

The Amphibious Warfare Force

America's First Line of Defense



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Executive Summary

The return of great power competition and the emerging focus on multi-domain operations has altered the role of the Marine Corps and amphibious warfare fleet. New potential conflict scenarios involving China, Russia and others demand that U.S. policymakers count on the amphibious fleet as a joint asset. The Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU) will be able to play a unique role in the first days of any conflict, large or small. They have the assets to influence the initial period of a future conflict, setting the conditions for larger joint and combined arms operations by theater commanders.

In multi-domain operations, every amphibious ship will be a potential forward node for tactical data fusion. A combination of onboard sensors, the F-35B and future unmanned surface and aerial systems will allow the “amphibs” to provide wide area intelligence, surveillance and reconnaissance.

In addition to its role as an information collection, fusion and dissemination node, the amphibious warfare force is increasingly a lethal instrument of U.S. national power. The Marine Corps is experimenting with ways of adding long-range fires to the larger amphibious ships. In the future, directed energy weapons could attack unmanned aerial systems, small boats, helicopters, aircraft and other threats. With upgraded communications and data fusion capabilities, the amphibs can join the naval tactical grid, fighting in cyberspace as well as at sea.

Then there is the role of the MEU in influencing the land environment. The combination of the V-22 Osprey, CH-53K King Stallion heavy-lift helicopter, the Amphibious Combat Vehicle, upgraded Landing Craft Air Cushions, lightweight and mobile artillery and rocket systems, armored wheeled tactical vehicles and Abrams tanks provide a potent force for rapid landings ashore to support raids and strike operations, even deep inland.

Overall, U.S. amphibious warfare capabilities, embodied in the ARG/MEUs, represent the most flexible and complete combat capability this country possesses. According to Marine Corps Commandant General Robert Neller, “The multi-domain world demands a new look at tasks and capabilities for the amphibious fleet. It’s going to be a land, air, sea operation, but it’s going to involve space, it’s going to involve information, it’s going to involve the electromagnetic spectrum; all things that we haven’t had to think about in the past 15 to 20 years.”

The current requirement for 38 amphibious ships covers the fleet size needed to deploy the assault echelons of two Marine Expeditionary Brigades. However, the Marine Corps is operating with 32 ships. This creates risk.

A combination of 12 Landing Helicopter Dock (LHD) ships or Landing Helicopter Assault (LHA) ships, 13 Landing Port/Dock (LPD) ships, and 13 Landing Ship/Dock (LSD) ships or LPD Flight II vessels meets the minimum requirement. The frugal way to reach the 38-ship goal is to accelerate production of *America/Bougainville*-class LHAs and speed up procurement of the LPD-17 Flight II. The LPD Flight II has a proven hull design that could decrease risk and increase delivery speed in replacing the LSD class.

The US has Always Been an Amphibious Power

On March 6, 1776, American Marines conducted their first successful amphibious landing against British forces on the island of Nassau.¹ Since that date, U.S. amphibious warfare forces – naval ships, sailors and Marines – have conducted hundreds of amphibious landing operations small and large in virtually every ocean and on all major continents. In the early decades after the founding of the republic, these forces were employed by the fledging nation to defend its citizens abroad and overseas from the Caribbean islands and North African littorals to the Northwest Pacific.

For more than a century and a half, U.S. amphibious warfare forces have played a significant, even decisive, role in this country's major conflicts. During the Civil War, the Union employed maritime capabilities to blockade Southern ports, assault numerous coastal forts and gun batteries, and successfully capture major cities including New Orleans and Mobile. At the beginning of the Spanish-American War, U.S. Marines landed on the beaches of Cuba and captured Guantanamo Bay.

Throughout World War Two, large, superior naval and amphibious forces were critical to America's ability to project power across two oceans and land on the shores of North Africa, Europe and the islands of the Western Pacific. The Allied strategy for winning the war in the Pacific was built around the twin pillars of carrier aviation and amphibious assault forces. To support this strategy, new ships, landing craft and vehicles designed to accelerate cross-beach assaults were designed and built and new tactics and organizations developed.

During the Cold War, U.S. amphibious warfare forces conducted presence, reassurance and deterrence missions across the globe. Forward deployed amphibious formations proved particularly useful for crisis response, humanitarian relief and engagement with allies. The Marine Air-Ground Task Force, formalized in 1983, was particularly well-suited to supporting tailored responses to the range of challenges that confronted the United States.² During this era, the Marine Corps conducted nearly 100 amphibious operations, including more than 60 battalion or regimental-size assaults in Vietnam alone.³ The Sea Services also maintained a capability to embark and land multi-brigade size amphibious forces in response to Soviet aggression.

The collapse of the Soviet Union and end of the Cold War did nothing to diminish the value of and hence the reliance on amphibious warfare forces by successive administrations. If anything, the demand for forward deployed amphibious forces has become so great that Amphibious Readiness Groups are routinely disaggregated so their capabilities can be more widely distributed.⁴ In addition, the victories in the 1991 Gulf War and the 2002 Afghanistan War owed much to the availability and effectiveness of major amphibious warfare forces.

¹ <https://www.wearethemighty.com/history/marines-first-amphibious-landing>

² <https://www.globalsecurity.org/military/agency/usmc/magtf.htm>

³ https://www.cna.org/CNA_files/PDF/D0006297.A2.pdf

⁴ <https://news.usni.org/2016/06/29/marines-navy-to-create-southern-pacific-argmeu-rotation-by-2019>



USS America is lead ship in a new class of amphibious assault vessels that will serve as the centerpiece of future amphibious ready groups. Amphibious assault vessels are similar in size to the aircraft carriers of other nations, and are designed to host diverse combat aircraft, plus up to 1,687 Marines trained for amphibious operations.

The Amphibious Warfare Force in the 21st Century

The 2017 National Defense Strategy (NDS) calls for the development of a future Joint Force that is more lethal, operationally unpredictable, flexible, agile, able to expand competitive space, and supportive of the security needs of allies and partners.⁵ U.S. amphibious warfare forces are remarkably well suited today to meeting the requirements described by the NDS. No other military in the world possesses the organization, experience, and systems to operate amphibious forces like the Navy-Marine Corps team.

The unique attributes of U.S. amphibious forces – flexibility, agility and sovereign basing at sea – are of increased value both to the U.S., its allies and coalition partners. According to the Marine Corps Commandant, General Robert Neller, “the purpose of our Corps is to provide maritime expeditionary combined arms air-ground task forces that are ‘most ready, when the Nation is least ready.’ We are a naval force whose mission requires us to be ready – a fight-tonight, forward deployed, Next Generation force – able to respond immediately to emergent crises around the globe either from the sea, forward bases, or home station.”⁶

Historically, and even to the present, the best U.S. military capability for addressing regional threats, the 911 force, has been the Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU). These formations are able to project tailored power ashore to perform missions that span the spectrum of crises and conflicts. The combination of specially designed and equipped amphibious warfare ships and a readily reconfigurable or expandable Marine Corps air-ground task force provides U.S. combatant commanders worldwide a capability that is both unique and relevant across the spectrum of conflict.

U.S. amphibious warfare forces, whether ARG/MEUs or larger formations capable of lifting and landing multi-brigade-size formations, could be particularly effective in contested environments. Forward deployed ARG/MEUs would be inside an adversary’s defensive umbrella. This might seem to be a vulnerable position, but, if properly sized and equipped, these formations could act from the opening of hostilities to blow holes in enemy defenses. In addition, these units create their own version of a defensive umbrella in support of forward-deployed forces and allies and to deny an enemy’s ability to attack our air and sea lines of communications.

The stealthy F-35B, able to operate from large deck amphibs and small airfields, provides a particularly useful capability for attacking defended targets and providing targeting information for other platforms and weapons systems. According to an analysis by the RAND Corporation, “Marine Corps aviation is on a path to significantly alter what even ARG/MEUs are capable of doing, and it is important to shape the rest of the force to acknowledge this change. An ARG/MEU with F-35Bs and MV-22s is not just capable of local influence, but can project power and provide defense in ways impossible just a few years ago.”⁷

⁵ <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

⁶ <https://docs.house.gov/meetings/AP/AP02/20180307/106932/HHRG-115-AP02-Wstate-NellerR-20180307.pdf>

⁷ <https://www.rand.org/pubs/testimonies/CT476.html>



The Marine F-35B fighter combines operational flexibility with unique survivability thanks to its stealthy airframe and other self-protection features. F-35B can land and takeoff vertically, enabling the Marine Corps to deploy tactical air power virtually anywhere in a war zone. At sea, it will operate mainly from amphibious assault vessels.

The ARG/MEU Team: The Forward Edge of U.S. Global Power.

The ARG half of the combined Navy and Marine Corps' capability typically consists of three ships – typically, an LHD/LHA, LPD and LSD – which not only provide transportation for the MEU's air and ground elements but can serve as a sovereign base at sea with advanced medical care, intelligence capabilities and support facilities. The large deck amphibians offer enormous mission flexibility with their well deck, medical capability and large internal volume for equipment, water, fuel and supplies. The MEU portion of the team consists of a reinforced infantry battalion with its own command and control, combat support, logistics, vehicles, indirect fires and aviation elements.

The large LHD and LHA amphibious warfare ships allow the ARG/MEU to deploy with its own air force consisting of MV-22 Ospreys, AH-1W attack, HH-60, UH-1Y utility and CH-53E heavy lift helicopters and most recently the F-35B fighter. The smaller LPD amphibious transport docks and LSD dock landing ships are primarily designed to deliver Marine Corps units and their equipment and supplies ashore.

Built around the large amphibious assault ships, the ARG/MEU can project significant air power, deploy a potent land capability from ships standing miles out at sea and engage in new forms of warfare. In late 2018, the 13th MEU was the first U.S. combat unit to conduct air strikes with the new F-35B, launching Joint Strike Fighters from the deck of the USS Essex in the Arabian Sea to attack Taliban targets in Afghanistan.⁸ In the future, F-35B-equipped large deck amphibians operating forward could provide critical intelligence and targeting information for the defeat of hostile anti-access/area denial capabilities.

The recent activities of the Kearsarge ARG and 22nd MEU illustrates the flexibility of the Navy-Marine Corps amphibious warfare team. Just prior to deployment, the ARG/MEU team was positioned off the North Carolina coast to provide disaster relief when Hurricane Florence made landfall.⁹ From there, it deployed as part of 6th Fleet to the Mediterranean where it planned to conduct maritime security operations, crisis response, medical evacuation and theater security cooperation. In January 2019, the ARG/MEU moved to the Eastern Mediterranean to provide security for the withdrawal of U.S. forces from Syria.¹⁰

The demand for ARG/MEUs consistently exceeds the supply. This forces combatant commanders to break up the three-ship ARGs. The former commander of U.S. Pacific forces, Admiral Samuel Locklear III, warned that there were not sufficient amphibious forces to meet worldwide demand. "I'm not the only combatant commander that desires amphibious shipping or the Marines that are on them. So there is a global competition among us as the world situation kind of moves around. [And] the global demand signal today is ... greater than what we can resource."¹¹

⁸ <https://www.militarytimes.com/news/your-military/2018/09/27/f-35-flies-first-combat-mission-in-afghanistan/>

⁹ <https://news.usni.org/2018/12/17/39699>

¹⁰ <https://www.wsj.com/articles/u-s-military-prepares-for-syria-pullout-amid-uncertainty-11547156824>

¹¹ <https://www.stripes.com/news/commander-us-military-can-t-conduct-amphibious-operations-in-the-pacific-1.274419>



USS San Antonio is lead ship in a class of amphibious transport dock vessels that each host 700 Marines and multiple rotorcraft. The unique configuration of the ship was designed to bolster survivability by deflecting hostile radar. A modified version of the same hull will be used to replace older dock ships, eventually comprising two-thirds of amphibious vessels in the U.S. fleet.

Critical Capabilities for Future Amphibious Warfare Forces

In addition to its role as an information collection, fusion and dissemination node, the amphibious warfare force is increasingly a lethal instrument of U.S. national power. The F-35B, operating from the large-deck amphibs, will be a game changer in future high intensity combat. The Marine Corps is experimenting with ways of adding long-range fires to the amphibs. In the future, directed energy weapons on board amphibious vessels can attack unmanned aerial systems, small boats, helicopters, aircraft and other threats. The newer amphibs, with upgraded communications and data fusion can join the naval tactical grid, fighting in cyberspace as well as at sea. Amphibious warfare forces also will deploy an array of unmanned aerial systems such as the new Integrator.¹²

Influence operations from the sea will be a big task for the amphibious fleet. Owning the sea lines of communication is crucial to deterrence and operations to shape the local environment. In wartime, each amphibious ship brings more than just firepower to the battlespace. For example, an amphib is a potential command and control node, employing manned and unmanned air, sea and land platforms. These capabilities are particularly relevant in coalition operations and when the ARG/MEU deploy to support partner countries.

Then there is the role of the MEU in influencing the land environment. Improved ship-to-shore connectors, including the MV-22 Osprey, the CH-53K heavy-lift helicopter, and new air cushion landing craft will enable Marine Corps units to project power onto the land further and faster. Once ashore, Marine units will be able to exploit the new Amphibious Combat Vehicle, lightweight and mobile artillery and rocket systems, armored wheeled tactical vehicles and Abrams tanks to conduct assault and maneuver operations, even deep inland. The Marine Corps is also likely to take advantage of Army modernization efforts, particularly in the areas of long-range precision fires, air and missile defense, robotic fighting vehicles and mobile tactical communications.

In anticipation of combat with more capable adversaries, U.S. amphibious forces will require greater reach and lethality. Recognizing the power inherent in forward deployed amphibious warfare forces, a study by the Center for Strategic and Budgetary Assessments proposes, inter alia, enhancing the aviation elements in the ARG/MEU, providing both amphibious ships and landing force with long-range fires and improving air and missile defense capabilities.¹³

Future operations in contested littorals will require a larger, more capable amphibious warfare fleet. This force must be comprised primarily of modern vessels with robust aviation capabilities, improved command and control facilities, and the ability to launch precision munitions and unmanned air and sea systems.¹⁴

¹² <https://www.defensenews.com/digital-show-dailies/air-force-association/2018/09/17/insitu-unveils-new-integrator-extended-range-unmanned-system/>

¹³ <https://csbaonline.org/research/publications/advancing-beyond-the-beach-amphibious-operations-in-an-era-of-precision-wea>

¹⁴

https://www.realcleardefense.com/articles/2017/10/17/a_more_capable_us_amphibious_warfare_fleet_112480.html



The Marine MV-22 Osprey tiltrotor has transformed amphibious air operations by combining the vertical agility of a helicopter with the speed and range of a fixed-wing aircraft. Osprey enables missions that were previously impossible using conventional helicopters, and has proven particularly useful when amphibious ready groups are broken up to cover widely separated locations.

Acquiring the Right Amphibious Warfare Fleet

The Navy's 355 ship force level goal calls for acquiring and maintaining a 38-ship amphibious force that includes 12 LHD/LHA-type ships, 13 LPD-17 class ships, and 13 LSD/LPD 17 Flight II-type ships.¹⁵ The requirement for 38 amphibious ships covers the fleet size needed to deploy the assault echelons of two Marine Expeditionary Brigades and maintain three deployed ARGs.

In reality, the U.S. needs a larger and more lethal amphibious warfare fleet. This would allow the deployment of larger Marine formations and expansion of the number of ARGs the Navy could deploy or as some studies have suggested allowing the size of the ARG to grow from three to four ships, significantly improving its area of influence and ability to deploy advanced manned and unmanned systems.¹⁶

In order to meet the growing demand for amphibious forces and prepare for operations in contested environments, the Navy needs to move forward with its plans to procure additional large deck amphibs. These are the older LHDs and new LHAs. In many ways they resemble small aircraft carriers, able to support F-35Bs and MV-22s, although their primary responsibility is the transportation of land forces by surface craft and helicopters. The USS *Bougainville* (LHA) will reacquire the well deck missing from LHAs 6 and 7 and will see a reconfiguration of its deck and island intended to support additional flight operations.¹⁷

The Navy also must replace its aging LSDs with the larger and more capable LPD 17 Flight II. The LPD-17s are designed to support the deployment of landing forces by helicopter, vertical lift aircraft, LCACs and conventional landing craft. The LPD-17 class has advanced electronics and sensor systems, signature reduction and modern command and control capabilities.

The frugal way to reach the 38-ship goal is to accelerate production of *America/Bougainville*-class LHAs and speed up the procurement of LPD-17 Flight II ships. LPD Flight II has a proven hull design that could decrease risk and increase delivery speed in replacing the LSD class. Moreover, given the trend of operating the ARG in a widely dispersed manner, the LPD 17 Flight II is being designed to support more intensive air activities and to support distributed operations with improved command, control and communications capabilities.¹⁸

Future large-scale amphibious landing operations will require a fleet of support vessels. These will include the Expeditionary Transfer Dock (ESD) / Expeditionary Sea Base (ESB), a new design based on the commercial Alaska crude oil carrier. The ESD/ESBs have float-on/float-off technology and reconfigurable mission decks. They have up to 25,000 square feet of vehicle and equipment stowage space and can carry 380,000 gallons of JP-5 fuel.¹⁹

¹⁵ <https://fas.org/sgp/crs/weapons/R43543.pdf>

¹⁶ <https://warontherocks.com/2016/11/amphibious-operations-in-a-brave-new-world/>

¹⁷ <http://www.thedrive.com/the-war-zone/20201/the-next-america-class-amphibious-assault-ship-will-almost-be-in-a-class-of-its-own>

¹⁸ <https://nationalinterest.org/blog/the-buzz/us-navys-new-lxr-assault-ship-%E2%80%98swiss-army-knife%E2%80%99-the-high-16567>

¹⁹ <https://www.navsea.navy.mil/Home/Team-Ships/PEO-Ships/Exp-Transfer-Dock-ESD-Exp-Sea-Base-ESB/>