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Ship-to-Objective Maneuver (STOM) in a Chinese Threat Environment

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

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Abstract

A set of nested concepts guide the future capabilities that the United States Marine Corps will provide to the President and the Joint Force Commander and drive changes to doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF). One of these concepts is Ship-to-Objective Maneuver (STOM). STOM is the tactical implementation of Operational Maneuver from the Sea (OMFTS) by the Marine Air-Ground Task Force (MAGTF) to achieve the joint force commander's operational objectives. As new STOM enabling platforms such as the MV-22 and Expeditionary Fighting Vehicle (EFV) become operational, the doctrine, concepts of operation, and tactics, techniques and procedures of STOM will proceed from development into implementation. With the current emphasis on counter-terrorism, STOM Operations may be influenced disproportionately through the counter-terrorism lens leaving a potential gap in STOM when fighting a more capable traditional threat. Such a threat may be the future Chinese military. This paper analyzes a STOM scenario against a threat based on the completion of current Chinese military development efforts. The paper applies future Chinese capabilities to future STOM capabilities and draws conclusions on any gaps which may exist in STOM capabilities.

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INTRODUCTION

A set of nested concepts guide the future capabilities that the United States Marine Corps will provide to the President and the Joint Force Commander and drive changes to doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF). *Naval Operations Concept 2006*, “presents a unified vision for the future and broadly describes how, when and where the Navy and Marine Corps will contribute to the national defense and maritime security strategies.”¹ *Marine Corps Operating Concepts for a Changing Security Environment 2007*, “presents a family of operating concepts that describes the role of the Marine Corps in implementing national policy. These operating concepts are nested within the *Naval Operations Concept*, informed by *Operational Maneuver from the Sea (OMFTS)*, and enabled by *Seabasing* and *Distributed Operations*.”² The operating concepts presented are forward presence, security cooperation, counterterrorism, crisis response, forcible entry, prolonged operations, and counterinsurgency.³

These operating concepts are applied at a classified level against scenarios that provide increased fidelity of current and future capabilities, in turn guiding future development.⁴ These operating concepts are also supported by functional concepts that are more detailed refinements supporting warfighting functions that in turn drive the Marine Corps’ DOTMLPF.⁵ Since these functional concepts project a future foundation for the Marine Corps’ capabilities, it is informative to examine the functional concepts in the context of a threat similarly projected into the future. An appropriate threat on which to evaluate the functional concepts is China.

This paper examines the functional concept of Ship-to-Objective Maneuver (STOM), enabled by Seabasing, in the context of an Operational Environment opposed by a future

Chinese threat. Specifically, will the functional concept of STOM supported from a Sea Base provide the future combatant commander with the capabilities required to respond operationally to a modernized Chinese military threat?

Why Use a Chinese Threat?

The Chinese threat is not hollow. “The rapid growth of the [People’s Republic of China] PRC’s economy, coupled with its military expansion, has propelled China’s emergence as a regional power with an increasingly global foreign policy.”⁶ Additionally, “The Defense Intelligence Agency (DIA) estimates China’s total military related spending for 2007 could be as much as \$85 Billion to \$125 Billion.”⁷ The operational capabilities the Chinese expenditures buy further validate the threat. Chinese defense industry modernization has “enabled the development and production of select weapon systems, such as missiles, fighter jets, and warships, approaching performance parameters comparable to Western systems.”⁸ “China is likely to continue making large investments in high-end, asymmetric military capabilities, emphasizing electronic and cyberwarfare; counter-space operations; ballistic and cruise missiles; advanced integrated air defense systems; next-generation torpedoes; advanced submarines; strategic nuclear strikes from modern, sophisticated land- and sea-based systems; and theater unmanned aerial vehicles for use by China’s military and for global export.”⁹ Conceivably, these Chinese investments could come to fruition nearly coincident with STOM becoming fully operational.

The *Naval Operations Concept* describes challenges to our national interests to include, “a complex mix of regional and rising peer competitors, states who sponsor terrorism, failing states that undermine regional stability, and a variety of violent extremists, insurgents, pirates, criminals, and paramilitary forces who seek to destabilize legitimate

governments.”¹⁰ China qualifies as a regional and rising peer competitor; however, wars in Iraq, Afghanistan, and the Global War on Terror seem to focus current thoughts of the future only through the lens of terrorism, failing states, extremists, and other irregular warfare threats.

A recent brief produced by the Marine Corps Combat Development Command articulated a future vision of the 21st Century Marine Corps stating that, “we’ve determined we are over-invested in capabilities optimized for traditional warfighting and under-invested in those most useful for more irregular warfare. We are making efforts to rebalance our investment strategy toward irregular warfare capabilities.”¹¹ The current priority of today’s irregular threats is not disputed. Neither is it suggested that the continuing and future importance of the irregular threat should not play an important role in the future of the Marine Corps. However, the United States military arrived in Iraq with capabilities developed during the Cold War suited for decisive battle with the Soviet Union that necessitated the ongoing adaptation to the current irregular threat. If the concept of STOM is developed only through the lens of irregular warfare the future may present a dangerous strategic surprise to the Marine Corps with an ironic inability to fight a modern and capable traditional Chinese force.

Why STOM Against A Chinese Threat?

A brief description of STOM is needed before its capabilities can be analyzed vis-à-vis future Chinese capabilities. According to *STOM CONOPS*:

STOM is the tactical implementation of OMFTS by the MAGTF to achieve the joint force commander’s operational objectives. It is the application of maneuver warfare to amphibious operations at the tactical level of war, and it is the conduct of combined-arms maneuver through and across the water, air, and land of the littoral battlespace directly to inland objectives. STOM treats

the sea as maneuver space, using it as both a protective barrier and an unrestricted avenue of approach. STOM is not aimed at seizing a beach for lodgment, but at projecting combat units ashore in their fighting formations and sustaining them to ensure mission accomplishment against a decisive objective. While the aim of traditional ship-to-shore movement is to secure a beachhead, STOM thrusts Marine Corps forces ashore at multiple points in order to concentrate forces at the decisive place and time and in sufficient strength to enable success. This creates multiple dilemmas too numerous for an enemy commander's response, disrupts his cohesiveness, and diminishes his will or capacity to resist. This concept focuses the force on the operational objective, providing increased flexibility to strike the enemy's critical vulnerabilities. Seabasing much of the logistic requirements and fire support reduces the footprint of forces ashore while maintaining the tempo of operations. Command and control capabilities allow commanders to control the maneuver of their units the moment they cross the line of departure at sea, this includes changing the axis of advance or points where they cross the beach during the assault. STOM operations are applicable to the full range of missions, from forcible entry operations to humanitarian assistance operations.¹²

If China confronted the United States, likely conflict locations would be in the littorals, suggesting the use of STOM. "In fact, the primary external security challenge (the United States) combines with the primary separatist threat (Taiwan) as the most powerful forces shaping in Beijing's thinking on how to modernize the PLA over the near term."¹³ Additionally, China's growing dependence on sea lines of communication (SLOCs) for energy needs, particularly through the Straits of Malacca, will require the PLA to develop increased military capability to protect vulnerabilities in the Southeast Asian straits.¹⁴ An increased Chinese military capability in those areas could one day confront the United States.

Both a Taiwan and a Southeast Asian Strait scenario present conflicts in the littoral that could present a need for crisis response or forcible entry capabilities. In both cases, the Regional Combatant Commander (RCC) could use Marine forces in turn using STOM to initiate a rapid response. Additionally, a Sea Base would provide a, "Joint Force Commander (JFC) with a scalable and mobile capability in the joint operations area (JOA)

from which to exercise command and control (C2) and/or provide strike, power projection, fire support, and logistics capabilities from the sea ... without reliance on host-nation support (HNS).”¹⁵ This capability would be particularly applicable in a Taiwan or Southeast Asian Strait scenario due to a future potential of HNS being denied in the region because of political restrictions or increased Chinese ballistic missile capabilities.

2015: STOM Capabilities and the Future Chinese Threat

The publication *STOM CONOPS* is a detailed description of how the Marine Corps may conduct STOM in the year 2015.¹⁶ It depicts a notional STOM Operation. Fully inserting a detailed Chinese threat into the *STOM CONOPS* scenario is beyond the scope of this paper; however, the United States force composition and various examples from the scenario will be used in the Chinese context for analysis. The *STOM CONOPS* force is described below.

The force disposition and composition is based upon a baseline 2015 Marine Expeditionary Brigade (MEB). The MEB is formed using a nonstandard organizational construct that includes two separate, smaller MAGTFs within a larger MAGTF. It consisted of two expeditionary strike groups (ESGs) (11th and 26th Marine Expeditionary Units-Special Operations Capable (MEU(SOC)) [sic] and a flow-in echelon (FIE) of the 7th Marines, 7th Air [sic] Combat Element (ACE) and 7th Brigade Service Support Group (BSSG) [sic]. The MEU(SOC)s [sic] in this scenario did not composite, but did cross attach units in order to execute the STOM mission.¹⁷

This force composition is designed for a mid-level threat which may not be sufficient for a more capable adversary.¹⁸ China could be such an adversary which could necessitate an amphibious MEB or a MEF executing STOM. However, to bound the analysis, the scenario force structure is used and may actually accentuate Chinese capabilities against STOM. To further bound the analysis, the threat scenario used is a Taiwan crisis response requiring rapid forcible entry to achieve objectives that will facilitate follow on operations. The RCC

has chosen the scenario force due to its ability to quickly aggregate distributed forces already in the area.

The Chinese threat facing this 2015 MEB will be a force under development since the early 1990s and the People's Liberation Army (PLA) modernization has been accelerating since the late 1990s. In developing its future military capabilities, the Chinese military is fully aware of the American dominance in decisive combat operations. Director of *Project Asia* and the China Studies Center, David M. Finkelstein writes, "once the strategic, operational, and tactical implications of Operation DESERT STORM became clear, the leadership of the PLA was forced to confront the disconcerting reality that China's armed forces were woefully inadequate for the demands of modern warfare, and that this inadequacy demanded a major adjustment to China's national military strategy...U.S. operations in Kosovo in 1999 and to this day in Afghanistan and Iraq have further defined and refined the nature of 21st-century warfare in the minds of PLA analysts, those operations and capabilities establish the 'gold standard' for what the PLA aspires to achieve eventually."¹⁹ Emerging PLA capabilities that could adversely affect STOM include conventional missile forces, electronic warfare, anti-air warfare, ground-based air defenses, offensive air operations, increased ISR, anti-satellite capabilities, and anti-access capabilities.

The STOM functions analyzed will be the maritime prepositioning force, maneuver, and command and control. For each STOM function, future Chinese developments with the potential for affecting the STOM function are applied and analyzed.

Maritime Prepositioning Force

"The Maritime Prepositioning Force (Future) (MPF(F))²⁰ is a transformational capability critical to the success of STOM and is the linchpin of a successful sea base. It

provides the combatant commander the ability to rapidly constitute a substantial, sustainable combat capability that is afloat in theater, ready to project maneuver elements ashore for operations as required, and able to transition to sustained operations ashore (SOA) with minimal reliance on the availability of access ashore in the operating area.”²¹ Additionally, MPF(F) brings capabilities above current capabilities to include at-sea Reception, Staging, Onward movement, and Integration (RSOI), at sea distribution of supplies and services, and additional platforms from which to launch STOM.²² In the scenario, 7th Marines, 7th Aviation Combat Element (ACE) and 7th Brigade Logistics Group (BLG) flow in via MPF(F), reinforce the ESG’s initial attack, and provide logistics and additional forces.²³ An additional capability of the MPF(F) is cross-decking and pre-boating at the sea base, between ESG and MPF(F) shipping. This is done in the scenario when MPF(F) battalions reinforce MEU battalions to build a surface and vertical assault.²⁴

The Chinese would pose multiple threats of area and access denial to the MPF(F), thereby challenging the closure of Marine forces.²⁵ Many of the emerging Chinese capabilities aimed at denying access to U.S. aircraft carriers could also be used against MPF(F). Future capabilities could threaten bases such as Guam from which MPF(F) forces could be located. “China could use IRBMs, MRBMs, and LACMs to target—with increased stand-off distances—foreign military assets located far from the mainland, such as U.S. bases on Guam. These new missile systems—depending on their ultimate range, accuracy, and numbers—could provide China with the capability to threaten all of the U.S. operational sanctuaries in the Western Pacific, further complicating U.S. power projection.”²⁶

MPF(F) shipping (and ESG shipping) could also be vulnerable to MRBMs. “One area of apparent investment involves the pursuit of medium-range ballistic missiles, an

extensive C4ISR system for geo-location of targets, and onboard guidance systems for terminal homing to strike surface ships on the high seas or their onshore support infrastructure.”²⁷

China continues to improve its surface and submarine forces that could also be used against MPF(F). “China received the second of two Russian made SOVREMENNYI II guided missile destroyers (DDG) in late 2006. These DDGs are fitted with anti-ship cruise missiles (ASCMs)...China took delivery of two KIL0-class submarines from Russia, completing a contract for eight signed in 2002. China operates twelve KILOs, the newest of which are equipped with the supersonic SS-N-27B ASCM, and wireguided and wake-homing torpedoes.”²⁸

Finally, the PLA Navy Air Force (PLANAF) could also be used to strike the MPF(F) with “recently purchased Russian Su-30MK2 fighters armed with AS-17/KH-31A anti-ship missiles. The acquisition of IL-78/MIDAS and development of the indigenous B-6U refueling aircraft, integrated with strike aircraft armed with precision strike munitions will extend operational range for PLA Air Force (PLAAF) and PLANAF aircraft, increasing the threat to surface and air forces at considerable distances off China’s coasts.”²⁹

Maneuver

One of the primary strengths of STOM is its inherent maneuver. As the tactical application of OMFTS, STOM uses the sea not only for movement but as maneuver space against an enemy objective. “The objective of STOM is to generate and maintain overwhelming tempo through maneuver from the sea and to avoid the operational pause associated with a traditional force beachhead. This further allows the MAGTF to drive directly at the heart of the enemy forces.”³⁰ The scenario included capabilities for vertical

landing of forces to conduct operations up to 110 miles inland within 1 period of darkness consisting of two reinforced infantry battalions, a combat service support detachment, and their ammunition all of which could be sustained from the sea base.³¹ The initial assault would require 195 MV-22 sorties, 76 CH-53E(SLEP) sorties, 48 AH-1Z sorties, 32 Joint Strike Fighter (JSF) sorties, and additional support sorties from other aircraft.³²

The amphibious and MPF(F) shipping would face the same vulnerabilities during the assault, even more so due to closer proximity to China than the MPF(F) faced in closing the force. The vertical landing force would face a multi-layered anti-air threat with Chinese force improvements. The threat would include the LUZHOU-class DDG which is equipped with the SA-N-20 SAM system controlled by the TOMBSTONE phased-array radar, and the JIANGKAI II guided missile frigate with medium range HHQ-16, a vertically launched naval surface-to-air missile under development. The PLAAF is deploying the F-10, China's fourth generation premier fighter, and China is also producing the multi-role SU-27SMK fighter. China will also receive the Russian S-300PMU-2 (SA-20 Gargoyle) with an advertised range of 200 km. China will deploy the HQ-9, a phased array-based SAM with a 150 km range.³³

Tactical SAMs can also be expected with "purchase of advanced tactical SAMs for short-range point defense and protection of ground forces, to include the SA-15 from Russia, development of the LY-60 tactical SAM system for ships and several shoulder fired SAM systems, such as the QW-1, QW-2, and FN-6, to replace the domestic HN- 5."³⁴

In addition to improved fighter aircraft, the Chinese continue seeking an improved Airborne Warning And Control System (AWACS) capability. "China is developing special

mission aircraft, including the KJ-2000 AWACS aircraft...”³⁵ By 2010 China will have many more capable airborne early warning and AWACS platforms.³⁶

Finally, the improvement in Chinese anti-air forces is not only hardware acquisition. The PLAAF also seeks to increase its capabilities through organizational and training restructuring. “The Air Force is now attempting to develop the capability to conduct all-weather, day-night, high intensity simultaneous defensive and offensive operations, while extending its ability to operate beyond the periphery of China’s coastline.”³⁷

The STOM scenario also describes a surface landing force composed of two reinforced infantry battalions each advancing on an operational objective through separate littoral penetration site (LPS). Enabled with the EFV, the assault would be conducted from over the horizon. With enhanced command and control, the surface force would have increased tactical dispersion and would be able to alter the LPSs by sharing a common tactical picture and continuous intelligence enroute.³⁸

Greatly improved Chinese platforms would be employed against the surface landing force. These would include improved FB-7 fighters with increased night strike capabilities and improved weapons such as KAB-500 laser-guided munitions, China’s first indigenously produced attack helicopter, the Z-10, with the Red Arrow anti-tank missile, new armored personnel carriers, additional artillery pieces, and China’s new main battle tank, the ZTZ-99.³⁹ Additionally, emphasis and continued improvement of ballistic missile forces will give China true precision strike capability on individual targets on Taiwanese beaches.⁴⁰

Command and Control

Enhanced command and control in STOM is essential to exploit the tempo, and synchronize the dynamic maneuver. This is especially critical because the control and coordination of maneuver forces at sea would require extensive new capabilities. Additionally, the greater distances and over the horizon maneuver of STOM would present new challenges in command and control. “The rapid and reliable collection, analysis, and dissemination of information and the resulting improved situational awareness, coupled with rapid decision making and execution throughout the force, are the key to STOM’s success.”⁴¹

“STOM also promises enhanced situational awareness. During the assault, maneuver forces have an electronic map of the area that identifies where mines are located and the lanes that have been breached, as well as where friendly forces are located in relation to them. The display continuously updates throughout the assault and during follow-on operations.”⁴²

Having learned from Operation Desert Storm, the Chinese are well aware of the consequences of facing an enemy that has effective command and control. The Chinese have been working towards fighting in Modern Informationalized Conditions.⁴³ The Modern Informationalized Conditions refer to the high-tech battlefield including modern Command and Control and smart weapons.

“PLA researchers are quite aware of the data links that support combat systems for the U.S. military, and they have created a catalogue of the knowledge necessary to replicate, counter, or attack them... They have carefully consulted dozens of corporate websites and tactical data link operator guides, as well as North Atlantic Treaty Organization (NATO) and U.S. military tactical and technical manuals, to produce a guidebook for electronic warfare and jamming to disrupt critical U.S. cooperative target engagement and C4ISR data links.”⁴⁴

The Chinese would also seek to deny U.S. information and communication capabilities in space. “In January 2007, China successfully tested a direct-ascent ASAT missile against a Chinese weather satellite, demonstrating its ability to attack satellites operating in low-Earth orbit. The direct ascent ASAT system is one component of a multi-dimensional program to generate the capability to deny others access to outer space... UHF-band satellite communications jammers acquired from Ukraine in the late 1990s and probable indigenous systems give China today the capacity to jam common satellite communications bands and GPS receivers... China’s CNO concepts include computer network attack, computer network defense, and computer network exploitation.”⁴⁵

CONCLUSIONS

Chinese military development is extensive and the improvements described above are far from exhaustive. Similarly, the capabilities of STOM far exceed the scope of this paper. However, from the examples given, meaningful representative conclusions can be made about how the near future Chinese threat may affect the 2015 STOM.

The access/area denial problem is understood by the Chinese and they are working to close the gap. The Chinese face challenges in implementing access/area denial but their efforts seem focused on solving the technical, force modernization, personnel, and command and control aspects of the problem. As shown above in the MPF(F) section, if the Chinese are successful in developing and deploying ballistic missiles, submarines, surface combatants, and maritime aviation strike capabilities they could potentially deny MPF(F) access out to the “second island chain.”⁴⁶ The Chinese could stop the closure of an MPF(F) MEB, preclude a sea base, and act as a STOM showstopper. More limited Chinese success

could push the MPF(F), ESGs, CSGs, and ESFs further from the littoral, perhaps past the effective range of STOM.

Conversely, the MPF(F) and ESGs supporting STOM could actually complicate the Chinese access denial problem and provide the RCC with the fastest and most flexible response to a Taiwan crisis. Future Navy-Marine Corps forces could deploy using distributed operations at the operational level of war.⁴⁷ They could be distributed across the region and rapidly re-aggregate in an access sanctuary to conduct STOM in a Taiwanese crisis. The distributed nature of U.S. naval forces in the region could befuddle Chinese C4ISR, and spread Chinese access denial forces thin. Lastly, the access denial problem is also apparent to the U.S. Navy. Efforts such as Sea Shield are specifically working to ensure access in the future.⁴⁸

The increased maneuver capability of STOM is its critical strength which has the potential to create multiple dilemmas for the enemy. This capability gives the combatant commander increased options for forcible entry. The maneuver is enabled by new assault lift platforms such as the MV-22 and EFV. However, these platforms in themselves bring critical requirements and critical vulnerabilities which in turn could bring operational risk to the combatant commander.

The Chinese threats presented in the analysis of maneuver were primarily directed at the assault lift platforms. Air superiority remains a prerequisite but the effects of air threats are exacerbated in STOM with MV-22s carrying landing forces far inland. PLAAF modernization makes the attainment of air superiority increasingly difficult. Landing forces remain embarked for greater distances, making them more vulnerable to Chinese fires. The MV-22 and EFV change the time-space factors in favor of STOM but the maneuver becomes

totally dependent on the new platforms, space becomes a strength and vulnerability.

Significant MV-22 losses from Chinese fighters or SAMs could strand a much larger landing force much further inland than in the past, with no means to extract or support the landing forces if the Chinese threat persisted. Significant EFV losses from Chinese aircraft or land forces could also leave landing forces stranded with support over the horizon. Additionally, even if able to close the force the Chinese would conceivably continue area denial efforts during the actual STOM. Distances involved and reliance on the sea base could put the landing forces at extreme risk with even a residual Chinese threat possessing the capabilities described above.

The Chinese threats described against maneuver are not left unchecked by the Navy-Marine Corps Team; however the threats are real and would have to be eliminated. The increased capabilities of JSF would be used to attain air superiority. The Joint Strike Fighter, AH-1Z attack helicopter, future naval surface fire support, LW-155 howitzer, high mobility artillery rocket system, and Expeditionary Fire Support System would all provide protective fires to the landing forces.⁴⁹ Other components of Sea Strike (of which STOM is but part) are also aimed at providing increased fires.⁵⁰ The scenario described in the *STOM CONOPS* being conducted in a single period of darkness would test the Chinese nascent night fighting capabilities.

A final consideration regarding the maneuver aspect of STOM will be in the minds of Chinese leadership. With Taiwan having priority in influencing future Chinese forces, the Chinese have themselves been developing amphibious capabilities.⁵¹ However, their army is transitioning from a large land oriented army and has limited amphibious experience. It is conceivable that Chinese leadership could mirror image their amphibious inexperience into

planning against a U.S. amphibious attack. That lack of reference would make the dilemmas presented by STOM even more overwhelming. Chinese leadership would intellectually understand STOM, but they would lack the institutional experience to serve as underpinnings to defend against STOM.

The Chinese understand that American forces occupy the high ground on C4ISR. C4ISR is a critical requirement in order to execute STOM's synchronized maneuver over the increased depth of reach STOM offers and control fires over the greater geographic area of littoral penetration zones (LPZ).⁵² Based on the priority the Chinese give to fighting under "Modern Informationalized Conditions," it can be expected that in a Taiwan crisis the Chinese would have implemented many of the threats to C4ISR described above. One may surmise those capabilities being a Chinese prerequisite prior to conducting decisive operations against Taiwan.

The amount of progress the Chinese make in C4ISR and their ability to disrupt U.S. C4ISR must be closely monitored because of the crucial role it could play, not only in STOM but other operations against or by the Chinese. Efforts such as ForceNet need to continuously improve Navy-Marine C4ISR capabilities.⁵³ The envisioned superior STOM C4ISR applied by STOM could overwhelm an inferior Chinese C4ISR system amplifying the STOM dilemmas. However, should the U.S. lose ground, STOM has exacerbated vulnerabilities that the Chinese could exploit.

Many obvious future and current U.S. capabilities such as F-22, B-2, anti-ballistic missile systems, new ASW capabilities, and combat UAVs capabilities were not discussed with this scenario force composition. Their uses in a rollback of Chinese defenses in a Taiwan scenario are obvious. However, they would also face challenges against a future

Chinese threat. Their absence in the analysis accentuates the fact that STOM is not a stand alone capacity and that it will be reliant on other Joint capabilities. However, STOM will provide the RCC with one of the fastest means to execute forcible entry or crisis response.

Finally, the inclusion of a variety of Chinese capabilities applied to STOM does not imply that the Chinese do not have significant challenges to force modernization. For example, while the Chinese understand the concept of network-centric warfare which could give an increased command and control capability to fight the tempo of a STOM operation, they still lack “a comprehensive set of data transfer systems necessary to field and maintain a modern force that employs these concepts in warfare in a uniform way.”⁵⁴ Other examples would include the significant technical challenges in employing ballistic missiles against deployed naval ships or significant time required to upgrade legacy equipment, training and doctrine.⁵⁵ But extensive programs are underway by the Chinese in all of the above depicted threats and the Chinese are improving their overall personnel training and force structure and are conducting increasingly realistic exercise scenarios.

RECOMMENDATIONS

The access/area denial capabilities of the Chinese must be carefully monitored, assessed, and war gamed against future Marine Corps and Navy concepts including STOM. Specifically, the ability of Marine forces to close on an operating area, the threats precluding establishment of a Sea Base, and the potential to carve out a sanctuary from the Chinese threat from which a MAGTF could execute STOM need significant study and wargaming. These wargames must identify gaps that need to be filled by the Marine Corps or other

services, or if the gaps cannot be filled, modify or scrap STOM. In either case the DOTMLPF must be changed based on the Chinese threat's impact.

Execution of STOM will be a high risk high reward maneuver. As the platforms required for STOM enter service, the Marine Corps must execute progressively larger scale experiments and exercises with STOM. These exercises should include MEB and higher level forces executing STOM against high level threat scenarios. The use of the revolutionary platforms enabling STOM should be exercised on a large scale with particular attention to the command and control of such an exercise. Command and control should be pushed to its limit based on Chinese capabilities. Obtaining resources to conduct such large scale exercises will be a daunting task considering the current and future resources being expended for counterterrorism. Unfortunately, the Marine Corps cannot concentrate only on the irregular threat as it looks to its future.

While the irregular threat is the most likely threat the Marine Corps will face in the future, the Chinese weapons systems outlined above represent the most dangerous threat. Despite the difficulties STOM will face by the Chinese, STOM may also provide the Nation with a means to quickly impact and possibly diffuse a Chinese crisis. Time, resources, procurement, and intellectual rigor must be used to defeat the threats to STOM. If those threats are not defeated they cannot be assumed away and STOM will fail. Likely or not, China must be in the calculations.

Notes

¹ U.S. Marine Corps, *United States Marine Corps Concepts & Programs 2007* (Washington, DC: Headquarters U.S. Marine Corps, 2007), 27.

² *Marine Corps Operating Concepts for a Changing Security Environment*, 2nd ed. (Washington, DC: Headquarters U.S. Marine Corps, 2007), 1.

³ *Ibid*, 1.

⁴ *Ibid*, 2.

⁵ *Ibid*, 2.

⁶ Office of the Secretary of Defense, U.S. Department of Defense, *ANNUAL REPORT TO CONGRESS Military Power of the People's Republic of China 2006* (Washington, DC: U.S. Department of Defense, 2006), 7.

⁷ *ANNUAL REPORT TO CONGRESS Military Power of the People's Republic of China 2007* (Washington, DC: U.S. Department of Defense, 2007), 25.

⁸ *Ibid*, 27.

⁹ Office of the Secretary of Defense, U.S. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: U.S. Department of Defense, February 2006), 29,30.

¹⁰ Chief of Naval Operations and Commandant of the Marine Corps, U.S. Navy and U.S. Marine Corps, *Naval Operations Concept 2006*, (Washington, DC, Department of the Navy, Headquarters U.S. Marine Corps, 2006), 5.

¹¹ Rich Webster, "The 21st Century Marine Corps," Powerpoint, August 2007, Quantico, VA: Marine Corps Combat Development Command, MAGTF Integration Division.

¹² U.S. Marine Corps, *The STOM Concept of Operations (STOM CONOPS)*, draft, (Washington, DC: Headquarters U.S. Marine Corps, 2003), 1-3.

¹³ Michael R. Chambers, "Framing the Problem: China's Threat Environment and International Obligations," in *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military* ed. Roy Kamphausen and Andrew Scobell (Carlisle, PA: Strategic Studies Institute, 2007), 59.

¹⁴ *Ibid*, 36-37.

¹⁵ U.S. Marine Corps, *Seabasing*, Marine Corps Warfighting Publication 3-31.7 (Washington, DC: Headquarters U.S. Marine Corps, August 2006), 1-2.

¹⁶ *STOM CONOPS*, 1-1.

¹⁷ *Ibid*, iii.

¹⁸ *Ibid*, forward.

¹⁹ David M. Finkelstein, "China's National Military Strategy: An Overview of the Military Strategic Guidelines," in *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military*, 102,104.

²⁰ Maritime Prepositioning Force (Future). The MPF(F) is the future shipping which will enable quick closure of a MEB to an area of operations. Marine Corps Warfighting Publication 3-31.7 gives a good description of the ships involved in MPF(F).

²¹ *STOM CONOPS*, 1-13.

²² *Ibid*, 1-14.

²³ *Ibid*, iii.

²⁴ *Ibid*, 4-3.

²⁵ Force closure or closing a force as described in Marine Corps Warfighting Publication 3-31.7 is the process of a unit arriving at a specified location. Force closure generates combat power through the joining of military equipment, materiel, and personnel in a planned sequence and location to support the force mission.

²⁶ Evan S. Medeiros, “‘Minding the Gap’: Assessing the Trajectory of the PLA’s Second Artillery” in *Right-Sizing the People’s Liberation Army: Exploring the Contours of China’s Military*,” 172.

²⁷ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2006*, 25, 26.

²⁸ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2007*, 3.

²⁹ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2006*, 26.

³⁰ *STOM CONOPS*, 4-1.

³¹ *Ibid*, 4-2, 4-3, 5-5.

³² *Ibid*, 5-3.

³³ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2007*, 3,4.

³⁴ Office of the Secretary of Defense, U.S. Department of Defense, *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2004* (Washington, DC: U.S. Department of Defense, 2004), 36.

³⁵ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2006*, 4.

³⁶ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2004*, 23.

³⁷ Kevin M. Lanzit and Kenneth Allen, “Right-Sizing the PLA Air Force: New Operational Concepts Define a Smaller, More Capable Force” in *Right-Sizing the People’s Liberation Army: Exploring the Contours of China’s Military*,” 442.

³⁸ *STOM CONOPS*, 4-3-4-6.

³⁹ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2007*, 4.

⁴⁰ *Ibid*, 17.

⁴¹ *STOM CONOPS*, 1-11.

⁴² *Ibid*, 11-12.

⁴³ Finkelstein, “China’s National Military Strategy: An Overview of the Military Strategic Guidelines,” 104.

⁴⁴ Larry M. Wortzel, “PLA Command, Control, and Targeting Architectures: Theory, Doctrine, and Warfighting Applications” in *Right-Sizing the People’s Liberation Army: Exploring the Contours of China’s Military*, 197,198.

⁴⁵ *ANNUAL REPORT TO CONGRESS Military Power of the People’s Republic of China 2007*, 21, 22.

⁴⁶ The second island chain is a line of islands approximately 1000 miles from the Chinese coast extended past Iwo Jima and Guam. The 2006 DOD report to Congress depicts the second island chain on page 15.

⁴⁷ Distributed Operations is another enabling concept described in *Marine Corps Operating Concepts for a Changing Security Environment*, Annex D.

⁴⁸ Marine Corps Warfighting Publication 3-31.7, A-1.

⁴⁹ *STOM CONOPS*, 4-11.

⁵⁰ Marine Corps Warfighting Publication 3-31.7, A-1.

⁵¹ Cortez A. Cooper III, “‘Preserving the State’: Modernizing and Task Organizing a ‘Hybrid’ PLA Ground Force” in *Right-Sizing the People’s Liberation Army: Exploring the Contours of China’s Military*, 262.

⁵² *STOM CONOPS*, M-10.

⁵³ Marine Corps Warfighting Publication 3-31.7, A-12.

⁵⁴ Wortzel, “PLA Command, Control, and Targeting Architectures: Theory, Doctrine, and Warfighting Applications,” 192.

⁵⁵ *Ibid*, 221.

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