



PM AAA
NDIA Conference
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AMPHIBIOUS VEHICLE WAY AHEAD

Overarching Facts

- Joint Operational Access capability is required across the range of military operations
- 2 Marine Expeditionary Brigade (MEB) Assault Echelons is the minimum required forcible entry sea-based capacity for Operational Access and supports crisis response, security cooperation and theater engagement requirement
- 2006 Strategic Planning Guidance (SPG) guidance to better balance the Ground Combat Tactical Vehicle (GCTV) Portfolio resulted in a track/wheel mix of Armored Personnel Carrier (APC) capability (8:4 ratio) in order to meet the Service capacity requirement of 12 battalions of lift for Marine Corps operational scenarios

Acquisition Programs

- Assault Amphibious Vehicle (AAV) Upgrade increases force protection and vehicle survivability levels of the current capability in order to sustain operations ashore against current threats to extend its service life until replaced by the Amphibious Combat Vehicle (ACV) and Marine Personnel Carrier (MPC).
- ACV will provide sea-based entry and land maneuver capability to come from over the horizon (12-18 NM)
- MPC supports expeditionary protected mobility requirements by enhancing Marine Operating Forces' tactical & operational mobility with balanced levels of performance, protection & payload



TRANSITION FROM EFV TO ACV Requirements Development

➤ Systems Engineering OPT

- Evaluate cost & technical risk associated with requirements (water speed, survivability, lethality eg.)
- Evaluate various system concepts to better define capability versus affordability trade space
- Utilize data to develop systems concepts for use in the AoA
- Systems concepts evaluated represent a continuum from minor upgrades to the legacy platform up to high-end new vehicles

➤ New Efforts in Support of ACV Requirements Development

- Hull demonstrator to explore achievable protection levels in an amphibious tracked vehicle
- Market research/trade study of remote weapon systems & variable height suspensions
- Evaluation of suitability/effectiveness of remote weapon systems for AAV, MPC, or ACV



A PORTFOLIO APPROACH TO COMPLEMENTARY CAPABILITIES

➤ Overarching CD&I Objective:

— *Marine ground combat forces require expeditionary protected mobility throughout the extended littoral operational environment across all types of terrain*

- *ACV & MPC are part of a portfolio of capabilities that provide closure to real world operational gaps and shortfalls in the ability of the MAGTF to conduct ground based maneuver tasks*
- *The MPC, as the medium capability category platform, provides a bridge in capability between the ACV and JLTV*
- *Distributed Combat Power - 2 MPCs will lift a reinforced rifle squad*
- *MPCs will be supported by JLTVs carrying heavy weapons, communications equipment, and cargo*
- *In conjunction with ACV the MPC will meet GS lift requirements for Marine Infantry across the ROMO*
- *ACV is optimized for JFEO/MCO while MPC is better suited for the fight in restricted terrain against irregular threats*



“Our Ground Combat & Tactical Vehicle Strategy is designed to field and support a portfolio of complementary capabilities - No one vehicle can do it all while being affordable and singularly operationally effective across the ROMO”.



AAV UPGRADE



Mission: General Support Lift / Amphibious Mobility

Dimensions: H: 130 in

W: 130 in

L: 321 in

Wt: 46,330 lbs (curb wt)

Weapons: HMG

Payload: 21 Infantry Marines + 3 Marine crewmen

Range: 200 miles

Speed: Effective with M1A1 off-road / 6 knots in water

Acquisition Status: Pre MS-B

Acquisition Objective: 392

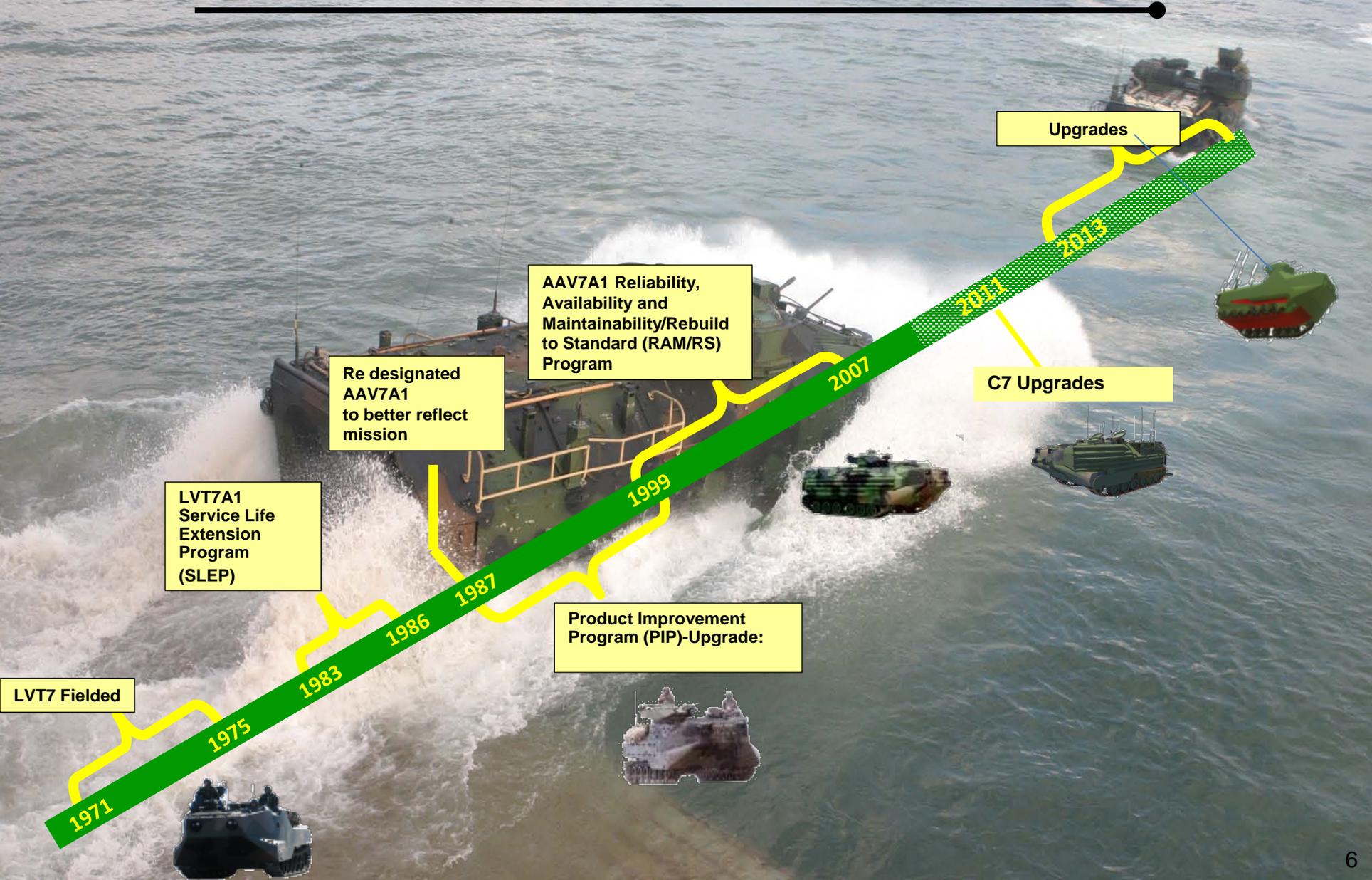
IOC/FOC: FY17/FY23

Approximate Unit Cost to Upgrade: \$1.5M

- AAV Upgrade AAO provides 4 Infantry Battalions lift capacity to the MAGTF

- *The AAV Upgrade is to be a bridge capability to ACV. Focus - restore operational relevance to the AAV by updating outdated protection attributes*

AAV TIMELINE





AAVC7 C2 UPGRADE/ FUTURE UPGRADES

- **Current C7 Upgrade**

- C7 AAO of 76 vehicles to be upgraded
 - 60 vehicles to be fielded prior to August 2011; production closed out with SPAWAR
 - 16 remaining vehicles to be completed in coordination with MPS backloads/IROAN
 - IIP (spares) at SMU/RIP
- NETT
 - CAB only command remaining

- **Future Upgrades as of September 2011**

- Underbody armor
- Sponson armor
- Blast mitigating seats; crew and troops (3+17)
- Contact and spaced spall liners
- Fuel tank protection
- Spray in Floor Liner & blast mitigating liner
- Engine/transmission and supporting components upgrade to support added weight
- Suspension and dual pin track



WHY AMPHIBIOUS COMBAT VEHICLE

Summary of Capability Gaps*

- When required to conduct amphibious operations and subsequent operations ashore in a denied or contested environment, the legacy platform (Assault Amphibious Vehicle) presents the following capability gaps
 - Water/Land Mobility: Cannot close to the beach from extended launch distances prescribed in future Navy CONOPS
 - Protection: Cannot protect its occupants from IED's
 - Network: Cannot communicate critical information requirements to the sea base
 - Lethality: Cannot achieve direct fire overmatch against threat peer vehicles identified in the System Threat Assessment Report

*Amphibious Combat Vehicle Initial Capabilities Document, pages 12-13