



## **EXPEDITIONARY ADVANCED BASE OPERATIONS: THE NEED TO CLOSE THE GAP BETWEEN U.S. NAVY AND MARINE CORPS LONG-TERM STRATEGIES**

**Major Franklyn A. Colorado, USMC**

### **JCSP 49**

#### **Exercise Solo Flight**

##### **Disclaimer**

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© His Majesty the King in Right of Canada, as represented by the Minister of National Defence, 2023.

### **PCEMI n° 49**

#### **Exercice Solo Flight**

##### **Avertissement**

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté le Roi du chef du Canada, représenté par le ministre de la Défense nationale, 2023.

CANADIAN FORCES COLLEGE - COLLÈGE DES FORCES CANADIENNES

JCSP 49 - PCEMI n° 49  
2022 - 2023

Exercise Solo Flight – Exercice Solo Flight

**EXPEDITIONARY ADVANCED BASE OPERATIONS: THE NEED TO CLOSE  
THE GAP BETWEEN U.S. NAVY AND MARINE CORPS LONG-TERM STRATEGIES**

**Major Franklyn A. Colorado, USMC**

*“This paper was written by a candidate attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”*

*« La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale. »*

## EXPEDITIONARY ADVANCED BASE OPERATIONS: THE NEED TO CLOSE THE GAP BETWEEN U.S. NAVY AND MARINE CORPS LONG-TERM STRATEGIES

### INTRODUCTION

“It is our intent to face any adversary with our forces spread out, with our effects masked, across multiple vectors, both physically and virtually, in all domains from the seabed to space,” stated Admiral Mike Gilday, U.S. Navy Chief of Naval Operations (CNO), when discussing the U.S. Navy’s (USN) strategic outlook in July 2022.<sup>1</sup>

### Expeditionary Advanced Base Operations: From Strategy to Implementation

*Force Design (FD) 2030* was published by General David H. Berger, the 38th Commandant of the U.S. Marine Corps (USMC), in March 2020. The purpose of *FD 2030* is to modernize and restructure the Marine Corps to support the military requirements specified in the 2017 *National Security Strategy (NSS)* and 2018 *National Defense Strategy (NDS)*. General Berger argued that both strategies “redirected the Marine Corps’ focus from countering violent extremists in the Middle East to great power/peer-level competition, with special emphasis on the Indo-Pacific.”<sup>2</sup> In December 2022, General Berger published *The Case for Change*, where he articulated his belief that “deep institutional change [was] inevitable” to meet the requirements of *FD 2030*, arguing that the Marine Corps needed to be restructured to make the pivot from nearly two decades of ground wars and operations in the Middle East to return to operating in the maritime littorals to counter China, the primary pacing threat that the Marine Corps’ “force design and force structure will be measured [against].”<sup>3</sup>

The Marine Corps developed a future warfighting concept for littoral operations known as Expeditionary Advance Base Operations (EABO) to align with the 2017 *NSS*, 2018 *NDS*, and the more recent 2022 *NSS* and *NDS*. EABO is intended to enable the Marine Corps to meet the military requirements outlined in these strategies and has become increasingly important as the Marine Corps endeavors to maintain a credible and effective role in support of U.S. strategy in the Indo-Pacific region, where in 2017, then U.S. President Donald Trump argued that China was seeking to “displace the United States.”<sup>4</sup>

---

<sup>1</sup> Megan Eckstein, ‘Navy Moves to Align Its Strategy with National Defense Strategy Priorities’, *Defense News*, 26 July 2022, <https://www.defensenews.com/naval/2022/07/26/navy-moves-to-align-its-strategy-with-national-defense-strategy-priorities/>.

<sup>2</sup> David H. Berger, ‘Force Design 2030’ (Washington, DC: The United States Marine Corps, March 2020), 2.

<sup>3</sup> Berger, 28.

<sup>4</sup> The White House, ‘National Security Strategy December 2017’ (Washington, DC: The White House, 12 December 2017), 25.

Although the fundamentals of Advanced Base Operations (ABO) were established in the early 1900s,<sup>5</sup> EABO is adapted to align with what the USMC perceives to be the current and future maritime operating environment—defining EABO as:

a form of expeditionary warfare that involves the employment of mobile, low-signature, persistent, and relatively easy to maintain and sustain naval expeditionary forces from a series of austere, temporary locations ashore or inshore within a contested maritime area in order to conduct sea denial, support to sea control or enable fleet sustainment.<sup>6</sup>

The operational characteristics of EABO seek to support five core missions:

1) support sea control operations; 2) conduct sea denial operations within the littorals; 3) contribute to maritime domain awareness; 4) Provide forward command, control, communications, computers, combat systems, intelligence, surveillance, reconnaissance, targeting (C5ISRT), and counter-C5ISRT capability; and 5) Provide forward sustainment.<sup>7</sup>

Additionally, EABOs are facilitated by the rapid deployment of Marine forces to “dispersed operating locations, where they can maneuver to conduct distributed operations and project their power over long ranges.”<sup>8</sup> In this context, maritime logistics in support of EABO assumes a central role in enabling contingency and crisis response operations in the Indo-Pacific anchored by effective sustainment and the rapid deployment of forces.<sup>9</sup>

Essential for USMC-led EABO is the U.S. Navy (USN) since the Marine Corps relies on its sister service to provide the necessary sealift, mobility, and maneuver capabilities through its ships and vessels. The Marine Corps *Tentative Manual for EABO (TMEABO)* highlights that the USN is arguably the U.S.’s primary service for sustained power projection.<sup>10</sup> Thus, it is the integrated Marine Corps and Navy team, or “littoral force,”<sup>11</sup> that must be manned, trained, and equipped to carry out EABO and distributed maritime operations (DMO), maneuver from and through the sea, and carry out logistics requirements. In the 2022 *NSS* and 2022 *NDS*, the U.S. prioritized countering China in the Indo-Pacific ahead of Russia, and in this context, the Marine Corps’ EABO, and the

---

<sup>5</sup> Matthew T. Ritchie, ‘Advanced Base Operations’, *Marine Corps Gazette* 99, no. 2 (2015): 32.

<sup>6</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC, 2021), 1–3.

<sup>7</sup> The scope of this paper focuses only on the Marine Corps’ 5<sup>th</sup> core mission through EABO: provide forward sustainment as well as the need for rapid deployment throughout the Indo-Pacific AOR.

<sup>8</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC, 2021).

<sup>9</sup> The current discourse among Western nations’ military strategy experts and active/retired USMC Field Grade Officers regarding the Marine Corps’ restructuring and the validity of EABO is beyond the scope of this paper. Instead, this paper assumes the irreversibility of the restructuring, which includes the divestment of major weapons systems, such as tanks, rotary wing aircraft, and towed artillery. Thus, the paper aims to discuss the requirements for EABO to achieve its full capability.

<sup>10</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, 2–1.

<sup>11</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, 1–5.

littoral force as a whole, have arguably become extremely important to U.S. campaigning in the Pacific, ahead of the Army.<sup>12</sup>

## Thesis

This paper argues that although there seems to be a consensus between the two services regarding their integrated and mutually supporting strategies in the Indo-Pacific to deter China, there is an urgent need for Congress to ensure the Navy is budgeted to support the USMC's FD 2030 requirements sooner than is planned. Additionally, the Navy needs to be operationally postured to support the Marine Corps' maritime logistics and sealift requirements by increasing the size of its amphibious and littoral fleet; modernizing all vessels to accommodate the technologies and capabilities required for the interoperability and command and control (C2) necessary for the operating environment; and make aggressive investments in unmanned<sup>13</sup> systems improving the survivability and increasing the operational range for logistics and sustainment.

## USMC AND USN MARITIME OPERATIONAL CONTEXT

The Navy and Marine Corps have a long history of working together, dating back to the founding of the U.S. in 1776. During the American Revolutionary War, the Continental Navy fought the British at sea and provided transportation and logistical support for the Continental Marines to conduct amphibious assaults and raids. After the Revolution, the U.S. Navy continued transportation duties, while the USMC focused on amphibious operations. In 1834, the two were merged into the Department of the Navy.<sup>14</sup>

During World War II, the Navy was responsible for conducting naval warfare and transporting troops and supplies in and to various theaters of operation across the Atlantic and Pacific Oceans. The Marine Corps played a key role in the Pacific theater, conducting frequent amphibious assaults and raids through "island-hopping" campaigns.<sup>15</sup> Central to the successful maritime campaigns in the Pacific theater were the USN transportation and logistics processes that were improved over time to ensure forces were moved and sustained in the weeks and months-long battles from 1941 to 1945.<sup>16</sup>

## Improved Maritime Logistics—A Recent History

Maritime logistics operations have undergone significant improvements and modernization since the post-World War II era, with a focus on enabling the Marine Corps' expeditionary role. By 2010, after over sixty years since the Marine Corps' successful "island-hopping" campaigns in the Pacific against the Japanese, and less than a

---

<sup>12</sup> Nora Bensahel, 'Transforming the US Army for the Twenty-First Century', *Parameters* (Carlisle, Pa.) 51, no. 1 (2021): 45, <https://doi.org/10.55540/0031-1723.3034>.

<sup>13</sup> In this paper, the terms "unmanned" and "uncrewed" are used interchangeably, with the latter becoming increasingly preferred in recent literature.

<sup>14</sup> Claudette Roulo, 'Why Are Marines Part of the Navy?', U.S. Department of Defense, 21 February 2019, <https://www.defense.gov/News/Feature-Stories/story/Article/1763150/why-are-marines-part-of-the-navy/>.

<sup>15</sup> Richard A. Rasmussen, 'Marine Corps Close Air Support Development from Guadalcanal to Okinawa' (Quantico, Virginia, Marine Corps University, 2011), 10.

<sup>16</sup> Rasmussen, 6–22.

decade of counterinsurgency operations in Iraq and Afghanistan, the primary focus of maritime logistics was for supporting major combat operations initiated by a forceable entry force from the sea and for counterinsurgency operations.<sup>17</sup> Thus, General Berger had to reorient the Marine Corps back to its amphibious roots with a new focus on dispersed littoral operations in the Indo-Pacific, while also ensuring that the service maintained credible crisis response capabilities—"combined arms operations at all echelons, enabled by organic air and logistics."<sup>18</sup>

The lessons garnered from the U.S.-led campaign in Iraq spanning 2003 to 2011 were not only beneficial to the Marine Air Ground Task Force (MAGTF) units deployed there but also to the naval forces responsible for transporting and unloading these troops.<sup>19</sup> Due to limited interoperability between the two services, inefficiencies and delays were experienced in offloading the MAGTF units into Kuwait before the invasion in mid-March 2003.<sup>20</sup> As the war progressed, resourceful Marines and Sailors had to overcome inadequate theatre supply chain management that resulted in shortages of critical supplies. The ability to construct resupply 'iron mountains' on land in Kuwait and distribute them to more than seventeen resupply and replenishment points in Iraq<sup>21</sup> was crucial in ensuring that the USMC maneuver elements maintained their speed and tempo, despite an initially unresponsive sustainment structure.

Thus, these challenges exposed significant vulnerabilities concerning interoperability, particularly in cross-service supply chain management and data analytics.<sup>22</sup> Logistics and sustainment were further complicated by the long supply lines and the absence of local suppliers that had the required materials and equipment. Additionally, the need to collect and analyze vast amounts of data from different sources to aid in operational decision-making was exacerbated by the complexity of the operating environment and the limited availability of data analytics tools and expertise across the services.<sup>23</sup> Interoperability challenges will hinder EABO and DMO in the Indo-Pacific unless corrected due to the need for effective coordination and communication between the different U.S. military branches and their coalition partners.

The U.S. maritime team experienced additional key lessons due to the geography of the operating areas in Afghanistan and Iraq from 2002 to 2009.<sup>24</sup> Despite technological

---

<sup>17</sup> Robert Button, Rand Corporation, and National Defense Research Institute (U.S.), *Maritime Prepositioning Force (Future) Capability Assessment: Planned and Alternative Structures*, vol. MG-943, Book, Whole (Santa Monica, CA: RAND, 2010), 15, 33.

<sup>18</sup> David H. Berger, 'Force Design 2030 Annual Update' (Washington, DC: The United States Marine Corps, May 2022), 1.

<sup>19</sup> Melissa D. Mihocko and United States Marine Corps History Division, 'U.S. Marines in Iraq, 2003: Combat Service Support during Operation Iraqi Freedom' (Washington, D.C: History Division, U.S. Marine Corps, 2011), 19–29.

<sup>20</sup> Mihocko and United States Marine Corps History Division, 26.

<sup>21</sup> Mihocko and United States Marine Corps History Division, 41.

<sup>22</sup> Diane K. Morales and Steve Geary, 'Speed Kills: Supply Chain Lessons from the War in Iraq', *Harvard Business Review* 81, no. 11 (2003): 17.

<sup>23</sup> Burton L. Streicher, Daniel D. Steeples, and Center for Naval Analyses, *Joint Theater Logistics: Maritime Support*, vol. CRM D0014827.A2/Final., Book, Whole (Alexandria, VA: CNA Corp, 2006), 11.

<sup>24</sup> Michael L. Bosworth Gregory J. Opas, Thomas M. Rivers, Malcolm Whitford, Thomas Wetherald, 'Supporting Affordable and Sustainable Amphibious Assault and Utility Capabilities with a Revitalized

advancements in moving critical assets from ship to shore, regular and irregular/insurgent forces posed a substantial threat to Marines and Sailors through asymmetric tactics against supply lines of communication and transportation infrastructure. Littoral force leadership realized that future conflicts may require opposed amphibious assaults and raids over contested beachheads, as the US cannot assume the ability to strike where the enemy is not present.;<sup>25</sup> now a primary planning consideration for conducting logistics.

### **Commitment to Evolve...at Least Conceptually**

In 2020, the littoral force, supported by the U.S. Coast Guard, published its integrated strategic outlook asserting that it aimed to produce durable and flexible logistics systems that can maintain forces in the face of unrelenting multi-dimensional attacks.<sup>26</sup> A significant move in the right direction was made with their acknowledgment of the requirement to operate in a dispersed multi-domain environment, helping to align the priorities and efforts of each service to sustain the operations of dispersed littoral or maritime units throughout the Indo-Pacific theater. The strategy focuses on modernizing the maritime prepositioning force and network, as well as upgrading “sealift, allied and partner support, and distributed logistics.”<sup>27</sup> To achieve these goals, the services are investing in various logistics resources, such as “the Next Generation Logistics Ship, operational support vessels, and sustainment platforms” equipped with capabilities for conducting manned-unmanned teaming to support forward-deployed naval expeditionary forces.<sup>28</sup>

This evolution and improvement in maritime sustainment were necessary to increase the overall operational C2, eliminate duplication of effort, increase efficiency in sustaining the joint force that will be competing for the same finite resources, and ensure the survivability of dispersed units.<sup>29</sup> It was not clear though what specific types and amounts of vessels the U.S. Navy would immediately provide to support the strategy.

Limited interoperability, insufficient C2 structure, and uncertainty in the assignment of the necessary vessels to support the littoral force will expose the operational limitations and insufficient survivability of current and proposed maneuver capabilities and EABO, potentially constraining the U.S.’s options in the Indo-Pacific unless planned for and mitigated now. Thus, it is crucial to re-evaluate the Navy’s ship-to-shore transfer mechanisms and to nationally commit to an adequate amount of operationally ready vessels, including unmanned vessels and vehicles to ensure the littoral force can support such contingencies in the Indo-Pacific theater as part of broader strategic and joint campaigns.

---

High-Low Mix of Platforms’, *Naval Engineers Journal* 121, no. 4 (2009): 72, <https://doi.org/10.1111/j.1559-3584.2009.00229.x>.

<sup>25</sup> Bosworth et al., 72.

<sup>26</sup> Kenneth Braithwaite, David H. Berger, Michael M. Gilday, Karl L. Schultz, *Advantage at Sea Prevailing with Integrated All-Domain Naval Power* (Washington, DC: Department of the Navy, 2020), 23.

<sup>27</sup> Braithwaite et al., 23.

<sup>28</sup> Braithwaite et al., 23.

<sup>29</sup> Braithwaite et al., 9.

## ANALYSIS OF EABO AND ITS IMPLICATIONS FOR USN REQUIREMENTS

According to the 2022 *NDS*, the People's Liberation Army (PLA) intends to undermine the Joint Force's capability to deploy forces to safeguard critical U.S. interests and support its partners in times of emergency or warfare. Additionally, it states that the People's Republic of China (PRC) is expanding the PLA's worldwide presence and developing a more substantial overseas and basing infrastructure to enable it to project military power over long distances.<sup>30</sup> The Marine Corps' EABO strategy accounts for this future operating environment in which the PLA is distributed throughout a vast maritime operating environment that will require the U.S. joint force and its Allies to conduct kinetic and non-kinetic distributed operations.

*Marine Corps Doctrinal Publication (MCDP) 4 – Logistics* states that “what makes Marines unique is their ability to creatively apply, improve, or even modify doctrine in response to Marine initiative or to meet future challenges.”<sup>31</sup> The future operating and potential combat environment in the Indo-Pacific is forecasted to increase in complexity due to the anti-access area denial (A2AD) systems of systems and sophisticated high-tech weapons capabilities that the PLA has developed in recent decades.<sup>32</sup> General Berger argues that operations in an A2AD environment will require the joint force to support DMO through stand-in forces (SIF)<sup>33</sup> that can sustain operations within the adversary's weapons engagement zone (WEZ).<sup>34</sup> Additionally, General Berger argues that DMO within and beyond the WEZ will “overwhelm enemy platforms,” by leveraging dispersed SIFs and units equipped with strike capabilities and a range of sensors capable of reconnaissance and counter-reconnaissance, with the assistance of unmanned platforms and artificial intelligence and autonomous systems that can overwhelm the adversary's defensive systems. The U.S. Congress is prioritizing the implementation of emerging military technologies to overwhelm the adversary,<sup>35</sup> which is favorable for the littoral force.

Figure 1 illustrates the PRC's strategic positioning and the outstretching implications for a U.S. Carrier Strike Group's (CSG) operational reach. To execute the ambitious EABO concept and project SIFs during operations throughout the Indo-Pacific, the U.S. must consider the PRC's present-day geopolitical positioning favoring PLA forces. The littoral force in support of the joint force must have a robust scalable set of operational units that can function simultaneously, independently, or mutually.

---

<sup>30</sup> Department of Defense, ‘2022 National Defense Strategy’ (Washington, DC: Department of Defense, 27 October 2022), 4.

<sup>31</sup> United States Marine Corps, *MCDP 4 Logistics* (Washington, DC: Headquarters United States Marine Corps, 2023), 5–22.

<sup>32</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, 1–3.

<sup>33</sup> Stand-in forces (SIF) are trained to operate within a competitor's WEZ and on Expeditionary Advanced Bases (EAB) with the objective of supporting host-nation sovereignty, cooperating with partners, confronting malign behavior, and engaging the enemy in close-range battle if necessary.

<sup>34</sup> David H. Berger, ‘Preparing for the Future Marine Corps Support to Joint Operations in Contested Littorals’, *Military Review* 101, no. 3 (2021): 3.

<sup>35</sup> Congressional Research Service, ‘Emerging Military Technologies: Background and Issues for Congress. CRS Report’, 2022, 2.



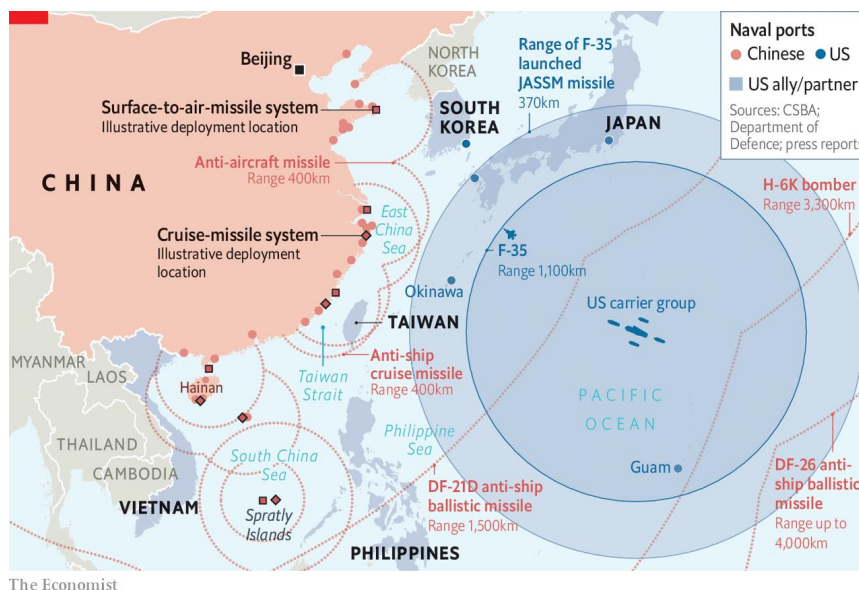


Figure 1<sup>36</sup>

Robert Sparrow argues that the future environment will increase the need for rapid decisions that necessitate the synthesis of information from several sources and they may ultimately determine the outcome of the battle.<sup>37</sup> USN and USMC commanders facing an adversary such as the PLA will need doctrine and tactics, techniques, and procedures supported by technology to eliminate, or worst case at least reduce, the chances of repeating the logistics and sustainment setbacks in Iraq and Afghanistan against technologically inferior forces. Facing a peer competitor in DMOs throughout the PRC-occupied Indo-Pacific will require the most sophisticated and redundant C2 network capable of processing information and data to outpace the PRC.

The Marine Corps is leveraging several activities, not just with the USN, but with other services as well, to test and continue to develop the EABO concept and C2. Marines took part in the U.S. Army's Project Convergence 2022 exercises. These exercises offered opportunities to evaluate various systems, such as unmanned aerial vehicles (UAV), long-range fires, next-generation sensors, and autonomous vehicles.<sup>38</sup> These exercises also aimed to foster Joint All-Domain Command and Control (JADC2) among the different military branches. In speaking of the service's participation, USMC Brigadier General Kyle Ellison stated that "a combined network of sensors, shooters, and enablers will enhance the joint force's ability to hold the key adversaries at risk, deny them their goals and defeat them if necessary,"<sup>39</sup> reinforcing General Berger's vision for EABO.

<sup>36</sup> 'Too Big to Fail? Aircraft-Carriers', *The Economist* (London) 433, no. 9169 (2019): 21.

<sup>37</sup> Robert Sparrow, 'Robots and Respect: Assessing the Case Against Autonomous Weapon Systems', *Ethics & International Affairs* 30, no. 1 (2016): 96, <https://doi.org/10.1017/S0892679415000647>.

<sup>38</sup> Nick Wilson, 'Marine Corps Drafting New Concepts for Amphibious Operations', *Inside the Pentagon's Inside the Navy* 35, no. 49 (12 December 2022): 1.

<sup>39</sup> Wilson, 1.

General Berger published *Preparing for the Future: Marine Corps Support to Joint Operations in Contested Littorals* in April 2021, outlining how the littoral force's EABO and DMO concepts layer within joint force campaigning. In the article, he stated that "in close partnership with the U.S. Navy, our thought in recent years has converged around the concepts of littoral operations in contested environments and expeditionary advanced base operations," arguing that "the overall thrust of our FD 2030 program is to produce a Marine Corps that is prepared to operate inside actively contested maritime spaces in support of fleet operations...nested within overarching joint campaigns."<sup>40</sup> The Marine Corps' EABO concept is critically relevant to the operating environment in the Indo-Pacific and also aligns with and supports overarching joint force campaigns.

The PRC grew more active in the Indo-Pacific in 2022, capitalizing on the distraction caused by the Russia-Ukraine kinetic engagement. They signed a security agreement with the Solomon Islands gaining access to areas closer to the U.S., and they reestablished ties with Myanmar.<sup>41</sup> This highlights the pressing strategic imperative of expediting the realization of the EABO concept proposed in 2018. The PRC's increasing expansion into the South Pacific raised concerns not only for the U.S. but also for other countries such as Australia, Taiwan, the Philippines, and Japan.<sup>42</sup>

## **USMC AND USN, AND JOINT CAMPAIGNING IN THE INDO-PACIFIC**

### **Relevancy of Littoral and Amphibious Operations**

In the current A2AD environment of the Indo-Pacific, the Joint Force must undergo a transformation that involves increasing the overall maritime footprint while reducing unit sizes, thus enhancing its agility and maneuverability to enable the execution of the EABO concept in support of DMO. Littoral (amphibious) forces must be modernized, organized, embarked, and equipped to enable them to execute a variety of missions across the continuum of competition. The significance of Amphibious Combat Vehicles, Amphibious Assault Vehicles, and logistic ships lies in their role as logistics platforms.<sup>43</sup> They facilitate the transportation of troops, equipment, and supplies throughout the littoral area and between units and must be modernized with the required hardware and software to be incorporated into the joint force C2 infrastructure. *U.S. Joint Publication for Amphibious Operations* states that the role of these maritime platforms is critical in executing logistics over-the-shore and maritime pre-positioning operations.<sup>44</sup>

The Marine Corps conducted 25 wargames from July 2019 to December 2022, and identified numerous lessons learned through trial and error and ultimately through specific EABO and distributed operations injects into the wargames and exercises. Key to those lessons was the reliance on the full complement of Navy and Marine Corps

---

<sup>40</sup> David H. Berger, 'Preparing for the Future Marine Corps Support to Joint Operations in Contested Littorals', *Military Review* 101, no. 3 (2021): 2.

<sup>41</sup> 'The Indo-Pacific: EABO and the Need for Speed', *Defense & Foreign Affairs Strategic Policy* 50, no. 4 (2022): 9.

<sup>42</sup> 'The Indo-Pacific: EABO and the Need for Speed', 9.

<sup>43</sup> United States Marine Corps, *MCDP 4 Logistics*, 2–23.

<sup>44</sup> Joint Chiefs of Staff, *Joint Publication 3-02 Amphibious Operations* (Washington, DC, 2021), X–16.

maritime vessels.<sup>45</sup> The amphibious warfare ships in the Navy along with the Marine Corps' amphibious vehicles and aerial assault support capabilities through the amphibious ships play a critical role in supporting the *NSS and NDS* by enabling Marines to execute three essential missions. Firstly, they project national power signaling the U.S.'s commitment to its Allies and partners, which is crucial for effectively integrated deterrence to maintain the rules-based international order. Secondly, these ships enable a rapid response to crises or contingencies, such as non-combatant evacuations or disaster relief efforts, where inland access may be limited or a large military presence could worsen the situation. Finally, amphibious ships offer a flexible and scalable maritime capability for geographical combatant commanders to utilize in support of integrated deterrence campaigning, which is a crucial aspect of the Marine Corps' strategic aims.<sup>46</sup>

### **The Need for Accelerated U.S. Government Investment**

The United States' seven Amphibious Ready Groups (ARG)/Marine Expeditionary Units (MEU) heavily rely on the 31 combined amphibious warfare ships for sealift and maneuver and allow for the global deployment of at least two ARG/MEUs at any given time and the option to surge up to five. However, divestment of these platforms at a faster rate than procurement of replacements will cause the littoral force to fall below the congressionally mandated floor.<sup>47</sup> An example of the failure to meet this requirement was evident during the earthquake in Turkey—a North Atlantic Treaty Organization (NATO) member and Allie—in February 2023, when the Marine Corps and Navy could not offer conventional disaster relief.<sup>48</sup> Signs of how a 'shortage' of ARG/MEUs can affect strategic crisis response capabilities became apparent earlier when in 2011 there weren't enough maritime forces to evacuate civilians from war-torn Libya.<sup>49</sup> In his testimony to the Senate Appropriations Committee, General Berger highlighted that the ARG/MEU deployments demonstrate the U.S.'s commitment to Allies and partners, signal readiness to contest malign activities of the PRC, and show commitment to NATO.<sup>50</sup> Based on the current thirty-year shipbuilding plan, and the decommissioning plan, there will be a significant reduction in the critical Amphibious Warships from the current 31 ships to 28 by 2025 and 24 ships by 2037.<sup>51</sup> If General Berger's estimates become a reality, the U.S.'s ability to conduct EABO and DMO in a contested

---

<sup>45</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee' (Washington, D.C., 28 March 2023), 12.

<sup>46</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 12.

<sup>47</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 13.

<sup>48</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 13.

<sup>49</sup> STEW MAGNUSON and DAN PARSONS, 'V-22 Osprey, Amphibs Prove Value During Typhoon Haiyan Operations', *National Defense* 98, no. 723 (2014): 29.

<sup>50</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 13.

<sup>51</sup> *Marine Corps Ship Requirement* (Washington, D.C., 2023), 3:42, [https://d34w7g4gy10iej.cloudfront.net/video/2302/DOD\\_109457388/DOD\\_109457388-1280x720-3000k.mp4](https://d34w7g4gy10iej.cloudfront.net/video/2302/DOD_109457388/DOD_109457388-1280x720-3000k.mp4).

environment against the PRC will be severely handicapped. Even more alarming will be the U.S.'s inability to maintain its capability for crisis response options in support of Allies and partners.

Admiral Mike Gilday, the U.S. Chief of Naval Operations (CNO), acknowledged that the current path the Navy is on may lead to an inability to meet all the requirements outlined in the 2022 *NDS*. In July 2022, he referenced current U.S. Secretary of Defense Lloyd Austin's emphasis on competing with China and the need for the Navy's continuous presence at sea to align with the 2022 *NDS*, and Admiral Gilday stated that the “focus on being forward for day-to-day campaigning activities will require a larger fleet, with more money...which is where the rub is, as the Navy has struggled to receive a larger portion of the budget from the Pentagon.”<sup>52</sup> To make matters worse, as of February 2023, the Navy faced substantial deficits in maintaining the readiness levels of its existing fleet at the necessary standards of 80% to maintain all planned operations and proposed exercises. The Navy often delays crucial maintenance to facilitate such operations due to a backlog of work across several shipyards in the U.S.<sup>53</sup> The Marine Corps recently published that Navy ship readiness is at 46%.<sup>54</sup>

It could be argued that the U.S. Congress is reluctant to increase the Navy's budget to account for the increase in vessel acquisitions due to the Navy's inability to adequately maintain its current fleet. However, there are mechanisms by which Navy leadership can be held accountable to make necessary improvements, incentivize shipyards to improve maintenance turnaround times, or impose penalties on those that fall behind. The U.S. could also leverage Allie or partner shipyards, especially in the Indo-Pacific AOR to make up for the lack of capacity in the U.S. as they are doing with Australia for the Stern Landing Vessel (SLV).<sup>55</sup> Ultimately, based on the PRC's ambitious plans to continue to expand and enhance the capabilities of their fleet—People's Liberation Army Navy (PLAN), including amphibious expeditionary warfare for “regional island-seizure or global force-projection campaigns,”<sup>56</sup> Congress needs to consider funding Admiral Gilday's *FD 2045* proposal sooner. The CNO's strategy to upgrade the current vessels and acquire new ones will result in the following fleet:

12 Columbia-class ballistic missile submarines as the undersea nuclear deterrent, 12 aircraft carriers, 66 attack submarines and large payload submarines, 96 large combatants such as destroyers, 56 small combatants such as littoral combat ships and frigates, **31 traditional amphibious ships, 18 light amphibious warships**, about **150 unmanned surface and**

---

<sup>52</sup> Megan Eckstein, ‘Navy Moves to Align Its Strategy with National Defense Strategy Priorities’.

<sup>53</sup> Richard Thomas, ‘Twin Reports Find US Navy Struggling with Fleet Management’, *Naval Technology*, 21 February 2023, <https://www.naval-technology.com/features/twin-reports-find-us-navy-struggling-with-fleet-management/>.

<sup>54</sup> *Marine Corps Ship Requirement*, 3:58.

<sup>55</sup> ‘The Indo-Pacific: EABO and the Need for Speed’, 10.

<sup>56</sup> James E. Fanell, ‘China's Global Naval Strategy and Expanding Force Structure: Pathway to Hegemony’, *Naval War College Review* 72, no. 1 (2019): 16–20.

**undersea vessels, 82 logistics and auxiliary ships,** and a sophisticated blend of **manned and unmanned aircraft** to complement the fleet.<sup>57</sup>

This will be too little, too late to meet the objectives outlined in both the 2022 *NSS* and *NDS*—to counter China’s expansion in the Indo-Pacific and to deter continued aggression towards Taiwan. As highlighted earlier, the PRC continues to expand in the South Pacific and it will continue to pursue its ambitious strategy of “reunification”<sup>58</sup> with Taiwan— “democratic and technologically advanced.”<sup>59</sup>

Congressional approval and funding need to be increased and accelerated to set the Navy’s acquisition mechanisms in motion to increase the capacity of the U.S. industrial base to meet the demands of the CNO’s FD strategy beginning with vessels necessary to support the ARG/MEU requirements outlined above.

## **NECESSARY CONSIDERATIONS FOR MODERNIZATION IN CONJUNCTION WITH EXPANSION**

To increase the success of the EABO and DMO, the maritime team must address several critical areas (some of which have implications for the entire joint force) as part of the Congress’ accelerated support of the CNO’s Force Design 2045 strategy recommended above. Firstly, the maritime services need to improve interoperability with each other and the rest of the joint force. This includes improving the efficiency of their supply chain management to enhance logistics and sustainment. Secondly, they need to increase mobility and maneuver throughout the battlespace. Lastly, they need to fast-track to exploit recent gains and successes in the use of unmanned systems, such as UASs, unmanned surface vessels (USVs), and even ground vehicles (collectively referred to as unmanned systems herein).

### **Interoperability**

As mentioned previously, inadequate interoperability continues to impede joint operations across the services, including the littoral force that has been operating together for almost two and a half centuries. Although the joint force made significant strides in increasing interoperability across all domains since the implementation of the Goldwater-Nichols Defense Reform Act of 1986,<sup>60</sup> and through joint operations in the wars in Iraq and Afghanistan, there continue to be shortfalls in the force’s ability to conduct operations in real-time, without first ‘operating’ through exercises and wargames. This is especially true for C2.<sup>61</sup> Today, the Department of Defense (DoD) is aggressively pursuing a joint all-domain command and control (JADC2) infrastructure for all future operations; however, each of the services is pursuing different aspects of the overall

<sup>57</sup> Eckstein, ‘Navy Moves to Align Its Strategy with National Defense Strategy Priorities’.

<sup>58</sup> Larry Diamond and James O. Ellis, ‘Deterring a Chinese Military Attack on Taiwan’, *Bulletin of the Atomic Scientists* 79, no. 2 (2023): 65, <https://doi.org/10.1080/00963402.2023.2178166>.

<sup>59</sup> Diamond and Ellis, 70.

<sup>60</sup> Robert Kozloski, ‘Hard Power- What Is Our Theory of Victory’, *US Naval Institute Blog* (blog), 17 June 2019, <https://blog.usni.org/posts/2019/06/17/what-is-our-theory-of-victory>.

<sup>61</sup> Nick Wilson, ‘Ellison: Jadc2 Interoperability “Not There Yet”’, *Inside the Pentagon’s Inside the Navy* 35, no. 43 (2022).

program, based on their operating culture, and interoperability challenges are already present.<sup>62</sup> This is an excellent opportunity for DoD, through the Chairman of the Joints Chiefs of Staff, to step in and get the program under control to ensure that once fully implemented, JADC2 will deliver on improving communications and standardizing procedures, enabling future operations such as those that could potentially take place in the Indo-Pacific.

The improvements to interoperability through JADC2 will also facilitate efficiencies in supply chain management to increase the joint force's real-time visibility of supplies and reduce replenishment delays,<sup>63</sup> necessary to enhance EABO and DMO. The 2022 *NDS* prioritizes interoperability with Allies and partners across all lines of efforts, especially in the Indo-Pacific with Japan in the North and Australia to the South,<sup>64</sup> but improving interoperability must be prioritized across the joint force first and foremost.

## **Mobility**

As previously mentioned, maneuver and mobility are essential to EABO, and to joint operations in general. The *TMEABO* highlights that a key principle of logistics (and maneuver/mobility) is responsiveness, which “demands lightening both supported and supporting forces [to increase] mobility.”<sup>65</sup> Additionally, the *TMEABO* states that the success of the littoral force depends on the essential factors of “force closure, maneuver, and sustainment of naval forces within contested areas;” and that mobility (and maneuver) can be enabled and logistics dispersed through the incorporation of “numerous, small, versatile transportation assets.”<sup>66</sup>

The littoral force along with the rest of the joint force must incorporate into their experimentation and research and development principles the requirement for lighter and more transportable equipment while maintaining the ability to fulfill their core functions. Overall mobility from the sea and throughout the littorals could be improved through modular containers and lightweight vehicles as well. A great example of ‘lightening the load’ is the current fielding of the U.S. Army-led Joint Light Tactical Vehicle (JLTV) intended to replace the heavier and outdated High Mobility, Multi-Wheeled Vehicle.<sup>67</sup> Although the JLTV program is plagued with traditional acquisitions setbacks, the Commandant of the Marine Corps confirmed the service’s investment, alongside the Army, as part of its Marine Air Defense Integrated System (MADIS) designed to “protect maneuver forces, installations, and other designated critical assets from fixed / rotary

---

<sup>62</sup> Mikayla Easley, ‘Information Dominance: Skeptics of Services’ JADC2 Plans Emerge’, *National Defense* 107, no. 826 (2022): 19.

<sup>63</sup> Joint Chiefs of Staff, *Joint Publication 4-0 Joint Logistics* (Washington, DC, 2019), II–3.

<sup>64</sup> Department of Defense, ‘2022 National Defense Strategy’, 14.

<sup>65</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, 7–1.

<sup>66</sup> Headquarters Marine Corps, 7–8.

<sup>67</sup> Congressional Research Service, ‘Joint Light Tactical Vehicle (JLTV): Background and Issues for Congress. CRS Report’, 2020, 1.

wing (FW/RW) aircraft and Group 1-3 UAS,”<sup>68</sup> which will be critical in support of EABO and DMO.

In the Navy, Marine Corps, and Coast Guard’s integrated strategy, the three Service Chiefs commit to modernizing the fleets with lighter vessels to increase their agility and mobility at sea.<sup>69</sup> A key example of this is the Navy’s acquisition of the LSV mentioned above or the potential acquisition of the Medium Landing Ship (LSM), which is intended to provide the maritime force a vessel that “is a maneuver asset, and as a shore-to-shore connector, is unique and critical to expeditionary littoral mobility.”<sup>70</sup> General Berger argues that the LSM’s unique features make it suitable for various missions, including security cooperation, HA/DR, and logistics support, and that its use carries a lower risk of escalation compared to larger platforms such as Amphibious warships, making it an ideal option for various operations across the spectrum of conflict.<sup>71</sup> Additionally, all services will need to invest in improving the ability to quickly load and unload equipment off of vessels and barges given that the contested operating environment will not only be limited by the adversary’s A2AD systems but without the necessary ports or runways as well—key planning considerations.<sup>72</sup>

The success of EABO and joint operations in general depend on mobility and maneuverability, which can be achieved through lightweight and transportable equipment. The TMEABO emphasizes the importance of responsiveness and dispersed logistics through the use of small, versatile transportation assets. The fielding of the JLTV and the potential acquisition of the LSM demonstrate a commitment to lighter vessels and equipment to significantly enhance distribution mobility, thereby ensuring the application of EABO.

### Unmanned Logistics

As a “stand-in” force of the future, the Marine Corps requires a family of UAS capabilities. We need to transition from our current UAS platforms to capabilities that can operate from ship, from shore, and able to employ both collection and lethal payloads. These future capabilities must be expeditionary and fully compatible with Navy platforms and command and control networks.<sup>73</sup>

The use of unmanned systems has grown out of necessity and through the normal evolution of the character of war,<sup>74</sup> by which militaries implement emerging technologies to gain a tactical or operational advantage over their adversary in an attempt to defeat

---

<sup>68</sup> ‘Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee’, 8.

<sup>69</sup> Braithwaite et al., *Advantage at Sea Prevailing with Integrated All-Domain Naval Power*, 21.

<sup>70</sup> ‘Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee’, 10.

<sup>71</sup> ‘Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee’, 11.

<sup>72</sup> *Marine Corps Ship Requirement*, sec. 4:55.

<sup>73</sup> Berger, ‘Force Design 2030’, 9.

<sup>74</sup> United States Marine Corps, *MCDP 4 Logistics*, 1–5.

them. The most recent example of this can be seen through the conflict in Ukraine in which Russia incorporated low-cost drones, manufactured in Iran. Russia used drones to attack critical energy infrastructure throughout Eastern Ukraine since early 2021, urgently offsetting its diminished artillery and indirect fire stockpiles by increasing the use of asymmetric tactics.<sup>75</sup> A key characteristic of this tactic is the significant reduction in the need for human operators in dangerous environments.

Based on the objective outlined in the maritime services' strategy *Advantage at Sea*, to "invest in unmanned and optionally manned systems to perform missions across all domains, including strike, Counter-C5ISR, C2, and logistics," the USN and USMC have been experimenting with unmanned systems, beyond ISR and destroying targets. As mentioned previously, the Marine Corps leveraged the U.S. Army exercise Project Convergence 2022, to not only test UAVs but automated systems as well. Additionally, key Allies such as Great Britain and Australia participated in the experimentation.<sup>76</sup> Similarly, during the world's largest naval multinational exercise Rim of the Pacific (RIMPAC) 2022, the Navy and Marine Corps successfully incorporated and tested the use of 30 unmanned systems,<sup>77</sup> several of which were used to complete sustainment operations between multiple locations.<sup>78</sup> The tactics, techniques, and procedures for the use of unmanned systems for logistics and sustainment are already outlined in the Marine Corps' *TMEABO*.<sup>79</sup>

These and other experiments led to the Marine Corps' development of the Unmanned Logistics System-Aerial (ULS-A) Small, also referred to as a Tactical Resupply Unmanned Aircraft System (TRUAS), capable of carrying payloads of up to 150 pounds to a 9-mile range, only requiring two Marines to operate it.<sup>80</sup> The TRUAS is set to be initial operational capable (IOC) in 2023 and completely fielded by 2027 allowing for the resupply of "ammunition, food, medical supplies, and batteries, among other supplies."<sup>81</sup> The implementation of this capability is of utmost importance in establishing prerequisites for the deployment of the ULS-A Medium system, which will be essential for extensive tactical sustainment in a contested area. The forthcoming ULS-

---

<sup>75</sup> Translated by Content Engine LLC, 'Drones, Missiles and Martial Law: Russia Changes Its Tactics and Extends the War across Ukraine', *CE Noticias Financieras*, no. Generic (21 October 2022).

<sup>76</sup> Mikayla Easley, 'Tech Trials', *National Defense* 107, no. 829 (2022): 29.

<sup>77</sup> Megan Eckstein, 'U.S. Navy Injects First-of-Kind Unmanned Experiments into Multinational Exercise', *Defense News*, 8 August 2022, <https://www.defensenews.com/naval/2022/08/08/us-navy-injects-first-of-kind-unmanned-experiments-into-multinational-exercise/>.

<sup>78</sup> Megan Eckstein, 'New US Marine Regiment Shows Off Capabilities at RIMPAC Ahead of Fall Experimentation Blitz', *Defense News Naval*, 10 August 2022, <https://www.defensenews.com/naval/2022/08/10/new-us-marine-regiment-shows-off-capabilities-at-rimpac-ahead-of-fall-experimentation-blitz/>.

<sup>79</sup> Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, A-3.

<sup>80</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 8.

<sup>81</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 8.



A Medium, anticipated to be IOC by 2025, is expected to have the capability of transporting payloads of 300 to 600 pounds with a range of up to 100 miles.<sup>82</sup>

The Director for Expeditionary Operations at the U.S. Naval War College, retired Marine Lieutenant Colonel (LtCol) Brent Stricker, recently wrote about the challenges that Marine Corps SIFs will face while carrying out EABO in the adversary's WEZ. LtCol Stricker proposed that a solution for logistics in contested EABO is through "the use of unmanned or autonomous Self-Propelled Semi-Submersibles (SPSS)."<sup>83</sup> The SPSS's semi-undetectable design is owed to drug traffickers from South America that have moved narcotics in recent years across the Atlantic undetected owing to the vessel's small profile, which makes them difficult to detect and locate even with radar.<sup>84</sup> Of course, the services will also need to invest heavily in counter-unmanned aircraft systems to increase defenses against the rapid proliferation of unmanned systems globally by state and non-state actors.<sup>85</sup>

The Navy's *FD 2045*, as previously discussed, already includes 150 unmanned surface and undersea vessels that the CNO argues will be part of the fleet the U.S. will need to meet operational demands in the Indo-Pacific and across the globe. In February of 2023, the CNO stated that unmanned vessels will begin to deploy with CSGs by 2028, filling roles in "areas previously neglected, understaffed or thought too dangerous...[to] broaden the [Navy's] field of view and stay engaged for longer periods."<sup>86</sup> Immediately solidifying the funding, acquisition, and incorporation of unmanned systems to augment existing sealift will expand the range and area of operations for the littoral forces operating throughout the Indo-Pacific and help with overwhelming the adversary.

## CONCLUSION

Working alongside our allies and partners, our operations, exercises, and engagements must set the conditions for a future in which our rivals are deterred from malign behaviors and aggression—and, if deterrence fails, a future in which they are defeated.<sup>87</sup>

The Marine Corps' EABO concept is a critical component of the joint force's overall strategy for the Indo-Pacific region. However, the USMC needs the Navy's support to be successful. Both services must work together to close the gap between their long-term strategies, ensuring the Navy's budget is allocated appropriately to support the

---

<sup>82</sup> 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee', 8.

<sup>83</sup> Brent Stricker, 'EABO Degraded Logistics in the WEZ: Self Propelled Semi-Submersible Solutions', Publisher, Center for International Maritime Security, 11 October 2022, 1, <https://cimsec.org/eabo-degraded-logistics-in-the-wez-self-propelled-semi-submersible-solutions/>.

<sup>84</sup> Stricker, 2.

<sup>85</sup> Congressional Research Service, 'Department of Defense Counter-Unmanned Aircraft Systems, CRS In Focus. CRS Report', 2022, 1.

<sup>86</sup> Megan Demarest, 'Admiral Gilday Sees Uncrewed Vessels as Critical to US Navy's Future', *C4ISRNET*, 10 August 2022, <https://www.c4isrnet.com/unmanned/2023/02/21/admiral-gilday-sees-uncrewed-vessels-as-critical-to-us-navys-future/>.

<sup>87</sup> Braithwaite et al., *Advantage at Sea Prevailing with Integrated All-Domain Naval Power*, 7.

USMC's *FD 2030* vision sooner than planned. The Navy needs to modernize its amphibious and littoral fleet to accommodate the technologies and capabilities required for the interoperability and C2 necessary for the operating environment. Additionally, aggressive investments in unmanned systems would improve survivability and increase the operational range for logistics and sustainment.

The U.S. faces the most significant pacing threat in China, and the littoral force's focus on the Indo-Pacific region is a testament to the importance of ensuring that the Navy and USMC work together seamlessly to counter China's aggression. The evolution towards EABO and DMO shows the importance and relevance of the littoral force. However, the current operating environment requires both services to modernize their capabilities and work together more closely. It is crucial to support the USMC's EABO concept and ensure that both services have the necessary tools and capabilities to carry out their missions. The Navy and Marine Corps' integrated littoral force must be manned, trained, and equipped to carry out EABO and distributed maritime operations, maneuver from and through the sea, and carry out logistics requirements to ensure the U.S. maintains its advantage in the region.

Bridging the gaps between the services' strategies through the recommendations laid out not only applies to the Indo-Pacific but more importantly to the global littoral commons as well. The recommendations detailed above could be challenged by budget constraints limiting the long-term development strategies; their inability to keep up with the rapid pace of technological advancements; personnel issues related to recruiting the right personnel, retaining the highly trained and experienced personnel due to the high operational military tempo and private sector recruiting; and reluctant organizational and U.S. government leadership that is not willing to collaborate or innovate. These are all areas that allow for further research to then make recommendations on how the Marine Corps and U.S. military services, in general, will need to be postured for the future operating environment of the Indo-Pacific.

## BIBLIOGRAPHY

- Bensahel, Nora. 'Transforming the US Army for the Twenty-First Century'. *Parameters (Carlisle, Pa.)* 51, no. 1 (2021): 39–50. <https://doi.org/10.55540/0031-1723.3034>.
- Berger, David H. 'Force Design 2030'. Washington, DC: The United States Marine Corps, March 2020.
- . 'Force Design 2030 Annual Update'. Washington, DC: The United States Marine Corps, May 2022.
- . 'Preparing for the Future Marine Corps Support to Joint Operations in Contested Littorals'. *Military Review* 101, no. 3 (2021): 5–13.
- BOSWORTH, MICHAEL L., GREGORY J. OPAS, THOMAS M. RIVERS, MALCOLM WHITFORD, and THOMAS WETHERALD. 'Supporting Affordable and Sustainable Amphibious Assault and Utility Capabilities with a Revitalized High-Low Mix of Platforms'. *Naval Engineers Journal* 121, no. 4 (2009): 69–78. <https://doi.org/10.1111/j.1559-3584.2009.00229.x>.
- Braithwaite, Kenneth, David H. Berger, Michael M. Gilday, and Karl L. Schultz. *Advantage at Sea Prevailing with Integrated All-Domain Naval Power*. Washington, DC: Department of the Navy, 2020.
- Button, Robert, Rand Corporation, and National Defense Research Institute (U.S.). *Maritime Prepositioning Force (Future) Capability Assessment: Planned and Alternative Structures*. Vol. MG-943. Book, Whole. Santa Monica, CA: RAND, 2010.
- Congressional Research Service. 'Department of Defense Counter-Unmanned Aircraft Systems, CRS In Focus. CRS Report', 2022.
- . 'Emerging Military Technologies: Background and Issues for Congress. CRS Report', 2022.
- . 'Joint Light Tactical Vehicle (JLTV): Background and Issues for Congress. CRS Report', 2020.
- Demarest, Megan. 'Admiral Gilday Sees Uncrewed Vessels as Critical to US Navy's Future'. *C4ISRNET*, 10 August 2022. <https://www.c4isrnet.com/unmanned/2023/02/21/admiral-gilday-sees-uncrewed-vessels-as-critical-to-us-navys-future/>.
- Department of Defense. '2022 National Defense Strategy'. Washington, DC: Department of Defense, 27 October 2022.

- Diamond, Larry, and James O. Ellis. 'Deterring a Chinese Military Attack on Taiwan'. *Bulletin of the Atomic Scientists* 79, no. 2 (2023): 65–71.  
<https://doi.org/10.1080/00963402.2023.2178166>.
- Easley, Mikayla. 'Information Dominance: Skeptics of Services' JADC2 Plans Emerge'. *National Defense* 107, no. 826 (2022): 19–21.
- . 'Tech Trials'. *National Defense* 107, no. 829 (2022): 28–30.
- Eckstein, Megan. 'Navy Moves to Align Its Strategy with National Defense Strategy Priorities'. *Defense News*, 26 July 2022.  
<https://www.defensenews.com/naval/2022/07/26/navy-moves-to-align-its-strategy-with-national-defense-strategy-priorities/>.
- . 'New US Marine Regiment Shows Off Capabilities at RIMPAC Ahead of Fall Experimentation Blitz'. *Defense News Naval*, 10 August 2022.  
<https://www.defensenews.com/naval/2022/08/10/new-us-marine-regiment-shows-off-capabilities-at-rimpac-ahead-of-fall-experimentation-blitz/>.
- . 'U.S. Navy Injects First-of-Kind Unmanned Experiments into Multinational Exercise'. *Defense News*, 8 August 2022.  
<https://www.defensenews.com/naval/2022/08/08/us-navy-injects-first-of-kind-unmanned-experiments-into-multinational-exercise/>.
- Fanell, James E. 'CHINA'S GLOBAL NAVAL STRATEGY AND EXPANDING FORCE STRUCTURE: Pathway to Hegemony'. *Naval War College Review* 72, no. 1 (2019): 10–55.
- Headquarters Marine Corps. *Tentative Manual for Expeditionary Advanced Base Operations*. Washington, DC, 2021.
- Joint Chiefs of Staff. *Joint Publication 3-0 Doctrine for Joint Operations*. Washington, DC, 2018.
- . *Joint Publication 3-02 Amphibious Operations*. Washington, DC, 2021.
- . *Joint Publication 4-0 Joint Logistics*. Washington, DC, 2019.
- Kozloski, Robert. 'Hard Power- What Is Our Theory of Victory'. *US Naval Institute Blog* (blog), 17 June 2019. <https://blog.usni.org/posts/2019/06/17/what-is-our-theory-of-victory>.
- MAGNUSON, STEW, and DAN PARSONS. 'V-22 Osprey, Amphibs Prove Value During Typhoon Haiyan Operations'. *National Defense* 98, no. 723 (2014): 29–31.

- Marine Corps Ship Requirement*. Washington, D.C., 2023.  
[https://d34w7g4gy10iej.cloudfront.net/video/2302/DOD\\_109457388/DOD\\_109457388-1280x720-3000k.mp4](https://d34w7g4gy10iej.cloudfront.net/video/2302/DOD_109457388/DOD_109457388-1280x720-3000k.mp4).
- Mihocko, Melissa D. and United States. Marine Corps. History Division. 'U.S. Marines in Iraq, 2003: Combat Service Support during Operation Iraqi Freedom'. Washington, D.C: History Division, U.S. Marine Corps, 2011.
- Morales, Diane K., and Steve Geary. 'Speed Kills: Supply Chain Lessons from the War in Iraq'. *Harvard Business Review* 81, no. 11 (2003): 16.
- Rasmussen, Richard A. 'Marine Corps Close Air Support Development from Guadalcanal to Okinawa'. Marine Corps University, 2011.
- Ritchie, Matthew T. 'Advanced Base Operations'. *Marine Corps Gazette* 99, no. 2 (2015): 32.
- Roulo, Claudette. 'Why Are Marines Part of the Navy?' U.S. Department of Defense, 21 February 2019. <https://www.defense.gov/News/Feature-Stories/story/Article/1763150/why-are-marines-part-of-the-navy/>.
- Sparrow, Robert. 'Robots and Respect: Assessing the Case Against Autonomous Weapon Systems'. *Ethics & International Affairs* 30, no. 1 (2016): 93–116.  
<https://doi.org/10.1017/S0892679415000647>.
- 'Statement of General David H. Berger Commandant of the Marine Corps on the Posture of The United States Marine Corps Before the Senate Appropriations Committee'. Washington, D.C., 28 March 2023.
- Streicher, Burton L., Daniel D. Steeples, and Center for Naval Analyses. *Joint Theater Logistics: Maritime Support*. Vol. CRM D0014827.A2/Final. Book, Whole. Alexandria, VA: CNA Corp, 2006.
- Stricker, Brent. 'EABO Degraded Logistics in the WEZ: Self Propelled Semi-Submersible Solutions'. Publisher. Center for International Maritime Security, 11 October 2022. <https://cimsec.org/eabo-degraded-logistics-in-the-wez-self-propelled-semi-submersible-solutions/>.
- 'The Indo-Pacific: EABO and the Need for Speed'. *Defense & Foreign Affairs Strategic Policy* 50, no. 4 (2022): 9–10.
- The White House. 'National Security Strategy December 2017'. Washington, DC: The White House, 12 December 2017.
- Thomas, Richard. 'Twin Reports Find US Navy Struggling with Fleet Management'. *Naval Technology*, 21 February 2023. <https://www.naval-technology.com/features/twin-reports-find-us-navy-struggling-with-fleet-management/>.

‘Too Big to Fail? Aircraft-Carriers’. *The Economist (London)* 433, no. 9169 (2019): 24.

Translated by Content Engine LLC. ‘Drones, Missiles and Martial Law: Russia Changes Its Tactics and Extends the War across Ukraine’. *CE Noticias Financieras*, no. Generic (21 October 2022).

United States Marine Corps. *MCDP 4 Logistics*. Washington, DC: Headquarters United States Marine Corps, 2023.

Wilson, Nick. ‘ELLISON: JADC2 INTEROPERABILITY “NOT THERE YET”’. *Inside the Pentagon’s Inside the Navy* 35, no. 43 (2022).

———. ‘MARINE CORPS DRAFTING NEW CONCEPTS FOR AMPHIBIOUS OPERATIONS’. *Inside the Pentagon’s Inside the Navy* 35, no. 49 (12 December 2022).

<https://login.cfc.idm.oclc.org/login?qurl=https%3A%2F%2Fwww.proquest.com%2Ftrade-journals%2Fmarine-corps-drafting-new-concepts-amphibious%2Fdocview%2F2753135144%2Fse-2%3Faccountid%3D9867>.