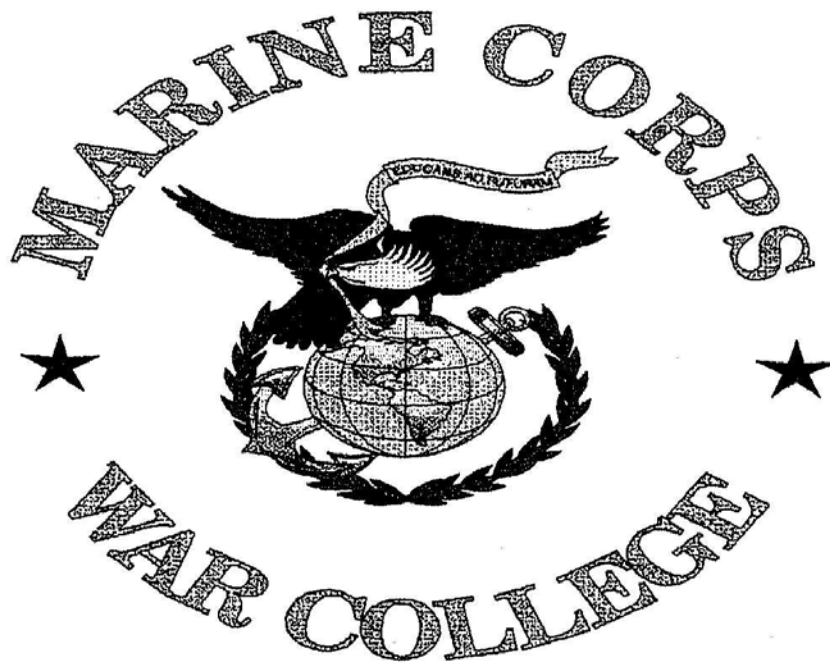


A Concept for Sustained Operations Ashore in 2010

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A Concept for Sustained Operations Ashore In 2010



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Sustained Operations Ashore
In 2010**

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A CONCEPT FOR SUSTAINED OPERATION ASHORE IN 2010

Purpose

The purpose of this paper is to develop a concept for conducting Sustained Operations Ashore (SOA) in the year 2010 and beyond. Although the term SOA is routinely used in military literature, the authors could not find a "joint", service, or Marine Corps specific definition for it. However, the evolving Marine Corps view of SOA has the Marine Air Ground Task Force (MAGTF) supporting the Unified or Joint Force Commander and fighting as a part of the total land force with or without naval support. This differs from an amphibious or seabased naval force as it has historically done under the maxim of "subsequent operations ashore". It is envisioned under this concept that the Naval Expeditionary Force (NEF) of the future will consist of multiple elements currently included within the Navy's Composite Warfare Concept. These elements commanded by the NEF may include the Marine Air Ground Task Force, Naval Force Protection (e.g. frigates, destroyers, cruisers), Logistics Support Ships (e.g. Maritime Prepositioned Ships), and the Amphibious Task Group (e.g. LCC, LPD, etc.). During the movement phase to the theater of operations, the NEF is subordinate to the Naval Component Commander. Upon commencement of SOA, the NEF will chop OPCON to the Joint Force Land Component Commander. As eluded to above, there is an important distinction between the ideas of "subsequent" and "sustained" operations ashore. "Subsequent operations ashore" are the land actions under an extended naval operation that occur after an amphibious assault and command and control has been phased ashore, but still supported by the Naval Expeditionary Force (NEF). SCA however, is the use and sustainment of Marine forces as a part of a larger land operation

under the command and control of the overall ground commander; in today's joint environment, the Joint Force Land Component Commander (JFLCC).

Other than a limited operation, such as a NEO, where the period of operation is of such a short duration to require little if any sustainment, all future operations will require some form of force sustainment. It is the physical sustainment of these subsequent operations where the NEF is most vulnerable to enemy influence and least flexible to respond to the dynamics of tomorrow's battlefield. The continual increased accuracy and precision of weapon systems available to potential adversaries and the ability to target fixed locations precisely, demands that the Marine Corps develop the means to reduce its footprint ashore while maximizing its maneuverability, firepower and flexibility. A new process is required to provide support and sustainment entirely from the sea regardless of whether or not the operation is a "sustained" or "subsequent" operation ashore. This process needs to eliminate the historical operational pause that has occurred between the Ship to Objective Movement (STOM) and the commencement of sustained operations while minimizing the build-up of the Combat Service Support (CSS) base or the "Iron Mountain" ashore.

The Threat Environment

This SOA concept must be flexible enough to operate within the threat environment envisioned in the future. This future is assessed as being filled with numerous threats that will have to be considered and overcome. As the Cold War fades from our memory and with no peer competitors foreseen in the near future, the United States is still confronted by the stark realities of a global community that will be plagued with a variety of new undefined threats likely to pose significant challenges for us well into the 21st century. We must be mindful of domestic violence involving fringe militias and gangs as well as global hot spots. Regional frictions such as those found in the Persian Gulf, Somalia, Haiti, Rwanda, Sudan, North Korea, and Bosnia represent examples of the diversity of threats to regional stability and tranquillity; to say nothing of the biochemical threat associated with the term, Weapons of Massed Destruction (WMD). The proliferation of biological, chemical, nuclear, and conventional weapons, mines, shoulder launched weapons, surface to surface missiles, precision guided munitions, etc... throughout the world is unprecedented. These capabilities are readily available to countries who never dreamed of acquiring such weapons in the past. China is presently making blinding lasers and missiles and exporting them to lesser developed countries at a relatively low cost. Further, with the collapse of the former Soviet Union, much of their military technology and more specifically its military hardware is for sale at relatively low cost.

It is apparent that in many places of the world, warfare in the 21st century will continue to de-evolve. There is a new world order of clans, tribes, gangs and ethnic groups that have been smothered for generations under the weight of prominent nation-states. These regional "gangs"

are often based upon cultures making religious and historical claims to territory once crossed by trans-national borders. Though there is much war in the news, there is very little mention of "soldiers", those who belong to the regular constituted armed forces of established states. Instead, most of the fighting is done by people in the much broader category of "fighters". At a time when most states are reluctant to risk casualties among their well organized and well paid regular forces, there seems to be no shortage of people who are willing to pick up a weapon and defend the cause of their ethnic group, religion, clan, or tribe usually as an unpaid volunteer.

One particularly frightening prospect is the use of WMD by non-state actors. States that fail to command the loyalty of significant portions of their populations will have difficulty controlling their stockpiles of nuclear, biological and chemical weapons. Whether our enemy is a future peer competitor, a regional power armed with second-hand weapons, or a political entity that has neither a capital city nor currency, the wars of the future share a number of important characteristics. Many of these derive from the wide availability of a variety of weapons that are far more lethal than the weapons used for most of the 20th century. These weapons include existing PGMs; non-line of sight, gunner-in -the-loop weapons such as the fiber-optic guided missiles; improved level-of-effect munitions, rockets/missiles, artillery, and mortars; and all Global Positioning System (GPS) guided munitions.

In war against non state actors, where the proximity to innocents is often the enemy's greatest advantage, precision weapons will allow a significantly greater degree of discrimination. A guided missile sent through a window, an armed robot turning a corner, and a directed energy weapon covering an exit will often be useful in situations where the delivery of tons of high explosive would be counter productive. In a war against regional powers, more precise weapons,

whether precision guided or non-precision guided, will allow greater effect on the target with far fewer rounds.

In a war against a new superpower or peer competitor new technologies and methodologies will allow us to be more effective and efficient. The infrastructure of 20th century combat power -- large dumps of fuel and ammunition, ships waiting for days to unload their cargoes, and crowded assembly areas -- will make for lucrative targets for the weapons of the 21st century. Still, the Marine Corps must maintain the ability to fight and win in this demanding environment. To succeed Marines will require maximum flexibility provided by operational concepts that encompasses not only the land, but more importantly the agility and force protection aspects provided by the sea.

INTRODUCTION

Roles and Functions

Title 10 US. code 5963 directs that the Marine Corps:

"be organized, trained, and equipped to provide Fleet Marine Forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases **and for the conduct of such land operations as may be essential to the prosecution of a naval campaign**. As such, together with the Navy, the Marine Corps is statutorily charged with functions that demand that it preserve and perfect the national amphibious capability".

FMFM 1-2. "The Role of the Marine Corps in National Defense" states that as a collateral function, Marine forces may be employed as a: "reinforcement, to join the continental campaign alongside the US. Army and US. Air Force". However, neither of these functions, as outlined in DOD Directive 5100.1 "contemplate the creation of a second land Army". Therefore, while Marine forces will occasionally be tasked to conduct SOA, these Marine forces will not be organized nor equipped like the U.S. Army. Furthermore, the integrity and readiness of Marine forces will be preserved for resumption of their primary role as a naval expeditionary force after a set period of performance in the "collateral function". The primary purpose for having a Marine Corps will remain the same - to participate in "naval campaigns" as part of a CJTF.

...From the sea

Today, the Marine Corps remains the most viable and responsive amphibious assault and forcible entry instrument of the United States' armed forces. Since the inception of the Marine Corps' hallmark doctrine of amphibious warfare in the 1930's, the Marine Corps has been at the forefront of tactical and operational innovation (e.g. vertical envelopment, MPS, close air

support). As such, it is incumbent on the Marine Corps to continue to develop, implement and perfect new methods of forcible entry, amphibious operations and SOA.

The continued relevance of the naval service as an instrument of national policy and power can be easily validated by the fact that nearly 75% of politically significant urban areas (those whose political/economic activity have warranted establishment of a U. S. embassy, legation or other US. agency) outside allied or former Warsaw pact territory are located along or within 150 miles of the sea. As the Marine Corps steps into the 21st Century, it continues to evolve into a force both focused on and tied to the sea. This bond continues to shape the Marine Corps's future way of fighting as evidenced by the adoption of Operational Maneuver from the Sea (OMFTS) and is a natural progression of the tried and true methods the Marine Corps has successfully employed throughout its history.

Past Amphibious Operations

In the past, projecting landing forces ashore required some form of linear movement for the ship to shore transition. The amphibious force then established a lodgment ashore to rapidly build up its combat capability for subsequent and sustained operations if combat of a longer duration was anticipated. This lodgment had to be secured and then established for the unloading and buildup of landing force supplies and support. All this combined to produce limited operational flexibility and a large logistical footprint which resulted in an operational pause between the assault and follow on operations. Only after sufficient combat capability was established ashore did the assault force continue to advance toward the subsequent operational objectives. Unfortunately, this lodgment tied the landing force both to the massive beach Combat

Service Support Area (CSSA) and a set of vulnerable fixed and inflexible Lines of Communication (LOCs).

It was during this transition movement that the advantages gained by using the sea as strategic maneuver space began to degrade, and the opportunity to seize the initiative and dominate operational tempo passed to the enemy. In effect, amphibious power projection forces suffered an extended operational pause while they built up combat power and logistics support in order to breakout and pursue their real objectives ashore. The limitations of technology, particularly in mobility, Command and Control (C2), and fires, dictated that the MAGTF execute a slow build up ashore from ships operating close to the beach. This in turn led to a necessary reliance on linear frontal assault to seize a beachhead from which maneuver could subsequently commence. Marine forces thus executed amphibious operations in three distinct phases:

- maneuver in ships to the amphibious objective area,
- ship-to-shore movement, and
- maneuver from shore to the objective

Future Amphibious Operations.

The evolution of the modern multi-dimensional battlespace and the simultaneous emergence of truly amphibious mobility now provide the capability to conduct offensive maneuver directly from the ship to the objective, eliminating both the linear movement and extended operational pauses characteristic of current amphibious operations. To take advantage of this capability, the Marine Corps has developed the operational concept OMFTS for conducting

amphibious forcible entry. Under this concept, amphibious operations now envisions two basic phases:

- operational maneuver at sea,
- over the horizon assault.

This capstone operational concept provides broad principles and directions for operations and force development, while concentrating on the required operational capabilities for decisive amphibious power projection. OMFTS combines the freedom of maneuver at sea with the tenets of maneuver warfare which specifically focuses "on the operational objective, uses the sea as maneuver space while generating overwhelming tempo and momentum, pits strength against weakness, emphasizes intelligence, deception and flexibility, and integrates organic, joint and combined assets".

Under OMFTS, the commander can rely on his superior mobility assets to support multiple options for several schemes of maneuver. By seabasing Command and Control (C2), the communication and logistical footprint ashore is significantly reduced. The commander and his staff can use seabased facilities aboard ship to command and control the battle while using shipboard C2 equipment to maintain situational awareness. Seabasing fires also reduces weapons and logistical requirements ashore. Fires provided from moving seabased platforms substantially reducing risks from counter-battery fires, whereas seabasing logistics allows CSS forces to concentrate on providing support to forces ashore without having to worry about rear area security. Also, seabasing minimizes the CSSA footprint ashore which is not only a lucrative target for ballistic missiles but also is a major contributor to the operational pause characteristic of today's amphibious operations. In short, OMFTS is the application of maneuver warfare to a

maritime campaign "ranging from humanitarian relief to a high-stakes struggle against a rising superpower.

Sustained Operations Ashore

Without benefit of a recognized joint or service definition for SOA, history has shown that certain campaigns and wars in which Marines participated in transitioned from an initial amphibious operation to an extended land operation. Guadalcanal, Okinawa, Korea, Vietnam, and South West Asia combat operations were characterized by the robust development of large logistical bases, hospitals, ammunition storage areas/depos, expeditionary airfields, fuel farms, water storage facilities, lines of communication improvements, motor pools, maintenance facilities, etc. It was these logistical requirements that resulted in the aforementioned operational pause. Therefore the historical precedence is clear, the Marine Corps has been utilized and will assuredly be called upon again to participate in SOA. *However, because of the future threat Sustained Operations Ashore will have to be conducted in such a manner that ensures protection while maximizing the inherent firepower of the MAGTF.*

This vision for future warfighting leverages the technological improvements in intelligence, fires, transportation, logistics, command and control projected to be available in the 21st century. This natural extension of the principles of OMFTS, can be summarized within the methodology outlined throughout this paper as Sustained Operations from the Sea (SOFTS). OMFTS incorporates the Navy and Marine Corps' core strengths of high quality people and information age technological advances and when coupled with the methodology of SOFTS will result in a

robust high quality force which will provide the U.S. with the ability to dominate opponents across the full range of military operations.

CONCEPT

With the advent and application of emerging technologies, and employing the tenets of OMFTS the Marine Corps will, in 2010, be able to conduct SOA with C2, Fires, and logistics predominantly maintained at sea. OMFTS focuses on operational objectives and uses the sea as maneuver space while generating overwhelming tempo and momentum. ***This concept will take the tenets of OMFTS to its logical conceptual limit and apply them to the concept of SOA being totally supported "... from the sea ".***

SOFTS will take advantage of the increased range, speed, surprise, and mobility offered by advanced technology equipment such as the V-22, AAV, LCAC, Arsenal ships and the future three tiered MPF concept. The principles of SOFTS are built upon those of OMFTS. Though the principles of SOFTS are focused on the high end of the spectrum of warfare, they apply at any level of conflict. The intent is to institute a mindset that will move us away from the general unloading phases of earlier amphibious operations regardless of scale. SOFTS necessitate the retention of as much of the force at sea as is possible and prudent. Future integration of Marine forces into joint and combined operations will rely on effecting C2 and coordination at sea rather than moving the command elements ashore. Liaison with higher headquarters will be effected as required but the force and its headquarters will be seabased as much as possible.

SOFTS, as the logical offspring of OMFTS, defines this new concept in naval operations. This approach emphasizes littoral operations, naval expeditionary forces (NEFs) and supports and builds on OMFTS. Seabasing is the basic premise of SOFTS. It allows maneuver elements more freedom to maneuver by reducing burdensome restraints imposed by large shorebased supply

areas. Although seabasing also encompasses C2, fire support, and aviation, its greatest impact is on CSS. Through seabasing, Marines can direct resources at those tasks specifically required to achieve operational goals, instead of using resources to support a large supporting infrastructure ashore. Marines will depend less on ports and airfields for intermediate throughput and staging facilities. Instead of using fixed facilities ashore, Marines will gain the ability to deliver supplies from seabased facilities directly to the maneuver forces. Without an intermediate stage, seabasing offers significant changes and advantages to the traditional view Marines have about sustained operations. Converting this new idea into operational reality requires the Marine Corps and Navy to change tactics and doctrine.

The term SOFTS will be used throughout this concept to indicate, among others things, that the concept of operations is inseparable from the concept of *sustainment*. As such SOFTS are a part of the land campaign directed by the Joint Forces Commander (JFC) and prosecuted by the JFLCC. The JFC no longer needs to rely on fixed LOCs because he can move the floating support base and change the supply routes to suit the tactical, operational, or strategic situation.

PRINCIPLES OF SUSTAINED OPERATIONS FROM THE SEA

The principles of SOFTS begin with the overarching precept of seabasing. In order for maneuver forces to maximize the benefits of SOFTS, there is a requirement to break with the past and accept that there will no longer be an "Iron Mountain" of logistics on the beach. The MAGTF commander will minimize the landward logistical footprint. The majority of the troops on the shore will be combat or combat support personnel whose focus will be on defeating the enemy, not on protecting CSSAs and LOCs. New concepts of "Just-In-Time" resupply and logistics will force the issue of cutting the cord with landward basing of materiel. Instead of there being an "Iron Mountain" it would be better to think in terms of an "Iron Molehill". The commander would determine how many days of consumable supplies and ammunition would be essential for initial operations and those supplies would be brought ashore. After that point, units would be resupplied from the sea on an as-needed basis. Utilizing new technologies such as LCAC's, AAV's, V-22 and others, supplies would be provided as required, not stockpiled and force-fed to the units. Ordering of supplies would be accomplished through digitized communications equipment which will transmit requirements from the combat units directly to the supplier, whether on a ship or an intermediate staging base or even in the continental United States. Repair of major end items will be accomplished through contact teams wherever and whenever required. Contact teams will be outfitted with all the heavy equipment required for on-the-spot repair. Evacuation of these items will only be conducted when it is beyond the capability of the teams to effect adequate repair to return the equipment to the fight.

Minimizing the logistical footprint also allows for other benefits. By reducing the presence of CSS, combat units can be made more flexible for maneuver, and therefore more rapidly available for subsequent missions. Withdrawal from one location, followed by reembarkation or redeployment for use elsewhere enhances strategic reach, flexibility, and maneuver. Theater commanders retain pliancy in the execution of campaign plans which rely on a powerful, mobile, responsive reserve. Without the encumbrance of a huge landward logistical tail, the force can move from engagement to engagement with relatively minimal delay.

The NEF will conduct SOFTS in a manner which will maximize the concept of surprise. By retaining flexibility in the conduct of operations, theater strategic and operational surprise can be achieved by not allowing the enemy the time or the ability to anticipate and respond to our moves. Surprise strikes against the enemy, whether as part of a deception operation or a full scale attack at an unexpected location can bring tremendous advantage to the theater campaign as a whole. Boldness and temerity against the enemy at the time and place of our choosing will bring a decided advantage.

SOFTS will enhance the commander's ability to focus his combat power at the time and place of his choosing by not requiring huge land masses in the plan for sustainment facilities. Supply distribution points, rather than depots, require much less space and can be much more easily displaced. Commanders will be less constrained by concern for protection and length of supply lines as the smaller distribution points can be easily displaced. This forces the support network to rely on long range transportation assets which circumvent the conventional way of thinking. This will allow us to maneuver against the enemy by exposing him to a concentration of our power, yet protecting our vulnerabilities from him. We will rely on highly accurate and lethal

munitions to defeat the enemy mass and deny him the ability to maneuver against us.

Technological advances in fire support, command and control, transportation and delivery systems will garner us a technological advantage at which our adversaries can only marvel. We will be mobile and decisively lethal, not allowing the enemy the opportunity to mass his fires or maneuver against us. Once initial objectives have been accomplished, we will stand ready for such other missions as may be directed by the JTF commander.

COMBAT SERVICE SUPPORT FOR SOFTS

"Logistics sets the campaign's operational limits." - Joint Pub 1

In order for the Marine Corps to be able to fully implement SOFTS, we must dramatically shift our conventional thought processes when it comes to CSS. Historically, we conducted amphibious assaults with the aim of putting as many men, and as much materiel, ashore as we possibly could in order to accomplish our mission of seizing advanced naval bases and conducting other such mission as may have facilitated the conduct of a naval campaign. Looking back at the island hopping campaigns of the Second World War, we have documented occasions on which the objective in the initial phase of the operation was to "establish a foothold" so that we could not be kicked back into the sea by a determined and fanatical defender. Simply put, we wanted to put more men and equipment ashore than the enemy could physically shoot, while pounding away at him with offshore bombardment and close air support. It was the epitome of attrition warfare, pitting brute force against brute force.

The Marines of that day were making the most of the technology that was available and were utilizing new tactics and techniques which had never been used before. The success of the mission often hinged on whether or not the forces ashore could be resupplied and sustained throughout the duration of the fight. After the initial assault, there was a rush to put as many supplies and as much logistical support on the beach as was possible; the thought being that possession of the turf equaled success, however limited that might be. Ammunition depots, field hospitals, fuel dumps, motor pools, water storage facilities etc. were all rushed ashore and, vital as they were, they rapidly became lucrative targets for the enemy. As our tactics and techniques

grew and developed over time, we began to dedicate more men and materiel to protecting these vital facilities. Through seabasing logistics, Marines can direct resources at those tasks specifically required to achieve operational goals, rather than using these resources to support a large infrastructure ashore. Marines will depend less on ports and airfields as intermediate throughput facilities. In lieu of using these types of fixed facilities ashore, Marines will gain the ability to deliver supplies from seabased facilities directly to the maneuver forces. Seabasing logistics is not a new idea. Throughout the history of our Corps there has been some degree of Seabasing. Smaller, limited military operations have used seabased logistics support for years.

Under the concept in MPF 2010 three new classes of ships will be available to deliver men and equipment to the theater of operations (also known as the MPS Triad). The first to arrive on the scene after the Amphibious Ready Group will be the "fast ships", with assets needed earliest in the campaign. Conceivably, these ships could participate in the first phase of the operation. After their initial deliveries have been completed, these vessels can return to Intermediate Support Bases (ISB) or to CONUS to reembark more men and materiel for a return trip. Meanwhile, the second tier of the MPS Triad, the "medium ships", is making its way to the theater for offload of its combat equipment. Ultimately, the third tier of the triad, an operations station like a "Mobile Offshore Base", will arrive to which other logistics ships can discharge their cargo. The base will act as the primary site for most logistics functions within the theater. There will be a requirement for additional naval forces under this concept to provide umbrella coverage against Theater Ballistic Missiles (TBM) and space, surface or sub-surface threats. But this concept allows for the rapid withdrawal and re-deployment of forces to new locations in a manner which has never been envisaged before. The operational and theater-strategic implications of this concept offer

advantages which will enhance the viability of naval expeditionary forces well into the next century.

Additionally, because of the size and importance of the CSSA, we took critical combat forces, often short-handed, away from their primary mission in order to protect these vital facilities. Instead of having infantry regiments manning the front lines, we devoted these critical assets to the conduct of "Rear Area Security Operations" (RASO). The Marines in the rear area were so encumbered by the tasks of service support, they had limited ability to provide their own physical security. The typical mechanic or fork lift operator was not able to do his job and provide the reaction force, patrol force, and other defensive actions required to secure the rear area. As a measure of scale, should the entire MEF combat service support area be established ashore, by doctrine over 100 square kilometers would be required for all functions. At this point, not only could the CSS personnel not protect it, but the regiments would have been hard pressed as well. In this day of WMD, PGMs, and the expected technological improvements of the future, it is clear that we need to find a smarter and more effective way to do business. The answer is simple and familiar, we have to base our logistical support at sea.

There are numerous proposals and studies for how this might be accomplished. In January 1990, then Commander Terrence Labrecque wrote an article for the Marine Corps Gazette. He proposed that rather than conduct a rapid offload of all shipping into a large beach support area, to serve as the warehouse, supply/maintenance depot, and collection point, all assets should remain spreadloaded at sea. Labrecque suggested the use of waterborne delivery services for supplies via contact points with the combat units. The system relied heavily on timely and responsive communications and the platforms presently in service. To his credit, Labrecque

sought to make the most of what was available at the time. He believed that the operations best suited for this type of CSS were those of limited size and/or duration. For the more conventional, long-term operations, he proposed that we continue with the traditional methods of CSS i.e. the "Iron Mountain" ashore. However, this proved to be the limiting feature in the development of the concept. Here is where we depart from his line of thinking.

As future technological developments and doctrinal concepts enhance our flexibility and operational reach, the Marine Corps will be able to conduct CSS operations in a way which will increase its responsiveness to situational changes and provide timely reaction as needed. No longer will the Marines need to conduct a general offloading of CSS assets during amphibious operations. This will greatly reduce the presence of CSS personnel ashore by debarking only the combat essential items of supply and equipment required to sustain the combat elements. Items such as minimal stores of Class I, III, and V items will be offloaded. Maintenance contact teams will be brought forward to effect combat essential repairs. Equipment which cannot be repaired on the site will be quickly evacuated. Maximum use of sea based maintenance facilities will be utilized. Contractor maintenance will reduce the requirement for non-combat essential personnel in the area of operations. Just-in-time logistics and resupply will be the predominant means of conducting operations. A responsive battlefield distribution system will be essential to the successful conduct of SOFTS.

This innovative departure from the traditional way of doing business will require operators to shift their thoughts to new technologies which will require advanced command and control systems to meet the needs of the warfighters in a timely and efficient manner. For example, secure satellite communications from the theater to the resource provider on the other

side of the world will be imperative. Miniature devices capable of identifying problems and transmitting requirements through satellites to any location in the world will facilitate just-in-time logistics and provide immediate feedback to using units on the status of their request. Troops will carry devices to scan and evaluate combat casualties and transmit vital information to medical personnel at sea. This will allow for timely and effective treatment and prepare receiving stations for the needs of incoming casualties. Only immediate life-saving and stabilization will be conducted ashore, all other treatments will be effected at primary care facilities afloat.

By moving so much of this manpower and resource intensive "iron mountain" out to sea, we achieve the desired result of decreasing the vulnerability of the CSS facilities and providing for greater operational tempo. Mobile offshore platforms and ships can move out of harm's way and reduce the number of security personnel required to protect the supporters.

In order for this concept to be viable, a major reorganization of available assets would be required. Under this scenario, a modification of currently available equipment and the adoption of other equipment would be necessary. Vessels with rapid accessibility to any and all stores would be mandatory. The present system of packing as much equipment into an MPF ship as possible would result in catastrophe if applied in a SOFTS scenario. The vessels for a SOFTS environment would have to be constructed and configured in a way that allows easy access to required items. Bar-coding of individual containers, linked to re-supply and requisition systems would enable embarkation personnel to rapidly locate and withdraw required items when called up by the operating forces. Ships would have to be specialized for various capabilities. This concept foresees the need for at least the following types of vessels: hospital ships (T-AHs), fuel ships, ammunition ships, T-AVBs, maintenance ships, storage ships, and warehouse ships. These

ships should be modularized to allow for plug in of different containers to outfit the ships for the appropriate scenario. A heavy reliance on containers is foreseen, thereby allowing either a selective or general unloading of the ship.

Furthermore, it would be prudent to have a mobile offshore platform onto which the various ships could offload their equipment for staging and onward delivery to the using unit ashore. Required capabilities for such a platform would include, but not be limited to, multiple docking sites for simultaneous offloading from different vessels, onboard maintenance facilities and workspaces, flight deck capable of handling multiple aircraft simultaneously, hospital facilities, cargo handling capabilities, and docking facilities for ship-to-shore platforms. By virtue of its mobility and fleet integrated defense systems, all of these capabilities would have greater survivability against GPS guided munitions (SCUDS) and pre-planned surface, subsurface and air attacks.

Evacuation of combat casualties (men and materiel) could be accomplished by the same methods described above. Shore-to-ship delivery platforms would deliver the casualty to the off-shore platform where it would be evaluated, repaired, and returned to service, or evacuated to one of the other vessels with the capability to effect the required repairs. Contact teams ashore would have identified the problem, transmitted the required information to the controlling agencies at sea, and the repair could be more rapidly effected than by conventional methods. Items not present aboard the repair vessels could be flown in from outside the theater and brought directly to the off-shore platform. This concept greatly reduces the requirement for force protection ashore of non-combat areas and enhances protection of the combat service element by putting most of it afloat at sea.

COMMAND AND CONTROL

The present Command, Control, Communications, Computers and Intelligence (C4I) systems are not adequate or flexible enough to meet the increased demands of the divergent and dispersed nature of sea, air, space and ground operations under OMFTS or SOFTS. The systems are not compatible in a joint or combined environment and in fact do only an adequate job of just meeting the needs of the Navy and Marine Corps warfighters for whom the systems were originally designed. With the increase in emphasis on seabasing which is inherent in SOFT, the C2 systems must allow the MAGTF commander the option to continue to operate from seabased platforms as C2 will not necessarily be automatically phased ashore prior to commencing SOA.

In the past, the commencement of SOA did not occur until C2 of the landing force was phased ashore and the commander of the landing force assumed responsibility for all operations ashore. Once reliable communications and links are established between ship and shore C2 nodes, the commander and his staff would transition to shore and reestablish situational awareness through communicating with subordinate commanders and his Navy counterpart still afloat. (See Fig. 1) This was done once the forced beachhead was established and all supplies and sustainment were brought ashore. It was during this operational pause that C2 was transferred from ship to shore.

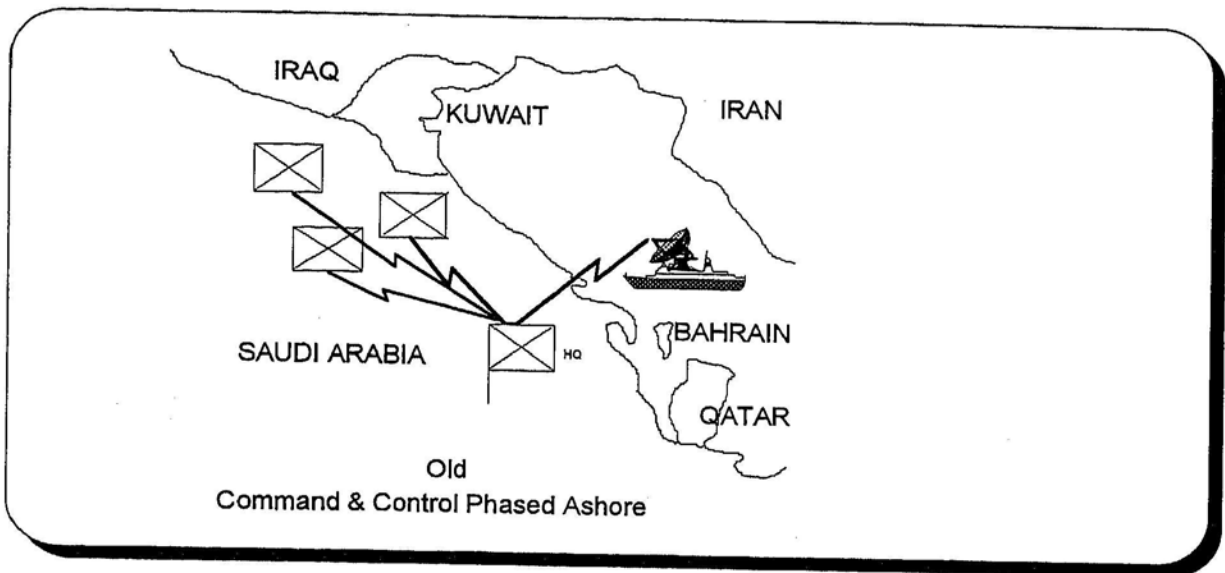


Figure 1

Under the SOFTS concept, the MAGTF commander can remain seabased to control his forces. Aboard ship he will have the C4I assets necessary to give him a total and complete picture of the battlefield. As his forces advance toward subsequent objectives, his C2 platform moves parallel with or inward toward the shore. (See Fig. 2)

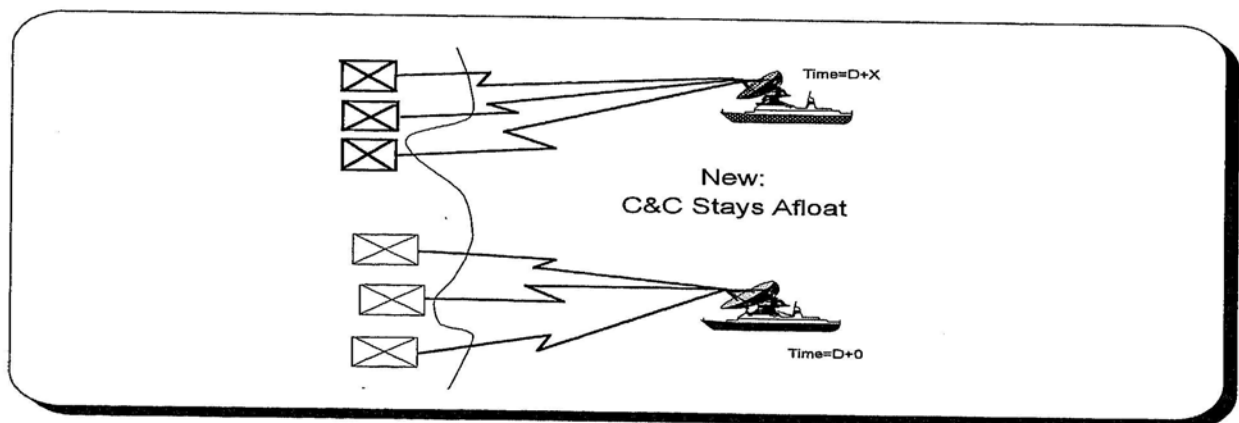


Figure 2

SOFTS C4I systems must be flexible enough to allow the MAGTF commander the option to operate from facilities ashore (i.e.. jump Command Post) if the situation warrants and he so desires. This dictates that the C2 system should have enough flexibility to allow him this option of taking his C4I ashore, leaving it seabased or both. These systems must be adaptable to a wide range of environmental conditions from the controlled atmosphere aboard ship, to the rugged and austere conditions associated with being in the field while using commercial and government off-the-shelf technologies.

The C2 of forces under the SOFTS concept requires four distinct levels of communications. The first is strategic connectivity to external joint agencies worldwide. This level must be interoperable to higher commands for the continuous, uninterrupted two way flow and processing of information in support of theater warfighting. The DOD joint vision *C4I for the Warrior (C4IFTW)* provides for the joint operational, intelligence and logistical architecture inherent in the Global Command and Control System (GCCS) necessary for operations in the joint and combined environment. The NEF and its MAGTF counterpart must have C4I systems that are interoperable, flexible, survivable and sustainable. *COPERNICUS* is the proposed Naval C4I vision supporting the joint and Naval warfighting strategies and is compatible with the C4IFTW concept. It will enable the Navy-Marine Corps expeditionary team to evolve, adapt, and integrate their C4I capabilities to meet the demands of the joint strategic environment, emerging concepts and evolving information warfare technologies. *COPERNICUS* is the unifying vision to ensure Naval C4I systems respond to the needs of the warfighter, capitalizes on advances in technology and supports the warfighting concept of operations such as OMFTS and SOFTS.

The second level of communications is intra-Amphibious Ready Group (ARG) communications. Greater, more balanced communications capability and capacity will have to be spread throughout the ARG shipping due to the dispersement of the various staffs.

In order of importance, the third level of change and need for ingenuity for ship to shore C4I will be the most vital and therefore most divergent from the present inadequate, antiquated systems. Due to the increased amount and importance of C2 and coordination that SOFTS demands and envisions, this link takes on new meaning and will prove to be the critical node for the success of SOETS. This link will have true over-the-horizon capability to coordinate the ground combat forces efforts ashore with air, naval surface fire support agencies and CSS agencies afloat.

SOFTS will eliminate the absolute need to phase control ashore and permit the NEF or MAGTF commander to perform his C4I functions straight from his seabased headquarters directly to the maneuver units ashore. This C2 linkage must be able to provide uninterruptable communications between the ships and units ashore for information as diverse as the transfer of "a common tactical picture" to requests for "just in time" supply.

The fourth level of communications is tactical communications between units ashore. Great strides have been made in burst data and secure voice transmissions, however, a more robust system capable of throughputting necessary information for maneuver operations, fire support and CSS is required. Under SOFTS, the requirement to provide information on friendly locations, operational changes and logistical requirements to a commander and his staff floating far over the horizon along with the need for reliability, flexibility, survivability and interoperability is greatly increased. Future technological advances to these four levels of C2 will enhance the

commander's ability to control and coordinate the MAGTF's activities in a dynamic and rapidly evolving environment.

FIRES

As depicted in figure 3, traditionally, during sustained operations ashore, a majority of fire support weapons (artillery, aircraft) and their associated support equipment, CSS, and force protection equipment and personnel, were moved ashore to support the ground scheme of maneuver. To improve tactical mobility and to reduce the MAGTF's footprint ashore, SOFTS will place greater emphasis on fire support from both surface ships and seabased aviation assets.

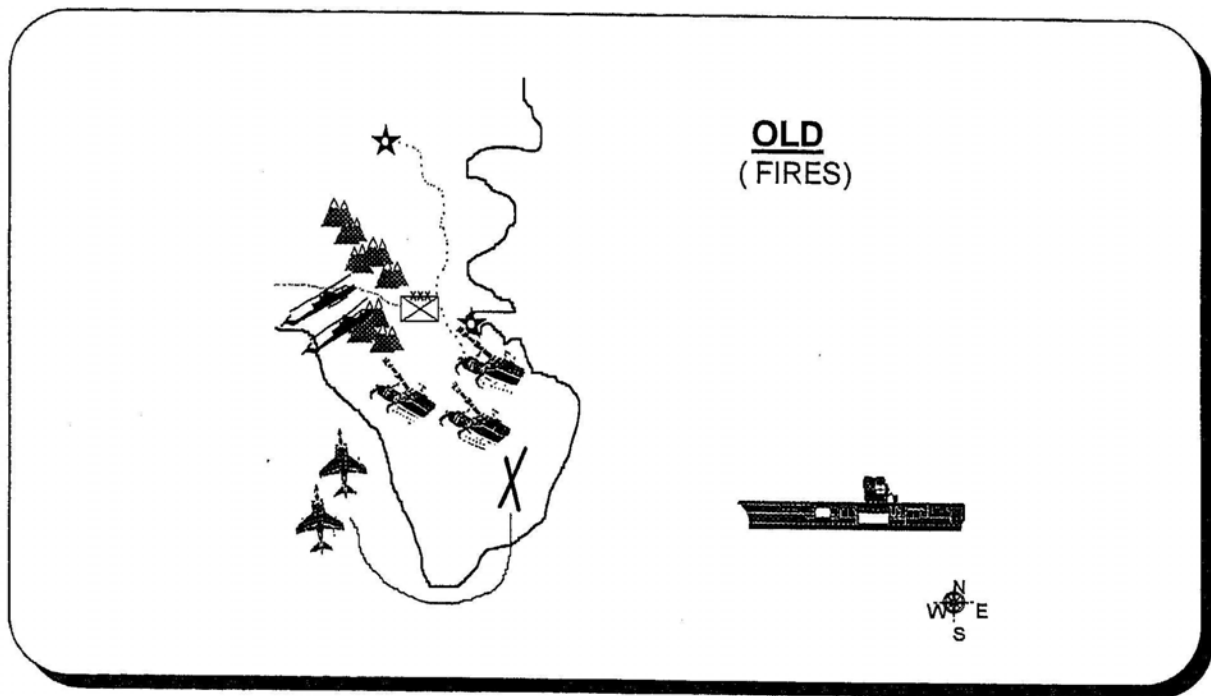


Figure 3

Although there may still exist a need for light weight shorebased artillery, there does not exist a requirement for the traditional heavy organic artillery nor its associated support equipment to

come ashore.

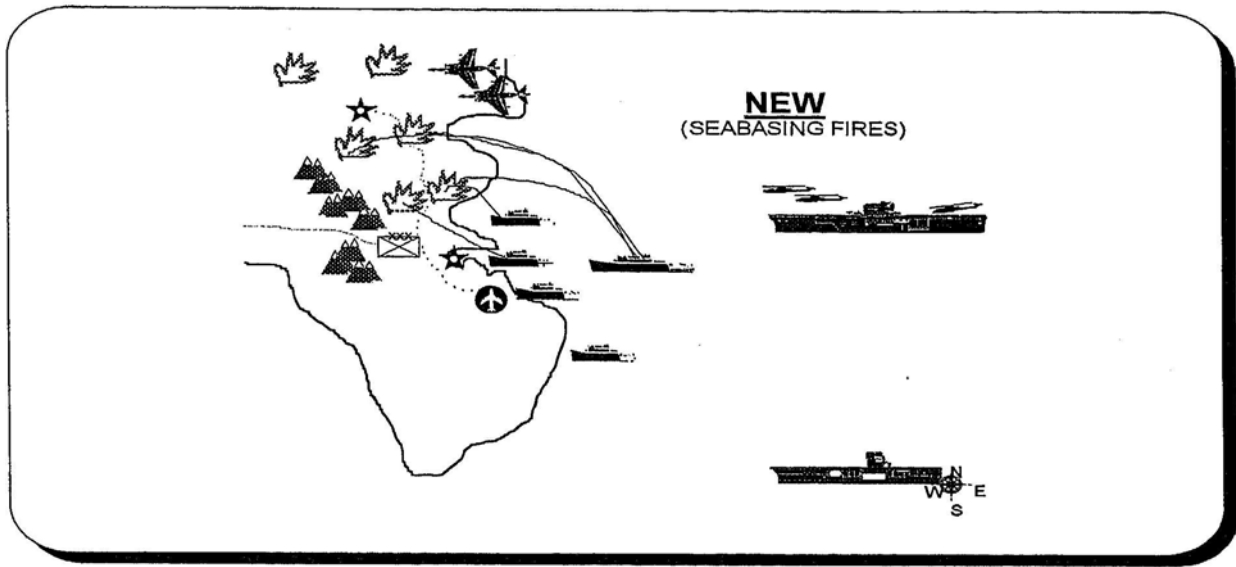


Figure 4

To support rapidly maneuvering forces along the littorals, seabased fires with increased range, improved accuracy and lethality in all types of weather will provide the commander with the ability to inflict instantly a high degree of destruction against all targets located throughout the battlespace. As shown in figure 4, precise fire support will be delivered from over-the-horizon by surface-to-surface missiles, air-to-surface missiles, and advanced extended range naval surface gun systems with precision projectiles; or more directly from both Marine or Navy tactical aviation assets (fixed and rotary wing) capable of delivering PGMs in all types of weather - day or night.

Through a variety of delivery means, advanced gun technology, extended range projectiles, and warheads, persistent, highly accurate, responsive fires will be able to suppress, neutralize, interdict, strike, and fix the enemy in the MAGTF's enhanced battlespace.

Additionally, the offensive applications of Electronic Warfare from both surface and airborne platforms to deny the enemy the effective utilization of its C4I will also play an equally important part of fires and will be a critical component of battlespace shaping.

A vital element for the sustainment of operations from the sea will be in the continual advancement and development of naval fire support platforms, munitions, and C4I systems capable of synergistically integrating these weapon systems to allow commanders to be able to exploit the full potential of developments in expeditionary force projection and precision strike.

Stealth strike fighter aircraft and attack rotary wing platforms operating individually or integrated together as hunter/killer teams, capable of operating from both large and small decks airfields in truly all weather conditions, day or night, and capable of remaining on station for long periods of time while carrying and delivering large quantities of all types of PGMs will provide instantaneous and precise fire support to the battlespace commander. These aircraft will be totally integrated into a holistic C4I system that includes fighter to fighter and fighter to helicopter links. These platforms will be able to deliver an entire host of stand off weapons such as JSOW, JDAM, SLAM and TSSAM as well as the less expensive but equally as lethal terminally guided iron bombs. Unmanned Aerial Vehicles (UAV) will provide not only real time intelligence and targeting data, day or night, but will also have the capability to terminally guide precision munitions delivered from either aerial or surface platforms.

Improvements and advancements in navigation and munitions technology will create a family of ordnance that is more precise, lethal and cost less to use than current smart weapons. GPS guidance control units will be standard on all weapons and platforms. All ground maneuver

forces will possess the capability to instantly transmit target locations as well as terminally guided ordnance in all weather conditions.

Proposed arsenal ships with long-range guns capable of firing beyond 180 miles along with land attack missiles will provide both direct and indirect fire support to the ground commander. It will possess the capability to rapidly acquire hostile targets, especially counter-battery targets, and quickly and effectively engage them to facilitate and protect maneuver forces ashore. Missiles would be optimized for battlespace dominance and interdiction whereas the gun with terminally guided munitions would provide the high volume of fire necessary in maneuver warfare. The arsenal ship would also play host to a squadron of smaller brown water fire support ships that would provide direct fire support at greater distances inland.

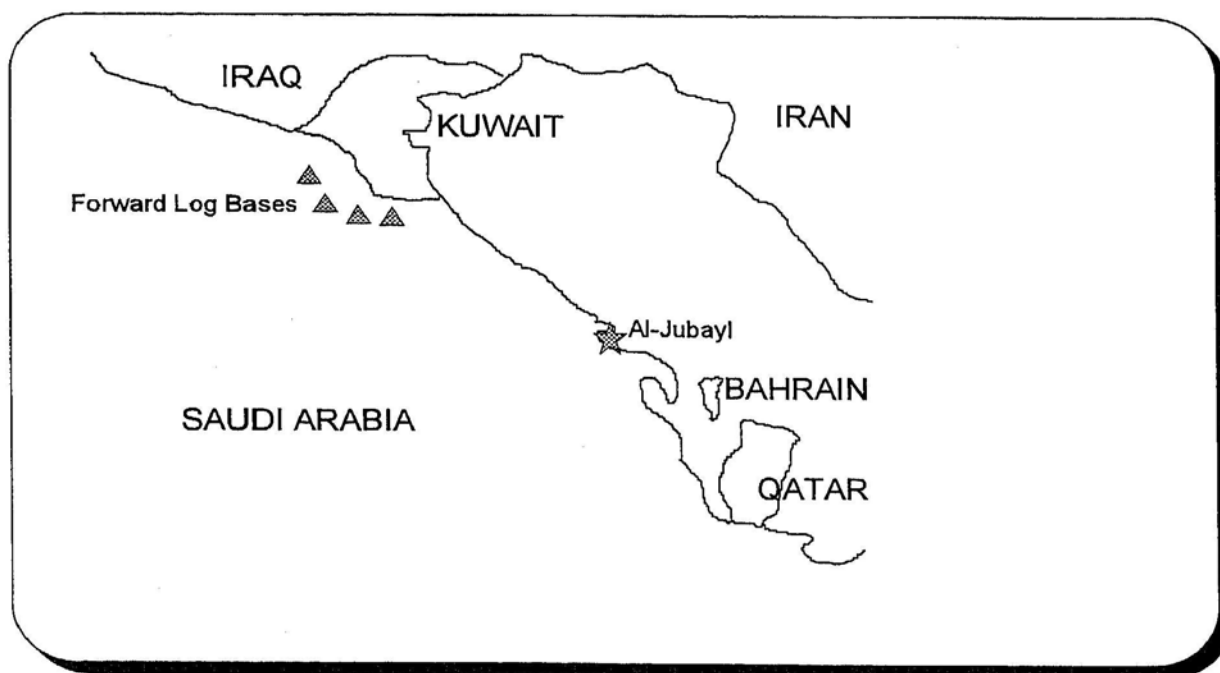
Timely and accurate information on the location of enemy forces is vital for commanders to exploit the operational and tactical developments that quickly evolve on the battlefield. Improved targeting methods will involve highly integrated sensors and a sophisticated joint communications network that is linked via satellite. Through global C2 connectivity, commanders will be able to exploit immediately all sources of sensor data, such as JSTARS, to be able to enhance situational awareness and to be able to immediately bring fires to bear on the enemy.

Power projection requires mobility, flexibility and technology to mass strength against weakness. A highly mobile, expeditionary force with its own air and a majority of its fire support afloat free to move with the maneuvering elements will prove to be a valuable asset to the unified commanders facing a wide spectrum of threats with fewer forward deployable forces.

SOA: A CLASSIC FROM THE PAST

During Operation Desert Shield/Storm, Marine Forces (I MEF) were utilized in the conventionally accepted medium referred to as Sustained Operations Ashore. The entire MEF was brought ashore including the supplies and equipment necessary to support it.

Marine Combat Service Support was and still is organized and equipped to conduct operations relatively close to the shore. In Desert Shield/Desert Storm, the 1st Force Service Support Group (1st FSSG) operated more than 50 miles inland and 100 miles from its main supply base at Al-Jubayl. As an innovative partial solution to the considerable distances involved, Marine Reservists, primarily from the 6th Motor Transport Battalion, formed "Saudi Motors", a collection of several hundred drivers with commercial trucks provided by the Saudis to link Al-Jubayl with the forward logistics sites.



In addition to ground transportation, Marine assault support transport helicopters were used to shuttle back and forth between the rear and forward logistics sites, carrying cargo and delivering high priority items. In the I MEF area, four CSS areas were set up near the Kuwait border. All forward sites were stocked with bulk potable water, both bottled and from reverse osmosis water purification units as well as ammunition, equipment, food, petroleum, construction materials and spare parts for delivery forward as needed. I MEF requested and received some direct support line haul, transportation and theater level fuel support in the form of Heavy Equipment Transport Systems, fuel tankers and other motor transport assets from the Army's 22d SUPCOM. To support the tactical units, 1st FSSG divided itself into general support and direct support groups, with mobile service support detachments providing support to each assault regiment or task force. This decentralized structure let 1st FSSG distribute supplies directly from Al-Jubayl directly to front-line units. Each level operated to help the next element forward. Although not a part of Marine Corps CSS doctrine, this innovative organization of the service support structure may have been one of the more successful aspects of the ground operation. I MEF supported its combat forces at distances far exceeding those anticipated in peacetime, and given the volume of supplies and speed of advance, Marine logistics were stretched to the limits.

While expeditionary in nature, Marine Corps logistics forces are not structured for sustained operations ashore much less at great distances from the coast. To conduct such operations, Marines rely on Joint doctrine and interservice agreements for such support as intra-theater transportation, common-item support, and establishment of extensive base areas and theater-level logistics structures. Joint doctrine and service agreements call for much of this support to be assumed by the Army and USAF after 60 days.

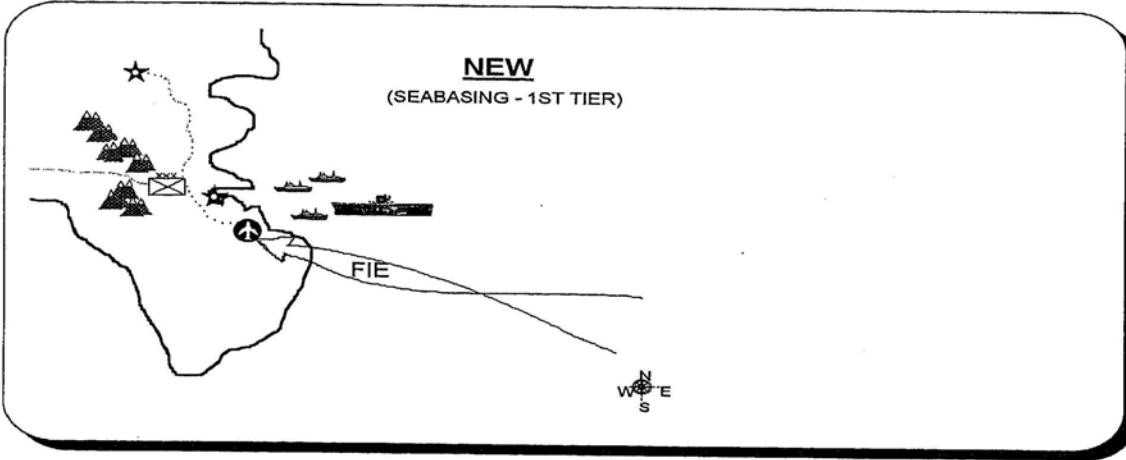
The circumstances as they existed then will not likely occur in 2010 (e.g. 4-6 months to establish forces and their sustainment; friendly host nation port and airport facilities with their fixed site infrastructure). In 2010, the threat is likely to possess cheap and easily attainable precision munitions (both conventional and weapons of mass destruction) and the Intelligence and Warning (I&W) capabilities to facilitate targeting on large static facilities and sites such as the "Iron Mountain" at Al-Jubayl, Saudi Arabia.

SOFTS: THE FUTURE

Conducting SOA in 2010 and beyond will require the seabasing of C2, fires, and logistics to maximize the MAGTF's strategic, operational and tactical mobility, force protection, combat power, etc. For example, in 2010 the following scenario occurs. A JTF commander directs that a MAGTF of a MEF size deploy to east coast of the Republic of Blue to deter a threatened invasion from the country of Orange. The MAGTF in conjunction with other Ground Component Commander (GCC) forces are further ordered to defend Blue's sovereign borders if invaded.

The application of SOFTS as it relates to the scenario above, supports the "full range of activities required for conducting joint operations" as outlined in Joint Pub 5.0. During the CINC's Deployment and Force Buildup Phase the MEF Forward, the first component of the triad, will deploy and its initial sustainment resources are brought into a specific operational area. It will be composed of Amphibious shipping and fast ships which will flow into theater. These ships will carry limited CSS and short term sustainment stocks in order to exploit the virtues of speed and firepower, thus maximizing the tooth to tail ratio. The footprint ashore will be occupied predominantly by tactical maneuver units which will have high mobility unencumbered by large

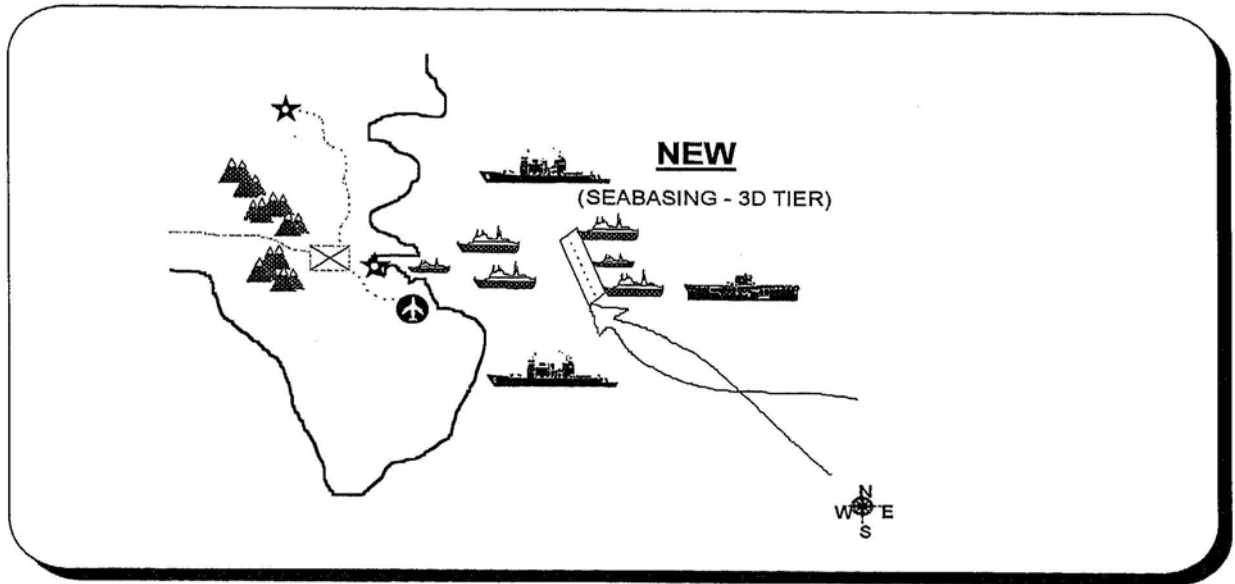
logistical infrastructures.



The second component of the triad will be composed of medium speed ships, visualized as the traditional MPF capabilities supported by fly-in-echelons, which will deliver the bulk of the MAGTF CE, ACE, CSS and force building assets. With these assets now in theater, the MAGTF commander will be able to pick and choose those personnel and materiel assets he requires for the successful completion of his mission. The remainder of his forces including fires, C2, and logistics would remain aboard ship. This would round out the forces ashore into a robust MAGTF and establish the logistics throughput pipelines and infrastructure for sustained operations ashore without the necessity of establishing huge support (read fires, C2 and logistics) footprints ashore.

With a crisis expected to last longer than 60 days, the third component of MPF 2010 would be brought into theater. This third component of the triad will be comprised of slower, multifunction vessels able to loiter indefinitely. This seabased "operations station" would provide the heavy materiel sustainment and follow-on force assets necessary for long term sustainment. The

operations stations greatest virtue will be its ability to operate in multifunction roles for extended periods offshore. It will enable transshipments of sustainment from worldwide shipping lanes into the theater.



The continued seabasing of selected functions of logistics, C2, fires and aviation aboard shipping brings a broad spectrum of force delivery options which can be tailored to the requirements of the scenario. This will significantly reduce the footprint ashore and provide all the benefits anticipated with seabasing. The MEF is now able to be supported truly from the sea. The MAGTF now will be fully able to conduct CSS operations in a way which will maximize its responsiveness to situational changes and provide timely reaction as needed. In this SOA scenario, the MAGTF commander will not have to, or want to, conduct a general offloading of CSS, C2 or fire support assets. He will be able to minimize the presence of CSS personnel ashore by debarking only the combat essential items of supply and equipment required to sustain the combat elements; minimal stores of Class I, III, and V items will be offloaded. Maintenance

contact teams will be brought forward to effect combat essential repairs and equipment which cannot be repaired on the spot will be evacuated. Maximum use of maintenance facilities at sea will be utilized. Contractor maintenance will reduce the requirement for non-combat essential personnel. Just-in-time logistics and re-supply will be the pre-dominant means of conducting support. A responsive battlefield distribution system is essential to the successful conduct of SOFTS within this scenario.

SUMMARY

Sustained Operations From the Sea (SOFTS) is the natural continuance of the seabasing principles outlined in Operational Maneuver From the Sea (OMFTS).

Like today's Navy-Marine Corps team, Naval Expeditionary Forces of the future will not be designed only for specific tasks. The NEF's mission will cover the gamut of operation from Military Operation Other than War to High Intensity Conflict. Nevertheless, future NEFs will, thanks to equipment and training associated with OMFTS and SOFTS, have the ability to conduct the full spectrum of operations seabased. By the year 2010, with the appropriate technological advancements, and consequential training and doctrine, the MAGTF commander will have the flexibility to seabase, or bring ashore, those capabilities necessary to effect command and control, logistics and fires. This flexibility minimizes the footprint ashore, enhances force protection, increases maneuver space, precludes the establishment of "Iron Mountains" ashore with the associated infrastructure and eliminates the logistical culminating points and operational pauses. The adoption of OMFTS, STOMS and now SOFTS marks a significant evolution in amphibious warfare. These three concepts fully enable our naval forces to carry out our nation's will by the joint tenants of dominant maneuver, precision engagement, full dimensional protection and focused logistics. Taking advantage of current and future innovations in technology, SOFTS completes the latest portion of the Navy and Marine Corps contribution to our joint warfighting capability. Improvements in doctrine, organization, training and education, and equipment will allow the Naval Service to realize the full potential of operations outlined in this concept as it applies the principles of seabasing to all facets of OMFTS.