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Marine Corps Advanced Reconnaissance Vehicle (ARV)

What Is the Advanced Reconnaissance Vehicle (ARV)?

According to the Marine Corps, the Advanced Reconnaissance Vehicle (ARV) aims to be a new armored vehicle family to replace the Light Armored Vehicle (LAV) (**Figure 1**):

Since the 1980s, the Light Armored Vehicle (LAV) has supported Marine Air-Ground Task Force missions on the battlefield. While the LAV remains operationally effective, the life cycle of this system is set to expire in the mid-2030s.... The Advanced Reconnaissance Vehicle (ARV) will be highly mobile, networked, transportable, protected, and lethal. The capability will provide, sensors, communication systems and lethality options to overmatch threats that have historically been addressed with more heavily armored systems.

Figure 1. U.S. Marine Corps Light Armored Vehicle (LAV)



Source: <https://www.marines.mil/News/News-Display/Article/1817404/marine-corps-plans-to-replace-lav-with-new-transformational-arv/>, accessed May 5, 2021.

ARV Desired Operational Capabilities

According to a Marine Corps May 2019 briefing, some of the ARV's desired operational capabilities include:

- an automatic medium-caliber cannon;
- anti-armor capability to defeat close-in heavy armor threats;
- precision-guided munitions (PGMs) to defeat threats beyond the engagement range of threat systems;
- unmanned systems swarm capability to provide persistent, multifunction munitions;
- advanced, networked, multifunctional electronic warfare (EW) capabilities;

- a modern command-and-control suite and a full range of sensors;
- organic unmanned aerial and ground systems (UAS/UGS) that can be deployed from the ARV;
- active and passive vehicle protection; and
- robust cross-country/on-road mobility performance with *shore-to-shore* water mobility.

ARV in Marine Corps Force Structure

The ARV is to be the primary combat system in Light Armored Reconnaissance (LAR) Battalions. The mission of the LAR Battalion is to

- Conduct mounted and dismounted reconnaissance, surveillance, and security operations in support of maneuver.
- Conduct offensive and defensive actions, deception, and raids to create decisive conditions for the Marine Division and the supported unit commander.

Program Status

The Marines plan for a number of ARV variants—referred to as a “family of vehicles.” The first described variant is the Command, Control, Communications and Computers/Unmanned Aircraft Systems (C4/UAS) version. Reportedly, on July 16, 2021, the Marines selected Textron Systems and General Dynamics Land Systems to build ARV prototypes with prototype delivery expected in the first quarter of FY2023 with evaluation of the prototypes concluding in the third quarter FY2023. If prototype testing proves successful, the Marines Corps could then initiate a production effort potentially worth an estimated \$1.8 billion to \$6.8 billion over five years. Textron (**Figure 2**) and General Dynamics (**Figure 3**) submitted proposals for prototype ARVs to the Marines for testing and evaluation in May 2021. According to Navy FY2023 budget documents, in 2022 and 2023, the Marines will continue prototyping and testing Textron and General Dynamics ARV candidate vehicles. The Marines will also examine if a modified Amphibious Combat Vehicle (ACV), currently being fielded to Marine units, might be adapted for use as an ARV.

Figure 2. Notional Textron ARV

Source: Defense Daily, “GD Submits Prototype Proposal For Marine Corps ARV, SAIC Is Out,” May 6, 2021.

Figure 3. Notional General Dynamics ARV

Source: Defense Daily, “GD Submits Prototype Proposal For Marine Corps ARV, SAIC Is Out,” May 6, 2021.

The ARV and the Marine Corps 2030 Force Design Initiative

In March 2020, the Marines undertook a major force design initiative planned to occur over the next 10 years. The Marine Corps intends to redesign the force for naval expeditionary warfare and to better align itself with the National Defense Strategy. In February 2021, the Marines updated the Secretary of Defense on the progress on force design initiatives. The March 2020 force design initiative plan raises questions that some have about the role or even the desirability of the ARV in future force design. According to the Commandant of the Marine Corps, General David Berger:

While I have repeatedly stated that all-domain reconnaissance and counter-reconnaissance will be a critical element of any future contingency, I remain unconvinced that additional wheeled, manned armored ground reconnaissance units are the best and only answer – especially in the Indo-Pacific region. We need to see more evidence during Phase III to support this conclusion before engaging in an expansion of our existing capacity, or committing billions of dollars in procurement funds towards the acquisition of an Advanced Reconnaissance Vehicle (ARV). (See page 10)

In the Marine’s February 2021 force design update to the Secretary of Defense, the Commandant further noted:

The 12 Light Armored Reconnaissance (LAR) Companies identified in the initial Force Design Report must be re-evaluated in light of the emerging concept of multi-domain mobile reconnaissance. This may affect the overall requirement for armored land mobility in the form of the Advanced Reconnaissance Vehicle (ARV). (See pages 5-6)

In the Marine’s May 2022 force design update to the Secretary of Defense, the Commandant directed the Marines to

[r]eview and validate all assumptions regarding programmed or potential future capabilities, such as the Amphibious Combat Vehicle (ACV)-30 and Advanced Reconnaissance Vehicle (ARV) (See page 9).

These three statements arguably raise questions regarding the future of the ARV program, seemingly implying that the ARV might not be the best solution for the Marines’ reconnaissance needs.

FY2023 ARV Budget Request

Table 1. FY2023 ARV Budget Request

Funding Category	Total Request (\$M)	Total Request (Qty.)
RDT&E	\$70.583	—

Source: United States Department of Defense Fiscal Year 2023 Budget Request, Navy Justification Book, Volume 2 of 5, Research, Development, Test & Evaluation, April 2022, p. 699.

Notes: RDT&E = Research, Development, Test & Evaluation; \$M = U.S. dollars in millions; Qty. = FY2023 procurement quantities.

Potential Questions for Congress

- In view of the Commandant’s statements in 2020, 2021, and 2023 regarding the need for the ARV, what is the Marine Corps’ current official position on the operational requirement to procure the ARV?
- If the requirement for the service’s LAR companies and the ARV “must be re-evaluated,” as stated in the February 2021 update, what are the Marines’ plans to re-evaluate this requirement? If there is to be a re-evaluation, when will the results be communicated to Congress?

For additional information on the Marine Corps 2030 Force Design Initiative, see CRS Insight IN11281, *New U.S. Marine Corps Force Design Initiatives*, by Andrew Feickert.

For additional information on the Marine’s Amphibious Combat Vehicle (ACV), see CRS Report R42723, *Marine Corps Amphibious Combat Vehicle (ACV): Background and Issues for Congress*, by Andrew Feickert.

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