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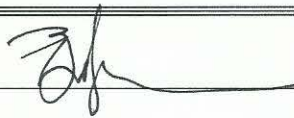
MASTER OF MILITARY STUDIES

**AMPHIBIOUS FORCE SUSTAINMENT SHORTFALLS APPLIED TO
THE ASIA-PACIFIC REGION**

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

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Executive Summary

Title: Amphibious Force Sustainment Shortfalls Applied to the Asia-Pacific Region

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Thesis: The Asia-Pacific region presents geographic challenges for US based amphibious operations. Given the current and potential for crisis response ranging from humanitarian disaster relief to security enforcement in the Asia-Pacific, the US needs to ensure it has the ability to sustain an amphibious force, and be prepared to do this at multiple and near simultaneous locations within this region. This will be feasible if the US Marine Corps abandons the larger Marine Expeditionary Brigade sized landing force and uses the smaller Marine Expeditionary Unit, coupled with an aggressive equipment acquisition process dedicated to lighter and more expeditionary equipment sets, and finally by increasing emphasis on integration with regional partners for forward staging and logistical support.

Discussion: The Asia-Pacific region has and will continue to remain vital to the US trade and economic interests. The past and projected disastrous weather patterns, coupled with regional pariah state actors, present likely situations for the US to conduct multiple and near simultaneous amphibious operations at varying sizes of Marine Air Ground Task Forces (MAGTF)s. The current and projected future fiscal reductions within the Department of Defense will drive reductions in amphibious force capability to include logistics and sustainment. There are several options the US should consider in order to adequately gain and maintain the ability to conduct near simultaneous amphibious operations within the Asia-Pacific region which include solidifying the size of the Marine Corps' amphibious response force, lightening the amphibious force equipment set while procuring economically sustainable assets, and finally by increasing emphasis on integration with regional partners for forward staging and logistical support.

Conclusion: The likelihood of conducting near simultaneous amphibious operations is probable. In order for the US to conduct multiple and near simultaneous amphibious forces, a reduction in response size will become necessary. The preferred Marine Expeditionary Brigade consisting of regiment sized landing teams will not be sustainable in multiple locations and the sustainable sized force will have to be the smaller battalion sized Marine Expeditionary Unit. Even with smaller sized response forces, solutions to extending sustainment beyond the organic 15 days will require lighter and more efficient equipment, and an increased reliance on regional Asia-Pacific allies.

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Preface

The research for this Master's thesis began out of concern for the current and future challenges facing the US amphibious force. During the last decade, as a Marine Corps logistician, I have executed logistics and sustainment activities in support of entirely land based operations in Iraq and Afghanistan. Recognition that the Marine Corps would soon return to its amphibious and expeditionary roots served as the impetus for taking on this research.

I am particularly indebted to the Commandant of the Marine Corps' Strategic Initiative Group (SIG) lead by Colonel Michael Groen USMC, for providing guidance that steered this research toward the Asia-Pacific region. The rationale for this is largely based on geographic complexity, such that, if the US can sustain an amphibious force in the Pacific, then it could be done anywhere. Secondly, I would like to thank the busy gentlemen at the Combat Development and Integration's Expeditionary Ship Capabilities Branch headed by Mr. Richard Betsinger USMC (ret). He and his staff were extremely helpful in providing primary source data on this subject. Finally, I would like to thank my academic mentor, Dr. Benjamin Jensen for his persistent encouragement, academic insight, and intellectual fervor. His leadership throughout this process has been instrumental.

Introduction

The United States (US) military's history in amphibious operations is one of victories that arrived at a great price. The amphibious landing at Normandy, for example, cost the Allied forces nearly 10,000 casualties.¹ The historical expense of both personnel and materiel has made amphibious operations the subject of debate amongst military leaders, scholars, and law makers.² These debates have, and continue to drive, inter-service rivalries, budget strategies, and fiscal fights. This was true in the mid-twentieth century following the conclusion of World War II, and it is true today following the ten year Global War on Terrorism. General Victor Krulak US Marine Corps (USMC), author of *First to Fight*, notes that in 1949 President Truman sought fiscal and administrative actions to reduce the Navy and diminish the Marine Corps.³ Through a series of budget cuts, the US Marine Corps went from 11 infantry battalions and 22 aircraft squadrons to 8 infantry battalions and 12 aircraft squadrons.⁴ As of November 2011, the US Congressional Budget Office reported that the platform to conduct amphibious operations, amphibious shipping, is similarly being reduced. The Marine Corps reports a requirement of 38 amphibious ships in order to land two Marine Expeditionary Brigades (MEB) in an opposed landing. The Navy currently possesses 30 ships, yet fiscal projections show the number to never

reach higher than 33.5. Once again the size and capability of the US amphibious force is in question as 33 ships will not provide enough capability to lift more than one MEB.

Department of Defense (DOD) joint publication 1-02 defines amphibious operations as a military operation launched from the sea by an amphibious force embarked in ships or craft with the primary purpose of introducing a landing force ashore to accomplish an assigned mission.⁶ Though not restricted to specific missions by joint publication 1-02, typical amphibious missions today include the Marine Expeditionary Unit (MEU) core missions' of conventional operations, humanitarian assistance/disaster relief (HADR), tactical recovery of aircraft and personnel, non-combatant/embassy evacuation operations, and amphibious assaults or raids. Captain Samuel Nicholas' landing of the Continental Congress Marines at Nassau in 1776, which historically has become known as the US Marine Corps' first amphibious landing, was unopposed. Unopposed landings receive accolades and pass through time as a cunning form of military maneuver; additionally the unopposed landing remains a credible way for the US to achieve other national and non-violent interests such as humanitarian assistance and disaster relief missions. Opposed landings, however receive great controversy. Images of high casualties akin to the opposed amphibious landings at Iwo Jima and Normandy have in part, shaped a national mindset of the high cost associated with amphibious operations.

This controversy has influenced leaders at the highest levels of US leadership. For example, President Truman was a known critic of amphibious landings and therefore sought to disband the US amphibious force service provider, the Marine Corps, circa 1950. Generals Eisenhower, Bradley and Marshall were also critics of amphibious operations.⁷ However General MacArthur's use of, and enthusiasm for, amphibious operations proved its utility on a

number of occasions during World War II and, most notably, the Inchon landing during the Korean War.

In the summer of 1950, General MacArthur found the UN forces he commanded in South Korea to be operationally out maneuvered by the communist North Korean People's Army (NKPA). During this time, General MacArthur stated, "The history of war proves that nine out of ten times an army has been destroyed because its supply lines have been cut off..."⁸ By mid July of 1950 General MacArthur determined that a flanking movement was needed to cut the supply and logistic lines of the NKPA. With General Walker's 8th Army pinned along the Pusan perimeter, the only way General MacArthur contended to achieve operational maneuver would be a corps sized amphibious landing at Inchon, and then a rapid movement to Seoul. An amphibious landing of this magnitude against the NKPA required a robust and experienced amphibious force. He immediately looked to the Navy Marine Corps team in order to conduct this landing.

The lapse of time between large scale amphibious landings and national hesitation seems to correlate. The Inchon landing in 1950, as Colonel Mark Cancian notes in *Preserving Amphibious Capabilities in a Time of Austerity*, was the last time a division sized landing occurred. Comparatively, when General MacArthur bid for this landing in 1950 he had to appeal to an audience who just five years prior executed the largest and most successful amphibious landing in the history of warfare, the landing at Normandy.⁹ Even with that recent amphibious experience and victory, the hesitation amongst US senior leadership was rampant. The US is now some 60 years removed from a division-sized landing and therefore opposition to large amphibious operations now has 60 years of separation from its last perceived relevance. Based

on this model alone, amphibious planners should expect large scale amphibious operations to be viewed as an antiquated way to conduct operations. This phenomenon adds to the challenges faced when trying to conduct a large scale or MEB-sized amphibious operations.

George Santayana's famous quote "those who cannot remember the past are condemned to repeat it" is germane. ¹⁰ A review of US military history reveals that amphibious operations, though costly in both materiel and personnel, have achieved operational maneuver while delivering decisive results, at decisive moments in wars. The Union's landing on Fort Fisher during the Civil War, the D-day landing at Normandy, and the Inchon landing in Korea all share a theme of a controversial military risk where amphibious forces ultimately achieved operational and strategic victory.¹¹ These victories were achieved by the superior use of warfighting principles, surprise, mass, and maneuver; all of which were gained through the amphibious nature of the force. The common denominator among these three amphibious operations was their ability to provide sustainment for the amphibious fleet both afloat and once ashore. Both the Union in the 1860's, and the US Army in World War II and Korea leveraged forward staging, and a robust sustainment pipeline creating operational endurance for the amphibious force. As has been true throughout history, predicting where and when an amphibious operation will be needed is rarely accurate. Therefore, this research seeks to apply planning against the greatest challenges potentially faced. The Asia-Pacific presents this challenge, and it is held that if the US can sustain an amphibious force in this theatre it could do it in other, less distant, and resource-restrained theatres.

The US is currently facing a situation in which the future capacity and endurance of the amphibious force is in question. The US has cut Maritime Prepositioning Forces (MPF) shipping

by one squadron as of 11 November 2012, and is lacking in amphibious lift, and as a result currently cannot sustain MEB-sized amphibious forces capable of forcible entry, or HADR for more than 30 days in simultaneous locations within Asia-Pacific.¹² This capabilities gap is the impetus for this research. This research will analyze the current USMC amphibious force logistics and sustainment capabilities measured against an Asian-Pacific scenario in which the US amphibious fleet is required to conduct near simultaneous amphibious operations defined as amphibious operations within 30 days of each other.

Thesis

The tyranny of distance presented by the Asia-Pacific region and the potential requirement for a wide range of missions makes sustainment for US amphibious forces problematic. Given the current and potential Asia-Pacific humanitarian and security issues, the US needs to ensure it has the ability to sustain an amphibious force, and be prepared to do so at multiple and near simultaneous locations. This will be feasible if the US Marine Corps abandons the larger Marine Expeditionary Brigade-sized landing force and uses the smaller Marine Expeditionary Unit, coupled with an aggressive equipment acquisition process dedicated to lighter, more expeditionary equipment sets, and finally by increasing emphasis on integration with regional partners for forward staging and logistical support.

Asia-Pacific/Research Design

The purpose of this research is to examine the current US amphibious and expeditionary force sustainment capabilities and analyze the extent to which they are able to meet challenges posed by the tyranny of distance and range of missions in the Asia-Pacific. This will include a review of potential scenarios requiring amphibious operations since the end of the Cold War in an attempt to predict future requirements applied to an Asia-Pacific theatre. These scenarios are drawn from historical data in an attempt to predict requirements balanced against probable US responses. An analysis of current US amphibious force sustainment architecture and equipment will be conducted. In doing this the identification of current shortfalls for an Asia-Pacific amphibious scenario with multiple amphibious landing site requirements will be analyzed. This analysis will then propose solutions based off likely force structures, and threats within the Asia-Pacific. Solutions will address cost-effective measures to the recent reduction in maritime prepositioning forces shipping and look at forward staging solutions in 1st and 2nd tier Asia-Pacific Island chains (see fig 1) along with increased logistical support and amphibious partnering within our multinational and coalition allies.¹³

The following quote is taken from the Chairman of the Joint Chiefs of Staff Admiral Mullen's Capstone Concepts for Joint operations:

The vast majority of the world's population lives within a few hundred miles of the oceans. Social instability in increasingly crowded cities, many of which exist in already unstable parts of the world, has the potential to create significant disruptions. The effects of climate change may also amplify human suffering through catastrophic storms, loss of arable lands, and coastal flooding, could lead to loss of life, involuntary migration, social instability, and regional crisis.¹⁴

The reality of Admiral Mullen's quote means that the requirement to intervene with US state-sponsored support will increase as population densities along the littoral regions increase and compete for resources. The Pacific Ocean is the largest body of water on Earth, comprising

approximately 28% of the Earth's surface.¹⁵ The Pacific Ocean's size also makes it a major contributor to the global economy. For states that have a Pacific Ocean coastline this body of water represents a low-cost way to move goods and resources. The ocean also provides vast offshore oil and gas fields, minerals, and lucrative fishing grounds. In the mid 1990's over 60% of the global fishing industry took place in the Pacific Ocean.¹⁶ The countries along the Asia-Pacific rim are routinely subject to typhoons, hurricanes, tsunamis, and floods, all of which have the potential to create mass casualty and humanitarian crises. Disastrous weather patterns, coupled with a fragile central government, invite destabilizing and violent forces such as the Indonesian based terrorist organization Jemaah Islamiya.¹⁷ Such groups create a security threat to the US, its allies, and global economic interests. The only certain method for power projection into one of these scenarios is through amphibious based expeditionary operations.¹⁸ The challenges of sustaining such a force revolve around available sea basing platforms, right sizing the MAGTF response force, and finding suitable ports to maintain logistic and sustainment resources. Compounding these issues are the US current amphibious force shortfalls.

Current US Amphibious Force and Shortfalls

The US amphibious force capability falls short in two areas, both related to the amount of available shipping. The first is amongst current amphibious shipping platforms, while the second is amongst the sustainment and logistics lifeline to those amphibious forces, which is Marine Prepositioning Forces. The US Marine Corps currently requires 38 total amphibious ships to lift two Marine Expeditionary Brigades and conduct forced entry amphibious operations. Based on the Navy's historical average of 10% shipping committed to long term maintenance,

the number 38 means the Corps would have 34 ships to actually plan against.¹⁹ As previously stated, the current number is 30 ships and is not fiscally projected to grow past 33 for the next 30 years. The projected five ship deficiency means that the two MEB capability will not be achieved. See figure 2.

The US Amphibious forces are currently supported via the US Military Sea Lift Command (MSC). The mission of MSC is to support the US by delivering supplies and conducting specialized missions across the world's oceans.²⁰ MSC is organized into five mission areas: combat logistics, special missions, prepositioning, service support, and sealift. Of the five mission areas, the combat logistics mission designated ships serve as the connector between US Navy amphibious shipping and prepositioned ships. The concept behind this support revolves around the MSC's ability to provide a scalable response to amphibious shipping in order to support operations. However, there is always a cost, and as the threat increases in conventional complexity, so too, do the logistical requirements growing the at sea footprint. See figure 3.

As the US moves forward out of the great recession of 2009, efficiency initiatives driven by fiscal austerity have taken hold. One way the US Department of Defense (DOD) chose to reduce spending was through the collapse of one of the three pre-existing MPF squadrons.²¹ Previously the MPF consisted of three squadrons based out of three separate geographically located positions. With the collapse of one squadron, the two existing squadrons have increased in size. However the aggregate MPF lift capability has been reduced by a total of 34 percent.²² This reduction, while saving the Department of the Navy \$125 million over a nine year period, reduces overall fuel capacity to only 43 percent of a MEB's 30 day requirement.²³ See figure 4.

The vastness and geographical complexity of the Asia-Pacific region will test an amphibious forces endurance while at sea. Compounding the dangers of this reduction in fuel capacity is the potential for simultaneous situations requiring an amphibious response force within this region.

Instability within the Asia-Pacific Region and the Likelihood for a Simultaneous

Amphibious Response

The Asia-Pacific region is rife with destabilizing forces that threaten both the region's physical safety and economic stability. Two major destabilizing forces in the Asia-Pacific are natural disaster and violent acts from pariah states. The United Nations Economic and Social Commitment for Asia and the Pacific (ESCAP) reports that the Asian and Pacific region is vulnerable to several types of natural disasters that includes floods, tsunamis, earthquakes, and droughts. During the past twelve years more than 200 million people in this region have been affected by natural disasters. ²⁴ Of those affected, an average of 70,000 have been killed annually since 2001.²⁵ According to ESCAP, these figures represent 65% of the world's total deaths from natural disasters during the past ten years. These devastating figures have had significant economic impacts as well.

Though natural disasters do not adhere to political borders, their effects do favor those populations with a higher level of gross domestic product (GDP). Consider that mortality rates via natural disasters from 2001-2010 in Asia-Pacific resulted in 1 death per 1 million people in the upper to middle level income bracket. Those in the low to lower middle income bracket suffered a death rate of 52 deaths per 1 million people.²⁶ This ESCAP study therefore suggests that the resiliency of an Asia-Pacific nation is most closely linked to the pre-existing economic

conditions present in that nation, and as a result, the desire for nations to increase, or at the very least maintain, GDP levels will remain tied to the ability to prevent deaths attributed to natural disasters. This desire appeals to a larger international audience under the auspices of economic development for humanitarian purposes and has the potential to write a narrative in which the US will be looked to by the international community to send a response force averting humanitarian suffering as well as setting conditions that will stabilize economic turmoil.

North Korean unpredictability adds to Asia-Pacific regional instability. The regime remains a UN pariah that has demonstrated the intent to conduct aggressive actions. Devastating weather patterns that require great resources from the US and UN, may create situations that, while a distraction to security, allow North Korea to conduct provocative acts demonstrating military power over opposing neighbor states. In a statement released on 24 January 2013, North Korea stated it planned to carry out a new nuclear test with long range rocket launches as it enters another phase of confrontation with the US.²⁷ Additional concerns for North Korea center on the devastating effects of a North Korean regime collapse. Though the current regime has proven itself hostile to the UN, a collapse could be equally destabilizing. The uncontrolled proliferation of weapons of mass destruction, the rise of regional opposition groups, or a rise in humanitarian issues amongst the civilian population are all likely scenarios resulting in a North Korean regime collapse.

Despite natural disasters and pariah states, the economy of the Asia-Pacific region represents the most complex and productive economic system in the world. James J. Przystup writes in the National Defense University's Strategic Forum that in 1990, the region's share of global GDP amounted to 26.5 percent; in 2006, the GDP raised to 37.5 percent. By comparison

in 2006, the GDP growth rate for Asia's economies averaged 5.1 percent, as opposed to a world average of 3.9 percent. Despite the encroachment of natural disasters, the Asia-Pacific region remains one that is economically resilient with demonstrated growth potential.²⁸ This economic vitality is reflected in the US aggregate trade within the region as it has grown from \$300 billion in 1991 to \$900 billion in 2006.²⁹ These levels of trade between the US and Asia-Pacific nations, coupled with the continued and demonstrated growth of the Asia-Pacific GDP, draws a clear line of humanitarian and economic interest within this region by the US, regardless of international pressure.

Since the end of the Cold War, the US has deployed amphibious forces more than 100 times.³⁰ Since 2007, the US Combatant Commanders cumulative requests for amphibious ships have grown by 53 percent.³¹ In 1998, then Commandant of the Marine Corps, General Gray stated,

The US is a maritime nation. It has always, and always will rely upon the seas for commerce with its trading partners, for support of its friends and allies far from our own shores...and they will be dealt with in areas where we will not likely have and will not want to establish, bases ashore.³²

Gray's quote helps to explain the reason for the high number of amphibious operations and suggests this is in large part a result of the US' desire to not establish permanent bases abroad.³³ ³⁴ The economic cost, and political challenges associated with the establishment of permanent basing post Cold War are too great and create a security risk the US, in most cases does not want to assume. This is where the amphibious force becomes an appropriate and agile tool for US influence, from the safety of the sea. Additionally, nations have shown they are more comfortable with a sea based response force, one that is easily able to depart the area.

Fears of occupation rapidly diminish when US Naval Ships off the coast project a visual reminder to all of the US's planned exit strategy.

In 2011 three of the five worst natural disasters took place in the Asia-Pacific region.³⁵ The propensity for destructive weather patterns in this region, as outlined by the UN's ESCAP, remains high. The December 2004 tsunami relief effort required the financial and relief assistance of 32 nations.³⁶ In addition to financial support, the US responded with an amphibious force comprised of aviation assets dispatched from Japan aboard the aircraft carrier USS Lincoln, and an Expeditionary Strike Group (ESG) that contained a Marine Expeditionary Unit led by the amphibious ship USS Bonhomme Richard as part of Operation UNIFIED RESPONSE. The expeditionary strike group in this disaster relief contributed 48 Navy and Marine Corps helicopters flying hundreds of sorties with disaster relief supplies, while simultaneously evacuating victims. Despite the chaos and destruction of the 2004 Tsunami, security forces were never requested, however if the ESG were required, with its attached MEU, it would have generated one battalion landing team of infantrymen, yielding approximately 900 Marines.

The US Army and Marine Corps' Counterinsurgency Field Manual 3-24 states that twenty counter insurgents per 1000 residents is often considered the minimum troop density required for effective COIN operations.³⁷ Should a counterinsurgency scenario arise during a destructive weather scenario, the MEU's 900 infantry Marines would, per Field Manual 3-24 planning factors, be suitable to secure a population of 40,000. The average population of the countries most heavily affected by the 2004 tsunami, India, Indonesia, Sri Lanka, and Thailand is over 300 million. According to Field Manual 3-24 the security force of 900 Marines would be

quickly overwhelmed. These numbers address a counterinsurgency threat and do not take into consideration other potential threats in the region that could seize an opportunity during a regional security distraction such as weather devastation.

The controversy with amphibious landings, as discussed in the introduction, stems from the opposed landing gamble akin to Iwo Jima, and the Normandy invasion during World War II. However, in the past 25 years amphibious operations have become more of a tool for inserting influence in a region while receiving little or no opposition. Consider since 1992, the 101 amphibious operations that have been conducted by the US.;³⁸ of the five types of amphibious operations: raids, assaults, withdrawals, demonstrations, and other amphibious operations, only two, raids and assaults presume opposition. The other amphibious operations prepare for opposition but do not presume an opposed landing. Of the 101 amphibious operations conducted, only eight were categorized as raids, or assault, while another 73 were categorized as ‘other amphibious operations’ which include humanitarian assistance disaster relief and noncombatant evacuation operations, and embassy evacuations. The remaining 13 have been categorized as other such duties as directed by the President or Secretary of Defense.³⁹ These numbers suggest that despite a historically controversial nature of amphibious operations, the US has extensively used this resource during the past 25 years as a way to maintain influence within regions while assisting partnered nations in myriad types of amphibious operations. The disproportionately high number of unopposed or non-kinetic amphibious operations clarifies that the majority of amphibious operations do not meet resistance. Lastly, within the other amphibious operations category, 26 were humanitarian assistance and disaster relief. This represents the most frequently used mission within the 101 conducted amphibious operations. The high use of HADRs suggests three points:

1. The forces of nature in the Asia-Pacific produce a high demand for HADR.
2. Those living in the littorals remain at risk for flooding, earthquakes, and tsunamis.
3. The US is politically and militarily comfortable executing HADR via an amphibious force.

The low casualty producing HADR via an amphibious force represents a politically palatable use of military forces, while simultaneously achieving strategic objectives of strengthening US partnerships with Asian allies and coalition partners as outlined in the President's National Security Strategy for 2010.⁴⁰

Shortfalls As Applied to the Asia-Pacific Region

The distance between resupply ports in Asia-Pacific present a unique logistical and time challenge for amphibious shipping. The logistical challenge is the fuel required to move shipping through some of the largest nautical distances in the world. Consider that from San Diego, California to Indonesia is approximately 8564 miles, while from Norfolk, Virginia to the Western Sahara is only 3640 miles. This distance presented by the Pacific consumes more fuel and, requires more fueling stops or in stream fueling operations, all of which delay an amphibious force's response time. For these reasons, a credible amphibious response force must be forward deployed within the Asia-Pacific region in order to defeat the sheer distance required to travel from a US based amphibious ready group.

However, a forward amphibious response force is not easily defined. The distances and diversity of Asia-Pacific nations creates a variety of mission sets. The range of military operations required for this amphibious force is not easily defined and therefore right-sizing the

amphibious force, both in terms of personnel and equipment, is equally difficult to predict. Complicating this factor even more is the rigidity of an amphibious ship's load plan. Once an amphibious ship is embarked, the offload of equipment will only go in the reverse order in which it was loaded. This requires MEU commanders to assume great risk every time they deploy. For example, embarking artillery pieces first, means they will be disembarked last. Should a situation arise where the MEU commander needs his artillery pieces to land first, this is not possible. The amphibious load plan will dictate what is available and when. Getting to these pieces while underway is in most cases impossible. The only way to alleviate the burden of the load plan is for amphibious shipping to conduct a reconfiguration to the embarkation plan which will require a friendly port, labor, and time.

Solutions and Concepts

There are three areas in which the US Marine Corps can offer solutions that will enhance its ability to respond to multiple amphibious requirements in the Asia-Pacific theatre.

1. Right sizing the amphibious requirements by reducing from the expeditionary brigade size to the expeditionary unit size MAGTF.
2. A fundamental Corps wide shift from large, heavy, and expensive equipment, to smaller, lighter, and less expensive equipment.
3. The use of a three ship sea basing model (see fig 5) in conjunction with the solidification of a 1st and 2nd tier island support plan enhanced by logistical support from multinational and coalition partners. See figure 1.

The Marine Corps maintains the requirement for the US Navy to provide an amphibious fleet of 38 ships. Current inventory, as of 11 November 2011 is 30 on hand, with 3 in maintenance dry dock, for a total of 27 available. This 27 gives the Marine Corps the ability to maintain a forward presence in the form of the smallest Marine Air Ground Task Force composition the Marine Expeditionary Unit (MEU). The MEU consists of approximately 2,200 Marines aboard three amphibious ships. This capability brings the weight of one infantry battalion supported by a composite Marine aviation squadron, and is self-sustaining for 15 days. Any operation exceeding 15 days requires auxiliary sustainment activity.

The request for 38 ships however hails from the Marine Corps' belief that in order to possess the amphibious force needed to meet today's threats, it will require shipping that enables two MAGTFs ashore in the form of the larger Marine Expeditionary Brigade (MEB).⁴¹ One MEB consists of approximately 5,000 infantry Marines, with an additional 5-7,000 aviation, logistics, and command element Marines for a total of 12,000 aboard 12 to 16 ships. One MEB brings the combat power of one infantry regiment, supported by a composite Marine aviation group, and is self sustaining for 30 days. Any operation exceeding 30 days requires auxiliary sustainment activity.

Fiscal realities and DOD budget reductions following the national expense of the Global War on Terrorism show that the US Navy will not reach the 38 amphibious ships required to lift two MEBs simultaneously in an opposed scenario as outlined in the report to Congress on Naval Amphibious Force Structure 2008.⁴² For the Marine Corps, this means that achieving a two MEB amphibious lift capability is not possible and therefore the right sized MAGTF will have to be of the smaller expeditionary unit in order to preserve the ability to conduct multiple and near

simultaneous amphibious operations. These numbers will continue to drive the likelihood of the MEU sized response versus a MEB sized response.

As stated the organic sustainment capability of the MEU is 15 days versus 30 of a MEB. Meaning if the MEU is the MAGTF size of choice, then the burden on naval logistics platforms will be required 15 days sooner. A combination of Naval logistics shipping in the Pacific theatre with robust sustainment classes of supply—namely class I, III, and V (water/food, fuel, and ammunition) will take the priority over other more robust logistics measures such as field maintenance activities, or complex communication architecture. These changes will only come about however once the Marine Corps chooses the MEU as the amphibious response force for Asia-Pacific scenarios and declares its logistical emphasis to be focused on an extension of the 15 days of sustainment organic to the MEU. The projected shipping numbers make the MEU the most likely size of MAGTF to be employed.

Finally, the issue of proficiency must be addressed. Since the beginning of the Global War on Terrorism, the Marine Corps has focused on land based counterinsurgency (COIN) operations mostly in Iraq and Afghanistan. As a result today's Marine Corps has more Marines with COIN experience than amphibious. In July of 2008, then Commandant of the Marine Corps General Conway recognized the atrophy of amphibious experience in the Marine Corps and directed the Corps to prepare for a return to its expeditionary roots by ensuring it focused on amphibious resources and doctrine.⁴³ In order for this to happen the force must be able to gain and maintain amphibious proficiency.⁴⁴ This cannot happen with a brittle 'just enough' number of amphibious shipping. In order to gain and maintain amphibious experience, the Corps requires a number of amphibious ships that will allow for amphibious exercises outside the

normal 18 month MEU rotation cycle. This capability will allow the Marine Corps to grow its amphibious experience base, while not interrupting operational and maintenance cycles for assigned amphibious shipping. This reality is in part what drives the Marine Corps' need for 38 ships. However in light of fiscal restraints, the Corps will have to accept the lower number of 33.⁴⁵ This lower number assumes greater risk to the Marine Corps amphibious forces in two ways. The first is that it does not allow for the projection of a second MEB, and would force the Marine Corps to address contingency operations with the smaller MEU force. Secondly, it does not allow for an amphibious training capability in order to gain and maintain amphibious expertise within the Marine Corps.

The second proposed solution is a fundamental Corps wide shift from large, heavy, and expensive equipment, to smaller, lighter, and less expensive equipment. One of the effects of the Marine Corps' participation in the Global War on Terrorism was an increased equipment footprint. Basic unit equipment density lists, in some cases, tripled in size. Consider an infantry rifle battalion before the Global War on Terrorism would rate, per its equipment density list, 8 generators and 60 highly mobile multipurpose wheeled vehicles (HMMWVs).⁴⁶ During the Global War on Terrorism, most infantry units possessed over 100 generators and nearly 200 tactical vehicles. Compounding the extreme weight and size of the Marine Corps was the congressionally procured Mine-Resistant Ambush Protected vehicles (MRAPs). Though highly effective in force protection, the MRAP's weight, dependent upon its model classification ranges from 28,000 pounds to 43,000 pounds per vehicle. By comparison the heaviest HMMWV with armor weighs 10,300 pounds.⁴⁷ What the MRAP gave the Marine Corps in force protection, it removed in expeditionary capability. The overweight Marine Corps has been a concern at the highest levels of the DOD leadership. In August of 2010, Secretary of Defense Gates stated that

anxiety about the future of the Marine Corps stems from the, "perception ... that they have become too heavy, too removed from their expeditionary roots."⁴⁸ ¹

The third proposed solution relies on the integration of three logistical support concepts. The first support concept is the exploitation of the Marine Corps Seabasing Integration Division's Seabasing Module. The second is to establish 1st and 2nd Tier Island staging sites that would further extend a Seabasing Module's reach and reduce response time. The third and final integration is the reliance on allied nations and coalition partners for selective logistical support in order to reduce the burden on organic US shipping while simultaneously supporting amphibious operations in support of collective regional interests. These regional partnerships will not only increase US efficiency, but send powerful signals to potential regional adversaries.

The Marine Corp's Expeditionary Ship Capabilities Branch and Seabasing Integration Division have designed the Seabasing Module.⁴⁹ The Seabasing Module is a three ship system designed to provide an amphibious force with sustainment and logistics while at sea. This tri-ship system consists of one Large, Medium Speed, Roll-on/Roll-off ship (LMSR). The LMSR serves as the nation's prime maritime mover of US military combat vehicles. The roll-on/roll-off designation indicates that this ship is able to transfer wheeled vehicles to and from her storage decks while at sea. The second is the auxiliary cargo and ammunition ship or 'T-AKE'. This

¹ The Secretary's statement has been confirmed by numerous Marine Corps mobility officer and embarkation officers who have cited for the first time in the history of the Marine Corps, the equipment sets are capable of overloading the ships storage vessels before they run out of actual storage space. This is referred to as "weighting out vice cubing out".

ship serves as the dry cargo and ammunition holding while offering a selective offload capability to the amphibious force.⁵⁰ The Mobile Landing Platform (MLP) is the third ship comprising the Seabasing Module. This ship serves as the conduit between the LMSR and T-AKE to the amphibious force. The MLP leverages float on/float off technology that enables the center of the ship to take on water in what appears to be controlled sinking. This ability turns the MLPs center ship into a floating pier that can send and receive amphibious assault vehicles, landing craft air cushion platforms. The US currently possesses four Seabasing Modules. While the capabilities of the Seabasing module create the ability to transfer equipment from ship to ship via a floating pier in the ocean, the aggregate support two Seabasing Modules provide to a MEB is 46% of a MEB's 30 day sustainment requirement.⁵¹ The Seabasing module's ability to sustain a MEU for 30 days however, which is approximately one third the size of a MEB is sufficient. The future of amphibious sustainment therefore relies on the integration the sea basing module into MEUs that can address isolated threats in a simultaneous period, or aggregate into one reduced MEB sized force. The sea basing module support numbers indicate the multiple MEB option is not sustainable.

The reach and endurance of the seabasing modules could be increased if 1st tier islands chains were to be used for the seabasing modules home port. Currently Guam and Saipan serve as ports for two of the four seabasing modules. Both Guam and Saipan are in the 2nd tier island chain. Seabasing modules hailing from the 1st tier island chain reduces response time and fuel consumption while placing assets closer to the disaster prone archipelago, and nations of economic and trade interests such as Malaysia, Vietnam, and Thailand, all which reside within range of multiple competitor weapon systems. Consider that from Guam (2nd tier island) to Manila (1st tier island) is approximately 1595 miles. Ships moving at an average rate of 20

knots would arrive in approximately 4 days versus 1st tier island response times that in most cases would require less than one day underway.

Finally, the third proposed solution is the reliance on allied nations and coalition partners for selective logistical support to extend an amphibious forces operational endurance, while supporting partnered amphibious operations in support of collective regional interests. The impetus for an increased reliability on our allied partners is discussed in the National Security Strategy as the President calls for an increase in burden sharing among the US and our allies.⁵² Part of the logistical burden could be outsourced to allied nations in the Asia-Pacific region with emerging naval and amphibious capabilities.

Australia specifically fits this model as a developed nation with a long standing partnership with the US, and a current desire to enhance their amphibious capabilities. US Army Colonel John Angevine, Federal Executive Fellow at the Brookings Institute, writes that Australian defense planners are actively seeking to re-establish an amphibious assault capability.⁵³ One of the barriers toward Australian amphibious development is the absence of amphibious force doctrine and training.⁵⁴ A way Australia could begin to gain and maintain amphibious force experience is through a deepened amphibious partnership with the US. Supporting the US amphibious forces with select naval logistics presents a win-win scenario. The US amphibious fleet could receive dry goods for example, extending the sustainment times from US based T-AKE ships, while the Australian Naval forces gain and maintain the crucial aspect of amphibious operations—amphibious sustainment. In exchange for dry goods and sustainment from the Australians, the US would consider integrating Australian amphibious assault forces into the MEU. This integration could be small in scale, perhaps command element

teams, or squad-sized train-the-trainer teams that would embed with the MEU's infantry battalion landing team while learning the nuances of conducting amphibious operations. A deepened amphibious relationship with Australia seeks to maximize both nations' regional interests: this relationship will save the US time and money and supports Australia's desire for increased amphibious experience. The strategic message this strengthened partnership sends could serve as a deterrent for pariah states such as North Korea.

Conclusion

The sources researched for this paper, both primary and secondary, share a theme that a silver bullet solution does not exist. All solutions toward improving amphibious capabilities, when applied to a region as diverse and spread out as the Asia-Pacific are complex. These challenges are further amplified by the impeding and fiscally restrained DOD budget. The author has proposed three possible solutions to ensure the US maintains a credible amphibious force. All three solutions share the element of increased risk to the force. The increase in assumed risk means that amphibious operations will become inherently more vulnerable to human error, and enemy force encroachment.

The first solution proposes that accepting the right-size force for amphibious operations in the future is the smaller sized MEU. This will require amphibious planners to first accept the reality of 33 amphibious ships for the next 30 years. In order to gain and maintain amphibious proficiency, the MEU then has to be the force of choice. Commanders and planners will therefore have to accept that the shipping needed to responsibly and appropriately support a MEB will not be available.

The cost of doing so will mean the MEB construct is achievable only when multiple MEUs aggregate. Even then, with a 33 amphibious ship fleet a second MEB construct is not achievable via amphibious entry. An aggregation of multiple MEUs facilitates operational flexibility and can achieve amphibious massing for larger and opposed amphibious objectives. The benefit of keeping the MEU as the nucleus for amphibious MAGTF's allows a MAGTF commander to maneuver a known and standing unit as the Corps maintains seven MEU command elements. In the spirit of Krulak's First to Fight, the Corps is best at maintaining a ready capacity versus a sophisticated capability.⁵⁵ Performance and reliability are the key to success for the Corps in the eyes of America.

The second solution requires amphibious and expeditionary forces to undergo a cultural shift that is a departure from the character of the robust equipment sets used during the past 11 years in the Global War on Terrorism. This shift needs to incorporate a mindset that bigger is not better, and more affordable does not connote cheap or of poor quality. For the US Marine Corps' amphibious capability to remain viable, the opposite idea must be projected. Lighter is better for the rapid movement of any expeditionary force, and for a fiscally restrained DOD, affordability translates into fiscal endurance. Affordability cannot mean poorer quality. The Marine Corps must leverage science and technology to develop lighter, affordable, and likewise economically sustainable equipment sets while retaining quality. Equipment sets that reduce size, weight, and cost will be the key to longevity within the amphibious force. The Corps' MV-22 Osprey loadable Internally Transportable Vehicle (ITV) is a foothold in the right direction.⁵⁶ However, the Corps needs to stand firm through the wind of criticism about the vehicles survivability, blast protection, and light armor. Alas, increased risk is associated with lightening the load; however, risk can be mitigated through Corps-led science and technological innovation.

In any case, for the Corps to remain capable and ready, lighter and more affordable equipment must blaze that trail.

The third solution proposed is twofold and requires trust on two fronts. First this solution requires coalition and host nation partnership in order to ensure port access in the 1st and 2nd tier Pacific island chains per figure 2.57. Second is the trust required from the US with coalition partnered nations to enhance US logistical reach. Trust in units, or nations that a commander does not control will challenge most commanders judgment as it violates the warfighting principle unity of command. However, the President of the US via the National Security Strategy of 2010, demands that multinational partnerships be solidified, and that nations expect the US to do more with less. These intentions set the conditions for the US amphibious force to rely on Asia-Pacific nations to augment an amphibious force with sustainment items for the sake of regional security and mutual benefit. For this sustainment to truly extend the operational timeline, the sustainment items must be logistically crucial, not logistically nice-to-have. Dry goods fit this category of logistically crucial items such as Meals Ready to Eat (food rations) and ammunition presents enduring requirements of any amphibious force.

The solutions presented require acceptance of force reduction, a cultural shift, and trust in our allied nations. In accepting these requirements, the commander of the amphibious force assumes more risk. With the fiscal reduction looming, it is logical to assume future missions will present greater risk regardless. Dire circumstances call for dire measures. Fiscal reduction is one such dire measure, but a measure the US amphibious and expeditionary forces will learn from, adapt to and become comfortable with. So long as the majority of the US economy continues to rely on maritime trade, it will remain a maritime nation. Assuming greater risk in

pursuit of maritime interests in a period of fiscal austerity will be the amphibious force's future reality.

Figure 1: 1st and 2nd Tier Island Chains

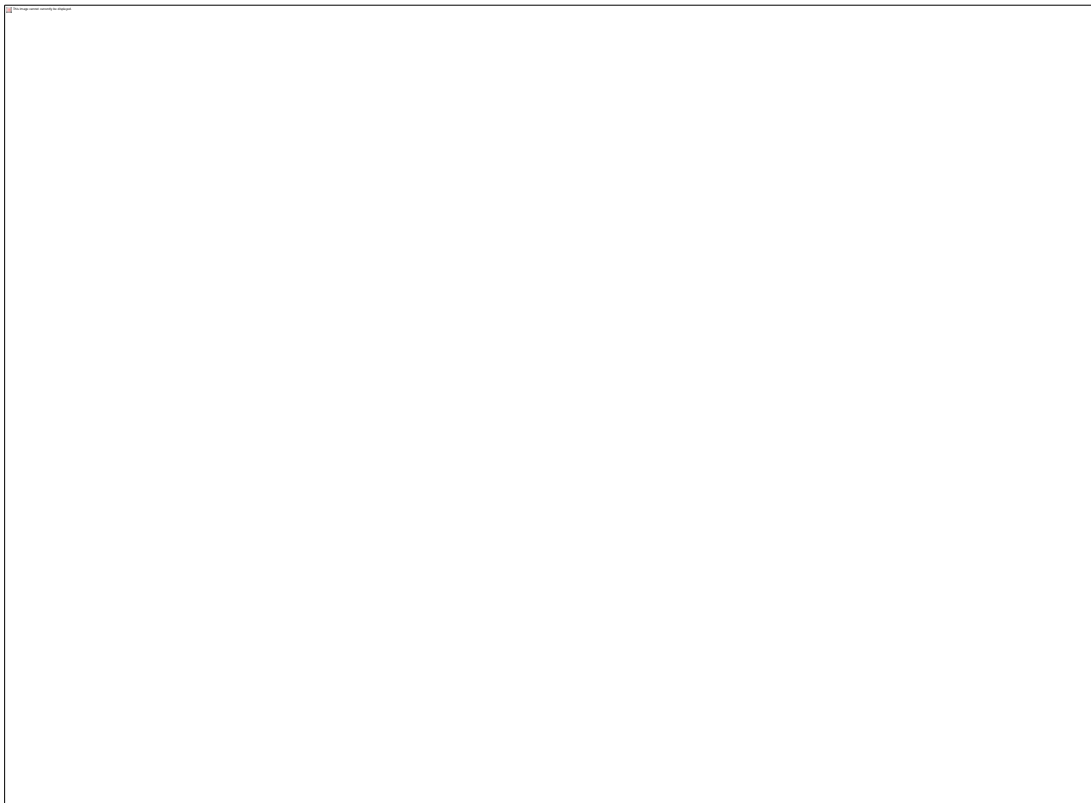


Reference: T.X. Hammes. National Defense University Strategic Forum58

Fig 2: Current and Projected US Amphibious Ships and location



Fig 3: Maritime Prepositioning Force Footprint Increase



Reference: Marine Corps Seabasing Requirements and Strategy Brief. 9 April 201059

Fig: 4

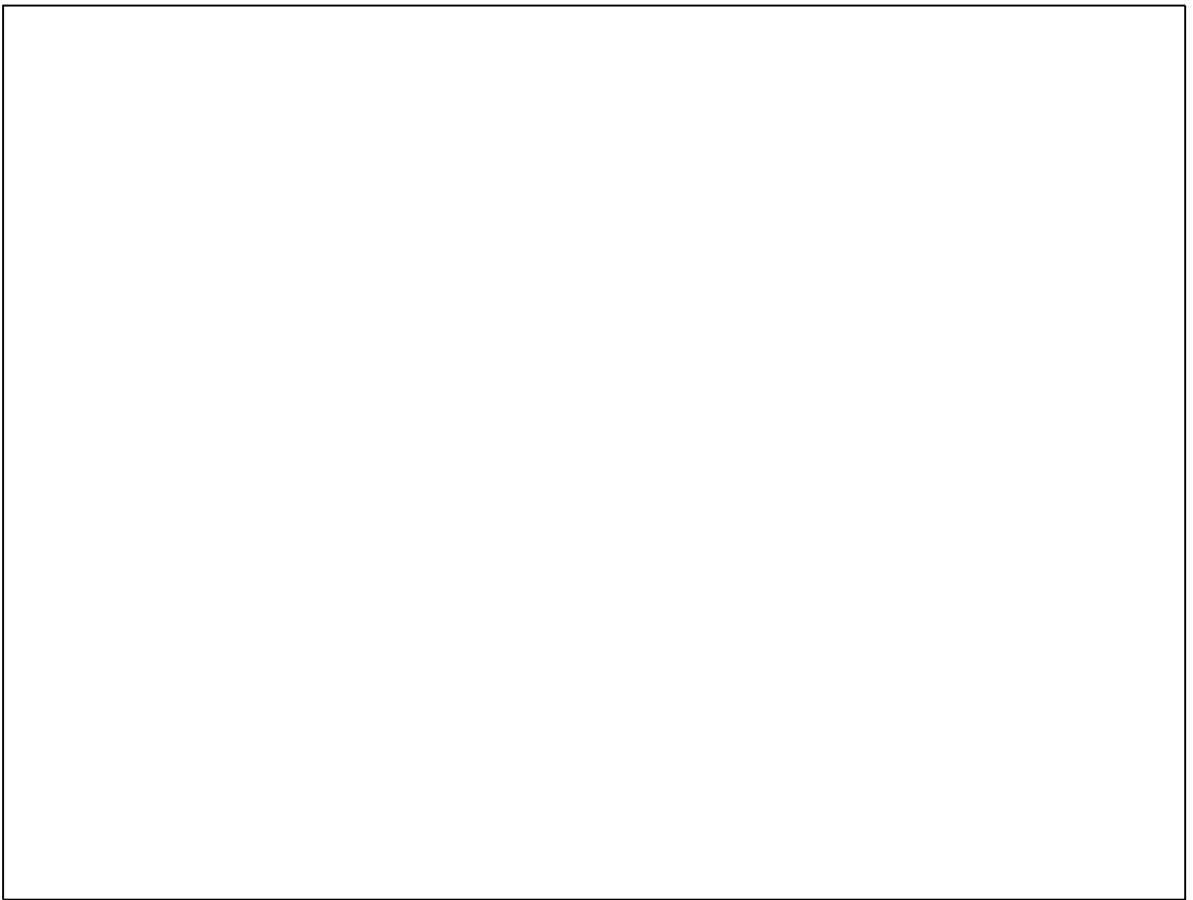


Fig 5: Three Ship Sea Basing Module



Fig 6: Marine Expeditionary Unit Composition



Source: US Marine Corps' 31st MEU official website.
<http://www.31stmeu.marines.mil/About/AssetsandCapabilities.aspx>

Map 1: Western Pacific



Reference: Brookings Institute60

Map 2: Southeast Asia



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