

STARFLEET ACADEMY SECURITY – TACTICAL GUIDE



Reformatted & Revised
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*A Security Officer Or Tactical Officer of Starfleet
must always act with Honor, Pride and Discipline.
The safety of the ship and the lives of her crew
are in your hands, you must judge every situation
before you act,without regard for your own safety.
Competence and self-sacrifice define who you are.*

-Lt Jg Horatio Hawke-



SECURITY OFFICERS

RESPONSIBILITIES INCLUDE:

- Internal security of the ship, similar to the military police.
- Cooperates with TACTICAL.
- Armory inventory & maintenance
- Securing & maintenance of the ship's brig
- security team assignments
- the Alert status of security teams
- Security of ambassadors, visiting dignitaries & guests on board
- Maintenance schedules of ship's security
- Security checks on all new personnel, dignitaries & guests on board.
- the selection of security team members on the away missions.
- Advises the command officers on all security and tactical situations.
- The person most responsible for the CO's protection.
- For storage, maintenance and safeguard of all personal weapons systems, phase rifles and grenades.

QUALIFICATIONS OF A SECURITY OFFICER:

- Able to foresee a problem and avoid it.
- Able to think of your feet if a problem arises.
- Chooses to find a peaceful & effective situation to problems that will arise
- A good working knowledge of the SIM
- Is not afraid to ask questions.
- Makes certain to gather all information needed to do the job.
- A good knowledge of the story and the people involved.
- Works well with others
- Security Chief is the team captain for the security department.
- Weapons are the last resort. Sometimes a peaceful resolution is not possible.

DRILLS & TRAINING:

To keep Security Officers on their toes and at their best - Security based drills and training are always being run.

- Schedule routine Combat drills with Tactical and Engineering – with the CO's Permission
- Keep the command team updated about the progress of said drills.
- Security based drills
- Training:
 - Practice for when a diplomat is expected aboard
 - Break up a small fight in the crew's mess.
- Use the Responsibility List for drill and training ideas.



I. ARMORY:

A. PERSONAL WEAPON SYSTEMS

Security's responsible all personal weapons systems.

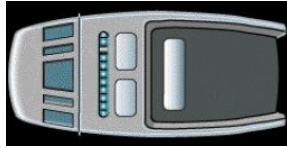
- In good working order
- That personal weapons are properly stored
- CO, XO or SEC authorization has been received for each personal weapon given out

1. Personal Phasers

The primary defensive arms carried by Starfleet personnel. There are four types:

a. Type I Sarium- Krellide power cells hold 7,200,000 mega joules and has only one pre-fire chamber.

- Power settings 1 thru 8
- Small hand-held weapon
- Easily concealed.



b. Type II Sarium- Krellide power cell hold 45,000,000 mega joules and has four pre-fire chambers. Able to achieve power settings 1 to 16.

Settings 9 through 16 employ higher proportions of nuclear disruption energy. They are pistol type weapons that are standard issue for Starfleet personnel. AKA: The "Dust buster"



c. Type III Sarium- Hand-held rifle weapon (p-rifle). Extremely powerful, seldom necessary on Starfleet missions due to the power of Type I and II phasers. The p-rifle increases the power output of and maximum distance of Type I and II phasers. The p-rifle is able to attain power settings 1 to 16 but has a 50% greater power reserve than Type II phasers.



d. Type IV Sarium Medium. A medium-sized phaser emitter device, mountable on small vehicles such as shuttle craft; mounted on the aft tips of the warp nacelles. It is used on Shuttle Craft type VI.

2. Power Settings

Below is a listing of phaser power settings.

Note that in most non-hostile situations phaser setting 3 (heavy stun) is all that will be needed.

In more dangerous situations phaser setting 8 "kill" is the maximum setting recommended by Starfleet.

Setting 1: Light stun: subjects remain unconscious for up to 5 minutes.

Setting 2: Medium stun: base-type humanoids are rendered unconscious for up to 15 minutes
Resistant humanoids up to 5 minutes

Setting 3: Heavy stun: base humanoids remain in a sleep state for approximately one hour.
Resistant bioforms for 15 minutes

Setting 4: Thermal effects: base humanoids experience extensive central nervous system (CNS) damage and epidermal EM trauma. Structural materials exhibit visible thermal shock.

Setting 5: Thermal effects: Humanoid tissue experiences severe burns, but due to water content, deep layers do not char. Simple personal force fields are penetrated after seconds. Large away-team force fields will not be affected.

Setting 6: Disruption effects: organic tissue and structural materials exhibit comparable penetration and molecular damage as higher energies cause matter to disassociate rapidly. Familiar thermal effects begin decreasing at this level.

Setting 7: Disruption effects: organic tissue damage causes immediate cessation of life processes, as disruption effects become widespread.

Setting 8: Disruption effects: Cascading disruption effects cause humanoid organisms to vaporize 50% of affected matter transitions out of the continuum

Setting 9: Disruption effects: medium alloy or ceramic structural materials over 100cm thickness begin exhibiting energy rebound prior to vaporization.

Setting 10: Disruption effects: heavy alloy structural materials absorb rebound energy 0.5 seconds before material vaporizes.

Setting 11: Explosive/Disruption effects:

ultra dense alloy structural materials absorb/rebound energy. 0.20 second delayed reaction before material vaporizes. Light geologic displacement.

Setting 12: Explosive/Disruption effects: ultra dense alloy materials absorb/rebound energy. 0.1 second delayed reaction before material vaporizes. Medium geologic displacement

Setting 13: Explosive/Disruption effects: shielded matter exhibits minor vibrational effects and medium geologic displacement.

Setting 14: Explosive/Disruption effects: shielded matter exhibits medium vibrational heating effects. Heavy geologic displacement

Setting 15: Explosive/Disruption effects: shielded matter exhibits major vibrational heating effects. Heavy geologic displacement

Setting 16: Explosive/Disruption effects: shielded matter exhibits light mechanical fracturing damage. Heavy geologic displacement

B. SMALL ARMS:

1. Grenades



a. Photon Grenade

A short-range variable-yield energy weapon that creates a powerful electromagnetic pulse at lower settings capable of stunning humanoid life forms in an enclosed area.



b. Stun Grenade

Essentially causes a burst of energy at the same level a normal phaser stun would be at. Affects a wide area useful for crowd control.



"Borg Hunt" - © Star Trek The New Generation CBS -Paramount

2. Phaser Rifles

(expanding on Type III Sarium in the section above) Phaser Rifles are powerful weapons used for special circumstances and missions when heavy hostile retaliation is expected. Phaser Rifles are NOT standard equipment on an away team mission.

a. Type III Phaser Rifle, (current model)

The redesigned Type 3 Phaser Rifle was first introduced in 2373 with two models, the Type 3a and Type 3b. It has since undergone several revisions, and the current model was introduced in 2379. Although not part of a standard away team's inventory, the Type 3 Phaser Rifle is the standard heavy weapon carried aboard most Starfleet vessels and stations.



Rating: Starship/Starbase Armory.

Total length: 76.2cm (30 inches)

Weight: 4.5 kilograms (9.9 lbs)

Power Settings: 1-16

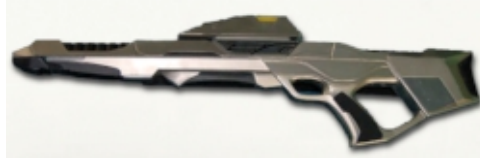
Firing Modes:

- **Single** - As with any other phaser weapon, one shot per pull of the trigger.
- **Sustained** - A sustained beam or stream, which is useful for cutting through obstacles or wearing down force fields or the target's resistance. Activated by holding the trigger down.
- **Burst** - Capable of firing up to twenty-five pulses of energy within a second. Burst fire coils store energy in a similar way as a phaser cannon, charging all the coils with the energy for the imminent firing. The coils cannot hold the energy

for long, and the energy is allowed to dissipate out of the coils to avoid an overload. This reduces the life span of the power pack by approximately 50% and causes the coils to visibly glow, emanate heat, and emit sound at 45 decibels, which limits its use in many combat situations. There is a delay of 0.02 second between pulses allowing the user to engage multiple targets.

ai. Model: Type III-a Phaser Rifle.

It was introduced in 2373 along with the Type 3b. ("Star Trek: First Contact" & DS9 Technical Manual)



aii. Model: Type III -b Phaser Rifle .

Introduced in 2373



b. Compression Phaser Rifle

The Compression Phaser Rifle is a tried and true weapon Starfleet officers prefer since it was introduced in 2373. It can be used in close quarters and on away team missions. It works in any type of environment where a normal phaser was useless, such as inside energy dampening fields or radiogenic environments.

It has been replaced by the latest Type III phaser rifle. But some officers still use it.



Security Armory: Starship/Starbase/Away Team.

Total Length: 81.28 cm (32 inches)

Weight: 2.95 Kilograms (6.5lbs)

Power Settings: 16

c. Type 33 CQC Phaser Rifle

"Assult Rifle"

The Type 33 Close Quarters Combat Phaser Rifle Production began 2388 in response to the difficulties of operating in close quarters during the retaking of DS9. The Type 33 CQC's compact design is intended to make operating in confined spaces, such as the corridors and Jefferies tubes of a Starbase easier.



Security Armory: Starbase/Starship

Hostile setting.

Length: 68.8cm (27.08 inches)

- **Weight:** 2.54 kg (5.6 lbs).

Power settings:

Firing Modes:

d. Isomagnetic Disintegrator

The **isomagnetic disintegrator** is still in production. It is a shoulder-mounted directed-energy weapon used by the Federation Starfleet, similar to an ancient Earth's bazooka. The weapon fires purple energy bolts. Since 2375, isomagnetic disintegrators have been kept of the armory of starships.

The isomagnetic disintegrator features a portable magnetic charge inducer which fires the beam of isomagnetic energy to disrupt the target's electromagnetic field. When used against lifeforms, the effect can be set anywhere from stun, to a temporary impairment of the central nervous system, and all the way up to the highest setting that disintegrates the target to dust.



Security Armory: Starbase/Starship

****CoTeam or CTAC command to use****

Length: 106.68 cm

Weight: 3.85kg (8.49 lbs)

Power Settings: 20

Firing Modes: 5

3. Disruptors:

These are common weapons that essentially shake the target apart by the use of harmonic nadiion interference (HNI). They are much cruder than phasers and cannot be put in arrays, but allow for more power in the same space.

Romulan and Klingon Disruptors are produced in personal weapon and rifle style.

Klingon disruptors have a stun setting, Romulan disruptors do not. Either version of the disruptor may leave an antiproton trace.

II. AWAY TEAMS

Away Teams are specialized squads of personnel sent on an away mission. Assembling the team is the responsibility of the ship's XO; however, security is responsible for the safety of the team.

The following guidelines have been established by Starfleet but are subject to change at the discretion of the CO and XO depending on the situation.

1. Peace Meeting

- a. No weapon
- b. Personnel: XO, OPS, TAC, SEC

2. Repair Situation

- a. Sec can wear weapon
- b. Personnel: XO, OPS, Sec, Eng

3. Any *unknown* situation.

- a. All away-team members wear weapons.
- b. Personnel: XO, TAC, Sec team, Med, Eng

*NOTE: SEC can make recommendation based on mission as to the number of security personnel, or special equipment needed. The final decision ultimately rests with the XO.

Away Team Formations-

Away-team formations describe the relationship of the personnel in the team to each other.

a. Wedge- This is the basic away-team formation. It has the following characteristics:

- Easy to control and flexible
- Allows immediate fires in all directions
- Provides all-around local security

b. File- When the terrain precludes using the wedge, away-teams use the file formation. The characteristics are:

- Provides maximum control
- Provides minimum frontage

- Easy to use in close terrain or vegetation
- Facilitates speed of movement
- Provides immediate fires to flanks
- Less flexible than wedge
- Provides minimum security to team

*Notes: Formation minimum four-man team. **Away-teams should never split into less than two-man teams.**

III. SECURITY PROTOCOLS

A. Alert Status

Status Green: Cruise Mode.

- Normal operations
- Two-man security teams make checks of ship areas.
- Personnel works shift to shift

Blue Alert- Alert Status for:

- landing and/or dry-docking operations
- Station heads report to their departments
- Medical Team is alerted and ready
- Engineering works with full personnel
- CO and XO on the bridge

Yellow Alert- State of significant increased readiness to all crew on board

- All security teams on standby
- Armory issues weapons.
- Chief Security Officer routes Security Teams from his office
- Senior Bridge Personnel report to duty

Red Alert- State of maximum crew and systems readiness

- Armed security teams guard Engineering and Bridge. Two men security teams sweep the decks.
- The Security Chief reports to Chief Tactical Officer on the bridge.
- All Security Personnel is ready for boarding parties.

B. Security-Only Alert Status

Used to specifically command the Security department of a ship There are 4 levels of Security alert:

Level 4: Standard Cruise mode operations

Periodic sweeps of high-security areas.

- Guards posted at the Brig, Armory, Battle Bridge, and other areas as ordered by the Captain.
- Three patrols make sweeps, one in each hull, with the third moving through the whole ship.
- All on-duty SEC personnel are armed with phasers on STUN only.

Level 3: Used when dignitaries are aboard

Same as Level 4 plus :

- Additional personnel are posted to assigned quarters
- SEC teams are present at all diplomatic functions.
- Upgrade phaser levels to HEAVY STUN.

Level 2: In effect when the ship goes to Red Alert

- Each patrol gets an extra officer
- The total number of patrols is doubled.
- Sentries now posted to all Engineering areas, Bridge, Hangar, Main Cargo deck, Air Locks, and all SEC/TAC compartments
- Phasers set to their highest NON-LETHAL level. Deadly force MAY be authorized by the senior most officer on the scene.

Level 1: Also called Intruder Alert.

- ONLY be implemented by the XO, CO, or by automatic Computer alarm
- Security interlocks and force fields are activated, preventing all movement through the ship.
- SEC personnel take command in all isolated spaces & over any crew they find there.
- Efforts are to be taken to identify all persons by palm, voice, retinal, and blood scans.
- Phasers are to be set to highest NON-LETHAL unless overridden by the officer activating the alert.



IV. COMPUTER SECURITY

Auto-destruct- A command program in the main computer system enabling the destruction of the vessel should the ship fall into enemy hands.

Initiation of this program requires the verbal order (with dermal hand print ID verification of the two most senior surviving command officers on the ship.)

Emergency Procedure ALPHA 2 Emergency Protocol

- ALPHA 2 will disengage all shipboard computer control
- Places the ships systems on manual override

Emergency Fleet Access-

- In a combat situation IFF the CO is incapacitated any officer with sufficient security clearance may take command
- Access is allowed.
- An auto message is dispatched to Starfleet, asking for a temporary approval of the change in command.

CLEAR AND PRESENT DANGER Read thrice.

No action is to be taken against potentially hostile targets without the direct orders of the CO, XO or officer in charge; unless a situation of CLEAR AND PRESENT DANGER is identified.

Clear and Present Danger is defined as:

"Your post is under attack and will be destroyed without rapid and legally defensible action."

-Or-

Other Starfleet vessels, stations or holdings, (colonies, protectorates) are under attack and WILL PERISH without definite and legally defensible action.

- Use extreme caution when considering action under this protocol.
- Launching an attack without the CO's express permission can have far reaching consequences
- You may need to defend your decision legally
- see the first part of the definition.

V. BOARDING A HOSTILE SHIP/STARBASE

These are highly dangerous and difficult to plan missions, the enemy has the home field advantage, knowing all of the corridors, rooms and access points, they know exactly how to defend their positions and will normally do so to the death.

As the Chief of Security, you have to identify key points on the enemy ship or StarBase, equip your officers with the equipment and supplies needed to capture and hold it while the other teams get to work, but what should we target?

STRATEGICALLY Order your teams to capture the "enemy's"

1) Bridge/Main Operations

should always be a priority target, the enemies commanders will most likely be here as well as important command junctions, control of the bridge while the command pathways are open will allow you to take control of the rest of the ship/station.

2) Engineering (Ship Only),

Again, a priority target when taking a ship, the propulsion systems, defensive systems, offensive systems, environmental systems, in fact every system on the ship is normally routed through Main Engineering, control of this area will give you complete access to every system unless it is locked out by Command officers on the bridge, taking both positions simultaneously is a very effective tactic and one that can win the day.

3) Armory

Not one of the two priority targets, but a worthy one none the less, the enemy forces will muster here first to counter attack if you do manage to take other positions on the ship, normally one of the hardest stations to take on a ship or StarBase due to the high number of weapons and occasionally, automated defense systems in place.

4) Sickbay

This is another position that enemy forces will defend. Their medical staff will be able to patch up minor wounds and keep people fighting; taking this area of the ship will prevent the enemy from returning to the fight. It is also a big morale drain to the enemy forces.

5) Computer Cores

A very good target, allows similar control to Main Engineering, however they do require a specialist knowledge of the enemy ship's computer systems.

If you should fail to take those positions, backup targets should be:

- Shield generators
- Weapons systems
- Environmental controls,

From those positions you can cause great damage to the ship and lower its defenses.

VI. BEING BOARDED BY A HOSTILE FORCE

1. Seal off all non essential areas of the ship
2. Force fields are bought to maximum
3. Any automated defenses are bought online
4. Security patrols keep order in isolated sections of the ship.

BEST STRATEGY:

- Defend the Bridge & Main Engineering.
- Protect the Commanding Officers and the Command Controls.
- Offline shields need to be brought back online by Tactical and Engineering (over the com).
- Computer Core

Without shields, only the areas of the ship with all -around force fields will be safe from people beaming into them.

Bridge, Engineering and Sickbay have containment fields. If you are not certain about force fields ask your CO.

VII. SECURITY CODES:

A. Command Codes:

ALPHA: COMMAND GRADE OFFICERS

1. Access to all areas of the ship
2. Ability to lockout all stations or entire areas of the ship

BETA: DEPARTMENT HEADS

- Access to non-command sealed areas of the ship
- Ability to lockout specific stations

GAMMA: ASSISTANT DEPARTMENT HEADS/JUNIOR OFFICERS/WARRANT OFFICERS/SENIOR NCO'D

- No special access privileges
- Able to lockout specific stations

DELTA: NCO'D

- No special access privileges
- Able to lockout own workstation

EPSILON: CADET/CIVILIAN

- No special access privileges
- Not able to lockout any stations

Special Codes:

OMEGA: ENGINEERING OVERRIDE

- Access to all key access points to systems are located
- Not able to lockout any stations

THETA: SECURITY OVERRIDE

- Accesses all areas of the ship
- Not able to lockout any station

SIGMA: MEDICAL OVERRIDE

- Access to all areas of the ship where injured personnel are present (internal scan verification)
- Not able to lockout any stations

KAPPA: SPECIAL INTELLIGENCE OVERRIDE

- Access to all intelligence material, used only by intellectual officers
- Not able to lockout any stations Security Access Levels

B. How to use Security Codes:

Examples:

Your last name = Beckerson

Assistant CSEC = GAMMA

Clearance Level = 3

You need to override security =THETA

It looks like this:

Beckerson- GAMMA -3- THETA

[Name – Position – Level – Special Code]

More Examples:

Chief Of Security:

Vokar – Beta -4- Theta

Assistant Chief of Security

Jameson – Gamma -3-Theta

Security Officer

Kyotsu – Gamma -2- Theta

C.. Security Access Levels:

LEVEL 10 (OMEGA DIRECTIVE - COMMAND ACCESS ONLY):

- Full access to classified material on the Omega Directive
- Restricted to CO's, Fleet Commanders, Subdivision Commanders
- No other special access

LEVEL 9 (CHIEF OF STARFLEET OPERATIONS AND DEPUTY):

- Full access to classified material
- Full access to Starfleet mission information
- Full access to personnel information
- Able to restrict the security clearance of any officer level 10, 8 and below

LEVEL 8 (STARFLEET INTELLIGENCE ADMIRALTY):

- Full access to classified material
- Full access to Starfleet mission information as determined by Starfleet Head of Operations
- Full access to personnel information Starfleet Head of Operations
- Able to restrict the security clearance of any officer level 7 and below

LEVEL 7 ALPHA (SUBDIVISION COMMANDER AND DEPUTY [I.E. - SFMC, AND STARFLEET CORPS OF ENGINEERS, ETC.]):

- Access to classified material as relates to Subdivision or as determined by Starfleet
- Intelligence or Starfleet Commander
- Full access to Subdivision mission information
- Full access to Subdivision personnel information
- Able to restrict the security clearance of any officer level 6 and below

LEVEL 7 BETA (FLEET COMMANDER AND DEPUTY):

- Access to classified material as relates to fleet
- Full access to fleet mission information
- Full access to fleet personnel information
- Able to restrict the security clearance of any officer level 6 Alpha and below

LEVEL 6 ALPHA (FLEET HEAD STAFF):

- Limited access to classified material, as determined by the Fleet Command
- Full access to mission information as relates to departments overseen in Fleet
- Full access to personnel information as relates to department in Fleet
- Not able to restrict the security clearance of any officer

LEVEL 6 BETA (FORMATION COMMANDER AND EXECUTIVE [I.E. FLO, STRGRU, BATGRU, TF AND TG]):

- Access to classified material as relates to the formation, as determined by the Fleet
- Command or Starfleet Intelligence
- Full access to formation mission information
- Full access to formation personnel information
- Able to restrict the security clearance of any officer level 6 and below

LEVEL 6 (CO):

- Limited access to classified material, as determined by Fleet Command or Starfleet Intelligence
- Full access to mission information
- Full access to personnel information
- Able to restrict the security clearance of any officer level 5 and below

LEVEL 5 (XO):

- Limited access to classified material, as determined by Starfleet Intelligence
- Full access to mission information
- Full access to personnel information
- Able to restrict the security clearance of any officer level 4 and below

LEVEL 4 (DEPARTMENT HEADS):

- No access to classified material
- Full access to mission information
- Full access to personnel information
- Able to restrict the security clearance of any officer level 3 and below

LEVEL 3 (ASSISTANT DEPARTMENT HEADS):

- No access to classified material
- Full access to mission information
- Limited access to personnel information
- Able to restrict the security clearance of any officer level 2 and below

LEVEL 2 (JUNIOR OFFICERS, WARRANT OFFICERS & SENIOR NCOS [CPO/GSGT AND UP]):

- No access to classified material
- Full access to mission information
- No access to personnel information
- Not able to restrict the security clearance of any officer

LEVEL 1 (NCOS [CRMN /PVT TO PO1/SSGT]):

- No access to classified material
- Limited access to mission information
- No access to personnel information
- Not able to restrict the security clearance of any officer

LEVEL 0 (CADET OR CIVILIAN):

-
- No access to classified material
- No access to mission information
- No access to personnel information
- Not able to restrict the security clearance of any officer



TACTICAL OFFICERS

A TACTICAL OFFICER IS RESPONSIBLE FOR:

- Defensive systems
- Phasers
- Torpedoes
- Cloaking device if the ship is fitted with one. Manages communications controls hailing frequencies
- To keep the Commanding Officer (CO) or Executive Officer (XO) of all incoming hails and messages.
- If the ship is so equipped, the Tactical Officer can also be responsible for managing and
- Directing fighters once launched.
- Keeping up with current changes in Tactical Weaponry and systems.

Only the Tactical Officer may detect ships in the vicinity, tactical controls the ship-to-ship sensors, **not** the ship-to-shore; they are the responsibility of the Operations Officer (OPS).

Tactical coordinates with Operations on the use of the tachyon beam to scan for Cloaked Ships.

QUALIFICATIONS OF A TACTICAL OFFICER:

- Very intelligent
- Self-aware
- Clear minded
- Flexible
- Has knowledge about star systems, alien cultures, spaceships and all kinds of weapons –constantly updates this knowledge.
- Thinks quickly in any situation
- Prepared for Everything
- The crew's best friend and the enemy's worst nightmare



TACTICAL OFFICER'S ROUTINE DUTIES:

- Maintain the defensive and offensive tactical systems by working side by side with Engineering. Engineering knows how to fix it and Tactical knows how to make it work.
- Tactical & Engineering should work with the Chief of Security to run combat drills (with the CO's permission)
- Keep the command staff updated as to the progress of said drills.

STANDARD STARFLEET TACTICAL SYSTEMS

DEFLECTOR SHIELDS

The shields are the most important part of the Tactical systems. They create a localized zone of highly focused spatial distortion within which an energetic graviton field is maintained. The shields are emitted and shaped by series transmission grids on the ships exterior, resulting in a field that closely follows the form of the ship itself. The shields are highly resistive to impact. Shield system utilizes one or more graviton polarity source generators whose output is phase-synchronized through a series of subspace field distortion amplifiers.

Cruise mode operating rules allow for the shields to operate at 5% rated output. At alert mode the shields run at 85% output.

Shields modulation frequencies and bandwidth are randomly varied to prevent a threat force from adjusting the frequency of a direct energy weapon i.e. phasers.

Covariant Pulse: a type of energy that can be transmitted over interstellar distances by modifying the field coils of the station's deflector array to emit covariant pulses allowing Morse Code style communication. Like an interstellar telegraph.

WEAPONS SYSTEMS

I. PHASER

Phasers are the most common directed energy weapon in the arsenal of Starfleet and several other powers. Most phasers are classified as particle weapons and fire nadiion particle beams, but some like the Ferengi hand phaser are classified as plasma weapons and fire forced plasma beams. Based on the intensity and field of the beam and a variety of adjustments, a wide variety of effects can be achieved.

Note: Hyperonic radiation will interfere by randomizing phaser fire. See memory-alpha.org for further information

A) SOUND: Different models of phasers make different sounds when fired, depending on the model and setting. Federation phaser fire typically made a high-pitched "whistling" or "tearing" sound, for example. A knowledgeable person could use the sound to differentiate between types and power settings.

B. COLOR: Phasers have an adjustable resonance frequency. When modified, the color of the beam changed.

C. MODIFICATIONS/CONFIGURATIONS:

Starship -mounted phasers can be configured or modified to:

3. **Proximity blasts:** Bolts of phaser energy that detonate at a specific point in space
4. **Stun:** Used to render lifeforms unconscious when fired at a planetary surface from orbit.
5. **Transfer power:** transfers power from ship to shore, ship to ship.
6. **Antimatter spread:** A harmless pyrotechnic display consisting of many small antimatter pellets fired from a phaser array. Sensor interference from the deployment of an antimatter spread can serve as a way to confuse sensor readings and mask the launch of small craft.
7. **Laser pulse beams:** This modification to a starship's weapons system allows for simulated phaser and photon torpedo operation and performance, but with no potential for actual damage. The system records hits in Starfleet battle simulations without damage to the ships involved.
8. **Pulse compression waves:** A type of high-energy phaser blast.
9. **Co-variant phaser pulses:** a specialized directed-energy discharge capable of taking advantage of phase retractions in an enemy vessel's shield configuration.

D. TYPES OF PHASERS:

1. Phaser Cannon:

Type IV Phaser –portable phaser canon/emitter used on Shuttle crafts Type 1- Type 5. It can be modified to fit Type 6 Shuttle craft. The phasers were located on the forward tips of the two warp nacelles.

2. Type V Phaser Emitter:

used on auxiliary craft:

- Type 7 shuttle crafts,
- Type 9A cargo shuttle
- Chaffee shuttlepod
- Delta Flyer

3. Type VI Phaser Array used on auxiliary craft and runabouts.

4.Type VII Phaser: Twin phaser banks used on starships

5. Type IX Phasers: phaser emitters used in the rotary weapon arrays used on Ambassador-class, Centaur-type, Curry-type and DS9

6. Type X Phaser: arrays used on the Galaxy-class starships.

- Akira -class
- Norway-class
- Nebula-class
- Saber-class
- Soyuz-class
- Constitution-class variant
- DS9 fixed phaser emitters in the weapon sail towers Intrepid-class
- Nova-class

7. Type X+ Phaser: Large dedicated planetary phaser emitters used for planetary defense.

8. Type XI Phaser: used for planetary defense. Designed to minimize atmospheric blooming of the beam

Modified Type XI Phaser emitters in the carriages are embedded into the habitat ring of Deep Space

9. Type XII Phaser Cannon: used on starships.

- Defiant-class starships
- The standard beam phaser arrays:
- Prometheus-class
- Sovereign-class

II. TORPEDOES

1. GENERAL INFORMATION:

A torpedo is a self-propelled, self-guided weapon. Torpedoes of some type have been part of the standard weaponry of most Starfleet vessels in the 22nd to 25th centuries.

Torpedoes are primarily used in space combat as an alternative to directed energy weapons (ie. disruptors or phasers).

Torpedoes can be configured before launch with various specifications. Normally a torpedo is equipped with a warhead. The explosive yield of the warhead could vary depending on the type of torpedo.

Torpedo launchers load the weapon into the launch tube. The launch is controlled from the ship's bridge; although, a torpedo can be launched manually. Usually a tactical officer is responsible for target acquisition and launch sequence.

The maximum effective range of a torpedo is dependent upon its type, on propulsion and acquisition capabilities.

Propulsion is categorized by propulsion method (ie warp or other method). The torpedo guides itself via internal sensors that can be configured by the Tactical Officer. The Tactical officer can launch one torpedo or establish firing pattern for multiple torpedo launches coordinating all the torpedoes to hit a single target; thus, make the best use of every torpedo's explosive yield.

The torpedoes internal sensors can be replaced by specialized sensor packs to detect gaseous anomalies to lock onto impulse engine emissions of a cloaked or hidden ship. Once configured the torpedo can be fired and will automatically acquire its target.

Some torpedoes feature advanced artificial intelligence to make the decisions about target acquisition, defensive maneuvers.

Torpedoes, like auxiliary craft, are equipped with shield window transponders. This allows them to be launched while the shields are active, as they passed through a window in the shields created by the transponders on the torpedoes.

Most torpedoes that are currently in use are equipped with a self-destruction mechanism. If a torpedo needed to be aborted and destroyed for any reason – it can be done.

2. TYPES OF TORPEDOES:

A. Spatial Torpedo (Obsolete)



Weapons carried aboard Starfleet ships during the 21 & 22nd century. These torpedoes were the most powerful

weapons in the standard Federation ship's armament but often ineffective when the warhead bounced off the opponent's deflector shield, it was slow with a short range. It had other drawbacks for more information: http://en.memory-alpha.org/wiki/Spatial_torpedo

B Photonic: (Obsolete)



2153: The earliest model of a Starfleet photon torpedo Aka photonic torpedoes. They were also armed with a matter/antimatter charge and an optional timer. They had simpler internal systems than the spatial torpedoes. For storage, the torpedoes were powered down to a safe mode to protect them from a failure of the

magnetic field around the antimatter charge.

- Could be launched while the ship was traveling at warp or sub light speeds.
- Over fifty times greater range the spatial torpedoes.
- Variable yield
- May or may not penetrate a Klingon deflector shield.

Those ships that had the spatial & first photon-torpedoes used them like depth charges or mines, deploying them in the expected path of the enemy ship and hoping for the best.

Klingon's began using photon torpedoes by at least the 22nd century. They used them extensively on board Raptor-class scout ships, as well as Birds-of-Prey. In comparison, during the same period that Earth's Starfleet was still employing the spatial torpedo, although

they soon upgraded to photonic torpedoes, the precursors to the photon torpedo.

C. Photon:



Self-propelled missile consisting of a small quantity of matter and antimatter bound together in a magnetic container, used as a tactical weapon by

The components of a Federation photon torpedo were contained within an elongated elliptical

casing, also known as a photon tube. 2.1m long, 0.76m across and 0.45m high. Inside the torpedo casing (tube) is target acquisition, guidance and detonation assemble and a warp sustainer unit which is charged by the launching vessels own drive field at launch , boosting the torpedo speed up to $V_{max} = V_l + (0.75 V_l / c)$, where V_l is the velocity of the launching vessel).

The torpedo is armed with a photon warhead comprised of 1.5kilos of antimatter and 1.5kilos of matter; both in pellet form suspended in a magnetic field (The yield is variable by reducing or increasing the amt of M/AM). When the warhead is detonated it creates a matter-antimatter explosion and flood of ion radiation.

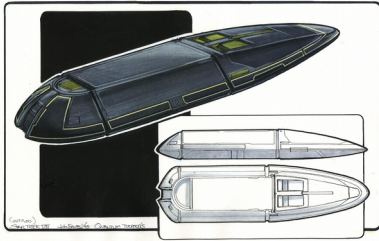
A photon torpedo detonation will deliver approximately 17 megatons of energy ($64.53 * 0.3 * 0.9$) to the target vessel in the form of a physical impact and various types of radiation.

2233: The first known use of a Photon-Torpedo by Starfleet –the USS Kelvin. By 2267 the photon-torpedo was standard to the weapons compliment of all Federation ships.

The 24th century saw the deployment of an improved type of ordnance in the year 2371: the quantum torpedo. Photons continued to be utilized along with quantum torpedoes.

D. Quantum Torpedo

The Quantum Torpedo was developed in the mid to late 2360s as part of Starfleet's response to its first contact with the Borg.



The device works by generating an eleven dimensional space time membrane which is twisted into a string similar in structure to a super-string. This process calls large numbers of subatomic particles

into existence, liberating correspondingly large amounts of energy in the form of an explosion. The production torpedo is of similar size to the standard photon torpedo and is made of a shell of densified tritanium and duranium foam coated in an ablative layer and an anti-radiation polymer coating.

This weapon operates in stealth mode. The warhead comprises a zero-point field reaction chamber, which is formed from a teardrop shaped crystal of rodinium ditellenite jacketed with synthetic neutronium and dilithium. A zero-point initiator is attached to this; the initiator is made of an EM rectifier, a wave guide bundle, a subspace field amplifier, and a continuum distortion emitter. The emitter creates the actual pinch field from a conical spike 10-16 meters across at the tip.

The zero-point initiator is powered by the detonation of an up rated photon torpedo warhead with a yield of 21.8 isotons. The M/AM reaction occurs at four times the rate of a standard warhead; the detonation energy is channeled through the initiator within 10^{-7} seconds and energizes the emitter, which imparts a tension force upon the vacuum domain.

As the vacuum membrane expands over a period of 10^{-4} seconds, an energy potential equivalent to at least 50 isotons is created. This energy is held by the chamber for 10^{-8} seconds and is then released by the controlled failure of the chamber wall.

The propulsion and guidance systems of the quantum torpedo also represent improvements over the standard photon. The computer system is based around bio-neural gel packs, allowing more efficient data processing and so improved guidance capability. Fabrication of the quantum torpedo initially proved difficult, since they contain many parts which are non replicatable. As a result the quantum

torpedo was issued to relatively few vessels. Over time this problem has gradually been overcome, and the quantum torpedo is now the standard issue torpedo in the Federation and United Confederation Fleet.

NOTE: More types of torpedoes are listed in the Advanced Weaponry section below.

3. TORPEDO LAUNCH SYSTEMS

There are eight major photon torpedo launch systems in use within the Federation:

2nd Class Photon Torpedo Tube

Dating from the late 23rd century, this model is now only in service on the Excelsior, Miranda, Centaur, Oberth, and Constellation classes. This tube is capable of firing one photon torpedo approximately every four seconds.

Standard Photon Torpedo Tube

A modern version of the 2nd class torpedo tube, this model can fire a torpedo every two seconds. It is more compact than the older model, has lower maintenance requirements, and is less prone to overheating with prolonged use.

Burst Fire (Type 1) Launcher Photon Torpedo Launch

One of the most important advances in torpedo tube technology, the burst fire tube allows more than one torpedo to be launched simultaneously. The Type 1 model can load and fire a cluster of four photons every 2.85 seconds; although this makes the tube almost three times as bulky as a standard tube, it allows many targets to be engaged simultaneously. The Type 1 is fitted to the Ambassador class as well as various starbases and space stations.

Burst Fire (Type 2) Launcher

Designed for larger vessels, the type 2 burst fire torpedo tube can fire up to eight photons every five seconds, giving a greater overall rate of fire and increasing the number of targets which can be engaged simultaneously.

Burst Fire (Type 3) Launcher

Developed to arm the Galaxy and Nebula classes, this tube can fire up to ten torpedoes every five seconds - a 25% increase over the type 3 - or alternately can fire single rounds at a high rate of fire.

Burst Fire (Type 4) Launcher

The type 4 is the most powerful photon torpedo tube currently in service within the Federation. It can fire a burst of twelve torpedoes every five seconds, and currently is only fitted to the Sovereign class starship.

Pulse Fire Launcher

Developed for the Akira class, the pulse fire tube is a modification of the burst fire tube. The loading and pre-fire stages can hold up to four photons simultaneously, but the launch tube itself is only of sufficient size to fire one weapon at a time. The pulse fire tube therefore fires four rounds in one second, then pauses for three seconds to reload with the next four photons. Overall rate of fire is therefore one torpedo per second.

Micro Tube

This system was developed to arm small vessels such as runabouts (such as the Danube class) and shuttle craft. It fires a compact torpedo with a much smaller warhead than the standard models.

Notes on Quantum Torpedo Launchers:

Most quantum torpedo launchers are simple modifications of photon launchers. The first model introduced on the Defiant Class was a quantum version of the pulse fire photon launcher found on the Akira class, which can fire an average of one torpedo per second.

The Sovereign class introduced a quantum burst fire tube - a variant on the type 4 photon burst fire model capable of launching a dozen torpedoes simultaneously.

Also introduced on the Sovereign class is the rapid fire turret; this allows torpedoes to be fired directly at a target, rather than having to maneuver toward it after launch - a measure which cuts down the torpedo flight time against targets at short range. The Sovereign turret is capable of firing four torpedoes per second, a rate of fire higher than any other model of torpedo tube in service

IV. TRACTOR BEAMS

A focused linear Graviton force beam used to manipulate objects outside a starship or starbase.

Tractors are commonly used for towing other vessels and guiding vessels or shuttle craft through landing and launches.

V. COMMUNICATIONS AND SENSOR ARRAYS

The tactical station controls all hailing frequencies, and routes them to the appropriate person (i.e. subspace communications and Starfleet messages).

1. COMMUNICATIONS

a) Code 47- Term designating a Starfleet subspace communique of extremely high sensitivity or secrecy. Code 47 messages are intended only for the eyes of a starship captain, and voice print ID required. Furthermore, computer records are scrubbed leaving no record of code 47 transmissions.

b) Code 1-ALPHA-0- Signal indicating the discovery of a spaceship in distress.

c) Subspace Radio- Communications system using transmission of electromagnetic signals through a subspace medium rather than through normal relativistic space. The use of subspace radio permits communication across interstellar distances at speeds greater than that of light; thereby significantly reducing the time lag associated with sending messages over such distances.

d) Code 7-10: a "quarantine code". No Starfleet or Federation-registered starship is to approach a system or vessel which is broadcasting Code 7-10.

2. REPORTING:

It is the duty of the Tactical Officer on the bridge to make the CO/XO aware of everything that occurs during a battle. This includes when antagonists:

- Bring weapons online
- Raise or lower their shields
- When they are firing
- When they change course & what heading & speed
- The Antagonist's damage
- Your damage
- Deck status
- Damage reports
- any phenomenon that threatens the safety of the ship

The tactical officer can make the other departments aware of what's happening so they can react. i.e. engineering staff will assess and repair damage. Repair can start immediately on hull and deck damage. Medical can prepare for triage and treating the injured etc.

3. SENSOR ARRAYS:

A sensor array is any device or structure devised to house sensors on-board a ship or station. Typically sensors fall into four categories:

- Long-range
- Scientific
- Navigational
- Tactical.

Long-range sensor arrays are placed around or behind the main deflector dish. Scientific, short-range, and navigational sensors are installed along lateral surfaces or on platforms. Tactical sensors can also be found on lateral surfaces, or in recesses and "blisters" along the hull. All are installed in a manner that allows for maximum coverage with minimum interference from other ship/station structures.

Sensors are normally kept in instrument pallets, and arrays are constructed to allow quick change-outs and maintenance of these pallets (via a Sensor Maintenance Bay). Approximately two-thirds of an array may house pallets, allowing for the addition of mission-specific sensors as the need arises. A sensor array pallet also includes a microwave power feed, optical data net links, cryogenic cooling feeds, mechanical mounting points, four sets of steering servo clusters, and two data sub processor computers.

NOTE: Operations Department is in charge of maintaining and operating sensors when the ships status is **Green**.

VI. PROBES

A probe is a small automated unmanned spacecraft used to gather information. Probes are often used for tasks that starships and auxiliary craft are not suited to handle. These tasks may include:

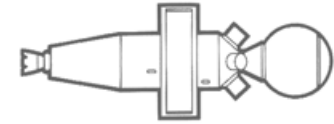
- Collecting information in environments that are too small for starships to examine
- Collecting information in dangerous environments that crew members or starships cannot enter.
- Extreme long-term deep space exploration
- Recording and transmitting remote sensor telemetry to a starship or base that is occupied with other mission objectives..

1. STANDARD GENERAL USE PROBES:

The UCIP standard general use probes are divided into nine classes and listed below according to sensor types, power and performance ratings.

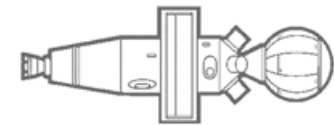
Features common to all nine probes are: spacecraft frames of gamma molded duranium -tritanium and pressure-bonded lufium boronate, certain sensor windows of triple layered transparent aluminum. Sensors not utilizing the windows are affixed through various methods such as surface blending with the hull material to imbedding the active detectors within the hull itself.

CLASS I: Sensor Probe

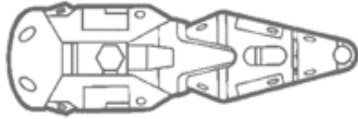


Range:	120 light years.
Delta-Vee limit:	Warp 9.
Power plant:	Matter / antimatter warp field sustainer engine. Duration 6.5 hours at warp 9. MHD power supply tap for sensors and subspace transceiver.
Sensors:	Standard pallet plus mission-specific modules. Full EM/subspace and interstellar chemistry pallet for in-space applications.
Telemetry:	4,550 channels at 300 megawatts.
Additional Data:	Applications vary from galactic particles and fields research to early-warning reconnaissance missions.

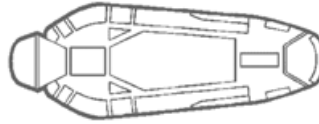
CLASS II: Sensor Probe



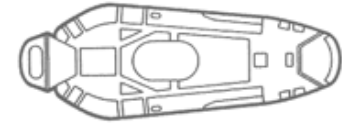
Range:	400,000 km.
Delta-Vee limit:	0.65c.
Power plant:	Vectored deuterium micro-fusion propulsion, with extended deuterium fuel supply.
Sensors:	Same instrumentation as a Class I Probe, with addition of enhanced long-range particle and field detectors and imaging system.
Telemetry:	15,650 channels at 20 megawatts.
Additional Data:	Modified CLASS I

CLASS III: Planetary Probe

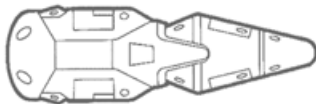
Range: 1,200,000 km.
 Delta-Vee limit: 0.65c.
 Power plant: Vectored deuterium micro-fusion propulsion.
 Sensors: Terrestrial and gas giant sensor pallet with material sample and return capability, and an on-board chemical analysis sub-module.
 Telemetry: 13,250 channels at approximately 15 megawatts.
 Additional Data: Limited SIF hull reinforcement. Full range of terrestrial soft landing to subsurface penetrator missions. Gas giant atmosphere missions survivable to 450 bar pressure. Limited terrestrial loiter time.

CLASS V: Medium-Range Reconnaissance Probe

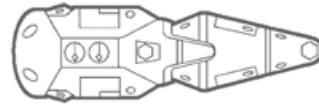
Range: 43,000,000,000 km.
 Delta-Vee limit: Warp 2.
 Power plant: Dual-mode matter / antimatter engine. Extended duration at sub-light, and limited duration at warp.
 Sensors: Extended passive data-gathering and recording systems, with full autonomous mission execution and return system.
 Telemetry: 6,320 channels at 2.5 megawatts.
 Additional Data: Planetary atmosphere entry and soft landing capability. Stealth coatings and hull materials. Can be modified for tactical applications with addition of custom sensor countermeasure package.

CLASS VII: Remote Culture Study probe:

Range: 450,000,000 km.
 Delta-Vee limit: Warp 1.5.
 Power plant: Dual-mode matter / antimatter engine.
 Sensors: Passive data gathering system plus subspace transceiver.
 Telemetry: 1,050 channels at 0.5 megawatts.
 Additional Data: Applicable to civilizations up to technology level III. Stealth coatings and hull materials. Maximum loiter time: 3.5 months. Low-impact molecular destruct package tied to anti-tamper detectors.
 Modified CLASS V:

CLASS IV: Stellar Encounter probe

Range: 3,500,000 km.
 Delta-Vee limit: 0.60c.
 Power plant: Vectored deuterium micro-fusion propulsion supplemented with continuum driver coil, and an extended maneuvering deuterium supply.
 Sensors: Triply redundant stellar fields and particles detectors, stellar atmosphere analysis suite.
 Telemetry: 9,780 channels at 65 megawatts.
 Additional Data: Modified Class III. Six ejectable and survivable radiation flux sub probes. Deployable for non-stellar energy phenomena.

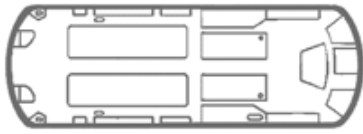
CLASS VI: Comm Relay/Emergency Beacon

Range: 43,000,000,000 km.
 Delta-Vee limit: 0.8c.
 Power plant: Microfusion engine with high output MHD power tap.
 Sensors: Standard pallet.
 Telemetry & Communication: 9,270 channel RF and subspace transceiver operation at 350 megawatts peak radiated power. 360 omni antenna coverage, 0.0001 arc-second high-gain antenna pointing resolution.
 Additional Data: Extended deuterium supply for transceiver power generation and planetary orbit plane changes.

CLASS VIII: Medium-Range Multi Mission Warp Probe

Range: 120 light years.
 Delta-Vee limit: Warp 9.
 Power plant: Matter / antimatter warp field sustainer engine. Duration 6.5 hours at warp 9. MHD power supply tap for sensors and subspace transceiver.
 Sensors: Standard pallet plus mission-specific modules.
 Telemetry: 4,550 channels at 300 megawatts.
 Additional Data: Modified photon torpedo casing; contains Applications vary from galactic particles and fields research to early-warning reconnaissance missions.

CLASS IX Long-Range Multi Mission Warp Probe



Range:	760 light years.
Delta-Vee limit:	Warp 9.
Power plant:	Matter / antimatter warp field sustainer engine. Duration 12 hours at warp 9. Extended fuel supply for Warp 8 maximum flight duration of fourteen days.
Sensors:	Standard pallet plus mission-specific modules.
Telemetry:	6,500 channels at 230 megawatts.
Additional Data:	Modified photon torpedo casing Limited payload capacity. Isolinear memory storage of 3,400 kiloquads. Fifty-channel transponder echo. Typical application is emergency log-message capsule on homing trajectory to nearest starbase or known Starfleet vessel position.

VII. ADVANCED WEAPONS

There are several reasons for exploring alternatives to Starfleet's traditional weapon technologies. Phasers are rapidly proving ineffective against some foes, and photon torpedoes are now becoming obsolete [outdated or outclassed] by new designs. New weapon designs are taking advantage of advanced technologies designed to enhance damage to enemy ship systems.

It is also often an advantage to be carrying much more fire power than your enemy suspects.

1. ANAPHASIC PULSE WEAPONRY:

A cannon style weapon that fires greenish plasma at a target that requires accurate control of a swivel mounts on the ships hull. This weapon relies on anaphasic energy in a plasma base that disrupts an enemy's EPS system. It will not affect ships that do not use EPS grids.

Addendum Anaphasic Pulse Weapon

Anaphasic energy is faintly green, living and an unstable energy that is capable of disrupting lifeforms down to the cellular level and disrupting EPS (Electro-Plasma Systems) Grids.

An Anaphasic charge can travel large distances through small plasma 'base' to be somewhat stable. A simple projection crystal and a geological anaphasic generator, and a nanofusion plasma cell will make a suitable hand weapon.

The ship mounted pulse cannon is a larger version of the hand weapon.

2. BEAMS AND ARRAYS

Thaser Banks:

[Obsolete]

These were the first attempt at the practical application of Thoron technology. They work on the same basic principles as Phaser banks. Thoron isotopes were stored, charged then channled through an emmitter at the target. The problem encountered is the low yeild available to adapted Phaser banks due to limited space available which does not allow for the generation of the Thoron Isotope.

Thaser banks were abandoned soon after its conception.

Teryon Beam Arrays:

[Only granted to starships by special committee]

Similar to phaser arrays, teryon beam arrays generate teryon particles in a purple white beam of energy. Teryons belong to the same particle class as dark matter. They disrupt matter on the atomic level and will pass through shields that do not have proper EM orientation.

A typical teryon beam array consists of a varying number of emitter segments in a dense linear arrangement for optimal control of firing order, field halos and target impact. Groups of emitters are supplied by redundant sets of energy feeds from the primary trunks of the EPS, and are similarly interconnected by fire control and sensor lines with no visible hull evidence of the arrays.

Problems:

One setting - Maximum

Lack of precision control of strength of the beam

Not widely available

4. TORPEDOES & TORPEDO LAUNCHERS

Plasma Torpedoes:

[Romulan Weapon]

Weapon first employed by the Romulan bird of prey in 2266 against a string of Federation outposts along the Romulan Neutral Zone. The plasma torpedo consists of a small but powerful force field generator which fires from a standard torpedo tube. The generator establishes small powerful force field around itself and a much larger concentric field with a radius of about one hundred meters.

The parent vessel established a field bridge through this outer layer and vented its plasma conduit system into the empty shell between the two fields. The breach was then sealed, and the vessel would break away and let the torpedo continue on its way. A high power sensor on the central body was capable of locking onto the target, and by venting part of the plasma in a specific direction some degree of control could be established over the course of the plasma torpedo.

This is a very complex and cumbersome weapons system with many disadvantages - venting the main plasma system of the starship causes an almost total loss of power while firing, which means that the ship must both decloak and drop to sub light speeds while firing. The guidance system is extremely limited by the difficulties inherent in operating any sensor system through a high energy plasma field, and any degree of maneuvering causes a significant drop in eventual yield.

Because of these difficulties the plasma torpedo has therefore not been very successful when used against mobile targets such as Starships.

Fixed installations, on the other hand, are a different matter. The plasma torpedo focuses the entire energy output of a starship into one colossal discharge; when used against a Federation asteroid based outpost a single plasma torpedo collapsed the shields and caused near total destruction of the installation even through several kilometers of solid rock. This level of destructiveness was not available with any other weapons system of the time.

Today Romulan Warbirds are equipped with plasma torpedoes for use against fixed installations.

Graviton Torpedoes:

Are non-lethal shield killing torpedoes that has the same external configuration as a Quantum torpedo. Graviton torpedoes will not damage anything except shields.

Verteron Torpedoes:

The verteron torpedo, larger than the Photon Torpedo or Quantum Torpedo, disables subspace within a 5,000,000 kilometer spherical diameter within 20 seconds of detonation disabling a ship's ability to go to warp, use subspace communications and cloak. The effect lasts an approximate 30-90 seconds.

[WARNING] Use of this technology should NOT be implemented if the source ship is within blast radius. Due to the nature of Verteron particle generators a maximum of **15** torpedoes may be carried on any one ship.

Gravity-based Torpedo Launcher:

Replaces magnetic-based torpedo launchers strung with sequential solid state gravity field induction coils and launch-assist MHD generators to provide initial power to the sustainer and propel the casing away from the starship. The use of gravity field coils instead of magnetic field coils eliminates the problems of overheating and slow re-fire rate.

Muon Antineutrino Torpedo:

This involves a high speed tuned muon/antineutrino particle burst directed at a ship's warp engine. Muons have a catastrophic effect on warp cores when they build up, and antineutrinos interfere with the properties of both dilithium and keltrinium.

Both particle emission generators are stored in a standard graviton torpedo shell. They operate after the graviton pulse has opened a hole in the shield wall (shields block both forms of radiation); Unfortunately, packing in the extra power generators reducing the range of the torpedo by 23%.

4. CANNONS

Heavy Ram Cannon: This utilizes the deflector dish to channel massive amounts of power. Several versions exist depending on the type of energy added like Thoron, Antiproton, or Graviton etc.

Normal dishes burn out after 3 shots, while specially designed deflector dishes can last for 16-22 shots.

Antiproton Cannon:

[Starship/Starbase class weapon only]

It fires a beam of pure antiprotons. At full strength it would sever castridium at a molecular level, and slice neutronium. It requires four thermal-neutron decay reactors to provide antiprotons, and an additional 40TW of power. The use of this weapon drains ship systems significantly and cannot be mounted on ships less than 600 meters long without some external modification.

Thoron Pulse Cannon

[Obsolete] Thoron Technology

Linear Thoron Beam Cannon

[Current Thaser Technology]

The Linear Thoron Beam Cannon is mounted on the ship in much the same fashion as the Galaxy "B" refit (from *All Good Things*) and requires 4 stages to complete beam formation, a total time about 2 seconds.

Stage 1- Collection

This process occurs all the time. Thoron particles are gathered from the refined thorium pile that is placed at the beginning of the linac. A initial storage amount is built up, then continually replenished; enough shots for around 20 beams to start with, maximum of 100. There `s only so much atoms one can store.

Stage 2- Ionization and cyclotronic acceleration

Prior to injection into the synchrocyclotron, a mesoenergy electron beam ionizes the thoron atoms, enabling them to be accelerated. Then they are drawn into the SCT, to be bumped up to about 2 MeV via two 'Dee' `s; magnets shaped like a D that guide the beam, and radio frequency cavities to give an additional boost in power. Then the beam becomes too powerful to be held by the size of the SCT(around 5 meters), and they `re passed to the next stage.

Stage 3- Linac-based acceleration Standard

acceleration techniques; with the superconducting materials available to the 25th century, plus smaller acceleration 'gaps'. High-temp superconducting magnets plus microwave-level radio frequency gaps provide a higher kick for the buck..hey, ye got 25000 TW of power, can afford the best. The energy by the end of this is around 2 GeV, higher than most phaser beams.

Stage 4- Lens Focusing and Graviton Field

generation Next step is basically magnetic lens shaping, to ensure a coherent beam for the final stage.

Also, in this stage borrowed deflector dish technology, at

a slightly smaller scale and power, generates a powerful subspace\gravimetric field distortion that accompanies the beam, preventing it from losing collimation or being affected by local gravitational and magnetic fields like most particle-beam weapons.

Thasers are an Anti-Shield weapon. They are installed on ships durring massive overhauls and take up the space normally used for Phaser banks. Ships that are fit with Thasers lose the corresponding number of Phaser segments.

The Thaser is Not intended to be a Primary weapon. It is a supplementary single role offensive weapon ntended, designed and applied for the sole purpose of disrupting shield operation.

5. TRICOBALT DEVICES

[Several Species deploy these devices]

Tricobalt is an explosive that can be used as anything between a small anti-personnel explosive to weapons of mass destruction to destroy large installations such as space stations. The thermokinetic explosion yield of tricobalt is measured in tons or by the amount of subspace distortion it produces in teracochranes.

A Tricobalt Device also known as a tricobalt charge or tricobalt warhead. The tricobalt warhead is a high yield device used for destruction of large scale stationary targets such as space stations.

[WARNING] Detonating tricobalt devices within high gravity fields like those found near to dead stars may create pockets of inter-phase space which can form gateways between parallel dimensions. These gateways can be highly unstable and are easily disrupted by energy releases.

NOTE: Tricobalt devices are not standard issue weapons on Starfleet starships, but are sometimes carried in addition to photon torpedoes.

6. THE CLOAKING DEVICE

Written by Czar Rom

Overview

A cloaking device is an energy screen generator used to render an object (typically, a space vehicle) invisible to the eye and to most sensor systems. This is accomplished by gravitational lensing, the creation of a distorted image of an object when its light is focused by gravity.

In the case of a cloaking device, the light is focused so that the object's index of refraction (the phase velocity of radiation in free space divided by the phase velocity of the same radiation in a specified medium) matches its surroundings, making the object transparent.

Cloaking a ship requires precisely balancing the radiative emissions from the warp drive nacelles, dissipating all electromagnetic radiation, gravitational fields and other energy emissions emanating from the ship, and distorting space in such a way that electromagnetic radiation and energy emissions are directed around the ship through subspace at velocities faster than light.

Technical Specifications

Off-axis warp field controllers balance the radiative emissions from the warp drive nacelles. This is necessary because the power source must be in phase with the cloaking device. These devices are used on warp-capable ships without cloaking devices, as well as warp-capable ships with cloaking devices, because they increase the engine operating efficiency. If any one of these controllers are misaligned or in some way damaged it would produce a polarized, magnetic distortion, detectable by other ship's sensors. When a cloaked ship is traveling faster than light in warp, the fact that the ship is moving so quickly makes it difficult to pin-point the location of a ship even if one of the controllers are in some way damaged or misaligned.

Components:

The Nullifier Cores dissipate all electromagnetic radiation and other energy emissions produced by the ship and its crew. This is done by remodulating the energy signature to have the appearance of background energy, as well as reducing the apparent output. The amount of energy required by the nullifier cores to mask a certain amount of energy is not directly proportional to the amount of energy to be masked. For increasingly larger amounts of energy to be masked, the amount of energy required by the nullifier cores to mask that energy becomes ever closer to being equal the

amount of energy to be masked. Providing shielding against the entire electromagnetic spectrum is energy-

costly, but necessary if a ship is within close proximity. However, if there are no ships within the immediate vicinity, then the nullifier cores are capable of dissipating electromagnetic radiation on the wavelengths that would only be detectable on long-range scanners, ignoring the wavelengths detectable on only short-range scanners. Another necessary function of the nullifier cores is to create a null area of gravity between the ship and the cloaking field. So that any gravity coming from the ship does not interfere with the cloaking field, or be detected by a gravimetric distortion mapping scanner on another ship.

Cloaking Generator Coils use a coherent graviton emission to distort space so that incident electromagnetic radiation and other forms of energy are directed around the ship through subspace at velocities faster than light, making the appearance that the light or energy never left its original course. One of the main parts of a cloaking generator coil is a graviton polarity source generator.

Graviton Polarity Source Generators create a highly focused spatial distortion which directs the course of the energy and light. The graviton polarity sources in each generator feed into subspace field distortion amplifiers that are phase-synchronized with each other by a network of small conduits that allow field bleed for gravitational stability between the graviton polarity sources. These conduits are equipped with tetryon compositors, to prevent a build-up of tetryons in the conduits, which would decrease the operating efficiency and eventually significantly damage the subspace field distortion amplifiers.

The flux energy output is directed and focused by a series of **Subspace Field Generator Coils**, according to the energy dispersal pattern. The energy dispersal pattern, or the energy transformational matrix, is the way in which the energy and light is directed around the ship. The actual subspace field generator coils are similar to warp field coils, but they create a multi-layered field in the space around the ship, not also within it. The propulsive, asymmetrical, peristaltic field distortion propels the energy faster than light. This compensates for the extra distance that the energy has to travel around the ship before returning to its original course, and any redshift or blueshift caused by the Doppler effect, or a gravitational field.

Cloaking Device Interface and Dedicated Computer Systems. The cloaking generator coils are controlled by special purpose, or dedicated, computers designed to perform this specific task. They are extremely fast

computers that contain a complex arrays of processors each designed to perform a specific function. These computers must handle huge databases, and perform complex mathematical operations in order to provide an accurate energy dispersal pattern. Input data is provided for the computers by a network of refractometers placed on the hull of the ship. The more refractometers placed on the hull of the ship, the more effective the energy dispersal pattern. The only limiting factor is the speed of the computers, which must provide a realtime energy dispersal pattern to effectively cloak the ship. These computer are completely separate from the computers that perform other ship functions, because they are limited to the specific function built into them.

Magnetic Constriction Coils create a localized magnetic waveguide plane for the energy to pass through in subspace, which ensures proper alignment of the energy when the ship is in warp. If a ship was using the magnetic constriction coils while not in warp, an active magnetic interferometry scanner could detect the use of the coils.

All of the parts of the cloaking generator coils are powered by plasma coils. These coils must all have an identical energy frequency. This is accomplished by a plasma buffer. If there is no plasma buffer, then the cloaking generator coils could easily be disrupted, by something like an ionic pulse.

If a ship had the ability to generate enough energy to maintain the cloaking device as well as defensive shields, the nullifier cores could neither mask all of the energy required to accomplish this, nor the interference created by defensive shields. In addition, the spatial distortions created by defensive shields would mean that the shield itself would have to exist within the cloaking field, and the larger the cloaking field is, the more energy is required to generate it. These reasons completely eliminate the possibility of using defensive shields.

When a starship's cloaking device is active, several ship's systems operate under special protocols to minimize the interference of the cloaking device.

If the cloaking generator coils distorted space so that all incident electromagnetic radiation and other forms of energy were directed around the ship, then the sensor systems could not gather any data. As a result, the cloaking generator coils create frequency windows to allow specific wavelengths to pass through the cloaking field at certain times. This limits the gathering of many types of scientific and tactical data, but is

adequate for most situations. Active scanners may not be used while the cloaking device is operating.

Although the transporter system could be tuned to the same frequency as the cloaking device, the gravitational distortions usually prevent usage of the transporter system.

Phased energy weapons make use of the rapid nadiion effect. This is very disruptive to the cloaking device's plasma coils, even with a plasma buffer, and therefore cannot be used. If a cloaked ship did use their phasers, the beam would be bent off course and hit the ship at a diametric point and angle. In addition, the nullifier cores would attempt to dissipate the phaser beam and remodulate its energy signature to give the appearance of background emmissions. The cloaking field would most likely collapse, causing powerful gravitational waves. However, it is possible for a phaser to penetrate the cloak from the outside if it is tuned to the frequency of a window opened in the cloak for sensory input.

Warp drive operation is considerably affected by the cloaking device. The geometry of the warp field must be significantly altered because of the spatial distortions created by the cloaking device. Warp drive control software works in parallel with the cloaking generator coil's dedicated computer to minimize the effect on both systems. The translational field interaction between the cloaking device and the warp drive is somewhat chaotic, creating potentially catastrophic effects. Such as a spontaneous field collapse of the warp field or subspace compression. This is why subspace listening posts are an efficient way of tracking cloaked ships.

It is possible to open an interference window in a finely tuned cloak, so that a photon torpedo will pass through, as opposed to being bent off course or even crushed by the gravitational distortion. This interference window is generated by, at the moment of firing, a cloaking generator coil to operate on a different frequency than the other cloaking generator coils. This is accomplished by temporarily disconnecting the plasma coil powering the cloaking generator coil for the area where the torpedo will leave the cloaking field from the plasma buffer. The translational field interaction between the cloaking

generator coils causes a gap to open in the cloak. The calculations that are necessary to allow the ship to properly cloak after the launch of the torpedo are very complex. As a result, there is a lag in firing, the length of which depends on the speed of the cloaking generator coil's dedicated computer.

Because the navigational deflector dish radiates significant amounts of both subspace and electromagnetic radiation,

it cannot be used when cloaked without an extremely powerful network of nullifier cores, which would consume a considerable amount of energy. Instead of this, a variant of the transporter system is used. This device converts the micrometeorite particulates to energy, lets the energy be directed around the ship as with all of the other light and energy, and then converts the energy back to matter. This method is only used when a ship is in very close proximity. Otherwise the magnetic constriction coils are tuned with the cloaking generator coils to reflect interstellar gases and micrometeoroid particulates. This method is more energy efficient than the method using a variant of the transporter system.

7. THE HOLOGRAPHIC CLOAK OR HOLOCLOAK

The Holographic Cloak creates a holographic illusion around a ship. It is the Federations solution to Romulan and Klingon Cloaking devices without violating the parameters set by the Treaty of Algeron.

Background:

At Treaty of Algeron with the Romulan Empire, one of the stipulations banned the Federation from developing "traditional" cloaking technology. However, the tactical advantage of masking a ship from its enemies could not be overlooked. It is a necessary technology to protect the Federation and it's allies.

The Federation's solution: develop a new system that performed the same basic function but in a completely different way without violating the treaties that prevented use of cloaking devices. The holocloak was developed as an offshoot from the holodeck technology employed on many modern starships and just took that principle to a totally different scale.

Technical Details:

The Holocloak takes a completely different approach to disguising a ship from the known Romulan/Klingon Cloaking Device. Instead of trying to make a whole ship disappear the technology is based around the idea of

masking a ship as something that is non-threatening and uninteresting to others.

This cloak is often called chameleon cloak due to the fact that it effectively creates a holographic illusion around the ship, using strategically placed holographic emitters on the hull, to make it look and feel like virtually any other object in the computer's database powered by a separate holo generator and coupled with an additional system that masks the warp and energy signatures of the ship to match that item.

When the holocloak and masking systems are activated the ship's weapons can be brought online, the shields and weapons systems still work as they normally would. The weapons & shields can be masked at will to reflect the chosen form.

Limitations:

It is important to note that while this system can change the appearance and even apparent size of the ship, it is limited to a range of simulating an object no larger than 1.5 times the size of the ship it is masking. Beyond that the holographic projectors on the hull cannot support the illusion and the image appears to flicker and fade. It is also physically impossible to create the illusion that a 300 meter ship is really only 170 meters!

Practical Uses:

A Romulan Warbird may engage its cloak to enter a hostile area and become totally invisible to ships around it, yet if detected it is extremely vulnerable as it cannot raise shields or fire weapons while it is cloaked.

In contrast the holocloak would not allow a Federation ship to become totally invisible but does hold several advantages over the traditional cloak. In many ways a holocloak can even be more useful than complete invisibility as an area of space that appears to contain a completely nonthreatening object is far less likely to get any attention than an empty area of space potentially containing a cloaked ship.

For example a holocloak could allow a ship to appear as a comet and simply drift into a hostile area of space without causing any alarm. In another case a holocloak could even create the illusion of a friendly ship to the hostiles, masking power signatures and warp trails to confirm the illusion.

Additional Information:

The holocloak is not fool proof. If the enemy knows what it is looking for then it will undoubtedly detect a

holocloaked ship. However, that does not mean that such detection will be easy or quick and just the notion that a holocloaked ship is in the area could be a great distraction to an enemy who suddenly feel the need to run detailed scans of every comet or dust cloud.

OOO Information:

The holocloak may be fitted to Federation vessels under approval by R&D. Other powers do not yet possess the technology to replicate the holocloak's operation.

8. TACTICAL MANEUVERS

A. Picard Maneuver: Used in situations where the threat craft does not have sensors capable of

FTL (Faster than Light) detection The attacker accelerates to Warp 9, and then stops again. If done fast enough, the ship can outrun it's own image, thus causing two ships to appear. An attack can then be mounted.

B. Riker Maneuver: Used when inside unstable nebulae or other gaseous anomalies. By using a ship's ram scoop to draw in the unstable gas, and then placing it in front of an enemy, the enemy's fire will detonate the gas, and the threat will destroy itself.

C. La Forge Maneuver: Used to defeat cloaked vessels. Drawing the enemy down into the atmosphere of a planet, allowing detection by the turbulence and heat created by re-entry. The craft may then be engaged by weapons.

D. Shield Penetration: Many shields may be penetrated by setting a weapon's modulation to that of the shield to be broken through. This technique is not as effective as it once was, because shields may be reset much faster than before. However, a well-placed shot can be all a ship needs.

C. Cloak Detection:

Subspace listening posts, gravitic sensor nets and tachyon heterodyne detection grids can be used to track cloaked ships.

Subspace Listening Posts are designed to listen for any subspace radio, subspace field distortions (these indicate the presence of a warp drive), any subspace compression (a possible warp drive error), or subspace shock waves small enough to be undetectable by standard sensor arrays (these indicate a spontaneous warp field collapse.) Subspace relay stations, which boost subspace radio transmissions, can be converted to subspace listening posts without much difficulty.

Gravitic Sensor Nets are a network of detection devices that are partially effective in detecting cloaked ships. Gravitic sensor nets utilize highly sensitive gravimetric distortion mapping scanners to map the gravitational forces throughout the area in which it would be probable that a cloaked ship would pass. If a cloaked ship's nullifier cores were not creating a complete area of null gravity around the ship, then it would be possible to observe the changes in the space around the ship.

Tachyon Heterodyne Detection Grids are a network of active tachyon beams used to detect cloaked ships passing through the net. Tachyon heterodynes are charged tachyons having alternating currents of two different frequencies that are combined to generate a new frequency equal to the sum or difference of the two. As a cloak engages and disengages, a momentary gravitational wave forms from the graviton polarity sources, while the subspace field distortion amplifiers phase-synchronize with each other.

Gravitational waves also called gravitational radiation or spatial ripples.) A gravitational wave is a ripple in the curvature of space-time In other words, it is a propagating gravitational field, or propagating pattern of strain, traveling at the speed of light. It carries energy and can exert forces on matter in its path, producing, for instance, very small vibrations in elastic bodies. As the ripple forms, the ships inertial damping system will attempt to respond. But because, on average, the inertial damping system lags 295 milliseconds to respond, there is a slight strain of the physical spaceframe of the craft.

If the ripple is fairly limited, no considerable effect will result, but, should the ripple be large, the systems will fail to adequately compensate and the ripple can cause a significant effect on the ship and crew. This distortion, although the relatively weak interaction between gravitational radiation and matter, can create an effect similar to that of spatial interphase, which alters the neural pathways in the brain, effectively rendering any humanoids exposed to the spatial radiation insane, or worse. Statistically, on a Mk 3.2a cloaking device, a ripple large enough that it cannot be adequately compensated for, should occur some 0.00007854% (39,271/50,000,000,000) of the time. A build-up of tetryons in the conduits that allow field bleed between the graviton polarity sources will significantly increase the chance of a spatial ripple occurring.

A neural disturbance should occur approximately 0.0000001386% of the time, with a 0.00000000341%

(341/100,000,000,000,000) chance of complete structural failure due to spatial ripple stress. In addition to the production of gravitational waves, cloaking devices have several other significant disadvantages. The greatest disadvantage is the tremendous amount of energy required to maintain all of the parts of the cloaking device.

RESOURCES USED IN UPDATING THIS GUIDE:

WEBSITES:

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lcars24.com/starfleet.html

[UCIP LCARS WIKI](http://lcars.ucip.org)
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CREDITS:

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