Lack of Modern Connectors:

The Challenge of Moving Marines from Ship-to-Shore or Intra-theater in a New Warfighting Environment

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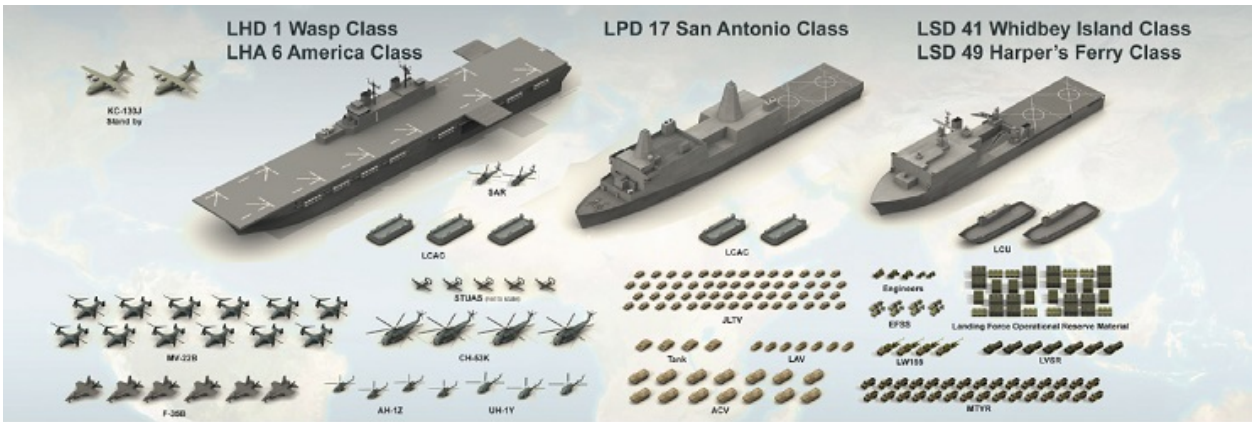
The U.S. military is transitioning away from seventeen years of counterinsurgency to an era of great power competition, as outlined in the 2018 National Defense Strategy. For the U.S. Marine Corps, this signals the need to return to operational concepts and tactics not rehearsed at scale since the end of the Cold War. It may require a new way to task, organize, and challenge well-established structures such as the Marine Expeditionary Unit (MEU), the Amphibious Ready Group (ARG), and the Maritime Prepositioned Force (MPF) that have been the hallmark of the Navy-Marine Corps team for decades. In his first planning guidance as the new Commandant of the Marine Corps, General David H. Berger highlighted that "our Nation's ability to project power and influence beyond its shores is increasingly challenged by long-range precision fires; expanding air, surface, and subsurface threats; and the continued degradation of our amphibious and auxiliary ship readiness. The ability to project and maneuver from strategic distances will likely be detected and contested from the point of embarkation during a major contingency."[1] As a result this will require changes not only in the way the Marine Corps thinks about power projection but the equipment required to successfully achieve strategic, operational, and tactical objectives. Berger goes on to state that "we recognize that we must distribute our forces ashore given the growth of adversary precision strike capabilities, so it would be illogical to continue to concentrate our forces on a few large ships. The adversary will quickly recognize that striking while concentrated (aboard ship) is the preferred option."[2] So what does this mean for the Marine Corps? To better understand, first we have to look at the current and programed amphibious capabilities of the Marine Corps.

HISTORY AND PRESENT DOCTRINE

For three decades the structure of the Marine Corps has been formed around the concept of a Marine Air-Ground Task Force or MAGTF. As written in *FMFM1 Warfighting*, the bible of modern Marine Corps strategy, "MAGTFs are task organizations consisting of ground, aviation, combat service support, and command components. They have no standard structure, but rather are constituted as appropriate for the specific situation." In order to better facilitate manning, training and equipping Marines, three standing types of MAGTFs were created and task organized. The principle Marine warfighting organization is a Marine Expeditionary Force (MEF), which has a command element and is structured around a mechanized infantry division with a Marine aircraft wing and a Marine logistic group in support; consisting of approximately 40,000 Marines. Getting a MEF to any theater of operation takes a significant amount of sealift and airlift. A Marine Expeditionary Brigade (MEB), the next smaller MAGTF, is structured around an infantry regiment with a Marine aircraft group and Marine logistics regiment in support and consists of approximately 14,000 Marines. With equipment prepositioned on large maritime prepositioning ships (MPS) or in the caves in Norway, the MEB is the largest Marine formation ready for deployment on short notice. The smallest standing MAGTF, and most well-known globally, is the Marine Expeditionary Unit (MEU) and consists of approximately 2200 Marines embarked on Navy amphibious ships collectively referred to as an Amphibious Ready Group (ARG). From the ships Marines deploy

[1] U.S. Marine Corps, "Commandant's Planning Guidance" (Washington D.C.: United States Marine Corps Headquarters, July 16, 2019), https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700, 4.
[2] *Ibid.*

either by helicopter or on smaller assault craft. The MEU is structured around a light infantry battalion with a composite aircraft squadron (mix of helicopters and fighter/bombers) and a logistics battalion.



Notional laydown of a Marine Expeditionary Unit (MEU)[3]

Trained for a variety of expeditionary missions such as amphibious assaults and raids, and noncombatant evacuation operations (NEO), tactical recovery of aircraft and personnel (TRAP), humanitarian assistance (HA), the MEU is a highly agile force. The Corps usually has up to two MEUs deployed at any given time.

As a maritime service, fighting from the sea has always been at the core of Marine operational concepts, and if the Commandant's guidance is nothing else, it is a message that the Corps needs to return to its maritime roots and go back to being a Fleet Marine Force (FMF). This is not to say that the MAGTF will go away, but the Marine Corps is looking at all possibilities as it researches options and re-looks at force design. "The MAGTF provides a single commander the optimum combined-arms force for the situation he faces. As the situation changes, it may of course be necessary to restructure the MAGTF."[4] Exploring what the next generation of MAGTF looks like is most likely where the new Commandant is headed, but to get there one needs ships and the ability to get forces to shore.

CHALLENGES

Getting those Marines ashore is a challenge during a time when the Marines are short the total number of ships required. General Berger has stated, "We must also explore new options, such as inter-theater connectors and commercially available ships and craft that are smaller and less expensive, thereby increasing the affordability and allowing acquisition at a greater quantity. We need to change this calculus with a new fleet design of smaller, more lethal, and more risk-worthy platforms. We must be fully integrated with the Navy to develop a vision and a new fleet

[3] U.S. Marine Corps, "Types of MAGTFS," U.S. Marine Corps, accessed December 20, 2019, https://www.candp.marines.mil/Organization/MAGTF/Types-of-MAGTFs/.
[4] U.S. Marine Corps, "FMFM1 Warfighting" (Washington, D.C.: United States Marine Corps Headquarters, 1989), https://www.globalsecurity.org/military/library/policy/usmc/fmfm/1/fmfm1.pdf.

architecture that can be successful against our peer adversaries while also maintaining affordability. To achieve this difficult task, the Navy and Marine Corps must ensure larger surface combatants possess mission agility across sea control, littoral, and amphibious operations, while we concurrently expand the quantity of more specialized manned and unmanned platforms."[5]

The Navy Marine Corps team has had a stated goal of 38 amphibious ships–in support of two amphibious brigades– for a number of years, but has struggled to meet that goal. The Navy currently has 32 operational amphibious ship, nine of which are amphibious assault ships (small aircraft carriers designed to carry helicopters and vertical take-off fighters) and a mix of 23 amphibious transport dock and dock landing ships). Cost and construction timelines for these large capital ships continue to rise, and they are now in direct competition for resources needed to modernize and increase the Navy's submarine fleet, not to mention competing against the cost of new modern aircraft carriers. Given this challenge, General Berger stated that the Marine Corps will "no longer use a '2.0 MEB requirement' as the foundation for our arguments regarding amphibious ship building, …as pertains to the Maritime Prepositioning Force." And that the Corps "will no longer reference the 38-ship requirement memo from 2009, or the 2016 Force Structure Assessment."[6] This is a dramatic change for the Marine Corps and an important step in the right direction to deal with an overstretched maritime capability, but there is another lurking problem for the Corps beside a lack of L-Class amphibious ships: connectors.

Hidden in the discussion of maritime capability and how to fund construction of larger ships, is a critical need to upgrade and modernize the Navy/Marine Corps' ship to shore connectors (also referred to as assault craft). These small craft are critical to the Marine Corps' ability to move personnel, equipment and supplies ashore or intra-theater. Without them, Marines have no way to get to the fight other than via aircraft or pulling into a large seaport. The Navy currently has 32 Landing Craft Utility (LCU) assault craft in its inventory. Scheduled to come on line in 2022[7] is the new LCU-1700 (a "modified repeat"), replacing one-for-one the venerable LCU 1610,a design dating back to the 1950s. With an average age of 48 years, the replacement for the LCU cannot come fast enough. Also coming online is the ship to shore connector (SSC), a replacement for the Landing Craft Air Cushion (LCAC). These two craft make up the bulk of the Navy-Marine Corps connectors. The problem for the Corps is neither of these new craft provide any substantially new capability. In essence, any surface assault from the sea, whether from amphibious ship, floating sea base, or other future hub, is still limited to the concepts of the 1990s and earlier.

EXTENDING THE LIFE OF THE LCAC

In order to keep the existing fleet of assault craft usable for the Marine Corps, in 2001 the Navy began a significant service life extension program (SLEP) to actively improve and upgrade 68 of the

[5] U.S. Marine Corps, "Commandant's Planning Guidance," 4.
[6] *Ibid.*
[7] Megan Eckstein, "LCU Replacement in Preliminary Design, Anticipating 2022 Fleet Debut," *USNI News*, April 21, 2015, https://news.usni.org/2015/04/21/lcu-replacement-in-preliminary-design-anticipating-2022-fleet-debut.

91 originally built LCACs for completion by 2021[8], when the program was due to conclude. The SLEP "includes upgrading the powertrain to provide additional power as well as decreasing fuel consumption and maintenance needs. SLEP also replaces older technologies, including upgrading command, control, communications, computer and navigation, or C4N, systems."[9]

Looking towards the future, in 2012 the Navy awarded Textron the contract for testing and development of the next generation landing craft, with a subsequent decision and award to Textron to produce a new LCAC, with LCAC-100 designated to be the first in class SSC. "The SSC Program of Record is for a total of 73 craft (one Test and Training and 72 operational craft). Deliveries began in fiscal year 2019 with initial operational capability projected for fiscal year 2020."[10]

LCAC 100, Textron's first-in-class Ship-to-Shore Connector (SSC), conducts its first on-water test outside of the company's facility in Louisiana on April 10, 2018. Textron photo.[11]

According to service budget documents, the Navy requested two craft for $128 million in the Fiscal Year 2017 budget, three for 212 million in the FY 2018 budget and five craft for $325 million in the FY 2019 budget,[12] for a total of 10 new craft. The Navy subsequently did not request any additional funding for FY2020, with production falling behind actual funding. As reported in Nov 2019, the House Armed Service Committee (HASC) put $84.8 million in its version of the FY 2020 National Defense Authorization Act for SSCs (Line 024) and the House Appropriations Committee (HAC) also listed a $65 Million add. The Senate authorized $40.4 million for advanced procurement (AP) of

[8] Naval Sea Systems Command, "LCAC SLEP," Naval Sea Systems Command, accessed December 20, 2019, https://www.navsea.navy.mil/Home/Team-Ships/PEO-Ships/LCAC-SLEP/.
[9] *Ibid.*
[10] Naval Sea Systems Command, "Ship to Shore Connector," Naval Sea Systems Command, accessed December 20, 2019, https://www.navsea.navy.mil/Home/Team-Ships/PEO-Ships/Ship-to-Shore-Connector-SSC/
[11] Megan Eckstein, "First Ship-to-Shore Connector Begins On-Water Testing in New Orleans," *USNI News*, April 17, 2018, https://news.usni.org/2018/04/17/32985.
[12] Ben Werner, "Textron Catching Up with Existing Ship-to-Shore Funding Ahead of Additional Navy Budget Requests," *USNI News*, April 17, 2019, https://news.usni.org/2019/04/17/textron-catching-up-with-existing-ship-to-shore-funding-ahead-of-additional-navy-budget-requests.

SSCs, but neither specifically designate money for LCAC landing craft (Line 026).[13] Whether planned or not, since most of these committees met prior to General Berger's new planning guidance, this move actually opens the door to apply funding towards other connectors for the Navy/Marine Corps team, but leaves unexplained what the future of the LCAC will be.

THE NEW LCU-1700

Similar to the LCAC replacement, the "new" LCU-1700 will also be a rehash of the same design and with similar capabilities. There are no new tactics involved in the employment of the craft or defensive measures that take into account the new threat posed by adversaries, such as anti-access/area denial (A2AD) capabilities. The projected speed and range (1200 nautical miles at 8 knots) is identical to the original platform. The Marine Corps faces a difficult decision: whether to continue with procurement and replacement as planned or potentially head in a totally new direction. There is one significant upgrade to the LCU-1700 over its processor which will give more punch to the lightweight seaborne force it is designed to support. The new LCU increases its lift capacity from 140 short tons of cargo to 170 tons and is widened by a little more than a foot.[14] In doing so, the LCU-1700 can now safely move two M1-tanks or equivalents (vice one) and accommodate attachments on tank platforms such as the mine plow, critical for initial combat power ashore.

As announced on February 4, 2019, Naval Sea Systems Command awarded a $26.7 million contract modification to Swiftships LLC for the second and third replacement LCUs (1701 and 1702) based on the LCU-1700 prototype. Both are scheduled for completion by May of 2021.[15] With options for up to 31 more craft, LCU delivery, if executed, would continue through 2027.[16] Delays in awarding these contracts unfortunately places connector replacement in direct competition for resources needed to modernize and increase the Navy's submarine fleet, not to mention competing against the cost of new modern aircraft carriers.

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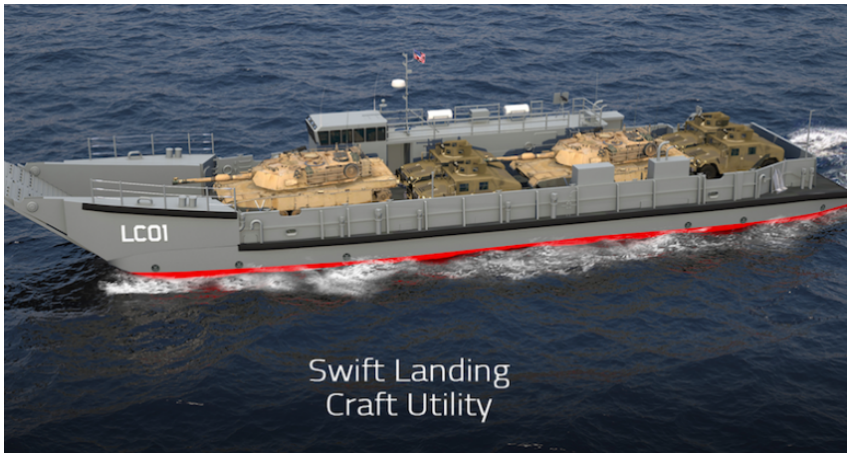
[13] Congressional Research Service, "Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress" (Washington, D.C.: Congressional Research Services, November 19, 2019), https://fas.org/sgp/crs/weapons/RL32665.pdf, 35.
[14] United States Navy, "Landing Craft, Mechanized and Utility – LCM/LCU," United States Navy, accessed December 20, 2019, https://www.navy.mil/navydata/fact_display.asp?cid=4200&tid=1600&ct=4.
[15] U.S. Department of Defense, "Contracts for Feb. 4, 2019," U.S. Department of Defense, accessed December 20, 2019, https://www.defense.gov/Newsroom/Contracts/Contract/Article/1747970/.
[16] Megan Eckstein, "NAVSEA Picks Swiftships LLC to Design, Build LCU Replacement in $18M Contract Award," *USNI News*, April 4, 2018, https://news.usni.org/2018/04/04/navsea-awards-18m-lcu-1700-contract-louisiana-based-swiftships-llc.



A graphic of Swiftships' LCU 1700 craft (Credit: Swiftships)[17]

In addition to the cost and challenges with replacing the existing fleet of connectors as planned, there is another hurdle for the Navy/Marine Corps team. Assuming each connector had modern defenses to protect themselves or that the environment was benign enough to assure a high degree of survivability, none of the assets are prepositioned or easily moved into theaters of operations. Under the MEU construct, connectors, in small quantities, are embarked aboard the same amphibious ships as the Marines themselves.

The Navy has three locations where LCAC's and LCUs are permanently based: Japan, California, and Virginia. This leaves a glaring absence of capability in the European theater to address threats from Russia, the ability to Reinforce NATO, or conduct any form of Expeditionary Advanced Base Operations (EABO), that isn't first brought into theater aboard amphibious shipping (already indicated as critically low) or ship moving transports (Heavy Lift Ships). MV Blue Marlin is an example of such a ship moving transport, but there are very few of these in the world, and none currently in the Navy or MARAD inventory which could be dedicated for such a mission. Moving connecters by civilian shipping is not a method routinely exercised or even planned. Thus, the only current method available to get connectors into theater is via US Navy Amphibious ships. All of these issues point to the need to not only relook the capabilities and capacities of the Navy/Marine Corps team today, but how to address the need to move from sea to land in the future. As highlighted by General Berger "preparing to launch the landing force in swarms of ACVs, (amphibious combat vehicles) LCUs, and LCACs are impractical and unreasonable."

Capt. J.R. Hill, Branch Head of amphibious warfare (OPNAV N953), stated during the National Defense Industrial Association's annual Expeditionary Warfare Conference (2019) that the CMC's Planning Guidance discusses adding a new capability to supplement the current amphibious ships. In particular the service is looking at something smaller than today's Whidbey Island-class dock landing ship (LSD-41/49) but larger than a landing craft utility (LCU) to complement the America

[17] Naval News, "Swiftships to Deliver Further Two LCU 1700 Units for US Navy Amphibious Forces," *Naval News*, February 6, 2019, https://www.navalnews.com/naval-news/2019/02/swiftships-to-deliver-further-two-lcu-1700-units-for-us-navy-amphibious-forces/.

and San Antonio classes. OPNAV N95, the Navy's Expeditionary Warfare department is already working on this new type of ship or craft[18]

POTENTIAL SOLUTIONS

As is stated in the Commandant's Planning Guidance, "The global options for amphibs (must) include many more options than simply (the current fleet of Amphibious ships) LHAs, LPDs, and LSDs."[19] One such option that is already being explored in-depth is the use of expeditionary fast transport (EPF) ships, formerly designated the Joint High Speed Vessel (JHSV). The EPF is a shallow draft, all aluminum, commercial-based catamaran capable of intra-theater personnel and cargo lift providing combatant commanders high-speed sealift mobility with inherent cargo handling capability and agility to achieve positional advantage over operational distances.[20] Previously only used on special occasions by Marines, and not considered part of the expeditionary fleet, it may require further discussion on how it could be used for the MAGTF.

The Navy has accepted delivery of ten EPFs from Austal USA, with USNS Puerto Rico (T-EPF 11) being the most recent delivery on 10 December 2019.[21] The shipbuilder is in production on Newport (EPF 12) and Apalachicola (EPF 13).[22] Managed by Military Sealift Command (MSC) on behalf of the Navy, the EPF is designed to transport 600 short tons 1,200 nautical miles at an average speed of 35 knots and a draft of only 15 feet.[23] This shallow draft, critical for the likes of the Baltic, Black and South China Seas, enables them to link up with expeditionary sea bases and discharge heavy equipment and troops in more remote areas and minimally equipped ports and piers. Combined with its speed and the potential for added defenses, the EPF takes on a new value to the Navy-Marine Corps team in attempting to minimize the A2AD threat, and maximize flexibility.

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[18] Megan Eckstein, "Marines, Navy Considering 'Alternate' Amphibs to Supplement Today's Fleet," *USNI News*, October 29, 2019, https://news.usni.org/2019/10/29/marines-navy-considering-alternate-amphibs-to-supplement-todays-fleet.
[19] U.S. Marine Corps, "Commandant's Planning Guidance," 4.
[20] United States Navy, "Expeditionary Fast Transport (EPF)," United States Navy, accessed December 20, 2019, https://www.navy.mil/navydata/fact_display.asp?cid=4600&tid=588&ct=4.
[21] PEO Ships Public Affairs, "Navy Accepts Delivery of USNS Puerto Rico," U.S. Navy, December 11, 2019, https://www.navy.mil/submit/display.asp?story_id=111662.
[22] DEFPOST, "Austal Starts Construction of U.S. Navy's 13th Expeditionary Fast Transport Vessel, USNS Apalachicola," DEFPOST, August 21, 2019, https://defpost.com/austal-starts-construction-of-u-s-navys-13th-expeditionary-fast-transport-vessel-usns-apalachicola/.
[23] United States Navy, "Expeditionary Fast Transport (EPF)," United States Navy, accessed December 20, 2019, https://www.navy.mil/navydata/fact_print.asp?cid=4200&tid=1100&ct=4&page=1.

USNS Spearhead (T-EPF 1) during UNITAS 2016 exercise last year in Panama[24]

Continued production of EPFs is a good start, but as noted, there are only 11 of these currently in service. Continuously deployed throughout the globe, a large concentration of these ships could not be counted on for any singular contingency. In addition to small quantity, the EPF is not without limitations: the twin haul design which helps give it its speed and stability on calm seas but has challenges in high sea states, a strong consideration for operating in the High North or in stormy conditions in South East Asia.[25]

As EPFs are only a partial solution, the Navy-Marine Corps team will need to look elsewhere for near and long term answers. When looking at contingency planning and the need to defend or reinforce NATO allies, it is possible that such a requirement could occur at a time when the U.S. is engaged elsewhere, and escalation has moved horizontally into the European theater. In such a scenario, much of the US amphibious fleet could already be engaged, leaving few maritime options to transport connectors into theater or to act as connectors themselves. Therefore, it would be prudent to look at allies, their inventory of ships, and which platforms in particular would be ideal to moves troops and equipment ashore or from point to point.

Norway is one such ally that has a significant merchant marine fleet, and in particular ships that may suit the needs of the Marine Corps. A nation with a huge offshore oil and gas industry and hundreds of islands and inland waterways, Norway requires a significant fleet to provide a variety of essential services. These ships are commonly referred to as off-shore support vessels (OSVs), something the U.S. Navy has already started taking a keen interest in.[26] Norwegian ship owners control a total fleet of almost 600 offshore vessels, composed of platform supply vessels (PSVs), anchor handling tug supply vessels (AHTSVs), and more specialized crane vessels and offshore construction vessels. Norwegian OSVs typically have a length of 80–90 meters (262–295 feet), a breadth of 18–22 meters (59–72 feet), and a draft of around 6–9 meters (19–29 feet). They can carry a load of around 4000–

[24] U.S. Southern Command, "SOUTHCOM Photos,"*U.S. Southern Command,* https://www.southcom.mil/MEDIA/IMAGERY/igphoto/2001689990/.
[25] Brock Vergakis, "Report: Navy Ship Designed for Fast Transport Has Problems," *Military.com*, April 28, 2018, https://www.military.com/daily-news/2018/04/28/navy-ship-designed-fast-transport-has-problems-report-says.html.
[26] Megan Eckstein, "Marines, Navy Both Considering Something Like an Offshore Support Vessel to Supplement Amphibs."

6000 tons, including a deck load of between 1500 and 2500 tons.[27] Designed for carrying extremely heavy objects such as anchors, oil drills, and heavy machinery the decks of OSVs would support the weight of the full spectrum of Marine Corps equipment. Highly maneuverable, a significant advantage of OSVs over EPFs and other Marine Corps connectors are their stability in high seas, using their multiple thrusters (Bow, stern and azimuthal). Certain OSVs also come with multiple internal tanks which can be used for hauling water, fuel or other needed bulk liquids. Critical for logistics and resupply, this is a function current Marine Connectors lack.

K" Line Platform Supply Vessel (PSV)[28]

MV North Sea Giant (PSV)[29]

OSVs are not unique to Norway, but Norway has two strong advantages that other U.S. companies and NATO Allies do not have. First is an existing agreement for support. Based on the 2006 agreement for the Marine Corp Pre-positing Program-Norway (MCPP-N), "In the event the MCPP-N is used to reinforce Norway, the Government of the Kingdom of Norway shall make available adequate means to load, transport, and protect equipment of the MCPP-N from Central Norway to mutually agreed Norwegian Sea or air ports of embarkation."[30] MCPP-N consists of a series of storage caves which contain the preponderance of a MEB's worth of ground equipment, aviation support equipment and non-smart ammunition. A challenge for the Marine Corps is transiting that equipment by any means other than truck and rail on short notice. OSVs may be a perfect solution.

The second major advantage Norway has is a national program similar to the U.S. Maritime Security Program (MSP), but on a much broader scale. Norway tracks every one of its merchant marine fleet, to include cargo and destination, on a daily basis. In times of emergency the government has agreements already in place to utilize those ships as required. This could provide the U.S. with a significant pool of ready resources to address a contingency in the High North, already located in

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[27] Ståle Ulriksen and Åse Gilje Østensen, "Building on Strength. Proposals for US-Norwegian cooperation on the operational and tactical level," (Oslo, Norway: Royal Norwegian Naval Academy, February 2019), https://fhs.brage.unit.no/fhs-xmlui/handle/11250/2630745.

[28] Kawasaki Kisen Kaisha, Ltd., "Offshore Support Vessels: Service Profile," *"K"Line*, https://www.kline.co.jp/en/service/energy/about/osv.html.

[29] Vesseltracker, "North Sea Giant Cargo Ship,"*vesseltracker.com*, https://www.vesseltracker.com/en/Ships/North-Sea-Giant-9524073.html.

[30] Ståle Ulriksen and Åse Gilje Østensen, "Building on Strength. Proposals for US-Norwegian cooperation on the operational and tactical level."

the theater of operations where the U.S. has little pre-positioned maritime assets. Familiar with the navigational challenges of their own coast and the waters around it, seasoned crews of Norwegian flagged vessels would offer a distinct advantage, even over U.S. crewed vessels.

CONCLUSIONS

As the Marine Corps retools its force design to fit roles and missions in an era of great power competition, it will always have to consider how the force will reach the battlefield. In a crisis, the U.S. Marine Corps currently has few options to get equipment *en masse* to where it is needed. Although airlift, prepositioned ships and sealift have proved themselves in the past, new technology by our adversaries demands a relook at not only strategic lift, but the final tactical mile. In Europe, there are congested waterways, beach landing areas, and a significant submarine and A2AD threat. In the Indo-Pacific Theater there is much more sea to work with, island chains to use as intermediary bases, but a tyranny of extreme distances, which the majority of connectors are not designed to handle. Closer to threat areas, there will likely be a progressively more complex A2AD threat to contend with. As highlighted by the Commandant's planning guidance the Corps must "increasingly look to other available options such as unmanned platforms, stern landing vessels, other ocean-going connectors, and smaller more lethal and more risk-worthy platforms."[31] Specific gaps and requirements need to be clearly identified and articulated to senior naval leaders and Marine Corps planners.

Updated LCACs and LCUs, which were planned for the foreseeable future in amphibious operations, are no longer viable as a sole solution. Those programs should be curtailed with an eye toward newer ideas. OPNAV 95 and Marine Corps Combat Development are currently working on an initial Integrated Naval Force Structure Assessment (FSA) to be delivered in December 2019 with the intent to support development of the Annual Long-Range Plan for Construction of Naval Vessels, rollout of the President's Budget and supporting testimony.[32] This plan will ideally set the stage for future amphibious shipping, of which OSVs and EPFs should play a much expanded role.

The Navy/Marine Corps team must start looking at allied capability as the interim solution not only in the European theater, but also in the Indo-Pacific Theater to augment current capability shortcomings. Both theaters offer their own unique challenges. Allies have the expertise and experience, and more critically, the capacity to help quickly integrate their platforms into the Marine Corps latest concepts of Expeditionary Advanced Base Operations (EABO) and Littoral Operations in a Contested Environment (LOCE). Their OSVs and EPF equivalents are ideal connector platforms that can be married to the Expeditionary Sea Base (ESB), a critical component of EABO. BALTOPS and large scale exercises such as TRIDENT JUNCTURE offer outstanding venues to test and validate Allies' ability to support U.S. operations. The U.S. is at a critical juncture in defining the future of expeditionary operations and may only get one real chance to get it right.

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[31] U.S. Marine Corps, "Commandant's Planning Guidance," 4.
[32] Commandant of the Marine Corps (CMC) and Chief Naval Officer (CNO) to Secretary of the Navy, September 6, 2019, "Integrated Naval Force Structure Assessment."