

**CLEARED
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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Selected Acquisition Report (SAR)



Amphibious Combat Vehicle Family of Vehicles (ACV FoV)

FY 2024 President's Budget

**Defense Acquisition Visibility Environment
(DAVE)**

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Common Acronyms and Abbreviations

\$B - Billions of Dollars

\$K - Thousands of Dollars

\$M - Millions of Dollars

ACAT - Acquisition Category

Acq O&M - Acquisition-Related Operations and Maintenance

ADM - Acquisition Decision Memorandum

APB - Acquisition Program Baseline

APPN - Appropriation

APUC - Average Procurement Unit Cost

BA - Budget Authority/Budget Activity

Blk - Block

BY - Base Year

CAPE - Cost Assessment and Program Evaluation

CARD - Cost Analysis Requirements Description

CDD - Capability Development Document

CLIN - Contract Line Item Number

CPD - Capability Production Document

CY - Calendar Year

DAB - Defense Acquisition Board

DAE - Defense Acquisition Executive

DAMIR - Defense Acquisition Management Information Retrieval

DoD - Department of Defense

DSN - Defense Switched Network

EMD - Engineering and Manufacturing Development

EVM - Earned Value Management

FMS - Foreign Military Sales

FOC - Full Operational Capability

FRP - Full Rate Production

FY - Fiscal Year

FYDP - Future Years Defense Program

ICE - Independent Cost Estimate

Inc - Increment

IOC - Initial Operational Capability

JROC - Joint Requirements Oversight Council

KPP - Key Performance Parameter

LRIP - Low Rate Initial Production

MDA - Milestone Decision Authority

MDAP - Major Defense Acquisition Program

MILCON - Military Construction

N/A - Not Applicable

O&M - Operations and Maintenance

O&S - Operating and Support

ORD - Operational Requirements Document

OSD - Office of the Secretary of Defense

PAUC - Program Acquisition Unit Cost

PB - President's Budget

PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
U.S. - United States
UCR - Unit Cost Reporting
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Amphibious Combat Vehicle Family of Vehicles

DoD Component

Navy

Responsible Office

Program Manager

Name: **Colonel Tim Hough**

Phone: **703-784-0844**

Email: **timothy.hough@usmc.mil** -

Mission and Description

On January 8, 2019, an ADM was approved to combine the Amphibious Combat Vehicle (ACV) 1.1 Personnel Carrier program and the future ACV 1.2 program into one MDAP. The recommendation was based on the demonstrated performance of the ACV 1.1 program meeting key requirements for the ACV 1.2 such as ship-to-shore capability. The Milestone C ADM also directed the continued development of ACV Mission Role Variants (MRVs). Thus, the vehicles reflected in the ACV Family of Vehicles (FoV) program are a personnel carrier variant (ACV-P), a command and control variant (ACV-C), a medium caliber cannon variant (ACV-30), and a maintenance/recovery variant (ACV-R). The ACV-C provides a modernized, armor protected tactical-echelon command post for the regiment or battalion. The ACV-30 mounts a stabilized, medium caliber weapon system capable of supporting dismounted maneuver while still embarking Marines, and the ACV-R provides field maintenance, recovery, and repair capabilities to the assault amphibian (AA) companies and battalion in support of the Marine division. The ACV serves as the near-term means to modernize Marine Corps AA battalions and provides the Marine Corps' Ground Combat Element with expeditionary, protected mobility, and will replace the legacy Assault Amphibian Vehicle (AAV). The ACV is capable of negotiating water obstacles, including use of the sea as maneuver space within the littoral operating area. The ACV provides protected mobility to embarked infantry, and possesses increased lethality to deliver accurate support-by-fire in support of dismounted infantry. The ACV's versatile land mobility allows it to operate effectively as part of the Ground Combat Element's (GCE) maneuver task force, as well as conduct mounted security operations in urban or restrictive terrain alongside other wheeled vehicles of the Marine Air Ground Task Force (MAGTF).

Executive Summary

ACV FoV

Program Highlights Since Last Report

Production is continuing on the ACV. 116 vehicles for LRIP ACV-P, 141 Full Rate Production (FRP) ACV-P, and 14 FRP ACV-C vehicles are on contract. All 116 LRIP ACV- Ps have been delivered including 4 Full-Up System Level (FUSL) vehicles. 64 FRP ACV-Ps have been delivered, with another 23 in production as of February 3, 2023.

92 vehicles have been fielded to 3d Assault Amphibian Battalion (AABn) and 47 vehicles have been fielded to Assault Amphibian School (AAS) for a total of 180 fielded vehicles. Following the CMC Decision Brief on December 15, 2022, ACVs planned fielding to II and III MEF will instead be provided to I MEF to fulfill priorities for AAS, 3d AABn and AVTB. Deputy Commandant for Plans, Policy and Operations released a new fielding plan on January 20, 2023, which facilitates fielding to III MEF by March 2024. Headquarters Marine Corps re-established the ACV Transition Task Force and a Transition Training Unit was established to build instructor capacity and proficiency certification processes for the Assault Amphibian Community.

ACV-C Developmental Testing completed at both Aberdeen Test Center (ATC) and the Amphibious Vehicle Test Branch (AVTB). The ACV-C Logistics Demonstration completed at AVTB in November 2021 and Follow-on Operational Test and Evaluation completed in February 2022. There were no unexpected test results and Director Operational Test and Evaluation Operational Testing and Live Fire Reports were finalized in March 2022. The Component Live Fire Report was also finalized in March 2022.

Safety of Use Message (SOU 141938Z Oct 22) remains in effect restricting surf zone operations until additional testing through AVTB data is collected and analyzed and proficiency re-certification of Marines and instructors can be executed. Re-certification of all Assault Amphibian School Instructors and 3d Assault Amphibian operators is being directed from the Transition Training Unit (TTU). Program Manager Advanced Amphibious Assault is revising its operational new equipment training course (OPNET) and field level maintenance course (FLMNET) to reflect necessary changes to ensure alignment between the TTU and instruction provided in OPNET 2.0 and FLMNET 2.0.

Training has been established through the New Equipment Training Team. New Equipment Training has been provided to all five 3d AA Bn Platoons to which ACVs have been fielded and AAS instructors. Additional training courses are planned for future units and additional AAS Marines.

PM AAA is conducting, supported by the Amphibious Vehicle Test Branch, High Surf Testing and testing at ATC to further understand the performance envelope and characteristics of the ACV in waves between four and six foot significant breaker height. Training and testing for AVTB crews conducting high surf testing began in December 2022. Marines from AVTB have conducted training in waves up to four feet across 114 runs. Official testing began January 14, 2023. To address a vehicle stranded in the surf on its side or on its roof, PM AAA will investigate (at ATC) the following two surf zone initiative tasks; 1) emergency egress of personnel from a submerged vehicle through the personnel door, and 2) self-righting; energy to capsize a broach vehicle within the surf zone. Additionally, PM AAA will understand conditions for an ACV to self-right at depth. Initial planning efforts have begun between PM AAA, ATC, and NSWCCD. Testing is planned to begin in March 2023, with a report delivered April/ May 2023.

Design work continues on the ACV Family of Vehicles. Following the Critical Design Review (CDR) May 17-19, 2022, the ACV-30 entered Phase 4 to build and test three production representative test vehicles. The ACV-30 Phase 4 contract was awarded August 15, 2022. The ACV-R Phase 1 contract was awarded on March 18, 2022. This phase covers design and development efforts for the ACV-R through CDR. The ACV-R Preliminary Design Review (PDR) was successfully held on February 7-8, 2023, and there were no critical Request For Actions (RFA).

History of Significant Developments Since Program Initiation	
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
Nov - 2022	FRP Lot 3a was awarded for 30 ACV-P vehicles with Continuing Resolution funds.
May - 2022	FRP Lot 2c was awarded for 14 ACV-C vehicles.
Mar - 2022	FRP Lot 2b was awarded for 36 ACV-P vehicles.
Dec - 2021	FRP Lot 2a was awarded for 33 vehicles with Continuing Resolution funds.
Feb - 2021	FRP Lot 1b was awarded for 36 vehicles.
Dec - 2020	FRP Lot 1a was awarded for 36 vehicles with Continuing Resolution funds.
Dec - 2020	Full Rate Production (FRP) Decision approved on December 08, 2020.
Nov - 2020	Initial Operational Capability declared on November 13, 2020.
Sep - 2020	Initial Operational Test and Evaluation successfully completed.
Feb - 2020	LRIP Lot 3b was awarded for 26 vehicles.
Dec - 2019	ACV Logistics Demonstration was completed on December 20, 2019.
Oct - 2019	LRIP Lot 3a was awarded for 30 vehicles with Continuing Resolution funds.
Jul - 2019	ADM approved LRIP Lot 3 to address production gap before full rate production.
Jan - 2019	ADM combining ACV 1.1 and ACV 1.2 into ACV Family of Vehicles (with additional variants).
Dec - 2018	LRIP Lot 2 was awarded for 30 vehicles.
Oct - 2018	ACV High Surf Test concluded and requirement was met.
Aug - 2018	Technical Interchange Meeting was held where BAE Systems presented design and implementation plans to correct issues identified during Operational Assessment. The approved ECPs will improve the crew's overall situational awareness.
Jul - 2018	Summit focus group was held at Camp Pendleton, CA. Output was a prioritized list of changes the government would like to be incorporated in the design.
Jun - 2018	Milestone C approval was granted. LRIP Lot 1 was awarded.
Dec - 2017	Marine Corps Requirements Oversight Council approved the CPD for ACV 1.1
Nov - 2017	Production Readiness Review was held.
Oct - 2017	EMD vehicle deliveries from both competitors complete.
Mar - 2017	Developmental Testing began.
Mar - 2016	The GAO dismissed the protest and the Stop Work Orders were lifted allowing production to continue on the vehicle builds.

Dec - 2015	General Dynamics filed a protest with the Government Accountability Office (GAO) resulting in Stop Work Orders being issued to both BAE Systems Land & Armaments and Science Application International Corporation which delayed the approval of the Milestone B.
Nov - 2015	Milestone B was achieved with the ADM authorizing entry into the EMD phase.
Nov - 2015	Two competitive EMD contracts were awarded to BAE Systems Land & Armaments and Science Applications International Corporation. Each contract was comprised of Fixed Price Incentive Firm Target, Firm Fixed Priced, and Cost Plus Fixed Fee CLINs).
Mar - 2015	Development Request For Proposal (RFP) Release Decision Point achieved with the ADM
Jun - 2014	Materiel Development Decision milestone achieved with the ADM) authorizing entry into the acquisition process at Milestone B.

Schedule

ACV FoV

Events	Milestone Baseline Objective	Current Baseline Objective/Threshold		Current Estimate/Actual	Deviation
Milestone B Complete	Nov 2015	Nov 2015	Nov 2015	Nov 2015	
Preliminary Design Review Complete	Jul 2016	Jul 2016	Jul 2016	Jun 2016	
Critical Design Review Complete	Jul 2016	Jul 2016	Jul 2016	Jun 2016	
Milestone C Complete	Jun 2018	Jun 2018	Jun 2018	Jun 2018	
Initial Operational Test & Evaluation Complete	Apr 2020	Sep 2020	Sep 2020	Sep 2020	
Full Rate Production Decision Complete	Jun 2020	Jun 2020	Dec 2020	Dec 2020	
IOC Complete	Aug 2020	Aug 2020	Feb 2021	Nov 2020	

Notes

Deviation Explanation

Performance

ACV FoV

Performance Characteristics				
Milestone Baseline	Current Baseline Objective/Threshold	Demonstrated Performance	Current Estimate/Actual	Deviation
(KPP) - Cyber Survivability				
	<p>The ACV will prevent, mitigate, and recover from cyber-attacks. The ACV shall prevent unauthorized external physical access to ports which connect to automotive Controller Area Network (CAN) bus(es) and J1939 network(s). The ACV shall allow only authorized users to update firmware and software on the system. The ACV shall not possess wireless capability beyond the C4I-related Government Furnished Equipment (GFE) systems. The ACV should counter attempted malicious data injection, other corruption, and denial of service activities. The ACV-C will possess additional cyber-related attributes.</p>	<p>The ACV will prevent, mitigate, and recover from cyber-attacks. The ACV shall prevent unauthorized external physical access to ports which connect to automotive CAN bus(es) and J1939 network(s). The ACV shall allow only authorized users to update firmware and software on the system. The ACV shall not possess wireless capability beyond the C4I-related GFE systems. The ACV-C will possess additional cyber-related attributes.</p>	<p>All cyber security requirements were successfully tested and evaluated in a Cooperative Vulnerability Identification (CVI)/Adversarial Cybersecurity Developmental Test (ACDT) and Cooperative Vulnerability Penetration Assessment conducted as part of the ACV cyber security test program. Details are provided in classified reports.</p>	<p>The ACV will prevent, mitigate, and recover from cyber-attacks. The ACV shall prevent unauthorized external physical access to ports which connect to automotive Controller Area Network (CAN) bus (es) and J1939 network(s). The ACV shall allow only authorized users to update firmware and software on the system. The ACV shall not possess wireless capability beyond the C4I related GFE systems. The ACV should counter attempted malicious data injection, other corruption, and denial of service activities. The ACV-C will possess additional cyber related attributes.</p>
(KPP) - Energy				

	An ACV should achieve at least 1.6 mpg across the land portion of the mission profile. ACV should consume less than 0.80 gph while stationary and providing 5.6 kW to power battle-command systems, weapon systems, and other key onboard systems.	An ACV shall achieve at least 1.28 mpg across the land portion of the mission profile. ACV shall consume less than 1.9 gph while stationary and providing 5.6 kW to power battle-command systems, weapon systems, and other key onboard systems.	Demonstrated 1.6 mpg (mission profile) 1.54 gph (idle)	An ACV should achieve at least 1.6 mpg across the land portion of the mission profile. ACV should consume less than 0.80 gph while stationary and providing 5.6 kW to power battle-command systems, weapon systems, and other key onboard systems.	
(KPP) - Payload					
	ACV-P shall carry a crew (3) and 13 embarked Marines with full combat loads (which includes 1st Day of Supply (DoS)), additional 2nd and 3rd DoS and combat essential equipment (CEE) totaling 8,500 lbs.	ACV-P shall carry a crew (3) and 13 embarked Marines with full combat loads (which includes 1st DoS), additional 2nd DoS and CEE totaling 7,600 lbs.	Accommodated crew of 3 and 13 Infantry with required loads.	ACV-P shall carry a crew (3) and 13 embarked Marines with full Combat loads (which includes 1st Day of Supply (DoS)), additional 2nd and 3rd DoS and CEE totaling 8,500 lbs.	
(KPP) - Sea Connectors					
	The ACV at GVW, without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the Landing Craft Air Cushioned (LCAC) 100 at GVW.	(T=O) The ACV at GVW, without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the LCAC 100 at GVW.	Accommodated 2 ACV-Ps with LCAC operational limitation for weight	The ACV at GVW, without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the LCAC 100 at GVW.	
(KPP) - Sustainment Materiel Availability					
	The ACV should have a Materiel Availability of 90% defined as "operational end items/total population".	The ACV shall have a Materiel Availability of 75% defined as "operational end items/total population".	0.93	The ACV should have a Materiel Availability of 90% defined as operational end items/total population.	

(KPP) - Sustainment Operational Availability

	ACV should have an Operational Availability of 90%.	ACV shall have an Operational Availability of 81%.	91% Director, Operational Test & Evaluation	ACV should have an Operational Availability of 90%.	
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(KPP) - System Survivability: Egress Kill Zone/Protected Fuel

	Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV should be capable of maneuvering for 25 miles on level primary roads without manual manipulation of any fuel system components or repair.	Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV shall be capable of maneuvering for 5 miles on level primary roads without manual manipulation of any fuel system components or repair.	Demonstrated 86.3 miles	Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV should be capable of maneuvering for 25 miles on level primary roads without manual manipulation of any fuel system components or repair.	
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(KPP) - Water Mobility

	ACV up to GVW shall be capable of ship-to-shore maneuver from distances of 12 NM in water conditions up through 3 ft. SWH to land an infantry company ashore.	(T=O) ACV up to GVW shall be capable of ship-to-shore maneuver from distances of 12 NM in water conditions up through 3 ft. SWH to land an infantry company ashore.	Demonstrated 12 NM ship-to-shore in required conditions	ACV up to GVW shall be capable of ship-to-shore maneuver from distances of 12 NM in water conditions up through 3 ft. SWH to land an infantry company ashore.	
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Requirement Reference

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Validated:
ACV FoV CDD Version 2.0 (MROC Approved) dated July 16, 2019.

Deviation Explanation

No deviations for this program/subprogram

Notes

None

Acquisition Budget Estimate

ACV FoV

Total Acquisition Cost

		Milestone APB	Current Baseline		Budget Estimate PB 2024		
Category	Base Year	Objective (BY\$M)	Objective (BY\$M)	Threshold (BY\$M)	BY\$M	TY\$M	Deviation
RDT&E	2014	769.3	1,095.3	1,204.8	1,132.8	1,256.2	
Procurement	2014	1,035.9	3,663.8	4,030.2	3,649.1	4,525.7	
MILCON	2014	21.4	64.5	71	18.5	22	
Acq. O&M	2014	9.1	14.4	15.8	15.4	17.8	
Total		1,835.7	4,838.0		4,815.8	5,821.7	
PAUC	2014	7.649	7.136	7.850	7.113	8.599	
APUC	2014	5.078	5.797	6.377	5.774	7.161	

Appropriation Category Deviation Explanations

PAUC Deviation Explanation

APUC Deviation Explanation

Budget Notes

The current APB dated November 24, 2020 is based on the Component Cost Position approved by ASN (RD&A) during the FRP decision on November 20, 2020. Program resources beyond FY26 are earmarked for the planned ACV Modifications Line and signify the start of the operations and support phase for the program; as such, these resources should not be counted against the program APB. Program resources in FY27 include \$45.463M of RDT&E, \$121.269M of PMC, and \$7.68M of Acquisition O&M which are planned for the ACV Modifications Line. These resources will be moved to a separate PE to properly align with the program APB.

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	46	45
Procurement	632	632
O&M-Acquired		

Quantity Notes

RDT&E quantity: Program plans to procure one less Production Representative Test Vehicle (PRTV) for ACV-R than originally planned in FY 2023; program will procure three PRTVs instead of four. PMC quantity: The program plans to only procure 31 ACV-Cs as new and will refurbish two ACV-C PRTVs and field them in FY 2023. The total number of fielded ACV-Cs remains 33 vehicles, and the AAO remains unchanged at 632 vehicles.

Unit Cost**ACV FoV**

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Category (\$M) Base Year:2014	Current UCR Baseline	Current Estimate	% Change
Program Acquisition Unit Cost			
Cost	4,838.0	4,815.8	
Quantity	678	677	
Unit Cost	7.136	7.113	-0.32%
Average Procurement Unit Cost			
Cost	3,663.8	3,649.1	
Quantity	632	632	
Unit Cost	5.797	5.774	-0.40%

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Category (\$M) Base Year:2014	Original UCR Baseline	Current Estimate	% Change
Program Acquisition Unit Cost			
Cost	1,826.9	4,815.8	
Quantity	240	677	
Unit Cost	7.612	7.113	-6.55%
Average Procurement Unit Cost			
Cost	1,015.5	3,649.1	
Quantity	204	632	
Unit Cost	4.978	5.774	15.99%

Cost Growth Details**Current Baseline PAUC Breach Explanation****Current Baseline APUC Breach Explanation****Original Baseline PAUC Breach Explanation****Original Baseline APUC Breach Explanation****Impacts of Schedule Changes on Unit Cost****Impacts of Performance Changes on Unit Cost**

There is no deviation or % change. The program cost is performing to the APB.

Actions Taken or Proposed to Control Future Cost Growth

A forward production rate agreement (FPRA) is in place to fix labor costs. A foreign exchange rate agreement is in place to limit

impacts to program costs from changes in the value of the euro.

Risk and Sensitivity Analysis**ACV FoV****Risk and Sensitivity Analysis****Current Procurement Cost(November - 2020)**

The current procurement cost estimate is the Component Cost Position that was approved for Full Rate Production in November 2020 and is the current APB. The estimate is approximately the 50th percentile cost estimate, i.e. it is equally likely that the estimate will prove too high or too low. The ACV FoV CCP was developed within an industry cost estimating tool (ACEIT) that incorporates cost risk and uncertainty. The cost uncertainty distribution graph (aka S-curve) and it's coefficient of variation indicated that the cost model has little sensitivity to individual and correlated cost changes.

Original Baseline Estimate (May - 2016)

The Current Baseline Estimate (May 2016) is ACV's Original Baseline Estimate (November 2015).

Current Baseline Estimate (November - 2020)

Schedule Risk		
Current	2022-12-31	<p>Schedule Risk: If BAE Systems and PM AAA cannot reduce ACV-30 development and test schedule, a gap will occur between ACV-P and ACV-30 production in FY25 which will increase vehicle cost and ACV-30 fielding to the FMF will be delayed. Mitigation:</p> <ol style="list-style-type: none"> 1. Conduct combined DT/OT. (On-going) 2. Incentivize early delivery of PRTVs. (On-going) 3. Shorten time from test completion to FRP decision (On-going) 4. Order long-lead items prior to FRP decision (On-going) 5. Fill production gap with other variant or Foreign Military Sales (On-going)
Current	2022-12-31	<p>Schedule Risk: If BAE Systems cannot increase their production capacity from 5 vehicles per month at the Full Rate Production (FRP) decision to 9 vehicles per month in FY 2025 due to facilities and personnel deficiencies, then vehicle delivery delays will impact the fielding plan. Mitigation:</p> <ol style="list-style-type: none"> 1. Review BAE Systems' proposed delivery schedule. (Completed) 2. Program Office on-site monitoring at York. (On-going) 3. Assembly line has been designed to expand from 4 (EMD) to 8 (LRIP) stations. (Completed) 4. BAE Systems implements proposed capital investments to achieve FRP capability. (On-going) 5. BAE Systems completes additional staffing process to support increase level of production. (On-going) 6. BAE Systems completes evaluation an implementation of process improvements and station re-arrangements in the assembly area to increase level of production. (On-going)
Technical Risks		

Current	December 22, 2022	<p>Technical Performance - Corrosion is present on ACV 1.1 LRIP Lot 1 vehicles. ACV corrosion surveys, Log Demo, and PQDRs identified multiple areas of corrosion and instances of rust-welded in place fasteners. LRIP corrosion surveys verified BAE Systems' design changes to LRIP vehicles were insufficient to improve ACV corrosion performance. Mitigation:</p> <ol style="list-style-type: none"> 1. PM AAA, USMC CPAC, & BAE Systems' stakeholders, as part of recurring corrosion working group discussions, compile, track and prioritize issues and develop candidate corrective action. (On-going) 2. Corrective action of initial reliability related issues, alternator & CTIS, included as part of FRT. (On-going) 3. NSWC Carderock LRIP survey and requirements compliance assessment completed. Reviewed with BAE and awaiting response. 4. Vehicle cover evaluation initiated with AAS vehicles. Three vendors participating. (On-going). Corrective actions to include design ECPs, integration and assembly process changes, and TM updates. (On-going)
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Low Rate Initial Production

ACV FoV

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	11/19/2015	06/19/2018
Approved Quantity	56	116
Reference	Milestone B ADM	ADM dated July 12, 2019
Start Year	2018	2018
End Year	2020	2020

Rationale if quantity exceeds 10% of the total number of articles to be procured:

The Current Total LRIP Quantity is more than 10% of the total production quantity in order to remove the gap in production leading into Full Rate Production. The gap would negatively impact BAE's skilled labor force and the planned ramp up for Full Rate Production. It was noted that this additional quantity exceeded 10% of the ACV Family of Vehicles Program Authorized Acquisition Objective (632 vehicles).

Notes

N/A

Contracts & Efforts

Contract Data	
Contract Number	M67854-16-C-0006
Effort Number	
Modification Number	P00163
Award Date	11/24/2015
Definitization Date	01/25/2022
Order Number	
CAGE Code/CAGE Legal Name	7B726/BAE Systems Land & Armaments LP
Contract Title	ACV Family of Vehicles
Contract Address	Sterling Heights, MI
Contracting Office	
Supported Phase	Production
Contract Strategy	
Contract Type	Firm-Fixed-Price
Modification Date	
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TY\$M)		
Initial Target Price	Current Target Price	
\$2,068.8	\$2,068.8	
Initial Ceiling Price	Current Ceiling Price	
\$2,082.2	\$2,082.2	
Contractor EAC	PM EAC	
Initial Quantity	Current Quantity	Delivered Quantity
16	320	176
BAC	BCWP	ACWP

BCWS	Cost Variance	Schedule Variance

Contract Notes:

BAE Contract Notes: The Program Office received a waiver of EVM on March 19, 2015 prior to Milestone B based on the limited duration of work to be performed in which EVM would apply. The cost of certifying an EVM System at multiple sites versus the benefit achieved due to the low level of residual risk after the application of alternative management controls was not beneficial nor did it produce actionable results. However, the Program Office receives monthly Integrated Program Management Reports including Schedule Risk Assessments, Cost Schedule Data Reports, and Contract Funding Status Reports from the prime contractor in order to track and manage cost, schedule and performance. The ACV 1.1 was competitively down-selected to BAE Systems, and the Contract Option for LRIP Lot 1 was awarded in June 2018. In addition, the following vehicle options were exercised: LRIP Lot 1 in June 2018; LRIP Lot 2 in December 2018; LRIP Lot 3A in October 2019; LRIP Lot 3B in February 2020; FRP Lot 1A in November 2020; FRP Lot 1B in February 2021; and FRP Lot 2A in December 2021. FRP Lot 2B in March 2022; FRP Lot 2C in May 2022; and FRP Lot 3A in November 2022. Lastly, the ACV-30 Production Representative Test Vehicles were awarded in August 2022.

Cost Variance: Cost Variance reporting is not required on this (FPIF/FFP/CPFF) contract.

Schedule Variance: Schedule Variance reporting is not required on this (FPIF/FFP/CPFF) contract.

Factors Contributing to Cost Variance and Projected Effects on Program Costs**Factors Contributing to Schedule Variance and Projected Effects on Program Schedule**

Contract Data	
Contract Number	M67854-16-C-0007
Effort Number	
Modification Number	P00059
Award Date	11/24/2015
Definitization Date	10/14/2021
Order Number	
CAGE Code/CAGE Legal Name	6XWA8/Science Applications International Corporation (SAIC)
Contract Title	ACV 1.1
Contract Address	McLean, VA
Contracting Office	
Supported Phase	Production
Contract Strategy	
Contract Type	Firm-Fixed-Price
Modification Date	
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$218.1	\$218.1	
Initial Ceiling Price	Current Ceiling Price	
\$228.9	\$228.9	
Contractor EAC	PM EAC	
Initial Quantity	Current Quantity	Delivered Quantity
16	16	16
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

SAIC Contract Notes: The Program Office received a waiver of EVM on March 19, 2015 prior to Milestone B based on the limited duration of work to be performed in which EVM would apply. The cost of certifying an EVM System at multiple sites versus the benefit achieved due to the low level of residual risk after the application of alternative management controls was not beneficial nor did it produce actionable results. However, the Program Office receives monthly Integrated Program Management Reports including Schedule Risk Assessments, Cost Schedule Data Reports, and Contract Funding Status Reports from the prime contractor in order to track and manage cost, schedule and performance.

Cost Variance: Cost Variance reporting is not required on this (Fixed Price Incentive Fee (FPIF)/Firm Fixed Price (FFP)/Cost Plus Fixed Fee (CPFF) contract).

Schedule Variance: Schedule Variance reporting is not required on this (FPIF/FFP/CPFF) contract.

Factors Contributing to Cost Variance and Projected Effects on Program Costs**Factors Contributing to Schedule Variance and Projected Effects on Program Schedule**

External Government Activities

Activity Title		Government Entity	Supported Phase
CAGE		Work Start Date	
City		State/Province:	
Notes			

Deliveries and Expenditures

ACV FoV

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development		39	45	86.67%
Production		176	632	27.85%
Total Program Quantity Delivered	0	215	677	31.76%

Expended and Appropriated (TY \$M)

Years Appropriated to date: 11

Total Years Appropriated Funding (Current Baseline): 14

Percent Years Appropriated: 78.57%

Then-Year Funding Appropriated as Percentage of Total Acquisition Estimate: 56.40%

Then-Year Funding Expended as Percentage of Total Acquisition Estimate: 31.04%

Total Acquisition Cost: 5,821.65

Deliveries & Expenditures Notes:

The above data is current as of March 13, 2023.

Operating and Support Costs

ACV FoV

O&S Cost Breakdown:

Category (BY\$ Million)	ACV 1.1
Unit-Level Manpower	.2
Unit Operations	.0
Maintenance	.2
Sustaining Support	.2
Continued System Improvements	.0
Other	.0
Total	.7

Cost Estimate Source: CCP dated November 03, 2020

O&S Cost Notes:

Total Program O&S Cost Compared with Baseline					
	Current Baseline				
	Objective (BY\$M)	Threshold (BY\$M)	Current Estimate (BY\$M)	Current Estimate (TY\$M)	Deviation
Total O&S	8,011.4	8,808.5	8,233	13,048.5	

Note:

This is the total O&S phase costs for FY 2014-FY 2049.

O&S Cost Deviation Explanation

Operating and Support Costs - Disposal and Unitized Costs**ACV FoV****Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:**

Sustainment Factors	System Name: ACV FoV	Antecedent System Name: AAV
Quantity to Sustain	632	1313
Unit of Measure	Vehicles	Vehicles
Unit Expected Service Life	20	20

Base Year:

Annual Unitized O&S Cost by Category Base Year \$ Unit:(\$M)	System Name: ACV FoV	Antecedent System Name: AAV
Unit-Level Manpower	0.2	0.3
Unit Operations	0.0	0.0
Maintenance	0.2	0.2
Sustaining Support	0.2	0.2
Continued System Improvements	0.0	0.1
Other	0.0	0.0
Total O&S	0.7	0.9

Disposal/Demilitarization Cost Estimate

(Base Year \$Millions)	System Name: ACV FoV	Antecedent System Name: AAV
Total Disposal	10.0	

Cost Estimate Source - Disposal	
Type:	Component Cost Position
Approval Authority and Date:	ASN RDA 11/24/2020
Note:	
Disposal Cost Notes:	
Estimated cost for disposal is \$12.5K/vehicle BY\$14. Cost per USMC DRMO facility.	
Additional O&S Estimate Assumptions:	
Sustainment Strategy:	

The ACV will be maintained utilizing uniformed Marines and the maintenance program structure outlined in Marine Corps Order 4790.23 Ground Equipment Maintenance Program (GEMP). The GEMP defines that structure utilizing a Field (which includes Organic and Intermediate level maintenance) and Depot capability. Field maintenance is performed by specially trained and equipped operators, crews, mechanics, and technicians within established organizations and activities. These include requisite advanced Military Occupational Specialty training for intermediate maintenance operations in either a direct or general support capacity. In most cases, field maintenance will be performed by uniformed Marine personnel within organizational maneuvering and intermediate supporting units. Depot maintenance can be conducted by the Marine Corps' organic depots, other service depots, commercial industrial facilities, Original Equipment Manufacturers, or a combination thereof throughout the logistics chain framework.

Antecedent Estimate Assumptions:

The Antecedent System is the Assault Amphibious Vehicle (AAV). It is important to note that the AAV program included multi-role variants such as a Personnel, Command & Control, and Recovery variant, whereas the estimate for ACV 1.1 includes only a Personnel variant. Now that the ACV 1.1 and 1.2 programs have been merged, future estimates will reflect Personnel, Command & Control, Lethality, and Recovery variants for ACV thus allowing for a better basis of comparison.