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MARITIME OPERATIONS BRANCH MANUAL





STARFLEET MARINE CORPS

Maritime Operations Manual

2006 Edition



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Part 1 - Introduction

Welcome Aboard!

Welcome to the Maritime Operations Branch Guidebook of the STARFLEET Marine Corps (SFMC). This publication is intended primarily for members of the SFMC, which is a component of STARFLEET, The International Star Trek Fan Association, Inc. (SFI). However, anyone with an interest in our part of the Star Trek universe is invited to look and learn. This manual serves as a handy reference work for members of the Maritime Operations Branch, covering tactics, missions, and organization. It is a one-book source for the new member wherein they can get the information they need to role-play as a member of the Maritime Operations Branch. The majority of this work is obviously fictional in nature, but the references to uniforms and insignia of the SFMC are accurate.

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Pronoun Disclaimer

The use of "he, his, him," etc., and in particular the term "man" as in "crew-man", are used for convenience as the standard English-language convention for unknowngender pronouns. Not very politically correct, perhaps, but grammatical...and a lot less awkward than "crewpersons". The point is, we don't mean anything by it.

Acknowledgments

The author of this manual would like to thank all those who put their time in effort into the first publication of this manual. I would also like to thank Sean Niemeyer for his help in producing this version.

Reporting Authority

The governing authority for the Maritime Operations Branch information is the Commanding Officer, Training Command (COTRACOM). Send questions, comments, or suggestion concerning Maritime Operations to: **cotracom@sfisfmc.org** - MO Manual

Part 2 - Story: Sail Ho!

The Armored Column had been chasing the Breen bandits across the surface of Ackbarh IV for two weeks, and the Commander knew he finally had them cornered on the peninsula's tip. The Breen's anti-air capability had kept the supporting aerospace units from observing, delaying or even attacking the Breen. The Colonel smiled as his lead Patton came over the last hill before the coastal plain. Finally, the Breen would be captured or eliminated. As the Colonel looks through the big eye binoculars his smile slowly disappeared, on the plain, at the docks, in the streets of the small coastal town, there was nothing.

300 Breen raiders and their vehicles, equipment and all of the stolen property was gone. The Colonel immediately called for the accompanying aerospace units to launch a recon drone. Within seconds the drone rose high enough over the horizon to begin transmitting images from out at sea, and then was blinded and destroyed by a Breen energy weapon. But for those few seconds the images showed what the Colonel feared, the Breen were sailing across the ocean and with their defenses, they could escape to another continent to begin their rampaging once again. More unnecessary death and destruction and nothing the Marines could do to stop them. The Colonel's grip on the big eyes tightened so hard, that the glass began to distort under the pressure of his Power Armor glove.

"Darn it, we are Marines, we should be able to operate on the water as well as the land and the air, when did we lose our Anchors?"

"Colonel there is a transmission on Frequency 65.2, someone named Colonel Mazach, wants to talk to you," came the call from the radio operator in the lead vehicle.

"Colonel Myers here, go ahead Colonel Mazach"

Myers turns his head as he hears a loud buzzing coming from his right around the point.

"Myers, could you boys use some assistance," and with that, 24 Large Hover-like Vehicles come into view. "515th Marine Maritime Operations Flotilla, reinforced, at your service sir"

Colonel Myers looks down at the vessels as they come alongside the piers in the town, several of the ships looked like major gun platforms, while others are obviously built to transport the armored vehicles of Armor Branch. In addition were two aerospace platform ships, and a couple of tanker/supply ships.

"Mazach, who the hell are you guys," asked the bewildered armor Colonel.

"Myers, you are on a planet with 78% of the surface covered with water, you think we took the Maritime out of Marine when we went into space? Get aboard, and lets go catch us some Breen."

Myers' tank rolls aboard the first transport, and as he jumps down, a large Marine wearing a dark blue coat and a branch device of a single fouled anchor then meets him.

"Welcome aboard Myers, Colonel Mazach - Maritime Branch formerly Aerospace, you are on board the USS Ardennes, my command vessel, ready to go hunting?"

Colonel Myers starts to smile again, and this time the teeth look like fangs, a wolfish grin that is duplicated on the face of his sea going counterpart "Let's go!" As the ships turn into the wind and accelerate over the horizon, clamshell doors close over the decks of the ships and they begin to submerge so that only about a meter of freeboard remains above the water, and The Tiger Shark flotilla is on its way.

Part 3 – History and Traditions

History of the Maritime Branch

Earth History:

Almost from the beginning of Human Civilization, mankind has taken to the sea. First as fishermen then as merchants, and finally as warriors. The first ships, were mere rafts with sails, but quickly as the need to protect the merchants from pirates grew, warships designed to protect them came about, galleys with increasing banks of rowers transported ancient Greek, Persian, Chinese, Indian, and Polynesian warriors across the seas and oceans of Earth. From ramming tactics, to catapults and archers, the ancient sea battles were merely extensions of the battles on ground. Then came gunpowder, and the battles became more distant, as longer and larger guns, led the ships to fight each other at greater and greater distances. Add in steam propulsion of the Terran 19th century, and then metal cladding and then simple metal ships, and we had the warships that are still recognizable today. Other innovations were Naval Aircraft, and Submarines and missiles. Suddenly in the middle of the 20th Century, naval warfare consisted of combatant vessels, which often never saw each other except on radar screens, and satellite camera monitors. Along this whole route, the Navy's of Earth carried Marines or Naval Infantry, some nation's having a better-developed Marine Force concept than others, the United States and Great Britain the prime example. By the mid 21st and even up to the beginning of World War Three, the United States enjoyed great supremacy in Blue Ocean power, and was able to project power unto the coasts and several hundred miles inland all over the globe, through Aviation, Missile, and Marine Corps assets.

Andorian History:

Andoria is the eighth of nine worlds that circle the Epsilon Indi star. Andoria is a Class M planet, something bigger than Earth, and shows a blue-green color when seen from space. It's the home planet of the Andorian race. Andoria is a dry world, compared with others Federation worlds, due to have 92% of its surface covered by land. The popular name in Andorian language is *Fesoan*. During this period, the settlements were based in regions with natural water. Since Andoria does not have oceans, like Earth or Tellar, settlements were located in river's coast and oasis, both of them exists in a big amount over the planet. The climate and food in the North and South were more difficult to deal than in the Center, but they developed quite effective agricultural techniques and hunting. It is a not so documented period, of course, but there are quite a lot of tracks found in historic research. Andorian culture is then divided into the "Coastal" and the "Inland" races. Those who live in coastal cities constitute about 60% of the total population, and have been the centers of technological development. Because of the much smaller water area of the planet, the Andorians developed a tradition of Riverine craft over the centuries, and instead of direct fire guns that can be fired over long ballistic trajectories, instead early developed indirect missile weapons, which is still a tradition of Andorian spacecraft today. Submarines were virtually unheard of in the Andorian naval tradition, but ramjet powered aircraft came much earlier than on Earth.

Tellarite History:

The naval history of Tellar is quite similar to that of Earth. With a planet that is 70% covered with water, and a race that is very belligerent and prone to confrontation, the seas became a perfect staging ground for their conflicts. Sudden advances were not a key part of Tellar conflict, but steady and continual improvements in the engineering and design of their ships was their trademark. Their submarine technology and their use of submersibles for all types of vessels: combatants, amphibious, and merchant shipping, was a direct outgrowth of the intense atmospheric storms and continual lightning strikes through their coastal areas. Their ability to withstand the cramped confines of early submersibles was offset by their seeming enjoyment to argue on endlessly with each other, or any others who will listen. These skills as engineers are valued in the SFMC maritime branch just as it is in Starfleet Engineering.

Vulcan History:

The naval history of Vulcan is even less impressive than that of Andoria. A dry planet, with virtually no standing water outside of rivers fed by the polar ice caps, the Vulcan physiology is highly evolved for such a climate. But it did not create a naval tradition. The result of this for their spacecraft was an intriguing diversion from the tradition of other races with an aquatic naval tradition. Spacecraft were not built along streamlined designs, but rather much more utilitarian and sometimes aesthetic plans.

Early Federation History:

Following the formation of the Federation, Maritime Forces like traditional Marine Forces were handled in a very ad hoc manner. When needed, Starfleet would recruit planetary maritime units in whole from constituent member militaries, transporting them to the battle zone as needed, and then returning them when the particular need ceased to exist. Following the Four Year war with the Klingon Empire, it was decided that the time had come for a dedicate Starfleet Marine Corps, but Maritime forces were neglected, and those responsibilities were handled by the Corps, the Fleet, by whatever aerospace assets were available. This overhead focus and bias of the maritime operations proved a hindrance when dealing with aquatic combat situations, but very few in Starfleet could see an immediate answer to the problem. Until 2305 when the Military Liaison from the planet of Argo, was conversing with this counterpart in the SFMC, at Starfleet Headquarters. Argo a planet with both a sentient species with both Water Breathing and Air Breathing individuals had long had a naval tradition considering their planet, species, and climate. Admiral Rila of Argo suggested that Starfleet or the SFMC, form a Maritime branch, similar to the Armor Branch, that would fill this gap, and provide the SFMC with a standing naval force, and further suggested that specialized Starfleet Vessels be equipped to carry these vessels to whatever battle zone the Federation may need them to go to, instead of trying to shoe horn one planets warship onto a Federation freighter never designed for such a load. The Marine Officer, later General and Commandant LouJaye McPhereson championed the idea to his superiors in the SFMC, and on January 1st, 2312, the first Maritime Branch under command of Colonel Samuel Morrison was formed. Ever since the SFMC has maintained a limited but well equipped and trained Maritime Branch with eighteen strike groups/flotillas, these are formed into six squadrons, and these into two fleets under the command of experienced Generals of the Starfleet Marines.

Traditions of the Maritime Branch

The Maritime Motto: "Before the Mast":

From the beginning of the age of sail, young sailors have stood before the mast, to receive their education at sea, to receive their pay, to receive their honors, and to receive punishment. It is the mast of the ship that held the sails, which allowed the ships the freedom to move across the vast oceans of many of the Federation's planets. Main Mast, Mizzen, Jib, Royals and Tops. "Before the Mast" where the Sailor of yore and the Maritime Marine of today belong.

The Maritime Slogan: "Anchors Away":

Since the dawn of naval operations, "Anchors Away" was the call that the fleet was underway and on it way to the next destination and often the next battle. It is a simple saying that denotes the readiness of the Maritime Branch to get underway at a moment's notice. More than the Armor or Mecha Branches, Maritime Branch can move its gigantic fortified vessels across vast expanses of a planet without ever leaving the atmosphere. Above, on, or under the sea the Maritime Branch is Away.

The Maritime Device: "The Fouled Anchor"

The decision to use the Fouled Anchor for the SFMC-Maritime Branch was almost immediately unanimous. It is the Anchor in the SFMC logo that reminds the Corps of their Naval and Maritime heritage. They are not soldiers who cross far away lands to get to the battle, but Marines. Marines rode ships, and to signify this, they have worn the fouled anchor in some incarnation or another, to signify this. Thus it was only fitting that the Maritime Branch straighten the anchor vertical, like the navies of old, and adopt it as their device.

The Pea Coat

Defined as a short, warm, double-breasted coat of heavy wool, worn especially by sailors. The Pea Coat or Pea Jacket goes so much further than that in being THE thing that sets sailors apart from landlubbers. Any who spend from Dusk to Dawn walking watch on the deck of a sea going vessel, will know why the Pea Coat is an essential part of any Maritime Marine's gear issue. From the over sized buttons to the large collars, everything about the Pea Coat echoes the call of the sea for those who have once heard its siren's song.

Tattoos

Members of the Maritime Branch often received distinctive Body Art markings, ranging from mermaids, and likenesses of their ships, to birds and hearts. Members of distinct units would often get the same tattoo, and some units even went so far as adding on to their tattoos, additional art denoting each combat operation.

The Ball cap

As late as the latter half of the 22nd century, Fleet Crews in Starfleet would wear the Ball cap with their ship's name embroidered on them, this tradition bought back by the Maritime Branch, as each Vessel's crew wearing a distinctive Navy Blue Ball Cap, with lettering and insignia of the vessel, and rank insignia in gold for officers, and silver for enlisted personnel.

The Sextant

Every vessel in the SFMC – Maritime Branch has a ship's working sextant on the Bridge at the Navigator's Station, though long obsolete by today's standard, every Navigator and Officer of the Deck qualified officer, knows how to navigate by celestial means. The Sextant like the Binnacle is kept polished to a glow, as a matter of pride by the vessels bridge crew.



The Cutlass

While in full dress uniform, swords can be authorized by local commanders. The SFMC officer sword and SFMC NCO sword are the normally prescribed accessories. However, Maritime officers and NCOs carry a traditional curved cutlass when in full dress.

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Part 4 – Organization Since the Maritime Operations Branch operates and has a mission profile that is

Since the Maritime Operations Branch operates and has a mission profile that is similar to the ancient sea going navies found on Earth and other planets with large bodies of water, organizationally it is unlike any other branch in the STARFLEET Marine Corps. An ancient sailor would have no trouble recognizing the structure, fields of service, or even the duties performed by members of the Maritime Operations Branch.

Unit Organization

Instead of the familiar structure used by most of the Corps, the Maritime Operations Branch uses a unit organizational structure that closely resembles that of Starfleet forces and those of ancient large navies of Earth. Below is a complete breakdown of the units, listed in order from smallest unit to largest unit, which are currently in use.

- **Ship/Vessel:** This is the smallest unit in the Maritime Operations Branch. Each ship/vessel has five (5) to seven (7) departments with four (4) to twenty (20) marines in each. Therefore a ship/vessel can have a total crew compliment ranging anywhere from twenty (20) to one hundred-forty (140) marines. But it is more common for the range to go from twelve (12) for small coastal patrol craft upwards of one hundred-fifty (150) on the larger carriers capable of carrying twelve (12) to twenty-four (24) aerospace craft. These numbers are a fraction of crews that were needed on ships/vessels of the 20th to 22nd centuries. Since then there have been advances in automation, especially in the Engineering Spaces, that have reduced the number of crew needed to maintain and operate the ships/vessels.Each ship/vessel has a command department staffed with the Commanding Officer, Executive Officer, Chief of the Boat, and the command security detail. In addition each vessel has Deck, Engineering, Weapons, and Services departments. Some vessels also have an Aviation Department (Carriers), and/or a Logistics Department (Supply Ships).
- **Flotilla:** A flotilla is composed of two or more ships: these can be destroyers, submarines, mine-sweepers, corvettes or light patrol craft. In the case of destroyers, a flotilla has a rigid structure. For example there are nine vessels in the flotilla, which are divided into two divisions of four, with another vessel leading. The divisions are further divided into two sub-divisions of two vessels. There is no fixed organization for flotillas of the smaller vessels. In the case of three or more vessels, they can also be divided into divisions and sub-divisions. A flotilla is usually commanded by a Colonel, and a division by a Lt. Colonel. Destroyers and submarines are usually commanded by a Major, and smaller vessels by Marine Captains. Flotillas fulfill the role of the traditional Marine Strike Group for Maritime Operations and are often deployed through the vast distances of the Federation as a unified MSG as well as Flotilla commande.
- Squadron: A naval squadron is composed of two or more capital ships. Capital ships are large powerful vessels, such as battleships, cruisers or aircraft carriers, each of which is usually commanded by a Colonel. Squadrons of more than three ships are generally organized into smaller units known as divisions and sub-divisions. Squadrons can be commanded, depending upon its size, by a Brigadier General, Major General or Lieutenant General.

A squadrons name usually takes the form of an abbreviation of the Vessel Class or type followed by "Ron" then followed by the number of the squadron.

For example Destroyer squadron 42 would be named "DesRon 42".

- **Task Force/Group:** A task force, or task group, is a number of ships grouped to carry out a specific task such as the escort of a convoy or the protection of an aircraft carrier. There is no set structure for a task force and the number and type of vessels allocated depends upon the tasks the group is expected to carry out. A task force is usually identified by a number. For example Task Force 44, which served in the Pacific Ocean during the Second World War (Terran years 1949 to 1945) on Earth, consisted of the Australian cruisers HMAS Australia, Canberra, Hobart, and two United States Navy ships, the destroyer USS Perkins and the cruiser USS Chicago. A task force is usually commanded by a Brigadier General or a Major General.
- **Fleet:** A fleet is the largest naval structure and the largest administrative unit of the Maritime Branch and would usually contain a number of squadrons, flotillas and/or task forces. A Fleets structure is flexible and depends on the tasks it is expected to carry out. Often a fleet is organized to work in a specific geographic area, such as the Pacific and Atlantic Oceans on Earth. Fleets are commanded by either Brigadier Generals or higher and are considered Flag Commands.

Fields of Service

Marine Occupational Specialties, or ratings as they are known in Maritime Operations, are arranged into four (4) different groupings known as Fields of Service. Ratings are grouped into each Field of Service based on the specific role that each Marine fulfills on each vessel and how they relate to the overall MO mission. Each Field of Service also has an emblem associated with it. While there are many emblems that have been used for countless centuries by various races through out the galaxy, all the emblems used by Maritime Operations are based on ancient Earth Naval emblems. The exact reason for this is unknown and has been lost to time, but it has been speculated that since humans played a large part in the creation of Starfleet and the SFMC, those organizations brought over emblems that were in use on Earth when they were created.



Deck:

Simply put the Deck Field of Service is comprised of all ratings that deal with the non-engineering aspects of operating a vessel.

These specialties deal with getting the vessel from port to sea and back again. One would find Boatswain's Mates, Quartermasters, Signalmen, Communications Techs, Data Techs as well as a myriad of other such specialties in this field.

The Quartermaster's Wheel, an ageold Earth symbol of controlling the destiny of a vessel while underway is this Field's emblem.

Note: A Quartermaster in Maritime Operations performs a much different function than that of their landbased brethren. A MO quartermaster steers a vessel while the traditional SFMC Quartermaster based on land is responsible for the food, clothing, and equipment of the troops. But to make matters even more confusing a quartermaster in MO is usually an enlisted person while the land-based quartermaster is a commissioned officer.





Weapons:

All ratings dealing with the offensive and defensive weaponry of a vessel can be found in this Field.

One would find Gunner's Mates, Torpedo Mates, Fire Control Technicians, Sensor Techs, Phaser Specialists, as well as those specialties involving the maintenance and repair of related equipment in this Field.

A pair of ancient crossed Earth cannons is this Field's emblem.

Engineering:

All ratings dealing with propulsion, power, hull, and other systems that are not weapons related are found in this Field.

A stylized steam turbine, an ancient form of propulsion on Earth, is this Field's emblem.



Services:

Ratings not dealing with Deck, Weapons or Engineering fall into this Field. In fact the entire support arm of Maritime Operations is contained in this Field.

One would find Mess Cooks, Barbers, Clerks and Medics in this Field.

A two-dimensional Pyramid that is divided into three sections is this Field's emblem. This represents the fact that the Services Field holds the rest of the Maritime Operations Fields together. MO Manual



Inside the Marine Strike Group (Maritime): 515th Marine Maritime Operations Flotilla – "The Tigersharks"

"The Tigersharks", the 515th Marine Strike Group is larger than most Marine Strike Groups in that it is comprised of eight vessels; an attack submarine and seven surface vessels. All the surface vessels in the 515th are hover capable and are also semisubmersible. This duality makes the 515th special in terms of Maritime Operations, allowing both great speed and stealth. In fact the fastest surface vessel in the 515th when on its sail can go 200 knots and

when in semi-submerged mode the tallest vessel is only 1.4 meters above the surface of the water. When deployed the 515th often operates with the **571**st **and 581**st **MSGs, both of which are Amphibious Warfare flotillas.**



Legend:

A – Command and Control Ship
B – Arsenal Ships
C – Remotely Piloted
Vehicle (RPV) Carrier
D – Submarine
E – Supply and Support Ship

The diagram to the left depicts the 515th as it is underway in a battle formation.

Fig 1.1

The 515th normally consists of; one Command and Control Ship (A), three Arsenal Ships (B), two RVP Carriers (C), one Submarine (D), and one Supply and Support Ship (E). While cruising in battle formation the flotilla is arranged as depicted in Figure 1.1.

The Command and Control Ship (A) is placed at the center of flotilla. The C&C ship is equipped with massive amounts of communications gear and anti-jamming gear. This enables the flotilla command to maintain combat awareness as well as issue commands to the vessels in the flotilla. C&C ships generally do not carry any offensive weaponry and this is the case with the 515th's C&C ship. The only weaponry that C&C ships normally carry are defensive in nature this is in addition to being equipped with additional shielding. This additional shielding increases the survivability of multiple direct hits, thus allowing the MSG to remain an effective fighting force even in the fiercest of battles.

Arsenal Ships (B) are placed in such a way that they act as effective buffers to the other vessels in the flotilla. Arsenal Ships also serve as the flotillas direct and missile fire platforms. Each Arsenal Ship is heavily outfitted with offensive weaponry which includes multiple Vertical Launch System (VLS) launchers and multiple Phased Array Beam Weapon Mounts.

Remotely Piloted Vehicle (RVP) Carriers (C) are placed to directly protect the C&C ship. Each of these carriers can carry 24 to 72 Remotely Piloted Vehicles which are armed with energy weapon and missile packs. Each of these RVPs is controlled from the relative safety of the carrier. The Pilot sitting in a control chair can instantly control multiple RPVs and their weapons systems to engage in dogfights, ground attacks, or deliver strategic packages.

An Attack Submarine (D) placed ahead of the flotilla by 3 to 10 kilometers acts as a scout and the flotilla's first line of defense.

The last ship is the Supply and Support Ship (E). This ship carries the flotilla's additional ammunition, food and other perishable supplies as well as fuel for the vessels and RPVs. This vessels underway replenishment capability utilizing transporters, aerospace craft and lines make this ship extremely valuable and extends the range and endurance of the flotilla.

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Part 5 – Ratings

Ratings in the Maritime Operations Branch are equivalent to what the land-based forces call Marine Occupational Specialties (*Please note that another term in use, rate, refers to an individuals rank. Great care should be taken as not to confuse or misuse the two terms.*). For a complete listing of all ratings in the Maritime Operations Branch and their required courses please see the SFMC MOS Manual and/or the Maritime Operations MOS Supplement.

Part 6 – Equipment For a listing of the current equipment and vessels used in the Maritime Operations

For a listing of the current equipment and vessels used in the Maritime Operations Branch, please see the SFMC Arms & Equipment Manual and the Maritime Operations Arms & Equipment Supplement (if applicable).

Part 7 – Tactics

Surface Vessels

Cat and Mouse in the 24th Century

Due to the immense firepower of the vessels concerned, ocean going combat become a huge game of hide and seek, with days upon days of maneuver and deception, finally culminating with a few minutes of deadly combat, that leave one or both sides devastated. The idea is to hit the enemy first, and if possible without them knowing where the incoming fire came from. With energy weapons it is nearly impossible to prevent counter battery fire from pinpointing where your ship is, so by necessity most ship-to-ship combat starts with long range and extreme over the horizon missile or RPV attacks. The major combatants arsenal ships, thus become the capital ships of the surface battle, with the phaser projector mounted ships, acting as their escorts and protectors. Working in tandem, long range scans; satellite imagery and other intelligence will determine where the enemy is located. This will be followed by firing of a first salvo of missiles in either Ballistic or Wave Skimming trajectories, or the flotilla will guickly move to another location thus preventing random counter battery fire from striking their location. Missiles fired on a Ballistic Trajectory are easier to detect, and to shoot down, but provide the firing ships more opportunity to misdirect from whence they were fired. Wave Skimming missiles are harder to detect and also harder to shoot down, but generally must be fired from closer range and thus easier to track back to there firing ship.

One-Two Punch

Power Projection Ships and their RPV attack craft, come into their own, in the surface battle. With their lightweight, long endurance, and extended combat reach with either munitions or beam weapons (or sometimes both), the RPVs can take the battle to the enemy flotilla extending the reach and effectiveness of the flotilla thousands of kilometers away from the ships themselves. Standard tactical doctrine as the RPVs working in conjunction with the Arsenal Ships, working in tandem waves to wear down the enemy and either affect a surrender or destruction. The RPVs will first act as scouts, discovering and pinpointing the enemy, often acting as a laser pointer for the Arsenal to fire their first missile salvo on an indirect course. The first wave of RPVs will often be sacrificed to decoy the anti-missile defenses of the enemy ships, so that the first missile salvo will have maximum effectiveness. The second wave of RPVs consisting of attack craft will then proceed on their attack run, dropping sub-munitions, or conducting pinpoint attacks with their beam weapons. This wave will be attacking an alerted but often-dazed enemy, and losses of vehicles usually reach 50%, but their pinpoint attacks can be counted on to finish the destruction on any inherent anti-missile defenses. Thus the second salvo of missiles fired from the arsenal ships will be able to effect even more devastating damages than the first. This is usually enough to wipe out resistance and lead to surrender of the enemy. This back and forth can happen up to four times before both the Arsenal Ships and the RPVs need to be replenished.

From the Shores of

Amphibious warfare tactics are essentially unchanged since US Marines first took the beaches on Guadalcanal, and the US Army Rangers landed in Normandy. Offshore bombardment of coastal defenses begins hours to days ahead of the actual landing, while special operations units swim ashore before and during the bombardments and set demolitions to clear avenues of approach through any obstacles and barriers emplaced along those landing areas. Aerospace transports will carry strike teams behind the front lines to cause confusion, and to seize

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important communications and transportation centers. Actual LCAC landing craft will carry marines and armored vehicles onto the beach, following close behind an advancing curtain of mortar fire from the amphibious vessels that will screen their exact position from the beach defenders until the LCAC lands right on their doorstep. As the infantry and armor marines deploy off these vessels, the LCAC will return to the Amphibious transport for more reinforcements, while the Marines on the Beach set up transport bomb inhibitors to protect the forces on the beach as they battle to set up a beachhead and corridors of advance up off those beaches.

Semi-Submersible Vessels

You can't strike back what you can't see

The semi-submersible vessel concept and accompanying tactics were created to ensure a more effective maritime fighting force for the 24th century, and was devised to foster innovative ways to employ new and emerging technologies in support of four tactical/operational concepts; dominant maneuver, precision engagement, full dimensional protection, and focused logistics. The semi-submersible arsenal ship measures up well with this plan for the future Dominant Maneuver being the multidimensional application of information, engagement, and mobility capabilities to position and employ widely dispersed joint air, land, sea, and space forces to accomplish the assigned operational tasks.". This concept matures the process of maneuver warfare, emphasizing the need for forces capable of "conducting sustained and synchronized operations from dispersed locations.

The semi-submersible arsenal ship provides the Maritime Branch Commander (MBC) with a powerful tool to support the land force's scheme of dominant maneuver through close support and interdiction weapons. It can be particularly effective as an instrument of asymmetric leverage against an enemy with little or no maritime capability. This allows massing fires through rapid targeting and near simultaneous engagements with "massive" amounts of "ordnance on target." The huge initial punch provided by the arsenal ship will allow the MBC to gain an immediate offensive advantage and continue to exercise the initiative through maneuver and synchronization.

The preponderance of weapons contained in the arsenal ship will also free other naval combatants to conduct other vital missions within the force, making the most efficient use of available forces. Dispersal of forces is a key consideration for dominant maneuver, however in the sense that the arsenal ship consolidates many weapons into one platform, it opposes the movement toward dispersal. This will reduce flexibility somewhat and make the arsenal ship a primary and perhaps vulnerable target for enemy forces. However, in the sense that the arsenal ship provides an additional platform for large-scale precision fires, interdiction, and close support, missions normally conducted by land and air forces, the ship may actually enhance dispersal of those forces. In order to overcome the inherent bulk of the platform, the MBC should employ methods to disperse the arsenal ship within the theater on a continual basis.

Maneuver, stealth, and synchronization with land and air forces can make the arsenal ship a true "hit and run" platform, the semi-submersibility of the arsenal ship then, makes it even more of an elusive target, thus contributing to its tactical and operational capability. Precision Engagement by incorporating the latest technology in precision weapons, the arsenal ship will be a key element in the "system of systems." The ship possesses no targeting, command and control (C2), or battle damage assessment capabilities, so maximum use of joining with other

elements of the system is essential to successful employment. While this may be necessary for the initial deployment period of the arsenal ship, the full development and joint use of independent C2 must be pursued. C2 will allow air and land force commanders to target and launch arsenal ship weapons directly, eliminating the "middle man" platform.

Unity and efficiency of command is a principal issue for successful joint operations, particularly with regard to the arsenal ship, since it will support multiple component and functional commanders. This division of resources would allow the MBC to direct primary tasking, flexible enough for the rapid pace of future conflicts, while also providing a measure of decentralized execution necessary for efficient mission accomplishment. Full-Dimensional Protection and control of the battle space to ensure the forces can maintain freedom of action during deployment, maneuver and engagement, while providing multi-layered defenses for our forces and facilities at all levels. This concept emphasizes proactive measures, built on information superiority, to degrade the enemy's opportunity for offensive action. The arsenal ship can bring a large number of defensive weapons to a theater to enhance the protective posture of the joint force and shore facilities. While not contributing directly to information superiority, it can provide additional resources for the ground theatre commander to execute their defensive plans and also to pursue the destruction of enemy command and control targets.

The arsenal ship brings with it an added consideration for the MBC: how to protect such a valuable platform. The greatest weakness of the arsenal ship concept is the lack of robust active defense systems for such a large concentration of firepower. Although designed to enhance passive defense measures (stealth, double hull construction, etc.), the arsenal ship's value to the joint force, as well as its value as a primary target for enemy forces, will necessitate a high level of attention to its protection. Maritime Branch SOP states that a beam mount combatant will provide a defensive escort for the arsenal ship. In light of the maritime branches other commitments, said vessel and the projected number of combatant ships available, assigning a full time beam mount escort for the arsenal ship may not always be possible. The MBC must pursue additional defensive options.

Submarines could be used for surface and subsurface protection, and aerospace craft could provide additional air defense. Innovative methods of operational deception, high levels of maneuverability, best use of the ship's reduced signatures, and the inherent toughness of the platform must be continually assessed and combined to maximize protection. The arsenal ship will be one of the most valuable platforms in the joint force, and its protection must be a high priority at all levels of command. Focused Logistics and the fusion of information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while enroute, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level[s] of operations.

The arsenal ship could reduce the logistics requirements during a regional contingency conflict. As detailed in past reports, weapons of deployed arsenal ships could replace 2-3 days of aerospace deep strike and interdiction assets early in such a conflict. The release of an equivalent amount of space lift required to transport the associated aerospace support could be used for other vital needs. While realistically, the MBC would probably not forego an equivalent amount of aerospace firepower because of the presence of an arsenal ship or two, some craft could be directed to other targets or delayed in transport, lightening the early space lift requirements to some lesser degree.

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Later in the conflict, the arsenal ship moves closer to the land mass as air and sea control are achieved, and its close support and theater missile defense weapons could replace land-based weapons systems, further lightening the logistics load for their support. The key for the realization of any logistics savings will be in loading of the correct mix of weapons in the arsenal ship prior to deployment. Long term theater needs must be considered if the weapons brought to the theater will continue to meet the MBC's needs throughout the arsenal ship's deployment. The arsenal ship will also reduce the need for naval ammunition replenishment by traditional methods, because it will be able to transport, position, and fire additional weapons on the command of combatant forces that need them most. In fact, "the most efficient replenishment ship yet designed" could be the most accurate assessment of the arsenal ship's primary contribution to the joint force of the future.

Submersible Vessels

The Silent Service

In the five domains in which our military forces operate --- on land, in the air, on the sea, beneath the sea, and in space --- it is undersea operations that are the least visible. This makes these operations extraordinarily valuable. They offer the ultimate in stealth and surprise while influencing events in all five domains. Therefore, they can have the highest impact at the least risk. Unfortunately, because they are least visible and highly secretive in nature, these operations are least understood and most frequently undervalued.

What SFMC Maritime Branch Submarines can do

SFMC submarines perform numerous critical missions – many in ways that submarines are uniquely able to perform. Many missions are classified; however, general mission areas include the following.

1. Intelligence, Surveillance and Reconnaissance: Submarines provide the nation with a crucial intelligence gathering capability that cannot be replicated by other means. Employing multiple sensors and operated with care and cunning, submarines can monitor any event in the air, surface, or subsurface littoral domain providing a complete picture of an event across the full spectrum of intelligence disciplines. They are also intelligence "forcemultiplier" by providing tip-offs of high interest events to other collection assets. Submarines are able to monitor undersea events and phenomena not detectable by any other sensor. Since they are able to conduct extended operations in areas inaccessible to other platforms or systems, submarines can intercept signals of critical importance for monitoring international developments and enable a wide array of military operations. Furthermore, the ability to dwell covertly for extended periods defeats efforts to evade collection or deceive satellites and other sensors. The unique look angle provided by a submarine operating in the littoral region enables it to intercept high interest signal formats that are inaccessible to reconnaissance satellites or other collection platforms. The intelligence gleaned from submarine operations ranges from highly technical details of military platforms, command and control infrastructure, weapons systems and sensors to unique intelligence of great importance to national policymakers on potential adversaries' strategic and operational intentions. Significantly, our submarines can provide real time alertment of indications of imminent hostilities. And unlike other intelligence collection systems such as satellites, submarines are also full-fledged war fighting platforms carrying militarily significant offensive firepower.

- **2. Mine Warfare:** In both covert offensive mining and mine reconnaissance, submarines provide capabilities that no other platform can deliver. The submarine offensive mining capability allows national leaders to precisely place mines for maximum effect without enemy alertment and with minimal risk. Mine reconnaissance capability from submarine launched Unmanned Undersea Vehicles allows the submarine to covertly detect and report mine danger areas without risk to naval forces. As a result, potential adversaries have fewer clues indicating potential locations of expeditionary operations and military planners are better able to exploit the element of surprise.
- **3.** Landing Special Operations Forces: Submarines are an excellent means of clandestine insertion for special operations forces when operating in the littorals. The submarine's inherent stealth and endurance, as well as sophisticated communications equipment, sensors and navigation suites, enable covert, precise insertion of special operations forces close to their littoral objective, and provide a reliable means for their extraction once their tasks are accomplished.
- 4. Power Projection Conventional Land Attack: An attack submarine can carry a 24 to 48 land attack missile salvo ready for submerged launch, with from 72 up to 96 additional missiles that can be reloaded and fired while submerged. Additionally, because of their stealth, these attack submarines can be positioned to operate alone in environments where the risks would prevent surface and air forces from operating without extensive protective cover. Whatever an opponent's ability to deny access to, or preempt, a SFMC presence, it can use these weapons in only limited ways against submarines. First, it cannot reliably detect their presence. Second, submarines are not threatened by many of the existing or projected access denial weapons. Coastal cruise missiles, tactical ballistic missiles and weapons of mass destruction pose little or no threat to a well-operated submarine. Submarines carry organic mine detection systems allowing them to avoid previously undetected minefields. A credible attack capability against submarines could be developed only by substantial investment in an attack submarine force comparable to that deployed by the SFMC.
- **5. Control of the Seas:** Modern SFMC submarines, armed with significantly improved sensors and weapons, are vastly superior to their historical ancestors. They possess unsurpassed abilities to hunt and kill submarines and surface ships on the high seas and in the littorals. And, as trade follows the flag, the merchant shipping of our colonies, allies, and friends can conduct the trade on which their prosperity and security depend. Likewise, power projection logistical military capability can be counted on to flow when and where needed.
- **6. Survivable Strategic Deterrent**: Because of the invulnerability of submarines operated in the vast ocean areas, they provide the strategic deterrent more effectively and at less cost than other systems. Submarines excel at preparing and controlling the littoral battle space for joint expeditionary forces. Submarines greatly enhance Federation policymakers' understanding of enemy and terrorist force dispositions and operational doctrine before the outbreak of hostilities. Likewise they allow the ability to decisively engage and destroy key threats at minimal risk. Before a full surface battle group or amphibious ready group with nearly 10,000 marines has approached a high threat area, a submarine can have already detected, reported and destroyed major threats.

Part 8 – Underway Replenishment

Most Maritime Operations vessels are deployed for 6 months or longer after which they return to their homeports. At the time the vessels deploy they take on supplies at dockside, but usually it is only enough for several months of operation. This means that sometime during their deployment they need to have their supplies replenished. Now the crew could simply return to port and resupply but most of the time that is infeasible considering that it would necessitate many trips that would severely cut into their patrol time. This is where the Maritime Operations Auxiliary Support ships play out their role. For the support ships are the lifelines to those MO vessels that are deployed.

Auxiliary Support ships carry the extra supplies that the other vessels need and are there to resupply them with everything from foodstuffs to ammunition and fuel. The process by which the support ships resupply another vessel while at sea is called Underway replenishment or UNREP for short. Underway replenishment is a broad term applied to all methods of transferring fuel, munitions, supplies, and personnel from one ship to another while the vessels are underway. Currently there are two general methods of UNREP employed by Maritime Operations; connected (CONREP) and transporter (TRANSEP). These methods may be used singly or concurrently depending on the situation. Each method has its own distinct set of advantages and disadvantages. Before an UNREP can be started the situation must be taken into account and the proper method chosen.

Connected Replenishment (CONREP)



This is perhaps the oldest form of underway replenishment currently still in use. The earliest form of this method appeared on Earth in the year 1900 and was subsequently perfected by the United States Navy in the 1930's. This form of replenishment entails two or more ships steaming side-by-side with transfer hoses and lines used to transfer fuel, ammunition, supplies, and personnel strung between them.

Above: Connected underway replenishment taking place between three vessels on Earth in 1997.

Connected replenishment involves two processes; refueling and re-supply. In fueling at sea (FAS), fuel is pumped from the delivering ship such as a fast combat support ship (AOE). Other replenishment ships such as the combat stores ship (AFS) and the ammunition ship (AE) can deliver fuel, but their primary mission is the delivery of dry cargo by methods referred to replenishment at sea (RAS).

While the major advantage of this method is that it is easier to transfer fuel directly into the fuel tanks than using a transporter, there are several disadvantages too. Because the ships have to be in close proximity to each other there is a very real possibility of collision. Although this probability has been greatly reduced with the use of computers and autopilots the possibility of collision still exists so connected UNREPs are only conducted when the seas are calm. Another disadvantage is that because of the nature of this method all vessels involved have to travel slowly, this makes them very attractive targets to any enemy forces that happen to find them. But the biggest disadvantage is the lines used to transfer the items. Even with today's super strength materials it is still possible to snap a line, plus there is the difficulty in getting the line established. Shooting the line to the other ship takes skill.

It may appear that it would be easier to use TRANSEP and not even bother with CONREP and one would be right if TRANSREP was infallible. There will always be situations where CONREP will be preferred over TRANSREP. Most of the time it will be when the transporters cannot be used, such as when there is an active dampening field or use of the transporters could give away the fleets location. Do remember that transporters use large amounts of energy that can be detected. So knowing how to conduct a CONREP is vital to fleet operations. Below is the correct procedure for conducting a CONREP.

Conducting a CONREP

There are several factors in favor of replenishment with the ships alongside each other instead of astern. First, by replenishing alongside, the fueler or other auxiliary ship, can service two ships at once, with multiple replenishment stations to each ship. Second, by replenishing alongside rather than astern, the whole formation of ships can maintain greater speed (up to 16 knots instead of the 7-8 knot maximum for astern refueling). Third, by replenishing alongside, both fuel and dry cargo can be transferred, instead of being limited to fuel only. Astern fueling does have a place in the replenishment plan, but it is generally limited to a tanker in convoy refueling the convoy escorts. Underway replenishment techniques continue to advance with the introduction of new systems and equipment. STREAM stands for Standard Tensioned Replenishment Alongside Method and is utilized in both RAS and FAS evolutions. The STREAM rig is preferred over other connected replenishment methods as it permits greater ships separation.

When utilizing the STREAM rig for FAS operations a tensioned spanwire is suspended between the two ships. A series of hose saddles are attached to the spanwire by trolleys. The actual transfer hoses are then suspended in between the saddles. The receiving end of the hose rig is tipped with a coupling. A variety of fueling couplings may be used to ensure compatibility between the delivery and receiving ships. The most common is a probe-fueling coupling. The probe may be used in the transfer of either deuterium or tritium products. The probe itself has a latching mechanism that holds it in the receiver by spring force. The receiver is mounted on the receiving ship by a swivel arm. The swivel arm allows the receiver to move throughout the full working range of the receiving station, ensuring proper alignment prevents the probe from unseating. The probe assembly will unseat from the receiver when a 2,500 lb. line pull is applied. The receiver also has a manual release lever, which is the desired way to release the probe upon completion of the fuel transfer.

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Figure 571-3-1. Missile/Cargo STREAM Rig (All-Tensioned Wires)



Figure 571-2-1. Fuel STREAM Rig - Single Hose with Probe



Figure 571-2-2. Single Hose Fuel STREAM Rig with Probe

During RAS the STREAM transfer rig utilizes a tensioned wire highline suspended between two ships. The exact type of STREAM rig is dependent on the kind of cargo. In all rigs, cargo to be transferred is connected to a trolley, which rides on the highline. The trolley is moved between the ships by inhaul and outhaul winches located on the delivery ship. When using a STREAM rig with all tensioned wires, the wire rope outhaul is faired through a SURF (Standard Underway Replenishment Fixture) block and attached to the outboard side of the trolley. The SURF is located on the receiving ship. A ram tensioner, located on the delivery ship, applies highline tension ensuring constant load support regardless of ship separation or motion. However, if ship separation becomes too great the amount of wire on the winch drum may be exceeded. A stream rig can handle loads up to 8,750 lbs. under ideal conditions. A replenishment at sea consists of two or more ships, one of which will be designated the "guide" ship. The guide will generally be the ship delivering cargo, but in a two-ship replenishment this may be changed. From the ship handling aspect, the responsibility of the guide ship is to maintain steady course (by gyro) and speed (by engine). The other ship(s) are referred to as "approach" ship(s), and their job is to come to station alongside the guide and maintain that station throughout the replenishment. The goal of the approach ship is to come alongside the guide, with sending and receiving stations aligned, at a lateral separation of about 160 feet, and then maintain that station throughout the replenishment.

The first step in conducting a replenishment at sea, from the operations and ship handling standpoint, is to coordinate a rendezvous time and position. While this is being done, additional information such as fuel quantities required and fueling stations and fittings available will also be exchanged and coordinated. Selecting a good rendezvous position, with plenty of clear water and acceptable to all ships' operational requirements, often requires some compromise of less urgent requirements in favor of more important considerations. If either ship has other pressing commitments, the replenishment course and speed (Romeo Corpen) may also be a subject for discussion during the planning and coordination stages. Once the receiving (also referred to as "customer" or "approach") ship rendezvous with the delivery (or "guide") ship, the next task, if not already accomplished, is to agree on a Romeo Corpen. Normal speed for auxiliary ship replenishments will be 12-14 knots. Selecting the replenishment course can be more of a challenge, depending on sea state. Replenishments are routinely conducted in sea state 4, with highly skilled personnel on both ships they can successfully be conducted in sea state 5. A rule of thumb is that if the guide ship is able to remain within 1 degree of base course, the replenishment is a definite "go". If the guide is yawing 1.5 degrees, it is a judgment call based on skill and experience, as well as operational necessity. And if the guide is yawing as much as 2 degrees on either side of base course, it's probably not possible to safely conduct a replenishment. Replenishments will normally be conducted on a Romeo Corpen that best satisfies both ships' follow on commitments, but in extreme conditions the sea state will determine the course, and even whether the replenishment is possible. Quartering seas are the worst possible situation from a ship-handling standpoint.

Once a Romeo Corpen is agreed upon and the guide ship is steady on that course and speed, the receiving ship's next task is to come to waiting station. The duty of the guide ship is to steer the agreed upon course and maintain a constant engine speed. Both ships will have gear tested and stations manned to at least the same standard used for sea details at arrival and departure from port. The purpose of waiting station is threefold. First, it improves the efficiency of the operation by having the approach ship begin coming alongside from a fairly close station (shorter approach times, less waiting around on deck). Second, it provides the approach ship an opportunity to accurately gauge the guide ship's course and speed. And last, but not least, it gives everyone on the bridge, including the Master, a chance to acclimate to being at such close proximity to another ship. All ship handling on the approach shipside is relative to what the guide ship is doing, so matching course and speed is critical. A waiting station of 600 yards astern the guide ship, and just outside the guide ship's wake on the appropriate side, maintains about 100 feet of open water between the approach ship's side and the guide's wake. Ships normally spend at least ten minutes in waiting station, and may spend 30

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minutes to an hour if one arrives early. When the guide ship is ready to receive the customer ship alongside, she'll indicate that by hauling up the Romeo flag on the appropriate side. At that time, or whenever ready, the customer ship will commence her approach alongside the guide. The approach ship indicates the commencement of her "approach" by also hauling up the Romeo flag on the appropriate side.

To commence the approach and begin closing the guide, all that's required of the approach ship is to increase engine speed by 4-5 knots. On an AOE, they would normally use about 60% throttle for 13 knots, so from waiting station we will increase speed to 80-85% (17-18 kts engine speed) to commence the approach. While closing the distance to the guide ship, the lateral separation between ships deserves some attention. However, if the approach ship has established good waiting station, it's likely that nothing more than minor course corrections will be required until alongside. When about 1 ship length astern of the guide, the approach ship can reduce speed to 1-2 knots above base speed. From this point until alongside and settled in position, matching speed will be the conning officer's primary concern. It's worth noting that an UNREP approach is significantly different from a docking maneuver. Mental adjustments to appropriate relative motions, lateral separation, and vessel aspect must be applied. To put it simply, what looks "right" during a docking maneuver is very different from what looks "right" during an UNREP approach.

As the approach ship's bow crosses the guide ship's stern, but probably not before then, the approach ship can ring up an engine order to match base speed. Before reducing to base speed the conning officer should ensure that he has enough momentum to pass through the pressure wave generated by the guide ship and carry herself into station. At times, the conning officer will match base speed too early and end up stalled out on the guide ship's pressure wave, which can result in a prolonged delay in getting alongside. From this point forward, engine orders to bring the ship into position and match speed are made almost entirely by eye, keeping in mind the base speed determined while in waiting station. The exact matching speed while alongside the guide will probably be very slightly less than the speed required to match while in waiting station. One very effective technique is to order an engine speed somewhat below the matching speed to reduce excess headway, rather than trying to laboriously "glide" into position. However, in using this technique the peculiarities of the ship and the current sea state must be taken into account.

On a large, relatively low-powered auxiliary ship, perhaps the most challenging aspect of replenishment conning is finding the matching speed alongside. Occasionally, the conning officer will basically luck out and hit both proper position and matching speed at the same time. More commonly, he will have to order an engine speed below matching speed to bleed off excess headway, then ring up an engine order above matching speed to catch the afterward drift (relative to the guide ship). It's not unusual to go through several cycles of ordering speeds, alternately, above and below the required final speed to figure out exactly what's required. The goal should be to decrease the range of engine orders until the needed engine setting is determined. One factor that adds to this challenge is the very slow rate of acceleration that most large auxiliaries experience.

As soon as the approach ship reaches adequate position, a shot line is sent for the phone and distance (P&D) line, which is marked every 20 feet by a flag. Once the P&D line is across, the job of maintaining separation becomes much easier, since constant "eyeballing" is no longer required. The P&D line also provides for sound powered bridge-to-bridge communications. Once alongside, the shot lines for the replenishment stations can be sent over, the messenger hauled across, with spanwire and hoses following. The teams on deck and in the pump room are then ready to commence cargo transfer.

Maintaining station alongside is best done through a series of small corrections. Of course, the rougher the conditions, the larger the envelope the ship will be operating in, so course and speed adjustments need to be tailored to the conditions. Ideal station while alongside will generally result in the replenishment rigs being aligned, with a ship-to-ship separation in the 140-180 foot range. At closer separations, the hydrodynamic forces between two large ships begin to build quite rapidly. At greater separations, the replenishment rigs begins to see larger stresses (particularly when a probe fitting is used, which can unseat at due to excessive lateral separation).

Upon completion of cargo transfer, the team on deck will begin sending back or retrieving the replenishment rigs. At this time, a prime concern from the shiphandling standpoint is to maintain station and not begin drifting away from the guide. Lines can become fouled, and in any case the added distance will put more spanwire in the water. Once all lines are clear of the other ship, the approach ship can begin opening the guide. This is probably the easiest part of replenishment ship handling and can be accomplished by ordering a 2-3 degree course change away from the guide and increasing speed 2-3 knots. As those changes begin to take effect, and with the ships a safe distance apart and opening gradually, the process can be repeated as desired while the ships clear each other.

Replenishment at sea involves an extended period of time where two ships are in close proximity while at relatively high speeds. Any problem at all, either external to the ships or internal to one or more of the ships, can require an immediate and timely disengagement. The Captain of either ship can initiate emergency breakaway procedures if there is a maneuvering problem or an unsafe situation is developing. An emergency breakaway follows the same procedures as a normal breakaway, but all steps are expedited as much as possible.

Transporter Replenishment (TRANSREP)

Since the transporters adoption several centuries ago by Maritime Operations, TRANSREP has become the preferred method to perform an UNREP for most material and personnel. This is no small part to the fact that a very large quantity of material can be transferred in about a quarter of the time of a CONREP. Unlike a CONREP there are there are two methods of completing a TRANSREP; ship-to-ship and starship-to-ship. As the names imply ship-to-ship TRANSREP takes place between two Maritime Operations vessels on the surface and starship-to-ship TRANSREP takes place between a starship in orbit to a Maritime Operations vessel on the surface. Both methods have advantages and limitations that must be taken into account before employing either one.

Even though locations of the support ship vary the equipment used in either case is still the same. Transporter Replenishment uses the ubiquitous cargo transporter system that can be found on all Starfleet starships, right down to the hardware and all its subsystems. The only difference between transporters used by Maritime Operations and those on a starship is the software that runs the whole process. The software used by starships does not take into account certain environmental factors that affect a vessel on the open ocean. So Maritime Operations had to have the software modified to take into account ship motion and line-of-sight during transporter operations.

Advantages and limitations

While it is extremely advantageous to transfer material from one vessel to another almost instantaneously there are several other key advantages to TRANSREP. Aside from instantaneous movement of cargo there is the time involved in moving it. It takes far less time to move material via TRANSREP than CONREP, and much more material can be move in that same amount of time. Another big advantage to a TRANSREP is that the ships do not have to be in close proximity to each other. In fact they can be kilometers apart on different headings. Another advantage to TRANSREP is that a single support vessel can have more than two UNREP operations running simultaneously. Even though there is no theoretical limit to how many UNREPs that can be running simultaneously operating procedures call for a maximum of four. This four UNREP limit arises out of the need to accurately keep track of all outbound materials. But by far the biggest advantage to TRANSREP is the ability to UNREP with a starship. This allows for the unloading of material when it is not possible to get a support ship in position for a more traditional ship-to-ship CONREP or TRANSREP.

While there are quite a few advantages to a UNREP, there are quite a few limitations too. One of the biggest is line-of-sight. Since planetary bodies are curved and the ocean sits on top of the body the ocean follows the curvature of the planetary body. To an observer on land this curvature is imperceptible, but to an observer on the ocean the curvature becomes very pronounced and is very perceptible. This slight curvature of the surface can block transporter signals, so to be sure that there will be a clear transmission one needs to maintain line-of-sight. Also like a CONREP a TRANSREP should only be initiated when the seas are calm. The reason for this is to prevent damage and injury to both ship and crew. As with starship transporters, Maritime Operations transporters use a large amount of energy which is exponential to the size and distance of the objects being transported. Granted the distances between two vessels on the surface is only a few kilometers and the energy expenditure would not be as great as a starship transporting material down to the surface, but nevertheless energy needs to be expended. This energy expenditure can be detected by threat forces and allow them to locate vessels. So TRANSREP should not be used when secrecy is essential. Another limitation of TRANSREP is in just what material can be transported. Deuterium, tritium and antimatter should never be transported. Deuterium and tritium should only be transferred in a CONREP; antimatter should only be loaded at dockside.

Conducting a Ship-to-ship TRANSREP

A ship-to-ship TRANSREP begins when a ship needing resupplying contacts an Auxiliary Support ship that it needs an UNREP and submits its materials requests. Once the Auxiliary Support ship arrives on station and comes within line-of-sight of the ship that requested the UNREP it signals that it is ready to begin. Once the support ship receives a "GO" reply it begins to transport the requested materials. All the while the transporter chiefs and systems are monitoring the ships motion and making sure that line-of-sight is being maintained. If either the ship makes abrupt motions or line-of-sight is lost, the UNREP stops immediately. The UNREP will recommence once either the seas calm down or line-of-site is re-established. The actual process of transporting is exactly the same as on a starship. A pallet of material is placed on the transporter pad, the receiving ship signals that it is ready to receive the shipment, once that message has been acknowledged the pallet is transported over. This process continues until all requested material is transported over. It is very common for a CONREP to be taking place for fuel at the same time a TRANSREP is taking place for other materials.

Conducting a Starship-to-ship TRANSREP

As with ship-to-ship TRANSREPs the process begins when ship needing resupplying contacts an orbiting starship and requests an UNREP and submits its materials requests. The starship then signals the surface vessel that it is ready to commence the UNREP. Once the support ship receives a "GO" reply it begins to transport the requested materials. But unlike a ship-to-ship TRANSREP line-of-sight does not affect this method, although calm seas are still needed. The starship-to-ship TRANSREP continues just like a ship-to-ship TRANSREP. This method is extremely useful in tactical situations where it would put any vessels in danger. Please note that there have been instances where a starship traveling at high sub-light speeds has successfully completed a TRANSREP this should only be attempted by certain qualified personnel and then only in an emergency.

Considerations

Before requesting an UNREP a ship's Commanding Officer should take into account the tactical situation in the theater of operations. A CO should also decide on what type of UNREP is needed, a CONREP, TRANSREP, or a combination of both. If a TRANSREP can be performed then the CO must decide whether or not if a ship-toship or starship-to-ship TRANSREP method is needed.

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Part 9 - Signals and Codes

What are signals and codes?

What are signals and codes and why are they important when all of our transmissions are encrypted. This is the number one question that most people reading this Chapter are asking themselves. The answer to this question, while simple to answer, takes a very long explanation, as it must be explored in detail.

As stated, the answer is simple. You need signals and codes incase a situation such as the one in the introduction occurs. If your enemy can read your electronic communications, then you must switch to a different form, or you must use different codes. This Chapter is designed to teach you some of the more basic forms of both signals and codes that can be used in the Maritime Operations Branch during times of combat when your other methods of communication may have been compromised. Remember, if your side has people working to break your enemies code, your enemy has people doing the same thing to your codes.

Basically then what are signals? Signals are messages sent using means other than spoken or written methods. Some of the classic examples that we will cover in this Chapter include Signal Flags, Semaphore Flags and Morse Code. All three of these send messages one character (ie. Letter or Number) at a time. This means that messages must be condensed to a series of Letter and Number combinations that can be deciphered quickly by those who know the codes.

Codes are a way to send long messages without additional encryption. There are many versions of codes, and on Earth each country has their own, and some are shared. For example, the United States during the 20th and 21st Centuries had a series of private codes, a series of codes it uses with NATO allies, a series of codes it uses with the United Nations, and many others. These codes could be anything. Some of the more advanced codes could be as complicated as any combination of numbers and characters combined to make a message.

So now we have the two parts, signals and codes, and we must learn how they interact with each other. This Chapter is divided into four major parts. The first of these is Signal Flags, which will teach you the basics of signal flags and their use. Next is Semaphore Flags, which will show you how they differ from Signal Flags, and also teach you the basic way to use them. From there we will move on to Morse Code. That section will deal, not only with Morse Code, but also the various methods by which a Morse Code message can be sent. Once the various methods of Signaling have been covered, this section will discuss the various Encryption methods that were used in the past, and how they apply to the Maritime Operations Branch.

Signal flags

First off, to understand the why Signal Flags are useful, you have to know what they are. Here you can see a list of the various Signal Flags Currently available and what they are called and what they stand for.

The question that you are now asking yourself is how do these flags work. They work in series of one to five flags connected by hooks, strung together and hoisted on a halyard on a ship. Doing this can assemble various messages. Simple messages, to intricate codes that let other ships in your battle group know what you are up to or what you are planning.

Why would this be useful to us in the 23rd Century? There are many scenarios that could lead a ship to have to use Signal Flags. What happens if all of your lines of communication are compromised?

Simple letter codes have always been used by the various militaries of the world to supplement the encrypted communications broadcast between computers and radios. During every conflagration Earth has ever had, backup codes and routine communications using signal flags, have been standard. For all of those reasons, we teach you how to use Signal Flags here.

Signal Flags					
Flag	Name	Phonetic Pronunciation	Military Meaning	Civilian Meaning	
	Alfa	AL-fah	I have a diver dow clear at low speed.	n; keep well	
	Bravo	BRAh-voh	I am taking in, discharging, or carrying dangerous cargo.		
	Charlie	CHAR-lee	"Yes" or "affirmative	"	
	Delta	DELL-tah	I am maneuvering v keep clear.	vith difficulty;	
	Echo	ECK-oh	I am directing m starboard.	y course to	

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	Foxtrot	FOKS-trot	I am disabled; communicate with me. On aircraft carriers: Flight Operations underway.		
	Golf	GOLF	I require a pilot.		
	Hotel	hoh-TELL	I have a pilot on board.		
	India	IN-dee-ah	Coming Alongside	I am directing my course to port	
	Juliet	JEW-lee-ett	I am on fire and have dangerous cargo; keep clear.		
	Kilo	KEY-lo	I wish to communicate with you.		
	Lima	LEE-mah	You should stop your vessel immediately.		
X	Mike	MIKE	My vessel is stopped; making no way.		
		no-VEM-bur	No or negative.		

	Oscar	OSS-kur	Man overboard.	
	Quebec	kay-BECK	Boat recall; all boats return to ship.	Ships meet health regs; r e q u e s t clearance to port.
	Romeo	ROH-me-oh	Preparing to replenish (At sea). Ready duty ship (Inport).	None
	Sierra	see-AIR-ah	Conducting flag hoist drill.	M o v i n g astern.
	Tango	TANG-go	Do not pass ahead of me.	Keep clear; engaged in trawling.
	Uniform	YOU-nee-form	You are running into	danger.
X	Victor	VIK-tah	I require assistance.	
	Whiskey	WISS-kee	I require medical assistance.	
	Xray	ECKS-ray	Stop carrying out your intentions and watch for my signals.	

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Yankee	YANG-kee	Ship has visual communications duty.	I am draggin anchor.
Zulu	ZOO-loo	I require a tug.	
C o d e / Answer	Code/Answer	Flag that follows is the Intergalactic Code of signals.	Message is understood. A I s o , n u m e r i c d e c i m a l point.
First	First sub	Absences of flag officer or unit commander (Inport).	Substitute for the first flag in this hoist.
Second	Second sub	Absence of chief of staff (Inport).	Substitute for the second flag in this hoist.
Third	Third sub	Absence of commanding officer (Inport).	Substitute for the third flag in this hoist.
Fourth	Fourth sub	Absence of civil or military official whose flag is flying on that ship.	Substitute for the fourth flag in this hoist.
One	WUN	Numeral one	None
Two	ТОО	Numeral two	None
Three	TREE	Numeral three	None

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X	Four	FOW-er	Numeral four	None
X	Five	FIFE	Numeral five	None
	Six	SICKS	Numeral six	None
	Seven	SEV-en	Numeral seven	None
	Eight	AIT	Numeral eight	None
	Nine	NIN-er	Numeral nine	None
+ + + + + +	Zero	ZEE-roh	Numeral zero	None
	Pennant one	PEN-ant WUN	Pennant one	N u m e r a l one
	Pennant two	PEN-ant TOO	Pennant two	N u m e r a l two
	Pennant three	PEN-ant TREE	Pennant three	N u m e r a l three
	Pennant four	PEN-ant FOW- er	Pennant four	N u m e r a l four

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Pennant five	PEN-ant FIFE	Pennant five	N u m e r a l five
Pennant six	PEN-ant SICKS	Pennant six	Numeral six
Pennant seven	PEN-ant SEV- en	Pennant seven	N u m e r a l seven
Pennant eight	PEN-ant AIT	Pennant eight	N u m e r a l eight
Pennant Nine	PEN-ant NIN-er	Pennant nine	N u m e r a l nine
Pennant zero	PEN-ant ZEE- roh	Pennant zero	N u m e r a l zero

Semaphore flags

The first difference between Semaphore Flags and Signal Flags is the number of flags used. Simply, Semaphore uses two flags held in different positions to signify the various letters and numbers. One disadvantage with this is that it is easier to get codes wrong in semaphore than it is with signal flags.

Semaphore has been around since the 18th Century when it was used by ships to communicate quickly with each other during battle. It was also used in both France and England to transmit messages between towers, in effect creating a sort of primitive telephone system. This system was a decent method of transmitting messages quickly although did have certain drawbacks.

Messages had the potential to be fouled up in transmission, especially long messages that had a long way to travel. Modern semaphore signalers can send messages of up to 20 words per minute. The drawback is that, like signal flags, semaphore flags are really only useful during the daylight hours, and unlike signal flags, they have a much shorter range of visibility.

To create a message with semaphore flags, you use only two flags. Both of these are Oscar flags, and holding the flags in different positions creates letters. Imagine two wheels, one for each arm. Each wheel goes around twice, and depending on which arm you use, the message is different.

Another potential problem is the expertise of the person reading the message. If an inexperienced person is reading the messages, you could wind up with many "wave offs". A wave off is when the person reading the message missed or did not understand the last sequence or letter. To perform a wave off. The flags are held diagonally down, and brought diagonally up in a waving motion. This is done three or four times to make sure the signal to repeat is understood.

Below you will find a depiction of what the various Semaphore Flag Positions look like. You will notice that the letter "J" does not appear in alphabetical order with the rest. The reason for this is that the "J" position also symbolizes an Alpha chain, or,

in laymen terms, a string of letters. The Alpha or Numeric designator will precede a string, especially as number and letters are displayed by some of the same flag positions.

Study these positions well, and learn to differentiate between then at a quick glance.



Above: Semaphore flag positions.

Morse Code

Morse code is a method to send a message using short sound or light combinations to spell out letters or numbers. As you can see in the accompanying figure, the written version of Morse code is a series of dots and dashes that spell out the letters. These dots and dashes can be used to send encoded messages from ship to ship, ship to shore, shore to ship, even between aircraft of different types.

The naval application also utilizes the dot and dash method, but instead of sound, lights are traditionally used. These flashing lights are operated by hand and exist on every type of military naval vessel, including those of the Maritime Operations Branch. Usually, there are found near the bridge wings, but occasionally, the light is mobile depending on the size of the vessel.

The biggest disadvantage with Morse Code is that it is, for the most part, standardized globally. This is so that when if the distress signal (SOS $\dots/--/\dots$) is sent, every one knows what it means. It is for this reason that most secure visual communications are *not* done via morse code, but rather using one of the other aforementioned systems.

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The advantage with this is that Morse Code is an Earth specific method of communication. Other races have different derivations of the same type of communication, but the specific sequences in Morse Code are limited to Earth. Maritime Operations has taken advantage of this by teaching its Communications Specialists to signal in this manner as it is quick, efficient and a good way to send non-critical information.



Naval Encryption

This is something on which a multitude of books could be written, so we will just give you a glance into the basics here. There are many different kinds of ciphers that can be used. These range from replacement ciphers to machine assisted ones. Every nation today uses machine assistance in its delivery and receipt of encoded messages.

One of the most famous Machines ever used for the purposes of encrypting messages was the German Naval Enigma, which saw widespread use during both the First and Second World War. This machine is beautiful in its simplicity. Basically it is a wooden typewriter with a series of trigger wheels inside which give you an output on a lighted board. This is then added to by a current board which additionally encrypts the message. Any message encoded with proper Enigma will require the user to not only know the initial settings for the three (four wheeled versions appeared later in World War Two but the fourth wheel was stationary) letter wheels, but also the connections on the plug board. All of this was done to confound the enemy to the message that was being delivered, and for the longest time, it worked.

What eventually killed the Enigma's effectiveness was the hard work of the men and women of Bletchly Park in England. Through the sacrifice of the Poles who got them their first working copy of the encoding wheels and plug board, to their use of the Turing Bombe, a giant computer of sorts, the Enigma Messages of the German Naval Forces were soon being read in almost real time. This was no small undertaking, considering the limited Computer ability in the 1940's.

From World War II onward, encryption, and Naval Encryption in particular has become more advanced. Today many countries use a series of codes which stand for words, letter, sentences, or numbers. These ciphers are sent via a machine which encrypts them. Many steps are involved, but on a Starship or Maritime Operations Vessel, it can be distilled down to a few simple steps.

A Message is sent from the originator, be it STARFLEET HQ, the Brigade Officer In Charge, the Commander in Chief of Maritime Operations or any number of other originators. This message is encrypted with a cipher at the source. It is then input into the communications computer that encrypts it according to the protocols of the day. The encrypted message is sent to the receiving vessel where the communications computer receives it, and decodes it upon proper authorization. As a final step, the Communications Specialist on duty, deciphers the message into plain text, unless it is for the eyes of senior personnel only. Authorized personnel who must yet again identify with a security code can now read the message.

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Appendix A: Glossary

Here is a list of common terms, abbreviations and acronyms that appear in this manual. There may be some references to terms that are common to the SFMC, but are not listed in this glossary. Those terms should be listed in the Marine Force Manual or in other relevant Branch Guidebooks.

Aerospace - 1. A planet's atmosphere and the space outside of it, considered as one continuous field. **2.** Things that are designed for flight in aerospace. **3.** The combat arm that deploys aerospace vehicles, such as fighters. **4.** The aerospace vehicles of a combat force.

Air Defense Battery – Shipboard mount that provides fires to destroy enemy aircraft.

Amphibious - Relating to or organized for a military landing by means of combined naval and land forces. Historically referred only to operations from water to land, but now also refers to ops from orbit to planetside.

Antiaircraft - Designed specifically to damage/destroy aerospace craft.

Antigrav/Antigravity - A method of propulsion or lifting that uses an anti-graviton generator to counteract the normal effects of gravity.

Antishipping - Designed specifically to damage/destroy spacecraft/starships.

Antivehicular - Designed to damage/destroy ground/water-based vehicles.

Branch - A group of related jobs within the Starfleet Marine Corps. There are eight branches of duty within the SFMC: Aerospace, Armor, Combat Engineers, Infantry, Mecha, Medical, Special Operations, and Support.

Calibre - The diameter of the bore of a firearm, shown today in millimeters.

Camouflage - 1. The method or result of concealing personnel or equipment from an enemy by making them appear to be part of the natural surroundings. **2.** The use of physical, as opposed to electronic or holographic, camouflage.

Centimeter - One one-hundreth of a meter. There are about 2.54 cm in an inch.

Charge Pack - Large power cells that provide electrical power for vehicles.

Cloaking Technology - Any system designed to render persons or objects "invisible"; usually by selective manipulation of light rays.

Colonial Marines - One of several historical Marine organizations that evolved into the present day SFMC.

Combined Arms - Military term for operations that involve more than one branch type of unit (Aerospace and Armor, Mecha and Infantry, etc.). Also known as "composite" operations or units.

Deflector Shield - Standard defense field for starships, based on the ability to alter gravitational effects across a plane perpendicular to the incoming threat. Deflector shields do not function safely or effectively inside a planetary atmosphere.

Differential Thrust - The process of maneuvering by disproportionately distributing thrust through nozzles that usually point in several directions. Commonly used by missiles. *See also "vectored thrust".*

Direct Fire - A method of weapon employment where line of sight must exist between the firing weapon and it's target.

Electronic Countermeasures (ECM) - Measure to counteract enemy sensing and targeting attempts through jamming, misinformation and distortion of their sensor signals.

Effective Range - In weapon systems, the distance at which the average operator can place the majority of shots on target. *See also "maximum range".*

Essential Task List - The list of duties, standards, behaviors, tactics, etc. of which a Marine must have mastery in order to attain a certain MOS.

Eugenics Wars - Devastating wars that took place in Earth's history, as genetically engineered humans (who believed themselves superior to non-engineered humans) tried to conquer the world.

Exotic Atmosphere - Any non-Class-M atmosphere that is composed of hominid-toxic, corrosive or high-pressure gases.

Field of Service - In SFMC organization, a group of related MOSs within a branch. Examples in the Maritime Branch are Deck, Weapons, Engineering and Services.

Force Field - A defensive technology, consisting of an energized field that protects a target by deflecting, diverting or absorbing a certain amount of energy per millisecond. Sometimes inaccurately referred to as "shields".

Gravitic - Of or having to do with gravity; esp. the manipulation of gravity.

Heavy Weapons - Weapons designed to engage vehicles or equivalent hardened targets, or to affect a large area with a single attack. Often requires a special mount or firing platform and more than one person to operate.

Hominid - Historically, a primate of the family Hominidae, of which Homo sapiens is the only extant species. Today used interchangeably with "humanoid" to describe beings which are Terran-like in appearance.

Hovercraft - Usually refers specifically to a vehicle which uses a cushion of air for limited lift in negotiating terrain.

Humanoid - See "hominid".

Incendiary - Causing or capable of causing fire.

Indirect Fire - Fire from artillery, mortars, rockets, or similar weapons of a ballistic or semi-ballistic nature. The projectile does not travel a straight path and so a direct line of sight to the target is not needed.

Kilogram - Standard measurement for weight used in the metric system. One kilogram is 1000 grams, or about 2.2 pounds.

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Kilometer - Standard measurement for distance used in the metric system. A kilometer is 1000 meters, or about 0.6 miles.

Kiloton - Standard measurement for explosive force. It is equal to the explosive force of 1000 tons of conventional TNT explosive.

Marine Occupational Specialty (MOS) - The specific "job" or function to which the individual Marine is trained to do. Groups of related MOSs are called Branches.

Maximum Range - In weapon systems, the maximum distance a shot will travel if it hits nothing else in flight. For Infantry weapons, it is usually expressed in terms of a Class M atmosphere/gravity.

MegaCorporations - Huge industrial conglomerates of the 21st century, responsible for much of Earth's early colonization efforts and rebuilding of civilization after the Eugenics Wars. Funded the Colonial Marines.

Meter - Measure of distance, the standard on which the metric system is based. One meter equals 39 inches, or one yard plus three inches.

Millimeter - One one-thousandth of a meter. About the thickness of a 20th century U.S. dime.

Mission - 1. A special assignment given to a person or group. **2.** A combat operation assigned to a person or military unit. **3.** A maritime or aerospace operation intended to carry out specific program objectives.

Muzzle - The end of the barrel of a projectile weapon through which the projectile leaves. Also, the emitter crystal end of an energy weapon.

Non-Commissioned Officer (NCO) - Refers collectively to pay grades E-4 through E-9 (corporal through sergeant major). These are enlisted personnel who lead other subordinate enlisted personnel.

Normal Upper Ceiling of Operations - The altitude at which vehicles can operate with no difficulty regarding power drain, control, and excess detectability.

Portable - Designed to be carried from place to place by personnel as opposed to vehicles. *See also "man portable" and "crew portable".*

Power Cell - An advanced form of battery, used to power small electronic devices and weapons.

Sensor Signature - The signal or emissions that personnel or vehicles give off, which can be detected by enemy sensing devices. This can be heat, electromagnetic, acoustic or some other form of energy.

Special Operations - Any operation that is not considered routine, common or standard when speaking of the SFMC as a whole.

Spotter - One who observes friendly fire for fire control purposes.

Strategic - Important or essential in relation to a plan of action; essential to the effective conduct of war; highly important to an intended objective. Usually refers to a longer term plan or view of a military situation.

Tactical - Of, relating to, used in, or involving military operations that are smaller, closer to base, and of less long-term significance than strategic operations. Usually refers to the immediate plan and situation rather than the long-term goals and picture of the strategic operation.

Track - A tractor-tread-type system used for ground vehicle propulsion over varying terrain.

Transatmospheric - Traveling from atmosphere to space or vice-versa.

Transponder - A transmitter-receiver activated for transmission by reception of a predetermined signal.

Vectored Thrust - The process of maneuvering by changing the orientation of a thruster nozzle while maintaining the level of thrust through the nozzle. See also "differential thrust".

Appendix B: Guide to Acronyms

Here is a list of commonly used acronyms in this manual. Entries followed by an asterisk have a separate glossary entry. Other terms are covered in detail in their respective manual sections.

ACH - Air-Cushioned Hover

AFV - Armored Fighting Vehicle

AG - Antigrav

ALSTTAR - Advanced Life Support for Trauma, Transportation, And Resuscitation

AMS - Artillery Missile System

AOD - Armor Operations Directorate

APC* - Armored Personnel Carrier

ARV - Armored Recovery Vehicle

BDA - Battle Damage Assessment

BDU - Battle Dress Uniform

BMNT - Beginning of Morning Nautical Twilight (first light)

C3 - Command, Control, Communications

CAS - Close Air Support

CQB - Close-Quarter Battle

CP - Command Post

cm* - centimeter

DEW - Directed Energy Weapon

ECM* - Electronic Counter Measures

EMD - Emergency Medical Dispensing unit

EMPW – Electro-Magnetic Projectile Weapon

EPS - Energetic Plasma System

EXCHEG - Extreme Conditions Hazardous Environment Garment

FACTS - Forward Aerospace Control and Tactical Support

GOEIS - Ground Offensive Electronic Interdiction System (pronounced "goes") **HE -** High Explosive

HEAT - High Explosive Anti-Tank

HIVAP - HI Velocity Armor Piercing (pronounced "hi-vap")

HOTAS - Hands On Throttle And Stick

HPK - High Probability of Kill

HQ - Headquarters

IDF - Inertial Dampening Field

IFV - Infantry Fighting Vehicle

I-LINK - Individual communications Link

IR - Infrared

kg* - kilogram

km* - kilometer

kph - kilometers per hour

LCARS - Library Computer Access and Retrieval System

LPK - Low Probability of Kill

m*- meter

MAPLIML - Man Portable Light Infantry Missile Launcher (called "mapper") **MIPPA** - Marine Infantry Personal Protective Armor (pronounced "mippa") **MOS*** - Marine Occupational Specialty

mm* - millimeter

MSG - Marine Strike Group

MVS - Modular Vehicle System

NBC - Nuclear, Biological and Chemical NCO* - Non-Commissioned Officer NUCO* - Normal Upper Ceiling of Operations **OIC -** Officer In Charge **OpArea -** Operational Area **OPCON -** Operational Control **OPORD -** Operations Order **OPSEC -** Operational Security PADD - Personal Access Display Device PL - Platoon Leader PS or PSG - Platoon Sergeant PVC - Pilot/Vehicle Commander **R&D** - Research and Development RCT - Regimental Combat Team **RF** - Radio Frequency SAC - Sensor-Absorbent Coating SFMC - StarFleet Marine Corps SIF - Structural Integrity Field **SOP -** Standard Operating Procedure SURTACCOM - Surface Tactical Command **TACAIRCOM -** Tactical Aerospace Command THEOG - Thermal Hazardous Environment Over Garment (pronounced "thug") **TVD** - Through-Visor Display **UFP -** United Federation of Planets **UN -** United Nations **UNPF - United Nations Peace Forces UNPFMC - United Nations Peace Forces Marine Corps US -** United States **USMC -** United States Marine Corps **XO - Executive Officer**

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About 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 Director SFMCA (DCO - Academy), 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 Director SFMCA 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.