Artist rendering of the ACV

AMPHIBIOUS COMBAT VEHICLE (ACV)

Program Description

A new start, pre-Major Defense Acquisition Program (pre-MDAP), the ACV will replace the AAV and serve as an advanced generation, armored, amphibious combat vehicle. The ACV will be the primary surface means of tactical mobility for the Marine rifle squad, both at sea and ashore, and will deliver the assault echelon from amphibious shipping at launch distances at or beyond the visual horizon. The ACV will possess the speed to enable the rapid buildup of combat-ready Marines ashore.

The Marine Corps requirement is for an amphibious vehicle that provides increased force protection, water speed, land mobility, lethality, and survivability, while balancing capacity, mobility, transportability and total ownership costs over the current AAV. The ACV will provide superior ground mobility and speed to the Marine Air-Ground Task Force during sustained operations ashore and will provide organic, direct fire support to dismounted infantry in the attack. The ACV will protect the force during both offensive and defensive operations, providing 360-degree protection against direct fire, indirect fire, mines, and improvised explosive device threats.

Program Status

The ACV is in the Material Solution Analysis Phase of the Joint Capabilities Integration and Development System process. The recently completed Analysis of Alternatives includes development of life cycle cost estimates for each alternative, considering major cost drivers, acquisition and sustainment strategies, as well as the fully burdened cost of energy.

ACV'S Top Three Program Technology Issues:

1. Increase Survivability

Technologies that protect both the occupants of the vehicle and the vehicle itself from emerging threats are critical. These include technologies that: increase armor protection while maintaining current weight (or with minimal weight gain), decrease impacts to the occupants and vehicle due to battle damage, as well as fuel system containment and fire suppression improvements.

2. Increased Weight Margin

The ACV will need to balance vehicle survivability with the overall mobility performance and sea-keeping capability. Technologies that increase the weight margin of the ACV are essential and would include such items as lightweight composite materials and armor.

3. Crew Visibility

The ACV crew must maintain direct sensory knowledge of their surroundings in order to safely and effectively employ the system. This includes, but is not limited to, fully blacked out land/water operations, station keeping, obstacle detection (including near-surface obstacles), and operation in urban environments. Technologies that provide the necessary situational awareness for the crew are critical in the execution of the ACV mission.

Artist rendering of the ACV

Amphibious Combat Vehicle (ACV)

TBD

Program Description

Mission: General Support Lift / Amphibious Mobility / Firepower
Dimensions: Similar to EFV footprint for transportability

Weapon: Lethality Options under analysis
Fire control: Modern, Stabilized Day / Night Optics
Capacity: 17 Infantry Marines + 3 Marine Crewmen
Range: 200 mile
Speed: Mobility effective with MAGTF Maneuver Task Force

Program Status

Acquisition Status: MDD
Acquisition Objective: ~600
MS B/MS C: TBD
IOC/FOC: TBD
Comments:

- AAO will provide lift for 8 Infantry Battalions

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ACV Technical Issue #1 Increased Survivability

ACV	2012	2013	2014	2015	2016	2017	2018
Program Milestones/ Insertion Points	TBD					Production	

Active and Potential Investment Opportunities

- (2)Desktop Software FOA of Effects of Blast & Ballistic Impact (PM AAA SBIR I) ($0.30M) — 6
- Modular Lightweight Armor System (PM AAA SBIR II) ($0.83M) — 6
- DARPA AVM Program ($293.00M) — 6
- Self Sealing Fuel Tanks Swampworks ($1.00M) — 5, 7 — T PM M&HTV
- Energy Absorbing Structures for Blast Mitigation ($0.99M) — 5 — T PM AAA
- (3)Active Laser Protection (PM AAA SBIR I) ($1.20M) — 6
- Modular Anthropomorphic Test Device (ATD) (PM AAA SBIR I) ($1.08M) — 6
- Advanced Transmission Technology ($3.14M) — 4, 6 — T PM AAA
- Modular LW Ext. Fuel Tank Sys. (PM AAA SBIR II) ($1.03M) — 6
- AAV Emergency Egress USON ($16.00M)

D&I | E&D | FNC | SBIR/ STTR | Other | TARDEC

Concept to Capability Issue Mapping Alignment Process

MCCL 3.1 7.2 → MCGL 3.1-G3-M1 → STO'S MVR STO-2, MVR STO-4, MVR STO-5 → Technology: -Desktop Software FOA of Effects of Blast & Ballistic Impact; -Modular Lightweight \ Armor System; -DARPA AVM Program; -Self Sealing Fuel Tanks System Swampworks; - EA Structures for Blast Mitg.; -Active Laser Protection; - Modular ATD → Venues: D&I, E&D, SBIR, Other → TTA → POM Funding → T

MCTL: MCT 1, MCT 6

Funding Profiles ($M)	FY 12	FY 13	FY 14	FY15	FY 16	FY 17	FY 18
S&T (6.2 / 6.3)	64.68	105.30	37.53	35.50			

6.1 ← → Science & Technology ← → 6.3 6.4 ← → System Development ← → 6.7

ACV Technical Issue # 2 Increased Weight Margin

ACV	2012	2013	2014	2015	2016	2017	2018
Program Milestones/ Insertion Points	TBD						

Active and Potential Investment Opportunities

(2)Modular Lightweight Armor System (PM AAA SBIR II) ($1.51M) — 6

Modular LW Ext. Fuel Tank Sys. (PM AAA SBIR II) ($1.03M) — 6

High Strength-High Ductility Nano Composites ($1.97M) — 4 – 6

D&I | E&D | FNC | SBIR/ STTR | Other | TARDEC

Concept to Capability Issue Mapping Alignment Process

MCCL 3.1 7.2 → MGL 3.1-G3-M1 → STO'S MVR STO-2 MVR STO-4 MVR STO-5 → Technology -Modular Lightweight Armor System -Modular LW Ext. Fuel Tanks -High Strength-High Ductility Nano Composites → Venues SBIR E&D → TTA → POM Funding → T

MCTL MCT 1

Funding Profiles ($M)	FY 12	FY 13	FY 14	FY15	FY 16	FY 17	FY 18
S&T (6.2 / 6.3)	1.00	1.56	1.01	0.10			

6.1 ↔ Science & Technology ↔ 6.3 6.4 ↔ System Development ↔ 6.7

ACV Technical Issue #3 Crew Visibility

ACV	2012	2013	2014	2015	2016	2017	2018
Program Milestones/ Insertion Points	TBD						
Active and Potential Investment Opportunities	(3)Active Laser Protection (PM AAA SBIR I) ($1.20M) — 6 "Flawless" Glass Armor ($3.20M) — 6 Transparent Armor ($6.30M) — 7						
D&I / E&D / FNC / SBIR / Other / TARDEC							
Concept to Capability Issue Mapping Alignment Process	MCCL 3.1 7.2 → MCGL 3.1-G3-M1 → STO'S MVR STO-4 MVR STO-5 → Technology -Active Laser Protection -"Flawless" Glass Armor -Transparent Armor → Venues SBIR E&D TARDEC → TTA → POM Funding → T MCTL MCT 1						

Funding Profiles ($M)	FY 12	FY 13	FY 14	FY15	FY 16	FY 17	FY 18
S&T (6.2 / 6.3)	1.65	3.55	4.15	0.25			

6.1 ← → Science & Technology ← → 6.3 6.4 ← → System Development ← → 6.7