US Marines Rush Wonky Amphibious Vehicles to the Pacific

New Amphibious Combat Vehicles have rolled over in recent surf and land drills but desperate strategic times require desperate deployments

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The US Marine Corps (USMC) is set to deploy its advanced Amphibious Combat Vehicle (ACV) to the Pacific despite questions about its readiness, maintenance and operation amid recent restrictions on surf-based use of the platform.

The ACV deployment, expected in or around March, aims to fill a looming amphibious warfare ship shortage amid rising tensions with China over Taiwan.

Defense News reported the 15th Marine Expeditionary Unit will deploy with the ACVs aboard the US Navy's Boxer Amphibious Ready Group (ARG) in phases, with the amphibious transport dock Somerset heading to the Pacific in the coming days for a six-month scheduled deployment.

The Defense News report says that the amphibious assault ship USS Boxer and the dock landing ship USS Harpers Ferry will deploy about two months later due to ship readiness and maintenance challenges.

The ACV is slated to replace the USMC's aging Amphibious Assault Vehicles (AAV), which have been in service since the 1970s. Defense News mentions that the eight-wheeled ACV can emerge from a ship, transit waves and then roll onto shore, allowing the military's amphibious force to conduct amphibious operations.

However, ACV operations have been restricted for nearly 18 months after one rolled over in

the water during training exercises in October 2022, prompting the USMC to halt nearly all surf-based operations, Defense News reports.

The ACV has also faced challenges on land, including a December 2023 rollover that killed a Marine aboard at a California USMC base.

The USMC has attributed the mishaps to training shortfalls and said it is on the process of recertifying vehicle operators and maintainers. But even the operators who have been recertified are not yet authorized to transit the surf zone with embarked troops or when the average height of the tallest waves is four feet or higher, Defense News reports.

A July 2020 US Congressional Research Service (CRS) report mentions that the USMC's AAVs have become increasingly challenging to operate, maintain and sustain. The report notes that even as the USMC's AAVs have been upgraded over the years, they have capability shortfalls in land and water mobility, protection and network capability.

The CRS report also says that the AAV's two-mile ship-to-shore range is viewed as a survivability issue for the vehicle and naval amphibious forces. Amphibious operations are considered among the most complex military operations, requiring planning across multiple domains amid significant operational challenges.

In a 2018 Marine Corps University Journal article, Steven Yeadon mentions that anti-ship missiles and tactical aircraft, submarines, mines, air defenses and opposing forces ashore pose significant challenges to modern amphibious operations.

Yeadon notes that while ARGs have several options for missile defense, potential adversaries can detect the force at over-the-horizon (OTH) ranges. Even though ARGs have sufficient missile defenses, Yeadon says, they become less effective as the force gets closer to shore as adversaries can deploy more missiles and the reaction time against these threats decreases.

Colin Smith and Stephen Webber mention in an October 2023 RAND think tank report that connectors such as AAVs are susceptible to multiple threats and vulnerable if engaged, noting that AAVs are exceptionally slow and must be launched close to shore.

While the ACV aims to address the AAV's shortcomings, a March 2023 CRS report raises concerns about the ACV's survivability against anti-tank guided missiles (ATGM), noting for example the vulnerability of Russian armored vehicles against such weapons in the ongoing Ukraine war.

Further to those survivability concerns, Karl Flynn notes in a November 2020 Proceedings article that the USMC's relatively lightly armed and armored vehicles, such as the ACV, AAV, and Light Armored Vehicle (LAV), would be vulnerable in possible operations against China's People's Liberation Army-Marine Corps (PLA-MC) in a conflict over Taiwan.

Flynn notes that currently fielded AAVs and LAVs may be under-armored and under-gunned against the PLA-MC's amphibious tanks, noting that the USMC's decision to divest itself of M1 Abrams tanks has resulted in a situation where the PLA-MC outmatches USMC armor in terms of both firepower and protection.

The USMC may also struggle to keep its forces at sea as it contends with an amphibious warfare ship shortage.

In a Defense News article this month, Megan Eckstein mentions that USMC is considering alternate deployments to address the shortage, which Lieutenant General Karsten Heckl, deputy commandant for combat development and integration, has called the "single biggest existential threat" to the service.

Eckstein says the USMC has been forced to use other types of ships, such as the Expeditionary Sea Base (ESB) and Expeditionary Fast Transport (EPF), to fill the gap. But while the USMC has successfully used the EPF in the Pacific several times recently, the ship is not tailor-made for amphibious missions.

Bryan McGrath notes in a January 2023 Defense One article that the US is planning to acquire Light Amphibious Warships (LAW) that could also transport Marines from shore to shore, unlike traditional connectors such as AAVs.

However, McGrath points out that LAWs may not be survivable against anti-ship missiles, lack the capacity to resupply far-flung forces in remote islands and could be too slow and under-armed for combat. They are also costly, he notes.

In contrast to the USMC's woes, China is apparently making steady progress in modernizing the PLA-MC, expanding the force in quality and quantity.

In a Task and Purpose article this month, Jeff Schogol notes that as of 2022 the PLA-MC has expanded from two to eight combined arms brigades, noting in comparison a US Army brigade typically has 5,000 soldiers.

Schogol notes that while the PLA-MC would play a vital role in a potential invasion of Taiwan, the force is an enabler, not the main invasion force, as the PLA-Ground Force (PLA-GF) has specially trained amphibious assault troops for such an operation.

While the PLA-MC can contribute six battalions to support an invasion effort, Schogol says it is still hamstrung by its small size and lack of experience in expeditionary operations.

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Featured image: The Marine Corps pulled the amphibious combat vehicle from most operations in the surf following nonfatal mishaps in 2022. Photo: Corporal Carl Matthew Ruppert / Marine Corps

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