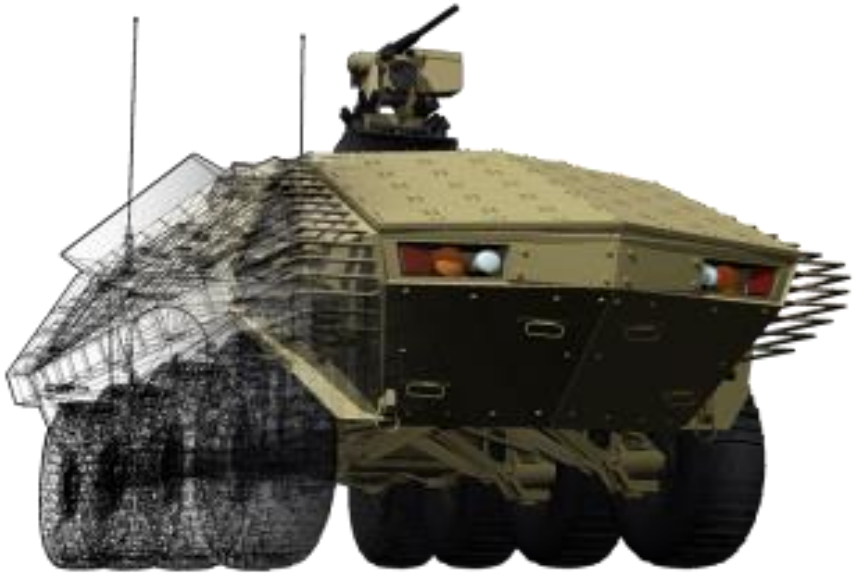
Program Manager Advanced Amphibious Assault



Expeditionary Warfare Conference

12 October 2016

Col Kirk Mullins, Deputy Program Manager ACV 1.1

ACV 1.1 Key Requirements

BAE

SAIC

Requirements Summary

- **Protection:**
  - MRAP level protection against under-vehicle & roadside IED
  - Maneuver for 5 miles to egress kill zone following ballistic attack
- **Transportability:** Two ACVs on a Ship-to-Shore Connector (SSC)
- **Maneuverability:**
  - Land: Must meet expeditionary mission profile (70% off-road)
  - Water: Sea worthy maneuver from shore-to-shore (3 nm)
- **Payload:** 3 crew, 10 Infantry PAX, 2 DoS, Combat Essential Equipment
- **Availability:** Operational: 81%
- **Energy:** Will not increase the refueling frequency above the AAVP7

Mission: General Support Lift / Protected Land and Water Mobility

Dimensions: Foot print similar to AAV
Weight: ~66,000 lbs GVW

Weapon: Single mount RWS that can be equipped with a MK-19 AGL or M2 HMG

Fire control: Modern, Stabilized Day / Night Optics

Capacity: 10 Infantry Marines + 3 Marine Crewmen

Range: 300 - 400 miles

Speed: Land mobility effective with MAGTF Maneuver TF/ 5 knots in 2ft significant wave height seas

Acquisition Status: MS B (17 Nov 15)

Acquisition Objective: 204

IOC/FOC: 2020/2022 (Projected)

Comments: Acquisition Objective will provide lift for two Infantry Battalions (Active Component)

Two Development Contracts Awarded on 24 Nov 15 to BAE & SAIC

ACV Phasing Overview

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040

17- PAX

392 AAV SUP/SII — 4xBN Lift

Legacy AAV — 666 C/R/P — 486 C/R/P — 76 C/R

~180 ~410

10- PAX

Test Vehicles

32

2xBN Lift

ACV 1.1

204

P Variants Only

4xBN Lift

ACV 1.2

490

P/C/R Variants

4xBN Lift

ACV 1.3 (Wheeled)

~700

1.1

1.2

OR 4xBN Lift

ACV 2.0
(HWS Tracked or Wheeled)

HWS Capability Development Exploration

▼ = Planned Initial Operating Capability

◆ = Planned Full Operating Capability

▼ =Divestiture

★ = 1.2 CDD Development JROC Staffing

★ = Assess ACV 1.1 Water Mobility

★ = HWS Decision

AAV Survivability Upgrade Program

Objective:
The Assault Amphibious Vehicle (AAV) Survivability Upgrade is an ACAT III program initiated to increase AAV7A1 force protection while maintaining required land and water mobility performance. This upgrade is derived from the need for an operationally effective amphibious armored personnel carrier capability bridge until the future amphibious portfolio of vehicles reaches full operational capability.

Acquisition Status: Engineering Manufacturing Development

Acquisition Objective: 392

- 392 AAVs out of a fleet of 964

IOC/FOC: 2019/2023 (Projected)

Approximate Unit Cost: $1.65M (FY12$)

Comments:

- Prototypes delivered/ testing began 2Q FY16
- MS C planned for 3Q FY17
- AAO will support MEU deployments and globally source lift for 4 infantry battalions and 2 RLT command elements to support a 2 MEB FEO

Fuel Tank Upgrade
- Added External Tank(s)
- Day Tank

Force Protection
- Spall Liner
- Direct Fire Protection

Prime Vendor: SAIC

IED Protection
- Underbelly Protection
- Sponson/Lower Sidewall Protection
- Blast Mitigating Seats

Performance Upgrades
- Powertrain
- Marine Drive Train
- Suspension

End Result – Improved protected mobility to extend the operational effectiveness of the system in the 2030s

Vehicle Overview – Exterior

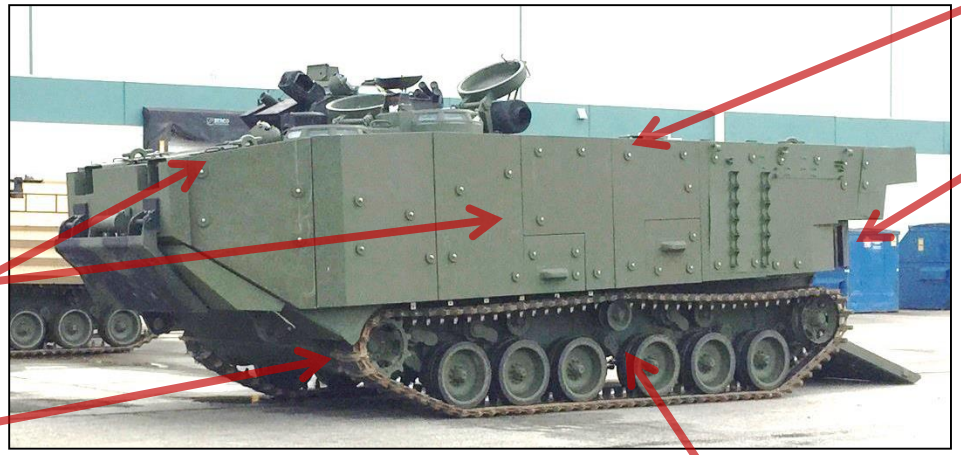
Performance Improvements

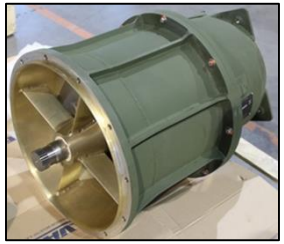
- Underbody protection
- Water speed: ~7 knots in 1' SWH
- Reserve buoyancy: 21%
- Top land speed: 42.5 mph
- 17 Embarked Marines
- GVW ~72,000 lbs.

External ceramic armor provides ballistic protection and improved buoyancy

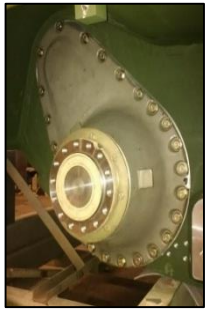
Armor protected external fuel tanks

NAMJET axial flow water jets

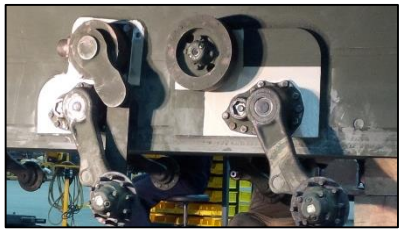


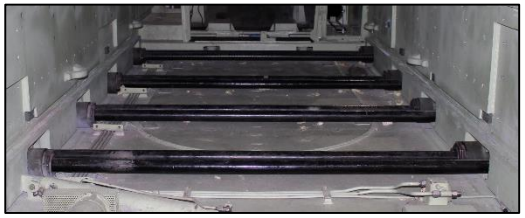


Bradley derived final drives



Upgraded torsion bars and rotary dampers

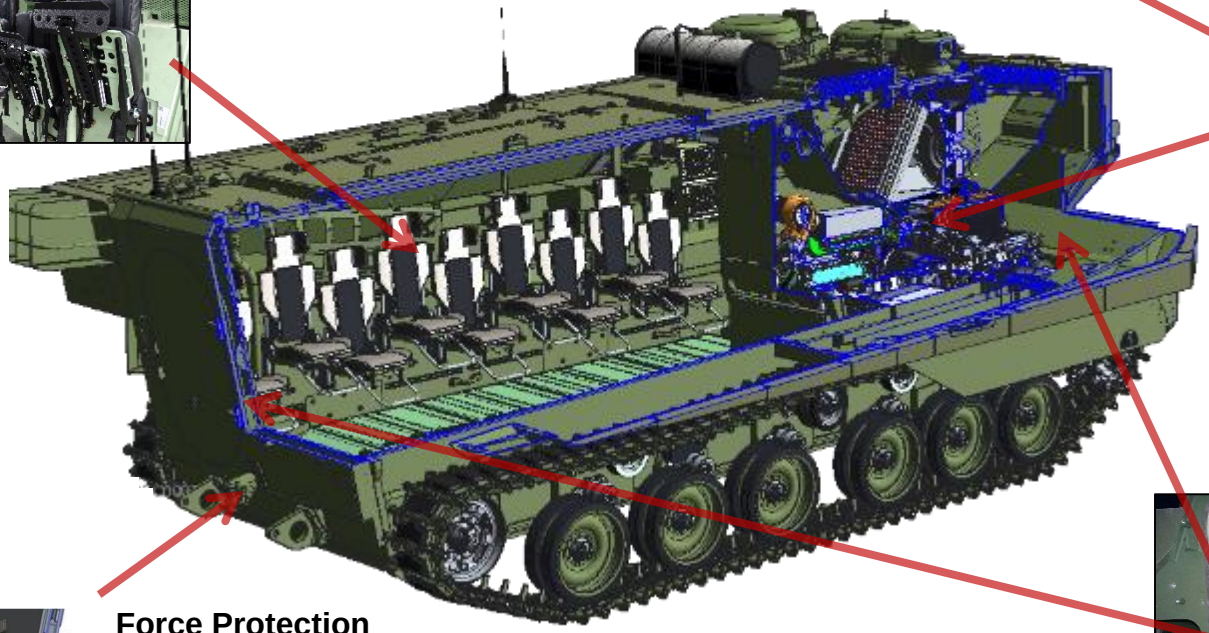




Upgraded suspension improves ride quality with ~80% commonality with RAM/RS suspension, increases load capacity, and raises the hull by 3 inches to improve survivability

Vehicle Overview – Interior

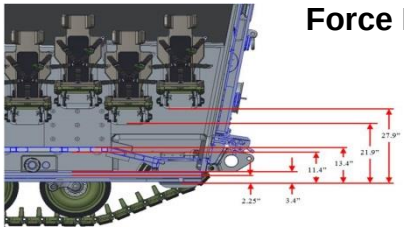
Blast Energy Mitigating Seats
(3 Crew + 17 Marines)



Upgraded VT 903
(675hp engine)

- New transmission
- New Power Take-Off (PTO)

Bonded spall liner



Force Protection

- Internal lower hull armor
- Integrated underbody keel protection and deck

Force protection modifications increased force protection against under-vehicle attack