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Congress Should Support the Marines' New Amphibious Combat Vehicle Plan

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For the past several years, the U.S. Marine Corps (USMC) has been working to better understand how the amphibious operations environment has changed and what those changes mean for relevant capabilities and operational concepts. A confluence of technological difficulties, changing operational requirements, and constrained budgets has forced the Corps to alter course several times, adjusting its programmatic efforts in the process.

The recently announced plan for the Amphibious Combat Vehicle (ACV) program seeks to leverage current and affordable technologies to meet near-term operational needs while laying the groundwork for future capabilities as necessary technologies mature. This program is the correct path forward but will require the support of the U.S. Navy and Congress.

Amphibious Operations for Today. A number of changes have occurred in the operational and threat environments associated with Marine Corps operations at sea that are making it increasingly difficult to project military power from the sea to objectives on land. Nonetheless, the benefit of and need for a sea-based, land-power projection capability has not waned and is arguably increasing as the

level of U.S. forces permanently based in other countries declines.

The ability to deploy ground forces absent ports, airfields, or roads is an invaluable capability with numerous operational benefits. It provides U.S. commanders more options, lessens risk to the force by distributing it over a greater area and across more units, and complicates the enemy's offensive and defensive plans.¹

However, the operational environment has substantially changed due to major advancements in vehicle, material, and weapon technologies. The littorals are becoming more dangerous to operate in.² There is a growing threat from proliferating anti-ship missiles, ever-quieter attack submarines, and increasingly sophisticated sea mines.

While these threats are not new, their increasing lethality makes the Navy less willing to operate close to shore. This condition is shaping the Corps's thinking about, and operational requirements for, its amphibious capabilities. The Corps has long accepted that it will have to operate from over the horizon (approximately 25 nautical miles from shore); how it will do so is proving to be a significant challenge.³

The Marines are also accounting for changes on land. The advent of improvised explosive devices (IEDs) and enhanced anti-armor munitions has impacted the design of vehicles across the military. These improvements include better armor, increased ground clearance, and incorporation of a blast-deflecting, V-shaped hull.⁴ For the Corps, this has meant a radical rethinking of its amphibious vehicle requirements.

The Effort to Upgrade. The Marine Corps has been attempting to update its amphibious pro-

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gram since the 1970s. The Amphibious Assault Vehicle (AAV-P7A1), the mainstay for the Marines' amphibious operations and armored ground mobility capability, is a tracked vehicle that can traverse about five miles of water at approximately four to six miles per hour.⁵ The 40-year-old vehicle saw significant use in Iraq and Afghanistan and is in dire need of replacement.⁶

Additionally, the Corps needs to update its wheeled armored vehicle, the Light Armored Vehicle (LAV)-25, which possesses a limited amphibious capability (e.g., it is capable of crossing rivers). This vehicle is also quite dated, starting service in the 1980s.

Given the age and importance of these vehicles, the Marine Corps has made replacing them a top priority, though with little success to date. Until most recently, their efforts included:

■ **The Expeditionary Fighting Vehicle (EFV).** The EFV, a reprogramming of the Advanced AAV initiative, was intended to address an increased ship-to-shore transit requirement. The initial design requirements stipulated that the EFV would have to travel 25 nautical miles at a speed of 20–29 miles per hour, thereby enabling Marines to make the transit in an hour or less. This proved to be infeasible given the trade-offs that had to occur to make such a transit possible—a lighter weight meant that the EFV had to shed armor, and a low, flat bottom was necessary for the vehicle to plane on top of the water, both characteristics that ran counter to vehicle design improvements mentioned above. Due to techno-

logical obstacles, cost overruns, and a constricting budget environment, the program was cancelled in 2011.

■ **The Marine Personnel Carrier (MPC).** The Corps's program to replace the aging LAV-25 was the MPC, which also has limited amphibious capabilities but would include the survivability enhancements developed for Iraq and Afghanistan. The MPC was meant to supplement the EFV. Not surprisingly, budget constraints drove the Marines to cancel the MPC to free up money for their main priority, the ACV.

■ **The Amphibious Combat Vehicle (ACV).** The follow-on to the EFV was the ACV. Envisioned to solve the ship-to-shore problem but at a shorter distance and slower speed than the EFV, the ACV included a comprehensive reassessment of the threat and operational environments, updated vehicle design characteristics, and analysis of the tactical value of speed in the ship-to-shore transit as it related to building relevant combat power ashore. These studies concluded that high-speed transit of a tracked, armored vehicle from over-the-horizon distances would continue to be problematic, especially at a reasonable cost.⁷

Enter the New USMC Plan. The Marine Corps recently settled on a final plan for upgrading its fleet of armored vehicles that recapitalizes existing vehicles while introducing new capabilities in a phased approach. The plan will consist of:

1. See Dakota Wood, "Caught on a Lee Shore," *The American Interest*, September 1, 2010, p. 22, <http://www.the-american-interest.com/articles/2010/09/01/caught-on-a-lee-shore/> (accessed April 17, 2014).

2. A commonly accepted understanding within the military community characterizes littorals as the coastal areas where the landward and seaward portions are each able to heavily influence the other, where land-based weapons can dominate the sea and sea-based forces must account for threats emanating from land.

3. See Dakota Wood, "The US Marine Corps: Fleet Marine Forces for the 21st Century," Center for Strategic and Budgetary Assessments, November 17, 2008, p. 60, <http://www.csbaonline.org/publications/2008/11/the-us-marine-corps-fleet-marine-forces-for-the-21st-century/> (accessed April 17, 2014).

4. Andrew Feickert, "The Army's Ground Combat Vehicle (GCV) Program: Background and Issues for Congress," Congressional Research Service Report for Congress, March 14, 2014, <http://www.fas.org/sgp/crs/weapons/R41597.pdf> (accessed April 17, 2014).

5. Hearing, *Marine Corps Modernization*, Subcommittee on Seapower, Committee on Armed Services, U.S. Senate, April 2, 2014, p. 20, <http://www.armed-services.senate.gov/imo/media/doc/14-30%20-%204-2-14.pdf> (accessed April 17, 2014).

6. General John M. Paxton Jr. and Lieutenant General Kenneth J. Glueck Jr., "Marine Corps Modernization," testimony before the Subcommittee on Seapower, Committee on Armed Services, U.S. Senate, April 2, 2014, http://www.armed-services.senate.gov/imo/media/doc/Paxton-Glueck_04-02-14.pdf (accessed May 12, 2014).

7. Ibid.

- **Upgrading a portion of the AAV-P7A1 fleet.** Given the technical hurdles of developing a completely new ACV, the Corps will upgrade a portion of its existing AAVs to increase their survivability on land.⁸ The upgrades will enable the Marines to maintain a ship-to-shore movement capability independent of U.S. Navy landing craft.
- **Purchasing 200–600 armored wheeled vehicles based on existing platform designs.** Though included as part of the ACV program, these vehicles are effectively a variation of the MPC program with limited amphibious capabilities.⁹
- **Acquiring a High-Water Speed “Connector.”** The Marines will work with the Navy to develop a new ship-to-shore “connector” or family of connectors that can achieve greater speeds at sea and traverse a greater distance than a fully amphibious tracked vehicle could. The Corps’s decision to adopt a wheeled ACV makes the connector a critical component of its amphibious operations capability.

Support Needed. Moving forward, the Corps is reliant on the Navy and Congress to make this plan effective:

- **The U.S. Navy should support with “connector” capabilities.** The decision to go with a wheeled amphibious vehicle relies heavily on the development of a future ship-to-shore connector. Since the procurement and maintenance of

these capabilities are all under the purview of the Navy, any change in requirement for the connector needs the Navy’s support.

- **Congress should adequately fund defense.** In making this decision, the Marine Corps was already cost conscious. However a return to sequestration levels would put the future of many investment programs in jeopardy. The initial phase of the Corps’s vehicle strategy has been crafted to fit within current budget request levels, but additional funding will be required for the new ship-to-shore connector(s).

The Right Decision. The proposed plan is the appropriate path forward for modernizing amphibious operations capabilities. By embracing a phased approach, the USMC can capitalize on current technology to quickly replace aging equipment while freeing funding to invest in a robust R&D effort, effectively creating a bridging strategy that maintains its current utility as a forward-deployed force while preparing it for the future.

Furthermore, the decision to purchase a MPC-type vehicle and leverage modern ship-to-shore connectors is an effective recognition of the evolving threat and operational environments.

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8. Ibid.

9. InsideDefense, “Marines to Look for a High-Water Speed Connector Under New ACV Plan,” April 2, 2014, <http://insidedefense.com/201404022466198/Inside-Defense-Daily-News/DefenseAlert/marines-to-look-for-a-high-water-speed-connector-under-new-acv-plan/menu-id-61.html> (accessed April 17, 2014).