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The Marine Corps' Amphibious Combat Vehicle (ACV)

Background

The Marine Corps describes the Amphibious Combat Vehicle (ACV) as

The Corps' next-generation vehicle designed to move Marines from ship to shore (**Figure 1**). Designed to replace the Corps' aging Amphibious Assault Vehicle (AAV), which has been in service since 1972, the ACV will be the primary means of tactical mobility for the Marine infantry battalion at sea and ashore (**Figure 2**). The ACV will have the capability to provide organic, direct fire support to dismounted infantry in the attack.

There are currently four ACV variants planned: (1) a Personnel Variant (ACV-P), which can carry three crewmembers with 13 Marines and two days of combat equipment and supplies; (2) a Command and Control Variant (ACV-C); (3) a Recovery Variant (AC-R); and (4) a 30-mm Gun Variant (ACV-30). The Marines intend for the ACV to provide effective land and tactical water mobility (ship-to-shore and shore-to-shore), precise supporting fires, and high levels of force protection intended to protect against blasts, fragmentation, and kinetic energy threats.

The ACV program delivered initial ACV-P variants in November 2020 and delivered initial ACV-C variants in FY2022. Plans call for delivery of Improved Lethality 30-mm Gun Variant ACVs in FY2025 and Recovery Variants in FY2026.

Figure 1. Amphibious Combat Vehicle in Ship-to-Shore Mode



Source: <https://www.baesystems.com/en-us/multimedia/amphibious-combat-vehicle-11-acv-11>, accessed February 3, 2021.

Figure 2. Amphibious Combat Vehicle Ashore



Source: <https://www.baesystems.com/en-us/multimedia/amphibious-combat-vehicle-11-acv-1-1->, accessed February 3, 2021.

Current Program Status

In June 2018, the ACV entered Low-Rate Initial Production (LRIP) with BAE Systems selected for the first 30 vehicles to be delivered in fall 2019. In November 2020, the ACV achieved Initial Operational Capability (IOC). In December 2020, a Full-Rate Production (FRP) decision was reportedly made by the Marine Corps after having been delayed from September 2020 due to issues related to Coronavirus Disease 2019. The current planned acquisition objective of 632 ACVs would replace AAVs in Assault Amphibian Battalions. The previous acquisition objective of 1,122 ACVs was reduced in accordance with Marine Corps Force Design 2030 modernization efforts (see CRS Insight IN11281, *New U.S. Marine Corps Force Design Initiative: Force Design 2030*, by Andrew Feickert).

Full-Rate Production Contract

On March 6, 2023, BAE reported it had received its third full-rate production ACV contract for \$256.8 million. Under this contract, BAE will produce both ACV-P and ACV-C variants. BAE reports ACV production and support is taking place at BAE locations in Stafford, VA; Jose, CA; Sterling Heights, MI; Aiken, SC; and York, PA.

ACV-30 Variant Delivered

Reportedly, BAE delivered its ACV-30 variant to the Marines in February 2024 for government testing. The ACV-30 is to be equipped with a stabilized, medium-caliber, remote-controlled turret system produced by the Norwegian company Kongsberg.

Low-Rate Initial Production (LRIP) is a programmatic decision made when manufacturing development is completed and there is an ability to produce a small-quantity set of articles. It also establishes an initial production base and sets the stage for a gradual increase in the production rate to allow for Full-Rate Production (FRP) upon completion of Operational Test and Evaluation (OT&E).

Full-Rate Production (FRP) is a decision made that allows for government contracting for economic production quantities following stabilization of the system design and validation of the production process.

ACV Amphibious Operational Mishaps
Reportedly, on July 19, 2022, two ACVs were involved in accidents while training off the coast of California during high surf conditions. According to the Marines, “One ACV tipped onto its side in the surf zone and another became disabled during the training. Marines in both ACVs conducted their immediate action drills and safely returned to shore.” After the incidents, the Marines suspended ACV amphibious operations while an internal review was conducted.

ACV Resumes Amphibious Operations
On September 23, 2022, the Marines resumed ACV operations in the open ocean. In addition, the Marines implemented new rules for surf conditions, noting, “The interim maximum surf conditions identified include a significant breaker height of four feet, which allows the ACV to operate safely while maintaining a high-state of readiness for the ACV community.”

FY2025 ACV Budgetary Information

Table 1. FY2025 Navy Budget Request—ACV

Funding Category	Total Request (\$M)	Total Request (Qty.)
RDT&E	\$60.2	—
Procurement	\$810.3	80

Source: Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, *Program Acquisition Cost by Weapon System: United States Department of Defense Fiscal Year 2025 Budget Request*, March 2024, p. 3-12.

Notes: RDT&E = Research, Development, Test & Evaluation; \$M = U.S. dollars in millions; Qty. = FY2025 procurement quantities.

According to the *Department of Defense Program FY2025 Acquisition Cost by Weapon System*, the ACV FY2025 budget request is intended to

Initiate the production of 80 Improved Lethality 30mm cannon variants (ACV-30s), procure related items such as Production Support, Systems Engineering/Program Management (SE/PM), Engineering Change Orders (ECOs), Government Furnished Equipment (GFE), and Integrated Logistics Support (ILS).

Reduction in Planned FY2025 and FY2026 ACV Procurement Quantities

Reportedly, the Marines are reducing “procurement plans for FY2025 and FY2026, reducing acquisition quantities by 48 vehicles across the two years due to spending caps under the Fiscal Responsibility Act (P.L. 118), inflation, and a higher-than-expected vendor proposal.”

The Navy’s FY2025 budget request notes,

FY2025 reductions in quantities from 104 to 80 are due to a fiscally constrained environment because of the Fiscal Responsibility Act of 2023, increased inflationary pressures, and a higher than anticipated vendor proposal for Full Rate Production Lots 5-6. These factors result in a loss of buying power to procure the number of vehicles in previous budget submission for FY2025 and FY2026. The program was fully funded to procure the Approved Acquisition Objective (AAO). However, due to 1) the loss of \$102 million from the FRA across FY2025 and FY2026, 2) the effects of inflationary increases, and 3) a much higher than anticipated vendor proposal, the programs vehicle procurement has been reduced by a total of 48 vehicles across FY2025 - FY2026.

Considerations for Congress
Oversight questions Congress could consider include the following:

ACV Amphibious Limitations?
As a result of a Marine internal review following two July 2022 ACV mishaps, it appears the Marines have decided to limit ACV amphibious operations when breaker height exceeds four feet. Does this new guidance preclude ACV amphibious operations in surf zone conditions where breaker height exceeds four feet, or are there supplemental operational procedures that permit ACV operation in high surf zone conditions? If ACV amphibious operations are restricted to four feet or less breaker height, how might this affect the conduct of amphibious operations during a conflict?

Program and Readiness Impact of Reduced FY2025 and FY2026 ACV Procurement

The reduction in the production of 48 ACVs over FY2025 and FY2026 raises a number of issues. From a program perspective, will the acquisition of these 48 vehicles be made up post-FY2026, or does this represent a decrease in overall ACV acquisition numbers? Will the reduction have cost implications for future ACV acquisition, and how could this affect current program costs and production plans? In terms of readiness, will having 48 fewer ACVs in FY2025 and FY2026 have an appreciable readiness impact on Fleet Marine Forces and, if so, how do the Marines plan to compensate for this lack of capability?

Lessons Learned from the Ukraine Conflict

There are a number of military observations resulting from the Ukraine conflict. One observation is armored vehicles have allegedly proven highly vulnerable to anti-tank guided missiles (ATGMs), armed drones, and loitering munition. As ACVs are intended to “provide organic, direct fire support to dismounted infantry in the attack,” how vulnerable to these systems are ACVs during amphibious operations and when operating ashore supporting combat operations? Are the Marines considering ACV survivability modifications based on lessons learned in Ukraine?

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