

**CONFIDENTIAL**

**STARFLEET MARINE  
CORPS**



**MARINE  
ESSENTIAL  
TASKS**

**Revision 2010**

**S  
-  
D  
-  
M  
-  
L**

**CONFIDENTIAL**



# STARFLEET MARINE CORPS

---

## **Marine Essential Tasks**

**2010 Edition**



This manual is published by the STARFLEET Marine Corps, a component of STARFLEET, the International Star Trek Fan Association, Inc., and released under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License (<http://creativecommons.org/licenses/by-nc-nd/3.0/>). You may freely copy, distribute, display, and perform this manual, but all other uses are strictly prohibited unless written permission is received from the Commandant or Deputy Commandant, STARFLEET Marine Corps.

The STARFLEET Marine Corps holds no claims to any trademarks, copyrights, or other properties held by Paramount, other such companies or individuals.

Published July 2010

# Contents

<b>Part 1 - Introduction .....</b>	<b>1</b>
Welcome Aboard!.....	1
Copyright and Disclaimer.....	1
Pronoun Disclaimer .....	1
Acknowledgements.....	1
Reporting Authority .....	1
<b>Part 2 - Cover, Concealment and Camouflage .....</b>	<b>2</b>
<b>Part 3 - Fighting Positions .....</b>	<b>6</b>
<b>Part 4 - Movement.....</b>	<b>8</b>
<b>Part 5 - Observation .....</b>	<b>13</b>
<b>Part 6 - Tracking .....</b>	<b>17</b>
<b>Part 7 - Combat Intelligence and Counterintelligence ....</b>	<b>22</b>
<b>Part 8 - Communications .....</b>	<b>25</b>
<b>Part 9 - Survival .....</b>	<b>29</b>
<b>Part 10 - Map Reading and Land Navigation .....</b>	<b>32</b>
<b>Part 11 - First Aid and Personal Hygiene .....</b>	<b>41</b>
<b>Part 12 - Recognition .....</b>	<b>49</b>
<b>Appendices.....</b>	<b>95</b>
Appendix A: Military Symbols .....	95
<b>About the SFMC Academy .....</b>	<b>105</b>

# Part 1 – Introduction

## Welcome Aboard!

The individual STARFLEET Marine is the key to success on the battlefield. Wars are not won by machines and weapons but by the marines who use them. Even the best-equipped force cannot win without motivated and well-trained soldiers. On the battlefield, marines must have the knowledge on how to do their jobs and how to survive.

The Marine Essential Task manual is a manual dedicated to the marine on the battlefield. Contained within this manual are some of the necessary skills needed to survive on today's modern battlefield as well as basic skills for when technology fails. The skills covered are ones that must be learned by all marines no matter their MOS or rank.

Through practice and mastery of these skills a STARFLEET Marine makes a formidable opponent on the field of battle.

## Copyright and Disclaimer

This manual is published by the STARFLEET Marine Corps, a component of STARFLEET, the International Star Trek Fan Association, Inc., and released under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License (<http://creativecommons.org/licenses/by-nc-nd/3.0/>). You may freely copy, distribute, display, and perform this manual, but all other uses are strictly prohibited unless written permission is received from the Commandant or Deputy Commandant, STARFLEET Marine Corps.

The STARFLEET Marine Corps holds no claims to any trademarks, copyrights, or other properties held by Paramount, other such companies or individuals.

Portions of this manual are from US Army Field Manuals FM 3-25.26 , FM 21-75, and FM101-5-1. Various graphics are from Memory Alpha ([www.memory-alpha.org](http://www.memory-alpha.org)), Starship Schematic Database (<http://www.shipschematics.net/>), and from Kristian Trigwell. All images used are done so according to fair use doctrine.

## Pronoun Disclaimer

The use of he/his/him, etc., are used for convenience as the standard English language conventions of unknown-gender pronouns.

## Acknowledgements

This manual would not have been possible if not for the dedicated efforts of Wade Olson and Sean Niemeyer.

## Reporting Authority

The governing authority for training information is the Commanding Officer, Training and Doctrine Command (COTRACOM). Send question, comments, or suggestions to: [tracom@sfi-sfmc.org](mailto:tracom@sfi-sfmc.org)

## Part 2 - Cover, Concealment, and Camouflage

If the enemy can see you, he can hit you with his fire. So you must be concealed from enemy observation and have cover from enemy fire. When the terrain does not provide natural cover and concealment, you must prepare your cover and use natural and man-made materials to camouflage yourself, your equipment, and your position.

### COVER

Cover gives protection from phaser fire, kinetic rounds, fragments of exploding rounds, flame, nuclear/antimatter effects, and biological and chemical agents. Cover can also conceal you from enemy observation. Cover can be natural or man-made.

To get protection from enemy fire in the offense or when moving, use routes that put cover between you and the places where the enemy is known or thought to be. Use ravines, gullies, hills, wooded areas, walls, and other cover to keep the enemy from seeing and firing at you. Avoid open areas, and do not skyline yourself on hilltops and ridges.

Natural cover includes such things as logs, trees, stumps, ravines, and hollows. Manmade cover includes such things as fighting positions, trenches, walls, rubble, and craters. Even the smallest depression or fold in the ground can give some cover. Look for and use every bit of cover the terrain offers. In combat, you need protection from enemy direct and indirect fire. To get this protection in the defense, build a fighting position (man-made cover) to add to the natural cover afforded by the terrain.

### CONCEALMENT

Concealment is anything that hides you from enemy observation. Concealment does not protect you from enemy fire. Do not think that you are protected from the enemy's fire just because you are concealed. Concealment, like cover, can also be natural or man-made. Natural concealment includes such things as bushes, grass, trees, and shadows. If possible, natural concealment should not be disturbed. Man-made concealment includes such things as battle-dress uniforms, camouflage nets, face paint, and natural material that has been moved from its original location. Man-made concealment must blend into the natural concealment provided by the terrain.

Light discipline, noise discipline, movement discipline, and the use of camouflage contribute to concealment. Light discipline is controlling the use of lights at night by such things as not smoking in the open, not walking around with a flashlight on, and not using vehicle headlights. Noise discipline is taking action to deflect sounds generated by your unit (such as operating equipment) away from the enemy and, when possible, using methods to communicate that do not generate sounds (arm-and-hand signals). Movement discipline is such things as not moving about fighting positions unless necessary, and not moving on routes that lack cover and concealment. In the defense, build a well-camouflaged fighting position and avoid moving about. In the offense, conceal yourself and your equipment with camouflage and move in woods or on terrain that gives concealment. Darkness cannot hide you from enemy observation in either offense or defense. The enemy's

night vision devices and other detection means let them find you in both daylight and darkness.

## CAMOUFLAGE

Camouflage is anything you use to keep yourself, your equipment, and your position from looking like what they are. Both natural and man-made material can be used for camouflage. Change and improve your camouflage often. The time between changes and improvements depends on the weather and on the material used. Natural camouflage will often die, fade, or otherwise lose its effectiveness. Likewise, man-made camouflage may wear off or fade. When those things happen, you and your equipment or position may not blend with the surroundings. That may make it easy for the enemy to spot you.

For the purpose of this manual we will assume that you do not have EWD-189J "Eloflage" Personal Electronic Interdiction System, EWD-202B "Holoflage" Squad Holographic Generator or other such system. The reason being that equipment can and does fail or be lost or destroyed, therefore it is a matter of life and death to learn how to camouflage one's self, equipment and positions without the aid of devices such as the EWD-189J.

## CAMOUFLAGE CONSIDERATIONS

**Movement** draws attention. When you give arm-and-hand signals or walk about your position, your movement can be seen by the naked eye at long ranges. In the defense, stay low and move only when necessary. In the offense, move only on covered and concealed routes.

**Positions** must not be where the enemy expects to find them. Build positions on the side of a hill, away from road junctions or lone buildings, and in covered and concealed places. Avoid open areas.

**Outlines and shadows** may reveal your position or equipment to air or ground observers. Outlines and shadows can be broken up with camouflage. When moving, stay in the shadows when possible.

**Shine** may also attract the enemy's attention. In the dark, it may be a light such as a burning cigarette or flashlight. In daylight, it can be reflected light from polished surfaces such as shiny mess gear, a worn helmet, a windshield, a watch crystal and band, or exposed skin. A light, or its reflection, from a position may help the enemy detect the position. To reduce shine, cover your skin with clothing and face paint. However, in a nuclear attack, darkly painted skin can absorb more thermal energy and may burn more readily than bare skin. Also, dull the surfaces of equipment and vehicles with paint, mud, or some type of camouflage material.

**Shape** is outline or form. The shape of a helmet is easily recognized. A human body is also easily recognized. Use camouflage and concealment to breakup shapes and blend them with their surroundings. Be careful not to overdo it. The **colors** of your skin, uniform, and equipment may help the enemy detect you if the colors contrast with the background. For example, a green uniform will contrast with snow-covered terrain. Camouflage yourself and your equipment to blend with the surroundings.

**Dispersion** is the spreading of men, vehicles, and equipment over a wide area. It is usually easier for the enemy to detect soldiers when they are bunched. So, spread out. The distance between you and your fellow soldier will vary with the terrain, degree of visibility, and enemy situation. Distances will normally be set by

unit leaders or by a unit's standing operating procedure (SOP).

## **HOW TO CAMOUFLAGE**

Before camouflaging, study the terrain and vegetation of the area in which you are operating. Then pick and use the camouflage material that best blends with that area. When moving from one area to another, change camouflage as needed to blend with the surroundings. Take grass, leaves, brush, and other material from your location and apply it to your uniform and equipment and put face paint on your skin.

***Fighting Positions.*** When building a fighting position, camouflage it and the dirt taken from it. Camouflage the dirt used as frontal, flank, rear, and overhead cover. Also camouflage the bottom of the hole to prevent detection from the air. If necessary, take excess dirt away from the position (to the rear). Do not over camouflage. Too much camouflage material may actually disclose a position. Get your camouflage material from a wide area. An area stripped of all or most of its vegetation may draw attention. Do not wait until the position is complete to camouflage it. Camouflage the position as you build.

Do not leave shiny or light-colored objects lying about. Hide mess kits, mirrors, food containers, and white underwear and towels. Do not remove your shirt in the open. Your skin may shine and be seen. Never use fires where there is a chance that the flame will be seen or the enemy will smell the smoke. Also, cover up tracks and other signs of movement.

When camouflage is complete, inspect the position from the enemy's side. This should be done from about 35 meters forward of the position. Then check the camouflage periodically to see that it stays natural looking and conceals the position. When the camouflage becomes ineffective, change and improve it.

***Helmets.*** Camouflage your helmet with the issue helmet cover or make a cover of cloth or burlap that is colored to blend with the terrain. The cover should fit loosely with the flaps folded under the helmet or left hanging. The hanging flaps may break up the helmet outline. Leaves, grass, or sticks can also be attached to the cover. Use camouflage bands, strings, burlap strips, or rubber bands to hold those in place. If there is no material for a helmet cover, disguise and dull helmet surface with irregular patterns of paint or mud.

***Uniforms.*** Most uniforms come already camouflaged. However, it may be necessary to add more camouflage to make the uniform blend better with the surroundings. To do this, put mud on the uniform or attach leaves, grass, or small branches to it. Too much camouflage, however, may draw attention.

When operating on snow-covered ground, wear overwhites (if issued) to help blend with the snow. If overwhites are not issued, use white cloth, such as white bed sheets, to get the same effect.

***Skin.*** Exposed skin reflects light and may draw the enemy's attention. Even very dark skin, because of its natural oil, will reflect light. Use the following methods when applying camouflage face paint to camouflage the skin.

CAMOUFLAGE MATERIAL	SKIN COLOR	SHINE AREAS	SHADOW AREAS
	LIGHT OR DARK	FOREHEAD, CHEEKBONES, EARS, NOSE AND CHIN	AROUND EYES, UNDER NOSE, AND UNDER CHIN
LOAM AND LIGHT GREEN STICK	ALL TROOPS USE IN AREAS WITH GREEN VEGETATION	USE LOAM	USE LIGHT GREEN
SAND AND LIGHT GREEN STICK	ALL TROOPS USE IN AREAS LACKING GREEN VEGETATION	USE LIGHT GREEN	USE SAND
LOAM AND WHITE	ALL TROOPS USE ONLY IN SNOW-COVERED TERRAIN	USE LOAM	USE WHITE
BURNT CORK, BARK CHARCOAL, OR LAMP BLACK	ALL TROOPS, IF CAMOUFLAGE STICKS NOT AVAILABLE	USE	DO NOT USE
LIGHT-COLOR MUD	ALL TROOPS, IF CAMOUFLAGE STICKS NOT AVAILABLE	DO NOT USE	USE

When applying camouflage stick to your skin, work with a buddy (in pairs) and help each other. Apply a two-color combination of camouflage stick in an irregular pattern. Paint shiny areas (forehead, cheekbones, nose, ears, and chin) with a dark color. Paint shadow areas (around eyes, under the nose, and under the chin) with a light color. In addition to the face, paint the exposed skin of the back of the neck, arms, and hands. Palms of hands are not normally camouflaged if arm-and hand signals are to be used. Remove all jewelry to further reduce shine or reflection.

When camouflage sticks are not issued, use burnt cork, bark, charcoal, lamp black, or light-colored mud.

## Part 3 - Fighting Positions

When defending, or when temporarily halted while making an attack, you must seek cover from fire and concealment from observation. Some type of fighting position best provides cover and concealment. This may be an existing hole, a hastily dug prone shelter, or a well-prepared position with overhead cover. The time available for preparation determines how well you build your position.

Your fighting position **must**:

- **Allow you to fire.**
- **Protect you from observation and direct and indirect fire.**

### COVER

The cover of your fighting position must be strong enough to protect you from small arms fire, indirect fire fragments, and the blast wave of nuclear/antimatter explosions. The position should have frontal cover to give protection from small arms fire from the front. Natural frontal cover (trees, rocks, logs, and rubble) is best, because it is hard for the enemy to detect a position that is concealed by natural cover. If natural cover is not available, use the dirt taken from the hole you dig to build additional cover. Putting the dirt in sandbags and then wetting them can improve the cover, however this approach does not work when dealing with directed energy weapons.

Your fighting position should be built so that, when you come under direct fire from your front, you can move behind the frontal cover for protection and yet fire to the oblique.

For all-round protection, to include protection from a nuclear/antimatter attack, your position should also have overhead, flank, and rear cover. The dirt from the hole can also be used to build that cover, which protects against indirect fire that bursts overhead or to the flanks and rear of the position. Cover also guards against the effects of friendly weapons supporting from the rear, such as small arms fire or discarding sabot rounds fired from tanks. You should leave crawl spaces in the rear cover. This lets you enter and leave the position without exposing yourself to the enemy.

### CONCEALMENT

If your position can be detected, it can be hit by enemy fire. If it can be hit, you can be killed in it. Therefore, your position must be so well hidden that the enemy will have a hard time detecting it even after he is in hand-grenade range.

Natural, undisturbed concealment is better than man-made concealment **because**:

- **It is already prepared.**
- **It usually will not attract the enemy's attention.**
- **It need not be replaced.**

While digging your position, try not to disturb the natural concealment around it. Put the unused dirt from the hole behind the position and camouflage it.

Camouflage material that does not have to be replaced (rocks, logs, live bushes, and grass) is best. You should not use so much camouflage that your position

looks different from its surroundings. Your position must be concealed from enemy aircraft as well as from ground troops. If the position is under a bush or tree, or in a building, it is less likely to be seen from above. Leaves, straw, or grass placed on the floor of the hole will keep the fresh earth from contrasting with the ground around it. Do not use sticks, as they may stop grenades from rolling— into the grenade sumps.

Man-made concealment must blend with its surroundings so that it cannot be detected.

## SECTORS AND FIELDS OF FIRE

The sectors of fire are those areas into which you must observe and fire. When your leader assigns you a fighting position, he should also assign you a primary and a secondary sector of fire. The primary sector of fire is to the oblique of your position, and the secondary sector of fire is to the front.

To be able to see and fire into your sectors fire, you may have to clear some vegetation and other obstructions from them. That is called clearing a field of fire.

When clearing a **field of fire**:

- **Do not disclose your position by careless or too much clearing.**
- **Leave a thin, natural screen of vegetation to hide your position.**
- **Cut off lower branches of large, scattered trees in sparsely wooded areas.**
- **Clear underbrush only where it blocks your view.**
- **Remove cut brush, limbs, and weeds so the enemy will not spot them.**
- **Cover cuts on trees and bushes forward of your position with mud, dirt, or snow.**
- **Leave no trails as clues for the enemy.**

A field of fire **to the front** is needed out to the range of your weapon.

A field of fire **to the oblique** (off center) lets you hit the attackers from an unexpected angle. It also lets you support the positions next to you. When fired to the oblique, your fire interlocks with the fire of other positions. That helps create a wall of fire that the enemy must pass through.

## Part 4 - Movement

Normally, you will spend more time moving than fighting. You must use proper movement techniques to avoid contact with the enemy when you are not prepared for contact.

The fundamentals of movement discussed in this chapter provide techniques that all soldiers should learn. These techniques should be practiced until they become second nature.

### MOVEMENT TECHNIQUES

Your unit's ability to move depends on your movement skills and those of your fellow soldiers. Use the following techniques to avoid being seen or heard **by the enemy**:

- **Camouflage yourself and your equipment.**
- **Tape your dog tags together and to the chain so they cannot slide or rattle.**
- **Tape or pad the parts of your weapon and equipment that rattle or are so loose that they may snag (the tape or padding must not interfere with the operation of the weapon or equipment). Jump up and down and listen for rattles.**
- **Wear soft, well-fitting clothes.**
- **Do not carry unnecessary equipment.**
- **Move from covered position to revered position (taking no longer than 3 to 5 seconds between positions).**
- **Stop, look, and listen before moving.**
- **Look for your next position before leaving a position.**
- **Look for covered and concealed routes on which to move.**
- **Change direction slightly from time to time when moving through tall grass.**
- **Stop, look, and listen when birds or animals are alarmed (the enemy may be nearby).**
- **Use battlefield noises, such as weapon noises, to conceal movement noises.**
- **Cross roads and trails at places that have the most cover and concealment (large culverts, low spots, curves, or bridges).**
- **Avoid steep slopes and places with loose dirt or stones.**
- **Avoid cleared, open areas and tops of hills and ridges.**

### METHODS OF MOVEMENT

In addition to walking, you may move in one of three other methods — low crawl, high crawl, or rush.

The **low crawl** gives you the lowest silhouette. Use it to cross places where the concealment is very low and enemy fire or observation prevents you from getting up. Keep your body flat against the ground. With your firing hand, grasp your weapon sling at the upper sling— swivel. Let the front handguard rest on your forearm (keeping the muzzle off the ground), and let the weapon butt drag on the ground. To move, push your arms forward and pull your firing side leg forward. Then pull with your arms and push with your leg. Continue this throughout the move.

The **high crawl** lets you move faster than the low crawl and still gives you a low

silhouette. Use this crawl when there is good concealment but enemy fire prevents you from getting up. Keep your body off the ground and resting on your forearms and lower legs. Cradle your weapon in your arms and keep its muzzle off the ground. Keep your knees well behind your buttocks so your body will stay low. To move, alternately advance your right elbow and left knee, then your left elbow and right knee.

The **rush** is the fastest way to move from one position to another. Each rush should last from 3 to 5 seconds. The rushes are kept short to keep enemy machine gunners or riflemen from tracking you. However, do not stop and hit the ground in the open just because 5 seconds have passed. Always try to hit the ground behind some cover. Before moving, pick out your next covered and concealed position and the best route to it.

Make your move from the **prone position as follows:**

- **Slowly raise your head and pick your next position and the route to it.**
- **Slowly lower your head.**
- **Draw your arms into your body (keeping your elbows in).**
- **Pull your right leg forward.**
- **Raise your body by straightening your arms.**
- **Get up quickly.**
- **Run to the next position.**

When you are ready to stop moving, **do the following:**

- **Plant both of your feet.**
- **Drop to your knees (at the same time slide a hand to the butt of your rifle).**
- **Fall forward, breaking the fall with the butt of the rifle.**
- **Go to a prone firing position.**

If you have been firing from one position for some time, the enemy may have spotted you and may be waiting for you to come up from behind cover. So, before rushing forward, roll or crawl a short distance from your position. By coming up from another spot, you may fool an enemy who is aiming at one spot, waiting for you to rise.

When the route to your next position is through an open area, rush by zigzagging. If necessary, hit the ground, roll right or left, then rush again.

## **MOVING WITH STEALTH**

Moving with stealth means moving quietly, slowly, and carefully. This requires great patience. To move with stealth, use the **following techniques:**

- **Hold your rifle at port arms (ready position).**
- **Make your footing sure and solid by keeping your body's weight on the foot on the ground while stepping.**
- **Raise the moving leg high to clear brush or grass.**
- **Gently let the moving foot down toe first, with your body's weight on the rear leg.**
- **Lower the heel of the moving foot after the toe is in a solid place.**
- **Shift your body's weight and balance to the forward foot before moving the rear foot.**

- **Take short steps to help maintain balance.**

At night, and when moving through dense vegetation, avoid making noise. Hold your weapon with one hand, and keep the other hand forward, feeling for obstructions. When going into a prone position, use the **following techniques**:

- **Hold your rifle with one hand and crouch slowly.**
- **Feel for the ground with your free hand to make sure it is clear of mines, tripwires, and other hazards.**
- **Lower your knees, one at a time, until your body's weight is on both knees and your free hand.**
- **Shift your weight to your free hand and opposite knee.**
- **Raise your free leg up and back, and lower it gently to that side.**
- **Move the other leg into position the same way.**
- **Roll quietly into a prone position.**

Use the following techniques **when crawling**:

- **Crawl on your hands and knees. Hold your rifle in your firing hand. Use your nonfiring hand to feel for and make clear spots for your hands and knees to move to.**
- **Move your hands and knees to those spots, and put them down softly.**

## **IMMEDIATE ACTIONS WHILE MOVING**

This section furnishes guidance for the immediate actions you should take when reacting to enemy indirect fire.

### **REACTING TO INDIRECT FIRE**

If you come under indirect fire while moving, quickly look to your leader for orders. He will either tell you to run out of the impact area in a certain direction or will tell you to follow him. If you cannot see your leader, but can see other team members, follow them. If alone, or if you cannot see your leader or the other team members, run out of the area in a direction away from the incoming fire.

It is hard to move quickly on rough terrain, but the terrain may provide good cover. In such terrain, it may be best to take cover and wait for flares to burn out. After they burn out, move out of the area quickly.

### **MOVING WITHIN A TEAM**

You will usually move as a member of a team. Small teams, such as infantry fire teams, normally move in a wedge formation. Each marine in the team has a set position in the wedge, determined by the type weapon he carries. The team leader to meet the situation, however, may change that position. The normal distance between marines is 10 meters.

You may have to make a temporary change in the wedge formation when moving through close terrain. The soldiers in the sides of the wedge close into a single file when moving in thick brush or through a narrow pass. After passing through such an area, they should spread out, again forming the wedge. You should not wait for orders to change the formation or the interval. You should change automatically and stay in visual contact with the other team members and the team leader.

The team leader leads by setting the example. His standing order is, FOLLOW ME AND DO AS I DO. When he moves to the left, you should move to the left. When he gets down, you should get down. When he fires, you should fire.

When visibility is limited, control during movement may become difficult.

## **FIRE AND MOVEMENT**

When a unit makes contact with the enemy, it normally starts firing at and moving toward the enemy. Sometimes the unit may move away from the enemy. That technique is called **fire and movement**. It is conducted either to close with and destroy the enemy, or to move away from the enemy so as to break contact with him.

The firing and moving take place at the same time. There is a fire element and a movement element. These elements may be single soldiers, buddy teams, fire teams, or squads. Regardless of the size of the elements, the action is still fire and movement.

The **fire element** covers the move of the movement element by firing at the enemy. This helps keep the enemy from firing back at the movement element.

The **movement element** moves either to close with the enemy or to reach a better position from which to fire at him. The movement element should not move until the fire element is firing.

Depending on the distance to the enemy position and on the available cover, the fire element and the movement element switch roles as needed to keep moving. Before the movement element moves beyond the supporting range of the fire element (the distance within which the weapons of the fire element can fire and support the movement element), it should take a position from which it can fire at the enemy. The movement element then becomes the next fire element and the fire element becomes the next movement element. If your team makes contact, your team leader should tell you to fire or to move. He should also tell you where to fire from, what to fire at, or where to move. When moving, use the low crawl, high crawl, or rush.

## **MOVING WITH TANKS**

You will often have to move with tanks. When you must move as fast as the tanks, you should ride on them. However, riding on a tank makes you vulnerable to all types of fire. It also reduces the tank's maneuverability and the ability to traverse its turret. If contact is made with the enemy, you must dismount from the tank at once.

To mount a tank, first get permission from the tank commander. Then mount from the tank's right front, not its left side where the coax machinegun is mounted. Once mounted, move to the rear deck, stand, and hold on to the bustle rack. If there is not enough room for you on the rear deck, you may have to stand beside the turret and hold onto a hatch or hatch opening.

When riding on a tank, be alert for trees that may knock you off and obstacles that may cause the tank to turn suddenly. Also be alert for enemy troops that may cause the tank to traverse its turret quickly and fire.

Riding on a tank is always hazardous and should be done only when the risks of riding are outweighed by the advantages of riding.

# Part 5 - Observation

During all types of operations, you will be looking for the enemy. However, there will be times when you will be posted in an observation post (OP) to watch for enemy activity.

An OP is a position from which you watch an assigned sector of observation and report all activity seen or heard in your sector.

## HOW TO OBSERVE

This section discusses the techniques you will use for day and night observation.

### DAY OBSERVATION

In daylight, use the **visual search technique** to search terrain. **Do this in two steps:**

- **Step 1.** Make a quick, overall search of the entire sector for obvious targets and unnatural colors, outlines, or movements. Look first at the area just in front of your position, and then quickly scan the entire area out to the maximum range you want to observe. If the sector is wide, divide it and search each subsector as in **Step 2**.
- **Step 2.** Observe overlapping, 50-meterwide strips, alternating from left to right and right to left, until you have searched the entire sector. When you see a suspicious spot, search it well.

### NIGHT OBSERVATION

At night, use anyone of three night observation techniques to search terrain.

**Dark Adaptation Technique.** First, let your eyes become adjusted to the darkness. Do so by staying either in a dark area for about 30 minutes, or in a red-lighted area for about 20 minutes followed by about 10 minutes in a dark area. The red-lighted method may save time by allowing you to get orders, check equipment, or do some other job before moving into darkness.

**Off-Center Vision Technique.** Focus your attention on an object but look slightly away from it. The object will be more visible this way than when you look straight at it.

**Scanning Technique.** Again focus your attention on an object, but do not look directly at it. Now move your eyes in short, abrupt, and irregular movements around it, pausing a few seconds after each move.

### THINGS TO LOOK AND LISTEN FOR

In trying to find the enemy in a sector of observation, look and listen for **these signs of his presence:**

- **Sounds.**
- **Dust or vehicle exhaust.**
- **Movement.**
- **Positions.**
- **Outlines or shadows.**
- **Shine or glare.**

- **Contrasting colors.**

### **SOUNDS**

Listen for such things as footsteps, limbs or sticks breaking, leaves rustling, men coughing, and equipment or vehicle sounds. These may be hard to distinguish from other battlefield and animal sounds.

Sounds can alert you to the direction or general location of the enemy. They may not pinpoint his exact location. However, if a sound alerts you, you are more apt to spot the enemy.

### **DUST OR VEHICLE EXHAUST**

Moving foot soldiers or vehicles often raise dust. Vehicle exhaust smoke also rises. You can spot dust and vehicle smoke at long ranges.

### **MOVEMENT**

Look for movement in your sector. Use the visual search technique.

### **POSITIONS**

Look for enemy positions in obvious places, such as road junctions, hilltops, and lone buildings. Also look at areas with cover and concealment, such as woods and draws.

### **OUTLINES OR SHADOWS**

Look for outlines or shadows of enemy soldiers, equipment, vehicles, or guns. The enemy may use the shadows of trees or buildings to hide himself and his equipment. Look for him in shaded areas.

### **SHINE OR GLARE**

In darkness, look for light sources such as burning cigarettes, headlights, or flashlights. In daylight, look for reflected light or glare from smooth, polished surfaces such as windshields, headlights, mess gear, watch crystals, or uncamouflaged skin.

### **CONTRASTING COLORS**

Look for contrasts between background color and the colors of uniforms, equipment, and skin. For example, a soldier's T-shirt or towel may contrast with its background.

### **RANGE ESTIMATION**

You must often estimate ranges. Your estimates will be easier to make and more accurate if you use the 100-meter unit-of-measure method, the appearance-of-objects method, or the flash-and-sound method. This section discusses the use of these methods.

**100-METER UNIT-OF-MEASURE METHOD (DAYTIME)**

Picture a distance of 100 meters on the ground. For ranges up to 500 meters, count the number of 100-meter lengths between the two points you want to measure. Beyond 500 meters, pick a point halfway to the target, count the number of 100-meter lengths to the halfway point, and then double that number to get the range to the target.

Sloping ground changes the appearance of 100-meter lengths. Ground that slopes upward makes them look longer than 100 meters, and ground that slopes downward makes them look shorter than 100 meters. Thus, the tendency is to underestimate 100-meter lengths on upslopes and overestimate them on downslopes.

The accuracy of the 100-meter method depends on how much ground is visible. This is most true at long ranges. If a target is at a range of 500 meters or more, and you can only see part of the ground between yourself and the target, it is hard to use this method with accuracy.

**APPEARANCE-OF-OBJECTS METHOD (DAYTIME)**

This method is a way to estimate range by the apparent size and detail of an object. It is a common method that is used in everyday life. For example, a motorist trying to pass another car judges the distance of oncoming cars based on their apparent size. He is not interested in exact distances, but only in having enough room to safely pass the car in front of him. Suppose he knows that at a distance of 1 mile an oncoming car appears to be 1 inch wide and 2 inches high, with a half inch between the headlights. Then, any time he sees an oncoming car that fits those dimensions, he knows it is about 1 mile away.

The same technique can be used to estimate ranges on the battlefield. If you know the apparent size and detail of troops and equipment at known ranges, then you can compare those characteristics to similar objects at unknown ranges. When the characteristics match, the range does also.

To use the appearance-of-objects method, you must be familiar with characteristic details of objects as they appear at various ranges. As you must be able to see those details to make the method work, anything that limits visibility (such as weather, smoke, or darkness) will limit the effectiveness of this method.

**COMBINATION OF METHODS**

Battlefield conditions are not always ideal for estimating ranges. If the terrain limits the use of the 100-meter unit-of-measure method, and poor visibility limits the use of the appearance-of-objects method, you may have to use a combination of methods. For example, if you cannot see all of the terrain out to the target, you can still estimate distance from the apparent size and detail of the target itself. A haze may obscure the target details, but you may still be able to judge its size or use the 100-meter method. By using either one or both of the methods, you should arrive at a figure close to the true range.

**FLASH-AND-SOUND METHOD (BEST AT NIGHT)**

Sound travels through air at 300 meters (1,000 feet) per second. That makes it possible to estimate distance if you can both see and hear a sound-producing action.

When you see the flash or smoke of a weapon, or the dust it raises, immediately start counting. Stop counting when you hear the sound associated with the action seen. The number at which you stop should be multiplied by three. This gives you approximate distance to the weapon in hundreds of meters. If you stop at one, the distance is about 300 meters. If you stop at three, the distance is about 900 meters. When you must count higher than nine, start over again after counting nine (counting higher numbers throws the timing off).

## Section 6 – Tracking

In all operations, you must be alert for signs of enemy activity. Such signs can often alert you to an enemy's presence and give your unit time to prepare for contact. The ability to track an enemy after he has broken contact also helps you regain contact with him.

### TRACKER QUALITIES

Visual tracking is following the path of men or animals by the signs they leave, primarily on the ground or vegetation. tracking is following men or animals by their smell.

Tracking is a precise art. You need a lot of practice to achieve and keep a high level of tracking skill. You should be familiar with the general techniques of tracking to enable you to detect the presence of a hidden enemy and to follow him, to avoid mines or booby-traps, and to give early warning of an ambush.

With common sense and a degree of experience, you can track another person. However, you must develop the following traits and qualities:

- Be patient.
- Be able to move slowly and quietly, yet steadily, while detecting and interpreting signs.
- Avoid fast movement that may cause you to overlook signs, lose the trail, or blunder into an enemy unit.
- Be persistent and have the skill and desire to continue the mission even though signs are scarce or weather or terrain is unfavorable.
- Be determined and persistent when trying to find a trail that you have lost.
- Be observant and try to see things that are not obvious at first glance.
- Use your senses of smell and hearing to supplement your sight.
- Develop a feel for things that do not look right. It may help you regain a lost trail or discover additional signs.
- Know the enemy, his habits, equipment, and capability.

### FUNDAMENTALS OF TRACKING

When tracking an enemy, you should build a picture of him in your mind. Ask yourself such questions as: How many persons am I following? How well are they trained? How are they equipped? Are they healthy? How is their morale? Do they know they are being followed?

To find the answer to such questions, use all available signs. A sign can be anything that shows you that a certain act took place at a particular place and time. For instance, a footprint tells a tracker that at a certain time a person walked on that spot.

The six fundamentals of tracking are:

1. Displacement.
2. Staining.
3. Weathering.
4. Littering.
5. Camouflaging.
6. Interpretation and/or immediate use intelligence.

Any sign that you find can be identified as one or more of the first five fundamentals. In the sixth fundamental, you combine the first five and use all of them to form a picture of the enemy.

### **DISPLACEMENT**

Displacement takes place when something is moved from its original position. An example is a footprint in soft, moist ground. The foot of the person that left the print displaced the soil, leaving an indentation in the ground. By studying the print, you can determine many facts. For example, a print that was left by a barefoot person or a person with worn or frayed footwear indicates that he may have poor equipment.

Footprints are only one example of displacement. Displacement occurs when anything is moved from its original position. Other examples are such things as foliage, moss, vines, sticks, or rocks that are moved from their original places; dew droplets brushed from leaves; stones and sticks that are turned over and show a different color underneath; and grass or other vegetation that is bent or broken in the direction of movement.

Bits of cloth may be torn from a uniform and left on thorns, snags, or the ground, and dirt from boots may make marks on the ground. Another example of displacement is the movement of wild animals and birds that are flushed from their natural habitats. You may hear cries of birds that are excited by strange movements. The movement of tall grass or brush on a windless day indicates that something is moving the vegetation from its original position.

When you clear a trail by either breaking or cutting your way through heavy vegetation, you displace the vegetation. Displacement signs can be made while you stop to rest with heavy loads. The prints made by the equipment you carry can help to identify its type. When loads are set down at a rest halt or campsite, grass and twigs may be crushed. A sleeping man may also flatten the vegetation. In most areas, there will be insects. Any changes in the normal life of these insects may be a sign that someone has recently passed through the area. Bees that are stirred up, and holes that are covered by someone moving over them, or spider webs that are torn down are good clues.

If a person uses a stream to cover his trail, algae and water plants may be displaced in slippery footing or in places where he walks carelessly. Rocks may be displaced from their original position, or turned over to show a lighter or darker color on their opposite side. A person entering or leaving a stream may create slide marks, wet banks, or footprints, or he may scuff bark off roots or sticks. Normally, a person or animal will seek the path of least resistance. Therefore, when you search a stream for exit signs, look for open places on the banks or other places where it would be easy to leave the stream.

### **STAINING**

A good example of staining is the mark left by blood from a bleeding wound. Bloodstains often will be in the form of drops left by a wounded person. Blood signs are found on the ground and smeared on leaves or twigs.

You can determine the location of a wound on a man being followed by studying the bloodstains. If the blood seems to be dripping steadily, it probably came from a wound on his trunk. A wound in the lungs will deposit bloodstains that are pink, bubbly, frothy. A bloodstain deposited from a head wound will appear heavy, wet,

and slimy, like gelatin. Abdominal wounds often mix blood with digestive juices so that the deposit will have an odor. The stains will be light in color.

Staining can also occur when a person walks over grass, stones, and shrubs with muddy boots. Thus, staining and displacement together may give evidence of movement and indicate the direction taken. Crushed leaves may stain rocky ground that is too hard for footprints. Crushed leaves or berries when walked on may stain roots, stones, and vines. Yellow stains in snow may be urine marks left by personnel in the area.

In some cases, it may be hard to determine the difference between staining and displacement. Both terms can be applied to some signs. For example, water that has been muddied may indicate recent movement. The mud has been displaced and it is staining the water. Stones in streams may be stained by mud from boots. Algae can be displaced from stones in streams and can stain other stones or bark. Water in footprints in swampy ground may be muddy if the tracks are recent. In time, however, the mud will settle and the water will clear. The clarity of the water can be used to estimate the age of the prints. Normally, the mud will clear in 1 hour. That will vary with terrain.

## **WEATHERING**

Weather may either aid or hinder tracking. It affects signs in ways that help determine how old they are, but wind, snow, rain, and sunlight can also obliterate signs completely.

By studying the effects of weather on signs, you can determine the age of the sign.

For example, when bloodstains are fresh, they may be bright red. Air and sunlight will change the appearance of blood first to a deep ruby-red color, and then to a dark brown crust when the moisture evaporates. Scuff marks on trees or bushes darken with time. Sap oozes from fresh cuts on trees but it hardens when exposed to the air.

## **FOOTPRINTS**

Footprints are greatly affected by weather. When a foot displaces soft, moist soil to form a print, the moisture holds the edges of the print intact and sharp. As sunlight and air dry the edges of the print, small particles that were held in place by the moisture fall into the print, making the edges appear rounded. Study this process carefully to estimate the age of a print. If particles are just beginning to fall into a print, it is probably fresh. If the edges of the print are dried and crusty, the prints are probably at least an hour old. The effects of weather will vary with the terrain, so this information is furnished as a guide only.

A light rain may round out the edges of a print. Try to remember when the last rain occurred in order to put prints into a proper time frame. A heavy rain may erase all signs. Wind also affects prints. Besides drying out a print, the wind may blow litter, sticks, or leaves into it. Try to remember the wind activity in order to help determine the age of a print. For example, you may think, "It is calm now, but the wind blew hard an hour ago. These prints have litter blown into them, so they must be over an hour old." You must be sure, however, that the litter was blown into the prints, and was not crushed into them when the prints were made.

Trails leaving streams may appear to be weathered by rain because of water running

into the footprints from wet clothing or equipment. This is particularly true if a party leaves a stream in a file. From this formation, each person drips water into the prints. A wet trail slowly fading into a dry trail indicates that the trail is fresh.

### **WIND, SOUNDS, AND ODORS**

Wind affects sounds and odors. If the wind is blowing from the direction of a trail you are following, sounds and odors are carried to you. If the wind is blowing in the same direction as the trail you are following, you must be cautious, as the wind will carry your sounds toward the enemy. To find the wind direction, drop a handful of dry dirt or grass from shoulder height. To help you decide where a sound is coming from, cup your hands behind your ears and slowly turn. When the sound is loudest, you are probably facing the origin of sound. When moving, try to keep the wind in your face.

### **SUN**

You must also consider the effects of the sun. It is hard to look or aim directly into the sun. If possible, keep the sun at your back.

### **LITTERING**

Poorly trained units may leave trails of litter as they move. Gum or candy wrappers, ration packages, remains of fires, or feces are unmistakable signs of recent movement. Weather affects litter. Rain may flatten or wash litter away, or turn paper into pulp. Winds may blow litter away from its original location. Ration cans exposed to weather will rust. They first rust at the exposed edge where they were opened. Rust then moves in toward the center. Use your memory to determine the age of litter. The last rain or strong wind can be the basis of a time frame.

### **CAMOUFLAGE**

If a party knows that you are tracking it, it will probably use camouflage to conceal its movement and to slow and confuse you. Doing so, however, will slow it down. Walking backward, brushing out trails, and moving over rocky ground or through streams are examples of camouflage that can be used to confuse you. The party may move on hard surfaced, frequently traveled roads or try to merge with traveling civilians. Examine such routes with extreme care, because a well-defined approach that leads to the enemy will probably be mined, ambushed, or covered by snipers.

The party may try to avoid leaving a trail. Its members may wrap rags around their boots, or wear soft-soled shoes to make the edges of their footprints rounder and less distinct. The party may exit a stream in column or line to reduce the chance of leaving a well defined exit.

If the party walks backward to leave a confusing trail, the footprints will be deepened at the toe, and the soil will be scuffed or dragged in the direction of movement. If a trail leads across rocky or hard ground, try to work around that ground to pick up the exit trail. This process works in streams as well. On rocky ground, even even the most careful evader could displace moss or lichens growing on the stones. If you lose the trail, return to the last visible sign. From there, head in the direction of the party's movement. Move in ever-widening circles until you find some signs to follow.

**INTERPRETATION/IMMEDIATE USE INTELLIGENCE**

When reporting, do not report your interpretations as facts. Report that you have seen signs of certain things, not that those things actually exist.

Report all information quickly. The term "immediate use intelligence" includes information of the enemy that can be put to use at once to gain surprise, to keep the enemy off balance, or to keep him from escaping an area. A commander has many sources of intelligence. He puts the information from those sources together to help determine where an enemy is, what he may be planning, and where he may be going.

Information you report gives your leader definite information on which he can act at once. For example, you may report that your leader is 30 minutes behind an enemy unit, that the enemy is moving north, and that he is now at a certain place. That gives your leader information on which he can act at once. He could then have you keep on tracking and move another unit to attack the enemy. If a trail is found that has signs of recent enemy activity, your leader can set up an ambush on it.

# Part 7 - Combat Intelligence And Counterintelligence

Using the observation techniques you must **collect** and report information about the **enemy, terrain, and weather**. That information becomes combat intelligence after it is interpreted.

Your leaders need combat intelligence to help them plan operations. Your life and the lives of your fellow marines could depend on reporting what you see, hear, and smell.

You must also act to keep the enemy from gaining information about SFMC operations. That action, called **counterintelligence, involves:**

- **Denying the enemy information about SFMC plans, intentions, and activities.**
- **Detecting the enemy's efforts to get information.**
- **Deceiving the enemy as to SFMC plans and intentions.**

## SOURCES OF INFORMATION

Commanders get information from many agencies, but **you** are their best agency. You can collect information from the **following sources:**

- **Prisoners of war (PW)** are an immediate source of information. Turn captured marines over to your leader quickly. Also, tell him anything you learn from them.
- **Captured documents** may contain valuable information about present or future enemy operations. Give such documents to your leader quickly.
- **Enemy activity** (the things the enemy is doing) often indicates what he is going to do. Report everything you see the enemy do. Some things that may not seem important to you may be important to your commander.
- **Local civilians** often have information about the enemy, terrain, and weather in an area. Report any information gained from civilians. However, you cannot be sure which side the civilians are trying to help, so be careful when acting on information obtained from them. Try to confirm that information by some other means.

## WHAT TO REPORT

Report all information about the enemy to your leader quickly, accurately, and completely. Such reports should answer the questions WHO? WHAT? WHERE? after "WHEN?" It is best to use the "SALUTE" format (size, activity, location, unit, time, and equipment) when reporting. To help you remember details, make notes and draw sketches.

**Size.** Report the number of marines and vehicles you saw. For example, report "10 enemy infantrymen" (not "a rifle squad") or "3 enemy tanks" (not "an enemy tank platoon").

**Activity.** Report what you saw the enemy doing. For example, "emplacing mines in the road."

**Location.** Report where you saw the enemy. If you have a map, try to give an eight-digit coordinate, such as "GL 874461." If you do not have a map, relate the location to some key terrain, such as "on the Harm Road, 300 meters south of the Ken River Bridge."

**Unit.** Report the enemy's unit. If the unit is not known, report any distinctive features, such as bumper markings on trucks, or type of headgear. Some armies have distinctive uniforms and headgear, or colored tabs on their uniforms, to identify types of units. A unit's action may also indicate its type. The kind of equipment observed may be peculiar to a certain type of unit. For example, a BRDM may indicate a reconnaissance unit.

**Time.** Report the time you saw the enemy activity, not the time you report it. Always report local or Zulu (Z) time.

**Equipment.** Report all of the equipment the enemy is wearing or using. If you do not recognize an item of equipment or a type of vehicle, sketch it and submit the sketch with the report.

The following is an example of a SALUTE report.

**FM: 1st Plt, C Co, 2d Bn, 1/73 Inf.**  
**TO S2, 2d Bn, 1/73 Inf.**

*Combat OP sighted four enemy tanks moving west along secondary road at grid coordinates NB613397 at 241730Z. Tanks traveling at approximately 5 kilometers per hour. Hatches were open and visible enemy personnel were wearing protective masks.*

## PRISONERS OF WAR AND CAPTURED DOCUMENTS

PWs are a good source of information. They must be handled without breaking international law and without losing a chance to gain intelligence.

Treat PWs humanely. Do not harm them, either physically or mentally. The senior soldier present is responsible for their care. If PWs cannot be evacuated in a reasonable time, give them food, water, and first aid. Do not give them cigarettes, candy, or other comfort items. PWs who receive favors or are mistreated are poor interrogation subjects.

### HANDLING PWs

In handling PWs, **follow the five S's:**

- 1. Search PWs** as soon as they are captured. Take their weapons and papers, except identification papers and protective masks. Give them a written receipt for any personal property and documents taken. Tag documents and personal property to show which PW had them.

When searching a PW, have one man guard him while another searches him. (A searcher must not get between a PW and the guard.) To search a PW, have him spread-eagle against a tree or wall, or get into a pushup position with his knees on the ground. Search him, his equipment, his clothing.

- 2. Segregate PWs** into groups by sex and into subgroups such as enlisted personnel, civilians, and political figures. This keeps the leaders from promoting escape efforts. Keep the groups segregated as you move them to the rear.
- 3. Silence PWs** and do not let them talk to each other. This keeps them from planning escape and cautioning each other on security. Report anything a PW says or does.
- 4. Speed PWs** to the rear. Turn them over to your leader. He will assemble them and move them to the rear for questioning by the S2.
- 5. Safeguard PWs** when taking them to the rear. Do not let anyone abuse them. Watch out for escape attempts. Do not let PWs bunch up, spread out too far, or start diversions. Such conditions may create a chance for escape.

If a PW is wounded and cannot be evacuated through normal channels, turn him over to a Corpsman to be evacuated through medical channels.

Before evacuating a PW, attach a tag to him. You can make these tags yourself. The battalion S2 should be able to supply these tags.

#### **HANDLING CAPTURED DOCUMENTS AND EQUIPMENT**

Enemy documents and equipment are good sources of information. Documents may be official (maps, orders, records, photos) or personal (letters or diaries).

If such items are not handled properly, the information in them may become lost or outdated. Give them to your leader quickly. Be sure to tag each and if the item was found on a PW, put that PW's name on the tag.

#### **COUNTERINTELLIGENCE MEASURES**

The enemy must not get information about SFMC operations. This means that you and your **fellow marines must:**

- **Practice camouflage principles and techniques.**
- **Practice noise and light discipline.**
- **Practice field sanitation.**
- **Use proper radiotelephone procedure.**
- **Use the challenge and password properly.**
- **Not take personal letters or pictures into combat areas.**
- **Not keep diaries in combat areas.**
- **Be careful when discussing military affairs (the enemy may be listening).**
- **Use only authorized codes.**
- **Abide by the Code of Conduct (if captured).**
- **Report any marine or civilian who is believed to be serving or sympathetic with the enemy.**
- **Report anyone who tries to get information about US operations.**
- **Destroy all maps or important documents if capture is imminent.**
- **Not discuss military operations in public areas.**
- **Discuss military operations only with those persons having a need to know the information.**
- **Remind fellow marines of their counterintelligence responsibilities.**

# Part 8 - Communications

You must know how to communicate with your leaders and fellow soldiers. **You must be able to tell:**

- **What you see.**
- **What you are doing.**
- **What you have done.**
- **What you are going to do.**
- **What you need.**

## MEANS OF COMMUNICATION

There are several means of communications. Each has its own capabilities, advantages, and disadvantages. Those you can use are described in this section.

### SUBSPACE RADIO COMMUNICATIONS

Subspace radios are a frequently used means of communications. Subspace radios are particularly suited for use when you are on the move and need a means of maintaining command and control.

Factors that affect the range of subspace radio equipment are line of sight, power, and electromagnetic interference. Weather does not interact with subspace so weather is not a factor. Interference in the form of static often occurs when you use subspace radios near powerful electromagnetic fields. Interference may also come from other radio stations or enemy jamming.

While one would think that subspace radio is one of the most secure means of communicating, it is not. Subspace radio transmissions are encrypted with very strong encryption keys, but keys can be broken. So when transmitting one has to assume that the enemy has broken the encryption and is listening in especially since each time you talk over a radio, the sound of your voice travels in all directions. The enemy can listen to your radio transmissions while you are communicating with other friendly radio stations. You must always assume that the enemy is listening to get information about you and your unit, or to locate your position to destroy you with artillery fire. Everyone who uses radios must know the defensive techniques available to prevent the enemy from getting information.

### VISUAL COMMUNICATIONS

The enemy's ability to interfere with your radio signals is causing more emphasis to be placed on visual communications for command and control. Visual signals include arm-and hand signals, pyrotechnics, smoke, flashing lights, panel markers, and aircraft maneuvers.

The effectiveness of any visual signal depends on a set of prearranged meanings. You assign prearranged meanings to visual signals to the soldier sending the signal and the soldier seeing the signal so both have the same understanding of what that particular signal means. Your commander will set prearranged meanings for pyrotechnics, smoke, and flashing lights. Generally, a listing of prearranged messages using these signals is contained in your unit SOP or communications electronics operation instructions (CEOI).

Visual signals have some shortcomings that limit their use. For example, visual signals can be easily misunderstood. Some visual signals are restricted during poor visibility such as at night or in dense terrain. Of course, at other times, the enemy who may, in turn, use similar visual signals to create confusion can intercept them.

### **SOUND COMMUNICATIONS**

Sound signals, like visual signals, depend upon a set of prearranged meanings. Sound signals include the use of the voice, whistles, horns, weapons, and other noise-making devices to transmit simple messages over short distances. Also, like visual signals, sound signals are vulnerable to enemy interception and use.

Battle noise can obviously reduce the effective use of sound signals. They have their greatest application as command post warning alarms. Local commanders usually establish the prearranged meanings for sound signals, and a listing of such meanings is commonly found in unit SOPS and the CEOIs. Sound signals, like visual signals, can be easily misunderstood.

### **FIBER OPTIC COMMUNICATIONS**

Fiber optic is another type of communications used in infantry units. Although installing a fiber optic network takes more time than installing a radio, fiber optic lines are usually more secure than radio. When you talk over fiber optic lines, your voice travels through the fiber optic lines from one handset to another and is generally not sent through the air. Fiber optic lines will give better communications in most cases because they are less subject to. Fiber optic lines also protect you from enemy electronic warfare actions such as jamming.

Fiber optic lines are subject to breakage by enemy artillery and air strikes and by friendly forces who accidentally cut the lines when driving over them with tracked and wheeled vehicles. It is important, therefore, to install fiber optic lines properly to reduce the possibility of breakage. When laying fiber optic lines, first consider the tactical situation. In a fast-moving situation, the use of fiber optics may be impractical. In a static situation, you have more time to install fiber optic lines.

Consideration must be given to the enemy's ability to jam radios and to locate positions through direction finding when you communicate by radio. If the enemy has displayed such capabilities, fiber optic should be considered as an alternative to radio. The terrain will also influence use of fiber optic communications. Fiber optic laying may be difficult in dense vegetation, in swampy areas, or in mountainous terrain. Rain, snow, and temperature extremes may also influence fiber optic laying. Men and equipment to lay fiber optic lines should be available.

### **MESSENGER COMMUNICATIONS**

Unlike other infantry communications, messengers are a means of transmitting large maps, documents, and bulk material, as well as oral or written messages. Message centers serve as a central point for receiving and distributing message-type information. They are located at battalion or higher-level headquarters. Messenger service may be limited, however, because messengers are subject to enemy action, require more time than radio or wire communications, and do not afford real time writer-to-reader exchanges.

## PHONETIC ALPHABET

To help identify spoken letters, a set of easily understood words has been selected.

Those words help to avoid confusion. BRAVO, for example, is the phonetic word of the letter B, and DELTA is the phonetic word for the letter D. BRAVO and DELTA are less likely to be confused in a radio message than B and D. **Use the phonetic alphabet to:**

- **Transmit isolated letters.**
- **Transmit each letter of an abbreviation.**
- **Spell out unusual or difficult words.**

PRONUNCIATION OF WORDS					
LETTER	WORD	SPOKEN AS	LETTER	WORD	SPOKEN AS
A	ALPHA	<b>AL</b> FAH	N	NOVEMBER	NO VEM BER
B	BRAVO	<b>BRAH</b> VOH	O	OSCAR	<b>OSS</b> CAH
C	CHARLIE	<b>CHAR</b> LEE/	P	PAPA	PAH PAH
		<b>SHAR</b> LEE	Q	QUEBEC	KEH BECK
D	DELTA	<b>DELL</b> TAH	R	ROMEO	ROW ME OH
E	ECHO	<b>ECK</b> OH	S	SIERRA	SEE AIR RAH
F	FOXTROT	<b>FOKS</b> TROT	T	TANGO	TANG GO
G	GOLF	<b>GOLF</b>	U	UNIFORM	YOU NEE FORM/
H	HOTEL	<b>HOH</b> TELL			OO NEE FORM
I	INDIA	<b>IN</b> DEE AH	V	VICTOR	VIK TAH
J	JULIETT	<b>JEW</b> LEE ETT	W	WHISKEY	WISS KEY
K	KILO	<b>KEY</b> LOH	X	X-RAY	ECKS RAY
L	LIMA	<b>LEE</b> MAH	Y	YANKEE	YANG KEY
M	MIKE	<b>MIKE</b>	Z	ZULU	ZOO LOO

(NOTE: Syllables in bold print carry the accent).  
 When you must spell out a difficult word in the text of a message, precede it by the proword "I SPELL." If you can pronounce the word, do so before and after spelling it.

Example: The word MANEUVER must be transmitted and can be pronounced. "MANEUVER - I SPELL - Mike-Alpha- November-Echo -Uniform-Victor- Echo-Romeo - MANEUVER."

PRONUNCIATION OF NUMBERS	
NUMERAL	SPOKEN AS
0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-ER
5	FIFE
6	SIX
7	SEV-EN
8	AIT
9	NIN-ER

Transmit multiple digit numbers digit by digit. Two exceptions to this are when transmitting exact multiples of thousands and when identifying a specific code group in a coded message. When calling for or adjusting field artillery or mortar fire, it is necessary to transmit, when applicable, exact multiples of hundreds and thousands using the appropriate noun.

MULTIPLE DIGIT NUMBERS	
NUMBER	SPOKEN AS
44	FOW-ER FOW-ER
90	NIN-ER ZE-RO
136	WUN TREE SIX
500	FIFE ZE-RO ZE-RO
1,200	WUN TOO ZE-RO ZE-RO
1,478	WUN FOW-ER SEV-EN AIT
7,000	SEV-EN TOU-SAND
16,000	WUN SIX TOU-SAND
812,681	AIT WUN TOO SIX AIT WUN

# Part 9 - Survival, Evasion, Resistance, And Escape

Continuous operations and fast-moving battles increase your chances of becoming temporarily separated from your unit. Whether you are separated from a small patrol or a large unit, your mission after being separated is to **rejoin your unit**.

## SURVIVAL

Survival is the action of staying alive in the field with limited resources. You must try to survive when you become separated from your unit, are evading the enemy, or during the time you are a prisoner. Survival requires knowledge of how to live off the land and take care of yourself.

## EVASION

Evasion is the action you take to stay out of the hands of the enemy when separated from your unit and in an enemy area. There are several courses of action you may take to avoid capture and rejoin your unit.

You may stay in your current position and wait for friendly troops to find you. This may be a good course of action if you are sure that friendly units will continue to operate in the area, and if there are a lot of enemy units in this area.

You may break out to a friendly area. This may be a good course of action if you know where a friendly area is, and if the enemy is widely dispersed.

You may move farther into enemy territory to temporarily conduct guerrilla-type operations. This is a short-term course of action to be taken only when other courses of action are not feasible. This may be a good course of action when the enemy area is known to be lightly held, or when there is a good chance of linking up with friendly guerrillas.

You may combine two or more of these. For example, you may stay in your current position until the enemy moves out of the area and then break out to a friendly area. There may be times when you will have to kill, stun, or capture an enemy soldier without alerting other enemy in the area. At such times, a rifle or pistol makes too much noise, and you will use a silent weapon. Some silent weapons are:

- **The bayonet.**
- **The garotte (a choke wire or cord with handles).**
- **Improvised clubs.**

In day or night, the successful use of silent weapons requires great skill and stealthy movement.

## RESISTANCE

The Code of Conduct is an expression of the ideals and principles. It prescribes the manner in which every marine of the STARFLEET Marine Corps must conduct himself when captured or when faced with the possibility of capture.

You should never surrender of your own free will. Likewise, a leader should never surrender the soldiers under his command while they still have the means to resist.

If captured, you must continue to resist in every way you can. **Some rules to follow are:**

- **Make every effort to escape and to help others escape.**
- **Do not accept special favors from the enemy.**
- **Do not give your word not to escape.**
- **Do nothing that will harm a fellow prisoner.**
- **Give no information except name, rank, SCC number, and date of birth.**
- **Do not answer any questions other than those concerning your name, rank, ssc, and date of birth.**

## ESCAPE

Escape is the action you take to get away from the enemy if you are captured. The best time for you to escape is right after you are captured. You will probably be in your best physical condition at that time. Prison rations are usually barely enough to sustain life, certainly not enough to build up a reserve of energy. The physical treatment, medical care, and rations of prison life quickly cause physical weakness, night blindness, and loss of coordination and reasoning power.

The following are other reasons for **making an early escape:**

- **Friendly fire or air strikes may cause enough confusion and disorder to provide a chance of escape.**
- **The first guards you have probably will not be as well trained in handling prisoners as guards farther back.**
- **Some of the first guards may be walking wounded who are distracted by their own condition.**
- **You know something about the area where you are captured and may know the locations of nearby friendly units.**
- **The way you escape depends on what you can think of to fit the situation.**
- **The only general rules are to escape early and escape when the enemy is distracted.**

Once you have escaped, it may not be easy to contact friendly troops — even when you know where they are. You should contact a friendly unit as you would if you were a member of a lost patrol. You should time your movement so that you pass through enemy units at night and arrive at a friendly unit at dawn. A good way to make contact is to find a ditch or shallow hole to hide in where you have cover from both friendly and enemy fire. At dawn, you should attract the attention of the friendly unit by waving a white cloth, shouting, showing a panel, or some other way. This should alert the friendly unit and prepare it to accept you. After the unit has been alerted, you should shout who you are, what your situation is, and ask for permission to move toward the unit.

## **SECURITY**

In combat, you must always think of security. You must do everything possible for the security of yourself and your unit. The following are some basic things to do **for security:**

- **Be awake and alert.**
- **Stay dressed and ready for action.**
- **Keep your equipment packed when it is not being used.**
- **Keep your equipment and weapon in good operating condition.**
- **Use camouflage.**
- **Move around only when necessary.**
- **Stay as quiet as possible.**
- **Look and listen for enemy activity in your sector.**
- **Use lights only when necessary.**
- **Do not write information about an operation on your map.**
- **Do not take notes or papers about an operation into combat.**
- **Do not take personal items into combat.**
- **Do not leave trash lying about.**
- **Tie or tape down equipment to keep it from rattling.**
- **Use challenge and password.**
- **Do not give military information to strangers.**
- **Remember the Code of Conduct.**

# Part 10 - Map Reading and Land Navigation

## MAPS

Cartography is the art and science of expressing the known physical features of the earth graphically by maps and charts. No one knows who drew, molded, laced together, or scratched out in the dirt the first map. But a study of history reveals that the most pressing demands for accuracy and detail in mapping have come as the result of military needs. Today, the complexities of tactical operations and deployment of troops are such that it is essential for all soldiers to be able to read and interpret their maps in order to move quickly and effectively on the battlefield. This chapter includes the definition and purpose of a map and describes map security, types, categories, and scales.

### DEFINITION

A map is a graphic representation of a portion of a surface drawn to scale, as seen from above. It uses colors, symbols, and labels to represent features found on the ground. The ideal representation would be realized if every feature of the area being mapped could be shown in true shape. Obviously this is impossible, and an attempt to plot each feature true to scale would result in a product impossible to read even with the aid of a magnifying glass.

### PURPOSE

A map provides information on the existence, the location of, and the distance between ground features, such as populated places and routes of travel and communication. It also indicates variations in terrain, heights of natural features, and the extent of vegetation cover. With our military forces dispersed throughout the world, it is necessary to rely on maps to provide information to our combat elements and to resolve logistical operations far from our shores. Soldiers and materials must be transported, stored, and placed into operation at the proper time and place. Much of this planning must be done by using maps. Therefore, any operation requires a supply of maps; however, the finest maps available are worthless unless the map user knows how to read them.

### SECURITY

All maps should be considered as documents that require special handling. If a map falls into unauthorized hands, it could easily endanger military operations by providing information of friendly plans or areas of interest to the enemy. Even more important would be a map on which the movements or positions of friendly soldiers were marked. It is possible, even though the markings on a map have been erased, to determine some of the erased information. Maps are documents that must not fall into unauthorized hands.

1. If a map is no longer needed, it must be turned in to the proper authority. If a map is in danger of being captured, it must be destroyed. The best method of destruction for paper map is by burning it and scattering the ashes. If burning is not possible, the map can be torn into small pieces and scattered over a wide area. If using electronic maps on a PADD or similar device, either perform a secure memory wipe or destroy it with your phaser.
2. Maps of some planets or sectors of space are subject to third party limitations.

These are agreements that permit the SFMC to make and use maps of another country provided these maps are not released to any third party without permission of the country concerned. Such maps require special handling.

## CATEGORIES

Military maps are categorized by scale and type.

**Scale.** Because a map is a graphic representation of a portion of the surface drawn to scale as seen from above, it is important to know what mathematical scale has been used. You must know this to determine ground distances between objects or locations on the map, the size of the area covered, and how the scale may affect the amount of detail being shown. The mathematical scale of a map is the ratio or fraction between the distance on a map and the corresponding distance on the surface of the earth. Scale is reported as a representative fraction with the map distance as the numerator and the ground distance as the denominator.

As the denominator of the representative fraction gets larger and the ratio gets smaller, the scale of the map decreases. Defense Mapping Agency maps are classified by scale into three categories. They are small-, medium-, and maps (Figure 2-1). The terms "**small scale**," "**medium scale**," and "**large scale**" may be confusing when read in conjunction with the number. However, if the number is viewed as a fraction, it quickly becomes apparent that 1:600,000 of something is smaller than 1:75,000 of the same thing. Therefore, the larger the number after 1:, the smaller the scale of the map.

1. **Small.** Those maps with scales of 1:1,000,000 and smaller are used for general planning and for strategic studies (bottom map in Figure 2-1). The standard small-scale map is 1:1,000,000. This map covers a very large land area at the expense of detail.
2. **Medium.** Those maps with scales larger than 1:1,000,000 but smaller than 1:75,000 are used for operational planning (center map in Figure 2-1). They contain a moderate amount of detail, but terrain analysis is best done with the large-scale maps described below. The standard medium-scale map is 1:250,000. Medium scale maps of 1:100,000 are also frequently encountered.
3. **Large.** Those maps with scales of 1:75,000 and larger are used for tactical, administrative, and logistical planning (top map in Figure 2-1). These are the maps that you as a soldier or junior leader are most likely to encounter. The standard large-scale map is 1:50,000; however, many areas have been mapped at a scale of 1:25,000.

**Types.** The map of choice for land navigators is the 1:50,000-scale military topographic map. It is important, however, that you know how to use the many other products available from the DMA as well. When operating in foreign places, you may discover that DMA map products have not yet been produced to cover your particular area of operations, or they may not be available to your unit when you require them. Therefore, you must be prepared to use maps produced by foreign governments that may or may not meet the standards for accuracy set by DMA.

These maps often use symbols that resemble those found on DMA maps but which have completely different meanings. There may be other times when you must operate with the only map you can obtain. This might be a commercially produced map run off on a copy machine at higher headquarters. In an old Earth military engagement at Grenada, United States used a British tourist map.

1. **Planimetric Map.** This is a map that presents only the horizontal positions for the features represented. It is distinguished from a topographic map by the omission of relief, normally represented by contour lines. Sometimes, it is called a line map.
2. **Topographic Map.** This is a map that portrays terrain features in a measurable way (usually through use of contour lines), as well as the horizontal positions of the features represented. The vertical positions, or relief, are normally represented by contour lines on military topographic maps. On maps showing relief, the elevations and contours are measured from a specific vertical datum plane, usually mean sea level. Figure 3-1 shows a typical topographic map.
3. **Photomap.** This is a reproduction of an aerial photograph upon which grid lines, marginal data, place names, route numbers, important elevations, boundaries, and approximate scale and direction have been added.
4. **Joint Operations Graphics.** These maps are based on the format of standard 1:250,000 medium-scale military topographic maps, but they contain additional information needed in joint air-ground operations (Figure 2-2). Along the north and east edges of the graphic, detail is extended beyond the standard map sheet to provide overlap with adjacent sheets. These maps are produced both in ground and air formats. Each version is identified in the lower margin as either Joint Operations Graphic (Air) or Joint Operations Graphic (Ground). The topographic information is identical on both, but the ground version shows elevations and contour in meters and the air version shows them in feet. Layer (elevation) tinting and relief shading are added as an aid to interpolating relief. Both versions emphasize airlanding facilities (shown in purple), but the air version has additional symbols to identify aids and obstructions to air navigation.
5. **Photomosaic.** This is an assembly of aerial photographs that is commonly called a mosaic in topographic usage. Mosaics are useful when time does not permit the compilation of a more accurate map. The accuracy of a mosaic depends on the method employed in its preparation and may vary from simply a good pictorial effect of the ground to that of a planimetric map.
6. **Terrain Model.** This is a scale model of the terrain showing features, and in largescale models showing industrial and cultural shapes. It provides a means for visualizing the terrain for planning or indoctrination purposes and for briefing on assault landings.
7. **Military City Map.** This is a topographic map (usually at 1:12,550 scale, sometimes up to 1:5,000), showing the details of a city. It delineates streets and shows street names, important buildings, and other elements of the urban landscape important to navigation and military operations in urban terrain. The scale of a military city map depends on the importance and size of the city, density of detail, and available intelligence information.
8. **Special Maps.** These are maps for special purposes, such as trafficability, communications, and assault maps. They are usually in the form of an overprint in the scales smaller than 1:100,000 but larger than 1:1,000,000. A special purpose map is one that has been designed or modified to give information not covered on a standard map. The wide range of subjects that could be covered under the heading of special purpose maps prohibits, within the scope of this manual, more than a brief mention of a few important ones. Some of the subjects covered are:
  - a. Terrain features.
  - b. Drainage characteristics.
  - c. Vegetation.
  - d. Climate.

- e. Coasts and landing beaches.
- f. Roads and bridges.
- g. Railroads.
- h. Airfields.
- i. Urban areas.
- j. Electric power.
- k. Fuels.
- l. Surface water resources.
- m. Ground water resources.
- n. Natural construction materials.
- o. Cross-country movements.
- p. Suitability for airfield construction.
- q. Airborne operations.

### TOPOGRAPHIC MAP SYMBOLS

The purpose of a map is to permit one to visualize an area of the surface with pertinent features properly positioned. The legend contains the symbols most commonly used in a particular series or on that specific topographic map sheet. Therefore, the legend should be referred to each time a new map is used. Every effort is made to design standard symbols that resemble the features they represent. If this is not possible, symbols are selected that logically imply the features they portray. For example, a small black drawing of a crossed hammer and pickaxe represents an open-pit mining operation.

### MILITARY SYMBOLS

In addition to the topographic symbols used to represent the natural and man-made features of the earth, military personnel require some method for showing identity, size, location, or movement of soldiers; and military activities and installations. The symbols used to represent these military features are known as military symbols. These symbols are not normally printed on maps because the features and units that they represent are constantly moving or changing; military security is also a consideration. The map user draws them in, in accordance with proper security precautions. ***Refer to Appendix A for more detail on military symbols***

### COLORS USED ON A MILITARY MAP

By the fifteenth century, most European maps were carefully colored. Profile drawings of mountains and hills were shown in brown, rivers and lakes in blue, vegetation in green, roads in yellow, and special information in red. A look at the legend of a modern map confirms that the use of colors has not changed much over the past several hundred years. To facilitate the identification of features on a map, the topographical and cultural information is usually printed in different colors. These colors may vary from map to map. On a standard large-scale topographic map, the colors used and the features each represent are:

- 1. Black.** Indicates cultural (man-made) features such as buildings and roads, surveyed spot elevations, and all labels.
- 2. Red-Brown.** The colors red and brown are combined to identify cultural features, all relief features, non-surveyed spot elevations, and elevation, such as contour lines on redlight readable maps.
- 3. Blue.** Identifies hydrography or water features such as lakes, swamps, rivers, and drainage.
- 4. Green.** Identifies vegetation with military significance, such as woods, orchards, and vineyards.
- 5. Brown.** Identifies all relief features and elevation, such as contours on older edition maps, and cultivated land on red-light readable maps.

6. **Red.** Classifies cultural features, such as populated areas, main roads, and boundaries, on older maps.
7. **Other.** Occasionally other colors may be used to show special information. These are indicated in the marginal information as a rule.

## TERRAIN ASSOCIATION

Failure to make use of the vast amounts of information presented by the map and available to the eye on the ground reduces the chances for success in land navigation. The soldier who has repeatedly practiced the skills of identifying and discriminating among the many types of terrain and other features knows how these features are mapped. He can begin to visualize the shape of the land by studying the map, estimate distances, and perform quick resection from the many landmarks he sees is the one who will be at the right place to help defeat the enemy on the battlefield. This chapter tells how to orient a map with and without a compass, how to find locations on a map as well as on the ground, how to study the terrain, and how to move on the ground using terrain association and dead reckoning.

### ORIENTING THE MAP

The first step for a navigator in the field is orienting the map. A map is oriented when it is in a horizontal position with its north and south corresponding to the north and south on the ground. Some orienting techniques follow:

1. **Using a Compass.** When orienting a map with a compass, remember that the compass measures magnetic azimuths. Since the magnetic arrow points to magnetic north, pay special attention to the declination diagram. Also remember that on some planetary bodies that compasses will not work as there are multiple poles.
2. **Using Terrain Association.** A map can be oriented by terrain association when a compass is not available or when the user has to make many quick references as he moves across country. Using this method requires careful examination of the map and the ground, and the user must know his approximate location (Figure 11-5).
3. **Using Field-Expedient Methods.** When a compass is not available and there are no recognizable terrain features, a map may be oriented by any of the field-expedient methods.

## LOCATIONS

The key to success in land navigation is to know your location at all times. With this basic knowledge, you can decide what direction and what distance to travel.

### TERRAIN ASSOCIATION USAGE

The technique of moving by terrain association is more forgiving of mistakes and far less time-consuming than dead reckoning. It best suits those situations that call for movement from one area to another. Errors made using terrain association are easily corrected because you are comparing what you expected to see from the map to what you do see on the ground.

Errors are anticipated and will not go unchecked. You can easily make adjustments based upon what you encounter. Periodic position-fixing through either plotted or estimated resection will also make it possible to correct your movements, call for fire, or call in the locations of enemy targets or any other information of tactical or logistical importance.

1. **Matching the Terrain to the Map by Examining Terrain Features.** By observing the contour lines in detail, the five major terrain features (hilltop, valley, ridge, depression, and saddle) should be determined. This is a simple

task in an area where the observer has ample view of the terrain in all directions. One-by-one, match the terrain features depicted on the map with the same features on the ground. In restricted terrain, this procedure becomes harder; however, constantly check the map as you move since it is the determining factor (Figure 11-5).

2. **Comparing the Vegetation Depicted on the Map.** When comparing the vegetation, a topographic map should be used to make a comparison of the clearings that appear on the map with the ones on the ground. The user must be familiar with the different symbols, such as vineyards, plantations, and orchards that appear on the legend. The age of the map is an important factor when comparing vegetation. Some important vegetation features were likely to be different when the map was made. Another important factor about vegetation is that it can change overnight by natural accidents or by man (forest fires, clearing of land for new developments, farming, and so forth).
3. **Masking by the Vegetation.** Camouflage the important landforms using vegetation. Use of camouflage makes it harder for the navigator to use terrain association.
4. **Using the Hydrography.** Inland bodies of water can help during terrain association. The shape and size of lakes in conjunction with the size and direction of flow of the rivers and streams are valuable help.
5. **Using Man-made Features.** Man-made features are an important factor during terrain association. The user must be familiar with the symbols shown in the legend representing those features. The direction of buildings, roads, bridges, high-tension lines, and so forth make the terrain inspection a lot easier; however, the age of the map must be considered because manmade features appear and disappear constantly.
6. **Examining the Same Piece of Terrain During the Different Seasons of the Year.** In those areas of the world where the seasons are distinctive, a detailed examination of the terrain should be made during each of the seasons. The same piece of land does not present the same characteristics during both spring and winter.

### TACTICAL CONSIDERATIONS

Military cross-country navigation is intellectually demanding because it is imperative that the unit, crew, or vehicle survive and successfully complete the move in order to accomplish its mission. However, the unnecessary use of a difficult route makes navigation too complicated, creates more noise when proceeding over it, causes wear and tear on equipment and personnel, increases the need for and needlessly complicate recovery operations, and wastes scarce time. On receipt of a tactical mission, the leader begins his troop-leading procedures and makes a tentative plan. He bases the tentative plan on a good terrain analysis. He analyzes the considerations covered in the following mnemonics OCOKA and METT-T.

1. **OCOKA.** The terrain should be analyzed for observation and fields of fire, cover and concealment, obstacles, key terrain, and avenues of approach.
  - a. **Observation and Fields of Fire.** The purpose of observation is to see the enemy (or various landmarks) but not be seen by him. Anything that can be seen can be hit. Therefore, a field of fire is an area that a weapon or a group of weapons can cover effectively with fire from a given position.
  - b. **Cover and Concealment.** Cover is shelter or protection (from enemy fire) either natural or artificial. Always try to use covered routes and seek cover for each halt, no matter how brief it is planned to be. Unfortunately, two factors interfere with obtaining constant

cover. One is time and the other is terrain. Concealment is protection from observation or surveillance, including concealment from enemy air observation. Before, trees provided good concealment, but with modern thermal and infrared imaging equipment, trees are not always effective. When you are moving, concealment is generally secondary; therefore, select routes and positions that do not allow covered or concealed enemy near you.

- c. Obstacles.** Obstacles are any obstructions that stop, delay, or divert movement. Obstacles can be natural (rivers, swamps, cliffs, or mountains) or they may be artificial (barbed wire entanglements, pits, concrete or metal antimechanized traps). They can be readymade or constructed in the field. Always consider any possible obstacles along your movement route and, if possible, try to keep obstacles between the enemy and yourself.
- d. Key Terrain.** Key terrain is any locality or area that the seizure or retention of affords a marked advantage to either combatant. Urban areas that are often seen by higher headquarters as being key terrain because they are used to control routes. On the other hand, an urban area that is destroyed may be an obstacle instead. High ground can be key because it dominates an area with good observation and fields of fire. In an open area, a draw or wadi (dry streambed located in an arid area) may provide the only cover for many kilometers, thereby becoming key. You should always attempt to locate any area near you that could be even remotely considered as key terrain.
- e. Avenues of Approach.** These are access routes. They may be the routes you can use to get to the enemy or the routes they can use to get to you. Basically, an identifiable route that approaches a position or location is an avenue of approach to that location. They are often terrain corridors such as valleys or wide, open areas.

**2. METT-T.** Tactical factors other than the military aspects of terrain must also be considered in conjunction with terrain during movement planning and execution as well. These additional considerations are mission, enemy, terrain and weather, troops, and time available.

- a. Mission.** This refers to the specific task assigned to a unit or individual. It is the duty or task together with the purpose that clearly indicates the action to be taken and the reason for it—but not how to do it. Training exercises should stress the importance of a thorough map reconnaissance to evaluate the terrain. This allows the leader to confirm his tentative plan, basing his decision on the effect on his mission.
- b. Enemy.** This refers to the strength, status of training, disposition (locations), doctrine, capabilities, equipment (including night vision devices), and probable courses of action that impact upon both the planning and execution of the mission, including a movement.
- c. Terrain and Weather.** Observation and fields of fire influence the placement of positions and crew-served weapons. The leader conducts a map reconnaissance to determine key terrain, obstacles, cover and concealment, and likely avenues of approach.
- d. Troops.** Consideration of your own troops is equally important. The size and type of the unit to be moved and its capabilities, physical condition, status of training, and types of equipment assigned all affect the selection of routes, positions, fire plans, and the various decisions to be made during movement. On ideal terrain such as

relatively level ground with little or no woods, a platoon can defend a front of up to 400 meters. The leader must conduct a thorough map reconnaissance and terrain analysis of the area his unit is to defend. Heavily wooded areas or very hilly areas may reduce the front a platoon can defend. The size of the unit must also be taken into consideration when planning a movement to contact. During movement, the unit must retain its ability to maneuver. A small draw or stream may reduce the maneuverability but provide excellent concealment. All of these factors must be considered.

- e. **Time Available.** At times, the unit may have little time to reach an objective or to move from one point to another. The leader must conduct a map reconnaissance to determine the quickest route to the objective; this is not always a straight route. From point A to point B on the map may appear to be 1,000 meters, but if the route is across a large ridge, the distance will be greater. Another route from point A to B may be 1,500 meters—but on flat terrain. In this case, the quickest route would be across the flat terrain; however, concealment and cover may be lost.

## MOVEMENT AND ROUTE SELECTION

One key to success in tactical missions is the ability to move undetected to the objective. There are four steps to land navigation. Being given an objective and the requirement to move there, you must know where you are, plan the route, stay on the route, and recognize the objective.

## NAVIGATION METHODS

Staying on the route is accomplished through the use of one or two navigation techniques; dead reckoning and terrain association. These methods are discussed in detail below.

**Moving by Dead Reckoning.** Dead reckoning consists of two fundamental steps. The first is the use of a protractor and graphic scales to determine the direction and distance from one point to another on a map. The second step is the use of a compass and some means of measuring distance to apply this information on the ground. In other words, it begins with the determination of a polar coordinate on a map and ends with the act of finding it on the ground.

**Moving by Terrain Association.** The technique of moving by terrain association is more forgiving of mistakes and far less time-consuming than dead reckoning. It best suits those situations that call for movement from one area to another. Once an error has been made in dead reckoning, you are off the track. Errors made using terrain association are easily corrected, however, because you are comparing what you expected to see from the map to what you do see on the ground. Errors are anticipated and will not go unchecked. You can easily make adjustments based upon what you encounter. After all, you do not find the neighborhood grocery store by dead reckoning—you adjust your movements according to the familiar landmarks you encounter along the way. Periodic position fixing through either plotted or estimated resection will also make it possible to correct your movements, call for fire, or call in the locations of enemy targets or any other information of tactical or logistical importance.

### **NIGHT NAVIGATION**

Darkness presents its own characteristics for land navigation because of limited or no visibility. However, the techniques and principles are the same as that used for day navigation. The success in nighttime land navigation depends on rehearsals during the planning phase before the movement, such as detailed analysis of the map to determine the type of terrain in which the navigation is going to take place and the predetermination of azimuths and distances. Night vision devices can greatly enhance night navigation.

## **ORIENTEERING**

What is orienteering? Orienteering is a competitive form of land navigation. It is for all ages and degrees of fitness and skill. It provides the suspense and excitement of a treasure hunt. The object of orienteering is to locate control points by using a map and compass to navigate through the woods.

### **HISTORY**

Orienteering began in Scandinavia in the nineteenth century. It was primarily a military event and was part of military training. It was not until 1919 that the modern version of orienteering was born in Sweden as a competitive sport. Ernst Killander, its creator, can be rightfully called the father of orienteering. In the early thirties, the sport received a technical boost with the invention of a new compass, more precise and faster to use. The Kjellstrom brothers, Bjorn and Alvan, and their friend, Brunnar Tillander, were responsible for this new compass. They were among the best Swedish orienteers of the thirties, with several individual championships among them. Bjorn Kjellstrom brought orienteering into the US in 1946.

### **DESCRIPTION**

Each orienteer is given a 1:50,000 topographic map with the various control points circled. Each point has a flag marker and a distinctive punch that is used to mark the scorecard. Competitive orienteering involves running from checkpoint to checkpoint. It is more demanding than road running, not only because of the terrain, but because the orienteer must constantly concentrate, make decisions, and keep track of the distance covered. Orienteering challenges both the mind and the body; however, the ability to think under pressure and make wise decisions is more important than speed or endurance.

# Part 11 – First Aid and Personal Hygiene

One of the most important duties of medical personnel in the SFMC is to render first aid to those who require it. Often life or death hinges on the first crucial minutes after an injury and by performing proper first aid the chances that a victim will live are greatly increased.

## Definition

First aid is defined as the immediate and temporary aid given to sick or injured people until more advanced medical treatment can be provided. More often than not first aid is a series of simple medical techniques that can be performed by someone trained to do so.

## Basic First Aid Life-saving Measures

When you or someone that you are with is wounded or injured first aid must be given at once. The first step is to apply, as needed, the four life-saving measures. The measures are:

1. Clear the airway; Check and restore breathing and heartbeat.
2. Stop bleeding
3. Prevent shock
4. Dress and bandage any wounds

**Clear the Airway; Check and Restore Breathing and Heartbeat**  
**DO NOT give rescue breathing or heart massage to an individual who is both breathing and has a heartbeat. Doing so can do more harm than good and there is a good chance that you'll injure them.**

**Clear the airway:** The lack of oxygen intake through normal respiration and the lack of a heartbeat lead to death in as little as 4 minutes. When treating a casualty, first find out if he/she is breathing. If you cannot detect any breathing do the following:

1. Place the individual on their back and kneel beside their head.
2. Clear the airway by removing any obstructions in their mouth.
3. Place your hand (the hand nearest their feet) under their neck and put your other hand on their forehead.
4. Extend their neck by lifting with the hand under the neck and pushing down on the forehead. This action also lifts the tongue away from the back of the throat, thus opening the airway.

**Check for Breathing:** After opening the airway, **LOOK**, **LISTEN**, and **FEEL**, to find out if the individual is breathing. To determine if the individual is breathing the following should be done:

1. Put your ear near the individual's mouth and nose and hold this position for about 5 seconds.
2. **LOOK** to see if the individual's chest is rising and falling.
3. **LISTEN** and **FEEL** for breathing

**Restore Breathing: IF THERE ARE NO SIGNS OF BREATHING, START MOUTH-TO-MOUTH RESUSITATION AT ONCE!** The following procedures should be used:

1. Put a hand under the individual's neck to keep the head tilted far back.
2. Press down on his forehead with the other hand.
3. Move this hand and pinch their nostrils between your thumb and index finger.
4. Open their mouth wide.
5. Take a deep breath and place your mouth over theirs, making an airtight seal with your lips.
6. Blow into their mouth.
7. Give four (4) to five (5) quick but full breaths to make sure their lungs are full.
8. Remove your mouth, turn your head, and **LOOK, LISTEN**, and **FEEL** for exhaled air.
9. Repeat this procedure once every 5 seconds until the individual exhales.

If you feel strong resistance when you first blow air in the individual's mouth, quickly reposition the head and try again. If the airway is still no clear, roll them onto their side. Hit them sharply between the shoulder blades with the heel of your hand to dislodge any foreign objects. If the individual's abdomen bulges (air is going into the stomach), apply gentle pressure on their abdomen with one hand and force the air out. If this makes the individual vomit, quickly turn them onto their side, clean out their mouth, and continue giving mouth-to-mouth resuscitation.

**Check for Heartbeat:** When you find an individual that is unconscious, check to see if they have a heartbeat and is breathing. To check for a heartbeat, use the following procedures:

1. Tilt the individual's head back.
2. Place your fingers on their throat.
3. Feel for the Adam's apple.
4. Slide the fingers down from the Adam's apple to the side of the throat.
5. This will place the fingertips over an artery, where the pulse can be felt.

**Restore Heartbeat:** You must start external heart massage quickly, as permanent damage to the brain may occur if it is deprived of oxygenated blood. External heart massage provides artificial circulation by squeezing the heart between the breastbone and the backbone, forcing blood through the lungs, brain, and body. To perform mouth-to-mouth resuscitation and external heart massage at the same time:

1. Kneel at the individual's side.
2. Blow four quick but full breaths into the individual (as described earlier) to fill the lungs with air (their head must be tilted back and their airway open).
3. Locate the tip of the breastbone and measure two finger-widths up from that tip.
4. Place the heel of the other hand alongside the fingers. Then, put both hands together and interlace the fingers. Push downward on the chest 15 times at a rate of 80 counts per minute.
5. Lean forward with the elbows locked. That will compress the individual's chest about 1 ½ to 2 inches. Then release the pressure on the chest.
6. After each 15 compressions, shift positions slightly and give them 2 quick,

but full, breaths.

7. Continue this 15 to 2 ratio: Until the individual can breathe by themselves and their pulse returns, until relieved by someone or if the individual dies.

If there are two people present that are capable of performing first aid, one should give mouth-to-mouth resuscitation and the other should give heart massage. In that case the procedure differs slightly. The individual giving the heart massage should change the number of compressions from 15 at a time to 5, keeping the 80 per-minute rate. The individual giving mouth-to-mouth resuscitation, should give 2 breaths after each 5 compressions.

## Stop the Bleeding

**Before attempting to stop any bleeding be sure to put on rubber gloves. This will reduce the likelihood of any transmission of any blood borne diseases. Also try to avoid any contact between blood or any other bodily fluids and any exposed skin. Be sure to wash off and sterilize any exposed skin that comes in contact with those fluids.**

If the individual is breathing and their heart is beating, the next thing to do is to stop any bleeding from any wounds. Before you stop the bleeding, you must find all wounds. After finding all wounds, stop bleeding by using the following procedure:

1. Without touching or trying to clean the wound, cut and lift the clothing away from it. **DO NOT UNDER ANY CIRCUMSTANCES** touch the wound or try to remove objects from it.
2. Put a field first aid dressing on the wound, trying not to contaminate the dressing or the wound. Wrap the dressing around the wound and tie the ends securely with a square knot. If possible, tie the knot directly over the wound.
3. If bleeding continues after the dressing is secure on the wound, press the bandage for 5 to 10 minutes.
4. If more pressure is needed to stop the bleeding, put a thick pad or stone on top of the dressing and tie the ends of the dressing over the pad or stone. This is called a pressure dressing. If the wound is in an arm or leg and the bleeding has not stopped, raise the injured limb above the level of the heart. Doing this helps to slow the bleeding. **DO NOT** raise a limb with a broken bone unless it is properly splinted.
5. If blood is spurting from the wound, there is bleeding from an artery. To stop it, press the on the point of the body where the main artery supplying the wounded area with the blood is located. This pressure should shut off or slow down the flow of blood from the heart to the wound until a pressure dressing can be put on it. In some cases, you may need to keep the pressure on the pressure point even after you put the dressing on.
6. If the wound continues to bleed after you apply pressure to a pressure point and apply a pressure dressing, use a tourniquet. The use of a tourniquet should however be a measure of **LAST RESORT ONLY**. Put the tourniquet between the wound and where the injured limb joins the trunk. Put it 2 to 4 inches above the wound, not over it. Never loosen or remove a tourniquet once it has been put on. Immediately let any medical personnel know that a tourniquet has been applied.

## Do's and Don'ts of First Aid

When giving first aid to a casualty, remember the following:

- **DO act promptly but calmly.**
- **DO reassure the casualty and gently examine him to determine the needed first aid.**
- **DO give lifesaving measures as required.**
- **DON'T position a soldier on his back if he is unconscious or has a wound on his face or neck.**
- **DON'T remove clothing from an injured soldier by pulling or tearing it off.**
- **DON'T touch or try to clean dirty wounds, including burns.**
- **DON'T remove dressings and bandages once they have been put on a wound.**
- **DON'T loosen a tourniquet once it has been applied.**
- **DON'T move a casualty who has a fracture until it has been properly splinted, unless it is absolutely necessary.**
- **DON'T give fluids by mouth to a casualty who is unconscious, nauseated, or vomiting, or who has an abdominal or neck wound.**
- **DON'T permit the head of a casualty with a head injury to be lower than his body.**
- **DON'T try to push protruding intestines or brain tissue back into a wound.**
- **DON'T put any medication on a burn.**
- **DON'T administer first-aid measures which are unnecessary or beyond your ability.**
- **DON'T fail to replace items used from the first-aid case.**

## PERSONAL HYGIENE

Personal hygiene consists of practices which safeguard your health and that of others. It is often thought of as being the same as personal cleanliness. While cleanliness is important, it is only one part of healthy living. Personal hygiene is important to you because:

- **It protects against disease-causing germs that are present in all environments.**
- **It keeps disease-causing germs from spreading.**
- **It promotes health among soldiers.**
- **It improves morale.**

## PERSONAL CLEANLINESS

**Skin.** Wash your body frequently from head to foot with soap and water. If no tub or shower is available, wash with a cloth and soapy water, paying particular attention to armpits, groin area, face, ears, hands, and feet.

**Hair.** Keep your hair clean, neatly combed, and trimmed. At least once a week, wash your hair and entire scalp with soap and water. Also, shave as often as the water supply and tactical situation permit. Do not share combs or shaving equipment with other marines.

**Hands.** Wash your hands with soap and water after any dirty work, after each visit

to the latrine, and before eating. Keep your fingernails closely trimmed and clean. Do not bite your fingernails, pick your nose, or scratch your body.

***Clothing and Sleeping Gear.*** Wash or exchange clothing when it becomes dirty (situation permitting).

Wash or exchange sleeping gear when it becomes dirty. If clothing and sleeping gear cannot be washed or exchanged, shake them and air them regularly in the sun. That greatly reduces the number of germs on them.

## CARE OF THE MOUTH AND TEETH

### CARE OF THE FEET

Wash and dry your feet daily. Use foot powder on your feet to help kill germs, reduce friction on the skin, and absorb perspiration. Socks should be changed daily. After crossing a wet area, dry your feet, put on foot powder, and change socks, as soon as the situation permits.

Regular and proper cleaning of the mouth and the teeth helps prevent tooth decay and gum disease. The most healthful oral hygiene is to clean your mouth and teeth thoroughly and correctly after each meal with a toothbrush and toothpaste. If a toothbrush is not available, cut a twig from a tree and fray it on one end to serve as a toothbrush. If mouthwash is available, use it to help kill germs in your mouth. To help remove food from between your teeth, use dental floss or toothpicks. Twigs can also be used for toothpicks.

### FOOD AND DRINK

For proper development, strength, and survival, your body requires:

- **Proteins.**
- **Fats and carbohydrates.**
- **Minerals.**
- **Vitamins.**
- **Water.**

Issued rations have those essential food substances in the right amounts and proper balance. So, eat primarily those rations. When feasible, heat your meals. That will make them taste better and will reduce the energy required to digest them. Do not overindulge in sweets, soft drinks, alcoholic beverages, and other non-issued rations. Those rarely have nutritional value and are often harmful.

Drink water only from approved water sources or after it has been treated with water purification tablets or anti-bacterial scans.

To purify water from rivers or streams:

- **Fill your canteen with water (be careful not to get trash or other objects in your canteen).**
- **Add one purification tablet per quart of clear water or two tablets per quart of cloudy or very cold water. (If you are out of tablets, use boiling water that has been boiled for 5 minutes.)**
- **Replace the cap loosely.**
- **Wait 5 minutes.**
- **Shake the canteen well and allow some of the water to leak out.**
- **Tighten the cap.**
- **Wait an additional 20 minutes before drinking the water.**

**EXERCISE**

Exercise of the muscles and joints helps to maintain physical fitness and good health. Without that, you may lack the physical stamina and ability to fight. Physical fitness includes a healthy body, the capacity for skillful and sustained performance, the ability to recover from exertion rapidly, the desire to complete a designated task, and the confidence to face any eventuality. Your own safety, health, and life may depend on your physical fitness.

There are lulls in combat when you will not be active. During such lulls, exercise. That helps to keep the muscles and body functions ready for the next period of combat. It also helps pass the time in the lulls.

**REST**

Your body needs regular periods of rest to restore physical and mental vigor. When you are tired, your body functions are sluggish, and your ability to react is slower than normal. That also makes you more susceptible to sickness. For good health, 6 to 8 hours of uninterrupted sleep each day is desirable. As that is seldom possible in combat, use rest periods and off-duty time to rest or sleep. Do not be ashamed to say that you are tired or sleepy. Do not, however, sleep when on duty.

**MENTAL HYGIENE**

The way you think affects the way you act. If you know your job, you will probably act quickly and effectively. If you are uncertain or doubtful of your ability to do your job, you may hesitate and make wrong decisions. Positive thinking is a necessity. You must enter combat with absolute confidence in your ability to do your job.

Fear is a basic human emotion. It is both a mental and physical state. Fear is not shameful if it is controlled. It can even help you by making you more alert and more able to do your job. Fear makes the pupils of your eyes enlarge, which increases your field of vision so you can detect movement more easily. Fear also increases your rate of breathing and heartbeat.

That increases your strength. Therefore, control your fear and use it to your advantage.

Do not let your imagination and fear run wild. Remember, you are not alone. You are part of a team. There are other soldiers nearby, even though they cannot always be seen. Everyone must help each other and depend on each other.

Worry undermines the body, dulls the mind, and slows down thinking and learning. It adds to confusion, magnifies troubles, and causes you to imagine things which really do not exist. If you are worried about something, talk to your leader about it. He may be able to help solve the problem.

You may have to fight in any part of the universe and in all types of terrain. Therefore, adjust your mind to accept conditions as they are. If mentally prepared for it, you should be able to fight under almost any conditions.

**RULES FOR AVOIDING ILLNESS IN THE FIELD**

- **Don't consume foods and beverages from unauthorized sources.**
- **Don't soil the ground with urine or feces. (Use a latrine or "cat-hole.")**
- **Keep your fingers and contaminated objects out of your mouth.**
- **Wash your hands following any contamination, before eating or preparing food, and before cleaning your mouth and teeth.**
- **Wash all mess gear after each meal.**
- **Clean your mouth and teeth at least once each day.**
- **Avoid insect bites by wearing proper clothing and using insect repellents.**
- **Avoid getting wet or chilled unnecessarily.**
- **Don't share personal items (canteens, pipes, toothbrushes, washcloths, towels, and shaving gear) with other marines.**
- **Don't leave food scraps lying around.**
- **Sleep when possible.**
- **Exercise regularly.**

**THIS PAGE  
INTENTIONALLY  
BLANK**

# Part 11 – Visual Recognition

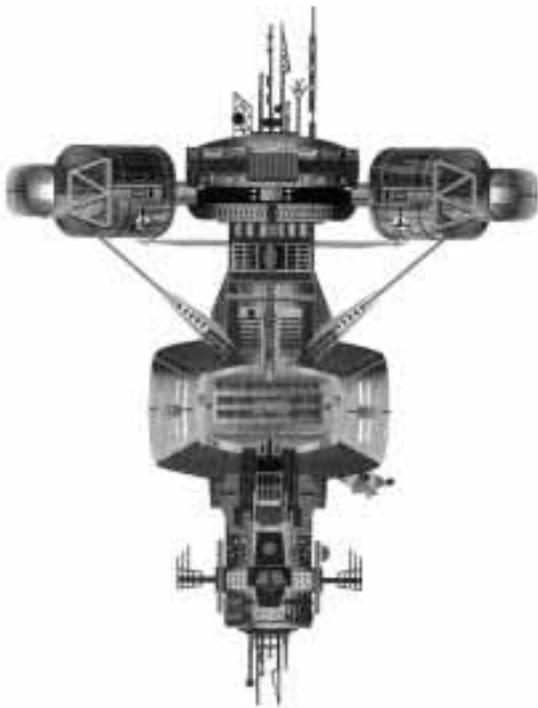
Among the many essential tasks a STARFLEET Marine must learn, one of the most important is visual recognition. A Marine at a glance must be able to tell friend from foe for his life and the lives of his comrades are at stake. A Marine must be able to tell friendly and threat forces apart, he must be able to discern which spacecraft to fire upon, which species will most likely attack, and which governments the Federation consider hostile.

## Spacecraft

This sections deals with friendly and threat forces spacecraft. Various spacecraft are included here as well as some basic facts about the craft if available. Please note that this listing is not a complete one, but is designed to give the marine a good base on which to build. The craft shown herein are some of the most common and are frequently encountered.

### Friendly Craft

The craft shown in this section are considered to be friendly. They are either Federation, SFMC, or allied.



### Klingon Space Station

This is a heavily armored space station. Most of these stations are placed around strategically important locations.

**Government:** Klingon

**Power Plant:** Unknown

**Length:** Unknown

**Length:** Unknown

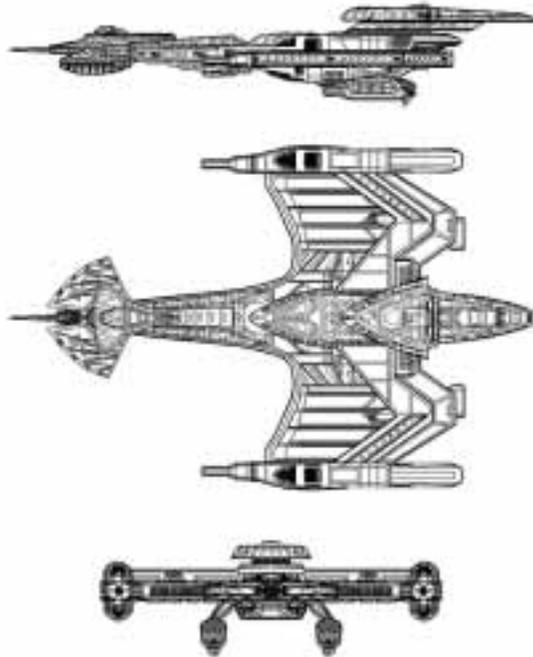
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Can not move

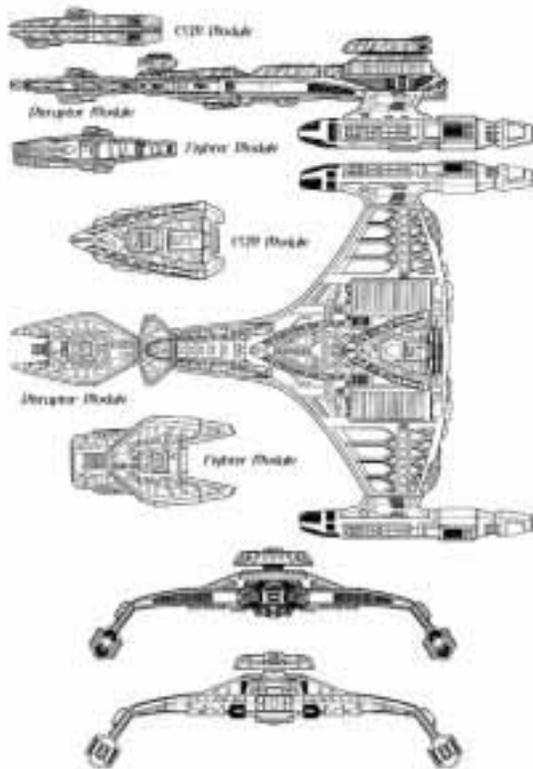
**Armament:** Unknown



**Negh'Var Class Battleship**

The Negh'Var battleship is the largest class starship known to operate in the Klingon Defense Forces during the late 24th century.

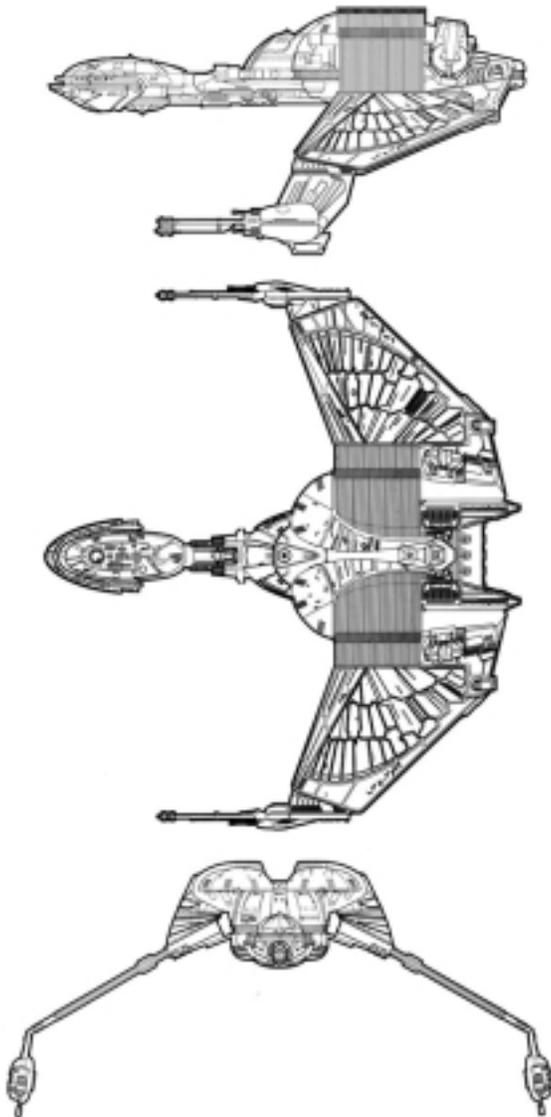
- Government:** Klingon
- Power Plant:** Two M/A warp system; four impulse system
- Accommodation:** 2,500 plus flight crew and troops
- Length:** 682.32 meters
- Beam:** 470.09 meters
- Height:** 136.65 meters
- Mass:** 4,310,000 metric tons
- Maximum Speed:** Warp 9.6
- Armament:** Twenty ship-mounted disruptor cannons, one large forward disruptor, four torpedo launchers



**Vor'Cha Class Cruiser**

The Vor'cha-class attack cruiser is one of the largest and most powerful mainstays of the Klingon Defense Forces during in the mid-to late-24th century. As such, many saw action in the Dominion War.

- Government:** Klingon
- Power Plant:** One M/A warp system; two impulse system
- Accommodation:** 1,900 plus flight crew and troops
- Length:** 481.32 meters
- Beam:** 341.76 meters
- Height:** 106.87 meters
- Mass:** 2,238,000 metric tons
- Maximum Speed:** Warp 9.6
- Armament:** Eighteen ship-mounted disruptor cannons, one large forward disruptor, three torpedo launchers



### Klingon Brid-of-Prey

The Klingon Bird-of-Prey is a type of warship utilized by the Klingon Empire servicing the Klingon Defense Forces from the late 23rd century into the late 24th century.

Its design is characterized by its multi-position wings. It comes in a variety of sizes, and some of the smaller types were capable of atmospheric flight and planetary landings.

**Government:** Klingon

#### B'rel-class

**Power Plant:** One M/A warp system; two impulse system

**Accommodation:** 12 plus flight crew and troops

**Length:** 157.76 meters

**Beam:** 181.54 meters

**Height:** 98.54 meters

**Mass:** 236,000 metric tons

**Maximum Speed:** Warp 9.6

**Armament:** Two ship-mounted disruptor cannons, one torpedo launchers

#### K'Vort-class

**Power Plant:** One M/A warp system; two impulse system

**Accommodation:** 1,500 plus flight crew and troops

**Length:** 678.36 meters

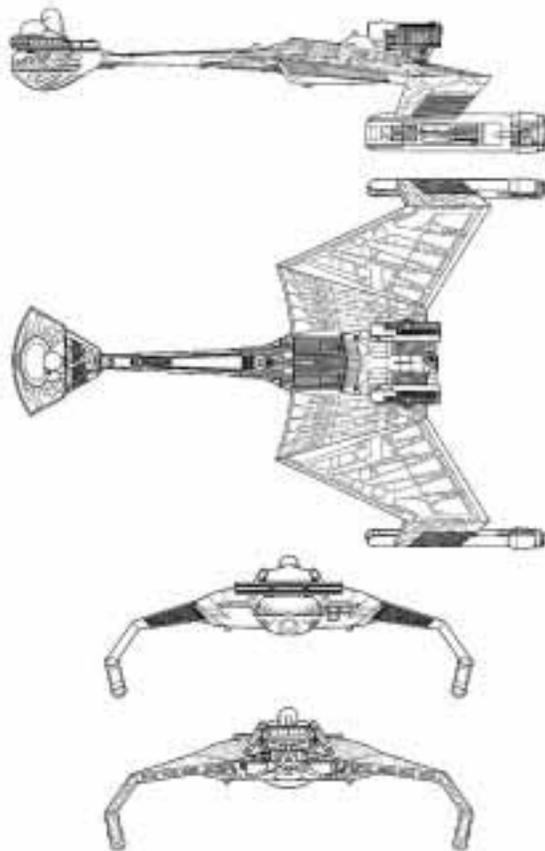
**Beam:** 780.62 meters

**Height:** 423.72 meters

**Mass:** 1,890,000 metric tons

**Maximum Speed:** Warp 9.6

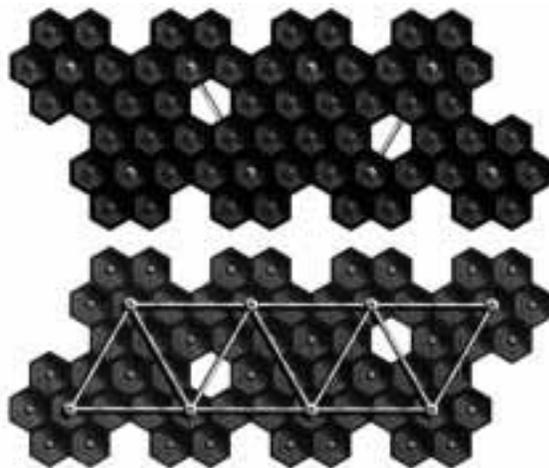
**Armament:** Four ship-mounted disruptor cannons, two torpedo launchers



**K't'inga Class Battle Cruiser**

The K't'inga-class battle cruiser was a primary class of warship in service with the Klingon Imperial Fleet from the late 23rd century through the late 24th century.

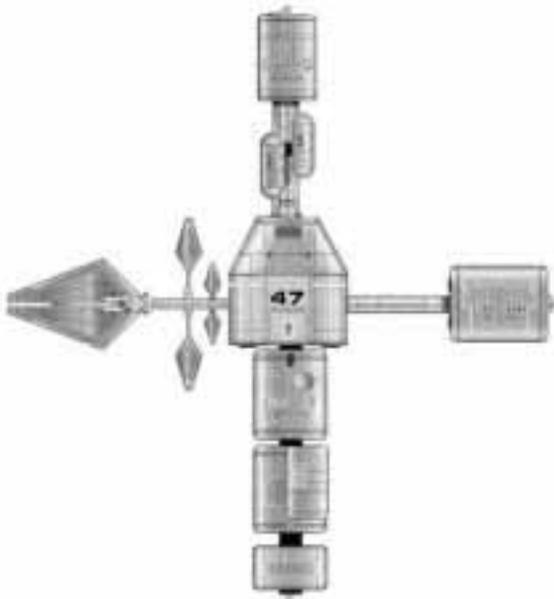
- Government:** Klingon
- Power Plant:** One M/A warp system; two impulse system
- Accommodation:** 800 plus flight crew and troops
- Length:** 349.54 meters
- Beam:** 251.76 meters
- Height:** 98.41 meters
- Mass:** 760,000 metric tons
- Maximum Speed:** Warp 9.6
- Armament:** Six ship-mounted disruptor cannons, two torpedo launchers



**Telescope**

The Argus Array is a Federation subspace telescope operating in the 24th century. The Array is located three light years from Cardassian space. Similar arrays are constructed throughout Federation space. They are constructed of hexagonal subspace antenna groups, each powered by a fusion generator.

- Government:** Federation
- Power Plant:** 18 Fusion reactors
- Accommodation:** None
- Dimension:** Varies
- Mass:** Varies
- Maximum Speed:** None
- Armament:** None



### Subspace Relay Station Type 40

Subspace relay stations are structures designed to relay subspace communications

**Government:** Federation

**Power Plant:** Classified

**Accommodation:** Varies

**Length:** Varies

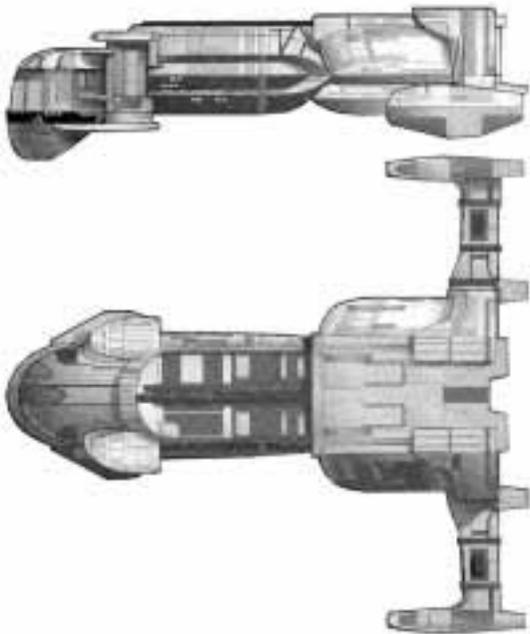
**Beam:** Varies

**Height:** Varies

**Mass:** Varies

**Maximum Speed:** None

**Armament:** None



### Whorfin Class Transport

The Whorfin-class was a type of transport vessel used by the Federation in the late 23rd century.

**Government:** Federation

**Power Plant:** Unknown

**Accommodation:** 17 Crew, Passengers vary

**Length:** Unknown

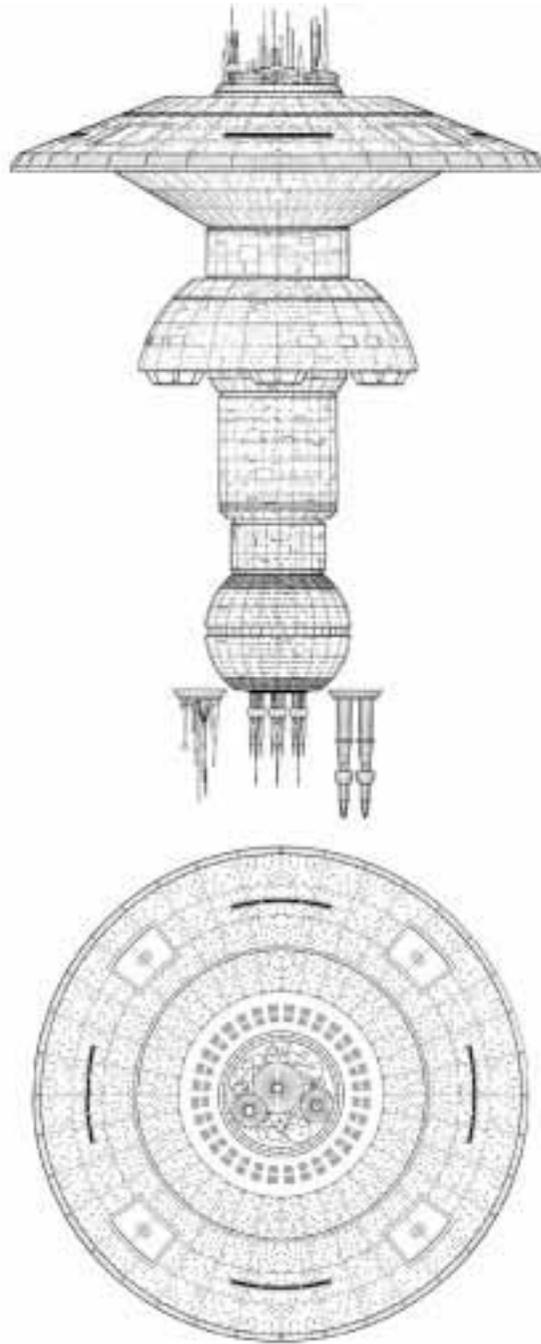
**Beam:** Unknown

**Height:** Unknown

**Mass:** Varies

**Maximum Speed:** Warp 4

**Armament:** None



**Ournal Spacedock**

A spacedock was a facility capable of docking starships for maintenance.

**Government:** Federation

**Power Plant:** Sublight Drive - 25  
Omni-directional thrusters

**Accommodation:**

Standard - 1,600

Maximum - 210,000

**Diameter:** 5,110 meters

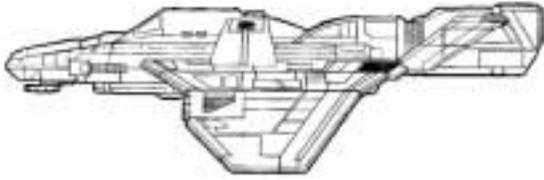
**Height (main):** 6,365 meters

**Height (overall):** 7,380 meters

**Number of Decks:** 1,600

**Maximum Speed:** None

**Armament:** 40 Type XII Phaser  
Arrays, 20 Type XII Pulse Phase  
cannons, 100 Torpedo launchers



### Peregrine Class Fighter

This ship is considered an interceptor and was used to in large formations to assault starships.

**Government:** Federation

**Power Plant:** Advanced Microfusion with 5 year project life span

**Accommodation:** 1 or 2

**Length:** 25 meters

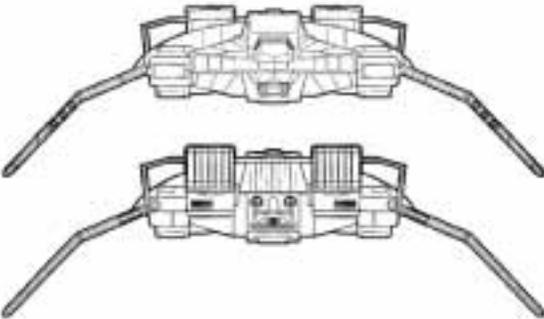
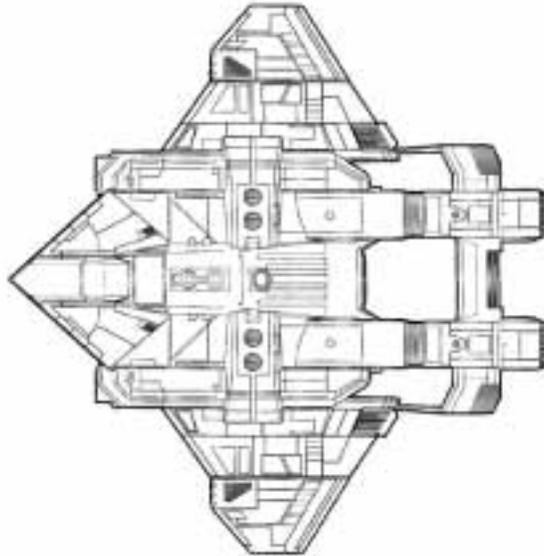
**Beam:** 26 meters

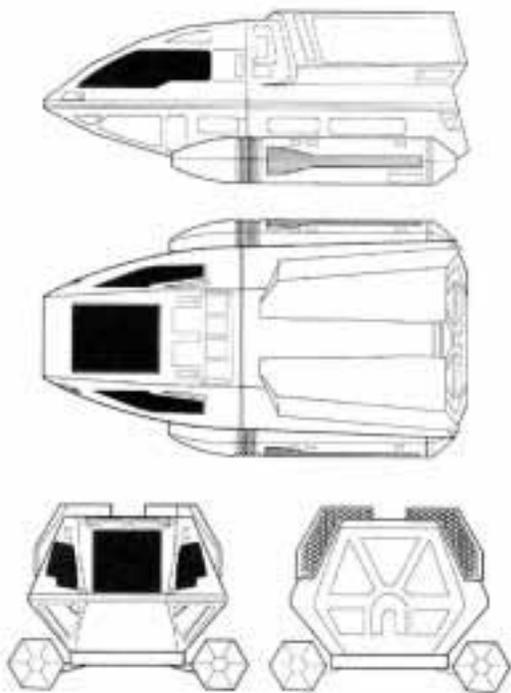
**Height:** 12 meters

**Mass:** 25 metric tons

**Maximum Speed:** Warp 9.0 (emergency)

**Armament:** Twin barrel pahser cannons or twin barrel pulse light phase cannons; mini-photon torpedo launcher.

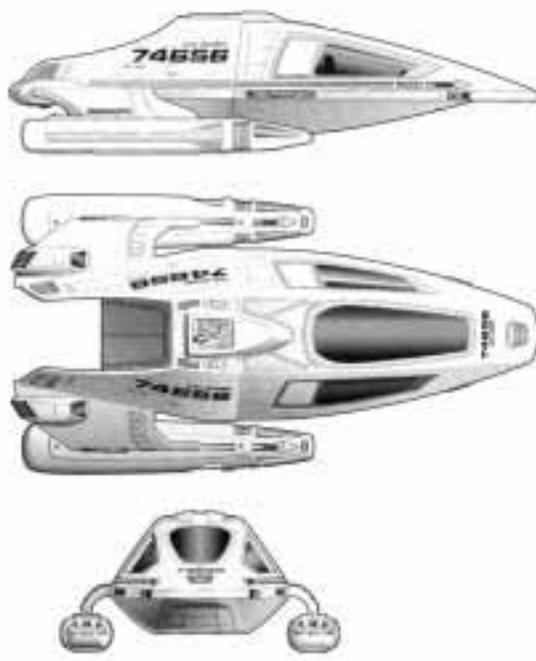




**Type 6 Shuttlecraft**

The type-6 shuttlecraft is a short-range Starfleet auxiliary vehicle carried aboard Federation starships and space stations during the 24th century.

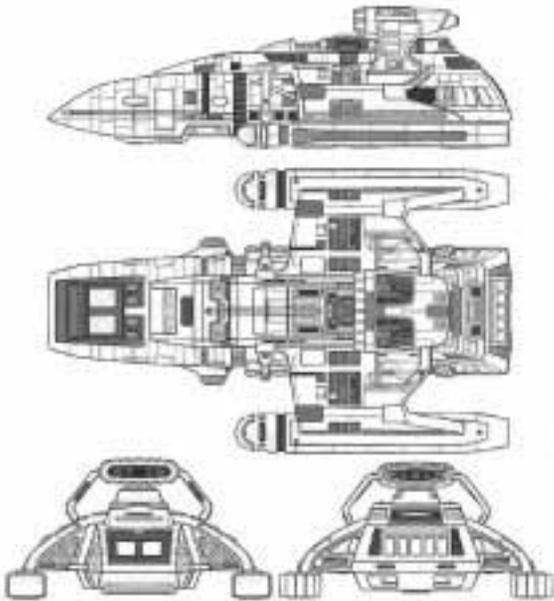
- Government:** Federation
- Power Plant:** 2 - 1250 millicochrane warp nacelles
- Accommodation:** Varies
- Length:** 6.0 meters
- Beam:** 4.4 meters
- Height:** 2.7 meters
- Mass:** 3.38 metric tons
- Maximum Speed:** Warp 3
- Armament:** Two Type-IV phaser emitters



**Type 9 Shuttlecraft**

The type-9 shuttlecraft is a short-range Starfleet auxiliary vehicle carried aboard Federation starships and space stations during the 24th century.

- Government:** Federation
- Power Plant:** 1 - 400 cochrane warp engine, two 800 millicochrane impulse engines, four RCS thrusters
- Accommodation:** 2 crew, 2 passengers
- Length:** 8.5 meters
- Beam:** 4.61 meters
- Height:** 2.67 meters
- Mass:** 2.61 metric tons
- Maximum Speed:** Warp 6
- Armament:** Two Type-VI phaser emitters



### Danube Class Runabout

In starship classification, a runabout is the designation of a type of vessel smaller than a starship but larger than a shuttlecraft. Runabouts are equipped with limited weapons and drive systems, but offer additional living space and the ability to be configured to mission-specific cargo capacities. They have a larger operational range and better weapons capability compared to shuttles, and are capable of speeds of up to warp 5. Runabouts are typically assigned to space stations or starships as auxiliary craft.

**Government:** Federation

**Power Plant:** 2 - 1250 millicochrane warp nacelles

**Accommodation:** Officers and crew: 12-15. Evac limit - 40

**Length:** 23.1 meters

**Beam:** 13.7 meters

**Height:** 5.4 meters

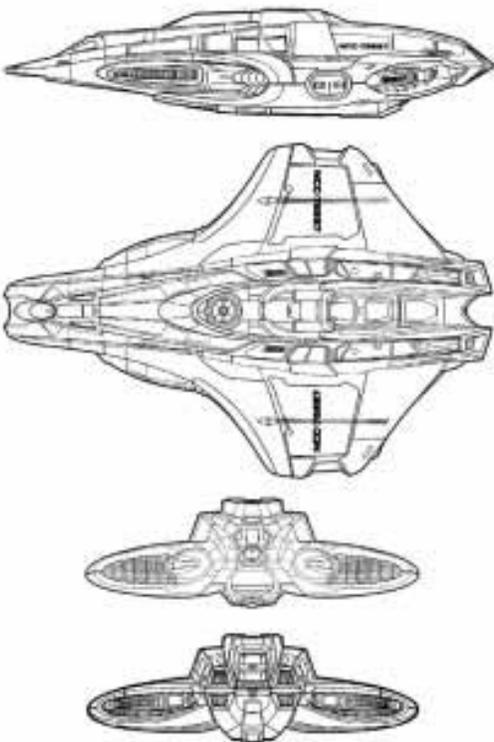
**Mass:** 158.7 metric tons

**Maximum Speed:** Warp 5

**Armament:** Varies

### Mission scoutship

The Federation mission scoutship was a type of Federation auxiliary craft in operation during the late 24th century. The scout was a single-pilot vessel with a forward mounted cockpit separated from the rest of the vessel. It was slightly larger in size than the Enterprise-E shuttlecraft, and carried dual-mounted phaser banks and photon torpedoes. The vessel is accessible through its docking hatch on the ventral hull.



**Government:** Federation

**Power Plant:** Class 5/H

**Accommodation:** 2 crew, 10 passengers

**Length:** 24.36 meters

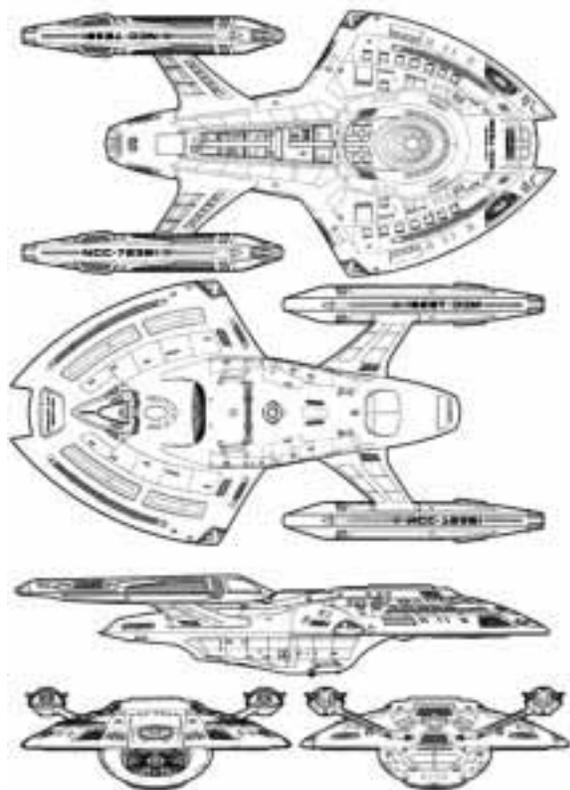
**Beam:** 16.26 meters

**Height:** 6.31 meters

**Mass:** 15.7 metric tons

**Maximum Speed:** Warp 5

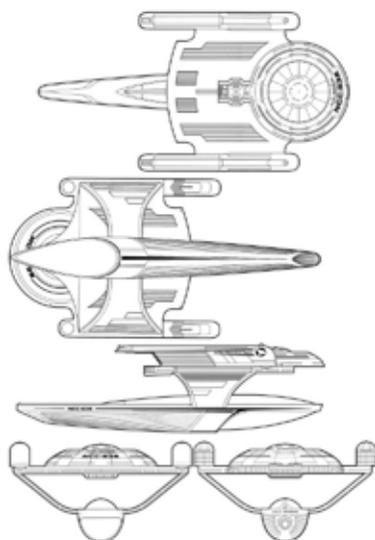
**Armament:** 2 Mk V Phaser arrays, micro-torpedo launcher (150 torpedoes)



**Nova-class Research Ship**

The Nova-class was a type of Federation starship designed for short-term planetary research missions. It was placed in service starting in the mid-to-late 24th century.

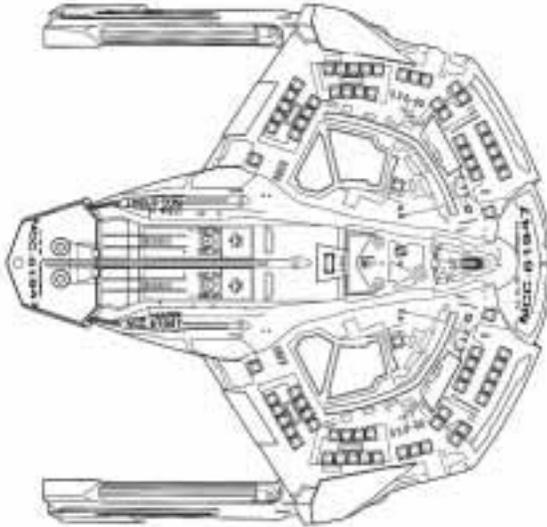
- Government:** Federation
- Power Plant:** One M/A warp system; two impulse systems
- Accommodation:** 80 officer and crew
- Length:** 160 meters
- Beam:** Classified
- Height:** Classified
- Mass:** Classified
- Maximum Speed:** Warp 8
- Armament:** 11 Type VIII phaser arrays, 1 Type X pulse phaser array, 3 standard photon torpedo launchers



**Oberth-class Research Ship**

The Oberth-class was a type of small Federation starship used as a scout, science vessel, and transport by Starfleet and civilian scientists alike, from the mid-23rd to the late-24th century.

- Government:** Federation
- Power Plant:** One M/A warp system; one impulse system
- Accommodation:** 80 officers and crew
- Length:** 150.81 meters
- Beam:** 87 meters
- Height:** 41 meters
- Mass:** 25,000 metric tons
- Maximum Speed:** Warp 8
- Armament:** 2 phaser arrays, 1 standard photon torpedo launcher



### Sabre-class Scout

The Sabre-class of Federation starship was first introduced in the late 24th century, and was in full service by 2373. The ship featured a design more compact than other Starfleet vessels, and was fairly well armed despite its small size.

**Government:** Federation

**Power Plant:** One M/A warp system; two impulse systems

**Accommodation:** 40 officers and crew

**Length:** 364.77 meters

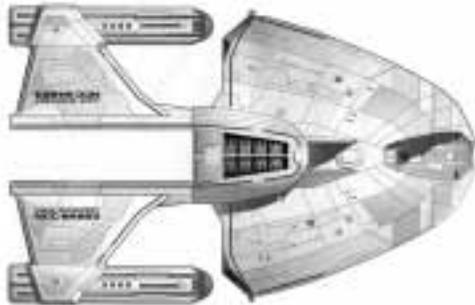
**Beam:** 225.61 meters

**Height:** 52.48 meters

**Mass:** 310,000 metric tons

**Maximum Speed:** Warp 9.7

**Armament:** Four type-10 phaser emitters, two photon torpedo launchers



### Norway-class Cruiser

The Norway-class was a type of Federation starship in service with Starfleet during the 2370s.

**Government:** Federation

**Power Plant:** One M/A warp system; one impulse system

**Accommodation:** 190 officers and crew

**Length:** 364.77 meters

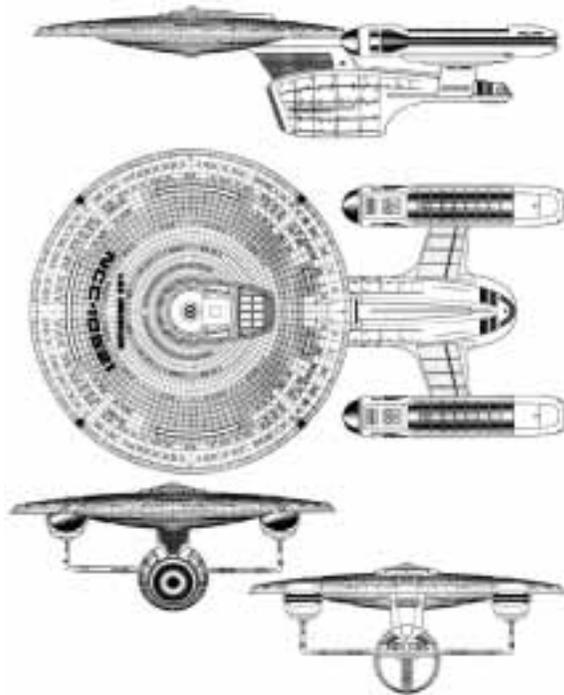
**Beam:** Classified

**Height:** Classified

**Mass:** 622,000 metric tons

**Maximum Speed:** Warp 9.7

**Armament:** Six type-10 phaser emitters; two photon torpedo launchers



**Ambassador-class Cruiser**

The Ambassador class starship was a Starfleet heavy cruiser class launched in the mid 24th century.

**Government:** Federation

**Power Plant:** Class 6 M/A warp system; one impulse system

**Accommodation:** 700 officers and crew plus 100 civilians

**Length:** 514 meters

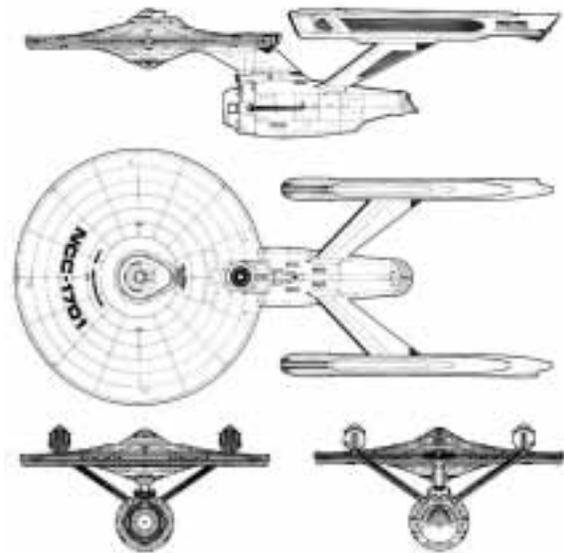
**Beam:** 322 meters

**Height:** 128 meters

**Mass:** 2,350,000 metric tons

**Maximum Speed:** Warp 9.9

**Armament:** 10 Type X phaser arrays, 2 photon torpedo launchers



**Constitution-class Cruiser**

The Constitution-class starships, which were also known as Starship class starships, were the premier front-line Starfleet vessels in the latter half of the 23rd century. They were designed for long duration missions with minimal outside support and are best known for their celebrated missions of galactic exploration and diplomacy which typically lasted up to five years.

**Government:** Federation

**Power Plant:** One M/A warp system; one impulse system

**Accommodation:** 300 officer and crew

**Length:** 304.8 meters

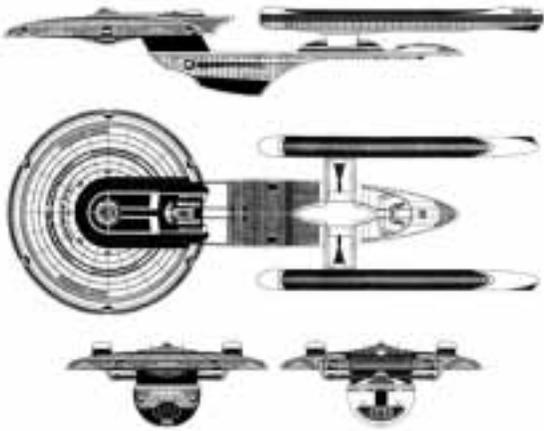
**Beam:** 141.7 meters

**Height:** 71.3 meters

**Mass:** 200,000 metric tons

**Maximum Speed:** Warp 9

**Armament:** 18 phaser arrays, 2 photon torpedo launchers



### Excelsior-class Cruiser

The Excelsior-class was a type of Federation starship first built in the 2280s. The prototype of this class, the USS Excelsior, was initially fitted with a transwarp drive and proclaimed as "the Great Experiment." The ship had an ignoble start when its engines were sabotaged when it was called into action to prevent the theft of the USS Enterprise from Earth Spacedock in 2285.

**Government:** Federation

**Power Plant:** One M/A warp system; one impulse system

**Accommodation:** 750 officers and crew

**Length:** 511.25 meters

**Beam:** 195.64 meters

**Height:** 86.76 meters

**Mass:** 2,350,000 metric tons

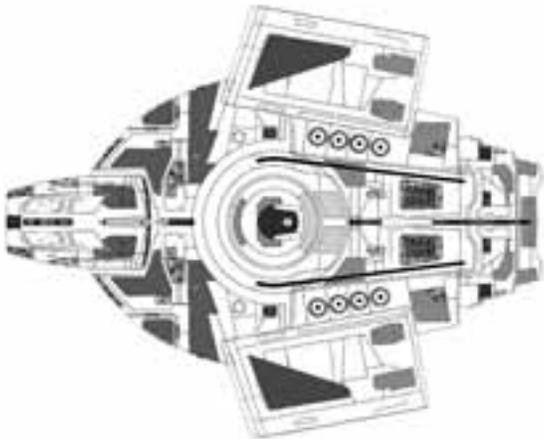
**Maximum Speed:** Classified

**Armament:** Classified



### Defiant-class Escort

The Defiant-class starship, officially classified as an escort, began development in 2366 as a small, highly-powered, heavily-armed warship intended to defend the Federation against the Borg.



**Government:** Federation

**Power Plant:** One M/A warp system; two impulse system

**Accommodation:** 40 officers and crew

**Length:** 170.68 meters

**Beam:** 134.11 meters

**Height:** 30.1 meters

**Mass:** 355,000 metric tons

**Maximum Speed:** Warp 9.982

**Armament:** Four pulse phaser cannons; two photon torpedo launchers

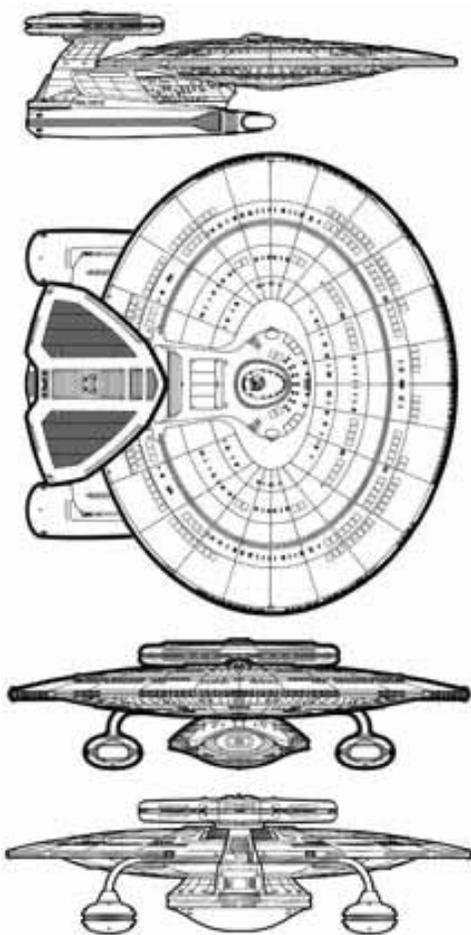




**Miranda-class Cruiser**

The Miranda-class starship was a type of medium cruiser introduced by Starfleet in the late 23rd century and had a production run through the mid 24th century.

- Government:** Federation
- Power Plant:** One M/A warp system; one impulse system
- Accommodation:** 220 officers and crew
- Length:** 277.76 meters
- Beam:** 173.98 meters
- Height:** 65.23 meters
- Mass:** 655,000 metric tons
- Maximum Speed:** Warp 9.2
- Armament:** Six type-7 phaser emitters; two pulse phaser cannons; two photon torpedo launchers

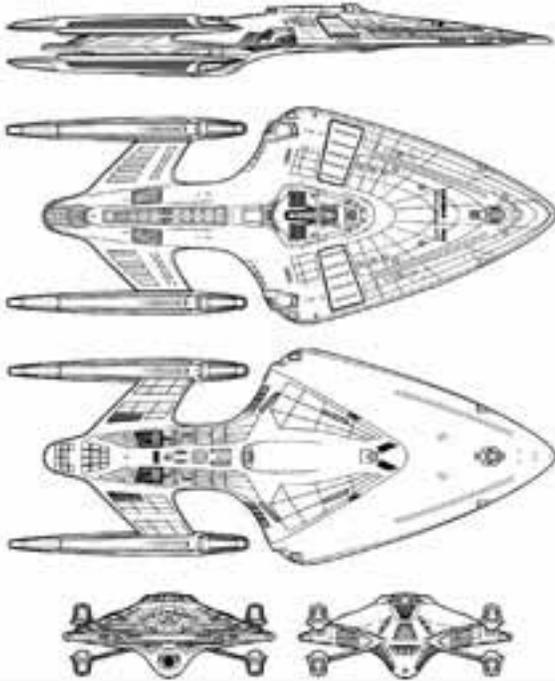


**Nebula-class Cruiser**

The Nebula-class was a type of Federation starship that was in service in Starfleet during the latter half of the 24th century. Its design is closely related to that of the Galaxy-class.

Atop the engineering hull is a superstructure which can support a variety of equipment, such as sensor platforms, additional warp nacelles, and torpedo launchers.

- Government:** Federation
- Power Plant:** One M/A warp system; one impulse system
- Accommodation:** 750 officers and crew
- Length:** 442.23 meters
- Beam:** 318.11 meters
- Height:** 130.43 meters
- Mass:** 3,309,000 metric tons
- Maximum Speed:** Warp 9.2
- Armament:** Six type-7 phaser emitters; two pulse phaser cannons; two photon torpedo launchers



TACTICAL MULTI-VECTOR  
ATTACK SEPARATION



### Prometheus-class Cruiser

The USS Prometheus (NX-59650/ NX-74913) was the prototype of the Prometheus-class, a long-range starship designed for tactical purposes and equipped with multi-vector assault mode, regenerative shields, and ablative armor. It was the fastest ship in Starfleet when it was launched in early 2374

**Government:** Federation

**Power Plant:** Three M/A warp system (With Trelinium); three impulse systems

**Accommodation:** 300 officers and crew

**Length:** 415 meters

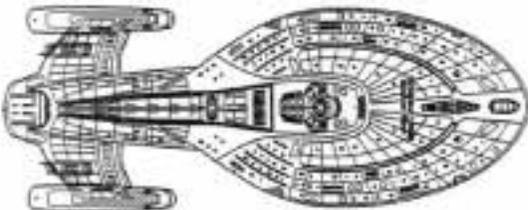
**Beam:** 163 meters

**Height:** 64 meters

**Mass:** <200,000 metric tons

**Maximum Speed:** Warp 9.9

**Armament:** 14 Type XII phaser arrays (TMA mode), 8 Type XII phaser arrays (normal flight), 4 torpedo launchers



### Intrepid-class

The Intrepid-class starship was a Federation design that entered service in the latter half of the 24th century.

**Government:** Federation

**Power Plant:** One M/A warp system; one impulse system

**Accommodation:** 168 officers and crew

**Length:** 342.5 meters

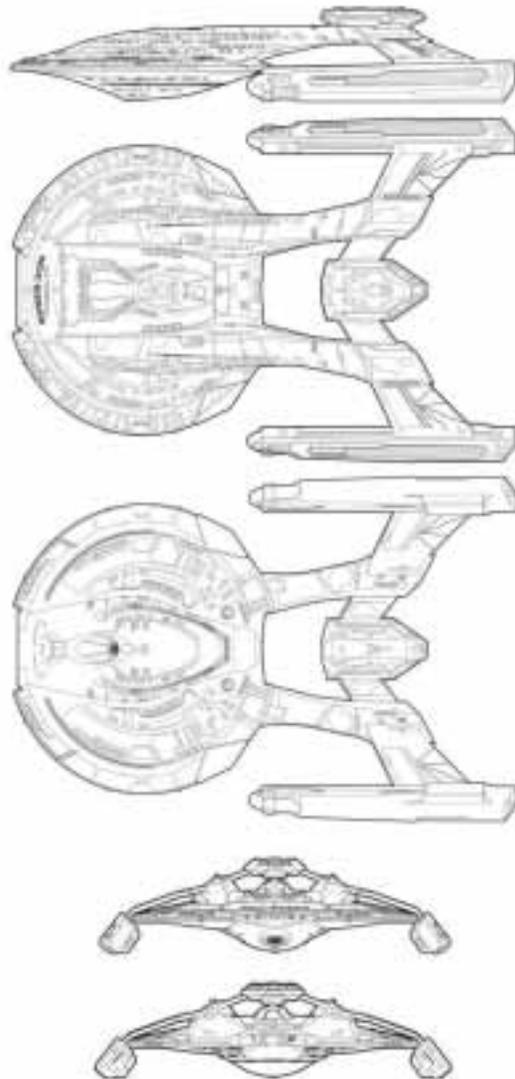
**Beam:** 144.84 meters

**Height:** 55.42 meters

**Mass:** 700,000 metric tons

**Maximum Speed:** Warp 9.985

**Armament:** 13 phaser arrays, 4 torpedo launchers



**Akira-class**

The Akira-class was a class of Federation starship that was in service with Starfleet by the early 2370s.

**Government:** Federation

**Power Plant:** Classified

**Accommodation:** Classified

**Length:** Classified

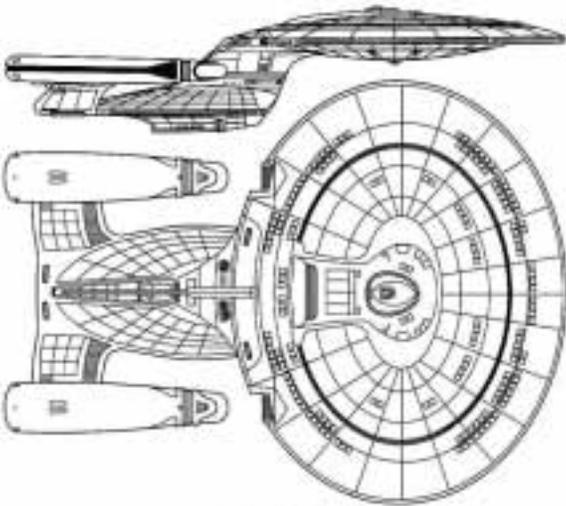
**Beam:** Classified

**Height:** Classified

**Mass:** Classified

**Maximum Speed:** Classified

**Armament:** Classified



### Galaxy-class

The Galaxy-class was a Starfleet starship first introduced in the late 2350s. It was the largest and one of the most powerful Federation starship classes of its time, with many serving in the Dominion War.

**Government:** Federation

**Power Plant:** One M/A warp system; two impulse systems

**Accommodation:** 1,016 officers and crew

**Length:** 641 meters

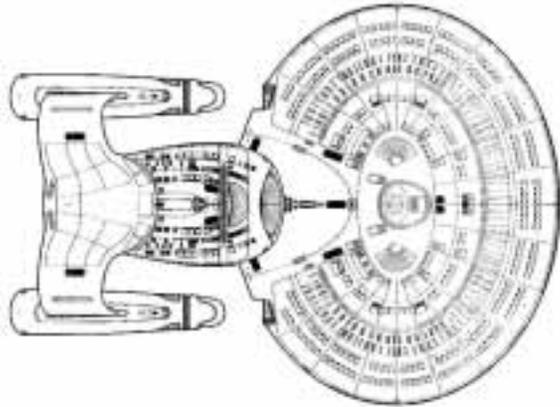
**Beam:** 463.73 meters

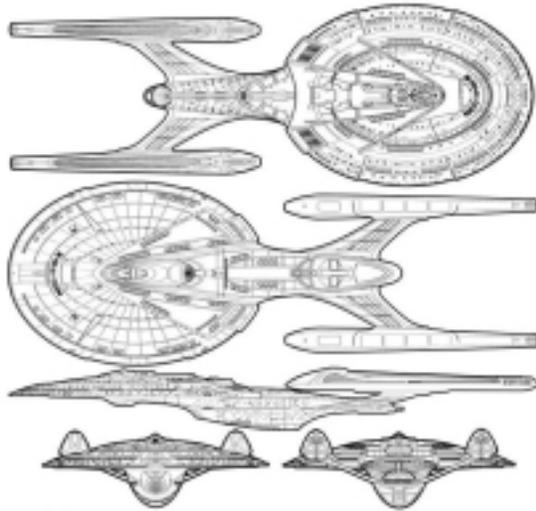
**Height:** 195.26 meters

**Mass:** 4,500,000 metric tons

**Maximum Speed:** Warp 9.6

**Armament:** 12 phaser banks, 2 torpedo launchers





**Sovereign-class**

The Sovereign-class starship was introduced in the late 24th century, showcasing some of Starfleet's most recent technological advances. The Sovereign Project was one of the new defensive technologies initially intended for use against the Borg threat.

**Government:** Federation

**Power Plant:** One M/A warp system; two impulse systems

**Accommodation:** Classified

**Length:** 685 meters

**Beam:** 250 meters

**Height:** 88 meters

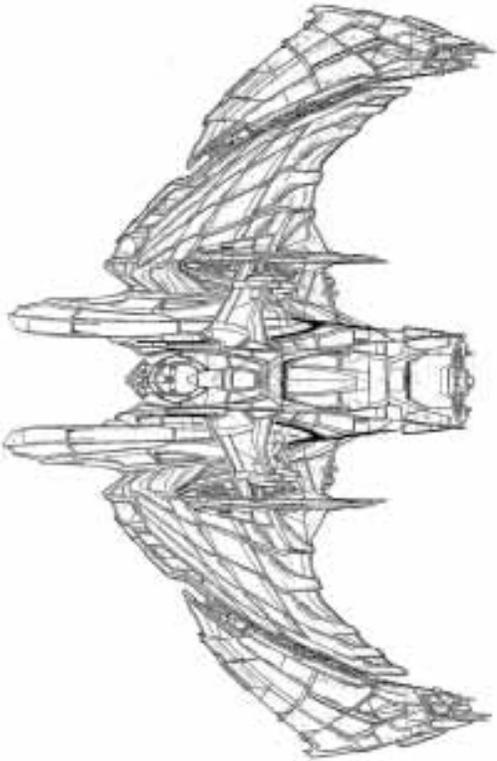
**Mass:** Classified

**Maximum Speed:** Warp 9.985

**Armament:** 16 phaser banks, 10 torpedo launchers

## Threat Craft

The craft shown in this section are considered to be Threats. They belong to governments which are hostile to the Federation or are species that have shown hostile tendencies toward the Federation. **Extreme caution should be used in approaching these craft.**



### Scimitar

The Reman warbird Scimitar was a massive warship constructed under the command of Shinzon as part of a secret plot to overthrow the Romulan Senate and liberate the subjugated natives of Remus.

**Government:** Romulan

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** 890 meters

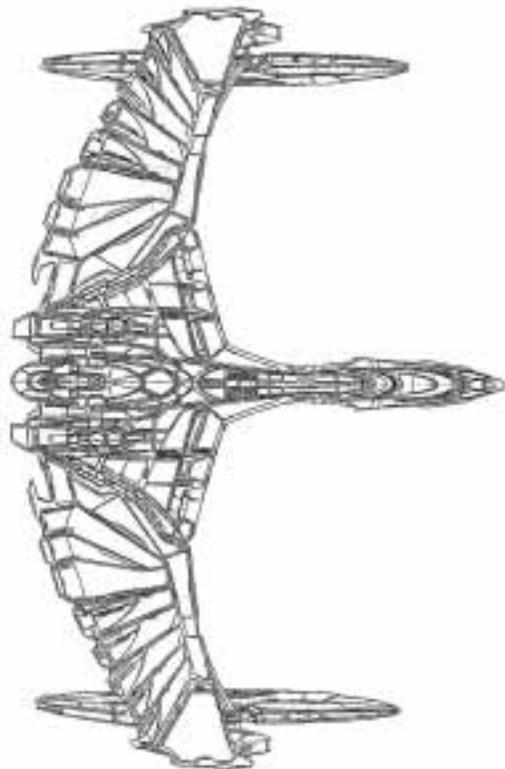
**Beam:** 1350 meters

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

**Armament:** 52 pulse disruptor cannons; 27 photon torpedo launchers; thalaron radiation emitters



### Valdore-class

In service during the late-2370s, the Valdore-type warbird was a staple of the fleet of the Romulan Star Empire.

**Government:** Romulan

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** 603 meters

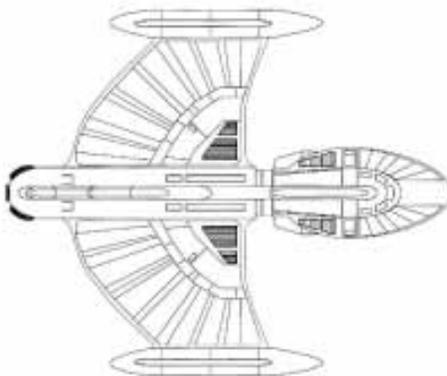
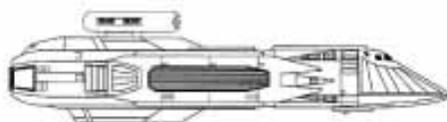
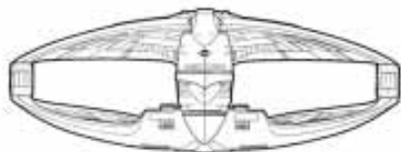
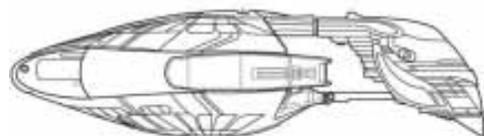
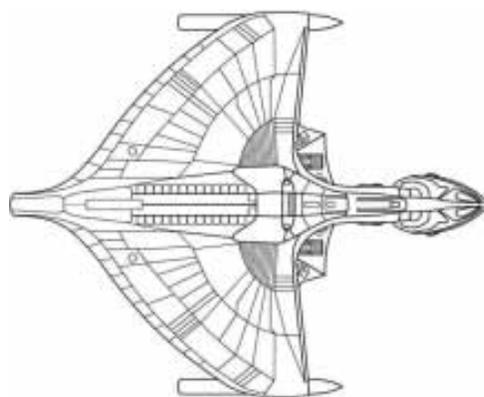
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

**Armament:** Unknown number of disruptor cannons and photon torpedo launchers



**D'deridex-class**

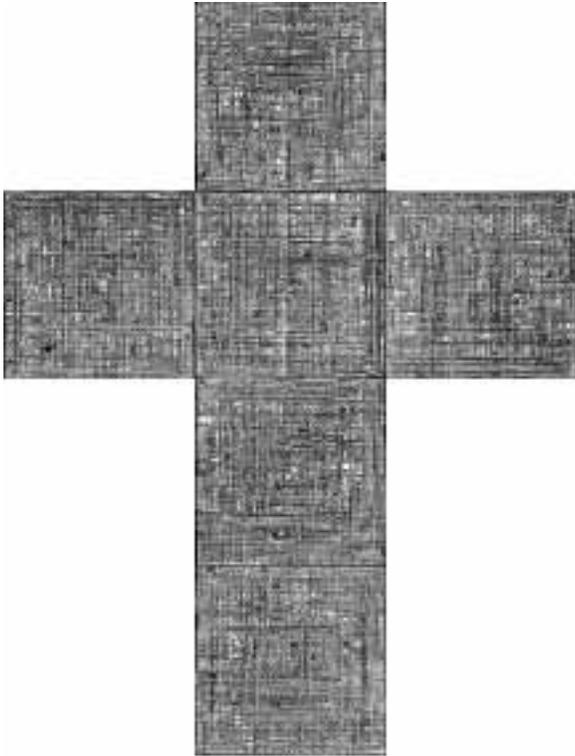
The D'deridex-class Warbird (also known as the B-type Warbird or Warbird Class) was the backbone of the Romulan fleet during the mid to late 24th century.

- Government:** Romulan
- Power Plant:** Unknown
- Accommodation:** Unknown
- Length:** 10413 meters
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Warp 9
- Armament:** 6+ disruptor arrays; phasers; 1 photon/plasma torpedo launcher/primary disruptor array

**Romulan scoutship**

The Romulan scoutship was a small starship used by the Romulan Star Empire for scouting missions during the late-24th century. They rarely ventured out as far as the Romulan Neutral Zone. Very little is known about the capabilities of these vessels, including whether or not they were equipped with cloaking devices.

- Government:** Romulan
- Power Plant:** Unknown
- Accommodation:** 1 - 2
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Unknown
- Armament:** Unknown



### Borg cube

The Borg cube was the primary vessel of the Borg Collective. It was extremely large, measuring 28 cubic kilometers in volume and carrying up to 129,000 Borg drones. It was one of the most powerful vessels in the galaxy.

**Government:** Borg

**Power Plant:** Unknown

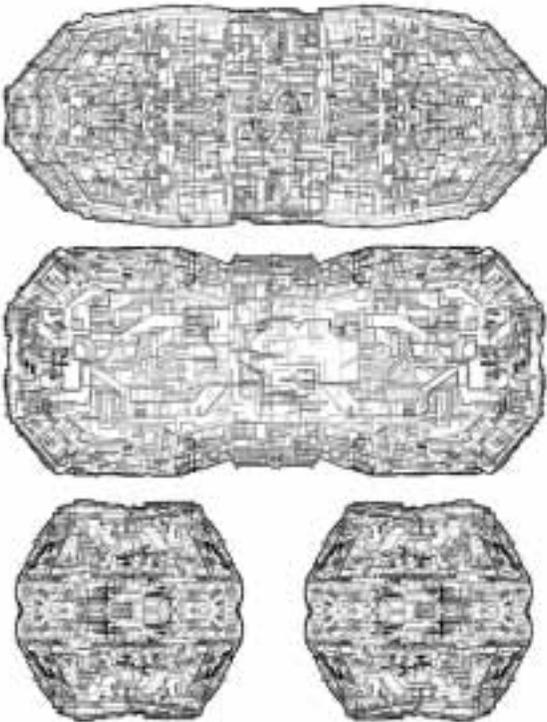
**Accommodation:** 129,000

**Volume:** 28 cubic kilometers

**Mass:** Unknown

**Maximum Speed:** Transwarp

**Armament:** Torpedoes, Cutting beams, Tractor beams



### Borg probe

The Borg probe was a type of small starship used by the Borg, apparently to scout low-resistance targets. The craft is not as well armed as most larger Borg ships, and is only about 350 meters long. These ships are equipped with transwarp coils.

**Government:** Borg

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** 350 meters

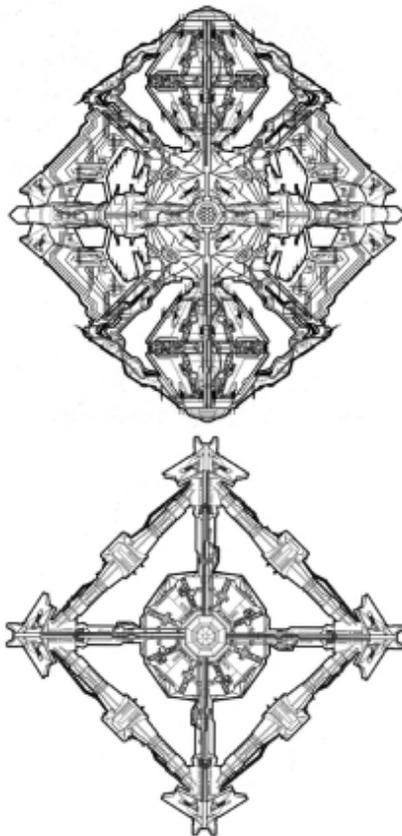
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Transwarp

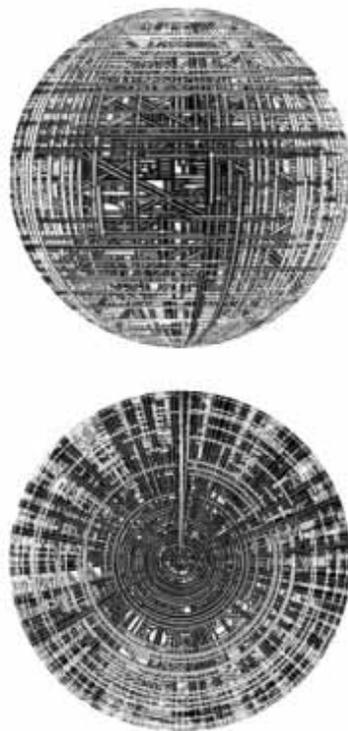
**Armament:** Unknown



**Borg Queen's Vessel**

The Borg Queen's vessel was a unique diamond shaped starship that was used by the Borg Queen to travel. Little is known about its capabilities or specific purpose, except that the only encounters by the Federation with this starship design was when the vessel was used to transport the Queen, and thus it can be inferred that it is 'her' ship. The ship is heavily armed and well protected and like all Borg ships, capable of transwarp speeds.

- Government:** Borg
- Power Plant:** Unknown
- Accommodation:** Unknown
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Transwarp
- Armament:** Unknown



**Borg Sphere**

The Borg sphere is a sphere-shaped starship used by the Borg Collective. According to the Borg drone, designated as One, some of these spheres are designated as long range tactical vessels, have transwarp capability and ablative hull armor.

- Government:** Borg
- Power Plant:** Unknown
- Accommodation:** 11,000
- Diameter:** 800 meters
- Mass:** Unknown
- Maximum Speed:** Transwarp
- Armament:** Tractor beams, plasma beams, phaser weaponry, torpedoes.



### Breen Warship

The Breen warship was a vessel used by the Breen Confederacy in the late-24th century.

**Government:** Breen

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** Unknown

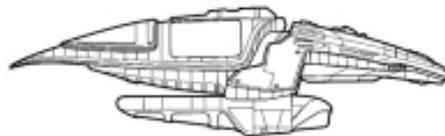
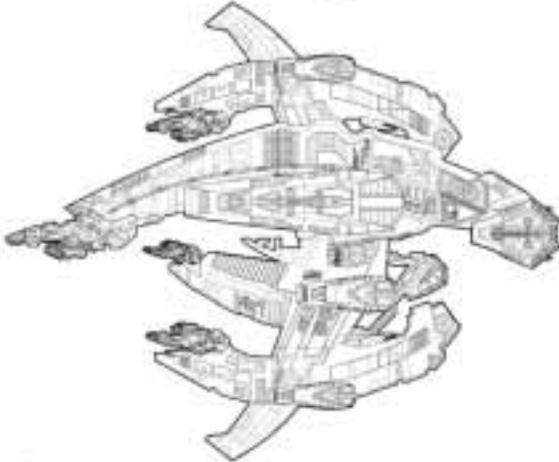
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

**Armament:** Energy dampening weapon, disruptors, torpedoes



### Jem'Hadar Attack Ship

Jem'Hadar fighters (also referred to as attack ships) are small warships that form the bulk of the Dominion fleet. These versatile starships have also been known to perform the roles of patrol ships and scouts.

**Government:** Dominion

**Power Plant:** One M/A warp system; one impulse system

**Accommodation:** 1 Vorta, 42 Jem'Hadar

**Length:** 68.32 meters

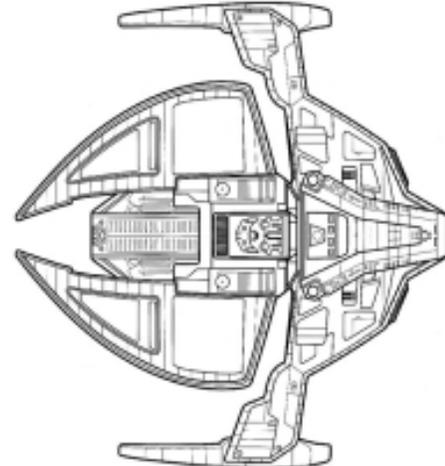
**Beam:** 70.02 meters

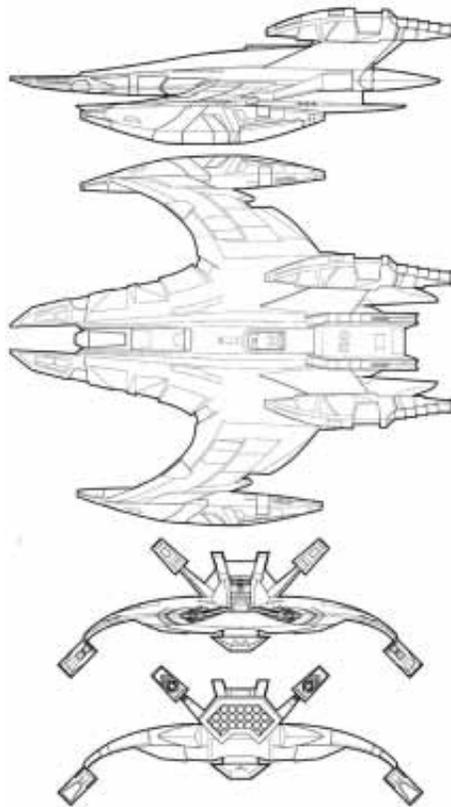
**Height:** 18.32 meters

**Mass:** 2,450 metric tons

**Maximum Speed:** Warp 9.6

**Armament:** 3 phased polaron beam weapons





**Jem'Hadar Battle Cruiser**

The Jem'Hadar battle cruiser was a large battleship used by the Dominion for fleet engagements during the 2370s.

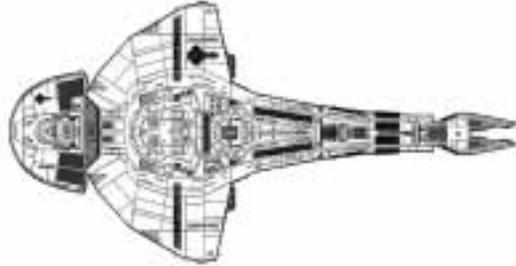
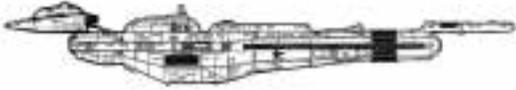
- Government:** Dominion
- Power Plant:** One and possibly two M/A warp system; two or more impulse system
- Accommodation:** 2,500 est.
- Length:** 639.75 meters
- Beam:** 568.44 meters
- Height:** 204.97 meters
- Mass:** 4,125,000 metric tons
- Maximum Speed:** Warp 9.6
- Armament:** 6 or more phased polaron beam weapons



**Jem'Hadar Battle Ship**

The Jem'Hadar battleship was a type of warship introduced in the Alpha Quadrant midway through the Dominion War, in 2374.

- Government:** Dominion
- Power Plant:** One and possibly two M/A warp system; two or more impulse system
- Accommodation:** Unknown
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Warp 4.7
- Armament:** Phasers, torpedoes



### Galor-class

Galor-class cruisers were the primary class of warship by the Cardassian Guard during the latter half of the 24th century.

**Government:** Cardassian

**Power Plant:** One and possibly two M/A warp system; three or more impulse systems

**Accommodation:** 300 plus flight crew and troops

**Length:** 371.88 meters

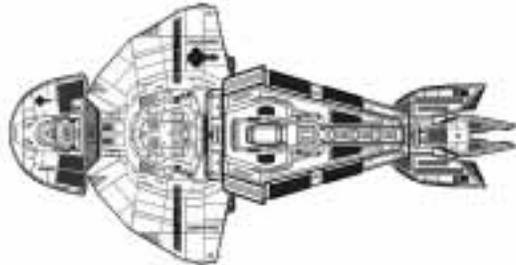
**Beam:** 192.33 meters

**Height:** 59 meters

**Mass:** 1,678,000 metric tons

**Maximum Speed:** Warp 9.6

**Armament:** Eight or more spiral-wave disruptors, one large aft disruptor wave cannon



### Keldon-class

The Keldon-class cruiser was a class of Cardassian warship utilized by the Cardassian Guard during the 2370s. The Keldon hull was similar to the Galor-class spaceframe, with additions to the aft end and main body.

**Government:** Cardassian

**Power Plant:** One and possibly two M/A warp system; two or more impulse system

**Accommodation:** 500 plus flight crew and troops

**Length:** 371.88 meters

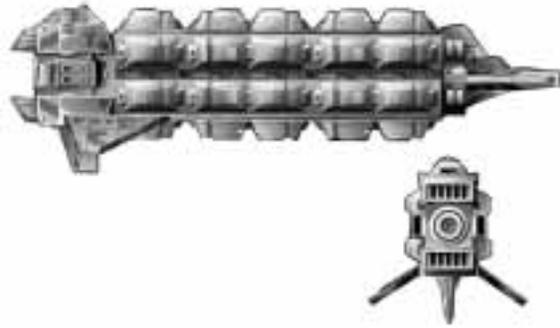
**Beam:** 192.33 meters

**Height:** 70.13 meters

**Mass:** 1,678,000 metric tons

**Maximum Speed:** Warp 9.6

**Armament:** Eight or more spiral-wave disruptors, one large aft disruptor wave cannon



**Groumall-type**

The Groumall-type was a type of starship utilized throughout the Cardassian Union during the late 24th century. During the early 2370s, this class of vessel, was utilized primarily as a freighter or transport, and occasionally fielded by the Cardassian Central Command.

**Government:** Cardassian

**Power Plant:** One M/A warp system; two or more impulse system

**Accommodation:** 30 plus flight crew and troops

**Length:** 255.65 meters

**Beam:** 55.13 meters

**Height:** 63.21 meters

**Mass:** 1,340,000 metric tons

**Maximum Speed:** Warp 6.5

**Armament:** Four or more spiral-wave disruptors, one medium aft disruptor wave cannon



**Hideki-class**

The Hideki-class attack ship was a type of small warship, or patrol ship, used by the Cardassian military during the late 24th century. The ship was considered approximately equivalent to the Starfleet Danube-class runabout, but equipped with heavier armament giving it sufficient striking power to operate in fleet actions.

**Government:** Cardassian

**Power Plant:** One and possibly two M/A warp system; one or more impulse system

**Accommodation:** 30 plus flight crew and troops

**Length:** 85.78 meters

**Beam:** 60.14 meters

**Height:** 12.43 meters

**Mass:** 120,000 metric tons

**Maximum Speed:** Warp 9.5

**Armament:** Four or more spiral-wave disruptors, one medium aft disruptor wave cannon



### Orbital Weapons Platform

Orbital weapon platforms are a type of powerful, automated planetary defense system developed by the Cardassian military during the Dominion War. They were protected by regenerative shields and equipped with three heavy disruptors and 1,000 plasma torpedoes.

**Government:** Cardassian

**Power Plant:** Unknown

**Accommodation:** None

**Length:** 255.65 meters

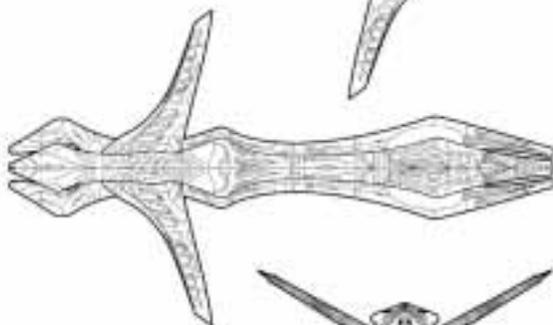
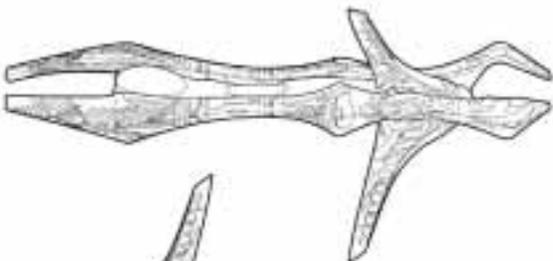
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** None

**Armament:** Three heavy disruptors and 1,000 plasma torpedoes



### Species 8472 bioship

The bioship was an organic vessel that was used by Species 8472 and had a similar genetic makeup to their pilots. The bioships, and Species 8472 themselves, were resistant to assimilation by the Borg and had enough firepower to destroy a Borg ship with only a couple of shots. Eight of these ships could collect and combine the firepower using a energy focusing ship to form a planet killer.

**Government:** Species 8472

**Power Plant:** Unknown

**Accommodation:** None

**Length:** Unknown

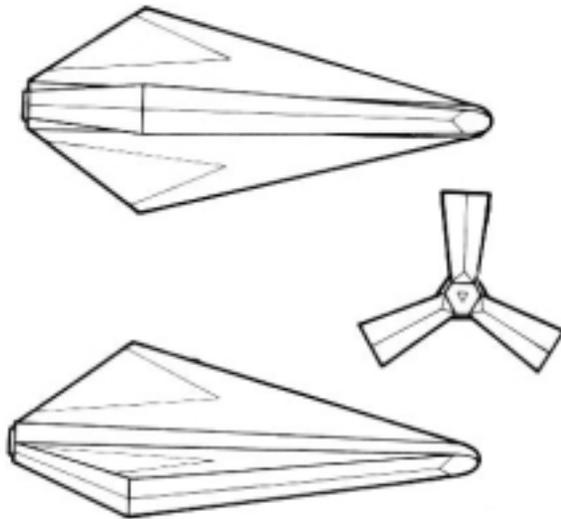
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

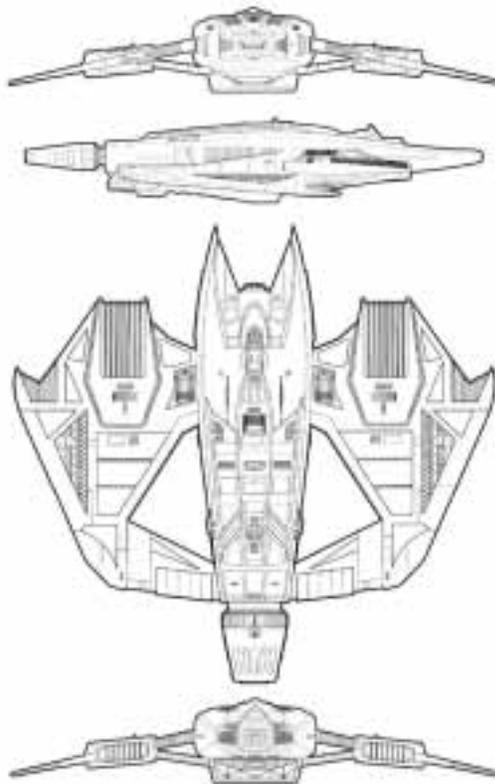
**Armament:** Unknown



**Tholian Starship**

Tholian starships were small starships of characteristic shape, utilized by the Tholian Assembly during the 23rd century. These vessels were armed with plasma torpedo-like weaponry. But their most powerful weapon was the so-called "Tholian web". This web was "weaved" by two or more Tholian vessels around an enemy ship, trapping it. The web could then be contracted, destroying the vessel inside.

- Government:** Tholian
- Power Plant:** Unknown
- Accommodation:** Unknown
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Unknown
- Armament:** Plasma torpedoes, "Tholian Web"



**Vidiian Starship**

The Vidiian starship was a massive starship utilized by the Vidiians. This class of vessel operated with a crew of well over 300, and was armed with hypothermic charges and grapples, which is used to access captured ships.

- Government:** Vidiian
- Power Plant:** Unknown
- Accommodation:** 300+
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Unknown
- Armament:** Hypothermic charges



### **Kazon Fighter**

Kazon fighters are small attack ships originally used by the Trabe, but were later seized from them during the Kazon uprising. Nearly identical in appearance to the Kazon raider, these vessels are approximately the size of a Federation shuttlecraft.

**Government:** Kazon

**Power Plant:** Unknown

**Accommodation:** 1

**Length:** Unknown

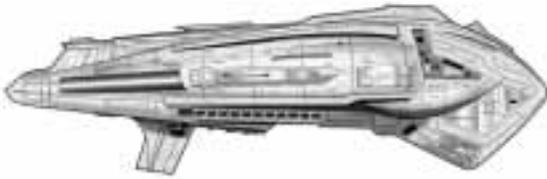
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

**Armament:** Three forward phaser banks and an aft photon torpedo launcher.



### **Predator-class**

The Predator-class was a class of warship utilized by Kazon during the 2370s.

**Government:** Kazon

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** Unknown

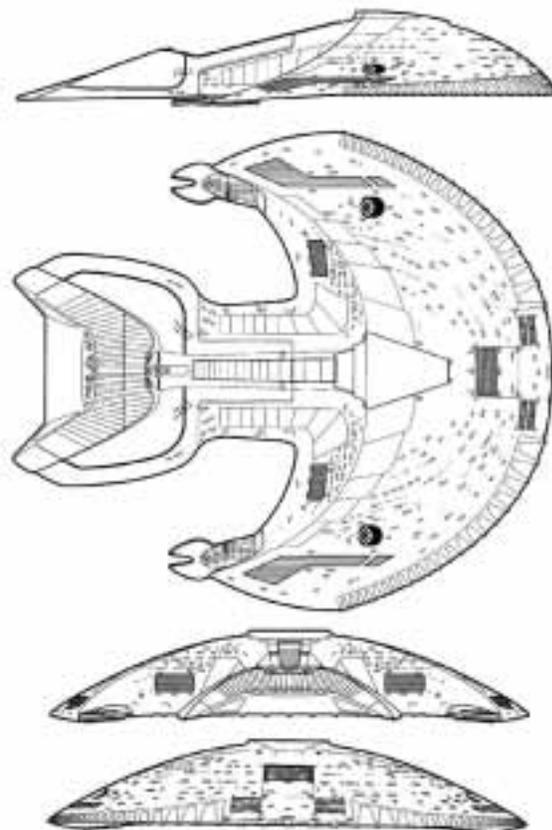
**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

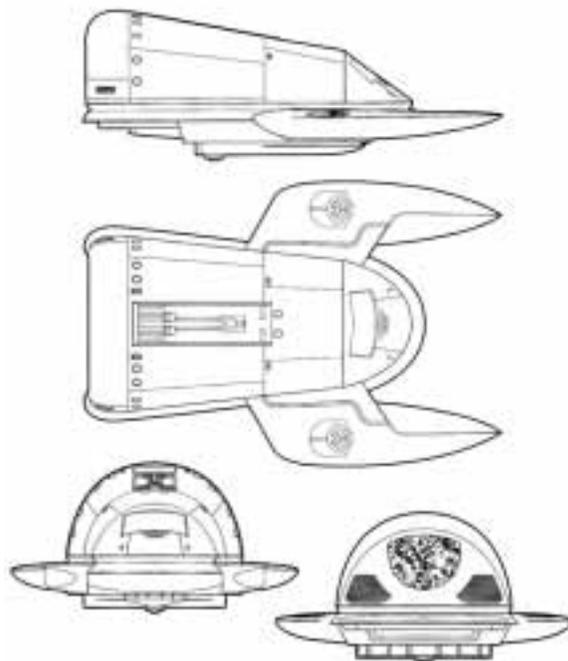
**Armament:** Plasma torpedoes



**D'kora-class**

The Ferengi D'kora-class starship (also sometimes referred to as a Ferengi Marauder, Ferengi warship or Ferengi trader) was a type of vessel operated by the Ferengi Alliance in the 24th century. The D'kora was an advanced vessel, comparable in power to a Federation Galaxy-class starship and almost as fast.

- Government:** Ferengi Alliance
- Power Plant:** Unknown
- Accommodation:** 450
- Length:** Unknown
- Beam:** Unknown
- Height:** Unknown
- Mass:** Unknown
- Maximum Speed:** Warp 9.6
- Armament:** Missile launcher; plasma spread



**Na'Far-class**

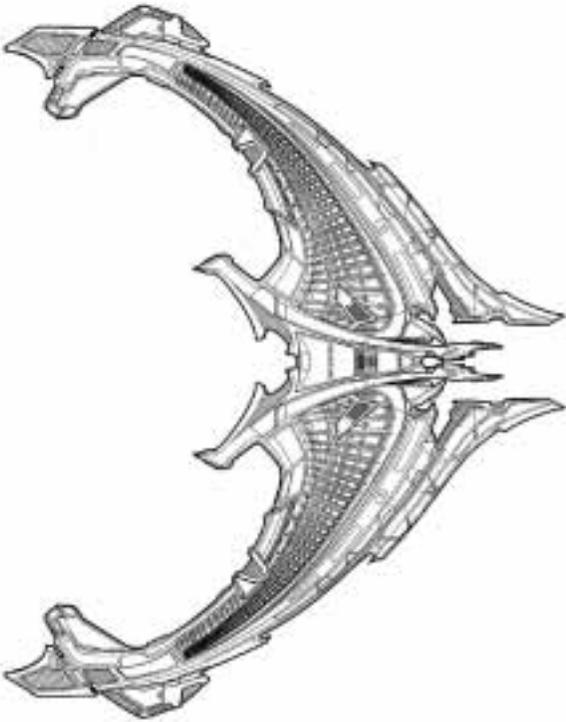
The Na'Far-class was a short-range auxiliary vehicle utilized by prominent businessmen in the Ferengi Alliance during the 24th century. Ferengi shuttles were warp capable vessels said to be fast enough to outrun a Romulan interceptor. These vessels were known to vary in size and could be outfitted with phasers and deflector shields.

- Government:** Ferengi Alliance
- Power Plant:** Unknown
- Accommodation:** Varies
- Length:** Varies
- Beam:** Varies
- Height:** Varies
- Mass:** Varies
- Maximum Speed:** Unkown
- Armament:** Varies



### Son'a Battle Cruiser

Son'a battle cruisers were large warships utilized by the Son'a during the late-24th century.



**Government:** Son'a

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** 837 meters

**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

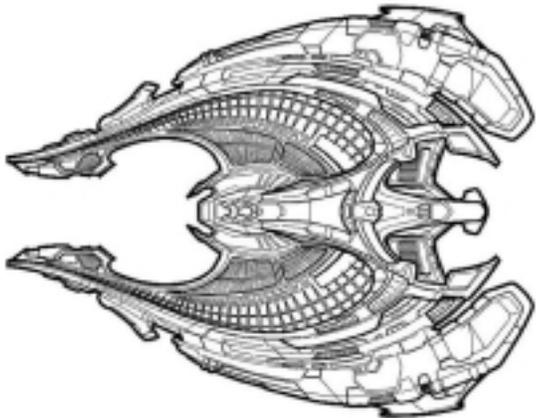
**Maximum Speed:** Unknown

**Armament:** Isolytic subspace weapons, conventional photon torpedoes



### Son'a Shuttle

Son'a shuttles are a medium sized auxiliary craft utilized by the Son'a.



**Government:** Son'a

**Power Plant:** Unknown

**Accommodation:** Unknown

**Length:** Unknown

**Beam:** Unknown

**Height:** Unknown

**Mass:** Unknown

**Maximum Speed:** Unknown

**Armament:** Unknown



## Species

This sections deals with friendly and threat species. Please note that this listing is not a complete one, but is designed ito give the marine a good base on which to build.

### Friendly Species

The species shown in this section are considered to be friendly. They are members of the Federation or have normal relations with the Federation and/or our allies.



**Species:** Human  
**Planet:** Earth (Terra)

Founding Member of the United Federation of Planets.



**Species:** Vulcan  
**Planet:** Vulcan

Founding Member of the United Federation of Planets.



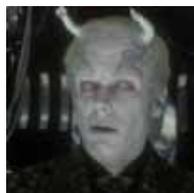
**Species:** Andorian  
**Planet:** Andoria

Founding Member of the United Federation of Planets.



**Species:** Tellarite  
**Planet:** Tellar Prime

Founding Member of the United Federation of Planets.



**Species:** Aenar  
**Planet:** Andoria



**Species:** Denobulan  
**Planet:** Denobula

Federation member.



**Species:** Antican  
**Planet:** Antica



**Species:** Ariolo  
**Planet:** Fillandia

Federation member.



**Species:** Arkenite  
**Planet:** Arken II

Federation member.



**Species:** Bajoran  
**Planet:** Bajor

Applied for membership into the Federation.



**Species:** Benzite  
**Planet:** Benzar

Federation member.



**Species:** Betazoid  
**Planet:** Betazed

Federation member.



**Species:** Bolian  
**Planet:** Bolarus IX

Federation member.



**Species:** Bynar  
**Planet:** Bynaus

Federation member.



**Species:** Bzzit Khaht  
**Planet:** Althos IV

Federation member.



**Species:** Caitain  
**Planet:** Cait

Federation member.



**Species:** Deltan  
**Planet:** Delta IV

Federation member.



**Species:** Efrosian  
**Planet:** Efros

Federation member.



**Species:** Elaysian  
**Planet:** Elaysia

Federation member.



**Species:** Garazerite  
**Planet:** Vacca III

Federation member.



**Species:** Halian  
**Planet:** Halii

Federation member.



**Species:** Kasheeta  
**Planet:** Kashet

Federation member.



**Species:** Klingon  
**Planet:** Qo'noS

Possible future Federation member.



**Species:** Takarian  
**Planet:** Takara



**Species:** Talaxian  
**Planet:** Talax



**Species:** Trill  
**Planet:** Trill

Federation member.



**Species:** Xindi - Aquatic  
**Planet:** Xindus

Possible future Federation member.



**Species:** Xindi - Arboreal  
**Planet:** Xindus

Possible future Federation member.



**Species:** Xindi - Primate  
**Planet:** Xindus

Possible future Federation member.

### Threat Species

The species shown in this section are considered to be threats. These species have either shown hostility towards the Federation or are known to have attacked Federation assets. **Extreme caution should be used in approaching these species.**



**Species:** Borg  
**Planet:** Various

**Extreme caution should be used in the presence of the Borg. Use your weapons sparingly as they can adapt to them quite fast, rendering them useless.**



**Species:** Boslic  
**Planet:** Unknown



**Species:** Breen  
**Planet:** Breen



**Species:** Cardassian  
**Planet:** Cardassia Prime

This species threat index will undoubtedly change soon as the Federation is helping to rebuild Cardassia Prime after the Dominion War.



**Species:** Crystalline Entity  
**Planet:** Unknown

One entity was destroyed in 2368. It is unknown if there more.



**Species:** Devidian  
**Planet:** Devida II

These species are known to have time travel capabilities.



**Species:** Ellora  
**Planet:** Unknown



**Species:** Etanian  
**Planet:** Unknown



**Species:** Excalbian  
**Planet:** Excalbia



**Species:** Changeling  
**Planet:** Unknown

This species was the founder of the Dominion. They can change shape at will. Blood screenings should be used if Changeling infiltration is suspected.



**Species:** Ferengi  
**Planet:** Ferenginar

This species is listed here since there have been some encounters with Ferengi where Federation ships have been captured.



**Species:** Gorn  
**Planet:** Unknown



**Species:** Hirogen  
**Planet:** Unknown



**Species:** Hunter  
**Planet:** Unknown



**Species:** Jem'Hadar  
**Planet:** None

This genetically engineered species acts as the troops for the Dominion. They are addicted to Ketracel White.



**Species:** Kazon  
**Planet:** Various



**Species:** Krenim  
**Planet:** Unknown

This species has developed chroniton-based weapons.



**Species:** Nausicaan  
**Planet:** Nausicaa



Female

**Species:** Orion  
**Planet:** Orion

Extreme care should be exercised in the presence of a Female Orion. Female Orion's secrete pheromones which make most humanoid males susceptible to suggestion.



Male

**Species:** Q  
**Plain of Existence:** Q Continuum

Q are a race of extradimensional beings. They are omnipotent and have almost limitless power. Extreme caution should be used in the presence of a Q.



**Species:** Romulan  
**Planet:** Romulus



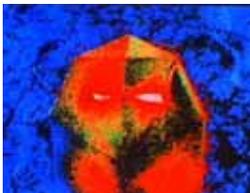
**Species:** Son'a  
**Planet:** Son'a Prime



**Species:** Suliban  
**Planet:** Unknown



**Species:** Tholian  
**Planet:** Tholia





**Species:** Vorta  
**Planet:** Unknown



**Species:** Xindi - Insectoid  
**Planet:** Xindus



**Species:** Xindi - Reptilian  
**Planet:** Xindus

## Governments

This sections deals with friendly and threat governments. Please note that this listing is not a complete one, but is designed ito give the marine a good base on which to build.

### Friendly Governments

The governments shown in this section are considered to be friendly. They are members of the Federation or have normal relations with the Federation and/or our allies.

	<b>Government:</b> United Federation of Planets
	<b>Government:</b> Bajoran
	<b>Government:</b> Trill
	<b>Government:</b> Aldean
	<b>Government:</b> Bolarus IX
	<b>Government:</b> Klingon Empire

	<p><b>Government:</b> Vulcan</p>
	<p><b>Government:</b> Andorian</p>
	<p><b>Government:</b> Risa</p>
	<p><b>Government:</b> Ocampa Stewardship</p>
	<p><b>Government:</b> Autonomous Province of Talax</p>

**Threat Governments**

The governments shown in this section are considered to be threats. These governments have either shown hostility towards the Federation or are known to have attacked Federation assets.

	<p><b>Government:</b> Dominion</p>
---	------------------------------------

	<p><b>Government:</b> Ferengi Alliance</p>
	<p><b>Government:</b> Borg Collective</p>
	<p><b>Government:</b> Cardassian Union</p>
	<p><b>Government:</b> Breen Confederacy</p>
	<p><b>Government:</b> Gorn Hegemony</p>
	<p><b>Government:</b> Kazon Collective</p>
	<p><b>Government:</b> Marquis</p>

	<p><b>Government:</b> Romulan Star Empire</p>
	<p><b>Government:</b> Son'a</p>
	<p><b>Government:</b> Tholian Assembly</p>
	<p><b>Government:</b> Vidiian Sodality</p>
	<p><b>Government:</b> The Nineteen Tribes of Hirogen</p>

## Military Symbols

This sections contains various military symbols of various friendly and unfriendly governments.

	<p><b>Military:</b> Bajoran Militia (2369-2378)</p>
	<p><b>Military:</b> Cardassian Guard</p>
	<p><b>Military:</b> Klingon Defense Force (c. 2374)</p>
	<p><b>Military:</b> Klingon Intelligence</p>
	<p><b>Military:</b> Romulan Tal'Shiar</p>
	<p><b>Military:</b> Reman Commando Corps</p>

**THIS PAGE  
INTENTIONALLY  
BLANK**

# APPENDICES

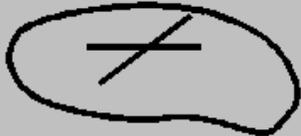


# APPENDIX A – Military Symbols

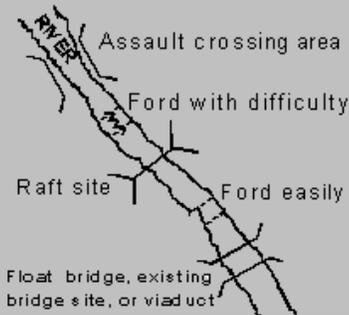
## General

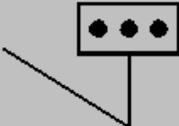
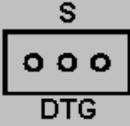
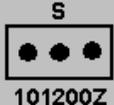
This section deals with some examples of the more commonly utilized graphics that are used to depict military units and/or topographical elements of importance. It is by no means complete but should give reasonable coverage of those aspects of general use in an SFMC environment. These graphics are used as overlays to any map or sketch to be used in either a field or a tactical command situation. These graphical representations are standardized for use throughout the Corps and are easily accessed in all field or command- post computer programs.

## COMMAND AND CONTROL

<p><b>Airfield Zone</b></p>	
<p><b>Checkpoint (CKP)</b> (Bottom point or an extension is exact location.)</p>	
<p><b>Contact Point</b></p>	
<p><b>Coordinating Point</b> (Center of symbol is exact location.)</p>	
<p><b>Decision Point</b></p>	
<p><b>General or Unspecified Point</b> (Bottom point or an extension is exact location.)</p>	

# MOBILITY AND SURVIVABILITY

<p><b>Crossing Sites/Water Crossings</b> Assault Crossing Area</p>	
<p>Bridge or Gap</p>	
<p>Ferry</p>	
<p>Ford/Ford Easy</p>	
<p>Ford Difficult</p>	
<p>Lane</p>	
<p>Raft Site</p>	
<p>Example Crossing Sites</p>	
<p><b>Engineer Regulating Point</b></p>	

<b>Minefields</b>	
Planned Minefield (Unspecified mines)	
Completed Minefield (Unspecified mines)	
Antipersonnel (AP) Minefield	
Antitank (AT) Minefield with Gap (Show effective time and name of gap.)	
Antitank (AT) Minefield (Line points to center of mass of minefield)	
Scatterable Minefield (Unspecified mines) with Self-Destruct Date-Time Group	
Antipersonnel (AP) Minefield Reinforced with Scatterable with Self-Destruct Date-Time Group	
Scatterable Minefield (Antitank mines) with Self-Destruct Date-Time Group	

## UNIT SIZE & INSTALLATION INDICATORS

Size Indicator	Meaning
■	Installation
∅	Team/Crew
●	Squad
●●	Section
●●●	Platoon/Detachment
I	Company/Battery/Troop
I I	Battalion/Squadron
I I I	Regiment/Group
X	Brigade
X X	Division
X X X	Corps
X X X X	Army
X X X X X	Army Group/Front
X X X X X X	Region

## UNIT ABBREVIATIONS

Long Name	Abbreviation
Air Assault	AASLT
Airborne	ABN
Armored Cavalry Regiment	ACR
Armored Division	AD
Cavalry Division	CAV
Infantry Division	ID
Light Infantry Division	ID(L)
Mechanized Battalion or TF	MECH
Mechanized Infantry Division	ID(M)
Mountain	MTN
Separate Armored Brigade	SAB
Separate Infantry Brigade	SIB
Separate Infantry Brigade (Light)	SIB(L)
Separate Infantry Brigade (Mechanized)	SIB(M)

## SYMBOLS FOR THE GROUND ENVIRONMENT

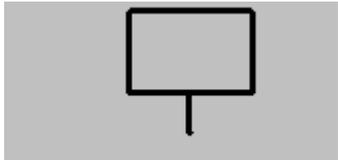
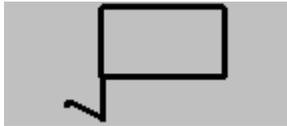
Situation maps and overlays provide a rapid and easily understood means by which a commander or staff may express an operational plan, concept, or friendly or enemy situation. The combination of unit and weapon symbols with objectives, boundaries, routes of march, and other control measures creates an indispensable tool for quickly and accurately portraying battle activity. Standardization of techniques is essential if tactical information is to be relayed without misunderstanding.

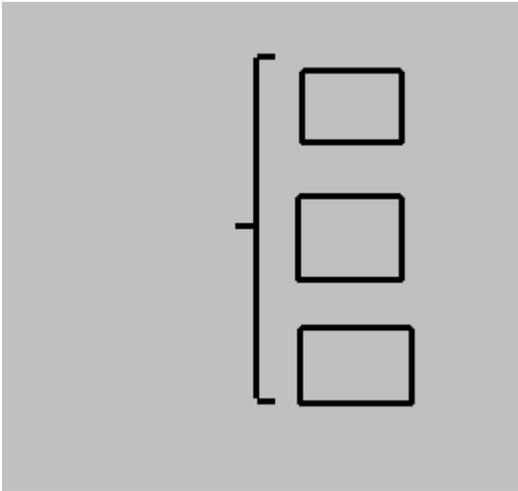
### Present and Proposed Locations

Basic unit and installation symbols are drawn with either solid or broken lines. The center of mass of the symbol indicates the general vicinity of the center of mass of the unit. If a staff is added to identify a headquarters, the base of the staff indicates the precise location of the headquarters.

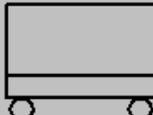
A solid line symbol represents a present or actual location.	
A broken line symbol indicates a future or projected location.	

**Precise Locations** To indicate locations more precisely, the following methods are employed.

Basic symbols other than the headquarters symbol (for example, points) may be placed on a staff which is extended or bent. The end of the staff indicates the precise location.	
Since the headquarters symbol already includes a staff, this staff may be extended or bent. The end of the staff, or extension (if used), indicates the exact location of the headquarters.	

<p>If several headquarters are at one location, more than one headquarters symbol can be on a single staff.</p>	
<p>If a group of units or installations other than a headquarters is at one location, the grouping of symbols may be enclosed with a bracket and the exact location indicated with a staff.</p>	

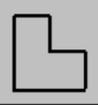
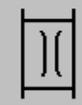
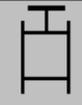
**COMBAT SERVICE SUPPORT**  
**Multifunctional Combat Service Support**

<p><b>Echelons Above Corps Combat Service Support</b></p>	
<p><b>Corps Level Combat Service Support</b></p>	
<p><b>Supply</b></p>	
<p><b>Supply Trains</b></p>	

## TYPES OF GROUND EQUIPMENT

	LIGHT	MEDIUM	HEAVY
Laser			
Howitzer			
Mortar			
Multibarrel Rocket Launcher			
Surface-to-Surface Missiles			
Flame Thrower			
Non-Line-of-Sight Antitank Missile			
Smoke Generator			
Tank (friendly)			

**VEHICLE SYMBOLS**

Infantry Fighting Vehicle	
Armored Personnel Carrier	
Cargo or Personnel Carrier	
Train Engine/Locomotive	
Armored Combat Earthmover (ACE)	
Armored Vehicle Launched Bridge (AVLB)	
Hovercraft	
Armored Vehicle Mounted MICLIC (AVLM) Trailer-mounted MICLIC	
Tractor, Full-tracked Low-speed (dozer)	
Armored Carrier with Volcano Truck-mounted Volcano	

**THIS PAGE  
INTENTIONALLY  
BLANK**

## About the SFMC Academy

The Starfleet Marine Corps Academy was established by Commander Starfleet in 2164 when it was determined that Starfleet Academy could no longer adequately meet the needs of both services. The historical home of the United States' Navy and Marine Corps academies, Annapolis, was selected as the new home of the SFMCA. The head of the Academy, known as DCO-Academy, TRACOM, is still headquartered at the main campus in Annapolis. The motto of the SFMCA is "Facta Non Verba" or, in Federation Standard, "Deeds not Words." This is reflected in the more informal academy slogan, "We lead by example... whether we mean to or not." The DCO-Academy, TRACOM reports to the Commanding Officer of the Training Command (COTRACOM) who, in addition to the SFMCA, oversees branch schools, enlisted personnel training, advanced technical schools, and periodic skill re-fresher courses. Most of these courses are held either at one of the SFMCA facilities, or at one of the many training facilities in the New Valley Forge system which is home to TRACOM. These facilities, together with an Oberth-class spacedock serving as TRACOM headquarters, comprise Station Valley Forge. Today, the SFMCA consists of 5 campuses, 8 training worlds, and 42 ranges and field courses throughout the UFP. Together with Station Valley Forge, the SFMCA comprises one of the largest and most advanced military training organizations in the known universe.

