REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
30-04-2018	Master's of Military Studies	JUL 2017 - JUN 2018

4. TITLE AND SUBTITLE
Expeditionary Advanced Base Operations

5a. CONTRACT NUMBER
N/A

5b. GRANT NUMBER
N/A

5c. PROGRAM ELEMENT NUMBER
N/A

6. AUTHOR(S)
Sonntag, Charles, C, LCDR, USN

5d. PROJECT NUMBER
N/A

5e. TASK NUMBER
N/A

5f. WORK UNIT NUMBER
N/A

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
USMC Command and Staff College
Marine Corps University
2076 South Street
Quantico, VA 22314-5068

8. PERFORMING ORGANIZATION REPORT NUMBER
N/A

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)
DR. PAUL GELPI

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
N/A

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release, distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This paper offers three perspectives of an up-and-coming concept within the USMC from the lens of a US Navy Officer. The first prespective proposes how this new concept can be employed rapidly, with readily availble commercial off the shelf technology, to better enable the USMC and USN more lethality and increased operational tempo within an adversary's littoral waters and submerged within their A2AD area. The second perspective shows how these concepts are anythign but new, employed rapidly and sucessfully during the World War II Guadalcanal Campaign. The final perspective aims to show how modern nuclear powered aircraft carriers are inherently terrible EABO platforms.

15. SUBJECT TERMS
Expeditionary Advanced Base Operations

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**	UU	29	USMC Command and Staff College
UNCLASS	UNCLASS	UNCLASS			**19b. TELEPHONE NUMBER** *(include area code)* (703)784-3330 (Admin Office)

United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

TITLE:

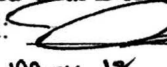
Expeditionary Advanced Base Operations

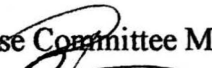
SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR:

Lieutenant Commander Charles C. Sonntag, USN

AY 2017-18

Mentor and ~~Oral Defense~~ Committee Member: Paul D. Gaupt, PhD
Approved: 
Date: 1 May 18

Oral Defense Committee Member: Benjamin Jensen PhD
Approved: 
Date: 1 May 18

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

Table of Contents

Preface

The authors would like to thank Dr. Benjamin Jensen and Dr. Paul Gelpi for their assistance throughout this research project as well as all of the various agencies that enable Fight Club. Additionally, the author would like to thank his wife and children for their enduring love and support throughout this endeavor. The hours of personal time sacrificed by the entire team to provide relevant feedback have enhanced not my only research but the entire DoD profession.

Executive Summary

Title: Expeditionary Advanced Base Operations

Authors: Lieutenant Commander Charles C. Sonntag IV, USN

Thesis: Expeditionary Advanced Base Operations (EABO) seeks to employ the USMC and USN in a distributed fashion to increase their warfighting lethality and mobility within an adversary's littoral coastal areas, defined as Anti-Access Area Denial (A2AD)

Discussion: The future of warfare has been forecasted to take place in urban coastal regions throughout the world. Additionally, the mass proliferation of lethal commercial off the shelf technology poses an ever-increasing threat to DoD and coalition forces. The USMC and USN must adopt fresh and unique warfighting strategies to remain effective and lethal within an adversary's littoral waters. One of these concepts, Expeditionary Advanced Base Operations (EABO) seeks to employ the USMC and USN in a distributed fashion to better fight in this littoral coastal area. This paper offers three perspectives on this EABO concept of distribution.

The first perspective showcases how the USMC and USN can utilize this concept today, in a "fight tonight" setting, using readily available, commercial off-the-shelf technology combined with military tested proven concepts. In this example, the USMC and USN can employ multiple drone boats, each with a unique suite of technologies to exploit an enemy A2AD threat.

The second perspective peers into the enduring past of the USMC and USN team to show how the EABO concept is anything but new. During World War II, the Guadalcanal Campaign in the Solomon Islands was how the USMC and USN team gained a foothold inside the Imperialist Japanese Naval area. To do so, the USMC and USN had to come together, in order to "Fight To Get To The Fight", using an EABO type of concept of operation.

Lastly, the third perspective focuses on the joint operations planning aspect of the DoD, dispelling a common idea that a modern USN nuclear aircraft carrier can be used as a viable EABO platform to support USMC operations during an amphibious assault. Complicated by numerous organic limiting factors, an aircraft carrier should largely be left to project power as it is designed.

Conclusion: While this paper offers three distinctly different perspectives on an emerging concept within the USMC and USN, the concept of EABO is extremely young and immature. It is the authors hope that this paper spurs follow on discussions and wargaming about its future efficacy. Whether determined tactically relevant or not, EABO is proof of critical thinking at its best, offering a fresh and unique perspective on future warfighting.

- Chapter One -

Expeditionary Advanced Base Operations One: A "Fight Tonight" Concept

"3 degrees left rudder, come left and steady course 290. Captain, we've reached PIM and begun our transit through the Straits of Hormuz." The Harry S Truman (CVN 75) Carrier Strike Group was in a tight single-file formation, steaming at 20 knots into the Persian Gulf in transit to its station. The air wing was slated to begin flight operations into Iraq the next day. 30 mins later the OOD announced, "Sir, the Furuno radar is picking up multiple contacts bearing 300 to 090! There are a lot of them Sir!" The airborne SAR helo could only keep so many away, and the ships did not have much room to maneuver. The bridge team counted at least 50, but there were definitely more, and they were bearing down on the carrier. Some had large caliber machine guns mounted, others were crewed with IRGCN wielding AK-47 style weapons. Most of the boats paralleled their course, but some took turns pointing right at the carrier. The next few seconds were fuzzy. Warning shots were fired from the left bow's 30mm gun, followed by an explosion shaking the ship from the right. The ship shuddered. "Sir, one of the boats drove into the ship and exploded! we've been hit behind EL3!"

With the growing threat inside an adversary's littorals, a new concept of battle has been slow to gain momentum. As outlined in the United States Marine Corps Marine Operating Concept (MOC), and United States Navy's "A Cooperative Strategy for 21st Century Sea Power", this concept, coined Expeditionary Advanced Base Operations (EABO) offers an answer to a growing concern for today's US Navy and USMC. The MOC states that the United States Marine Corps must evolve though five critical tasks. One of these tasks being to "operate with resilience in a contested-network environment."[i] This contested-network environment has been recently given the name Anti-Access and Area Denial (A2AD). Similarly, the United States Navy's future concept calls for resiliency inside an A2AD environment. It states with observation that "the proliferation of technologies that allows potential adversaries to threaten naval and air forces at greater ranges complicates our access to some maritime regions (anti-

access), as well as our ability to maneuver with-in those regions (area denial), including the littoral and landward access."[ii] With commercial off-the-shelf technology becoming easier to obtain and easier to use against US forces, we are entering a strategic transition point[iii] in warfighting.

This unanimous understanding of growing threats in the littoral environment is forcing the US Navy and USMC to evolve. We simply cannot operate with increasing ranges of standoff, outside of adversary's threats. This essay agrees with the US Navy's concept of increasing forward basing abroad to boost in-theater presence while providing globally distributed expeditionary forces[ii], which supports the EABO concept. Unfortunately, because of its youth, it conjures fantastic ideas interwoven with futuristic technologies and in some cases non-existent capabilities. This paper offers a basic idea centered on the EABO concept and uses technologies that are currently employed by both the USN and the USMC. It further offers the merits of employing these concepts and a few of the challenges that they face.

What is EABO?

EABO is a USMC driven, Naval concept that supports joint operations through advanced and forward deployed naval and joint sensors, shooters, and sustainment capabilities to achieve sea control and denial while simultaneously providing improved access for follow on forces.[iv] This concept distributes forces across a large area of operation, "Generating the virtues of mass without the vulnerabilities of concentration."[v] This concept is completely tailorable to the required mission ranging from Humanitarian Assistance and Disaster Relief (HA/DR) to all-out war. In its most perfect form, EABO provides numerous distributed, lethal, independent forces

that operate simultaneously through a litany of missions. These include but are not limited to Air Defense (AD), Deception, Mine Counter Measure (MCM), Forward Arming and Refueling Points (FARP), and Logistical resupply. In an extremely simple form, EABO is simply multiple FARP's distributed across an adversary's A2AD littoral region. Furthermore, it also aids in maintaining of Sea Lines of Communication (SLOC) for USMC connectors and US Naval ship navigation.

EABO offers a solution to a current problem. It allows the fighting force to regain sea and air control in a contested littoral area. Adversaries have begun to effectively challenge the totality of US control. They are doing so using crude, cheaply procured, and commercially available off-the-shelf technology. Unfortunately, this indirect warfare is effective. Things such as remote-control drones purchased as department stores and video game systems reconfigured into remote fire control stations are a few examples of these cheap and crudely effective technologies. An innocent example of these crude technologies being effective and powerful, and used on US soil occurred in August 2013. A New Jersey UPS worker rigged together, with less than one hundred dollars, a homemade GPS jammer. He used readily available components purchased at a local Radio Shack and was powered by a cigarette outlet. When powered, it prevented his company from tracking his whereabouts. Unbeknownst to him, he was also jamming Newark Airports approach corridor. This caused air traffic control and commercial aviation chaos.[vi] While not intended to harm in anyway, it was very effective. It also serves as an adequate example which showcases the effectiveness and power of cheap, crude commercial off-the-shelf technology.

There is a growing trend within the last few years inside the US Military. This trend of technology innovation aims to ensure total sea and air domain dominance around the world.

While needed, this paper offers an alternative. Incorporating an EABO concept with commercial off-the-self technology, it synergizes force effectiveness and complements the technology proliferation to battle indirect warfare. While new technology proliferation is necessary for EABO evolution, adversaries also have access to the same commercial off-the-shelf technologies. Adversaries further understand their lethality to US systems. Rather than innovating concepts and technologies to use in their defense, the US Navy and USMC could instead use the same commercial, readily available off-the-shelf technologies to its favor. Drones fixed with cameras, munitions, or IR emitters could be equally as effective for coalition forces as they are for an adversary.

From the Land and From the Sea

There are two main strategies to EABO and its facilitation for follow of forces. They are timing and location. The timing of an EABO is critical. Staging and employment of an EABO must be early enough to exploit and shape adversary coastal defenses, yet not so early that the adversary is able to adapt to the EABO. Most critical however, is an EABOs location. Unfortunately, location is also the toughest constraint. It is completely situation dependent and relies on many unreliable factors. Two of those factors are geographic uncertainties and ally support. This paper postulates that geographical uncertainties are the biggest factor in determining EABO location. When factoring in an EABO location, land mass types and their distance from an adversary's coast must be carefully considered. Ideally however, an adversary's littorals are littered with locally close islands. This local island network could be retrofitted for use as Forward Operating Bases (FOB).

In the absence of an island chain, organic military shipping will need to act as those EABO FOBs. While potentially more effective than an island, it does require considerable US Naval infrastructure. What should be realized is that what works in one part of the world may not in another. The geography of the Mediterranean Sea is different from that of the Persian Gulf, or the Pacific Ocean. Areas like the western Pacific and Mediterranean Sea offer the highest geographical likelihood of these island chains. Amphibious Readiness Group (ARG) type ships with well deck capabilities, such as Wasp Class Amphibious Assault Ships (LHD), and San Antonio Class Amphibious Transport Docking Ships (LSD) offer the best alternative. These ships are able to deploy quickly and can be reconstituted with required EABO infrastructure at sea. Acting as floating command posts at increased ranges, these LHD/LSD ships would be ideal for the employment of an EABO in the absence of a natural island chain.

Maritime Pre-Positioning Force (MPF) ships can further facilitate this concept. They have the ability to reconstitution the ARG/MEU Ships at sea while enroute to an Area of Operation (AO). MPF ships are constantly circulating the globe. They are outfitted with floating "barges" that allow the forward reconstitution of Marine HMMVs, AAV, Tanks, and various amphibious connectors. By incorporating an MPF ship filled with EABO loadouts, and incorporating them into the MPF shipping rotation in conjunction with ARG/MEU deployment schedules, the US Navy and USMC will be able to rapidly respond, pre-stage, and be ready for the employment of an EABO.

The second biggest factor in determining the location of an EABO is dependent on coalition and allied support. Allied support is however not required for the employment of and EABO and can be conducted completely by organic US Naval and USMC assets. If an adversary's littorals give way to an island chain, or geographically local coast, coalition and ally

support will then prove vital. The US will simply not be able to utilize foreign land without support. An understanding of regional alliances will prove beneficial. A regional alliance may prohibit a partnering country from allowing the US to respond to a mutual adversary. The US Navy and USMC should consider the political implications of pre-staging military equipment. Assuming that pre-staging of EABO equipment and personnel under secrecy is a poor assumption and could further degrade diplomatic negotiations. Due to this, the political implications of and EABO should be strongly understood.

Swarm and Mass EABO Concept

The Navy of the Islamic Revolutionary Guard Corp (IRGCN) often practice and use this tactic against United States Naval forces. While crude, the tactic is effective, and uses dozens (in some cases hundreds) of small cheap fishing boats. These small boats are each loaded with any number of direct fire weapons. The IRGCN has been using this swarm tactic for years in the Straits of Hormuz and Persian Gulf against any surface ship it deems a threat. Its main target is however a US Aircraft Carrier. The United States Navy does not have an effective strategy to defend against these massive swarms of small craft. Testing has not been able to replicate the sheer mass the IRGCN is capable of. While countermeasures are effective, the chance of them being overwhelmed is a high. Considering the law of averages, with enough small fast craft, one has a high probability of breaching a ships Weapons Engagement Zone (WEZ) and contacting its hull.

Adopting this tactic and employing it within an EABO, the US Navy and USMC has a cheap and effective way to achieve mass in contested waters. Taking a fleet of small, fast-

moving craft, outfitting them with a mix of lethal and no lethal fires capabilities (GPS jammers, high power emitters, and direct fire capabilities), and employing them in mass within an A2AD littoral environment has the potential to distract and overwhelm adversary Indications and Warnings (I/W) systems. Forward staging these small drone craft on a series of islands, or in their absence from US Navy LHD and LSD ships, they would act as an advanced deception force that exploits an adversary's I/W systems in anticipation of follow of forces. Adversary targeting of these small crafts will prove beneficial. Small craft are tough to break out on radar. Adversaries would have to unmask critical coastal defense infrastructure and weapon in their defense. While likely effective at destroying a few of these small craft, the loss of one or two would not degrade the net effect of the mass. The benefits are two-fold. The adversary has shown his defenses with minimal loss to US Naval and USMC forces, and the mass has exposed a critical vulnerability and system weakness. With this exposure known, the US Navy and USMC would be able to better limit an A2AD threat WEZ and could better exploit the adversary to their benefit.

These small fast craft can be driven by man, remote, or a combination of the two. A proof of concept for a drone capable small craft has already taken place. In December 2016, the US Office of Naval Research (ONR) conducted a test of drone small boats that loitered and patrolled a four nautical mile area four miles off the southern Virginia coast.[vii] This test showcases the US Navy's capacity to eliminate the human element from this concept. Drone small boats will be able to loiter longer, in harsher conditions, and extended ranges from their bases. Piloted through a tactical data link, such as LINK-16 or Cooperative Engagement Capability (CEC), or via satellite, extends the control range outside adversary A2AD and WEZ areas. Forward staged, and when directed, they would begin their shaping effort to exploit an adversary's coastal defenses.

MPF shipping assets could assume this critical task of pre-staging this fleet of small drone craft, further reducing EABO reaction times. Control of the crafts could be handled through LINK-16 or CEC from ARG/MEU LHD/LSD ships operating at safe ranges. In summary of this concept, nesting these deception capabilities onto remote piloted small craft, producing them in mass, and then distributing them around the adversarial environment, inside an EABO construct, the US Navy and USMC will be able to further exploit and shape an adversary's littoral waters and limit the possibility for human losses.

Conclusion

When presented, EABO reads in a very futuristic and expensive way. This can lead to a lot of confusion over employment with visions of use in the distant future. While at the wave top level it is seemingly vague, this is a concept that can be used today. Its applications are endless and is tailorable across many mission sets. This paper showcases just a few examples of how the employment of an EABO in a "fight tonight" scenario with readily available, cheaply procured technologies can be effective. This paper further offers the idea that cheaply procured, remote operated small craft, outfitted with kinetic and non-kinetic soft kill technologies, operated in mass can break down an adversary's littoral I/W infrastructure. That what they potentially offer is the highlight of an adversary's coastal defense I/W and fires locations without the risk of operating the fleet within an A2AD environment. EABO's can further highlight critical vulnerabilities in an adversary's A2AD systems. This paper further concludes that EABO infrastructure should be pre-staged upon MPF shipping and incorporated into the ARG/MEU deployment rotation allowing for its rapid employment when needed. EABO employment relies

heavily on the geographic location of the adversary and ideally from an island chain and that its employment, in the absence of an island chain, could be through US Navy well deck shipping. Based on its low cost and potential high payoff, the US Navy and USMC should seek to utilize this concept to "fight tonight".

- Chapter Two -

Expeditionary Advanced Base Operations and Guadalcanal: A Historical Example of Fighting to get to the Fight.

Within the past few months, the upper echelon of the United States Marine Corps have been promoting two emerging concepts coined “Single Naval Battle” and “Fighting to get to the Fight”. They also complement an existing concept within the USMC of Expeditionary Advanced Base Operations, or EABO. What are the motivations behind these emerging and new concepts? This essay offers an argument for each, and how the two latest concepts, “Single Naval Battle” and “Fighting to get to the Fight” relate to EABO using historical examples. Simply put, “Single Naval Battle” is a call for the USMC and the United States Navy to better align themselves operationally. Almost symbiotic, EABO allows the USN and USMC, in a total war scenario to establish themselves and operate inside an enemy’s Anti-Access Area Denial (A2AD) environment. These two concepts, Single Naval Battle and EABO complement each other greatly, and when combined form the newly promoted concept coined “Fighting to get to the Fight”. These three concepts have recently been fully supported by the Commandant of the Marine Corps. Unfortunately, these concepts can seem openly vague. They conjure mixed,

confused, or bore sighted types of emotions and ideas. Further compounding these frustrations, EABO is routinely pitched with futuristic and fantastic technologies. The ideas fail to gain traction simply because they are seemingly grandiose and empty. What is often overlooked is that these concepts are nowhere near new, or even innovative for that matter. History provides examples of each of these ideas, full of colorful victories, losses, and lessons learned. No historical example embodies these concepts like Operation Watchtower. Also known as the battle of Guadalcanal, Operation Watchtower took place in the southern Solomon Islands from August 1942 to February 1943. It is an excellent and modern example of these new concepts put to work. Operation Watchtower encompasses and validates all three concepts of EABO, "Single Naval Battle", and "Fighting to get to the Fight" for the USMC and USN today.

The "Single Naval Battle" concept, only recently promoted by the Commandant of the Marine Corps, is one of harmony. It is a call upon the USMC and USN to better synergies their efforts and become more combat efficient. The next total war is unknown in both size and scope. Although unknown, the USMC and USN will undoubtedly have to work together as one fighting force. While this might seem challenging, maybe impossible to some, Operation Watchtower saw back in 1942, the harmonizing of these two services. The USN did not understand how the USMC and amphibious operations could benefit their mahanian beliefs, even though outlined in their War Plan Orange.[viii] Further, the USMC was still searching for confident operational validation. These two-separate service "-isms" fueled two separate and distinct battles during the Guadalcanal Campaign. Quickly however, the USMC and USN would overcome the growing pains of war, come together to for a "Single Naval Battle", and in doing so prove critical to their success against the Imperial Japanese Military.

This service harmony was not without growing pains. Operation Watchtower was fraught with them. As an example, the USN Task Force commander saw it necessary to provide aircraft for artillery spotting, marking beaches, assisting naval surface fires, and guiding landing boats. This was done against the wishes of the Commanding Officer of the First Marine Division, General Alexander Vandegrift who was responsible for USMC operations on Guadalcanal. He would later report the aircraft were unnecessary and unwarranted and were only exposing themselves to coastal defensive fires.[ix] Two days later, on 8 August 1942 and after the initial amphibious landing, the USN decided to pull its carrier and surface ship support citing fuel shortages, carrier aircraft losses, and intelligence of Imperial Japanese ships steaming south to intercept US forces. With carrier aircraft support gone, General Vandegrift and his Marines were in a precarious position. With the logistic offloading taking much longer than expected, the Marines were alone on the island, undermanned, undersupplied and undefended.[x] General Vandegrift shifted his focus to seizing and defending the islands airfield and put off seizing the entire island. Motivated by the USN, there were two distinct battles. One of the Naval Battle and the other of the USMC land battle. No service operational harmony existed, and therefore Operation Watchtower would enter a hazardous offensive operation "stalling out" period from nine to twenty August.

Fortunately, this service operational melding would start to take place once General Vandegrift's Marines made Guadalcanal's airfield fully operational. Being able to carry out organic aerial strikes against Imperial Japanese ships, land forces, as well as start logistical supply flights in and out of the island would do four things for US forces. First, it supplemented Admiral Nimitz naval operations in the area, giving him a critical advantage over the Imperial Japanese. Second, it would allow the US to contest the Imperial Japanese aerial supremacy using

both carrier and land-based aircraft. Thirdly, it would force the Imperial Japanese to refocus their operational efforts and tactics. Lastly, it gave General Vandegrift a critical and powerful aerial defensive arm. The USMC seizure of Henderson field and beginning operations in support of overall theater operations enabled the USMC and USN to begin to fight together. Things were not perfect however, and it would take the relieving of the USN's Commander of South Pacific to do so.

The "Single Naval Battle" would not be fully realized until the middle of October 1942. "On 18 October, Admiral Ghormley was relieved of South Pacific Area Command by the aggressive Admiral Halsey, who would further harmonize USMC and USN operations. Admiral Nimitz and Halsey would pledge to do whatever they could to provide General Vandegrift with more supplies, more aircraft, and more manpower."[xi] This shift of command, and subsequent backing of the USMC's amphibious operations would forever codify the two services for the rest of the war. The two services would island hop northward, toward Japan with ever increasing efficiency and power as one team. Fighting one "Single Naval Battle", the USMC and USN would take the lessons learned from Operation Watchtower on Guadalcanal and apply them to future amphibious assault of ever increasing importance. Bougainville, Tarawa, and Saipan victories, all owe themselves to the USMC and USN growing together through Guadalcanal, and unifying their efforts, under one "Single Naval Battle"

Gaining superiority of any one of an enemy's domains in order to facilitate the support follow on forces is the main principle of EABO. The concept is not designed for exclusive and sustained total war. It is simply a way to better get our foot in the door of the enemy. There is no blueprint, as of now at least, because each scenario is unique. What EABO tactics one uses for one threat will likely not be as combat efficient for another. The concept however is enduring

and fluid. It allows the USMC and USN flexibility to use its combined resources to gain domain superiority within an A2AD environment. It is a concept that is historically successful. There is no better modern proof of concept for EABO in a total war setting the Operation Watchtower.

First flagged as necessary by the USN's War Plan Orange, amphibious operations such as Operation Watchtower marvelous depict EABO in a historical setting. War Plan Orange featured a war with Japan and proposes a thrust across the islands of the central pacific. The advance calls for the securing of a set of "stepping-stone" bases obtained by amphibious assaults.[viii] These "stepping-stone" bases obtained by amphibious assaults called for by War Plan Orange is in essence EABO. A modern realization of War Plan Orange's call for EABO is Operation Watchtower. It features the USMC and USN working, growing together, melding operational efforts, and establishing a lodgment inside an enemies A2AD area. In Operation Watchtower, the US seized and established the advanced base of Guadalcanal and Henderson Field through expeditionary means. This was all done within reach of the Imperial Japanese might. Once the USMC established Guadalcanal and began operating daily aerial strikes out of Henderson Field, they began exploiting the Imperial Japanese A2AD environment. These aerial strikes upset the Imperial Japanese battle rhythm, exposing weaknesses in other Imperial Japanese domains and built combat momentum for US forces. Joining operational forces and unifying a "Single Naval Battle", the USMC and USN were better able to execute the EABO battle plan laid on in War Plan Orange. EABO is an effective tactic when employed in harmony by the USMC and USN team. Because of this, Operation Watchtower is a great example of EABO in a modern total war setting.

Lastly, how does EABO, when employed under a "Single Naval Battle" define the new emerging concept of "Fighting to get to the Fight"? To better understand this, one must be able

to define Fighting to get to the Fight". This paper argues that this concept is a focus shift from current operations. Since the Gulf War, the USMC and USN have been operating predominately in the Middle East. They have had the luxury of sailing to, offloading, and conducting strikes all within one area or country. The War on Terror has recently been winding down and with four of the "4+1" actors located within, or in close proximity of the Pacific Theater, the likelihood our next conflict will take place in that area is highly likely. This requires the US Military to traverse the great expanse of the Pacific Ocean in order to project its military might. Taking into consideration Mahan's power projection rule of thumb that states for every 1000 miles traveled, the USN loses approximately 10 percent of its combat power, it behooves the USMC and USN to "island-hop" and employing EABO much like Operation Watchtower. "Fighting to get to the Fight" further impresses upon the USMC that while executing EABO, it should plan on its island-hopping to be contested by the adversary. The USMC and USN will have to employ EABO, under a "Single Naval Battle", within an adversary's A2AD area in order to project the full force of its military power upon an adversary. "Fighting to get to the Fight" is a preparatory and predictive concept, encompassing EABO and "Single Naval Battle" for the next total war.

In conclusion, this paper attempts to illustrate how the newly promoted concepts of "Single Naval Battle" and "Fighting to get to the Fight" compliment the Marine Corps Operating Concept's idea of EABO. This essay further showcases that while these concepts are newly promoted, they are anything but. They are tried and true concepts of effective total war tactics. These concepts were employed and effectively used during Operation Watchtower on the island of Guadalcanal during World War II. The USMC and USN employed EABO by seizing the island of Guadalcanal, established it as a lodgment and further using its airfield for follow on operations. The USMC and USN would during this campaign harmonize their operational efforts

to form one “Single Naval Battle” against the Imperial Japanese within their A2AD area. Lastly, by employing these tactics through a series of island-hopping, all the while fighting the Imperial Japanese for local supremacy in order to better project their combined power on mainland Imperial Japan, the USMC and USN were “Fighting to get to the Fight”.

- Chapter Three -

EABO: U.S. Naval Aircraft Carrier’s as a Non-Solution

> *The initial assault and landing went flawlessly 15 days ago. Since then, a steady flow of LCACs and LCUs have facilitated the transfer of logistics from ARG ships to the beach. On board LHD-1, the stores have dropped to 30 percent. PACOM and MARFORPAC have scheduled us to link up with the USNS Arctic for an underway replenishment to return out stores back to roughly 70 percent. One problem, we are still operating under an active enemy A2AD WEZ and in an area that is still heavily sea mined. The USNS Arctic’s crew is composed of military contractors who will not sail into contested and dangerous waters. Further, the First MAW rotor and tiltrotor aircraft are schedule to arrive to supplement ongoing operations, but they are out of range.*

With the forecast of the next war outlined by the Marine Corps Operating Concept (MOC) and 21st Century Sea Power, the USMC and U.S. Navy must be able to operate with resiliency in an active Anti-Access Area Denial (A2AD) environment that is further within the contested littoral waters of a foreign country. Planning for the fictitious vignette above while tactically specific and unique, does present a real problem that requires innovative and critical thinking. Often, an idea surfaces about the efficacy of an U.S. Navy aircraft carrier (CVN) to solve the problem. CVN’s have extremely large flight decks, uniquely suitable as an

Expeditionary Advanced Base Operations (EABO) role or Forward Arming and Refueling Point (FARP). They offer more range, and flight deck space than an Amphibious Assault Ship (LHD). They are no stranger to Underway Replenishment's (UNREP) and have organic helicopters onboard that can further supplement the transfer of logistics from ship to ship. Even better, CVN's have unlimited range, do not require refueling, and thus can travel extreme distances to bridge the gap between Maritime Pre-Positioning Ships (MPS) and Amphibious Readiness Group (ARG) shipping. CVN's therefore sound like the perfect solution to this problem. Sadly, while their attributes would surely solve the above vignette, CVN's are in fact a terrible EABO/FARP platform. This essay will address the argument against using CVN's for anything other than their intended purpose. The reasons might seem minute, or even trivial, but they are anything but. Aircraft carriers are a conglomeration of various commands, systems, and networks that rely on one another for full system viability. As an example, aircraft launch and recovery systems require constant maintenance and operational system checks to remain fully operational. Crews are constantly working on and fixing these systems, walking the line between being operational and not. Preventing those system checks due to an EABO/FARP role brings those systems checks and maintenance and therefore readiness to a halt. This in turn prevents the timely launching and recovering of aircraft either as a scheduled or alert sortie. While CVN's use is viable EABO and FARP platform appears viable and even easily doable, they are limited by their associated shipboard systems and attached commands and therefore should be avoided in their use outside their designed role.

In 2016, the U.S. Navy implemented a scheduled and routine maintenance program for its fleet of aircraft carriers. Coined Optimized Fleet Response Plan or (OFRP), its aim was to better manage the carrier fleet through maintenance periods and therefore better schedule CVN

presence to Geographic Combatant Commanders GCC) while reducing strain on those CVNs. A recent article published about OFRP states that it "gives the combatant commanders only as much presence as the service can generate without over-taxing the fleet."[xii] Extended use since the Gulf War has given rise to an increase of maintenance and overhaul of shipboard and aircraft systems. With maintenance periods extending past scheduled completion dates, the U.S. Navy had no choice other than to redeploy working ships and aircraft to meet operational demands. The effect only compounded the problem, with more ships and aircraft breaking from overuse. OFRP combats this problem and will take a few cycles to become effective. How does the OFRP affect planning for the use of a CVN in either an EABO or FARP role? Simply put, the U.S. Navy does not have a CVN to spare. There are none mothballed, and none floating unused in "ghost fleets". The U.S. Navy currently has ten operating aircraft carriers. Eleven if you consider its newest, the USS GERALD R. FORD (CVN 78), which at the time of this writing is not yet fully operational and ready for the fleet. OFRP ensures the fleet gets what it needs and nothing more. It does have plan for standby aircraft carriers.

CVN's also never sail alone. Left alone, they are inherently vulnerable to threats. While they do have multiple layers of defensive system, they are all just that, defensive. The CVN relies heavily on its attached Carrier Strike Group (CSG) ships for its protection. While some of its ships get tasking by GCC's for various missions, CVN's sail under the veil of its cruisers, destroyers, and submarine protection. Assuming the CSG can be distributed or broken up is another poor assumption. What does this mean for planning? While a deployed CVN may be able assist as a temporary EABO or FARP, their associated CSG might be fixed in a location by a GCC. One cannot assume a CVN can move without the movement of its entire CSG. While the CVN may not be limited in its movement, its associated ships may be.

Organically, CVN's house their own unique limitations operational planners within the sister services rarely understand. Because of its organic limitations, they are poor EABO and FARP platforms. As stated above, a CVN will almost always have its CVW attached. CVW's have between 70 and 75 aircraft. Moving these aircraft around the flight deck and hangar bay is a slow and methodical, highly trained evolution. CVN's further have nine total helicopter landing spots. (See Figure 1) It can therefore easily be misconstrued that all nine are always available. This is not the case, on average between two and four helicopter spots are only ever readily available at any given time on a deployed CVN. Deck space quickly become valuable. If planning to use a CVN as a temporary FARP with Marine Air Wing (MAW) rotor and tilt rotor aircraft, it must be understood that all nine spots will be available. Furthermore, it takes substantial time, upwards of 12 hours, to reconstitute a CVN flight deck for this FARP role. This reconstitution is necessary to open up the most amount of helicopter landing spots. A CVN hangar bay can only hold a maximum of 28 aircraft. This leaves upwards of 41 remaining on the flight deck[xiii]. Those remaining 41 aircraft are going to be parked tightly from the bow to the base of the control tower. In some cases, a few of those aircraft must parked on the fantail of the ship. What does this mean for planning? Simply stated the CVN can only offer six workable helicopter spots. That number changes based on munitions, aircraft type, weather, and time of day.

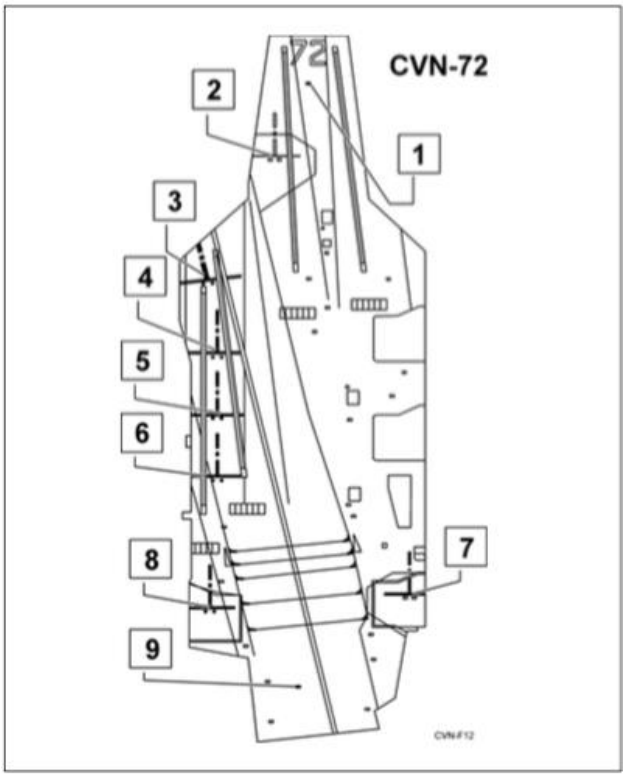


Figure 1[xiv]

Forward firing ordinance places further limitations on the number of available helicopter spots. NAVAIR 80T-120 states "The area in front of helicopters with forward firing ordnance shall be clear of personnel and equipment. Helicopters with forward firing ordnance shall not launch/recover on spot 7."[xv] Due to the threat of an accidental discharge and the potential for a shipboard fire and casualty, the number of helicopter spots falls to four (spots 3,4,5,6). Nighttime and inclement weather limits that number of available helicopter spots to five as well. NAVAIR 80T-105 states "Left seat slide−in visual recoveries to Spot 3 are prohibited. Left seat slide−in visual recoveries to Spots 2 are not recommended."[xvi] The same limitations apply to spot 1. The reason for this limitation is simple once understood. Night time and bad weather prevents the pilot from seeing the ship, discerning a horizon, and his height above the flight deck. Landing is therefore dangerous. For larger helicopter and tiltrotor aircraft, the MH-53's and MV-22's, the

number of available helicopter spots drops to two. These aircraft have a much larger footprint and rotor wash and are therefore limited to only landing inboard spot 4 on runway centerline and spot 9. NAVAIR 80T-105 states the reasoning for this is because of the severe hazard of rotor wash, consideration should be given to conducting CH-53E, MH-53E and V-22 operations from afterdeck spots only.[xvii] Helicopter spot eight has numerous limitations and is typically never used. Based on these helicopter spot restrictions dropping the available spots from nine to two in some cases, CVN's do not make viable FARP platforms.

Considerations also needs to be made whether these aircraft will be landing onboard the CVN, refueling, and taking back off (Hot Pump), or if they are going to land and shutdown (Stuff). In the authors experience, a hot pump takes around 15 minutes. Loitering aircraft will not have to wait long before a hot pump is completed and a helicopter spot opens up. It should be noted that not all helicopter spots can support a hot pump evolution. NAVAIR 80T-120 states "Hot refueling operations shall not be conducted on Spot 8."[xviii] Time increases exponentially if aircraft land, shutdown, and stuff. After aircraft are shutdown, they must be folded up for deck space (if applicable) and towed out of the way. This evolution takes upwards of 30 minutes. This increases the airborne aircraft loiter time who are also waiting to land and stuff. Time increases even more when non-Marine and Naval aircraft are planned to be used on the CVN. This is addressed in NAVAIR 08T-105 when it states "Army helicopters are not equipped with an automatic blade fold/spread system. Time for manually folding and spreading main rotor blades should be taken into account for tactical planning during shipboard operations."[xix] Further, CVN's do not have the equipment or crew to service these MAW aircraft. They must come from the individual squadrons. Therefore, Marine squadron personnel will have to be pre-staged or

flown onboard in advance to be able to service their respective aircraft if they are planning to stuff.

Attached CVW's further complicate these planning factors. Fixed wing pilots are required to maintain currency with carrier arrested landings or "traps". Currency equals combat readiness, and CVW pilots are required to maintain currency for the CVN to project its power. CVW pilots must get a minimum of one-night trap every seven days. If they exceed this seven-day window, the requirements increase. Pilots then require the completion of one day trap before they can complete their night trap for currency. This "day for night" window is critical. Outside of seven days, carrier pilots must perform a series of field carrier landing practices (FCLP's) at a land-based airfield before returning to the CVN for their day-for-night traps for currency. FCLP's must be conducted with a qualified and current Landing Signal Officer (LSO) who will determine if that pilot is safe for his currency traps. (See Figure 2) Tracking of these metrics is vital and counts for CVW readiness and lethality. It is unacceptable to a GCC for a deployed CVN/CVW to lose its power projecting CVW arm. What does this all mean for planning? Accounting for the 12-hour flight deck reconstitution before and after the planned FARP operation, and the seven-day night trap currency requirement, six days are left for flexibility in planning. At the end of those six days, the CVN MUST resume organic shipboard carrier operations for pilots to remain current and the CVN a vital war fighting and power projecting platform. This CVW limitation is the most crucial of all the arguments listed.

DAY					
DAYS SINCE LAST DAY CURRENT	**REQUIREMENTS PRIOR TO A DAY LANDING**	**WEATHER**	**DECK**	**DIVERT FIELD**	**CURRENCY REQUIREMENT**
1-14 days	FCLP not required	Ships mins	ALL conditions	N/R	1 arrested landing

NIGHT (3)					
DAYS SINCE LAST NIGHT CURRENT	REQUIREMENTS PRIOR TO A NIGHT LANDING OR NIGHT CAT SHOT(6, 7, 9)	WEATHER	DECK	DIVERT FIELD	CURRENCY REQUIREMENT
1-7 days	None	Ships mins	ALL conditions	N/R	1 arrested landing (T/G or arrested)(10)

Figure 2[xx]

Furthermore, reconstitution of the flight deck and continuous "packing" of fixed wing aircraft around the CVN introduces those aircraft to the unnecessary risk of towing collisions or "crunches". Crunches vary in their aircraft debilitation, ranging from a scratch in an aircraft paint, to entire new control surfaces needing to be replaced. Regardless, each crunched aircraft must be downed for inspection for an undetermined amount of time, taking away the lethality of the overall CVN. It may sound like a remote occurrence, but CVW aircraft are routinely parked within inches of each other to save and optimized valuable flight deck space. Asking for flight deck reconstitutions to be done more than usual will expose the CVW aircraft unnecessarily to the increased potential for crunches.

Shipboard Aircraft Launch and Recovery Equipment (ALRE) also provide their own limitations. The catapults and arresting gear systems are inherently complex and require constant, round the clock preventative and non-preventative maintenance and operational checks. If the flight deck is flooded with CVW and MAW aircraft that are parked on top of the CVN's arresting gear engines and catapults, maintenance crews will be unable to perform those required preventative checks. Wire pulls and catapult no-loads for operational checks cannot happen and must wait until after the flight deck is reconstituted back to normal. These operational checks take hours to perform, and could increase the amount of time before flight operations can resume. Risk of shipboard fire increases when CVW and MAW aircraft are refueled above CVN catapult tracks. Constant refueling of aircraft on top of the super-heated catapult tracks

increases the likelihood of a “catapult-track fire”. The catapults are super-heated with steam and covered with grease. This heat is a system requirement and aids in metal lubricity, makes the metal more malleable, and ensures it is fully expanded without cracks. Overtime, residual fuel leaks from these aircraft and coats the catapult tubes and grease. Once superheated, it ignites and causes a “catapult-track” fire. This author has personally witnessed half a dozen catapult track fires. While usually not debilitating to the CVN, these fires do exposes the CVN, aircraft, and personnel to unnecessary risk.

In conclusion, this paper proposes strong arguments why planning for the use of a CVN in an EABO, FARP, or logistic connector setting should be avoided. CVN’s come with their own set of unique and specific limitations that the average military planner does not understand. From the threat of shipboard fire to CVW currency, CVN’s while seemingly offer a lot to a critical thinking planner, should be avoided unless all other options are exhausted. Most importantly, if no other options exist, a CVN can be used in a limited capacity, but for not longer than six days. More than six days of use in any role that prevents the attached CVW from flying will drastically reduce CVN lethality and will likely be met with heavy resistance.

Bibliography 1

Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century. Quantico, VA: 2016.

A Cooperative Strategy for 21st Century Seapower: 2015

AUTHOR. "U.S. Fleet Forces: New Deployment Plan Designed to Create Sustainable Naval Force" *USNI* (2016): https://news.usni.org/2016/01/19/u-s-fleet-forces-new-deployment-plan-designed-to-create-sustainable-naval-force.

CV NATOPS MANUAL (NAVAIR 80T-105)

LSO NATOPS MANUAL (NAVAIR 80T-104)

CVN FLIGHT/HANGAR DECK NATOPS MANUAL (NAVAIR 80T-120)

Bibliography 2

Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century. Quantico, VA: 2016.

A Cooperative Strategy for 21st Century Seapower: 2015

Corbett, Art (COL, USMC, RET.). Interview. USMCU, Quantico, VA. November 2017

Corbett, Art. "Expeditionary Advance Base Operations: Future Naval and Marine Concepts." PowerPoint, September 21, 2017.

Matyszczyk, Chris. "Truck Driver Has GPS Jammer, Accidentally Jams Newark Airport". CNET (August 11, 2013): https://www.cnet.com/news/truck-driver-has-gps-jammer-accidentally-jams-newark-airport/

Hsu, Jeremy. "U.S. Navy's Drone Boat Swarm Practices Harbor Defense". IEEE Spectrum (December 19, 2016): https://spectrum.ieee.org/automaton/robotics/military-robots/navy-drone-boat-swarm-practices-harbor-defense

Bibliography 3

Frank, Richard. "Innovation and Determination Ashore." *Naval History Magazine* 21, no. 4 (August 2007).

Hough, Frank, Verle Ludwig, Henry Shaw, *Pearl Harbor to Guadalcanal: History of the U.S. Marine Corps Operations in World War II.* Quantico, VA: Historical Branch, G-3 Division, Headquarters, 1958.

Ulbrich, David. “Thomas Holcomb, Alexander A. Vandegrift and Reforms in Amphibious Command Relations on Guadalcanal in 1942.” *War and Society* 28, no. 1 (May 2009): 113-147.

Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century. Quantico, VA: 2016

A Cooperative Strategy for 21st Century Seapower: 2015

Corbett, Art. “Expeditionary Advanced Base Operations: Future Naval and Marine Concepts.” Powerpoint, September 21, 2007

---

[i] *Marine Corps Operating Concept (MOC)*, September 2016, 10.
[ii] *A Cooperative Strategy for 21st Century Seapower,* March 2016, 9.
[iii] Art Corbett (COL, USMC, RET), Interview. USMCU, Quantico, VA. November 2017
[iv] Corbett, Art. "Expeditionary Advance Base Operations: Future Naval and Marine Concepts." PowerPoint, September 21, 2017. Slide 24.
[v] Corbett, Art. "Expeditionary Advance Base Operations: Future Naval and Marine Concepts." PowerPoint, September 21, 2017. Slide 20
[vi] Chris Matyszczyk, “Truck Driver Has GPS Jammer, Accidentally Jams Newark Airport”. CNET (August 11, 2013): https://www.cnet.com/news/truck-driver-has-gps-jammer-accidentally-jams-newark-airport/
[vii] Jeremy Hsu, “U.S. Navy's Drone Boat Swarm Practices Harbor Defense”. IEEE Spectrum (December 19, 2016): https://spectrum.ieee.org/automaton/robotics/military-robots/navy-drone-boat-swarm-practices-harbor-defense
[viii] Richard Frank, “Innovation and Determination Ashore.” *Naval History Magazine* 21, no. 4 (August 2007).
[ix] Frank Hough, Verle Ludwig, Henry Shaw, *Pearl Harbor to Guadalcanal: History of the U.S. Marine Corps Operations in World War II* (Quantico, VA: Historical Branch, G-3 Division, Headquarters, 1958), 254.
[x] Frank Hough, Verle Ludwig, Henry Shaw, *Pearl Harbor to Guadalcanal: History of the U.S. Marine Corps Operations in World War II* (Quantico, VA: Historical Branch, G-3 Division, Headquarters, 1958), 259, 260, 264.
[xi] David Ulbrich, “Thomas Holcomb, Alexander A. Vandegrift and Reforms in Amphibious Command Relations on Guadalcanal in 1942.” *War and Society* 28, no. 1 (May 2009): 133.
[xii] AUTHOR, “U.S. Fleet Forces: New Deployment Plan Designed to Create Sustainable Naval Force”. *USNI* (2016): https://news.usni.org/2016/01/19/u-s-fleet-forces-new-deployment-plan-designed-to-create-sustainable-naval-force.
[xiii] Yendry Martinez, Aviation Boatswains Mate, Chief, USN, telephone conversation, March 20, 2018
[xiv] Naval Air Systems Command, *CV NATOPS* MANUAL. Patuxent River, MD: (2009), B-2.

[xv] Naval Air Systems Command, *CVN FLIGHT/HANGAR DECK NATOPS* MANUAL. Patuxent River, MD: (2010), 6-2.
[xvi] Naval Air Systems Command, *CV NATOPS* MANUAL. Patuxent River, MD: (2009), 5-22.
[xvii] Naval Air Systems Command, *CV NATOPS* MANUAL. Patuxent River, MD: (2009), 5-21.
[xviii] Naval Air Systems Command, *CV NATOPS* MANUAL. Patuxent River, MD: (2009), 5-21.
[xix] Naval Air Systems Command, *CV NATOPS* MANUAL. Patuxent River, MD: (2009), 6-27.
[xx] Naval Air Systems Command, *LSO NATOPS* MANUAL. Patuxent River, MD: (2001), 6-2.