

Ship-to-Objective Maneuver



May 2011

16 May 2011

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Publication of the capstone Marine Corps concept paper *Operational Maneuver from the Sea* in 1996 began the process of proposal, debate, and experimentation on a new approach to the conduct of amphibious operations based on the tenets of maneuver warfare and the new challenges and opportunities of the 21st century. *Ship-To-Objective Maneuver*, written in 1997, was a central part of that process. It offered a method for conducting an amphibious assault from over the horizon to achieve operational objectives deep inland, while avoiding the establishment of an “iron mountain” of logistics at the beachhead. These concepts sparked debate, war gaming, and experimentation at both the Service and joint levels for over a decade. During this same period, geographic combatant commander demand for amphibious crisis response forces and forward engagement by seabased forces has significantly increased. Regular employment of these forces in uncertain and austere environments where access is challenged has been chronicled by over 50 amphibious operations conducted since 2001.

Operational Maneuver from the Sea has been adapted by the Navy, Marine Corps, and Coast Guard into the central idea of the *Naval Operations Concept 2010*—the Sea as Maneuver Space—which envisions an expanded use of naval forces to build partnerships, influence and create access. The Marine Corps, as a key player working with our Naval partners, provides the ability to extend naval operations into the landward portion of the littorals, engaging forward to build relationships, while remaining capable of responding to crisis, projecting power, and creating access.

Similarly, this fresh look at *Ship-To-Objective Maneuver* will expand upon a proven concept and describe how amphibious forces can be applied in future uncertain, complex, and often austere environments where access cannot easily be assured. As a result, this revision will address how ship-to-objective maneuver will enable the breadth of missions the Marine Corps will be called upon to perform in the future. It will help us think through implications and combat development actions necessary to improve upon this capability. As with all our concepts, I encourage you to read it, discuss it, challenge it, and ultimately, contribute your personal wisdom and experience to its cause.

A handwritten signature in black ink, appearing to read "George J. Flynn", with a long horizontal flourish extending to the right.

GEORGE. J. FLYNN
Lieutenant General
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Chapter 1

Background

Ship-To-Objective Maneuver (STOM) is a tactical concept that can apply to all types of amphibious operations, but generally involves overcoming access challenges. These operations include assaults, raids, demonstrations, withdrawals, and amphibious support to other operations. These five types of amphibious operations support theater security cooperation, building partner capacity, crisis response, small scale contingencies and assaults to enable the joint force. Simply described, amphibious operations overcome access challenges, gain entry and achieve results on land. This revised concept discusses the utility of STOM in all missions—including major combat operations. It should be viewed as the next step in the Marine Corps' development of littoral maneuver and how amphibious forces will be successfully employed in future operations.

An amphibious force can be task organized to the mission and threat, and scaled to bring only those capabilities ashore necessary for mission accomplishment. Capabilities such as well decks and flight decks, landing vehicles and craft, rotary wing and tilt-rotor craft, billeting, communications, medical, dental, messing, planning, and command and control (C2) all give amphibious forces great utility and flexibility across the ROMO. Of note, the Navy and Marine Corps have conducted 137 amphibious missions since 1990.

Environment

The complexity and uncertainty of the future security environment is amplified by the migration of populations to the global littorals—congregating into mega-cities such as Shanghai, Jakarta, and Mumbai. Most ports and airfields are located near the epicenters of these dense masses of people, which further complicate our nation's freedom of access through the increased uncertainty associated with overstressed populations, infrastructure, and host nation's ability to effectively govern. If coastal migration simply remains constant, about 4 billion

people will live in the littoral regions by 2050¹. This could exponentially raise the cost of natural disasters by directly increasing the potential for these disasters to serve as catalysts for second and third-order human suffering in the form of disease, drought and starvation.

Permissive, Uncertain, or Hostile. As discussed in the Marine Corps Operating Concepts Third Edition, an amphibious force has utility in permissive, uncertain, and hostile environments. Permissive environments are described as those in which the host country military and law enforcement agencies have control, as well as the intent and capability to assist operations that a unit intends to conduct. Uncertain environments are described as those in which host government forces, whether opposed to or totally receptive to operations that a unit intends to conduct, do not have totally effective control of the territory and population in the intended operational area. Hostile environments are those in which hostile forces have some degree of control as well as the intent and capability to effectively oppose or react to the operations a unit intends to conduct.² In a security environment characterized by uncertainty, operating from the sea provides maximum flexibility, force protection and freedom of action unachievable by traditional ground force lay-down. Amphibious forces enjoy the capability and capacity to operate across domains as well as the agility to operate in uncertain situations. When tasked to operate in uncertain or hostile environments, forces require the ability to create access—when and where suited for mission success. Through the use of STOM, amphibious forces operate across myriad operational environments, retaining options to address different objectives with the same general-purpose force—no matter the environmental challenge.

Environmental Challenges to Access. Major natural disasters caused by hurricanes and typhoons, tornadoes, tsunamis, severe storms, landslides, droughts, fires, and flooding regularly result in intense human suffering and loss of life. The World Bank and Columbia University have studied these events and developed a map that identifies the areas in the world at greatest risk for a major natural disaster. These events have been occurring with all but predictable frequency over the past two

¹ Ghadar, Fariborz, and Peterson, Erik. Global Tectonics: What Every Business Needs to Know Penn State Center for Global Business Studies. 2005

² Joint Publication 1-02 Department of Defense Dictionary of Military and Associated Terms

decades and often damage roads, buildings, water storage, sewage systems and electrical power services; greatly impeding first responder action. Because of the damaged infrastructure and human toll caused by natural disasters, the execution of disaster-relief operations has a high degree of danger and uncertainty associated with it. As such, amphibious forces must be capable of gaining access, operating in austere environments, providing self-defense, and protecting an affected population, while remaining poised to project combat power in order to protect our interests or gain entry for follow-on joint forces. Amphibious forces employing capabilities which enable effective STOM are uniquely able to overcome environmental impediments to access caused by natural disasters—providing relief exactly when and where it is needed most.

Political Challenges to Access. Many nations continue to limit or deny over-flight of their territories by U.S. and coalition forces. The ability of joint forces to be pre-positioned in a geographic region, in international waters, affords the joint force commander (JFC) additional options for transit and access, as well as a more flexible time-line for allowing the diplomatic process to develop. Diplomacy requires negotiation and negotiation requires time. An amphibious force can loiter off shore indefinitely providing valuable time for diplomatic efforts to unfold, complementing diplomacy with demonstrated resolve. A force operating from the sea retains the ability to increase or decrease scale, visibility and tempo as the situation dictates. STOM allows the host nation government to cooperate with US forces without having their entire population aware of the partnership, thus allowing leaders the opportunity to work together without compromising the perception of host nation authority or competence.

Military Challenges to Access. Potential adversaries will increasingly use sophisticated anti-access and area denial weapons and technologies. These adversaries' forces may possess varied levels of integrated air and coastal defense systems which may include anti-ship missiles, mines and guided munitions, as well as aircraft, submarines, small boats, and mobile reaction forces. From mobile or fixed positions, defending forces will attempt to deny landing sites and counter friendly maneuvers afloat and ashore. The enemy will attempt to deny access to the amphibious force by contesting control of the air, surface, subsurface or cyberspace. As such, maritime security challenges inherently intensify as a naval force maneuvers within the proximity of littoral

regions. The increase in maritime traffic in these littoral regions further contributes to an ambiguous atmosphere where it is easy for adversaries to conceal their capabilities and intent.

Military Problem

Oversea military operations are frequently challenged by an increasing variety of impediments to access. The uncertainty of the future security environment necessitates a capability to overcome access in operations across the ROMO.

Central Idea

STOM facilitates credible response to crises in the littorals with tailored, scalable forces in permissive, uncertain and hostile environments, enabling successful engagement, humanitarian assistance, crisis response, and power projection. Projecting power and influence ashore in uncertain environs necessitates seamless operation across all domains. Recognizing the special requirements of each, amphibious forces leverage resources in all domains air, sea, land, space and cyberspace to gain area control with maximum speed and effectiveness. STOM envisions a force with the ability to operate across a wider geographic area, in a more decentralized manner, allowing naval forces to gain entry exactly when and where needed; expanding and enhancing JFC's options.

Tenets of STOM

To fully exploit the sea as maneuver space in the modern era and provide greater force employment options—STOM seeks to remove the transition at the water's edge. Exploiting significant improvements in the speed, range, and command and control; it advocates a seamless littoral maneuver. In addition to leveraging superior mobility and awareness, STOM relies upon improved unit training, and empowering the enhanced MAGTF to more effectively apply soft and/or hard power capabilities in permissive and uncertain environments. Together these capabilities provide the theater and JFC a greater range of options, including the ability to aggregate forces in order to conduct more traditional missions in openly hostile environs. Through the use of STOM, amphibious forces are better able to:

- **Conduct littoral maneuver.** Treat the sea, air and land as unified littoral maneuver space. The sea is both a protective barrier and a highway of unparalleled mobility that provides greater maneuver flexibility, surprise, and increased security for the amphibious force. Amphibious forces may employ STOM to outflank or envelop an adversary, secure the vulnerable flanks of other friendly forces, or to remove landward threats to the maritime domain.
- **Continue to apply the single-battle concept.** The increasing speed of information flow and reliance on distributed action requires recognition that operations or events in one part of the battlespace often have profound and unintended consequences in other areas or on other events. Therefore a commander must always treat the battlespace as an indivisible entity.
- **Improve options for joint force commanders.** Supporting a combatant commander’s engagement strategy while providing a crisis response capability applicable across the ROMO makes STOM an important soft and hard power enabler for the JFC. As amphibious forces are routinely forward deployed, they are immediately available for use. The “rheostatic” capability provided by these seabased forces allows time for the diplomatic process to be fully developed before determining the best option. Not only do amphibious forces provide the ability for response, they also serve as a deterrent, ready to come ashore if required but able to loiter over the horizon indefinitely as a joint force insurance policy.
- **Use seabasing to limit the footprint ashore.** Only those forces specifically task organized for the mission are required to enter the operating area. This approach allows for much of the C2, intelligence, logistics, and fires functions to remain at sea. Often, political constraints limit the type and number of forces ashore; an operational consideration easily accommodated by the use of forces based at sea. The inherent force protection afforded by staging remotely based support and non-mission critical forces in international waters minimizes the number of personnel at risk and reduces the logistical requirement—sustaining only mission essential forces ashore.

- **Focus equally on soft and hard power missions.** There are numerous reasons necessitating assured access in permissive, uncertain and hostile environments, from enabling the execution of operations with governmental and non-governmental civilian relief organizations, executing non-combatant evacuation operations, as well as kinetic operations and the introduction of follow-on-forces to achieve operational objectives outright.
- **Emphasize maneuver flexibility and avoiding established defenses or obstacles** to drive planning, course of action selection, and method of STOM execution. In order to rapidly locate and exploit gaps in enemy defenses or avoid obstacles to maneuver, naval forces must integrate joint C2, intelligence, fires, and assessment capabilities. The key is to be able to incorporate this information in real-time, at the lowest possible echelon in order to avoid obstacles—man-made or otherwise.
- **Use a cross-domain approach.** As Sun Tzu said, “Water's formation adapts to the ground when flowing,” understanding and exploiting opportunity is essential. Amphibious forces leverage capabilities across all domains employing an integrated “littoral domain” approach. Embracing the littorals collectively as a domain, affords the naval force advantages in any mission.
- **Use dispersed forces to avoid** adversaries' effects while maintaining the ability to concentrate at the right time and place to overwhelm enemy forces or achieve desired results on the objective. STOM capitalizes on littoral maneuver through the use of multiple entry points and mission-dictated force packages to provide local and time-sensitive “zones” of support; exploiting flexibility, speed and maneuver across domains. The cumulative nature of these dispersed tactical activities will more rapidly benefit the operational plan by increasing overall tempo and providing responsive effects over a wider geographical area, retaining the ability to quickly mass combat power at a decisive place and time if required.
- **Employ scalable landing forces.** The building-block unit for future operations in the littorals will likely be the company landing

team³ (CLT). The CLT provides many options for increasing distributed or disaggregated operations to include raids, reinforcement, security cooperation, advising and assisting. More significantly, the company team provides a force capable of securing an entry point or aggregating as the building-block for larger power projection operations of up to two Marine Expeditionary Brigade (MEB) assault echelons.

CLTs maximize the tactical flexibility offered by a true decentralized mission approach. They are reliant on increased access to, and /or control of improved C2, intelligence, logistics, and fires capabilities, as well as increased maturation of experience at the individual, squad, and platoon level. Enhanced companies or smaller formations aboard non-traditional platforms provide more options to support the geographic combatant commanders' (GCCs) demand for engagement—a demand currently not being adequately met.

- **Increase options for partnering.** STOM tactically enables amphibious forces whether part of a quick-reaction-force or using general purpose forces and logistics in direct support of operations ashore. STOM enabled amphibious forces can provide scalability and depth to SOF efforts and missions. A CLT with increased capability and wider distribution across a GCC's area of operations can effectively partner with SOF during engagement activities or crisis response operations, while being able to immediately reinforce or provide logistics support in stability operations. Opportunities for increased partnerships with United States Agency for International Development (USAID) promoting U.S. national security and foreign policy, as well as the U.S. Coast Guard conducting maritime missions offer mutual benefit in pursuit of GCC requirements.
- **Gain local area control for periods of time.** STOM has both a temporal and a spatial context. The goal is to achieve the requisite degree of area control to allow the maneuver of forces and

³ A CLT is a reinforced rifle company; task organized to perform a specific mission from the sea, and may remain formed in order to accomplish follow-on assignments. The CLT is capability-based, normally enabled, at a minimum, with the ability to: coordinate and control fires within its' assigned area of operation; communicate and coordinate with all relevant actors across it's area of operation, as well as coordinate and manage logistics of all attached elements. CLTs are designated by the Marine Air Ground Task Force (MAGTF) commander.

capabilities throughout the littorals for that specific amount of time required to accomplish the mission. This can be accomplished in an uneven manner shaping adjacent areas rather than attempting to dominate an entire domain or “roll back” defenses in the entire operations area.

Methods

As described in *A Cooperative Strategy for 21st Century Seapower* (2007) and expanded upon in *Naval Operations Concept 2010*, U.S. Naval forces use the seas as maneuver space to gain access and freedom of action. The ability to use the operational maneuver space offered by the sea is dependent upon the ability to conduct—littoral maneuver. Littoral maneuver is the ability to transition ready-to-fight combat forces from the sea to the shore in order to achieve a position of advantage over the enemy. It may be employed directly against an objective, including inland objectives, to accomplish the mission singly; to seize infrastructure or lodgments that will enable the arrival of follow-on forces; or to pose a continuous coastal threat that causes an adversary to fix, maneuver or dissipate his forces. The key is the combination of flexibility, speed and maneuverability in relation to the environment and enemy. A wide variety of platforms with distinct capabilities can be employed to maneuver forces or to deliver equipment and supplies from ship to a specific objective area or a series of objectives. Tilt-rotor aircraft can range far and deliver many capabilities with exceptional speed. Surface assets such as the Landing Craft Air Cushion (LCAC) are capable of moving heavy armored vehicles and large quantities of supplies across the sea and over the beach. The simultaneous use of many of these capabilities in either amphibious assault or humanitarian relief operations facilitates rapid maneuver through the littorals and the build-up of capacity at the point of action.

Amphibious ships provide efficient operating platforms for: launch, recovery and maintenance of landing craft and aircraft; command, control, communications and intelligence systems; logistical support, to include berthing, messing, and medical; unit and staff accommodations; and offensive and defensive weapons suites. The ships of an amphibious task force are able to close, assemble, employ, sustain and reconstitute MAGTFs in any environment. The important forward presence role of Navy and Marine forces positions them to respond rapidly to crises as

they arise. At times when no crisis is imminent, these same forces support a wide variety of security cooperation and engagement activities in support of the commander's theater security cooperation plans.

Application

STOM applies the principles and tactics of maneuver warfare to the littoral battlespace—even in non-combat scenarios. Specifically, it allows for conducting combined arms operations from the sea directly to objectives ashore without stopping to seize, defend, and build up a beachhead or landing zone. Landing forces will conduct STOM by executing plans which are detailed, but flexible. A focus on the overall objective and mission command⁴ will drive planning and the scheme of maneuver ashore, allowing commanders to base decisions (such as the time and place of landing) on enemy gaps, population, nature of the problem or other events. Surface and vertical maneuver elements will be employed to accomplish the mission, producing a cumulative effect greater than the sum of the parts. Application of maneuver warfare principles in the execution of STOM will require continued DOTMLPF changes, to include:

- Future enhancements that enable maneuver elements to depart their ships prepared to execute actions on the objective without pausing at or establishing a beachhead.
- Tactical commanders on the scene may choose to vary their formations and axes of advance given opportunity for tactical exploitation, based upon the changing situation and task force commander's intent.
- Tactical commanders plan landing force maneuver options so that they can exploit up-to-date information and cross from sea to shore

⁴ Mission command is a command and control philosophy defined by reciprocal trust-based relationships and the principle of "command by influence." The primary characteristic of command by influence is decentralization of command, with empowered subordinates exercising initiative in accord with the superior commander's intent. For more detail on mission command see the *Marine Operating Concepts Third Edition* chapter two.

at the most advantageous points.

- The maneuver forces will create and exploit new opportunities achieving a decisive advantage.
- STOM emphasizes *seabased* C2, logistics, and fire support. Improved information connectivity will allow the landing force command element (CE) to remain at sea, capable of effective command, but better protected from enemy attack.
- Because the CE may remain afloat, the shift from commander amphibious task force (CATF) control to commander landing force (CLF) control during transition of forces ashore may not be required. In order to simplify C2 in future amphibious operations, a single commander for the entire amphibious mission (as opposed to a separate CATF and CLF) may be desired. The seamless conduct of C2 in the littorals is the most important feature for success.
- The amphibious task force provides combat service support to units rapidly and directly, fully exploiting the lift and mobility offered by surface and vertical connectors.
- Force vulnerability and footprint ashore are significantly reduced, greatly improving freedom of maneuver.
- Amphibious operations may rely on supporting, advance force, or pre-assault operations including deception operations, reconnaissance and surveillance, mine clearing, fire support, and obstacle reduction in the objective area. While such tasks remain critical to the success of STOM, these operations must be considered in relation to the surprise achieved by STOM. The benefits of surprise are so important that a premium is placed on intelligence, surveillance and reconnaissance (ISR) to identify gaps that can be exploited without compromising intentions. Future operations will emphasize clandestine efforts to determine enemy strengths and weaknesses by locating and identifying mines, obstacles, fire support units, critical C2 nodes, and force dispositions. Breaching, preparatory fires, and obstacle clearing—traditionally pre-assault tasks—will become an integral part of the assault phase.

- STOM requires task organizing forces for success to, from and on the objective.
- The amphibious operation does not terminate with the transfer of C2 ashore, but rather with the accomplishment of the mission. In fact, the full transfer of command ashore may not occur. Rather, littoral maneuver C2 will occur from the sea or on land—wherever the commander is best positioned to accomplish the mission. Upon completion of the amphibious operation, the MAGTF may either transition to subsequent operations ashore, or re-embark on board the amphibious task force.
- Advanced C2 systems will provide the commander with the ability to see and influence the battlefield, while giving subordinate maneuver commanders the freedom to exploit fleeting opportunities. Plans will be based on accurate intelligence, but an understanding of the commander’s intent will permit maneuver unit commanders to adapt their actions to the changing situation.
- Two coordination measures will be needed to control maneuver forces in the expanded littoral battlespace of STOM: *littoral penetration site*⁵ (LPS) and *littoral penetration point*⁶ (LPP). Capitalizing on the precision location and navigation capabilities of the landing force, an LPP need only be large enough to support the passage of a single craft, but it may be used by a maneuver element or series of maneuver elements passing in column. Commanders will normally designate multiple LPPs to promote maneuver options and flexibility. Figure 1 below depicts an example of LPP and LPS usage.

⁵ An LPS is a continuous segment of coastline through which landing forces cross by surface or vertical means.

⁶ An LPP is a point within an LPS where the actual transition from waterborne/over-water movement (“feet wet”) to overland (“feet dry”) movement occurs.



Figure 1- Littoral Penetration Points and Littoral Penetration Site

- The transition from maneuver on/over the sea, to overland must be seamless, allowing forces to maintain momentum and tempo so as to conduct deep penetrations and reach inland objectives quickly. Vertical and surface maneuver forces bring complementary capabilities to the battle, permitting operations to continue unabated until forces achieve their objectives.
- MCM detection from the very shallow water to the beach exit will enable maneuver forces to avoid or by-pass mines. When required the ability to clear assault lanes and littoral penetration points is needed.

Figures 2 and 3 are representations of what differentiates STOM from the traditional conduct of amphibious operations. By treating the entire littoral area as maneuver space, amphibious forces rapidly leverage capability against opportunity, without needing to pause while establishing a lodgment for follow-on operations ashore.



Figure 2- Previous Amphibious Execution



Figure 3- STOM-enabled Amphibious Execution

Chapter 2

Permissive and Uncertain Environments

Permissive

In a permissive scenario the tenets of STOM allow the amphibious force to operate with partners in order to conduct engagement activities and steady state operations with a more deliberate operational tempo than would be possible in a more risky setting. As mentioned before, a permissive environment assumes a functioning government, infrastructure, military and law enforcement agencies with the capability to provide local stability. “Permissive” does not equate to “easy.”

A permissive environment must be viewed as one that can change at any time depending on the situation locally or regionally; it is fluid and dynamic—not static. As such, the MAGTF must be able to operate while placing the least strain on local politics, infrastructure and economic drivers. The amphibious force maintains the ability to scale its visible footprint to reinforce stability while enabling host nation activities. Forces employing STOM in a permissive environment are able to disperse to the maximum extent, provide the greatest amount of assistance, best tailor to the mission and operate at the most efficient tempo possible. However, the additional responsibilities to work through in-depth diplomatic processes, collaborate with nongovernmental and intergovernmental organizations, and accommodate the media, make such operations substantially more complex.

The most common methods for amphibious forces to engage in activities within other nations are those activities that fall under the general term—building partner capacity. Building partner capacity activities are largely the result of interoperability with allied and partner-nation maritime forces. Interoperability is achieved through effective, steady-state engagement activities, coupled with the flexible employment of naval force packages that are tailored to specific capacity building or security cooperation missions. These are normally conducted in a permissive setting. STOM-capable forces possess enablers that provide additional measures to lessen the strain on local infrastructure, and avoid negative impact on local economies or fragile political conditions, while shaping strategic communication and mission focus to each individual objective

within the greater geographic area.

STOM enables the Marine Corps to more efficiently conduct planned activities focused on enhancing regional ties and relationships, such as security cooperation and security force assistance, maritime security operations, training and readiness exercises, as well as pre-planned humanitarian and civic assistance. These steady-state activities build a foundation to address regional challenges with multinational partners when presented with crisis, or in any situation in which the environment becomes less certain.

Uncertain

An uncertain environment is arguably the most challenging and difficult one in which amphibious forces operate, inasmuch as they are exposed to potential danger but restricted from taking the offensive initiative to eliminate threats. Thus, they are placed on a restrictively defensive stance—consistent with the rules of engagement. Unfortunately, assessments of the future security era indicate that an uncertain environment is also the one in which amphibious forces will most often find themselves. Operating in locations where there is no prevailing trend indicating the attitude of the local population or in which the level of destruction or discontent is such that any further deterioration could push the population into desperate measures, increases risk to the local population, friendly forces and mission success. The uncertain environment may include characteristics of permissive and hostile environs, interwoven within the same operating area. In order to mitigate risk, forces must be able to immediately alter their posture based on the real-time changes occurring in each objective within the wider operating area. The MAGTF must be able to operate from over the horizon and freely maneuver throughout the littorals. This ability to maneuver provides advantages in gaining and maintaining operational access, as well as providing assistance and relief to those in need.

Humanitarian assistance and disaster response⁷ (HA/DR) operations benefit from speed, depth and cross-domain mobility for the early

⁷ As mentioned in the NOC 2010, HA/DR is usually performed in support of US government partners. HA/DR activities include, but are not limited to: defense support to civil authorities, humanitarian and civic assistance, foreign humanitarian assistance, foreign disaster relief, foreign assistance, humanitarian evacuation, development

provision of water, food, shelter and medical support that are essential to mission success. Amphibious forces are ready to rapidly provide service ashore, without large ports, airfields or the roads and bridges normally used to transit to/from the objective; as this infrastructure is often damaged by natural events. Working closely with local and international humanitarian agencies, military support is integrated into an overall response plan. With STOM-enabled capabilities, forces are able to move humanitarian aid directly to the point where it is most critically needed—in the least amount of time possible. Speed of execution and precise attention to the needs at different locations, such as food, water and medical assistance achieve multiple benefits in a crisis. They not only provide aid at the time needed, but they also alleviate some of the primary stressors that transform need into desperation and potentially hostile action.

In non-combatant evacuation operations (NEO), every effort is made to quickly transport U.S. and allied citizens to a safe location. Speed and maneuverability of STOM-capable air and surface connectors along with the ability to provide customized security and force projection capabilities by elements of the landing force, are optimal for success in these characteristically uncertain situations. NEO success is determined by the speed of its execution. The ability to extend security and reach out to isolated evacuees rapidly using vertical maneuver is a critical capability. Equally important is surface lift, which provides the capability to readily move significant numbers while providing additional force protection measures and medical capability. Some instances require air and surface evacuation in addition to air and ground maneuver ashore. A combination of these air and surface options affords the JFC the best capability-mix to employ in order to accomplish a NEO in any setting.

Counter terrorism operations and missions conducted to deny sanctuary to terrorists and other unlawful actors are inherently dangerous given the increased capability of adversaries to procure advanced weapons and technology and immerse themselves among the civilian population. These challenges become increasingly more difficult in the urban littorals. When fleeting opportunities to target terrorists or other unlawful actors present themselves, forward-postured amphibious forces

assistance, maritime environmental response operations and selected aspects of security assistance, in accordance with their doctrinal functions.

may be called upon to rapidly transition from response or engagement missions—thereby eliminating the JFC’s requirement to deploy a separate force. This affords the JFC the ability to exploit opportunities in one locality without changing the mission posture in others. STOM allows the commander the ability to tailor the size, capability, posture and footprint of the force based on the threat and mission requirements on the objective without requiring those same changes in other parts of the larger operating area. In this type of mission, the ability to disperse, denying the enemy the safe havens from which to plan, stage and operate from, weakens enemy capability while allowing adjacent friendly activities to continue according to the operational plan or deviate as necessary.

Relevant to every operation, Tactical Recovery of Aircraft, and Personnel (TRAP) missions have the greatest potential to be conducted with little predictability. Whether the mission is to go recover a downed pilot or to secure a crash site, the reaction of the indigenous population may be volatile or sympathetic, and the reaction is often unknown until the recovery team arrives. Through STOM, the TRAP mission can be conducted quicker with greater responsiveness relying on a combination of surface and vertical maneuver, keeping in mind the time required on the objective as well as the time required to get to it. Recovery of equipment and aircraft, including unmanned systems, requires a larger logistical consideration which benefits from a mobile, seabased force.

Certain visit, board, search, and seizure operations may require surface and vertical means of execution in order to be effective while remaining tactically unpredictable. Though STOM is normally discussed in the context of amphibious operations—capabilities and techniques may also be applied against objectives at sea, such as ships or gas and oil platforms. Forward-postured amphibious forces may be called upon to conduct concurrent missions at sea and on land.

Chapter 3

Hostile Environments

The original STOM concept effectively captured the relevance and applicability of STOM for conducting forcible entry operations in a hostile environment. However, it did not adequately communicate the possibility of the joint force operating in an area that does not start off as hostile, but due to some unforeseen event, becomes hostile. This escalating situation is something that cannot be overlooked and it is arguably the most dangerous scenario for joint forces.

Some environments evolve to become hostile without the need for forcible entry operations. Occasionally, forces will already be conducting operations ashore when hostilities begin. When an escalation in the intensity of operations does occur, the speed of combat power buildup at the point of contact—or speed of withdrawal of forces from contact—may be essential to accomplishing National objectives and protecting US citizens and interests. The possibility of conducting combat operations concurrently with a noncombatant evacuation and/or humanitarian relief cannot be overlooked.

The Battlefield

The requirement to gain entry along a littoral front in the face of an adversary is enduring. Littoral maneuver through simultaneous vertical and surface means provides the capability to attack throughout the breadth and depth of an enemy's territory. Littoral maneuver can begin from over the horizon but aircraft and surface launch points will vary based on situation, mission, threat and scheme of maneuver. Entry operations may occur over an extended operating area to accomplish the mission singly; to initiate a campaign by seizing a lodgment for the introduction of additional forces; or to support an ongoing campaign by assailing an enemy's flank or rear area. Amphibious forces conducting STOM provide the JFC a credible and sustainable maneuver option and a critical enabler where entry is denied or contested.

Adversaries may employ a combination of obstacles, mines, artillery, missiles, aircraft, submarines, small boats, air defense artillery, direct fire, and maneuver forces with integrated air and coastal defense systems

to deny entry to the joint force. The battlefield is further complicated by enhancements and precision to include guided rockets artillery mortars and missiles (G-RAMM). The enemy will contest the control of air, maritime, land, space, and cyberspace domains. Amphibious forces will offset these challenges by remaining—at least initially—over the horizon, using the expanded maneuver space offered by the sea to complicate enemy targeting and provide more reaction time to defeat counterstrikes. From this tactically advantageous position, the landing force will be able to initially avoid enemy strength, maneuver to create multiple entry points and disrupt enemy anti-access strategy and then overwhelm adversary defenses to attack or influence its' landward objectives.

STOM takes advantage of C2 systems to maneuver landing forces in their tactical array from the moment they depart the ships, replacing legacy ship-to-shore movement with true littoral maneuver. Thus, the need for separate seaward and landward C2 arrangements, as well as the necessity to transition command, from afloat to ashore, is eliminated. The evolving system of integrated naval logistics likewise permits seabased support to maneuver forces ashore, rather than the establishment of separate, and potentially vulnerable, land-based logistics nodes.

STOM is not aimed at seizing a beach, but at maneuvering combat units ashore in their fighting formations, and in sufficient strength to strike directly at the point of decision to accomplish the mission. The landing force seeks to generate overwhelming tempo and overmatch enemy weaknesses with its power and rapidity of execution. Tactical flexibility, combined with reliable intelligence, will allow it to bypass, render irrelevant, or unhinge and collapse the enemy's defensive measures. Landing forces will aim to create opportunity through maneuver to defeat adversaries and accomplish operational objectives. STOM provides the opportunity to achieve tactical as well as operational surprise, something seldom possible in past amphibious operations. By requiring the enemy to defend a vast area against our seaborne mobility and deep power projection inland, naval forces will render most of the adversary's force irrelevant. If the enemy chooses to withhold a strong mobile reserve, it will be found and attacked with long-range joint fires. His thinly spread defenses will allow friendly forces greater freedom of maneuver at sea and ashore. Supporting, advance force, and pre-assault operations will confuse and deceive the enemy, locate and attack his forces, and further

limit his ability to react. Amphibious forces will take advantage of the night and adverse weather conditions, as well as the ability to control the electromagnetic spectrum and cyberspace. These capabilities will enable exploitation of known enemy vulnerabilities, create opportunities, achieve tactical surprise, and result in mission accomplishment.

Surface Maneuver Force

Surface maneuver forces consist of self-contained combined arms teams. After leaving the ship, these teams maneuver overwater and overland, under the direction of their tactical commanders. The rapid movement of this force inland to their objectives reduces landing force vulnerability to enemy defenses and creates a tempo of operations that will outpace the enemy's ability to react. The combined arms teams include supply and maintenance capabilities that will be replenished and augmented as required from seabased, integrated naval logistics. The flexibility offered by a complementary blend of surface maneuver capabilities is essential to negotiating various coastal conditions as well as projecting the diverse vehicles resident within a combined-arms force. These will include a combination of self-deploying amphibious combat vehicles as well as Navy-operated landing craft to carry non-amphibious tracked and wheeled vehicles, and equipment. The latter include the present landing craft, air-cushioned (LCAC) and landing craft, utility (LCU) as well as their successor craft under development.

Amphibious vehicles provide the ability to seamlessly maneuver across the seaward and landward portions of the littoral. LCACs provide speed, agility, and the ability to negotiate a variety of coastal conditions to rapidly project wheeled vehicles inland. LCU's provide a large carrying capacity, albeit at slower delivery speeds. Collectively, this mix of vehicles and craft gives the amphibious force multiple platforms to reach various objectives concurrently or sequentially, with the operational agility to match the best force employment means for each specific objective or mission.

Overwhelming combat power will be concentrated from several directions using organic firepower of maneuver units as well as seabased fires. High-speed amphibious mobility will enable friendly forces to reinforce success quickly by redirecting their efforts toward gaps found or created in enemy defenses. These forces might penetrate the enemy's

coast outside the area they intend to control, and then attack back into the vital area using high speed avenues of approach such as rivers, highways or off-road paths. Subsequent surface elements may not penetrate at the same points as initial elements. As defenses are turned and impediments destroyed, subsequent elements will be able to penetrate at points most advantageous to their mission, rather than simply following in trace.

Vertical Maneuver Force

A deep vertical envelopment presents the enemy with a dilemma. If he moves in reaction to it, he risks increasing his vulnerability to attack by other surface or maneuver forces and supporting fires. If he ignores the vertical maneuver force, it can seize objectives which either accomplish the purpose of the operation, or facilitate surface maneuver, creating other opportunities for exploitation. Tilt-rotor and heavy-lift rotary aircraft offer mobility that enables the vertical maneuver force to attack deep objectives, from over the horizon, re-embark, and attack other objectives before the enemy can react.

As with the surface elements, vertical maneuver forces will operate on multiple axes and not be restricted to the same LPPs and landing zones previously used. Furthermore, the endurance and speed of tilt-rotor aircraft permit multiple lifts and extractions of the same unit, providing a flexibility of maneuver seldom before achieved in vertical assault operations. The ability to insert deep and then conduct bounding maneuver will allow the vertical maneuver force to maintain a rapid tempo, exploiting freedom of maneuver, destroying the enemy's forces through supporting fires, without allowing the vertical assault force to become decisively engaged.

Planning

The major differences between traditional and future amphibious planning are the elimination of the requirement for forces to build up mass at a beachhead and the selective use of multiple entry points. Future landing forces will be inserted via multiple entry points by the means that best support the mission. The best option might not be the shortest route, but the one that best takes advantage of gaps in obstacles (enemy-created or naturally occurring) or provides the most rapid effects on the objective. Some situations will require creating a gap by

destroying enemy forces while others will merely avoid them altogether. Commanders may also vary the entry points used as the operation unfolds.

While detailed tactics, techniques, and procedures will continue to evolve, like all military operations, STOM planning will generally focus on the mission to be accomplished, the enemy, terrain/weather, troops and fire support available, and time. A few key planning factors which must be considered for the successful execution of STOM are:

- The scheme of maneuver and the landing plan are combined into a single STOM plan, requiring commanders to conceive of the battlespace as an indivisible entity.
- The LOD may be over the horizon.
- Amphibious reconnaissance will be required to conduct advanced force operations such as hydrographic surveys and beach surveys, as well as traditional reconnaissance onto the objective.
- Littoral maneuver should begin at the LOD and be under the control of a single commander to ensure mission success.
- Sea basing of select warfighting functions will reduce the requirement to bring the entire landing force ashore.
- STOM capabilities may be applied in other situations beyond forcible entry with objectives located at sea, in the littorals, or deep inland.
- Future landing forces will take the best route from the ship to the objective area—not necessarily the most direct route.
- Launching the attack from over the horizon will enhance security while expanding the potential for surprise.
- Surface maneuver forces must time their landing to coincide with the successful completion of breaching operations, if required.

Execution

Landing force surface maneuver will require careful coordination between elements of combined arms landing teams. These teams will deploy from any number of dispersed amphibious ships or possibly non-traditional platforms. Different tasks, movement rates, and survivability factors will determine the sequence and timing of each element. After crossing the LOD, landing elements will begin their run toward inland objectives. Operational commanders will continue to monitor and enable progress; though landing unit tactical commanders will have the authority to maneuver as required, depending upon the tactical situation. Attack helicopters may escort surface maneuver forces to provide added capability against hostile watercraft during the long transit to the objective or in support of vertical maneuver forces, while providing careful coordination with individual unit commanders in order to ensure units maintain tactical integrity and cohesion.

Resistance at any point en route to the objective is always possible. Some portion of the surface or vertical maneuver forces may be tasked to clear sufficient space, laterally and in depth, to ensure secure offloading of LCACs and LCUs, while the preponderance of those maneuver forces continue the rapid inland penetration uninterrupted.

Commanders will coordinate vertical and surface maneuver to achieve maximum enemy disruption, achieve depth, maintain tempo and overwhelm local defenses. To confuse defenders, some portion of the surface maneuver force may be employed to conduct demonstrations, while vertical maneuver forces may employ alternate approaches for the same purpose. The number of vehicles or aircraft in each element and the time between elements will depend on the mission, enemy situation, and characteristics of the tactical environment. Individual landing teams may embark on different ships in order to provide sufficient flight deck and well deck space to facilitate near simultaneous launching, as cohesive units. While such dispersion is not ideal for administrative purposes during the movement phase of an operation, it will speed the landing of cohesive combat units during the assault phase. With all of its non-amphibious vehicles loaded in LCACs, a tactical commander can maneuver his unit so that it will be able to land as a combat team regardless of the number of ships upon which it was embarked.

Key Capabilities

Successful implementation of STOM across the ROMO will require improvements in mobility, C2, intelligence, fires (including non-kinetic options), seabased logistics, organization, doctrine, training, and education. Specific capabilities that we must achieve through the combat development process are outlined below.

Mobility. The landing force must maneuver from offshore using coordinated yet flexible control measures. This requires surface and vertical maneuver systems with the speed, range, precision location and navigational capabilities, protection, and firepower to launch from over-the-horizon positions, maneuver through tactical points of entry, and penetrate the environmental and defensive shell of the objective area while maintaining the momentum of the attack. The technologies required to enhance these capabilities are under development to enable a 12 nm standoff. The combat systems implementing these technologies are the highest priority in the Marine Corps. These include surface amphibious vehicles and aircraft to deliver and recover equipment and supplies throughout the littoral region.

Mission Command. Mission command is the blend of the art and science which allows a commander to fully integrate his instinct and experience with the systems and technology at his disposal. The combat leadership philosophy of mission command enables decentralized decision-making that empowers Marine forces operating in accord with the STOM concept. Decisions are informed by ensuring commander's have knowledge at the point of action. By empowering subordinate commanders with decision-authority commensurate with their mission tasking, STOM preserves operational tempo and enables the decision advantage necessary to gain and retain the initiative in any environment. It is through mission command that informed action is possible even in a service denied or contested battlespace.

Command and Control. C2 provides the mechanism by which a commander recognizes what needs to be done and communicates those actions required to ensure mission accomplishment. C2 systems must provide landing force commanders at all echelons a common operational picture as well as the connectivity to monitor execution and influence

events in real-time. In the event of lost connectivity, the employment of mission tactics and commander's intent—per the maneuver warfare philosophy—will allow subordinates to exercise initiative while maintaining unity of purpose.

Command Relationships. The responsibilities of the CATF and CLF must be refined to add detail to the transition of the supporting and supported relationship begins. The traditional transfer of control from CATF to CLF occurs once the CE is transferred ashore. It is clear there is a need to develop and clarify a more efficient way to integrate littoral domain C2 into a cooperative construct that better reflects the types of missions amphibious forces will be called upon in the future. The goal for C2 in STOM is a simple, flexible structure, in which control is relinquished and transferred in a fluid manner based on mission specifics. This level of integration will require close coordination among commanders' staffs to be effective.

Intelligence. Satisfaction of intelligence requirements is critical. The most immediate intelligence priority for STOM is locating and identifying forces and impediments to mobility. The landing force will exploit this intelligence throughout the operation using active ISR to take advantage of gaps while avoiding obstacles and strong points. Commanders at all levels require timely access to all source intelligence relevant to their immediate needs. They must be able to request and receive specific, real-time, and near-real-time information in a usable format, whether they are embarked, maneuvering toward objectives, or conducting subsequent operations ashore. Increasingly capable unmanned aerial systems (UAS) will greatly contribute to this requirement as they continue to proliferate into lower echelon tactical units. Moreover, MAGTF airborne systems will provide greater collection capacity on both low-observable (LO) and non-LO platforms, while enhanced MAGTF electronic warfare systems will provide increased capacity and greater coverage for electronic support activities.

Fires. Fires in support of STOM must provide immediate and responsive suppression and neutralization in support of all landing force elements. Unit commanders at all levels will call for and control the fires of organic and joint supporting arms. As such, commanders must leverage the capabilities of the Marine Corps' increasingly expeditionary and precise surface fire support systems. These fire support systems must

be capable of providing highly accurate and lethal long-range fires to simultaneously satisfy the needs of both the vertical and surface maneuver forces. These fires must be available “around the clock” and in all weather conditions. Fire support units must respond to calls for fire with sufficient speed and accuracy to support a dynamic landing force scheme of maneuver. Armed UAS will provide flexibility to the fires plan with their ability to deliver aviation fires in scenarios where manned systems are unable to be employed whether due to weather, enemy defensive capability or otherwise. Additionally, electronic warfare systems provide non-kinetic fire options to disrupt the adversary’s use of the electromagnetic spectrum and provide scalable fires plans.

Seabased Logistics. Seabased sustainment of rapidly moving and deeply penetrating vertical and surface maneuver forces provides both an opportunity, and a critical challenge. The absence of logistical bases ashore reduces critical vulnerabilities and minimizes personnel and materiel requiring transportation ashore. On the other hand, limited resupply delivery options and rapidly maneuvering combat forces combine to make “logistics push” techniques undesirable and infeasible. Maneuver units must therefore operate under a “logistics pull” methodology, drawing support from the floating combat service support areas. This will require total asset visibility, significant data transmission capability, and selective offload capability as well as manned and unmanned systems for delivering tailored logistic packages directly to the requesting unit.

Information Operations. STOM relies on surprise and ambiguity to create exploitable gaps. Friendly forces must not only have the capability to gain knowledge about the enemy, but also the resources to deceive the enemy regarding friendly capability, capacity, location and intent. Through the use of information operations and computer network operations, amphibious forces will leverage coordinated capabilities to enable the amphibious force to successfully operate in the physical, and increasingly important, non-physical domains. Having “painted a picture” for the enemy, Marines must then be used to selectively disrupt, deceive and degrade his C2 systems to delay his recognition of the actual situation. The capability to defeat the enemy’s C2 system through kinetic and non-kinetic means while protecting one’s own give amphibious forces an important edge in operations across the ROMO.

Organization, Doctrine, and Training and Education

The human element is as important to the implementation of STOM as are materiel improvements. The possibility of placing responsibility on the CLF for controlling movement from the ship to the objective is a significant departure from existing doctrine. The organization and coordination agencies of the naval force must adapt to fully exploit the advantages offered by new technology and empowered tactical leaders. Tactical maneuver-unit commanders will now direct maneuver from attack positions located at sea, all the way to objectives located deep inland, coordinating movement with higher and adjacent units, calling for fires, and making rapid decisions to achieve commander's intent. Preparing future naval leaders to deal with the challenges and opportunities of conducting maneuver warfare in the littoral battlespace will require that:

- Naval service schools impart a common understanding of STOM and its underlying philosophy.
- Navy and Marine units develop and refine tactics, techniques, and procedures through unit, staff, and task force exercises to employ STOM across the ROMO.
- Realistic naval power projection simulations facilitate initiative, imagination, boldness, and rapid decision-making in exercises and operations.

Through STOM, amphibious forces are best suited for concurrent operations across the ROMO by treating each objective area as a separate segment of the area of operation—each with its own mission, force posture requirement and end-state desired. From lower-end operations conducted by small teams of various surface combatants, to higher-end Marine expeditionary force forcible entry operations, utilizing a two MEB assault echelon, amphibious forces must retain the capability in sufficient capacity to operate in austere, hostile locales using all means necessary to overcome obstacles in time and space.

Challenges

Further study and deliberation will be required to achieve the full operational value of STOM. A few of the questions needing to be explored are:

- What is the best C2 relationship to address various future amphibious operations across the ROMO?
- Is there a need to develop naval CONOPs for gaining access in uncertain and hostile environments?
- How close can amphibious ships close to the beach given current and future threats?
- How do we meet GCC demand for engagement and response?
- How do we fight in contested domains?
- Do we need to develop a naval CONOP for sea control in uncertain environments?
- How do we implement the Air Sea Battle concept⁸?
- Should we develop a CONOP for littoral maneuver?
- What level of detail is required in a CONOP for establishing sea echelon areas, assault lanes etc. and is one necessary?
- How can we better examine the impact of company landings?
- What is the best venue to discuss C2 arrangements for forces maneuvering ashore?
- To what level do we need to define our naval fires requirements and what is the best setting?
- How do MAGTF electronic warfare capabilities enable STOM operations?
- How do we train and evaluate MEB/Expeditionary Strike Group operations?
- How do we integrate naval fires C2 requirements?
- How do we achieve total asset visibility in a dynamic environment apart from the seabase?
- How do we defeat G-RAMM and other A2/AD technologies?

The answers to these questions as well as those that arise while reading this concept are not likely to be achieved without much discussion, thought, collaboration and innovation.

⁸ Air Sea Battle is a 'limited objective' operational concept designed to provide sea control and 'freedom of action' for the joint force to pursue subsequent operations, to include power projection and forcible entry.

Summary

The 2007 Maritime Strategy, *A Cooperative Strategy for 21st Century Seapower*, noted that “preventing wars is as important as winning wars.” The Naval Operations Concept 2010 identified the use of the sea as maneuver space as the overarching concept for achieving twin goals—prevention of, and when required, prevailing in conflict. To fully exploit the sea as maneuver space in the face of modern access challenges, the Marine Corps will employ STOM, across the ROMO, as its preferred approach to amphibious operations.

We cannot deny that some national security problems must be resolved by the judicious and precise application of combat power. However, many national security concerns are more complex and require a more nuanced, graduated response with the ability to wait for diplomatic processes to develop. Consequently, the ability to place forces ashore will be as critical, and as difficult, in the future as in the past. STOM is a concept that will enable this difficult trans-domain mission to be achieved with maximum speed and effectiveness, while minimizing the risk to the Marines involved.

STOM will capitalize on continued advancements in mobility (MCM/surface maneuver), fires, C2 and intelligence to provide combatant commanders with a uniquely flexible capability that contributes to missions across the range of military operations—from HA/DR and NEO, to insertion of combat ready forces ashore in support a variety of missions.

STOM has utility across permissive, uncertain, and hostile environments in conjunction with SOF and aboard naval surface combatants or amphibious ships alone. This concept describes a naval service capability, evolved to provide GCCs with an immediately available, highly tailorable organization that uses the sea and land for protection and maneuver space to accomplish an increasingly diverse set of missions. Simply put, STOM is the enabler that will allow the Marine Corps to assure access and conduct littoral maneuver in future operating environments around the globe.

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