

ASSAULT AMPHIBIOUS VEHICLE



Assault Amphibious Vehicle

Program Background

The Assault Amphibious Vehicle (AAV) was initially fielded in 1972 as the Landing Vehicle Tracked 7 (LVT7). It was subsequently renamed the AAV7 and upgraded to the AAV7A1 configuration in the late 1980s; and it was upgraded to the AAV7A1 RAM/RS (Reliability Availability Maintainability/Return to Standard) configuration in the 1990s and 2000s. The AAV, which continues to be the Marines' primary amphibious lift and armored personnel carrier, provides ship-to-shore-to-objective mobility as well as direct fire support with organic weapons. The AAV Family of Vehicles consists of the AAVP7A1 personnel variant, the AAVC7A1 command and control variant, and the AAVR7A1 recovery variant. The AAV is scheduled to remain in service until

at least 2030, requiring upgrades as a bridge to the arrival of the Amphibious Combat Vehicle.

Program Status

The AAV Survivability Upgrade Program is expected to enter the acquisition cycle at Milestone B during FY 2014 and begin the EMD phase. The program will improve force protection and platform survivability by integrating mature technologies into the AAV. These upgrades include belly and sponson armor, blast-mitigating seats, spall liners, and expected automotive and suspension upgrades. Currently slated for approximately 392 AAV personnel variants, the upgrades will provide Marine Corps operational forces with four battalions of lift plus some additional support capabilities. The

program's developmental testing is planned for FY16-17. Milestone C, authorizing entrance into the production and deployment phase, is scheduled for FY17, with an Initial Operating Capability slated for FY19.

Another modification that will be fielded in FY14 is the Emergency Egress Lighting System (EELS). This safety enhancement automatically turns on lighting if an AAV starts taking on water. If a vehicle goes underwater, EELS will enable the Marines to get oriented and will guide them to an exit. EELS, which is currently being mounted in Marine Corps helicopters, replicates a capability that was planned for the Expeditionary Fighting Vehicle. EELS was developed and engineered for the AAV family in coordination with the Naval Surface Warfare Center Panama City. The system has already been installed in the first unit and is under evaluation by a Marine Expeditionary Unit before a plan to expand its fielding is implemented in 2014.

Upcoming efforts will focus on numerous subsystems and components that will require technology refresh and/or upgrades; they include fuel tanks, fire suppression, radios and intercoms, suspension, and driver's display. The requirements of the AAV Survivability Program and legacy sustainment may be met with Non-Developmental Items and mature technology. The following areas, however, may offer opportunities where advanced technology could benefit the AAV.

AAV'S Top Three Program Technology Issues:

1. Survivability

Technologies that provide advances in ceramic and layered armor to improve survivability and reduce weight would benefit the AAV Survivability Upgrade. Such technologies would likely include a combined internal and external belly armor solution. Additionally, advances in blast seats and spall liner would benefit the AAV Survivability Upgrade.

2. Weight/Buoyancy Management

Enhancing survivability will likely add weight to the AAV. Alternative lightweight, economical materials, along with design improvements to increase and protect buoyancy, would benefit the AAV Survivability Upgrade.

3. Sustainment/In-Service Engineering

The AAV is a 40-year-old platform that will remain in service for years to come. The day-to-day logistics, maintenance, and technical challenges of managing such a dated platform would be mitigated by advanced technology that increases reliability and reduces operation and maintenance support costs.



AAV Technical Issue #1 Survivability



