also serve as a decoy, a buoy, a relay, and as emergency ship's log or report messenger.



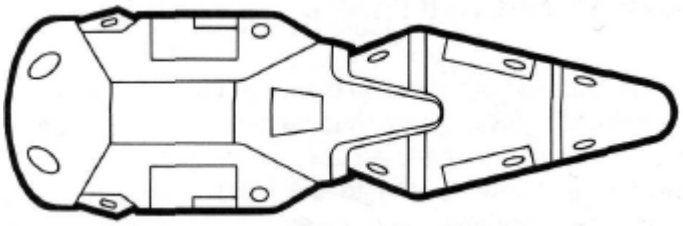
Class I Sensor Probe:

This is the basic probe for basic scientific stellar data collection. All probe classes have the same basic pallet included. In modern times this probe doesn't offer enough, but serves well for stacking-up a simple sensor grid in space.
Range: 2×10^5 km
Max velocity: 0.5c
Powerplant: Vectored deuterium microfusion propulsion
Instruments: Standard pallet with full EM/Subspace and interstellar chemistry analysis for spaceborn applications.
Telemetry: 12500 channels at 12 MW.



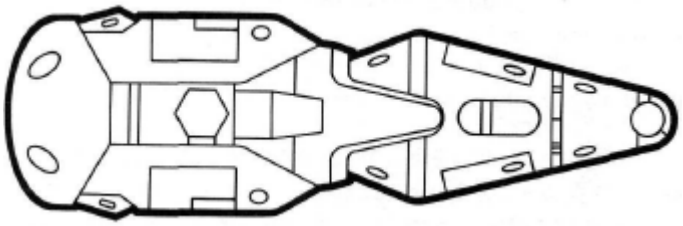
Class II Sensor Probe:

This is the probe of choice; it offers the same minimum capability as all probes from 20th century Earth.
Range: 4 x 10^5 km
Max velocity: 0.65c
Powerplant: Vectored deuterium microfusion propulsion, extended deuterium fuel supply
Instruments: Basic pallet plus enhanced long-range particle and field detectors and imaging system
Telemetry: 15650 channels at 20 MW.



Class III Planetary Probe:

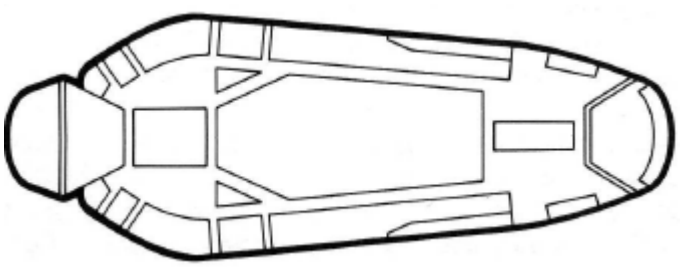
This is the probe for celestial bodies. It has limited terrestrial loiter time. It has been designed for terrestrial soft landing, but also has limited SIF hull reinforcement for subsurface penetration. It can survive up to 450 bar pressure in a gas giant's atmosphere. It is not as well water proofed. Depending on water depth it may not be able to return.
Range: 1.2 x 10^6 km
Max velocity: 0.65c
Powerplant: Vectored deuterium microfusion propulsion
Instruments: Terrestrial and gas giant sensor pallet with material sample and return capability; onboard chemical analysis submodule
Telemetry: 13250 channels at ~15 MW.



Class IV Stellar Encounter Probe:

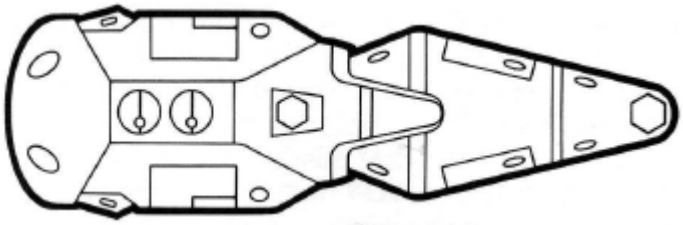
This is the probe for stellar phenomena. It is basically a supped-up class III. It has six eject able subprobes, designed to survive radiation flux found in nebulas or ion storms. It is not suitable for stellar energy phenomena.
Range: 3.5 x 10^6 km
Max velocity: 0.6c
Powerplant: Vectored deuterium microfusion propulsion supplemented with continuum driver coil and extended deuterium supply

Instruments: Triply redundant stellar fields and particle detectors, stellar atmosphere analysis suite.
Telemetry: 9780 channels at 65 MW.



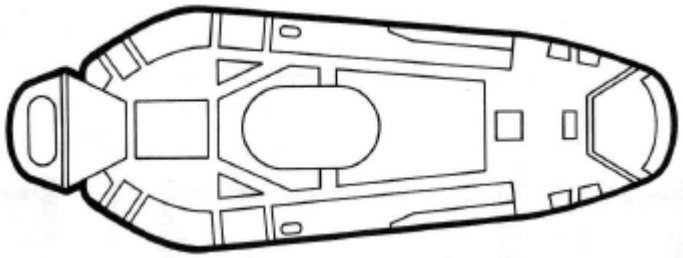
Class V Medium-Range Reconnaissance Probe:

This probe has the capability for planetary atmosphere entry and soft landing. It has low observatory coatings and hull materials. It can be modified for tactical applications with the addition of custom sensor countermeasure package.
Range: 4.3×10^{10} km
Max velocity: Warp 2
Powerplant: Dual-mode matter/antimatter engine; extended duration sublight plus limited duration at warp
Instruments: Extended passive data-gathering and recording systems; full autonomous mission execution and return system
Telemetry: 6320 channels at 2.5 MW.



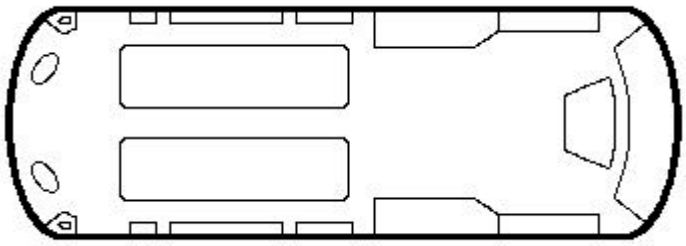
Class VI Communications Relay/Emergency Beacon:

This is a modified class III with extended deuterium supply for transceiver power generation and planetary orbit plane changes. It can be used as a warning beacon.
Range: 4.3×10^{10} km
Max velocity: 0.8c
Powerplant: Microfusion engine with high-output magneto-hydrodynamic (MHD) power tap
Instruments: Standard pallet
Telemetry/Comm: 9270 channel radio and subspace transceiver operating at max. 350 MW. 360 degree omni antenna coverage, 0.0001 arc-second high-gain antenna pointing resolution.



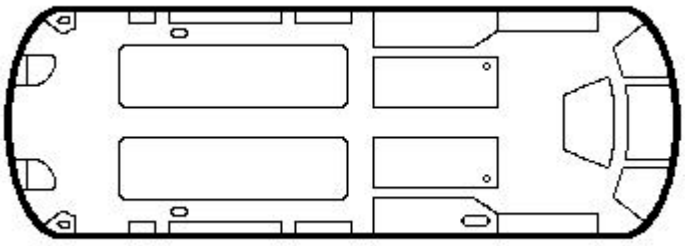
Class VII Remote Culture Study Probe:

A modified class V. This probe should not be used for higher than technology level III civilizations. It has a maximum loiter time of 3.5 months and a low-impact molecular destruct package tied to antitamper detectors.
Range: 4.5×10^8 km
Max velocity: Warp 1.5
Powerplant: Dual-mode matter/antimatter engine
Instruments: Passive data gathering system plus subspace transceiver
Telemetry: 1050 channels at 0.5 MW.



Class VIII Medium-Range Multimission Warp Probe:

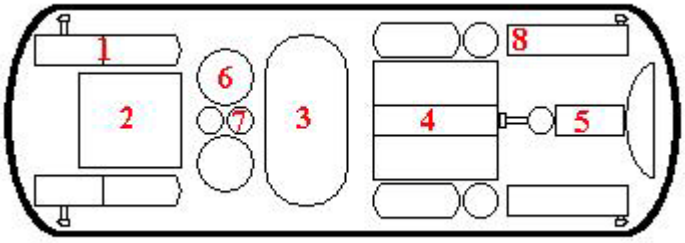
A modified photon torpedo for research such as galactic particles and fields or for early-warning reconnaissance missions.
Range: 1.2×10^2 light-years
Max velocity: Warp 9
Powerplant: Matter/antimatter warp field sustainer engine; duration of 6.5 hours at warp 9; MHD power supply tap for sensors and subspace transceiver
Instruments: Standard pallet plus mission-specific modules
Telemetry: 4550 channels at 300 MW.



Class IX Long-Range Multimission Warp Probe:

A modified photon torpedo with limited payload capacity; isolinear memory storage of 3400 kiloquads; fifty-channel transponder. Typical application is emergency-log/message capsule on homing trajectory to nearest starbase or known Starfleet vessel position.
Range: 7.6 x 10^2 light-years
Max velocity: Warp 9
Powerplant: Matter/antimatter warp field sustainer engine; duration of 12 hours at warp 9; extended fuel supply for warp 8 maximum flight duration of 14 days
Instruments: Standard pallet plus mission-specific modules
Telemetry: 6500 channels at 230 MW.
Note: There have been cases under which the probe has been converted to transport a person in a hibernated state. This should only be considered if no starship is available for a dire transfer. Except for guidance and warp propulsion, every other equipment has to be removed. A small breathing tank, life-control/support system and transmitter have to be included loosely.

Photon Torpedoes



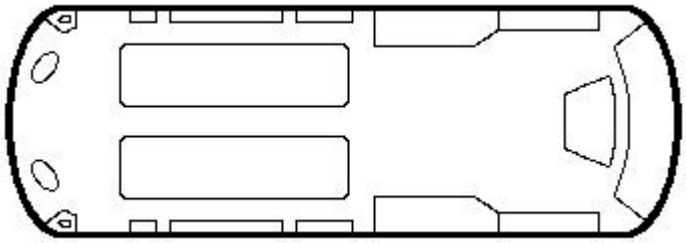
Mark XXV

1: 4 microfusion thrusters	2: warp field sustainer coils	3: M/A reaction chamber
4: computer system	5: deflector dish sensors	6: deuterium tank
7: antimatter tank	8: RCS assembly	

The standard capabilities include multi targeting and guidance, pattern spread, impact or proximity detonation, timed or self-destruct detonation, dormant mine mode, search mode or any of the mentioned in combination.

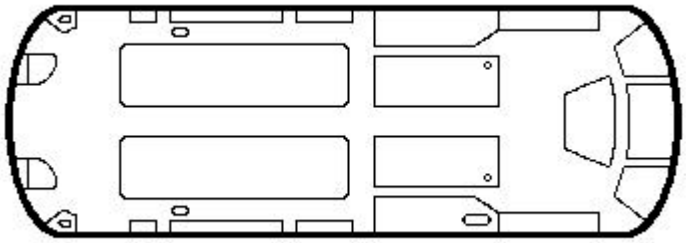
As Photon Torpedoes are semi-active weapons, the firing vector may vary within 10 degrees in any direction of the bore sight, allowing the torpedo to change the approach vector to target as necessary. If required, the torpedo may conduct immediate target tracking or acceleration as verified by sensors. For targets within 25 km, the weapon will automatically change into active mode, and accelerate away to prevent damage to the firing ship. Otherwise, active targeting will be activated 0.01 seconds or 10 km before interception point whichever is first. Should the target be elsewhere the torpedo will intercept accordingly or begin a search pattern until fuel exhaustion, upon which it will self-destruct.

With their high yield photon torpedoes are effective against attack craft formations (to a certain degree). In this case proximity detonation is recommended.



Photon Torpedo MARK IV

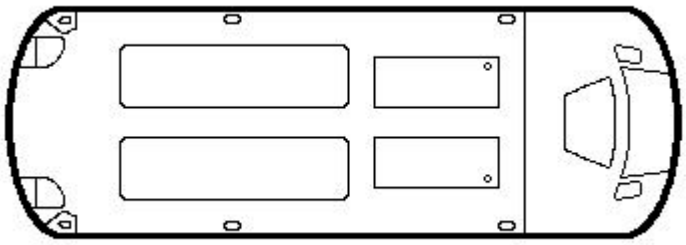
Maximum Range: 750000 Km
Current Maximum Explosive Yield:
Theoretical Maximum Yield:
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 250 kg
Performance: 0.5c
Production year: 2215
Note: currently used for practice shooting



Photon Torpedo MARK VI

Maximum Range: 3500000 Km (midrange detonation yield)
Current Maximum Explosive Yield: 15 Isotons
Theoretical Maximum Yield: 17.8 Isotons

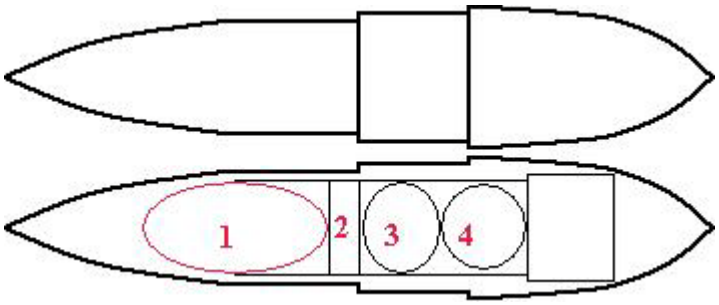
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 247.5 kg
Performance: 0.75c
Production year: 2271
Note: 236



Photon Torpedo MARK XXV

Maximum Range: 4050000 Km (warp launch, midrange detonation yield)
Current Maximum Explosive Yield: 18.5 Isotons
Theoretical Maximum Yield: 25 Isotons
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 186.7 kg
Performance: 0.75c
Production year: 2375

Micro-Torpedo



1: Payload	2: computer & transceiver
3: deuterium tank	4: micro fusion propulsion assembly

Since the early ages of modern warfare an increase in firepower was needed for auxiliary crafts to close the gap to the powerful starships. Until recently the photon torpedo could not safely micronized for an antimatter warhead. Advances in antimatter handling systems finally made it possible to design a launcher with a micro injector and loader. The micro torpedo casing and systems have been developed from the micro probe system used in planetary and stellar research. The standard configuration consists of a miniature fusion thruster, computer and transceiver

guidance, and a configurable payload head. The computer and transceiver assembly is powered by a sarium krellide power cell which has to be charged every half-year. The transceiver is a low-power subspace emitter connected to an encryption circuit. The payload can be a chemical explosive, a gas or biological agent, an antimatter or quantum warhead. The quantum warhead is constructed like its bigger version and has a very high resource cost. Like the big torpedo it is a semi-active weapon. At launch the micro fusion system receives initiation energy from the launcher. The micro fusion assembly has also been prefilled with fuel for increased fuel. After launch it tries to keep the programmed course, but this is limited in the first 3.7 seconds due to limited propulsion power verses launch velocity. After the 5 seconds powered stage the torpedo will fly past the interception point and autodestruct shortly afterward if not hitting. The torpedo has very limited course correction and range in an atmosphere.

Micro Torpedo (standard)

Maximum Range: 280000 Km (powered in space)
Current Maximum Explosive Yield: 1 Isoton (photon)
Theoretical Maximum Yield: 2 Isoton (quantum)
Dimensions: 13.3 x 4 x 4 cm
Mass: 450 g
Performance: 0.185c
Production year: 2250

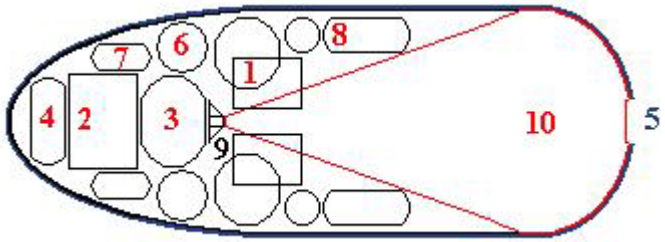
Tricobalt Torpedo

The tricobalt torpedo consists of a normal torpedo casing with a tricobalt device. The tricobalt device is built around a shaped construct of tricobalt. The detonation energy of a M/A warhead is directed to the device which transgress causing a subspace wave. This wave creates extreme local spatial stress which virtually tears matter apart. Due to the extreme nature and range of the weapon, it should be used with caution.

Tricobalt Torpedo (MARK VI)

Maximum Range: 3500000 Km (warp launch, midrange detonation yield)
Current Maximum Explosive Yield: irrelevant
Theoretical Maximum Yield: irrelevant
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 260 kg
Performance: 0.75c
Production year: (before 2261)

Quantum Torpedoes

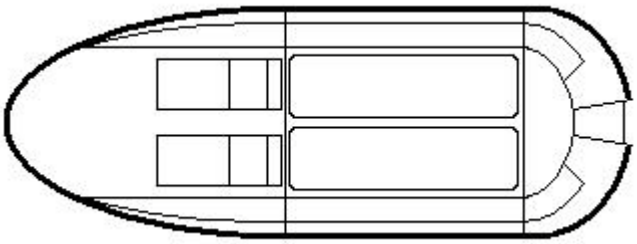


proposal

1: 4 microfusion thrusters	2: warp field sustainer coils	3: M/A reaction chamber
4: bioneural computer system	5: lateral sensors	6: deuterium tank
7: antimatter tank	8: RCS assembly	9: zero point initiator/emitter
10: zero-point field chamber		

Testing began in 2355 with a Mark IX warhead which reached the theoretical maximum yield of 25 isotons for matter-antimatter reaction. The calculated potential of the prototype continuum-twist device was 52.3 isotons. The test was made by Starfleet R&D facility on Groombridge 273-2A, an uninhabited gasgiant moon, which was restored and abandoned afterwards.

The warhead is powered by the detonation of an uprated photon torpedo warhead with a yield of 21.8 isotons which is achieved with fluoronetic vapor and four times the standard reaction rate. The energy is channeled through the zero-point initiator within 10^{-7} s and energized the emitter. A tension force upon the vacuum domain is imparted through an opening at the tapered end of a teardrop-shaped chamber. The 0.76 x 1.38 m and 2.3 cm thick chamber is constructed from two layers of neutronium and dilithium. The vacuum membrane expands within 10^{-4} s equal to an energy potential of 50 isotons. This energy is held for 10^{-8} s before released by the controlled failure of the chamber wall.



Quantum Torpedo MARK Q-II

Maximum Range: 4050000 Km (15-23% M/A usage)
Current Maximum Explosive Yield: 50+ Isotons
Theoretical Maximum Yield: 52.3 Isotons
Dimensions: 2.1 x 0.76 x 0.45 m
Mass: 186.7 kg
Performance: 0.993c
Production year: 2368+

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.

Type 15/15A/16 Shuttlepod

Type: Light short-range sublight shuttlepod.
Accommodation: Two; pilot and system manager.
Propulsion:

- Type 15/15A: Two 500 millicochrane impulse driver engines, eight DeFi 657 hot gas RCS thrusters, three sarium krellide storage cells.
- Type 16: Two 750 millicochrane impulse driver engines, eight DeFi 645 hot gas RCS thrusters, four sarium krellide storage cells.

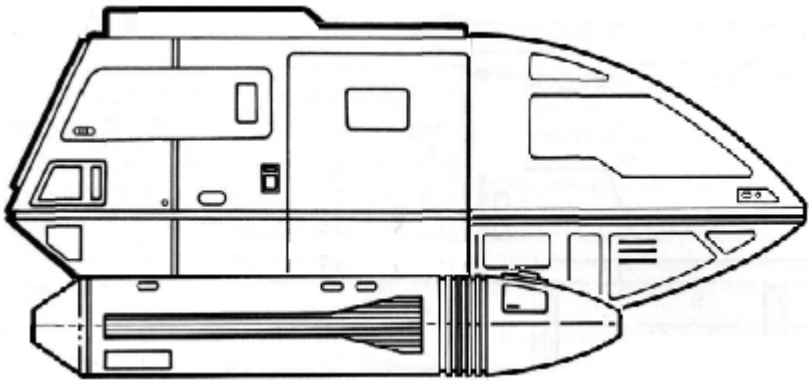
Dimensions: Length 3.6 m; beam 2.4 m; height 1.6 m.
Mass: 0.86 metric tonnes.

- Type 15: 0.86 metric tonnes.
- Type 15A: 0.97 metric tonnes.
- Type 16: 1.25 metric tonnes.

Performance:

- Type 15: Maximum velocity 12800 m/s.
- Type 15A: Maximum velocity 13200 m/s.
- Type 16: Maximum velocity 12250 m/s.

Armament: Two Type-IV phaser emitters.
Production year:
Production Base: Starbase 134 Integration Facility, Rigel VI
Overview: Developed in the mid-2350s, the Type-15 Shuttlepod was intended for individual use by crew members to get around in-system without the need of a shuttle or the ship itself.



Type 17 Shuttlepod

Type: Medium short-range limited-warp capable shuttlepod.
Accommodation: Two to four(converted).
Propulsion: Two 800 millicochrane impulse driver engines, four RCS clusters, three sarium krellide storage cells, high performance micro fusion reactors.
Dimensions: Length 3.92 m; beam 2.5 m; height 1.7 m.
Mass: 1.06 metric tonnes.
Performance: Maximum velocity 14750 m/s; limited warp launch
Armament: Two Type-IV phaser emitters.
Production year:
Production Base: Starbase 134 Integration Facility, Rigel VI
Overview: Developed in the mid-2360s, the Type-17 Shuttlepod is a middle way between a shuttlepod and a shuttle. It is the first shuttlepod which is warp capable when launched at warp by the mothership. It generally serves individual crewmembers to get around in-system without the need of a shuttle or the ship itself.

Type 18 Shuttlepod

Type: Medium short-range sublight shuttle.
Accommodation: Two; pilot and system manager.
Power Plant: Two 800 millicochrane impulse driver engines, four RCS thrusters, four sarium krellide storage cells.
Dimensions: Length 4.5 m; beam 3.1 m; height 1.8 m.
Mass: 1.21 metric tones.
Performance: Maximum velocity 16750 m/s.
Armament: Two Type-IV phaser emitters.
Production year:
Production Base: ASDB Integration Facility, Antares Fleet Yards, Antares IV.

Overview: The Type-18 Shuttlepod is a testbed of a new generation of shuttlepod. Shuttlepods have been designed purely for transport, but the current trend is to have full shuttle capability.

Type-1 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, five passengers.
Power Plant: Two 1250 millicochrane warp engine, (four RCS clusters).
Dimensions: Length 7.32 m; beam 3.2 m; height 2.44 m.
Mass: 5.45 metric tonnes.
Performance: Warp 5 (TOS scale).
Armament: One Type-III phaser emitter.
Production year: 2252-2275
Production Base: San Francisco Fleet Yards, Earth.

Overview: The Type-1 was the last design of the transporterless era.

Type-3 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, eleven passengers; two diplomatic.
Power Plant: Two 1250 millicochrane warp engines, (four RCS clusters).
Dimensions: Length 8.93 m; beam 3.4 m; height 2.96 m.
Mass: 9.45 metric tonnes.
Performance: Warp 5 (TOS scale).
Armament: None; One Type-IV phaser emitters (special operations).
Production year: 2280
Production Base: San Francisco Fleet Yards, Earth.

Overview: The Type-3 is among the first modern warp capable shuttles in Starfleet inventory. It has no transporter.

Type-6 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, six passengers; two diplomatic.
Power Plant: One 1250 millicochrane warp engine (2100 mcr uprated), twelve DeFI 3234 microfusion RCS trusters (four RCS clusters).
Dimensions: Length 6.0 m; beam 4.4 m; height 2.7 m.
Mass: 3.38 metric tonnes.
Performance: Warp 1.2 for 48 hours; Warp 2 for 36 hours (uprated).
Armament: None; Two Type-IV phaser emitters (special operations).
Production year:
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.

Overview: The Type-6 Personnel Shuttlecraft is in wide use throughout Starfleet. Designed for short-range interplanetary travel, personnel and cargo transport. A short-range transporter is installed, allowing for easy beam out of cargo and crew to and from their destination. This type is currently in use aboard virtually every medium to large sized starship class, as well as aboard stations and Starbases.

The Type-6 is perhaps the most successful shuttle design to date, and its overall structure and components are the foundations upon which the Type-8, -9, and -10 spaceframes are based.

Type-7 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, six passengers; two diplomatic.
Power Plant: Two 1250 cochrane warp engines (2100 mcr uprated), twelve DeFI 3234 microfusion RCS trusters (four RCS clusters).
Dimensions: Length 8.5 m; beam 3.6 m; height 2.7 m.
Mass: 3.96 metric tonnes.
Performance: Warp 1.75 for 48 hours; Warp 2 for 36 hours (uprated).
Armament: None; Two Type-V phaser emitters (special operations).
Production year:

Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.

Overview: Designed with comfort for short term missions or journeys between planets and stations at low warp. The shuttle has a standard replicator system and sleeping compartments. The forward and aft compartments are separated by a small, informal living area that has a workstation and table. The aft area is normally equipped with a bunk area, but can easily be converted to allow for increased cargo capabilities.

Type-8 Personnel Shuttle

Type: Light short-range warp shuttle.
Accommodation: Two flight crew, six passengers.
Propulsion: One 1350 cochrane warp engine, two 800 millicochrane impulse engines, four RCS clusters.
Dimensions: Length 6(7.965) m; beam 4.4 m; height 2.7 m.
Mass: 3.38 metric tonnes.
Performance: Sustained Warp 3.
Armament: Two Type-IV phaser emitters.
Production year:
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.
Overview: The Type-8 personnel shuttlecraft is currently in production and replacing the Type-6 shuttle. This craft is considered to be more adapted to interplanetary travel with increased reliability within planetary atmospheres, and provide slightly greater internal volume. A short-range transporter allows for easy handling of cargo and crew. This type of shuttle is currently in use throughout Starfleet.

Type-9A Cargo Shuttle

Type: Heavy long-range warp shuttle.
Accommodation: Two flight crew, one cargo specialist, 11 passengers
Propulsion: Two 2150 millicochrane warp engines (2175 mcr uprated), twelve DeFI 2142 microfusion RCS trusters (four RCS clusters).
Dimensions: Length 10.5 m; beam 4.2 m; height 3.6 m.
Mass: 4.5 metric tonnes (empty).
Maximum payload: 6.6 metric tonnes (8.9 metric tonnes uprated).
Performance: Warp 2 for 36 hours; Warp 2.2 for 32 hours (uprated).
Armament: None; Two Type-V phaser emitters (special operations).
Production year:
Production Base: Starfleet Plant #24, Utopia Planitia Fleet Yards, Mars.
Overview: The Type-9A cargo shuttle is the most used orbital and interplanetary supply transporter throughout Federation space. It is a common sight at starbases and facilities. It is used for making regular supply transports and personnel transfer. With the introduction of much more capable runabouts like the Danube, it has become somewhat less used for long distance transports. However, due to its size it can perform faster for regular transports.

Type-9 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, four passengers.
Propulsion: Two 1350 millicochrane warp engine, two 800 millicochrane impulse engines, four RCS thrusters.
Dimensions: Length 8.5 m; beam 3.8 m; height 2.8 m.
Mass: 3.2 metric tonnes.
Performance: Sustained Warp 4.
Armament: Two Type-IV phaser emitters.
Production year: 2370
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.
Overview: With the ever increasing need of sophisticated shuttles for medium-ranged missions it became clear that a new design was needed to fill the gap between shuttle pods and shuttles. This was realized in the type-9 shuttle design. It is able to support independently a small team on medium-range missions not requiring bigger shuttles. With warp capability it also freed the need to use bigger shuttle for medium-range transfer. The shuttle is equipped with a transporter, two space suits in the bank storage.

Type-10 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, ten passengers.
Propulsion: Two 1350 millicochrane warp engine, two 800 millicochrane impulse engines, four RCS thrusters.
Dimensions: Length 9.64 m; beam 5.82 m; height 3.35 m.
Mass: 19.73 metric tonnes.
Performance: Warp 3.
Armament: Three Type-IV phaser emitters, micro-torpedo launchers.
Defenses: shields, signal intelligence jamming devices.
Production year:
Production Base: ASDB Integration Facility, Antares Fleet Yards, Antares IV.

Overview: Testbed built for the Defiant. Constructed from Type-6 shuttle and spare parts. Computer system is a shortened version of the Danube class computer core, partitioned into five polled processor segments. Provisions have been made for bioneural gel pack peripherals and upgrades. Landing system includes fixed and deployable surface pads. The shuttle is equipped with formation lights, emergency beacon, transporter, pressure suits, and surface survival packs.

Type-11 Personnel Shuttle

Type: Medium short-range warp shuttle.
Accommodation: Two flight crew, ten passengers.
Propulsion: Two 3500 millicochrane warp engine, two 800 millicochrane impulse engines, four RCS thrusters.
Dimensions: Length 14.64 m; beam 3.26 m; height 4.5 m.
Mass: 27.2 metric tonnes.
Performance: Warp 4.

Armament: Three Type-IV phaser emitters.
Production year: 2372
Production Base:

Overview: With the ever increasing need of sophisticated shuttles for medium-ranged missions it became clear that replacements for the Type 6 & 8 are needed. This was realized in the type-11 shuttle design. It is able to support independently a small team on medium-range missions not requiring bigger shuttles. Currently the Type-11 shuttle is the fastest shuttle in Starfleet.

The Type 11 shuttle was designed by the crew of the USS Enterprise as part of Starfleets recent move to allow Starships to produce their own shuttlecraft fleets. The design was created under the direction of Lieutenant Commander Geordi LaForge during the Enterprise's shakedown cruise in 2372, and after some evaluation the ship has produced a dozen of these craft using its industrial replicator system. Like the Type 10, the Type 11 uses some elements of the technology of its parent vessel. Bio-neural gel packs have been included as standard, a step up from the Type 10 computer system which offers the gel packs as an upgrade only. Other technology incorporated is mostly centered around the warp core and nacelles, which use allows the Type 11 to have an equal speed to the type 10 but with a somewhat smaller power plant.

The Type 11 design has been included in Starfleet's shuttle design database, and is now available for any starship with an industrial replicator to produce as needed.

Work Bee

Type: Light industrial manipulator.
Accommodation: Pilot in SEWG suit
Propulsion: Two 2000 Newton-second I_{sp} microfusion primary thrusters, sixteen DeBe 3453 hot gas RCS thrusters (4 clusters). Four alfinium krellide power storage cells.
Dimensions: Length 2.7 m; beam 1.2 m; height 1.3 m. (Length 4.11 m; beam 1.92 m; height 1.9 m).
Mass: 1.68 metric tonnes.
Maximum manipulator mass: 1 metric tonnes
Performance: Maximum velocity 1100 m/s.
Armament: None
Production year: 2268
Production Base:
Overview:
Life support (gas, water, cooling) for 15 hours. Fuel cell and microfusion power for 76.4 hours. It has a searchlight at the front. Window transparency is controllable in opacity and EM penetration. The bee does not have an artificial gravity system. The work bee is simple to maintain and upgrade.

Type-M1 Sphinx Workpod

Type: Light industrial manipulator (Sphinx M1A), medium industrial manipulator (Sphinx M2A), medium tug (Sphinx MT3D).

Accommodation: Pilot (M1A, M2A); pilot and cargo specialist (MT3D).
Propulsion: Two 4600 Newton-second I_{sp} microfusion primary thrusters, sixteen DeBe 3453 hot gas RCS thrusters (4 clusters). Four alfinium krellide power storage cells.
Dimensions: Length 6.2 m; beam 2.6 m; height 2.5 m.
Mass: 1.2 metric tonnes.
Maximum manipulator mass: 2.3 metric tonnes.
Maximum sled mass: 4.5 metric tonnes.
Performance: Maximum velocity 2000 m/s.
Armament: None
Production year:
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.
Overview: The various Sphinx Workpod types are designed for construction work and repair. The Sphinx MT3D can be used for towing objects to and from the construction site. All variants of the Sphinx Workpod are commonly found at Federation Fleet Yards and Starbases, as well as on larger Starfleet vessels.

Runabout

Danube Class Runabout

Type: General Purpose Auxiliary craft
Accommodation: Crew of 2-4. Evacuation capacity: 20 passengers; 40 if with passenger container.
Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions: Length: 23.1m, Draft: 5.4m, Beam: 13.7m
Mass: 158.7 metric tonnes
Performance:

- Full Impulse: 0.25c
- Cruise Speed: Warp 2
- Maximum Velocity: Warp 4.7 (for twelve hours)

Armament: 6 Type V phaser arrays, 2 micro-torpedo launcher in weapons pod (optional), 24 micro torpedoes
Production year: 2369
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.
Overview: In recent times, the Federation's expansion had increased the workload on the aging fleet such that availability became a problem. A desire to shift some work load onto smaller vessels appeared. In 2363, ASDB began a study for a warp capable shuttle for short and medium range missions. It was to be able to carry out small scientific missions, cargo and personnel transport. It would to offer bases with the ability to carry out minor local and sector operations without the need to depend on capital ships.

As the range was to be much greater than general shuttles, the requirement for cargo transport adopted a container system. This increased its capability as starship replacement as well as increased cargo capacity and mission. The Danube introduced the runabout classification in Starfleet. Civilian ships of this size had been and still are classified as ships.

The development of the Danube-Class runabouts began in 2363, and reached production status in early 2368. The Danube features a detachable front cabin for four and a stardrive sled design. It typically carries an empty pressurized cargo module. The typical flight crew included a pilot, co-pilot/flight engineer, and two mission specialists. The Danube has a full-fledged a two-person transporter in the rear of the front cabin. Until now shuttles only offered limited transporter capability. The Danube runabout can be equipped with different modules for missions such as personnel transporter, cargo transporter, scientific expeditions, tactical assignments, prison transports, medical transports, etc.

A weapons pod with two micro-photon torpedo launchers or a sensor pod can be attached to the roof.

The impulse power is provided by two drives, each with four fusion reactors, build into the side housing. The impulse drive assembly includes modern driver coils and vectored exhaust directors. Bussard type intakes assist for atmosphere or interstellar travel. For maintenance the impulse drive assembly can be removed.

In the cockpit subfloor is a computer core measuring 2.3 x 2.1 x 1.3 meters. It is assembled from standard isolinear units consisting of 186 isolinear chips and 53 command pre-processors. Sub-nodes are installed throughout the runabout and are connected to the core by standard optical data network relays. This allowed the computer core to be compatible with starship and base computer system elements.

Venture Class Reconnaissance

Type: Special Operations Scout
Accommodation: Crew of 1-2.
Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions: Length: m, Draft: m, Beam: m
Mass: metric tonnes
Performance:

- Full Impulse: 0.25c
- Cruise Speed: Warp 4
- Maximum Velocity: Warp 6

Armament: 2 Type V phaser arrays, 3 micro-torpedo launchers
Production year:
Production Base:
Overview: The recent appearance of the Dominion and the difficulty of acquiring intelligence by normal starships have triggered the development this advanced scout ship.

Hopper

Argo Type

Type: Armored Transport
Accommodation: Crew of 2 + cargo specialist. Evacuation capacity: 20.

Propulsion: One warpcore, two impulse drives, four RCS clusters.
Dimensions: Length: 21.95(21.6) m, Draft: 5.18 m, Beam: 9.285-16.3 m
Mass: 130 metric tonnes
Performance:

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

Armament:
Production year: 2372
Production Base:
Overview: Designed and built by the Enterprise-E crew.

Wyvern Class

Type: Armored Transport
Accommodation: Crew of 2, 30 passengers; 60 evac.
Propulsion: two impulse drives, four RCS clusters.
Dimensions: Length: 20.2 m, Draft: 3.5 m, Beam: 8.6 m
Mass: 15.7 metric tonnes
Performance:

- Full Impulse: 0.5c

Armament: 1 Type V phaser array forward.
Production year: 2363
Production Base:
Overview: The Wyvern hoppers are the first modern hoppers designed in a long while. Their need arose in the Tzenkethi war, but came too late. It was produced in low numbers for special operations. The recent short war with the Klingon Empire in 2372 led to a rise in production which reached its peak during the Dominion War. Although heavily armored and shielded, many were lost to superior Dominion Defense systems. Analysis of the Romulan Zemba class dropship actions provided vital in upgrades to shield systems and tactics. This led to somewhat lesser loses compared to allied crafts of similar design. Some analysts believe that smaller crafts would lead to lesser casualties and offer relatively more protection. However, the general opinion is that ‘the bigger the better’.

Fighter

Valkyrie Type Fighter

The ship loses during the Dominion War had called upon the Peregrine fighters as a cheap and effective way to bring more firepower onto the battlefield. However, Starfleet’s premier fighter was outdated and proved poorly in performance compared to other powers. Starfleet immediately requested a modern design. Despite great efforts the Valkyrie design suffered several delays due to technical problems and lack of experience of Starfleet engineers in fighter designs. The Valkyrie is the first true superiority fighter created in many years since the Romulan War. The Valkyrie incorporates the latest shuttlecraft system design combined with the latest in micronized weaponry.

After the end of the Dominion War the first Valkyrie squadron was commissioned and reached operational status at the end of 2376. The Valkyrie is being deployed to elite units at certain borders.

The Valkyrie is still being produced in low numbers, and considered classified due to some characteristics. Among these are the high-recharging shield system, and technologies recovered from the Dominion. Aside from these the Valkyrie can do anything shuttles can do, e.g. towing or recovering an object with a tractor beam. It can transport a small number of mines in the aft of the cabin and deploy them through the aft hatch.

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 cabin can be separated from the main body and act as an escape pod.

Type: Space Superiority Fighter
Accommodation: Crew of 2.
Propulsion: One warpcore, four impulse drives, two RCS clusters.
Dimensions (estimated)

- Overall Length: 15.5-19 meters
- Overall Height: 3.2 meters
- Overall Beam: 12-15 meters

Mass (estimated): 15-28 metric tonnes
Performance

- Standard Impulse Configuration: 0.25c
- Maximum Sustainable Speed: Warp 5
- Cruising Speed: Warp 3

Armament

- 2 Type-VII pulse phasers (fore)
- 2 Type-VII phaser emitters (ventral fore, aft)
- 2 micro quantum torpedo launchers (fore), 10 micro torpedoes
- 4 Mark VI/XXV Photon Torpedoes/Mark III Quantum Torpedoes on external stations.

Production year:
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.

Peregrine Type Strike Fighter

The Peregrine was the most powerful fighter design in Starfleet since the Romulan War. Its design was created parallel to the Peregrine scout ship. It was the first to include a total of 8 canons of various weapons types. Until then heavy fighters would have to equip a weapons pack to match in fire power. The powerful and upgradeable Peregrine-class has served Starfleet in the role of defense and patrol fighter ever since. After the Romulan War, fighters had been considerate to be too fragile against sophisticated starships. The Peregrine designers tried to disprove this opinion, but never got the chance until the Dominion War. The Peregrine had shown its worth in the Dominion War, and had resurrected the value of fighters once again. The Peregrine series has shown to be an amazing expandable design that has far exceeded the original design expectations. However, it has outlived its design limit. Its great production

number will warrant its existence for some time before being phased out from Starfleet inventory. It will probably be serving in its civil capacity for a much longer time than any ship class. Peregrine-class fighters have been decommissioned in batches, and released onto the civilian market as well as having been transferred to local defense organisations such as the Bajoran military.

The latest upgrade includes new computer cores, sensors, phasers, weapons interfaces, and redesigned weapons bays. It can now hot swap the latest fighter equipment and weapons without the need for reconfiguration.

Type: Strike Fighter
Accommodation: Crew of 2.
Dimensions

- Overall Length: 24.4 meters
- Overall Height: 5.82 meters
- Overall Beam: 17.5 meters

Mass: 132 metric tonnes
Performance

- Standard Impulse Configuration:0.25c
- Maximum Sustainable Speed: Warp 5
- Cruising Speed: Warp 3

Armament

- 2 Type-VII phaser cannon (forward firing arc)
- 6 micro photon torpedo launchers on wings, 50 micro torpedoes
- 6 Mark VI/XXV Photon Torpedoes on external stations

Production year:
Production Base: ASDB Integration Facility, Utopia Planitia Fleet Yards, Mars.

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 infrantry 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.

Type I

This is the smallest phaser which easily fits in a palm and can be used by a child. The power cell in 2365 holds enough energy to vaporize 3 cubic meters of tritanium. It has a 1.5 cm diameter

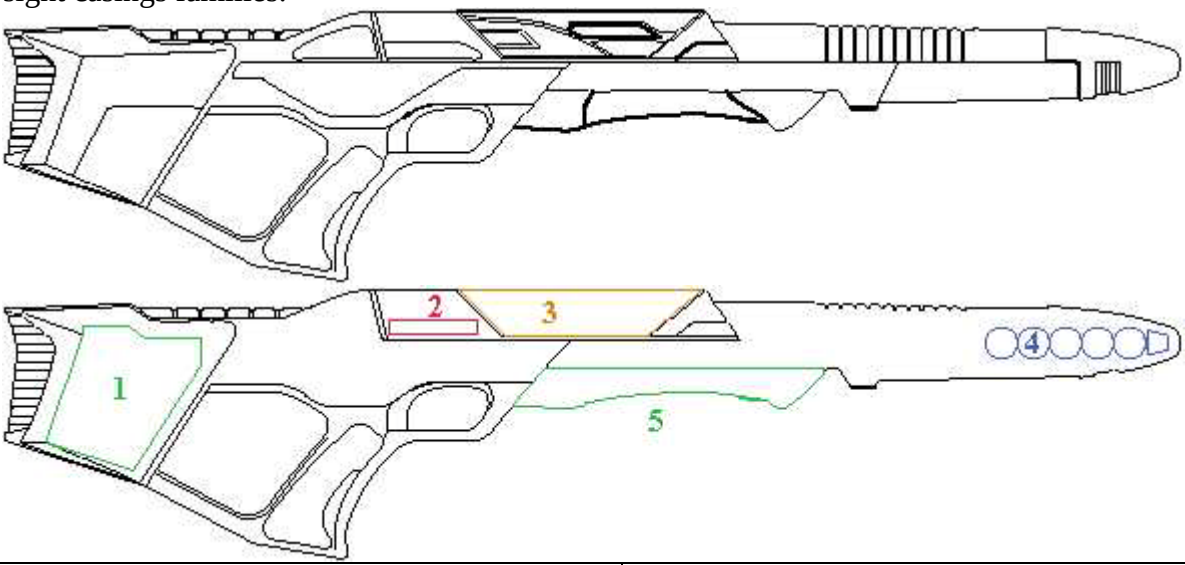
prefire chamber of LiCu 521. The emitter crystal is an elliptical solid of 0.5x1.2 cm. It is a more efficient and expensive crystal than the LiCu 518 used in starship Type X phasers.
Powersource: 2.4x3.0x0.77 cm Sarium krellide cell $7.2x10^6$ MJ (2367)
Dimensions: Length:
Mass:
Settings: 1 to 8

Type II

This is the typical hand weapon used regulary on missions. It has 4 prefire chambers. The emitter crystall is a regular trapezoid of 1.5x2.85 cm.
Powersource: 10.2x3.0x11.3 cm Sarium krellide cell $45x10^6$ MJ (2367)
Dimensions: Length:
Mass:
Settings: 1 to 16
2373: densified $87.9x10^6$ MJ power cell, reinforced prefire chambers for +15% plasma pressure

Type III

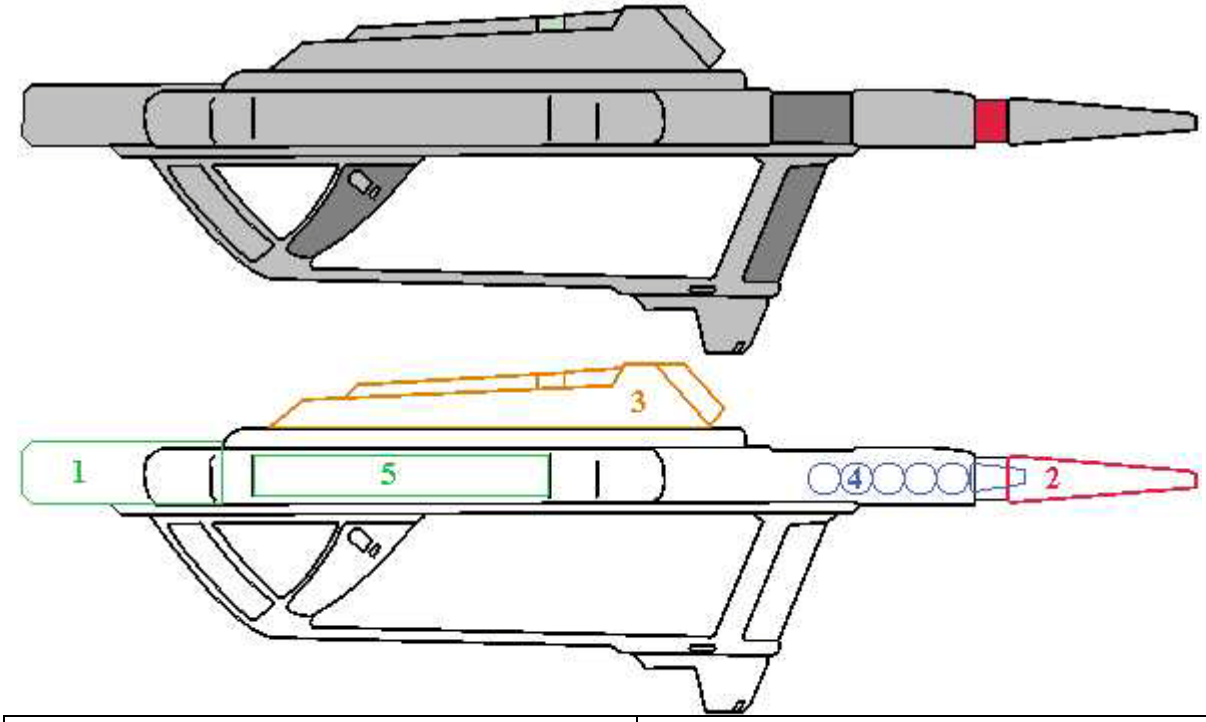
This is the typical rifle weapon used on missions. The 'head' can be removed for service as well as other parts.
Powersource: 2 x 10.2x3.0x11.3 cm Sarium krellide cell $90x10^6$ MJ (2367)
Dimensions: Length:
Mass:
Settings: 1 to 16
2373: **Type-3** of 2367 production ends after 6 years; modular design; 'head' compatible with type II phaser; flip-able computer aided holographic sensor sight; upgraded sensors & processors; densified power cell, reinforced prefire chambers; Combat has proven its sturdiness, but the flip-able sight tends to get broken in melee action. This led to the design of newer sensor sight casings families.



1: counter weight power cells, gas tank	**2:** 2 plasma gas generator

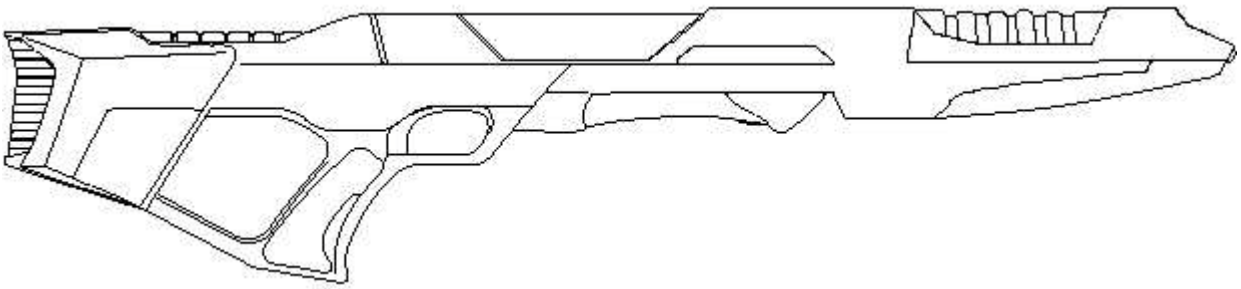
3: swappable computer control system	**4:** 5 prefire chambers, emitter crystal
5: power cell, safety	

Type-3: This new rifle design was created for combat and is sturdier.



1: swappable gas tank	**2:** split resonator
3: sensor sight control unit	**4:** prefire chambers, emitter crystal
5: power cells	

Type-3a: compression phaser; two $340x10^6$ MJ hot-swappable power cells; split emitter resonator to tune and focus the beam



Type-3b: first true transitional phase pulse accelerator; $345x10^6$ MJ hot-swappable power cells; field-replaceable deuterium plasma generator, twelve-stage plasma accelerator, five-stage cascading prefire chambers; new seeker/tracker for passive and active EM and subspace detection.

Type IV

This is the typical small to medium shuttle phaser system.

Power:
Emitter Dimensions:
Mass:

Type V

This is the typical medium to heavy shuttle phaser system.
Power:
Emitter Dimensions:
Mass:

Type VI

This is the typical heavy fighter as well as light starship phaser system e.g. Oberth class.
Power:
Emitter Dimensions:
Mass:

Type VII

This is a military grade phaser system found on Federation capital ships e.g. Miranda class.
Power:
Emitter Dimensions:
Mass:

Type VIII

This is an old battleship phaser system, formerly a mega phaser.
Power:
Emitter Dimensions:
Mass:

Type IX

This is the first phaser array system developed for the Ambassador class.
Power:
Emitter Dimensions:
Mass:

Type X

This is the phaser system developed for the Galaxy class, it uses mass produced LiCu 518 crystals. In 2373, the production of 8.3% higher nadion emission crystals allowed them to be used at lesser power and extend the life cycle.
Power: 5.1 MW (2350); 4.8 MW (2373 upgrade)
Emitter Dimensions: Length 4.1 m

Mass:

Type XI

This is a planetary phaser system found at Federation bases. It has been optimized for firing through an atmosphere. As of 2373, this phaser is being adapted for DS9.
Power:
Emitter Dimensions:
Mass:

Type XII

This is the phaser system used by starbases. It has been adapted for the Sovereign class.
Power: 7.2 MW
Emitter Dimensions:
Mass:

Glossary

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

Brown: other sources estimates/calculation

Blue: own estimates/calculation, generic info