GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Weapon System Sustainment
Various Challenges Affect Ground Vehicles' Availability for Missions

GAO-25-108679
September 2025

A report to the Committee on Armed Services, House of Representatives

Source: U.S. Marine Corps/Lance Corporal Justin Marty

GAO

Defense Capabilities and Management Team

Weapon System Sustainment

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Highlights of **GAO-25-108679**

September 2025

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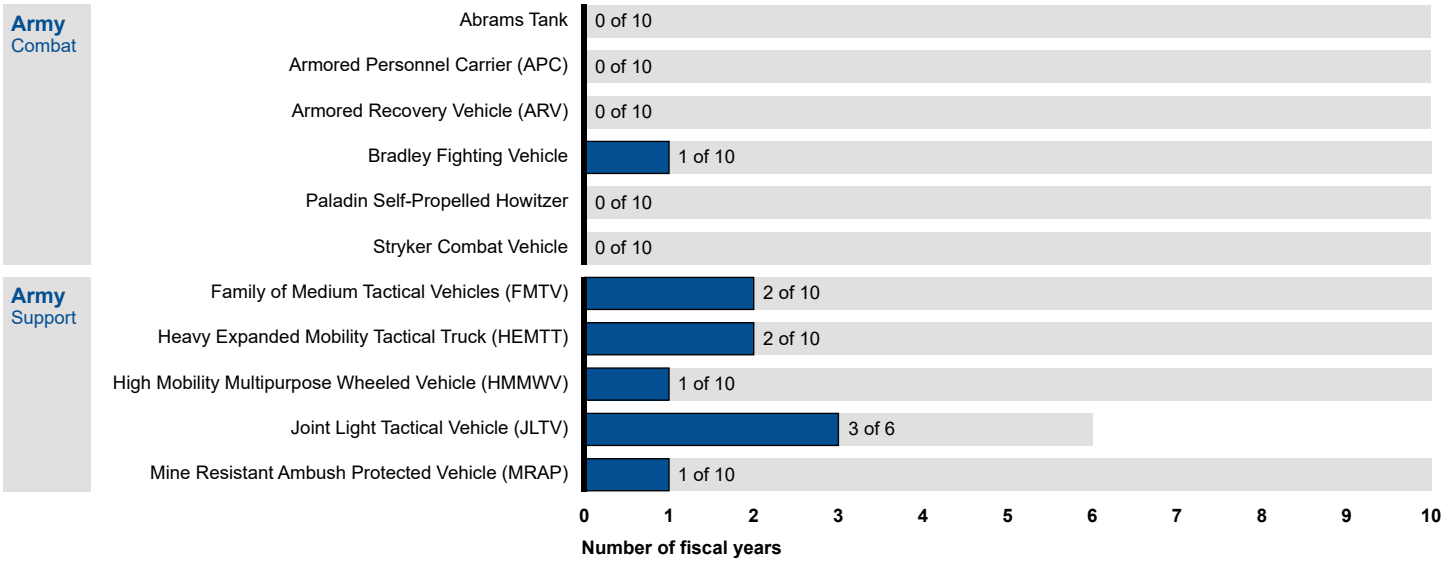
Mission Capable Rates Trends for Selected Army and Marine Corps Ground Vehicles

Five of six selected Army ground combat vehicles did not meet mission capable goals in any fiscal year (FY) during the time frame of GAO's review. In the same time frame, selected Army ground support vehicles achieved mission capable goals about 20 percent of the time. The Marine Corps does not have a mission capable goal for its ground vehicles, though two of seven selected vehicles achieved positive changes in mission capable rates when comparing fiscal years 2015 and 2024.

Number of Years That Army Ground Vehicles Met Mission Capable Goals in Fiscal Years 2015 through 2024



Source: GAO analysis of Army data. | GAO-25-108679

Sustainment Challenges Affecting Army and Marine Corps Ground Vehicles

Nine sustainment challenges have affected the ground vehicle fleets as shown in the figure on the next page. According to Army and Marine Corps officials, two challenges affected all 18 ground vehicles in this review: a lack of parts and materiel and not having current technical data or drawings. Further, other sustainment challenges that affected many ground vehicles included a shortage of trained or skilled maintainers, service-life issues, and unplanned maintenance.

GAO found that the number of overhauls performed by Army depots dropped from 1,278 in FY 2015 to 12 in FY 2024. A senior Army official stated that the Army accepted the risk from the decision to reduce funding for overhauls. Army officials also said reducing overhauls negatively affected the mission capable rates of most vehicles. Further, the Army partially mitigated declining overhauls by harvesting parts from vehicles being phased out of service. Also, the Marine Corps reduced the number of depot overhauls from 725 in FY 2015 to 163 in FY 2024. Marine Corps officials said they have not begun performing overhauls on two recently fielded vehicles and stopped performing overhauls on two others it is phasing out of service.

Army and Marine Corps Identified Sustainment Challenges Affecting Selected Ground Vehicles

Source: GAO analysis of Army and Marine Corps data. | GAO-25-108679

Even as mission capable rates and depot overhauls have declined, the cost of maintaining Army and Marine Corps vehicles has gone up for most selected ground vehicles. Since FY 2015, GAO found the Army's maintenance costs increased for 9 of the 11 ground vehicles in GAO's review. For example, when comparing FY 2015 to FY 2023, the Abrams experienced a fleet-wide increase in maintenance costs of $181.3 million and per-vehicle maintenance costs nearly doubled. Meanwhile, availability rates were below the Army's goal. The Marine Corps' fleet-wide maintenance costs decreased, although its per-vehicle maintenance costs increased for four of seven vehicles in GAO's review.

Why This Matters

The Department of Defense (DOD) spends billions of dollars annually to sustain its weapon systems, including ground vehicles, to ensure that these systems are available to support defense requirements. In FY 2023, the Army and Marine Corps spent more than $2.3 billion combined on depot maintenance of their ground vehicles. Ground vehicles are one type of weapon system sustained by DOD to conduct their missions. Weapon systems are costly to sustain, in part, because they often incorporate a complex array of technical subsystems and components and need expensive repair parts and logistics support to meet required readiness levels.

How GAO Did This Study

For the 18 selected Army and Marine Corps ground vehicles that provide combat and support roles, this report examines vehicle availability rates in FY 2024, the types of sustainment challenges affecting ground vehicles, and maintenance costs. GAO performed site visits to Army and Marine Corps depots, interviewed cognizant officials, collected and analyzed data about mission capable rates and cost, among other things, and determined the data were sufficiently reliable for the purposes of this review. Further, GAO collected information on what actions the services have taken to address the sustainment challenges. This is a public version of a sensitive report GAO issued in August 2025. GAO omitted information that DOD deemed Controlled Unclassified Information.

For more information, please contact Director Diana Maurer at maurerd@gao.gov.

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Abbreviations

AAV	Assault Amphibious Vehicle
ACV-P	Amphibious Combat Vehicle-Personnel Carrier
AMC	Army Materiel Command
APC	Armored Personnel Carrier
ARV	Armored Recovery Vehicle
CUI	Controlled Unclassified Information
DLA	Defense Logistics Agency
DOD	Department of Defense
FMTV	Family of Medium Tactical Vehicles
FMC	Fully Mission Capable
HEMTT	Heavy Expanded Mobility Tactical Truck
HMMWV	High Mobility Multipurpose Wheeled Vehicle
JLTV	Joint Light Tactical Vehicle
LAV	Light Armored Vehicle
LVSR	Logistics Vehicle System Replacement
MC	Mission Capable
MRAP	Mine Resistant Ambush Protected Vehicle
MTVR	Medium Tactical Vehicle Replacement
NMCM	Not Mission Capable Maintenance
NMCS	Not Mission Capable Supply
TACOM	Army Tank-automotive and Armaments Command

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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September 25, 2025

The Honorable Mike Rogers
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Department of Defense (DOD) spends tens of billions of dollars annually to sustain its weapon systems—including ground vehicles, aircraft, and ships—to ensure that these systems are available both to support today's military operations and for future defense requirements. In fiscal year (FY) 2023, the Army and Marine Corps spent more than $2.3 billion combined on depot maintenance of their ground combat vehicles.

Ground vehicles (including vehicles such as tanks, personnel carriers, and self-propelled artillery systems; trucks for hauling fuel and supplies; and light, armored vehicles for transporting personnel and cargo) all require sustainment throughout their life cycle. Historically, the costs to sustain a weapon system from initial operations through the end of its life account for approximately 70 percent of a weapon system's total life-cycle cost. These costs include repair parts, depot and field maintenance, contract services, engineering support, and personnel. Weapon systems are costly to sustain, in part because they often incorporate a complex array of technical subsystems and components and need expensive repair parts and logistics support to meet required readiness levels.

House Report 118-125, accompanying a bill for the National Defense Authorization Act for Fiscal Year 2024, includes a provision for us to continue periodic Sustainment Quick Look reviews focused on the availability, condition, and operations and sustainment costs for selected DOD major weapon systems.[1] This report examines, for selected Army and Marine Corps ground vehicles, the: (1) availability rates in FY 2024

[1]H.R. Rep. No. 118-125, at 112 (2023). For our two most recent sustainment reviews, see the following: GAO, *Weapon System Sustainment: Aircraft Mission Capable Goals Were Generally Not Met and Sustainment Costs Varied by Aircraft*, GAO-23-106217 (Washington, D.C.: Nov. 10, 2022) and *Weapon System Sustainment: Navy Ship Usage Has Decreased as Challenges and Costs Have Increased*, GAO-23-106440 (Washington, D.C.: Jan. 31, 2023).

and how those rates have changed since FY 2015; (2) the types of sustainment challenges affecting these ground vehicles and changes in depot maintenance since 2015; and (3) how maintenance costs have changed over time. In addition, we provide 18 individual Sustainment Quick Looks that sometimes include multiple variants of a particular ground vehicle in operation as of FY 2024. These Sustainment Quick Looks include detailed information on each ground vehicle fleet's availability, sustainment, and maintenance costs.

This report is a public version of a sensitive report that we issued in August 2025. DOD deemed some of the information in our August report to be controlled unclassified information, which must be protected from public disclosure. Therefore, we omitted from this report controlled unclassified information, including graphics, about the Army's and Marine Corps's highest- and lowest- performing ground vehicles, and specific vehicle mission capable rates and non-mission capable rates over time. Although the information provided in this report is more limited, the report addresses the same objectives as the sensitive report and uses the same methodology.

To address our objectives, we selected 18 types of Army and Marine Corps ground vehicles. In selecting these ground vehicles, we considered several factors including the vehicles being self-propelled, acquisition category I programs, and actively fielded by their respective services at the end of FY 2024.[2]

For objective one, we collected and analyzed data for the Army and Marine Corps for FY 2015 through 2024 on key metrics including mission capable rates. We also obtained information, including written responses and in-person interviews, from program office officials regarding the reasons for trends in mission capable rates. Additionally, we collected and analyzed data on depot overhauls of the selected ground vehicles.

For objective two, we reviewed our previous reports on DOD depots, naval and aviation sustainment, and operational sustainment reviews from the Army and Marine Corps to identify potential sustainment

[2]Acquisition Category I programs have the highest level of oversight and are Major Defense Acquisition Programs. These programs are those that are not a highly sensitive classified program and are designated as such; or that are estimated to require an eventual total expenditure for research, development, test, and evaluation, including all planned increments, of more than $525 million (Fiscal Year 2020 constant dollars) or, for procurement, including all planned increments, of more than $3.065 billion (Fiscal Year 2020 constant dollars).

challenges for the selected ground vehicles.[3] We collected additional challenges and responses to previously identified challenges through interviews and written responses from program officials and officials at military depots. We assessed the services not mission capable rates and the reasons for them. Further, we collected information on what actions, if any, the services have taken to address the identified sustainment challenges.

For objective three, we collected and analyzed maintenance cost data from the Army and Marine Corps cost reporting systems. Specifically, we collected and analyzed Army maintenance cost data for FY 2015 through 2023, and Marine Corps maintenance cost data for FY 2015 through 2024. For each service, this was the last fiscal year for which complete data were available at the time of our analysis. We also obtained information through written responses and in-person interviews from program office officials about the reasons for changes and trends in maintenance costs.

We assessed the reliability of the Army and Marine Corps data used in our report. To do this, we reviewed related documentation; held interviews with knowledgeable agency officials; and performed electronic data testing for missing data, outliers, and obvious errors. As a result, we determined these data to be sufficiently reliable for the purposes of summarizing trends since FY 2015 in mission capable rates and operating and support costs. Appendix I provides further information on our scope and methodology.

The performance audit upon which this report is based was conducted from January 2024 to August 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We subsequently worked with DOD from August to September 2025 to

[3]GAO-23-106217; GAO-23-106440; *Military Depots: Army and Marine Corps Need to Improve Efforts to Address Challenges in Measuring Performance and Planning Maintenance Work*, GAO-20-401 (Washington, D.C.: July 16, 2020); and *Depot Maintenance: DOD Should Adopt a Metric That Provides Quality Information on Funded Unfinished Work*, GAO-19-242 (Washington, D.C.: July 26, 2019).

prepare this public version of the original sensitive report. This public version was also prepared in accordance with those standards.

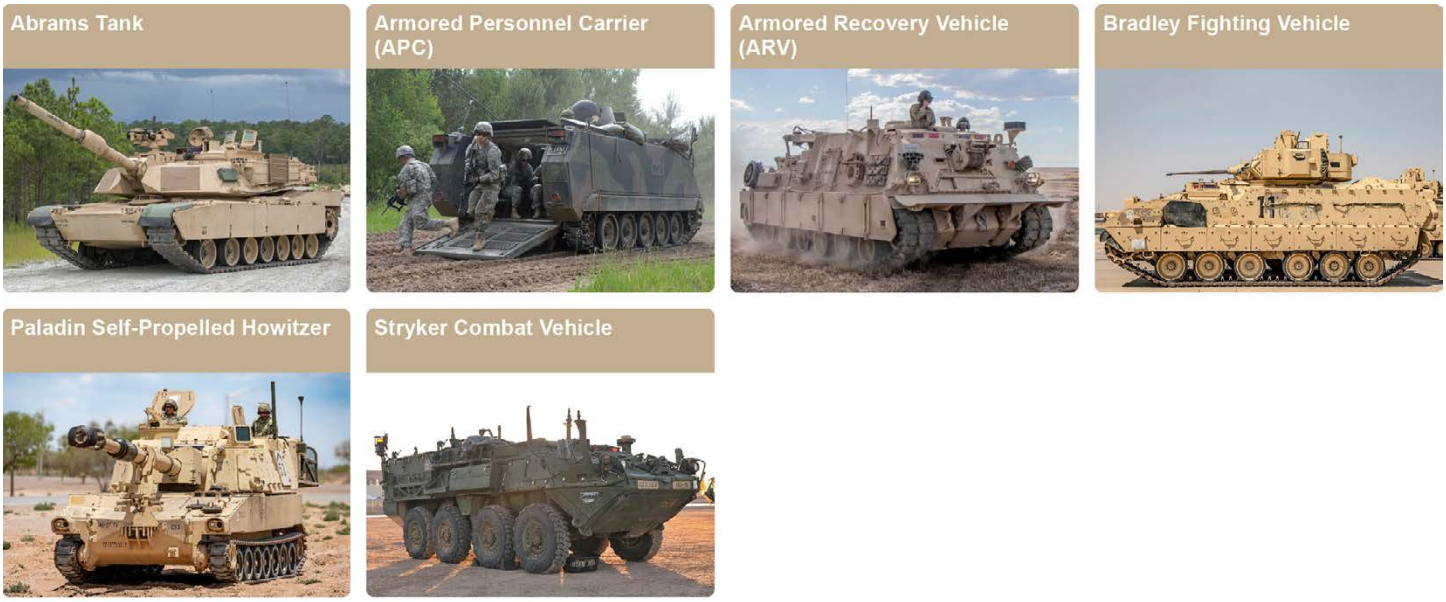
Background

Selected Army and Marine Corps Ground Vehicles

The Army and Marine Corps use a variety of ground vehicles to support DOD's military operations.

The Army's six combat vehicles included in this report are shown in figure 1 and are described in more detail in Appendix II.

Figure 1: Selected Army Combat Vehicles



Sources (L to R): U.S. Army Reserve/Sergeant First Class Austin Berner, U.S. Army/Staff Sergeant Kimberly Derryberry, U.S. Army/Staff Sergeant Michael Hunnisett, U.S. Army Reserve/Sergeant Jorge Reyes Mariano, U.S. Army/Staff Sergeant Xavier Legarreta, and U.S. Army/Sergeant Michael Spandau. | GAO-25-108679

The Army's five combat support vehicles (hereafter support vehicles), which are included in this report, are shown in figure 2 and are described in more detail in Appendix II.

Figure 2: Selected Army Support Vehicles

Sources (L to R): U.S. Army/Captain Joseph Warren, U.S. Army National Guard/Sergeant Frank Zuniga, U.S. Army Reserve/Staff Sergeant Thomas Crough, U.S. Army Reserve/Sergeant John Russell, and U.S. Army/Joseph Kumzak. | GAO-25-108679

The Marine Corps's seven vehicles (hereafter Marine Corps vehicles), which are included in this report, are shown in figure 3 and are described in more detail in Appendix II.

Figure 3: Selected Marine Corps Vehicles

Sources (L to R): U.S. Marine Corps/Lance Corporal Kendrick Jackson, U.S. Navy/Petty Officer 1st Class Benjamin Kittleson, U.S. Army Reserve/Staff Sergeant Thomas Crough, U.S. Army Reserve/Sergeant John Russell, U.S. Marine Corps/Sergeant Adam Dublinske, U.S. Marine Corps/Corporal Mackenzie Binion, and U.S. Navy/Lieutenant Commander Brian Wierzbicki. | GAO-25-108679

DOD Organizations

In table 1, we identify the key DOD, Army, Marine Corps, and defense agency organizations that have roles and responsibilities for sustaining Army and Marine Corps ground vehicles.

Table 1: Key DOD Organizations with Ground Vehicle Sustainment Roles and Responsibilities

Organization	Role and Responsibility
Office of the Deputy Assistant Secretary of Defense for Materiel Readiness	Under the authority, direction, and control of the Assistant Secretary of Defense for Sustainment, advises, supervises, and develops policy for all Department of Defense (DOD) sustainment elements that relate to military maintenance requirements, capabilities, workloads, and materiel readiness. Also develops policy to utilize, maintain, and assess the organic industrial base for maintenance capabilities critical to national security.
Department of the Army	
• Deputy Assistant Secretary for Sustainment	The formation, implementation and execution of Army acquisition, life-cycle logistics, and industrial base policies, processes, and procedures providing oversight to manage supply chain risk in Army weapon systems.
• Deputy Assistant Secretary of the Army (Cost & Economics)	Provides Army decision-makers with cost, performance and economic analysis in the form of expertise, models, data, estimates and analyses at all levels.
• Assistant Secretary of the Army for Acquisitions, Logistics, and Technology	Oversees the management and sustainment of Army weapon systems and equipment, from research and development through test and evaluation, acquisition, logistics, fielding, and disposition.

Organization	Role and Responsibility
• Program Executive Office, Ground Combat Systems	Mission is to modernize, sustain, and transform the Army's portfolio of ground combat vehicles by incorporating lethality, survivability, mobility, and adaptability improvements for ground combat vehicles.
• Program Executive Office, Ground Combat Support and Combat Service Support	Leads the development, systems integration, acquisition, testing, fielding, and sustainment and modernization of critical combat enabling systems across the Army's Transportation, Quartermaster, Ordnance and Engineer portfolios.
• Deputy Chief of Staff, G4 (Logistics)	Provides comprehensive maintenance support capabilities, among other things.
• Army Materiel Command (AMC)	Provides day-to-day management and oversight of the Army's depots, each of which falls under subordinate commands.
• Tank-Automotive and Armaments Command (TACOM)	A subordinate command to AMC, TACOM is a Life Cycle Management Command that provides materiel life-cycle management for Army depots that service combat vehicles and support vehicles.
• Anniston and Red River Army Depots	Each depot is aligned under a major subordinate command—known as a Life Cycle Management Command—in accordance with the nature of its mission. For example, Anniston and Red River Army Depots principally conduct maintenance work on ground systems—such as the Paladin and M1 Abrams tanks—and therefore are aligned with TACOM.
United States Marine Corps	
• Logistics Division, Logistics Sustainment Brach	Planning, programming, providing policy, and executing oversight and management of expeditionary and enterprise logistics and supply chain business to support the Marine Corps's current and future capabilities for logistics and the supply chain.
• Marine Corps Logistics Command	Day-to-day management and oversight of the Marine Corps's production plants (depots).
• Program Executive Officer (for) Land Systems	Oversees the acquisition and sustainment of Marine Corps ground systems critical to the Fleet Marine Force.
• Marine Corps Depot Maintenance Command	Provides worldwide, depot-level maintenance support for rebuild, repairs, engineering solutions, modifications, calibrations, manufacturing, and technical services to maximize the operational readiness and sustainability of ground combat and combat support weapon systems and equipment.
• Albany and Barstow Production Plants	These Marine Corps depots principally conduct maintenance and repair work on the selected ground vehicles—such as the Light Armored Vehicle (LAV) and the JLTV—and therefore are aligned under the Marine Corps Maintenance Command.

Source: GAO Analysis of DOD information. | GAO-25-108679

Mission Capable Rates

The Army's and Marine Corps's mission capable, or availability rates, are not directly comparable between the two services.

- The Army measures the availability of its ground vehicles using a "fully mission capable" rate (FMC). The FMC rate shows that a vehicle is in a state where it can perform all its potential missions. Further,

Army guidance identifies a fully mission capable goal of 90 percent for ground vehicle fleets.[4]

- In contrast, the Marine Corps measures the availability of its ground vehicles using a "mission capable" rate (MC).[5] The MC rate shows that a ground vehicle can perform at least one of its potential missions. For example, according to Marine Corps officials, a HMMWV could have a malfunctioning radio that would hinder its ability to perform certain missions requiring coordinated movement or receiving updated orders. However, if the vehicle's engine, drivetrain, and weapon systems are functioning, it could still perform its primary mission of transporting troops and providing a mobile firing platform.

The Army and Marine Corps rate a vehicle to be "not mission capable" when the vehicle is incapable of performing any missions. There are two common reasons that both services use to designate non-mission capable vehicles:[6]

- Not mission capable supply (NMCS), meaning these individual vehicles have been rated not mission capable because they are awaiting new parts and materiel items.
- Not mission capable maintenance (NMCM), meaning these individual vehicles have been rated not mission capable while awaiting maintenance.

[4]See Army Regulation 700-138, *Army Logistics Readiness and Sustainability* (Apr. 23, 2018).

[5]See Marine Corps Order 4790.25*, Ground Equipment Maintenance Program* (Jan. 12, 2014).

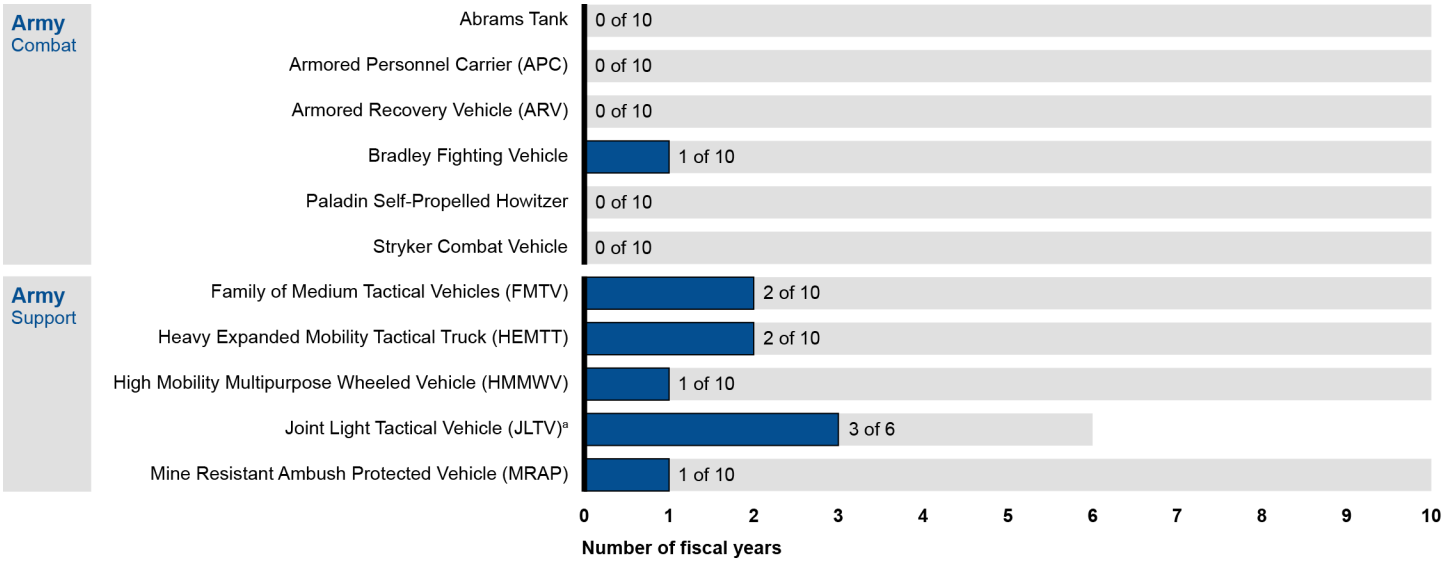
[6]Marine Corps officials stated, as of April 2025, that they had identified two other categories for rating vehicles as not mission capable: administration and transportation. However, Marine Corps officials stated that these categories are still under development. We subsequently only reported on not mission capable supply and not mission capable maintenance for the Marine Corps.

Army and Marine Corps Vehicles Achieved Similar Availability Rates from FY 2015 through FY 2024 and Rates Have Trended Downward Since FY 2015

The Army's Ground Vehicles Did Not Meet Their Mission Capable Goals

None of the Army vehicles in our review met the mission capable goal of 90 percent in FY 2024. Five of six selected Army ground combat vehicles did not meet mission capable goals in any fiscal year from 2015 through 2025. In the same time frame, selected Army ground support vehicles achieved mission capable goals about 20 percent of the time as shown in figure 4.

Figure 4: Number of Years That Army Ground Vehicles Met Mission Capable Goals in FY 2015 through FY 2024



Source: GAO analysis of Army data. | GAO-25-108679

Note: The Army initially fielded the JLTV in FY 2019.

From this section, we removed a figure and some narrative information about the highest- and lowest- performing Army ground vehicles because DOD deemed the information to be CUI.

Marine Corps Vehicles Do Not Have Mission Capable Goals, but Achieved Rates Similar to the Army

According to Marine Corps officials, the service does not have a mission capable goal for its ground vehicles. The AAV achieved the highest rate among vehicles we reviewed; however, Marine Corps officials attributed its higher mission capable rates to declining usage by field units as the service phases this vehicle out of service. The Marine Corps's ACV-P achieved the lowest mission capable rate in FY 2024. In this paragraph, we removed a figure and some narrative information about the highest- and lowest- performing Marine Corps ground vehicles because DOD deemed the information to be CUI.

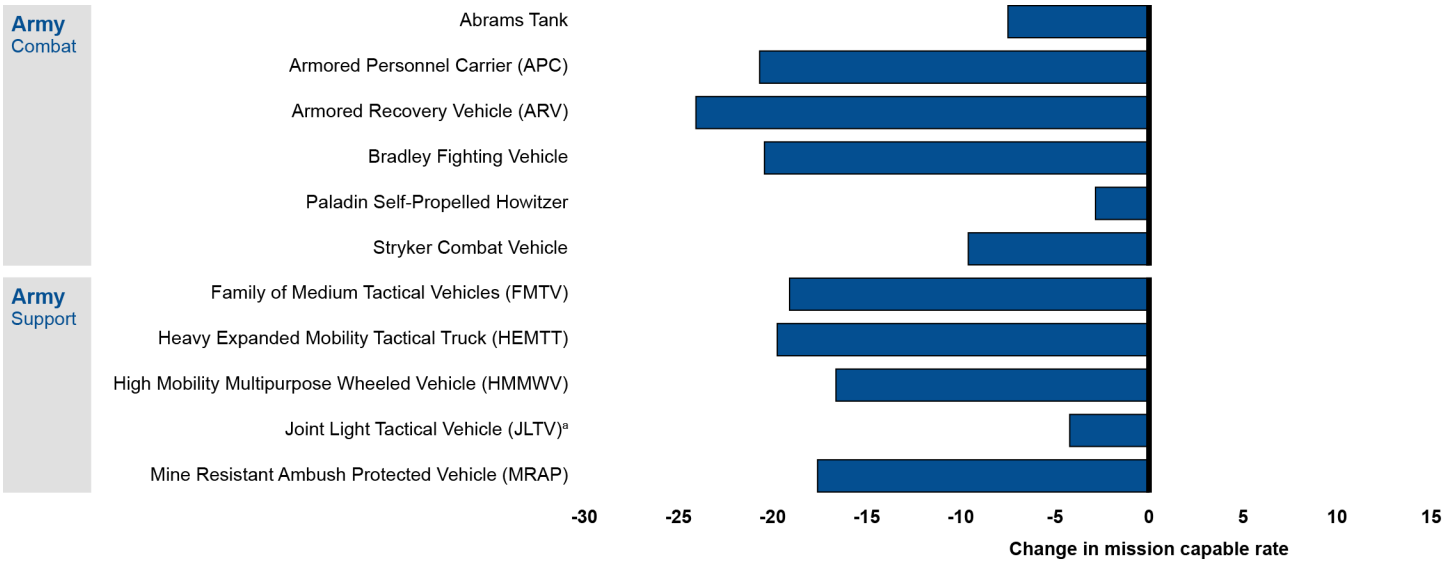
Mission Capable Rates for Most of the 18 Ground Vehicles Have Generally Decreased Since FY 2015

Since FY 2015, mission capable rates have declined for 16 of the 18 Army and Marine Corps ground vehicles in our review. All 11 Army vehicles we reviewed experienced declines in mission capable rates and five of the seven Marine Corps vehicles experienced declines similar to Army vehicles. In this paragraph, we removed narrative information of the highest- and lowest-performing Army and Marine Corps ground vehicles because DOD deemed the information to be CUI.

Army Combat Vehicles

The change in mission capable rates for all six Army combat vehicles have decreased since FY 2015, as shown in figure 5.

Figure 5: Change in Mission Capable Rates for Army Ground Vehicles Comparing Fiscal Year 2024 to Fiscal Year 2015



Source: GAO analysis of Army data. | GAO-25-108679

Note: The Army initially fielded the JLTV in FY 2019.

- The Paladin's mission capable rates decreased the least.
- The ARV experienced the largest decrease in mission capable rates among both Army combat and support vehicles.
- The Bradley met the Army's mission capable goal in FY 2015 but has not met the goal since.

In this paragraph, we removed a graphic and some narrative information about Army ground vehicles because DOD deemed the information to be CUI.

Army Support Vehicles

Mission capable rates for all five of the Army support vehicles that we reviewed have trended down since FY 2015, as also shown in figure 5.

- The Army's JLTV began operating in FY 2019 and met its mission capable goal during FY 2020 through 2022. The JLTV's mission capable rate has dropped below the Army's goal since FY 2022.
- The HEMTT experienced the largest decrease in mission capable rates over this period.

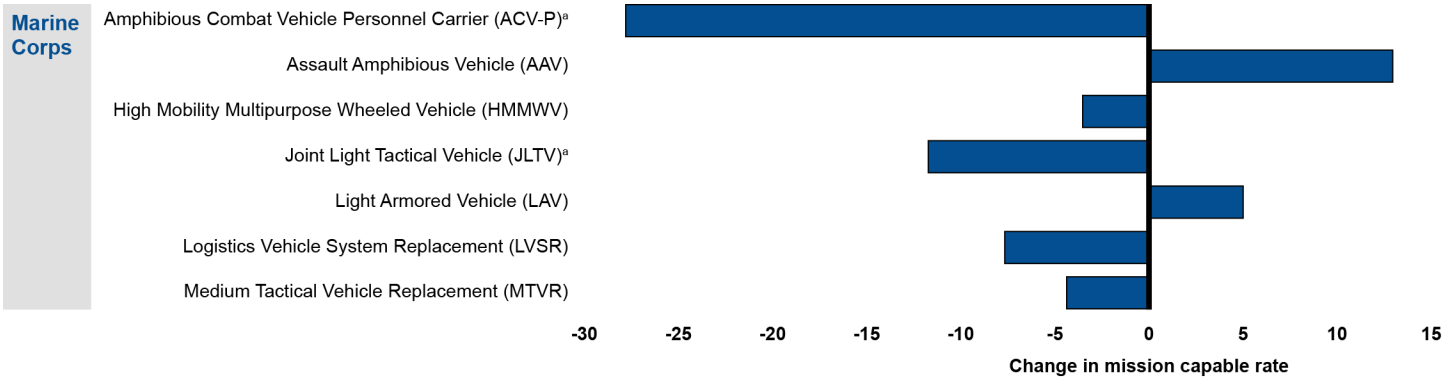
Of the Army support vehicles we reviewed, four have operated continuously since FY 2015. Three of these vehicles—HMMWV, FMTV,

and HEMTT—met the Army's 90 percent mission capable goal in FY 2015. In FY 2016, FMTV, MRAP and HEMTT met the Army's goal, though none of these support vehicles have met the goal again since FY 2016. In this paragraph, we removed a graphic and some narrative information about Army ground vehicles because DOD deemed the information to be CUI.

Marine Corps Vehicles

The mission capable rates for five of the seven Marine Corps ground vehicles we reviewed declined since FY 2015, as shown in figure 6.

Figure 6: Change in Mission Capable Rates for Marine Corps Ground Vehicles Comparing Fiscal Year 2024 to Fiscal Year 2015



Source: GAO analysis of Marine Corps data. | GAO-25-108679

Note: The Marine Corps initially fielded the ACV-P in FY 2021 and the JLTV in FY 2019.

- The HMMWV experienced the smallest decline.
- The ACV-P experienced the largest decrease in mission capable rates.
- Counter to the trends among most of the services' ground vehicles, the Marine Corps's AAV and LAV experienced increases in mission capable rates.

In this paragraph, we removed a graphic and some narrative information about Marine Corps ground vehicles because DOD deemed the information to be CUI.

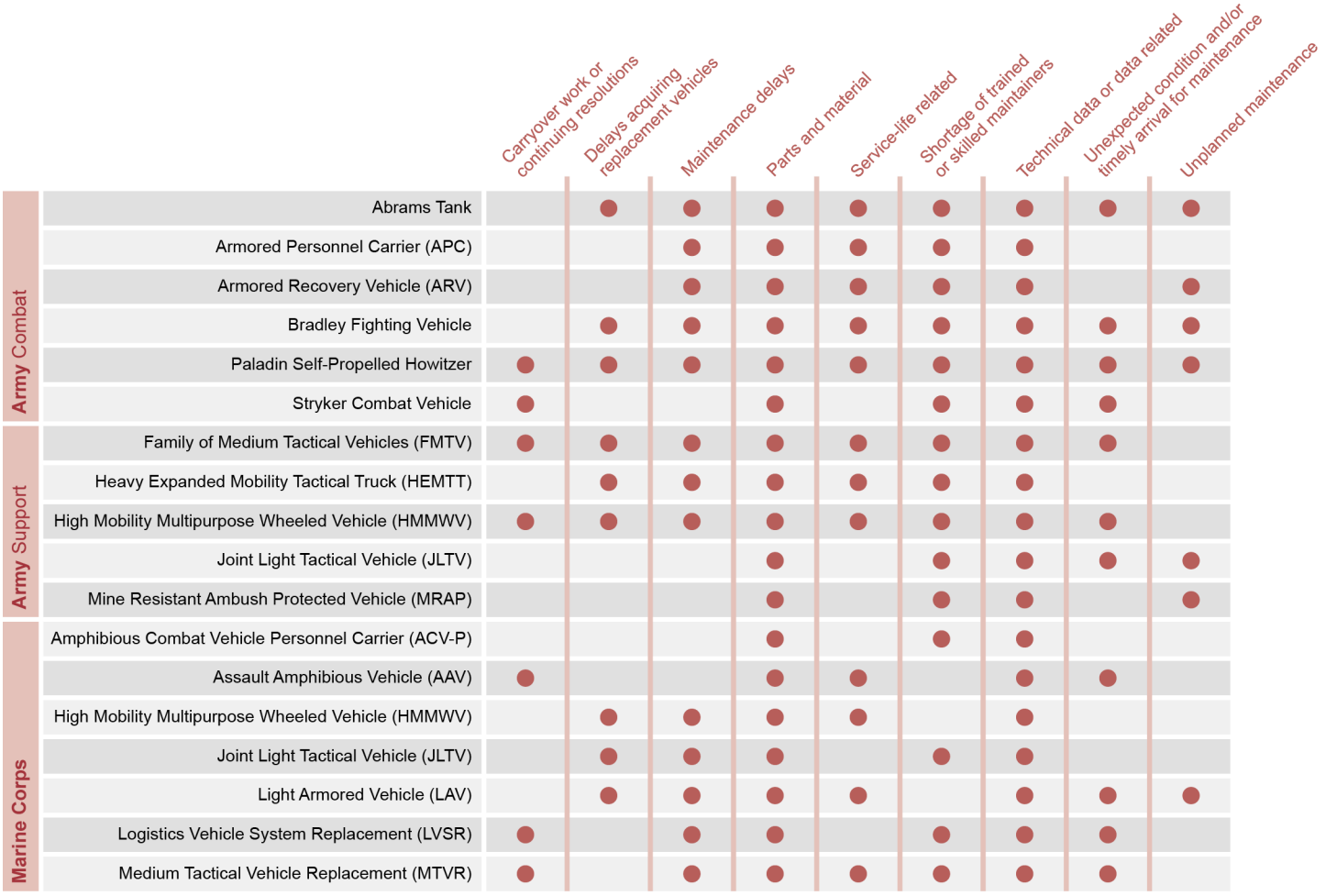
Various Sustainment Challenges Affected the Availability of Ground Vehicles and Both Services Sharply Reduced Depot Maintenance

Both Services Reported That Sustainment Challenges Affected All of the Selected Ground Vehicles

Army and Marine Corps officials reported that nine sustainment challenges have affected multiple fleets of selected ground vehicles, as shown in figure 7.[7]

[7]We identified these nine challenges in the Army and Marine Corps's operational sustainment reviews and from our prior work and asked the services' program managers and depot officials to discuss whether those challenges applied to the vehicles they were responsible for. For more details about our methodology, see appendix I.

Figure 7: Sustainment Challenges Affecting Ground Vehicles as Identified by Army and Marine Corps Officials



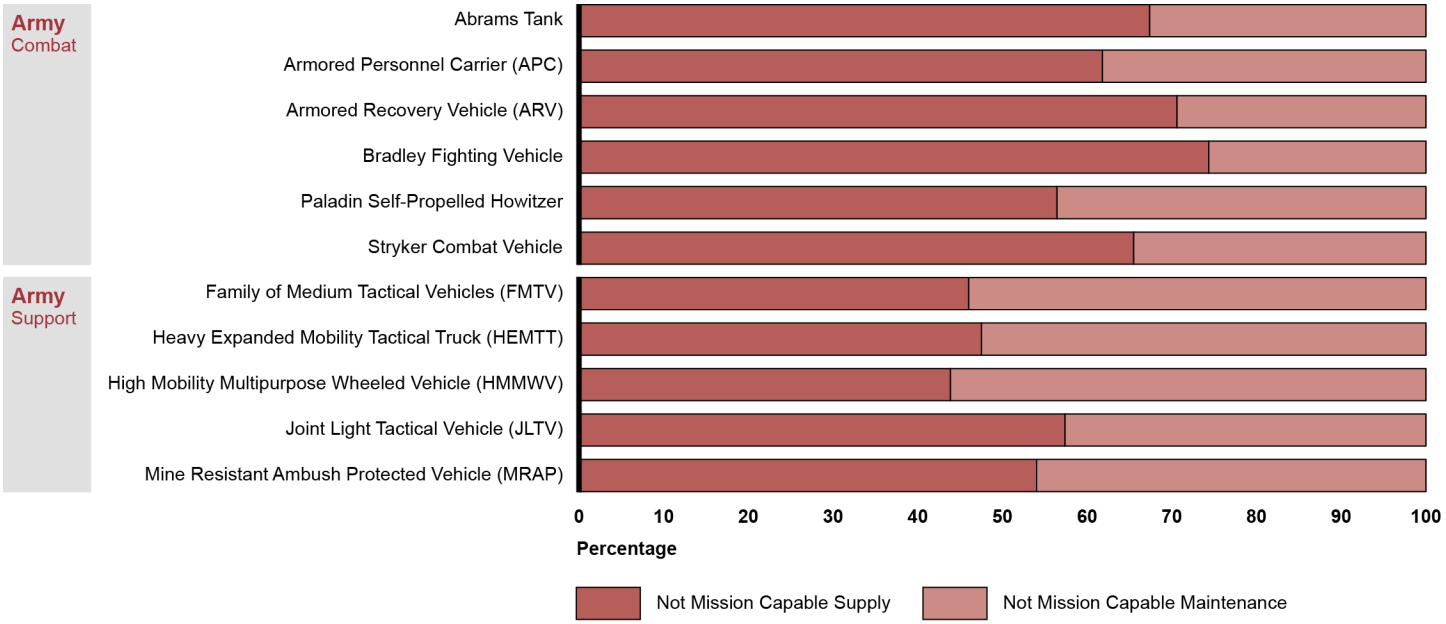
Source: GAO analysis of Army and Marine Corps data. | GAO-25-108679

According to officials from both services, the lack of parts and materiel (e.g., obsolete parts and diminishing manufacturing sources) and challenges related to technical data (e.g., lack of current or updated technical drawings and proprietary data rights) negatively affected all 18 ground vehicle fleets. Army and Marine Corps officials described a variety of other widespread sustainment challenges, such as shortages of trained or skilled maintainers and unplanned maintenance.

Parts and materiel challenges play an outsized role in the mission availability of the vehicles we reviewed. Both services cited a lack of parts

and materiel as the leading cause for rating vehicles not mission-capable for 14 of 18 ground vehicles during FY 2024. The Army rated eight of 11 individual ground vehicles as having a greater share of the not mission capable rate for parts and materiel than any other reason, as shown in figure 8.

Figure 8: Proportions of Supply and Maintenance for Not Mission Capable Rates for Selected Army Ground Vehicles in FY 2024

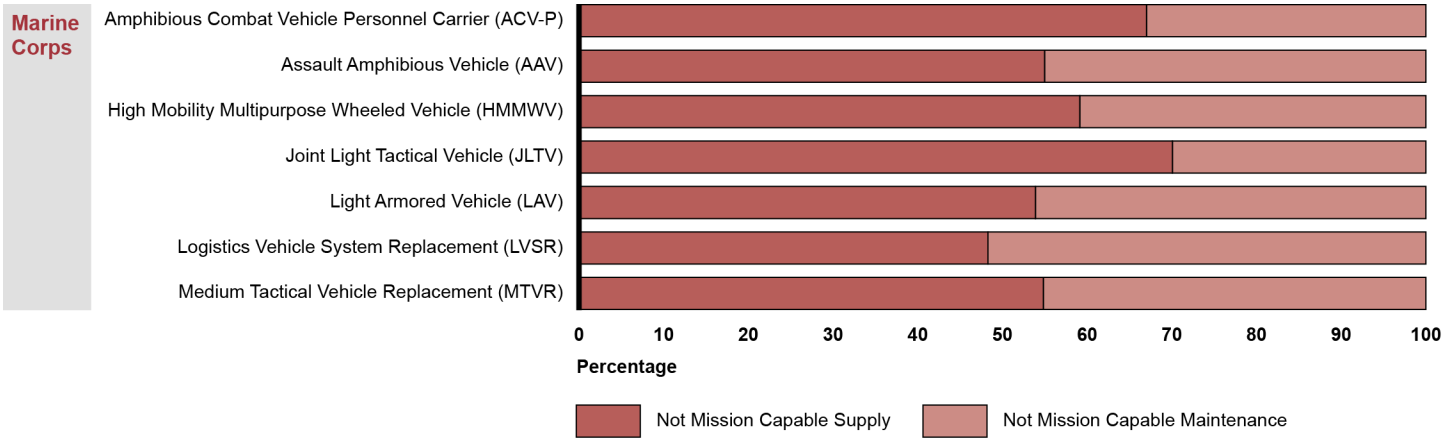


Source: GAO analysis of Army data. | GAO-25-108679

In this paragraph, we removed a graphic and some narrative information about Army ground vehicles because DOD deemed the information to be CUI.

The Marine Corps also rated ground vehicles as not mission capable for parts and supplies (NMCS), proportionately more than for any other reason in FY 2024, as shown in figure 9. Specifically, the Marine Corps identified NMCS as the leading cause of rating vehicles not mission-capable for six of seven ground vehicles in FY 2024.

Figure 9: Proportions of Supply and Maintenance for Not Mission Capable Rates for Selected Marine Corps Ground Vehicles in FY 2024



Source: GAO analysis of Marine Corps data. | GAO-25-108679

In this paragraph, we removed a graphic and some narrative information about Marine Corps ground vehicles because DOD deemed the information to be CUI.

Parts and Materiel Availability

Officials from both services identified sustainment challenges with parts and materiel for all 18 selected ground vehicles. Both services' officials identified multiple issues affecting parts and materiel availability including:

- Diminishing manufacturing sources,
- Long lead time for production,
- Obsolete parts,
- Single-source suppliers, and
- Competing between vehicle fleets for manufacturers' capacity to produce parts.

Among the vehicles we reviewed, aging ground vehicle fleets—including the APC, ARV, and HMMWV—experienced diminished manufacturing sources. Specifically, Army officials reported that for the APC, with an average vehicle age of 35 years, diminishing manufacturing sources served as the primary driver of long lead times in acquiring parts. Meanwhile, other Army officials described how diminished manufacturing sources have affected parts availability for headlights for the ARV and torsion bars and other metal equipment for both ARVs and APCs. Parts

and materiel challenges related to obsolete parts have also affected the APC, ARV, and HMMWV, according to Army officials. Marine Corps officials similarly reported that both LVSR and MTVR faced parts and materiel challenges related to diminished manufacturing sources and obsolete parts.

Single-source suppliers also contributed to shortages. This includes when only a single manufacturer supplies certain parts or materiel for a fleet of vehicles. For example, Army officials reported that the Bradley program had more than 40 backordered fuel tanks due to long lead times of 7 months to 9 months for new orders. According to these officials, the Army relies on a single supplier for fuel tanks across multiple fleets of vehicles, putting them in competition with each other for that manufacturer's capacity to produce parts and materiel.

We also found instances where the same aspect of the parts and materiel challenge affected multiple vehicles from both services. For example, Army officials described challenges obtaining transparent armor (used as windows in armored ground vehicles) for the JLTV, HEMTT, HMMWV, and MRAP. Meanwhile, the Marine Corps described the same challenge obtaining transparent armor for the JLTV, MTVR and LVSR. Further, Marine Corps officials told us that some MTVRs had been rated as not mission capable for more than 18 months because they could not obtain transparent armor.

Other Sustainment-Related Challenges

Army and Marine Corps officials also identified a variety of other sustainment challenges. Among them:

Technical data-related challenges affected all 18 selected ground vehicles.[8] Army officials identified the lack of current technical data when describing some technical drawings. For example, Army officials

[8]Technical data—such as user manuals, engineering design data, models, and computer software has been a long-standing issue negatively affecting the ability of maintainers to conduct maintenance on weapon systems. In 2020, we reported on 11 different shipbuilding programs and found that nearly all of them experienced sustainment issues due to a lack of technical data that resulted from poor planning in the early stages of the acquisition process. See *Navy Shipbuilding: Increasing Focus on Sustainment Early in the Acquisition Process Could Save Billions* (GAO-20-2), (Washington D.C., Mar. 24, 2020). We made 11 recommendations to the Navy to improve sustainment planning for ships, including sustainment risks associated with the lack of technical data. However, only one of the 11 recommendations had been fully implemented, as of May 2025. We have an ongoing review examining DOD weapon system programs, including their planning for intellectual property acquisition and challenges faced by weapon systems in sustainment due to data rights shortfalls. We plan to report on the results of that work later in 2025.

described for both the APC and Paladin handmade drawings from the 1960s that still exist in the current technical data packages. Army officials reported that for the Abrams, Bradley, and Stryker, depot maintainers send various maintenance and repair work to manufacturers due to the proprietary nature of some of the technical data instead of performing the work at Army depots. Specifically, Army officials stated that for the Abrams separate manufacturers own the technical data for the vehicle, engine, and transmission. These officials said that the Army sends repair work to original equipment manufacturers that depot maintainers could perform themselves if they had access to the technical data. Finally, Army officials also described that even when the technical data has been purchased, getting the data updated by the manufacturer when a new version of an engine or transmission is produced is time consuming and delays the performance of maintenance.

Marine Corps officials also described technical data issues that affected vehicle availability. For example, both the LVSR and MTVR programs lack access to current technical data, which has hindered the ability and cost to reverse engineer certain parts and materiel, added months to the time to authorize creating a part, and increased the risk of parts and materiel not functioning correctly on the vehicles.

Shortages of trained or skilled maintainers affected 15 of 18 Army and Marine Corps ground vehicles.[9] Army officials told us that maintainers' skills have deteriorated because the Army extended the intervals between maintenance service for both FMTV and MRAP. Army officials told us that reductions in the frequency and complexity of Abrams depot overhauls have affected maintainers' ability to retain their skill levels because this work does not require full disassembly. Additionally, Army officials reported that most field level maintainers and operators are not trained to maintain the APC and that this lack of training leads to high rates of failure for the vehicle. Army officials also reported that the Bradley faced the challenge of reallocating or releasing skilled maintainers due to decreases in the number of overhauls, which led to a loss of experienced maintainers and created critical skill gaps.

[9]GAO reported in 2018 on DOD's efforts to maintain critical skills at its maintenance depots. Our report included recommendations to the Army and Marine Corps to assess the effectiveness of their depots' hiring, training, and retention programs. As of May 2025, neither the Army nor the Marine Corps has implemented these recommendations. See GAO*, DOD Depot Workforce: Services Need to Assess the Effectiveness of Their Initiative to Maintain Critical Skills*, GAO-19-51 (Washington, D.C.: Dec. 14, 2018).

Marine Corps officials stated that their depot maintainers are not yet experienced in working on the JLTV. Specifically, these officials stated that the repairs to two damaged JLTVs currently in the depot have been ad hoc and proof of concept for maintaining the JLTV. Additionally, these officials stated depot maintainers have not had any training on the JLTV and that similar gaps in training in the field have led to delays in field-level maintenance. For the Marine Corps's ACV-P, the depots have sent maintainers to field level training.

Service life-related challenges affected sustainment in 12 of 18 programs. These include both aging fleets of vehicles and those vehicles still in production. For example, ground vehicles that are well into their expected service lives—such as both services' HMMWVs or the Army's APC, which has operated since the 1960s—face common challenges with diminished manufacturing sources and obsolete parts, according to service officials. Army officials also reported that the HEMTT experiences parts and materiel challenges because parts for different variants became obsolete due to its long service life.

More recently fielded types of vehicles also face parts and materiel challenges because they are competing with vehicles currently being produced for the same components. For example, both services' officials reported that their JLTVs are competing for the same parts and materiel as the manufacturer producing new JLTVs. Army officials told us they experience similar challenges with the HEMTT and Paladin, which are both still in production.

Unplanned maintenance and vehicles arriving at the depot in an unexpected condition caused the depot to perform more maintenance than originally planned. According to officials from both services, these two challenges overlapped each other five of 11 times. Of the 11 times ground vehicles that we identified as arriving at the depot in an unexpected condition, five also required unscheduled or unplanned maintenance. Further, when combined, these challenges affected 13 of 18 ground vehicles in our review. For example, Army officials described Abrams arriving at depots in worse condition than expected, which required months of additional unplanned work and required unplanned orders for additional parts and materiel.

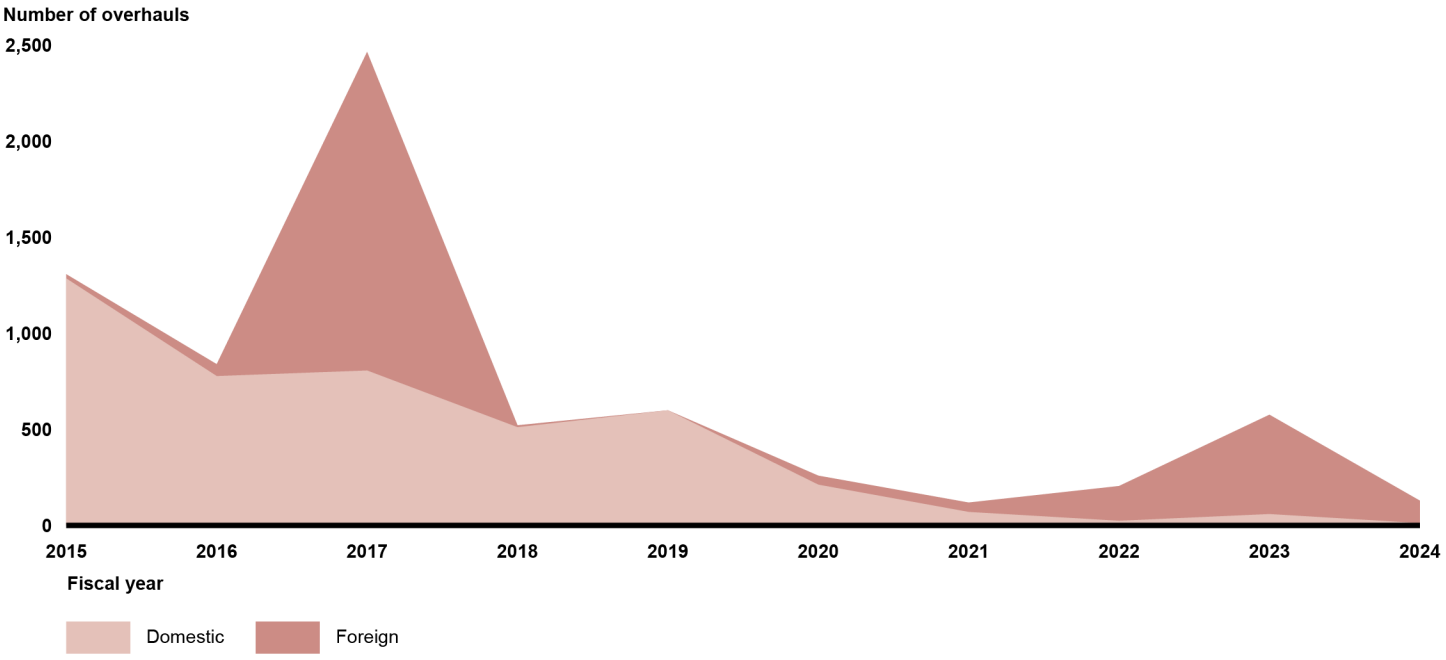
Maintenance delays, including those resulting from delays in supplying parts and materiel ("backorders"), affected sustainment for 13 of 18 programs. For example, for the FMTV, Army officials stated that large numbers of parts backorders cause reductions in the quantities of

overhauls produced per month. These officials stated that the backorders include items such as doors and door-related parts, transparent armor, and tire or wheel-related parts. Similarly, for the LVSR, Marine Corps officials stated that delays in depot maintenance typically occur when specific parts and materiel—such as transparent armor and steering gears—are difficult to procure.

Army and Marine Corps Sharply Reduced Depot Maintenance

The Army had a large decrease in depot overhauls for the 11 Army vehicles in our scope since FY 2015, as shown in figure 10.[10]

Figure 10: Army Domestic and Foreign Military Ground Vehicle Overhauls During Fiscal Years 2015–2024



Source: GAO analysis of Army data. | GAO-25-108679

[10]For the purposes of this report, depot overhauls refer to various categories of maintenance or repair work performed at the Army and Marine Corps depots. For the Army, these categories include: overhauls that restore most or all tolerances to original specifications; progressive maintenance that represents a partial overhaul; conversions in conjunction with overhauls; modifications in conjunction with overhauls; and repairs that return an unserviceable item of equipment to a serviceable condition. For the Marine Corps, these categories include: inspect and repair only as necessary to restore equipment, components, or assemblies to prescribed serviceability standards; rebuilds to restore an item to a standard as near as possible to original; and specified overhaul and repair, which incorporates both of the previous categories.

Note: The large increase in 2017 of foreign military overhauls was largely composed of HMMWVs for Afghanistan.

Army officials stated that the decrease in overhauls has in part led to declining mission capable rates among the selected ground vehicles. Specifically, the Army reduced the number of overhauls from 1,285 in FY 2015 to 12 in FY 2024. For example, the Stryker had 157 overhauls in FY 2016 through 2019 and has had three overhauls in the 5 years since. A senior Army official told us that the Army accepted the operational risk to its ground vehicles by not funding depot overhauls of its ground vehicles.

Also, during this period, the Army generally increased the overhauls of vehicles for foreign militaries. For example, the Army performed 32 Bradley overhauls for foreign militaries in FY 2016. Otherwise, the Army performed no Bradley overhauls for foreign militaries until it performed a combined 142 Bradley overhauls for foreign militaries in FY 2023 through 2024.

Army officials told us that declining depot overhauls have negatively affected the mission capable rates of eight of the 11 ground vehicles we reviewed. Specifically, Army officials stated that as vehicles age, they require more parts replacement and maintenance work. Further, officials told us that vehicles going through overhauls reset the number of miles and hours driven to zero and that the parts are essentially like new and will last longer. Depot overhauls correct these defects and restore a vehicle to a like-new and fully mission capable condition. Army officials told us that the lack of overhauls for the Abrams, ARV, FMTV, and HEMTT, amongst others, led to lower mission capable rates across the vehicle fleets.

For some Army vehicles, the Army has partially mitigated the effect of the reduced number of overhauls on overall fleet condition through upgrading or phasing out older variants. For example, according to Army officials, the Army has been upgrading older model Abrams and flat-bottom Strykers into newer variants. Further, for other vehicles such as the Paladin, officials told us that the Army has phased out older variants while harvesting the usable items from these vehicles when producing new variants. Specifically, Paladin officials told us they used gun turrets from phased out Paladin variants when producing newer Paladin variants.

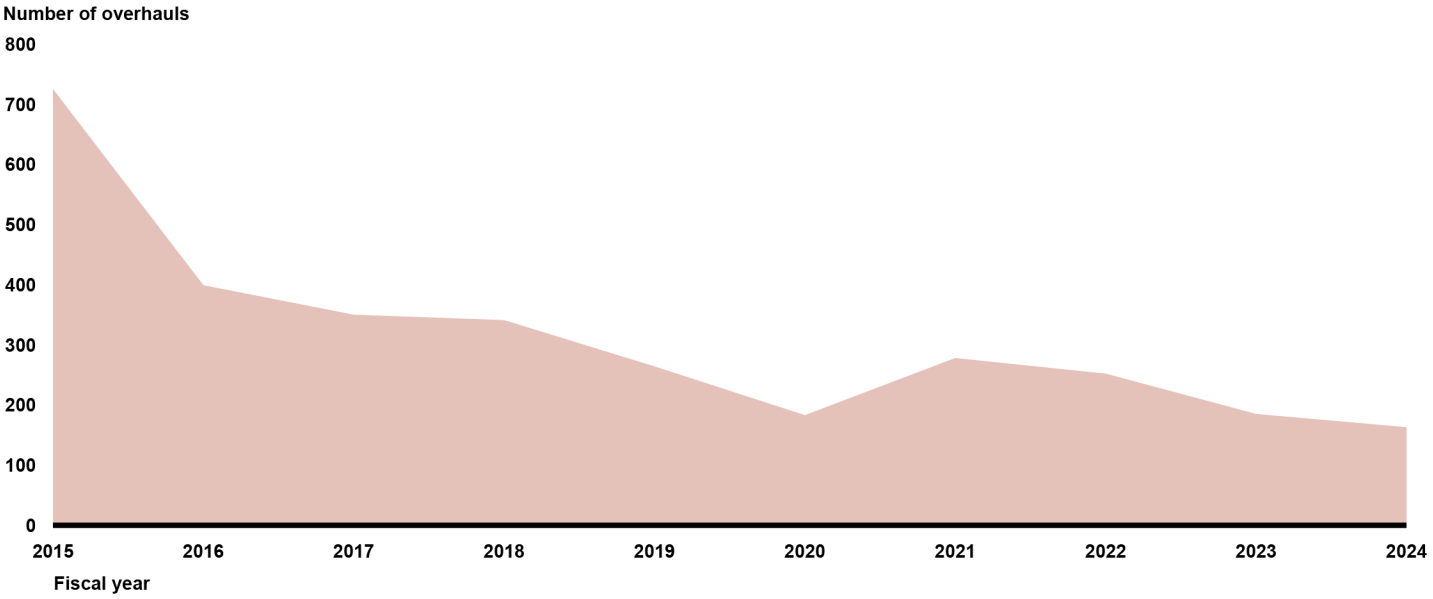
Further, Army officials reported that the reduction in depot overhauls contributed to shortages of trained and skilled maintainers. According to Army officials, diminished depot workload has led to higher turnover

among experienced personnel, resulting in some gaps in needed skills. Additionally, Army officials reported that, due to reduced staffing numbers, maintainers sometimes performed maintenance on vehicles for which the maintainers had not received training.

Army officials told us that higher levels of depot-level overhauls for foreign militaries have allowed the Army to retain more staff and allowed personnel to continue to practice their skills, despite reductions in domestic workload. Army officials told us that performing higher numbers of work has helped offset some losses among its depot maintainers and an associated degradation of maintainers' skills.

In contrast to the Army, Marine Corps officials did not identify decreased funding for depot-level overhauls as having a negative effect on mission capable rates of its vehicles. The Marine Corps reduced the number of overhauls performed at its depots from 725 overhauls in FY 2015 to 163 overhauls in FY 2024, as shown in figure 11.

Figure 11: Marine Corps Overhauls of Selected Ground Vehicles During Fiscal Years 2015–2024



Source: GAO analysis of Marine Corps data. | GAO-25-108679

Two factors help explain the reductions in Marine Corps depot overhauls.

- First, officials told us the Marine Corps is not overhauling vehicles that it is divesting. For example, Marine Corps depots performed a combined 226 overhauls on its HMMWV and AAV fleets in FY 2015 compared to 11 overhauls on the same two vehicles in FY 2024 because the Marine Corps plans to phase out both vehicles.
- Second, according to Marine Corps officials, the JLTV and ACV-P are newly fielded systems that have not begun planned depot-level overhauls due to their recent fielding in FY 2019 and 2021, respectively.

The Marine Corps has consistently maintained overhaul programs for the LAV, LVSR, and MTVR. For example, the service has annually overhauled between 117 and 47 LAVs since FY 2015. The mission capable rates for all three vehicles were about 80 percent or greater in FY 2024.

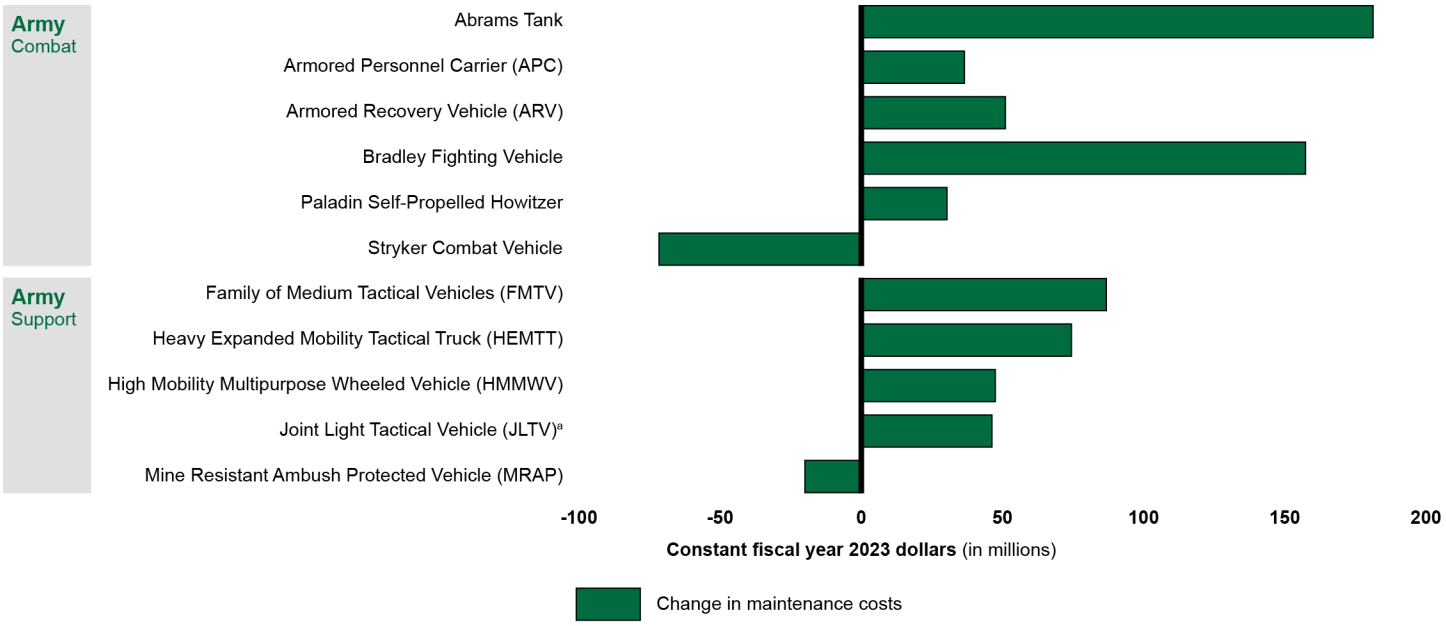
Maintenance Costs Increased for Most Army Ground Vehicles and Have Varied for Marine Corps Vehicles

Since FY 2015, the Army's fleet-wide ground vehicle maintenance costs have increased by about 50 percent while the Marine Corps's vehicles fleet-wide maintenance costs have dropped by about 15 percent.[11] Increased costs of parts and materiel—items provided by both DLA and Army depots—drove the overall increase in the Army's total maintenance costs in FY 2015 through 2023, the latest fiscal year for which complete data were available at the time of our analysis. For the Marine Corps, parts and materiel costs also increased during this period but decreases in depot labor costs led to the decline in total maintenance costs in FY 2015 through 2024.

Fleet-wide maintenance costs increased for nine of 11 Army ground vehicles in FY 2015 through 2023, as shown in figure 12.

[11]We found that Army crew, fuel, and ammunition cost estimates were not sufficiently reliable to report. The Marine Corps did not provide crew, ammunition, and fuel costs for its vehicles. As a result, we are reporting only maintenance costs for both services.

Figure 12: Change in Fleet-Wide Maintenance Costs for Army Vehicles from Fiscal Years 2015 through 2023



Source: GAO analysis of Army data. | GAO-25-108679

Additionally, the per-vehicle maintenance costs also increased for nine of 11 Army vehicles (see appendix II for trends in maintenance costs per vehicle for all 18 selected ground vehicles).

The Abrams experienced the largest fleet-wide increase in maintenance costs among Army vehicles by increasing $181.3 million when comparing FY 2015 to FY 2023. Increases in parts and materiel costs drove the Abrams increase in maintenance costs, which rose $180.4 million during this time frame. Further, though the total maintenance cost per Abrams tank has varied since FY 2015, the total maintenance cost per vehicle in FY 2023 nearly doubled that of FY 2015 while the total number of fielded Abrams decreased by 51 vehicles during this period.

Army officials told us that increases in fleet-wide maintenance costs cannot be attributed to a single factor. For example, the ARV experienced an increase of about $51 million since FY 2015. Further, though the total maintenance cost per ARV has also varied since FY 2015, the total maintenance cost per vehicle in FY 2023 also more than doubled that of FY 2015 while the total number of fielded ARVs increased by 395 vehicles during this period.

Army officials stated that the reduced depot-level overhauls for all ARV, resulted in poor vehicle conditions that needed more frequent repairs at a higher cost. Additionally, officials stated that inflation has led to increasing labor and materiel costs that have further driven up maintenance costs at both the depot and field levels. Finally, according to Army officials, inadequate preventive maintenance has led to some defects, which have caused catastrophic failures. An example is engine fires, which have high costs of repair.

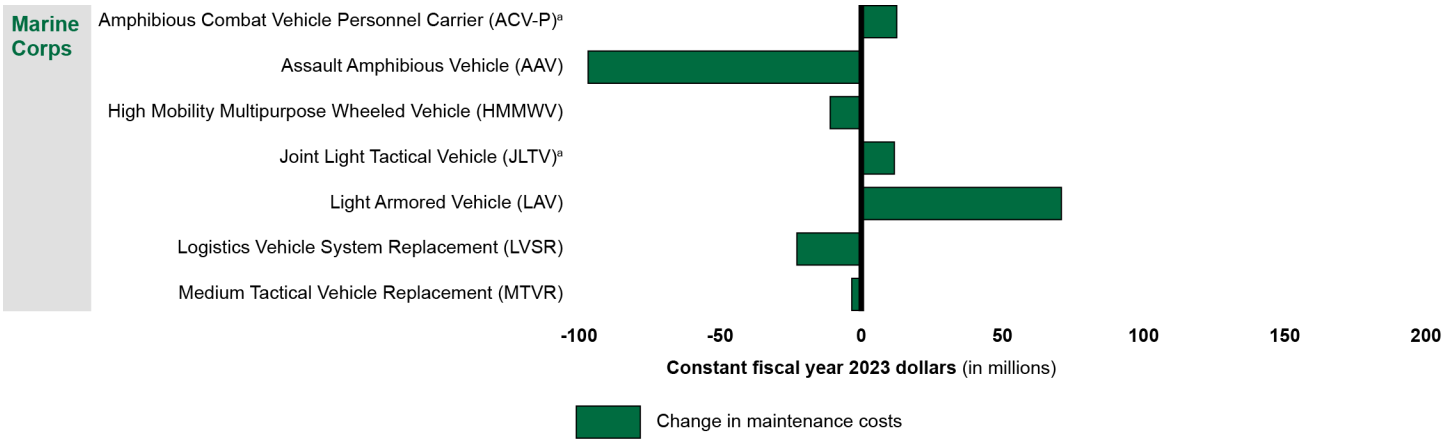
In contrast to the other Army vehicles that we reviewed, the Stryker and MRAP experienced fleet-wide decreases in maintenance costs during FY 2015 through 2023. The Stryker fleet experienced the largest decrease in maintenance costs, falling $71.7 million since FY 2015, and the MRAP fleet maintenance costs fell $20 million over the same period. Per vehicle maintenance costs for the Stryker has varied but saw a decrease in both fleet size and total maintenance costs since FY 2018. The per vehicle cost for the MRAP decreased as fleet size has grown and total maintenance costs have decreased since FY 2018.[12]

Army officials cited several contributing factors to the Stryker's decline in maintenance costs, including upgrades of older variants, phase out and deactivation of older variants, and maintenance overhauls of vehicles returning from deployment in Afghanistan. According to Army officials, the decline in MRAP maintenance costs occurred because the Army is phasing out these vehicles due to their reduced mission role.

The Marine Corps's fleet-wide maintenance costs decreased for four of seven ground vehicles when comparing FY 2015 to FY 2024, as shown in figure 13.

[12]The Army changed the method for tracking MRAP inventory prior to FY 2018. The Army did not include MRAPs going through a depot reset program in its inventory data prior to FY 2018. As a result, we excluded data for the cost per vehicle for these two vehicles from the years prior to FY 2018.

Figure 13: Change in Fleet-Wide Maintenance Costs for Marine Corps Vehicles in Fiscal Years 2015 through 2024



Source: GAO analysis of Marine Corps data. | GAO-25-108679

The fleet-wide maintenance costs decreased for four of the seven Marine Corps vehicles in our review.

- The LAV fleet experienced the largest increase in maintenance costs among vehicles rising $70.9 million when comparing FY 2015 to FY 2024. Increases in depot labor costs drove the increase in maintenance costs for the Marine Corps, rising $49 million during this timeframe.
- The AAV fleet experienced the largest decrease in maintenance costs among Marine Corps vehicles declining $96.8 million when comparing FY 2015 to FY 2024. Decreases in depot labor costs drove the decrease in maintenance costs for the AAV, declining $89.9 million during this time frame.

Of the three Marine Corps vehicles that experienced increased fleet-wide maintenance costs, two—the JLTV and ACV-P—were first fielded in the last 5 years. Both vehicles have experienced increased maintenance costs as the total number of vehicles has risen. Marine Corps officials told us that JLTV and ACV-P maintenance costs rose primarily due to increased parts and materiel costs as new vehicles were fielded and maintenance demands increased.

Since FY 2015, only the LAV fleet has continuously operated and experienced increased maintenance costs. Marine Corps officials told us that the LAV's maintenance costs increased, in part, due to upgrades such as the electronic drive that has a high failure rate. Further, many

components, including the electronic drive and the laser range-finder, must be purchased from the manufacturer instead of being repaired by the depot.

Four Marine Corps vehicles experienced decreases in maintenance costs. Marine Corps officials told us that AAV fleet's maintenance costs has declined because the vehicle has reached its planned phase-out period. As a result of the vehicle being phased out, officials told us that the Marine Corps has ended active depot maintenance for the AAVs. The last depot-level overhaul program occurred in FY 2024.

According to Marine Corps officials, the HMMWV also experienced decreased maintenance costs as the service plans to phase out these vehicles. Marine Corps officials reported that service has ended the cyclical depot maintenance program for the HMMWV except for those variants that have attached systems such as communication or electronic warfare systems.

The LVSR and MTVR fleets have continuously operated since FY 2015 and experienced decreased maintenance costs. Declines in depot labor costs drove the reduced maintenance costs for both fleets. Marine Corps officials explained that parts harvesting programs, divestment of older vehicles, and fewer depot overhauls have decreased the total maintenance costs for both fleets.

Agency Comments

We provided a draft of this report to DOD for review and comment. DOD provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Under Secretary of Defense for Acquisition and Sustainment, and the Secretaries of the Army and Navy and the Commandant of the Marine Corps. In addition, this report is available on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at maurerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report.

GAO staff who made key contributions to this report are listed in appendix IV.

//SIGNED//

Diana Maurer
Director, Defense Capabilities and Management

Appendix I: Scope and Methodology

We selected ground vehicles to be included in this review based on the vehicles having been acquisition category I, self-propelled, and still operational with the Army or Marine Corps as of fiscal year (FY) 2024. Table 2 lists the vehicles that we included based on these criteria:

Table 2: Ground Vehicles Included in This Review

Army Vehicles	Marine Corps Vehicles
Abrams Tank	Assault Amphibious Vehicle (AAV)
Armored Recovery Vehicle (ARV)	Amphibious Combat Vehicle – Personnel Carrier (ACV-P)
Armored Personnel Carrier (APC)	High Mobility Multipurpose Wheeled Vehicle (HMMWV)
Bradley Fighting Vehicle	Joint Light Tactical Vehicle (JLTV)
Stryker Combat Vehicle	Light Armored Vehicle (LAV)
Paladin Self-Propelled Howitzer	Logistics Vehicle System Replacement (LVSR)
Family of Medium Tactical Vehicles (FMTV)	Medium Tactical Vehicle Replacement (MTVR)
High Mobility Multipurpose Wheeled Vehicle (HMMWV)	
Heavy Expanded Mobility Tactical Truck (HEMTT)	
Joint Light Tactical Vehicle (JLTV)	
Mine Resistant Ambush Protected vehicle (MRAP)	

Source: GAO analysis of Army and Marine Corps information. | GAO-25-108679

For objective one, we examined Army and Marine Corps ground vehicle availability rates in FY 2024 and how those rates have changed since FY 2015 for the 18 selected ground vehicles. We collected data and analyzed mission capable rates for the 18 selected ground vehicles for FY 2015 through 2024. We selected this time frame so we could identify and obtain insight on availability trends for these vehicles over 10 fiscal years. For Army vehicles, Tank-Automotive and Armaments Command (TACOM) provided these data from the Global Command & Control System Army database. For the Marine Corps, Marine Corps Logistics Command provided these data from its Master Data Repository.

To understand mission capable metrics for both services, we interviewed officials from the following Army organizations:

- Deputy Assistant Secretary of the Army for Sustainment
- Deputy Assistant Secretary of the Army for Cost and Economics
- Program Executive Office for Ground Combat Systems and the program offices for all six Army combat vehicles
- Program Executive Office for Combat Support and Combat Support Services and the program offices for all five Army support vehicles.

- Tank-automative and Armaments Command Integrated Logistics Service Center

For the Marine Corps we interviewed officials from the Program Executive Office Land Systems and from Marine Corps Logistics Command.

For objective two, we examined the types of sustainment challenges affecting these ground vehicles and changes in depot maintenance since FY 2015. To identify categories of potential sustainment challenges, we reviewed our prior reports on DOD depots and both aviation and naval sustainment reviews, and analyzed both services' available operational sustainment reviews. We also met with officials when we performed site visits to the following organizations:

- Tank-Automative and Armaments Command Integrated Logistics Service Center
- Program Executive Office for Ground Combat Systems and the program offices for all six Army combat vehicles
- Program Executive Office for Combat Support and Combat Support Services and the program offices for all five Army combat vehicles.
- Anniston Army Depot in Anniston, Alabama and maintainers who perform maintenance on five of the six Army Ground combat vehicles.

For the Marine Corps, we performed a site visit to the Production Plant in Albany, GA. We also met with or received written responses from officials from the Program Executive Officer Land Systems, Marine Corps Logistics Command, Marine Depot Maintenance Command, the Production Plant in Barstow, CA

We then performed interviews using a set of questions based on our analysis of potential categories of sustainment challenges, which also included an open-ended question to identify any additional sustainment challenges and any actions the services have taken to address these challenges. These interviews included groups of subject matter experts for each of the vehicles in the scope of this review.

We then created a collection instrument to gather information from additional subject matter experts from both services whom we did not meet in-person to obtain their views on sustainment challenges that affected the vehicles in the scope of this review. For the Army, this included officials from the Red River Army Depot. For the Marine Corps, we met with or received written responses from officials from the Program Executive Officer Land Systems, Marine Corps Logistics Command,

Marine Depot Maintenance Command, and the Production Plant in Barstow, CA.

We performed a content analysis of the information gathered from the interviews and standardized collection instrument, with one analyst coding the results of the documentation from the combination of site visits, interviews, and written requests to identify sustainment challenges specific to each of the 18 ground vehicles included in this review. A second analyst reviewed the coding and resolved any disagreements through discussion.

We also identified, collected, and analyzed data for this objective, including:

- Not mission capable rates for supply (NMCS) for the 18 selected ground vehicles in this review. For Army vehicles, TACOM provided these data from the Global Command & Control System Army database. For the Marine Corps, Marine Corps Logistics Command provided this data from its Master Data Repository.
- The number of depot overhauls performed from FY 2015 through 2024 on the 18 selected ground vehicles. These data included the number of overhauls, 10/20 and 10/20+, and "inspect and repair only as needed" work performed for each vehicle.[1] The scope of this data included both the overhauls performed for domestic customers as well as those performed for foreign militaries. The Army TACOM Organic Industrial Base office provided these data from the Depot Maintenance Operations Planning System database. The Marine Corps Logistics Command provided these data via the Master Data Repository. In July 2025, the Marine Corps made us aware that their model used to provide depot throughput data may not have captured all data. Since we reported using data provided by the Marine Corps, it may also reflect those same inconsistencies.

For objective three, this report examined trends in maintenance costs for selected ground vehicles. For the Army, we collected and analyzed maintenance costs for FY 2015 through 2023, the last fiscal year for which complete costs data were available at the time of our analysis. For the Marine Corps, we analyzed maintenance costs for FY 2015 through 2024. Because the Marine Corps model used to provide depot throughput data may not have captured all data, this may have also affected the

[1]The terms "10/20" and "Inspect or Repair as Needed" refer to Army and Marine Corps depot work standards.

depot maintenance costs data provided by the Marine Corps. Since we reported using data provided by the Marine Corps, it may also reflect those same inconsistencies. We selected these time frames so we could identify and obtain insight on trends in vehicle maintenance costs. We reported whole Army and Marine Corps total maintenance costs by fiscal year for each fleet of ground vehicles.

To understand maintenance cost data for both services, we conducted interviews and received written responses from officials with TACOM's Program Executive Offices for both Ground Combat Systems and Combat Support and Combat Support Services. For the Marine Corps we conducted interviews and received written responses from officials with the Program Executive Officer Land Systems.

To develop the Sustainment Quick Looks on each ground vehicle, we obtained historical and current information, including background on vehicle capabilities and quantities of each in fielded inventory as of FY 2024. We also obtained information about manufacturers, depot maintenance throughput for domestic customers and foreign militaries, and key dates in the life cycle of each vehicle (e.g., initial operational capability and planned lifecycle). We used this information, as well as the information collected for objectives one, two, and three on mission availability, sustainment challenges, and maintenance costs, in each Sustainment Quick Look.

In the Quick Looks, we compared mission capable and ground vehicle availability rates to goals set by the Army—the Marine Corps had no availability goals for its ground vehicles. We analyzed maintenance costs, including maintenance sub-categories, and reported trends in costs since FY 2015. We analyzed Army data on the order fill rate of depot-level repairables—parts and equipment repaired or refurbished by the services depots. The Marine Corps had not tracked the depot-level repairable fill rates though officials told us they plan to start tracking this information later in FY 2025.

We conducted data reliability assessments for the data provided by the Army and Marine Corps. To do this, we reviewed related documentation; held interviews with knowledgeable agency officials; and performed electronic data testing for missing data, outliers, and obvious errors. Additionally, we shared the data we collected with the program offices that manage each vehicle for review and comment, to ensure the accuracy and completeness of the data being presented and to collect views on causes of trends that we found. As a result of our assessment,

we determined these data to be sufficiently reliable for reporting the numbers of vehicles, rates, averages, maintenance costs, and trends since FY 2015 that we provide in this report. We found some limitations with the vehicle quantities for two Army vehicles and adjusted our reporting to exclude the years our analysis deemed to be unreliable. We also found data on ammunition, crew, and fuel costs to be unreliable due to the use of estimates and did not include these costs in our report.

The performance audit upon which this report is based was conducted from January 2024 to August 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives. We subsequently worked with DOD from August to September 2025 to prepare this public version of the original sensitive report. This public version was also prepared in accordance with those standards.

Army Combat Vehicles

Abrams Tank

Armored Personnel Carrier (APC)

Armored Recovery Vehicle (ARV)

Bradley Fighting Vehicle

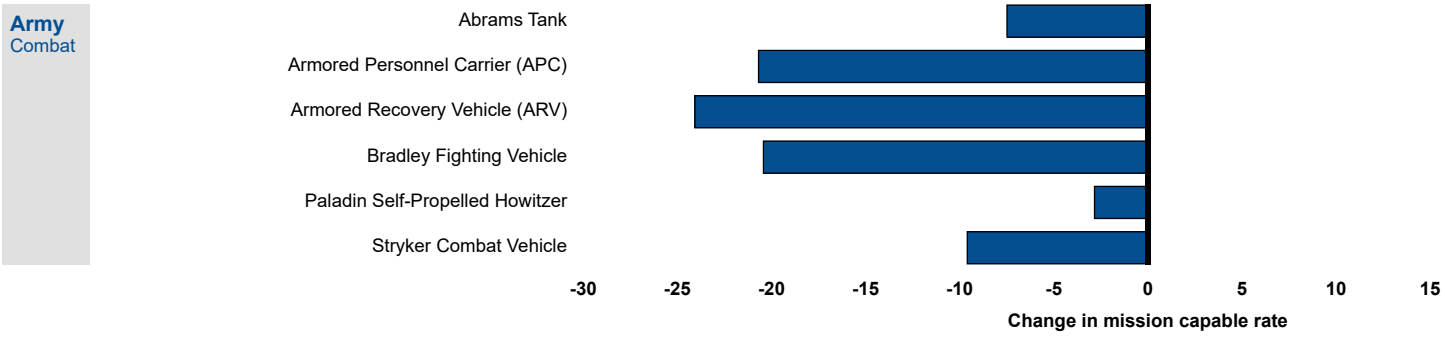
Paladin Self-Propelled Howitzer

Stryker Combat Vehicle

Sustainment Challenges Identified by the Army as Affecting Selected Combat Vehicles

		Carryover work or continuing resolutions	Delays acquiring replacement vehicles	Maintenance delays	Parts and material	Service-life related	Shortage of trained or skilled maintainers	Technical data or data related	Unexpected condition and/or timely arrival for maintenance	Unplanned maintenance
Army Combat	Abrams Tank		●	●	●	●	●	●	●	●
	Armored Personnel Carrier (APC)			●	●	●	●	●		
	Armored Recovery Vehicle (ARV)			●	●	●	●	●		●
	Bradley Fighting Vehicle		●	●	●	●	●	●	●	●
	Paladin Self-Propelled Howitzer	●	●	●	●	●	●	●	●	●
	Stryker Combat Vehicle	●			●		●	●	●	

Change in Mission Capable Rates for Army Combat Vehicles Comparing Fiscal Year 2024 to Fiscal Year 2015



Abrams Tank
M1

Program Essentials

Manufacturer
General Dynamics Land Systems

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

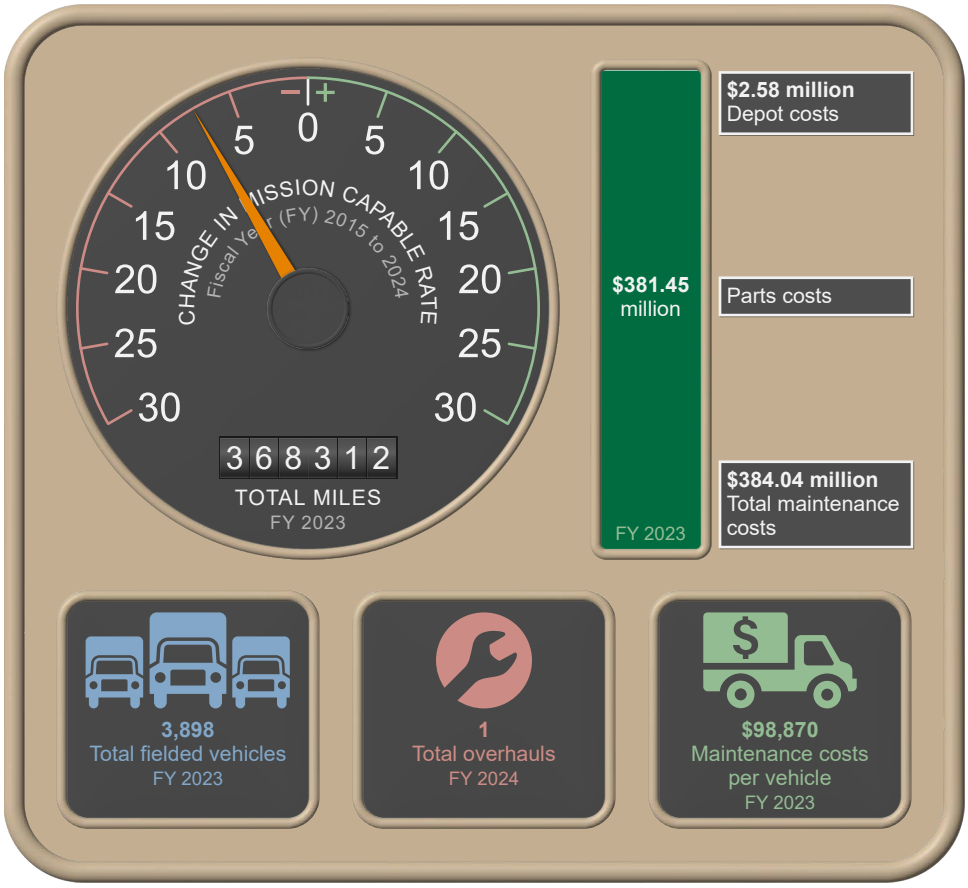
Primary Depot
Anniston Army Depot, Alabama

Variants and Introduction Date
- M1A1: 1985
- M1A2 SEPv2: 2005
- M1A2 SEPv3: 2017

Vehicle Service Life
30 years

The Abrams tank has been used in multiple conflicts worldwide since its first production in 1980. The Abrams is a tracked, low-profile, land combat assault weapon with 1,500-horsepower turbine engine, 120mm main gun, and special armor that make it lethal against other tanks and armored vehicles.

Abrams Sustainment Status



Mission Capable Rate and Inventory

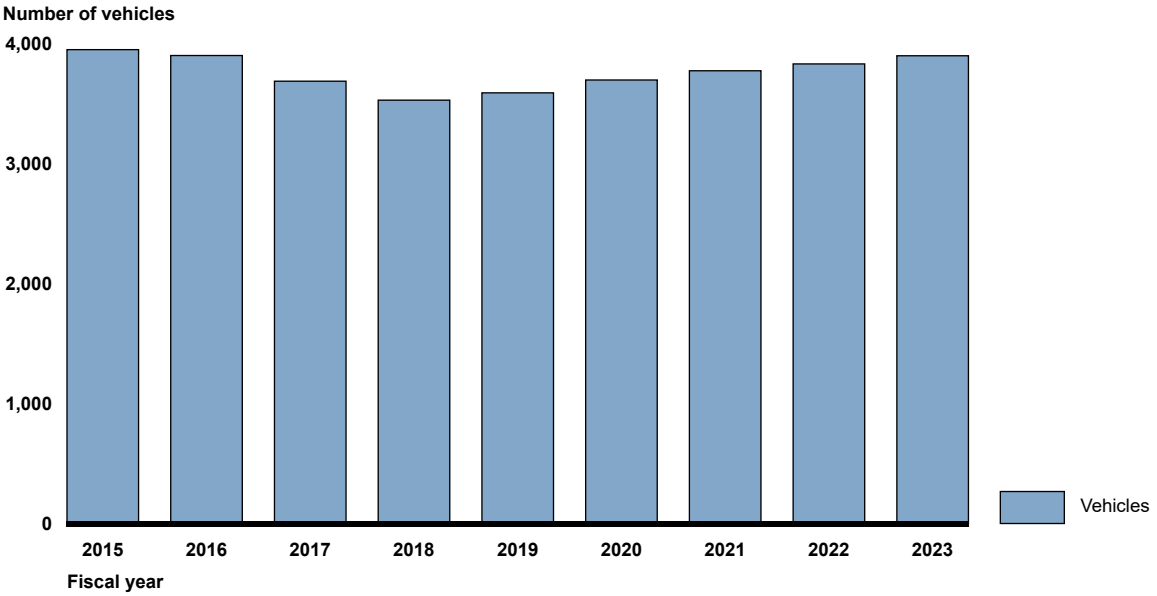
Army officials stated that the Abrams program did not meet its 90 percent availability goal due to parts and materiel challenges. Additionally, increased parts and materiel prices have resulted in contract delays or cancellations. For example, Army officials stated both the engine and transmission have secondary supplier issues, and the Army cannot find a manufacturer for these critical components. Also, other components are not compatible with previous variants, and the manufacturer faces delays producing the obsolete components. Army officials stated that they hold bi-weekly meetings with Abrams units to address availability challenges.

Abrams Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↓	↓	→	↑	→	↓	→	↓
Met goal	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

↑ Increase ↓ Decrease → Less than 1 percent change

Abrams Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

Abrams Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that the Abrams faced sustainment challenges in eight of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Army officials stated that unplanned maintenance occurred when vehicles arrive at the depot in worse condition than expected because sending units often strip any useful parts and equipment prior to sending tanks to the depot. Additionally, Army officials stated that almost all depot maintenance delays occurred due to a lack of available parts and materiel. Army officials also stated that a lack of depot overhauls affects both the staffing numbers and training of maintainers. For example, the Army has made use of Abrams depot maintainers for flyaway teams to help unit-level maintenance, though sending depot maintainers to the field reduces maintainers for Abrams upgrades and maintenance and causes delays with depot maintenance.

Army depots performed 47 Abrams overhauls for Army customers since fiscal year (FY) 2015 while performing 188 overhauls for foreign militaries including 116 in FY 2023.

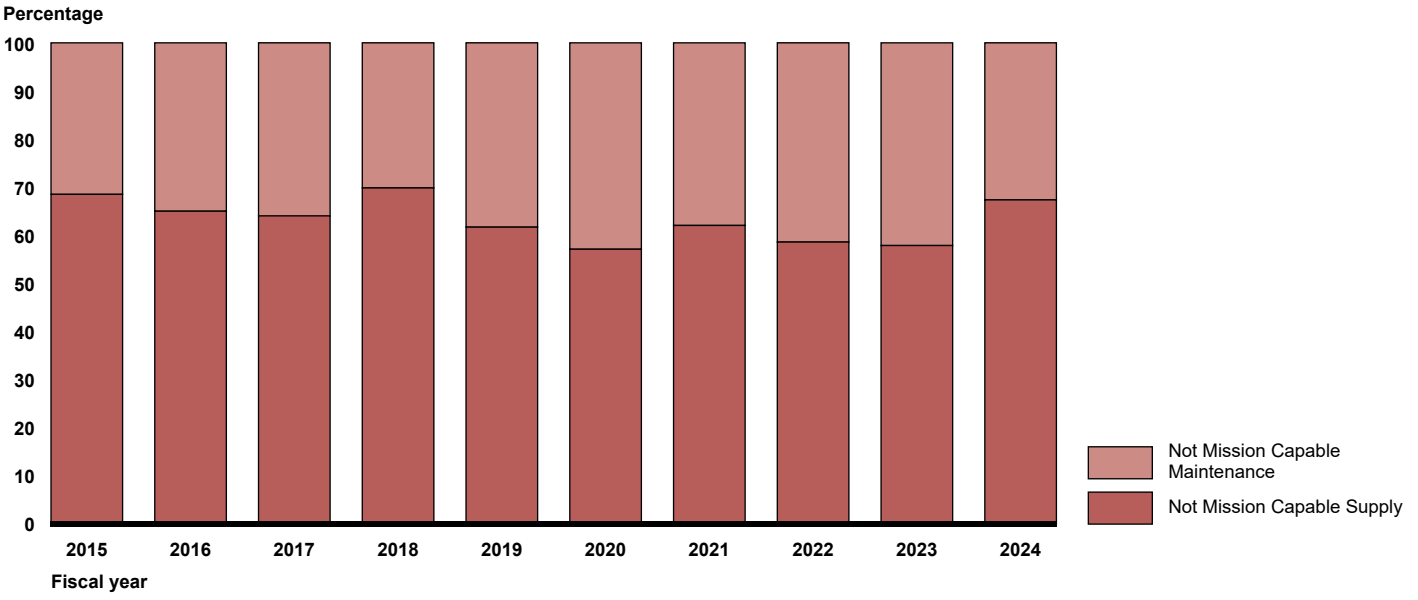
The Army reported individual Abrams as not mission capable due to the lack of parts and materiel and seven percent of the time due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the Abrams because DOD deemed the information to be CUI.

The order fill rate for Abrams depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 81.1 percent in FY 2024.

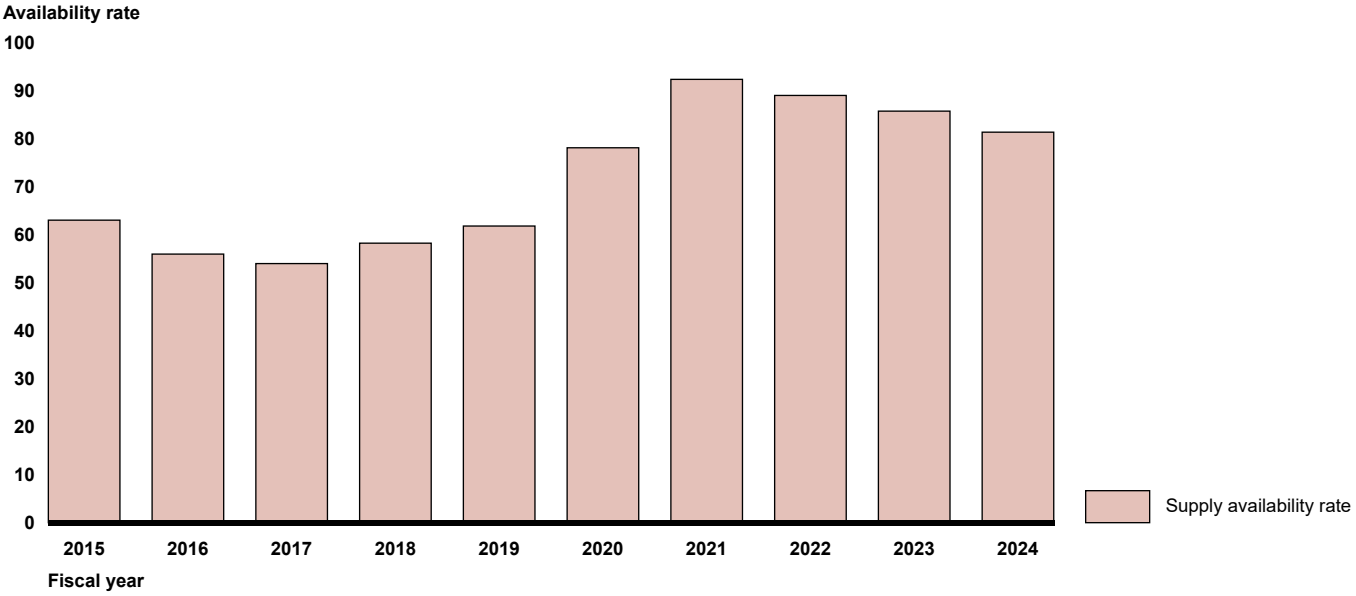
Abrams Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	0	6	8	26	2	4	1
Foreign	22	28	22	0	0	0	0	0	116	0

Abrams Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



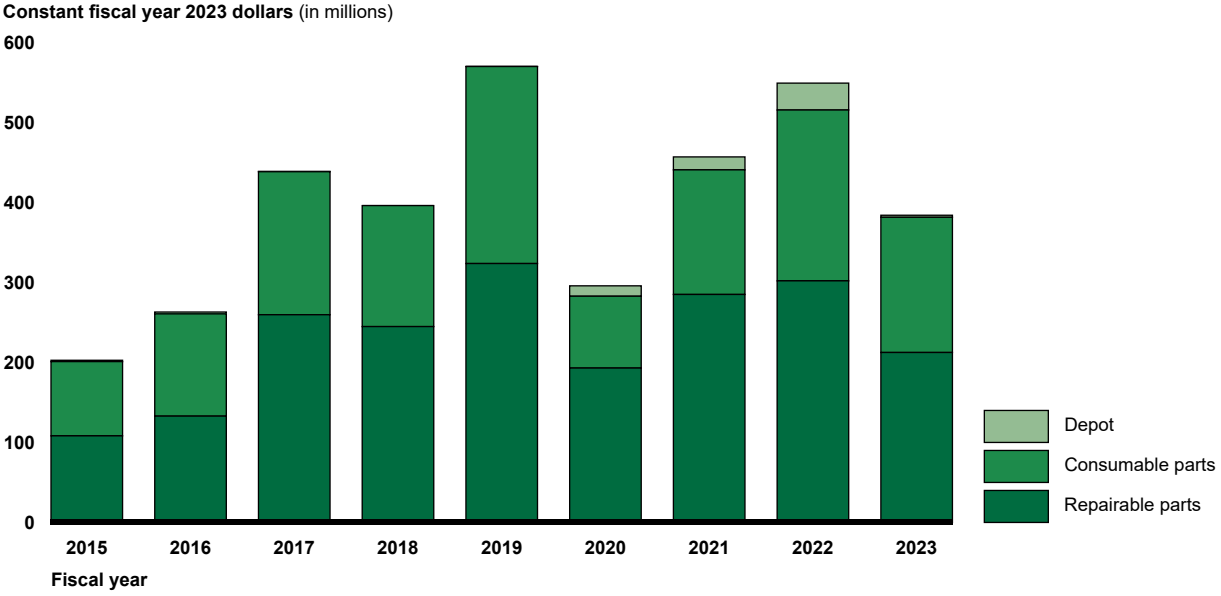
Abrams Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



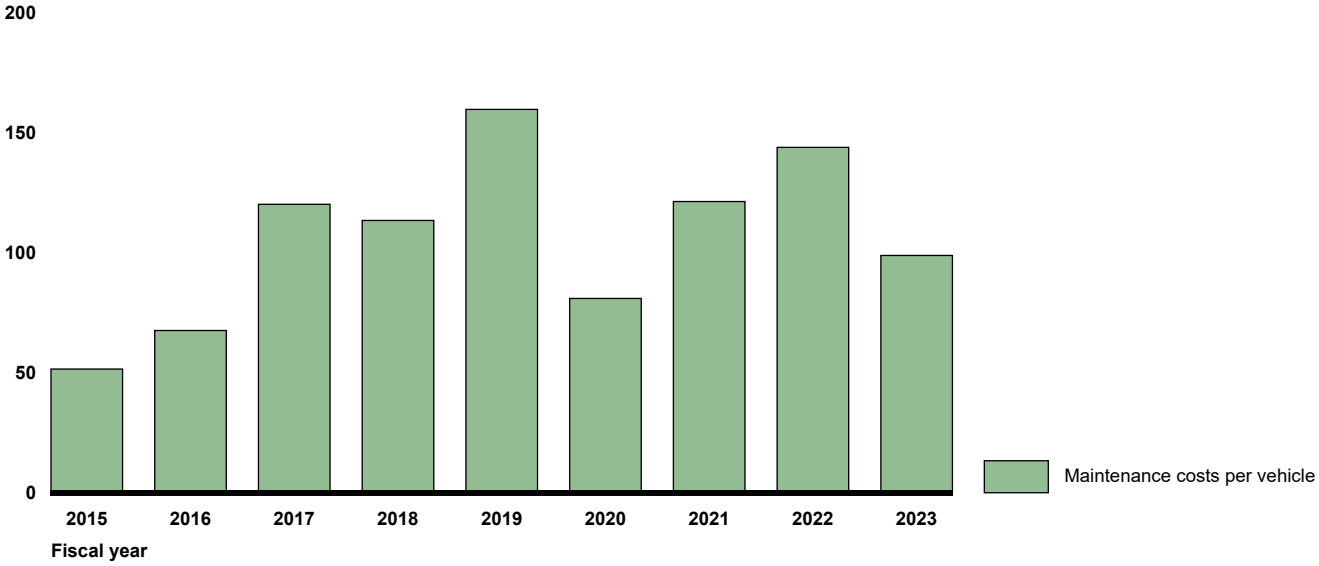
Maintenance Costs

Abrams total maintenance costs changed by $181.3 million from FY 2015 to FY 2023. According to Army officials, the change was driven by increased parts and materiel costs.

Abrams Total Maintenance Costs, Fiscal Years 2015–2023



Abrams Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



APC
M113 Armored Personnel Carrier

Program Essentials

Manufacturer
BAE Systems

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

Primary Depot
Anniston Army Depot, Alabama

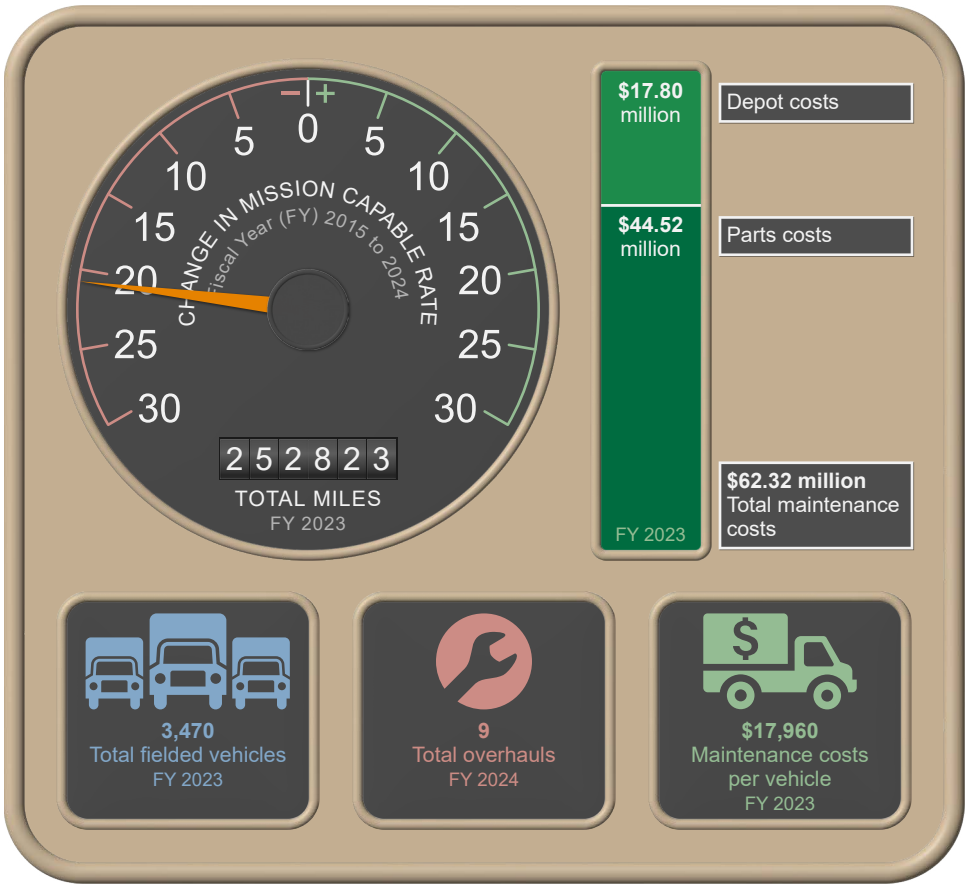
Variants and Introduction Date
- A1: 1959
- A2: 1979
- A3: 1987

Variants include ambulances, mortar carriers, and command posts vehicles.

Vehicle Service Life
30 years

The APC is a lightly armored, tracked, air transportable personnel carrier designed to carry soldiers and certain types of cargo.

APC Sustainment Status



Mission Capable Rate and Inventory

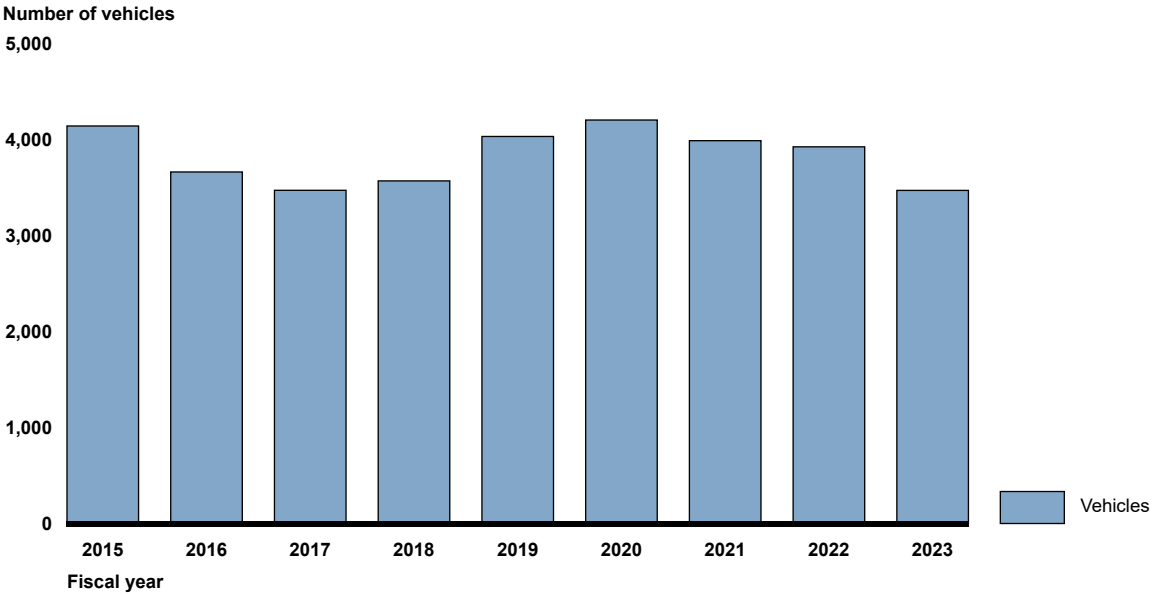
Army officials stated that APC vehicles have not reached its 90 percent availability goal due to factors including minimum depot overhauls, which caused the average age of the fleet to reach 35 years, resulting in added difficulty maintaining APCs for unit maintainers. They also stated the original equipment manufacturer no longer makes new engines, and the Army solely relies upon rebuilt engines from the depot. Army officials stated that the Army attempts to mitigate these challenges by harvesting long lead time parts from vehicles at its depot and working with the manufacturer to reestablish the production of APC engines.

APC Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↓	↓	↓	→	↑	↓	↓	↓
Met goal	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

↑ Increase ↓ Decrease → Less than 1 percent change

APC Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

APC Sustainment Challenges Identified by the Army

- ○ Carryover work or continuing resolutions
- ○ Delays acquiring replacement vehicles
- ● Maintenance delays
- ● Parts and material
- ● Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ○ Unplanned maintenance

Army officials reported that the APC faced sustainment challenges in five of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Army officials cited the longer-than-expected service life of the APC fleet as a challenge. These officials stated that extended service life of the APC led to diminished replacement parts sources, longer lead time parts production, and poor vendor performance. For example, Army officials stated that the engine production line began having parts quality issues in the 2021 timeframe with piston sleeves, bearings, and fuel injectors. Army officials stated that engines continue to be the top availability driver for the APC program.

Army depots performed 87 APC overhauls for Army customers since FY 2018 while performing 193 overhauls for foreign militaries including 184 in FY 2023.

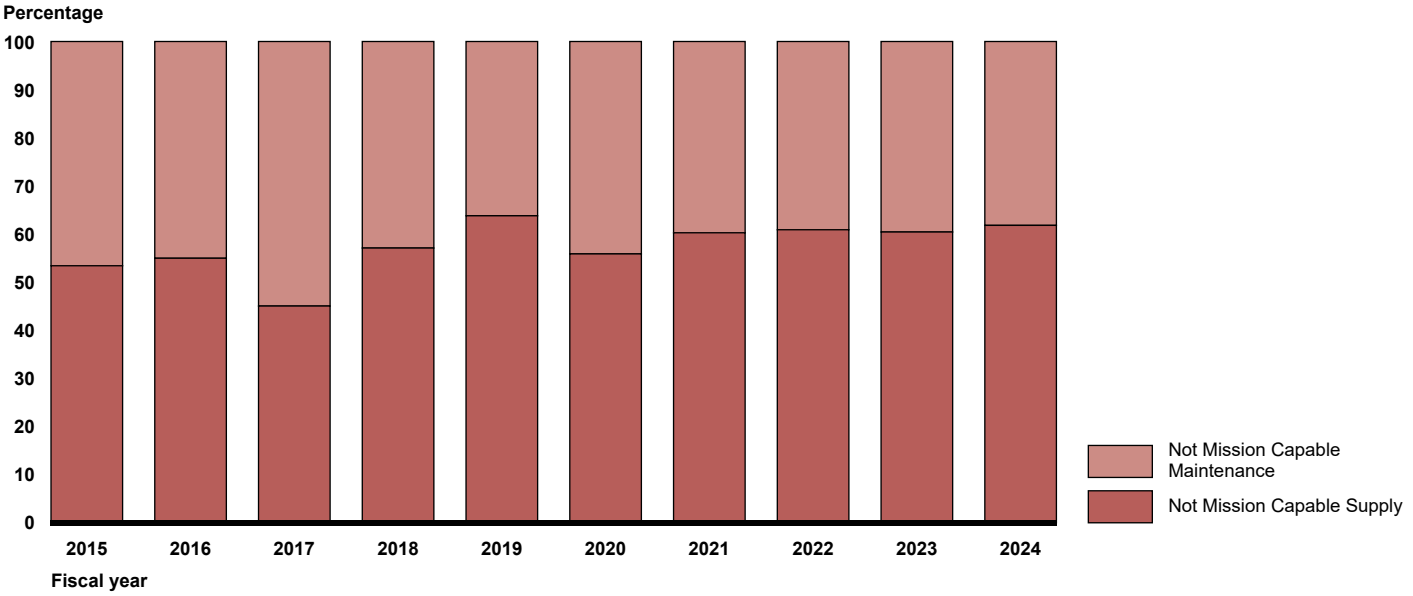
The Army reported individual APCs as not mission capable due to the lack of parts and materiel and due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the APC because DOD deemed the information to be CUI.

The fill rate for APCs depot-level repairables, which are parts and equipment repaired or refurbished for reuse, stood at 75.8 percent in FY 2024.

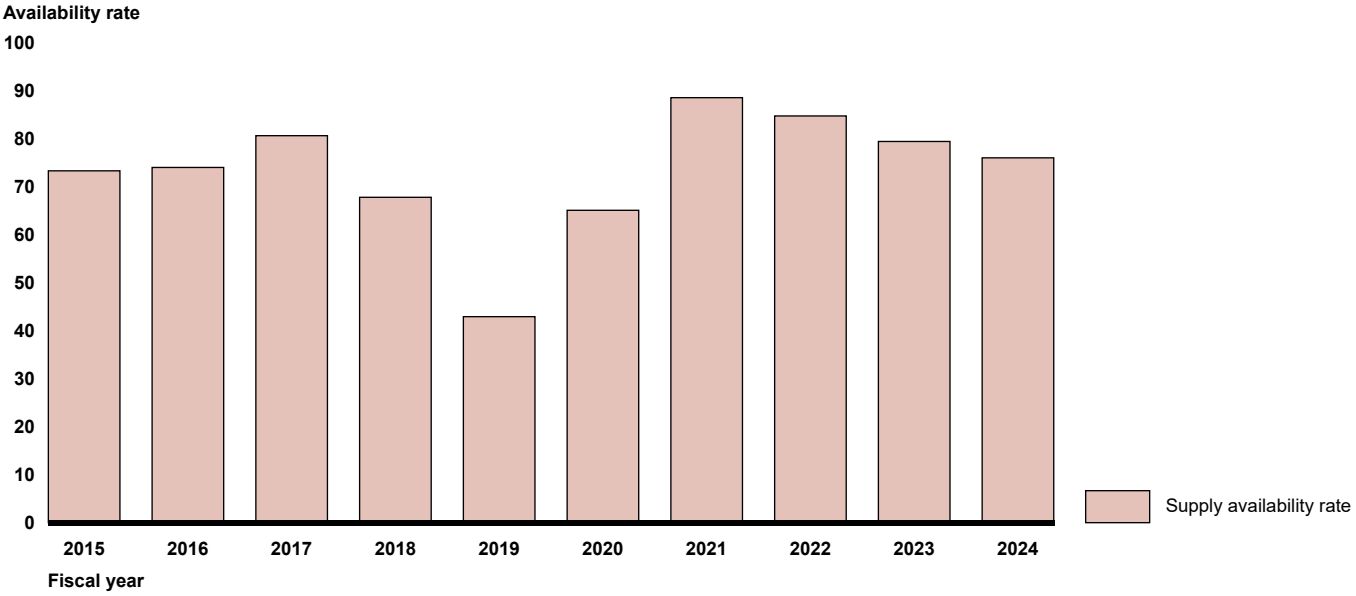
APC Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	25	8	8	12	18	16	0
Foreign	0	0	0	0	0	0	0	0	184	9

APC Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



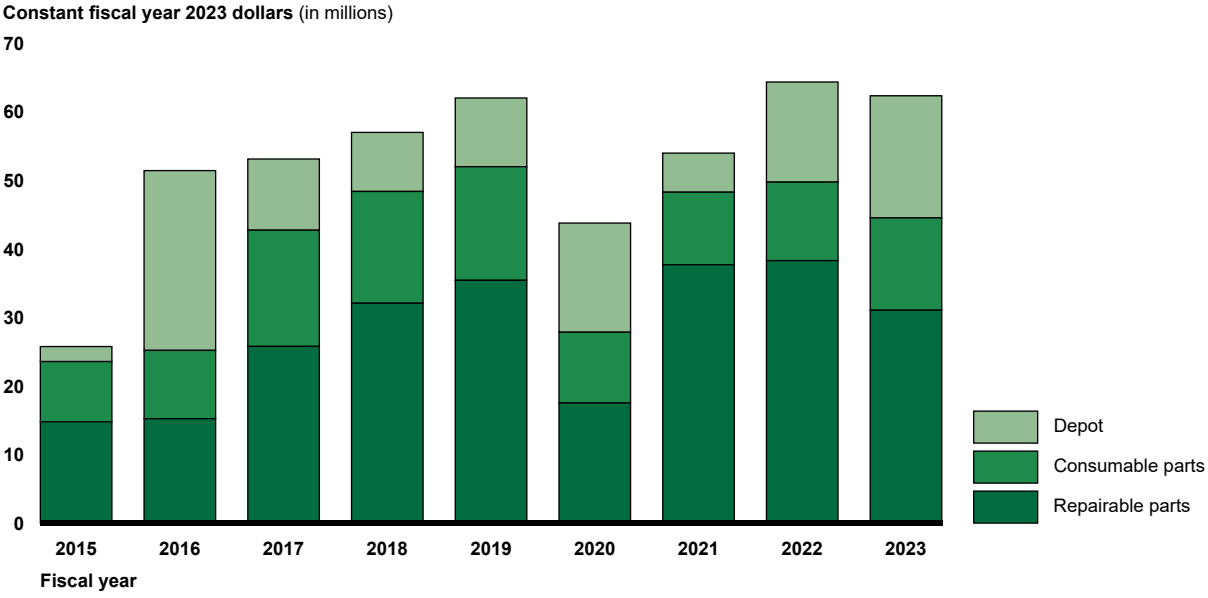
APC Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



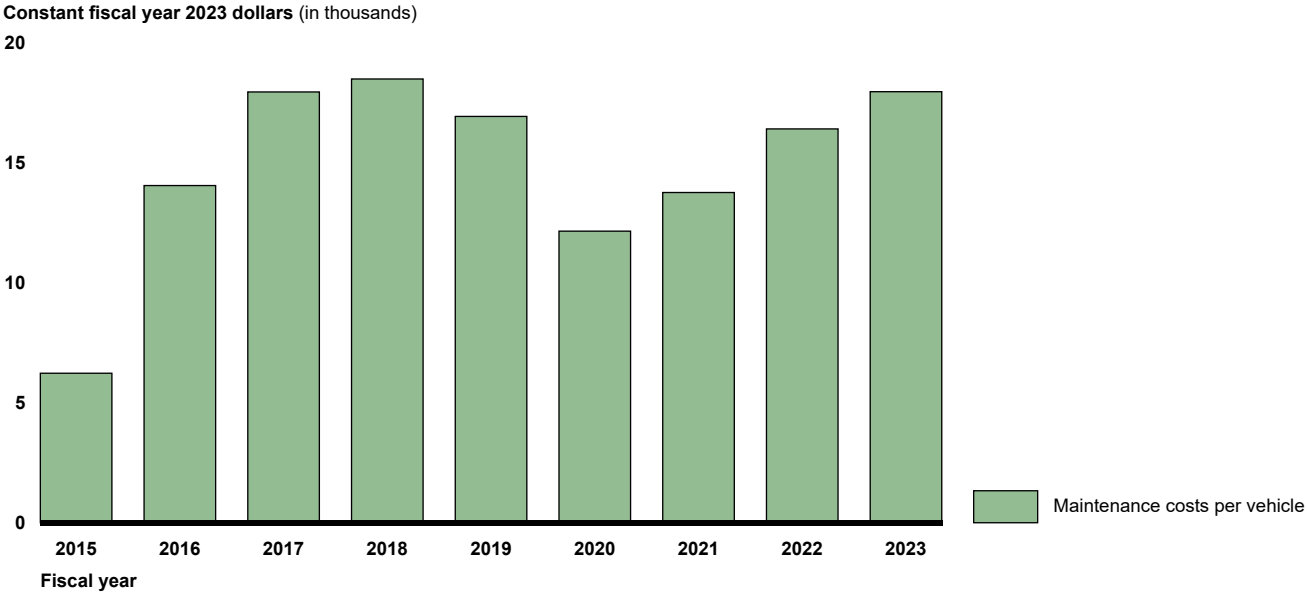
Maintenance Costs

The APC's total maintenance costs have increased $36.6 million since FY 2015 and according to Army officials were driven by increased parts and materiel costs. Officials told us that fewer overhauls result in more expensive repairs for vehicles as their condition degrades.

APC Total Maintenance Costs, Fiscal Years 2015–2023



APC Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



ARV
M88 Armored Recovery Vehicle

Program Essentials

Manufacturer
BAE Systems

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

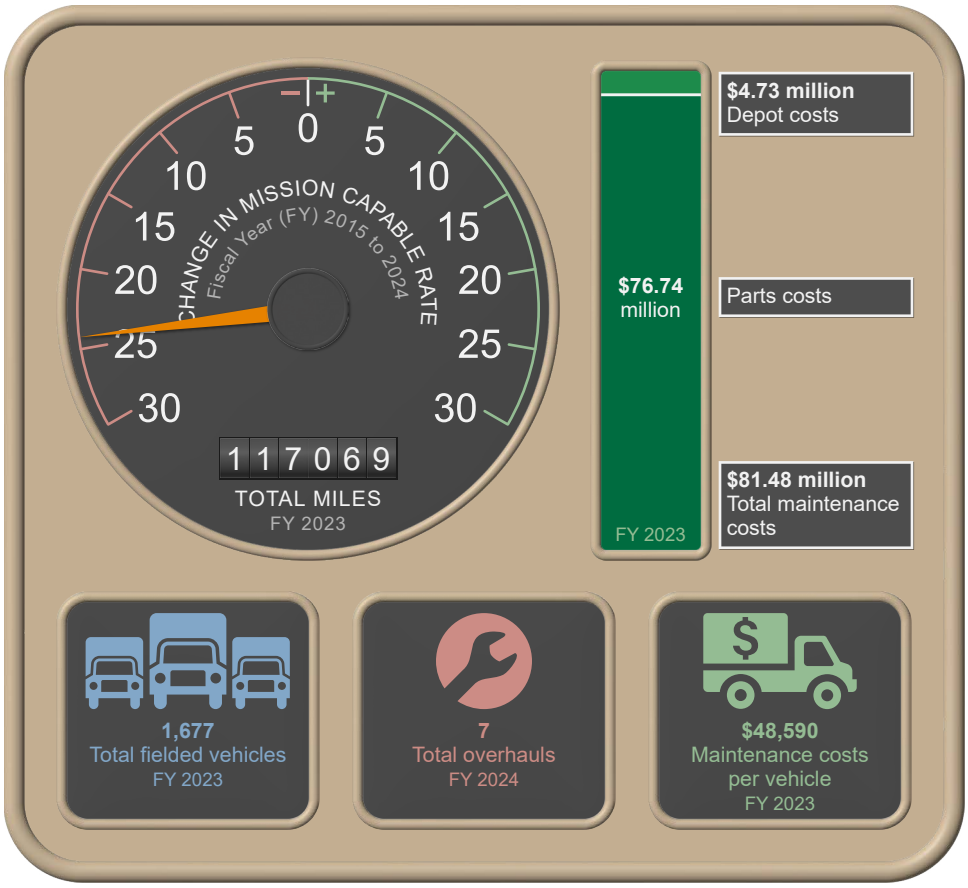
Primary Depot
Anniston Army Depot, Alabama

Variants and Introduction Date
- M88A1: 1972
- M88A2: 1994

Vehicle Service Life
30 years

The armored recovery vehicle is designed for battlefield recovery of heavy equipment and combat vehicles. It can recover tanks mired to different depths, remove and replace tank turrets and power packs, and upright overturned heavy combat vehicles. The main winch on this vehicle is capable of recovering Abrams tanks. The armored recovery vehicle can also be used to start other vehicles and to refuel or defuel vehicles.

ARV Sustainment Status



Mission Capable Rate and Inventory

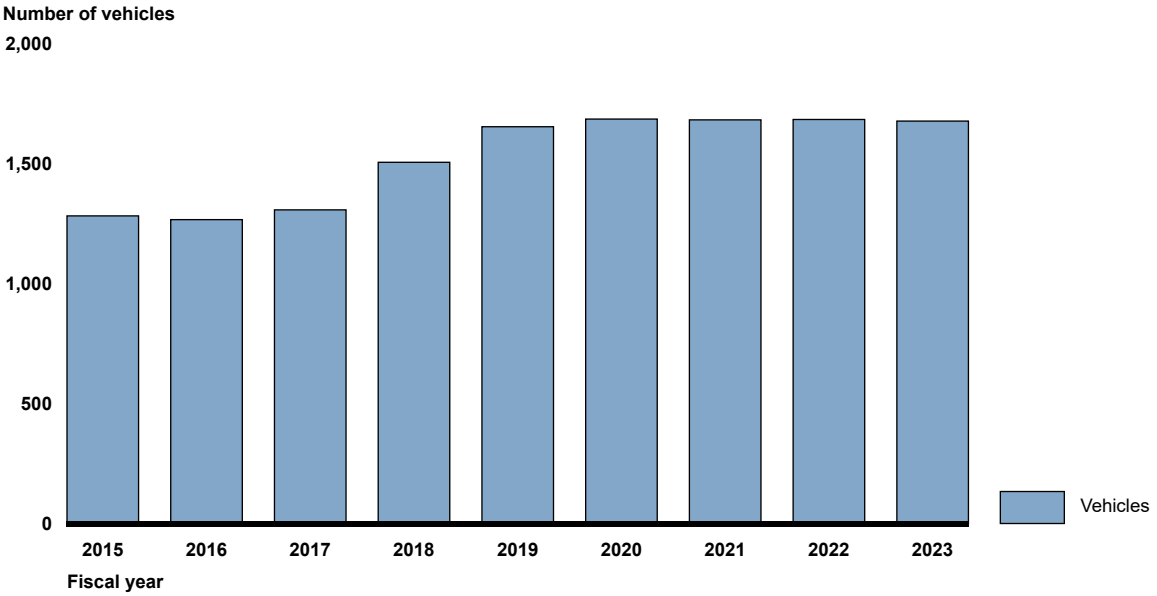
Army officials stated the ARV fleet has not met its 90 percent availability goal because of several factors including funding issues, lack of spare parts, contracting issues, and obsolescence. For example, the lack of maintenance funds has prevented active ARVs from obtaining overhauls leading to more frequent breakdowns. Army officials also stated efforts to mitigate the shortfall in ARV availability include repairing spares parts and buying critical components among other efforts. Officials also said the Army is working to identify and prioritize top availability drivers to reduce maintenance downtime to ultimately improve overall ARV availability rates.

ARV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↓	↓	↓	→	↑	→	↓	↓
Met goal	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

↑ Increase ↓ Decrease → Less than 1 percent change

ARV Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

ARV Sustainment Challenges Identified by the Army

- ○ Carryover work or continuing resolutions
- ○ Delays acquiring replacement vehicles
- ● Maintenance delays
- ● Parts and material
- ● Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ● Unplanned maintenance

Army officials reported that the ARV faced sustainment challenges in six of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated that specific sustainment challenges for the AVR include diminishing sources of supply and parts obsolescence. For example, Army officials stated that manufacturer of the auxiliary power unit in the engine recently ceased production. Further, officials stated that a previous manufacturer lost the technical data after going out of business and that reverse-engineering some parts remains challenging. For example, the Army has struggled to source high-grade steel for torsion bars due to the manufacturer's reluctance to produce small batches of the steel.

Army depots performed five ARV overhauls for Army customers, the last one in FY 2019. Army depots performed 47 ARV overhauls for foreign militaries including 37 since FY 2023.

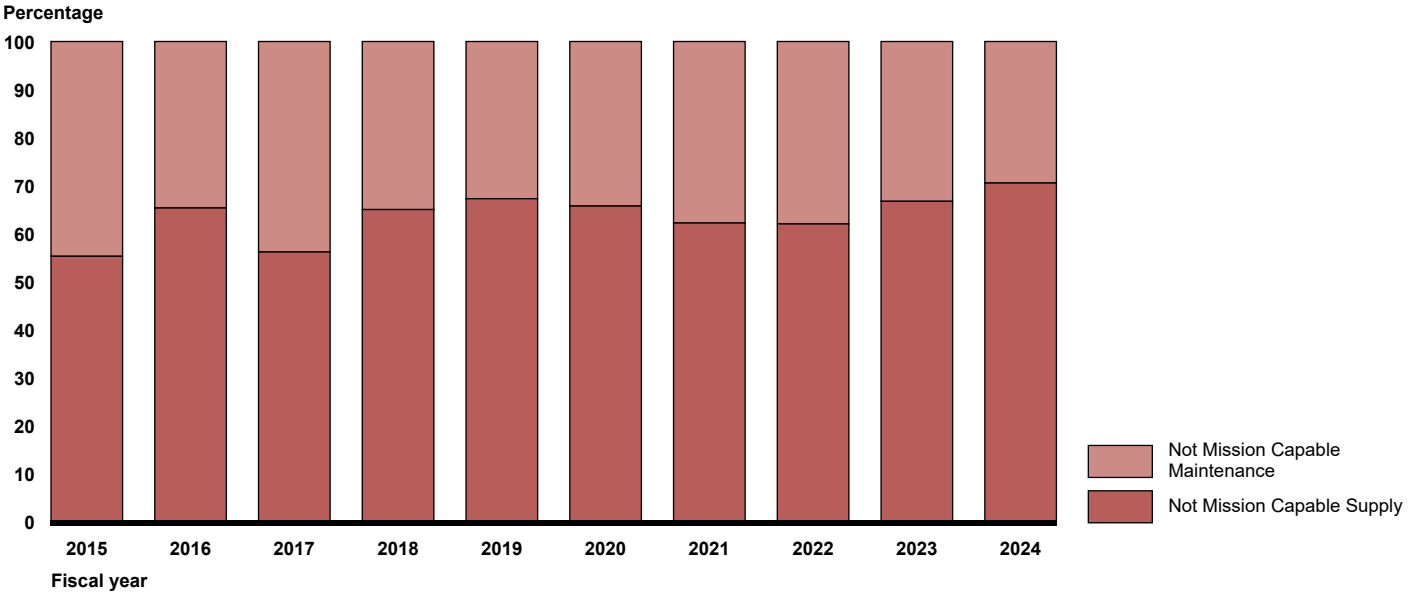
The Army reported individual ARVs as not mission capable due to the lack of parts and materiel and due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the ARVs because DOD deemed the information to be CUI.

The fill rate for ARVs depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 55 percent in FY 2024.

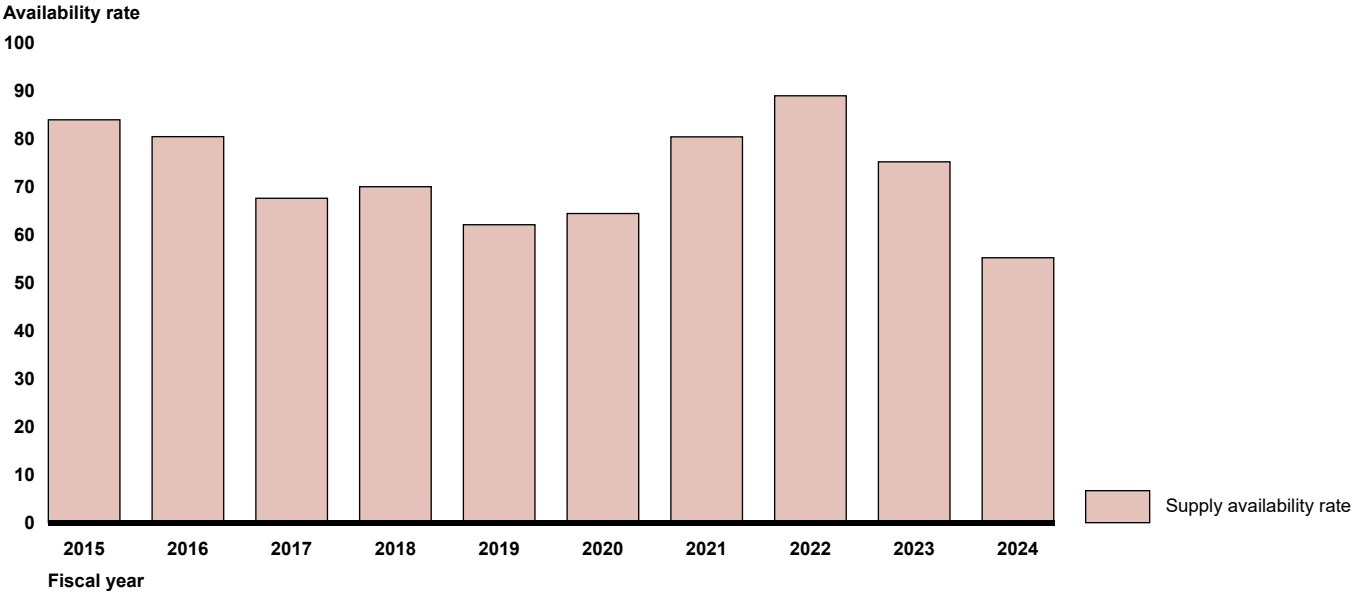
ARV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	2	3	0	0	0	0	0
Foreign	0	0	0	10	0	0	0	0	30	7

ARV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



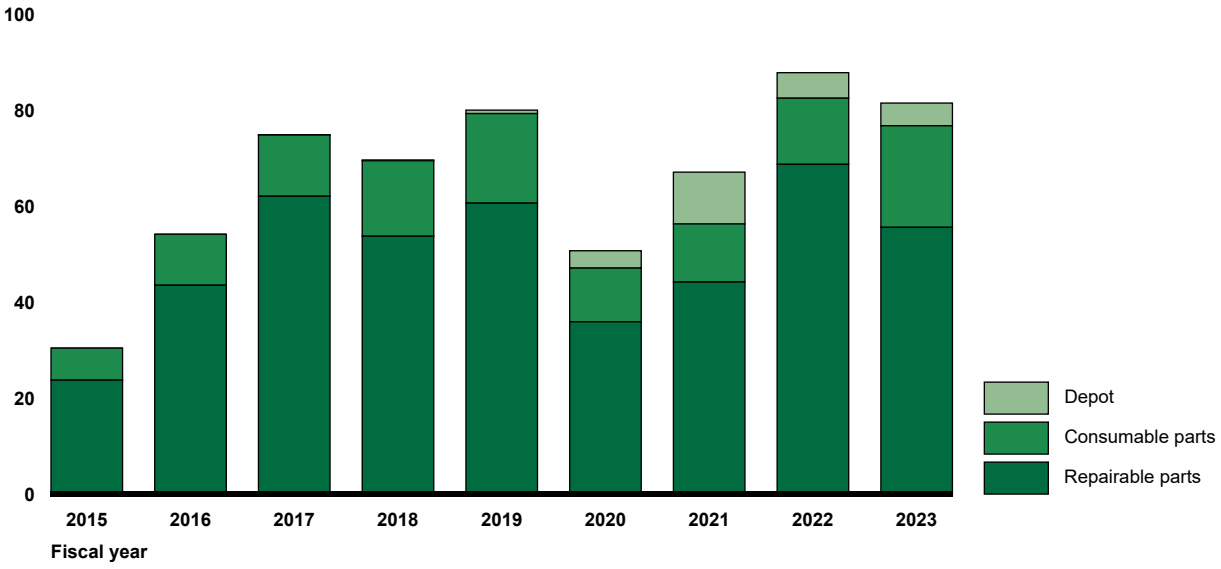
ARV Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



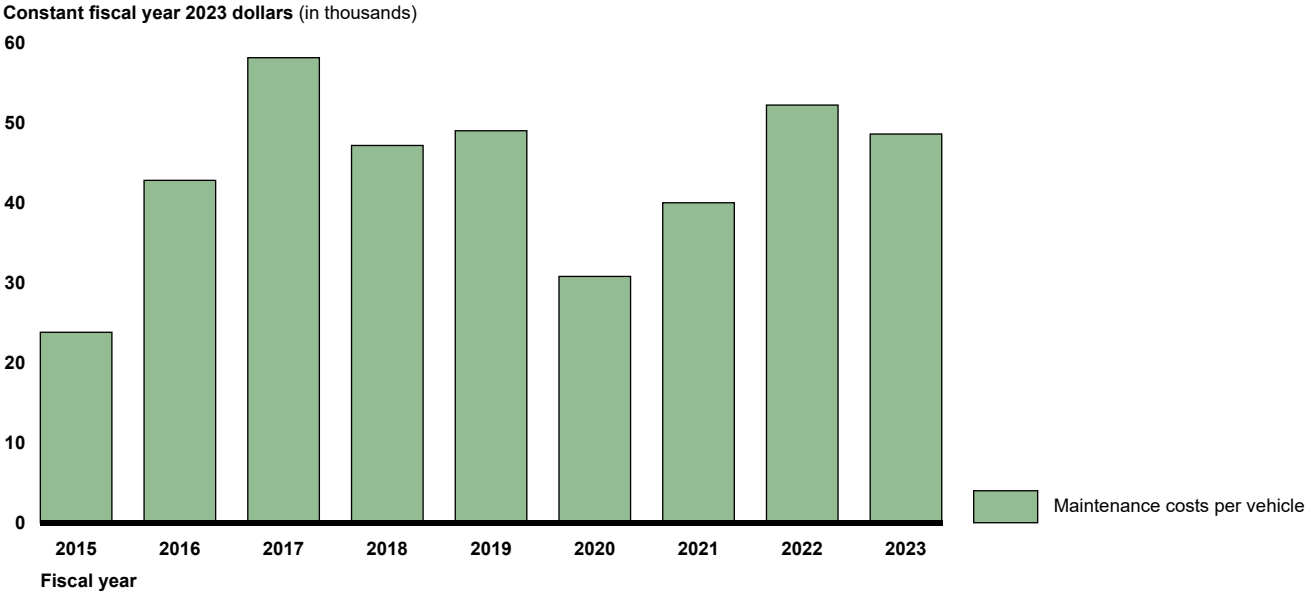
Maintenance Costs

The ARV's total maintenance costs have increased $51 million since FY 2015 and according to Army officials were driven by increased parts and materiel costs. Officials stated that the cost of repairs have increased due the need for more extensive repairs as vehicle conditions degrade.

ARV Total Maintenance Costs, Fiscal Years 2015–2023



ARV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



Bradley Fighting Vehicle

Program Essentials

Manufacturer
BAE Systems,
formerly United Defense

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

Primary Depot
Red River Army Depot, Texas

Variants and Introduction Date
- M2A2: 1985
- M2A3: 1998
- M2A4: 2020

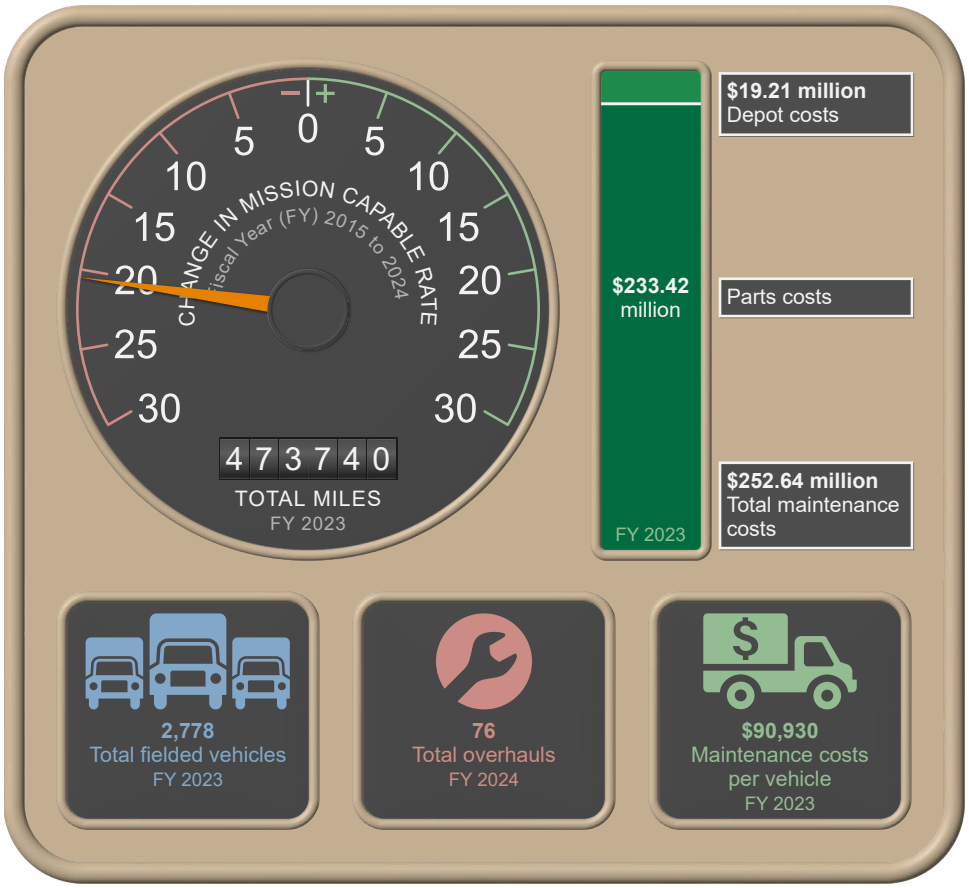
Other variants include:
- M3A3
- M7
- M7A4

Bradley mission roles include infantry, cavalry, fire support, and engineer vehicles.

Vehicle Service Life
30 years

The Bradley Infantry Fighting Vehicle is a tracked platform designed to transport infantry or scouts with armor protection, while providing covering fire to suppress enemy troops and armored vehicles. The M2A4 version has three seats for crew members and seven seats for squad members and includes a 25mm automatic cannon as its primary weapon.

Bradley Sustainment Status



Mission Capable Rate and Inventory

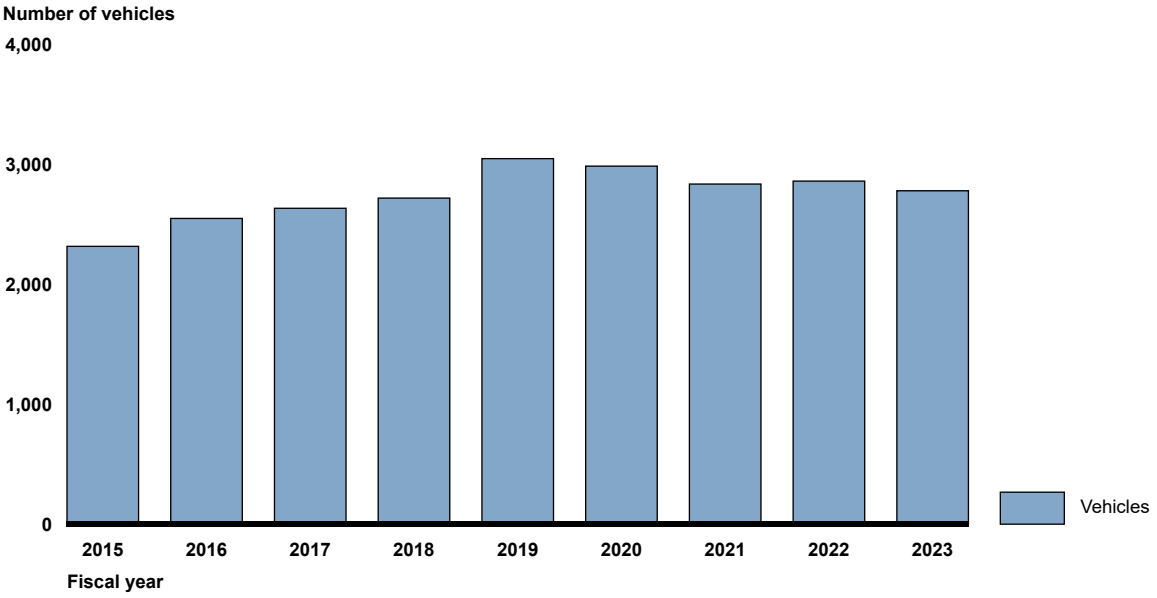
Army officials stated that the Bradley did not meet the 90 percent availability goal due to factors including service-life related aging fleet of vehicles and delays in obtaining parts and materiel. To mitigate these challenges, officials stated that the Army focused planning to meet current and forecasted requirements. Officials stated that the Army has initiated harvest programs, emergency procurements, and long-term contracts. Army officials attribute decreases in operational availability to factors such as: demand increases for critical long-lead items (i.e. cable assemblies, and engines); unplanned events like trainings; and contractor production issues.

Bradley Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↓	↓	↓	↑	↓	↓	↓	↓
Met goal	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

Bradley Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

Bradley Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that the Bradley faced sustainment challenges in eight of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated service-life related challenges common to an aging fleet, such as increased unplanned maintenance, and diminished manufacturing sources. Also, Army officials stated that the Army lacks enough expert maintainers to service more vehicles annually.

Army depots performed 109 Bradley overhauls for Army customers while performing 174 overhauls for foreign militaries including 142 overhauls since FY 2023.

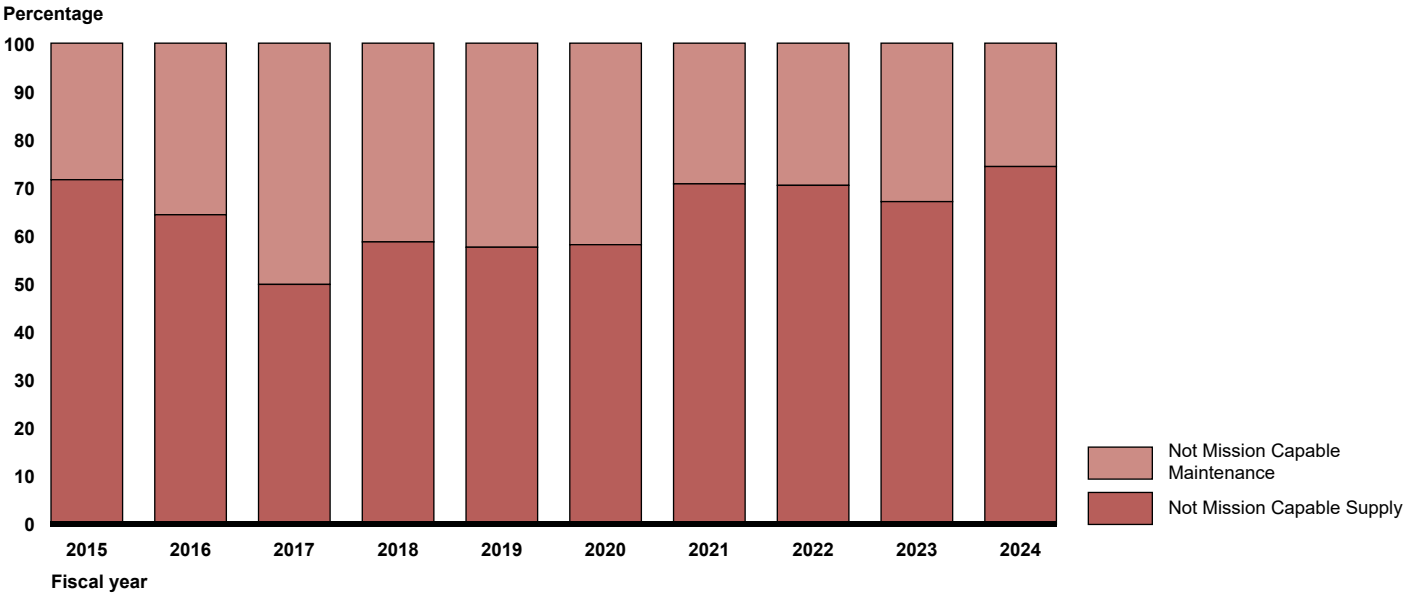
The Army reported individual Bradley vehicles as not mission capable due to the lack of parts and materiel and time due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the Bradley vehicles because DOD deemed the information to be CUI.

The order fill rate for Bradley's depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 68.3 percent in FY 2024.

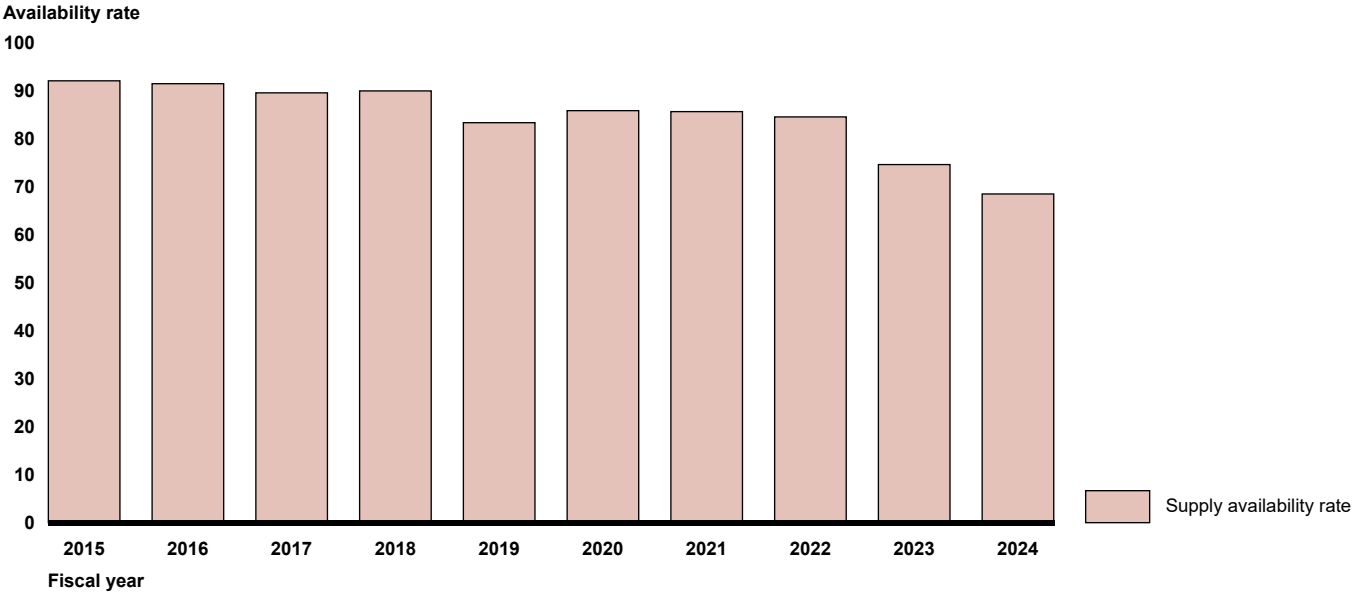
Bradley Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	14	1	12	26	6	28	7	0	4	11
Foreign	0	32	0	0	0	0	0	0	77	65

Bradley Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



Bradley Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024

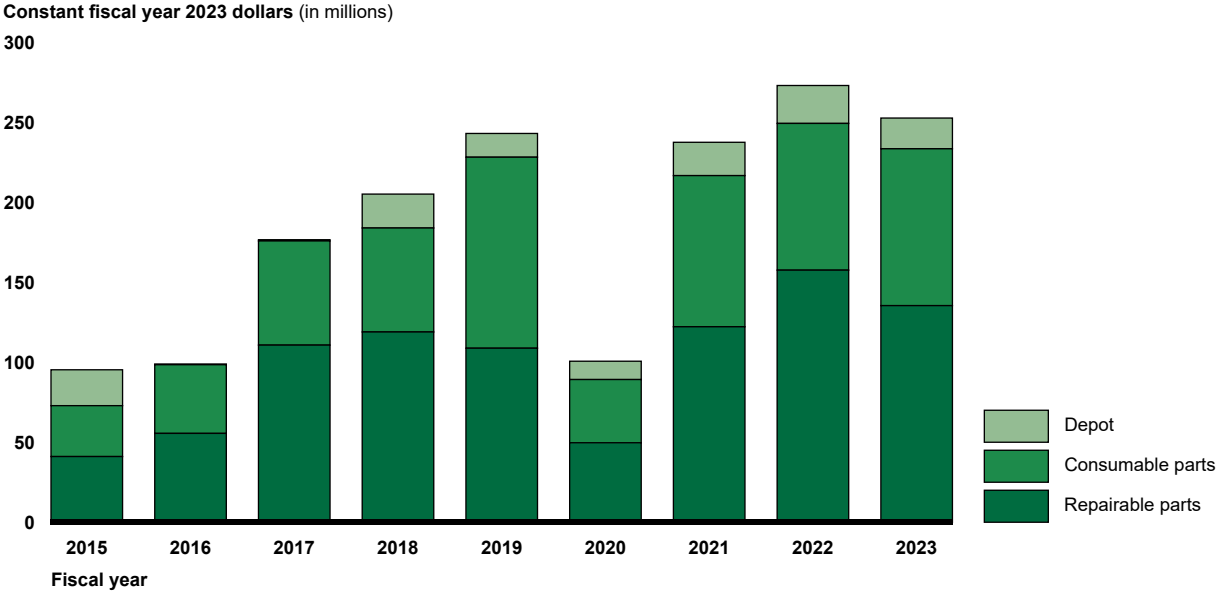


Note: Based on data provided by the Army, we could not combine order fill rates for each Bradley variant. The order fill rate above applies only to the greatest number Bradley variant, the M2A3.

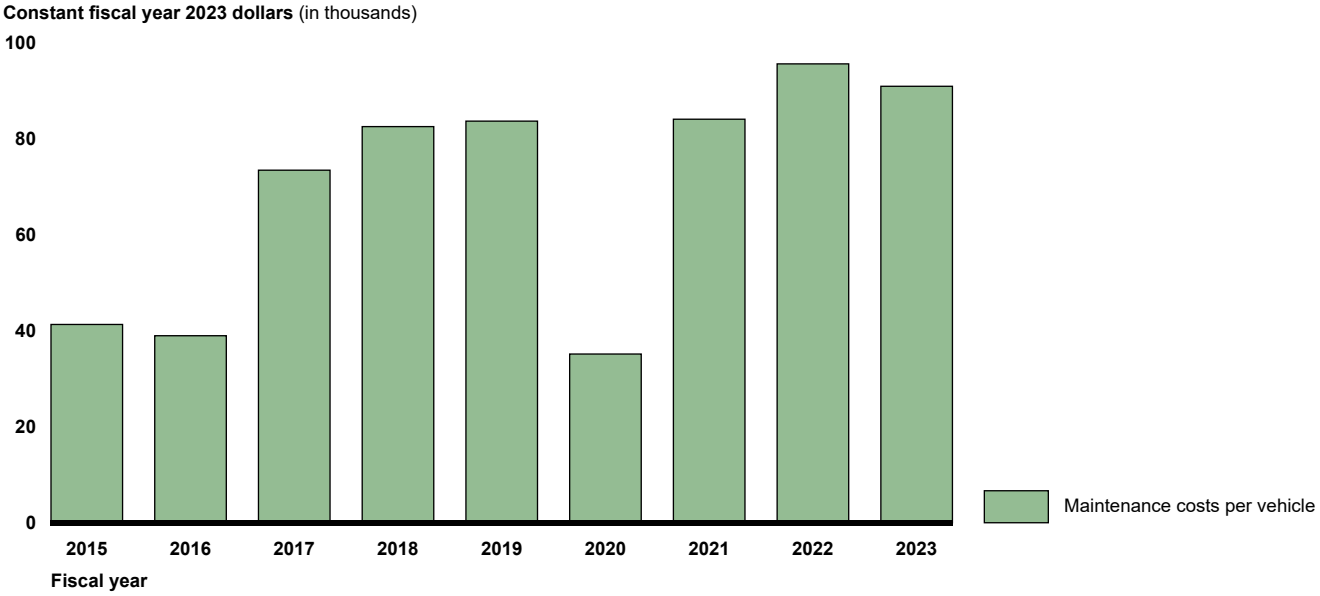
Maintenance Costs

The Bradley's total maintenance costs have increased $157.3 million since FY 2015 driven by increased parts and materiel costs according to Army officials.

Bradley Total Maintenance Costs, Fiscal Years 2015–2023



Bradley Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



Paladin
M109 Self-Propelled Howitzer

Program Essentials

Manufacturer
BAE Systems

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

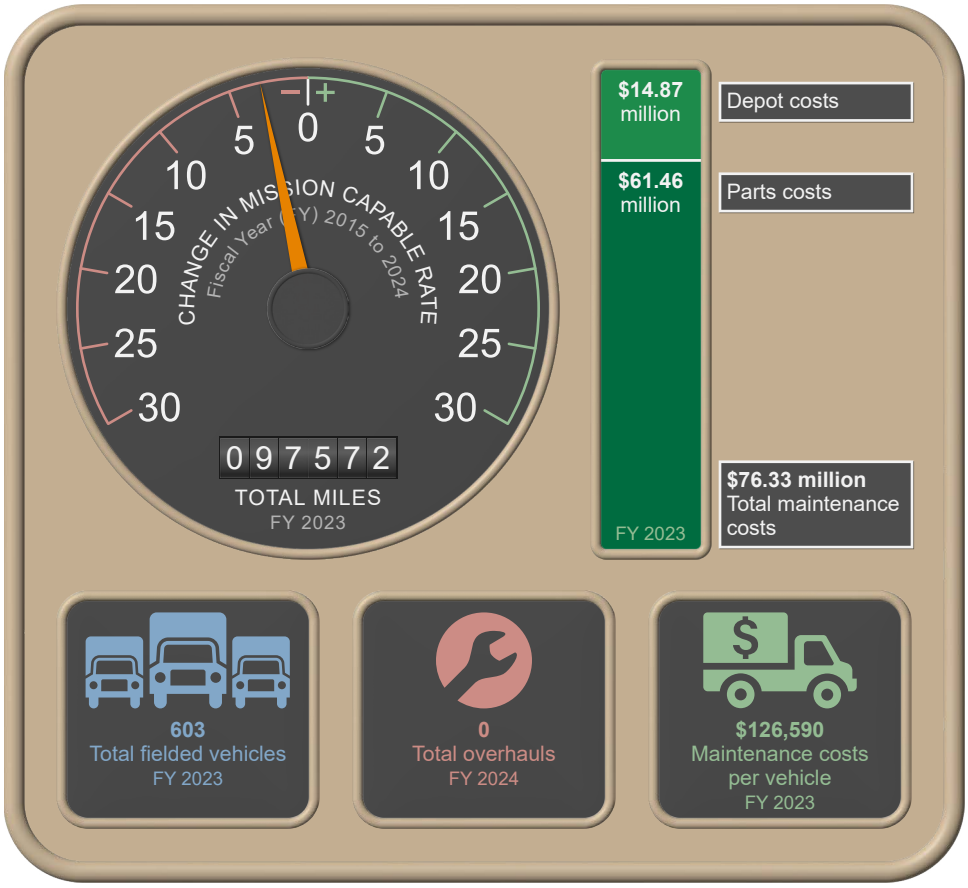
Primary Depot
Anniston Army Depot, Alabama

Variants and Introduction Date
- M109A6: 1991
- M109A7: 2013

Vehicle Service Life
30 years

The Paladin self-propelled howitzer uses indirect fire to deliver precision-guided, long-range, lethal and non-lethal artillery fire to support large-scale combat operations. The newest variant, the A7, improves the mobility, survivability, and reliability of the Paladin and utilizes common parts, including the chassis, with the Bradley.

Paladin Sustainment Status



Mission Capable Rate and Inventory

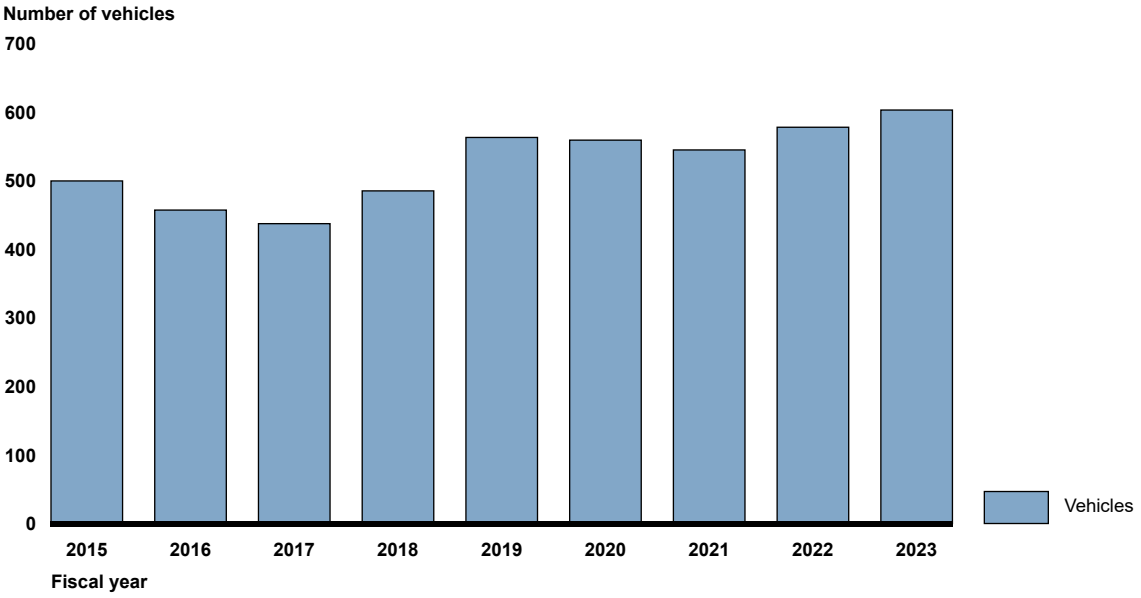
Army officials stated that the Paladin fleet did not meet its 90 percent availability goal due to factors including receiving less depot maintenance funding for parts and materiel. Officials told us that the service has transitioned to a sustainment mentality and reduced funding for procurement, repairs, and depot maintenance. Officials stated that the Army has funded harvesting programs to cover shortages of DLA managed parts and leveraged emergency buys. Additionally, the depot has dispatched Maintenance Augmentation Teams to increase unit availability at the field level.

Paladin Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↑	↓	↑	↑	↑	↓	→	↓	↓
Met goal	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

↑ Increase ↓ Decrease → Less than 1 percent change

Paladin Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

Paladin Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that the Paladin faced sustainment challenges in all nine of the categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Army officials cited a shortage of trained maintainers and service life-related challenges, such as the age of the fleet. For example, Army officials noted that seven of 10 Army artillery brigades had received the newer Paladin A7 variant, yet the training they received remained tied to the older A6 variant. Further, Army officials noted that the A6 variant's gun mounts are old and some use technical data that include hand drawings from the 1950s.

Army depots performed 59 Paladin overhauls for Army customers since FY 2015 though the depots last performed Paladin overhauls in FY 2022. Army depots have performed no Paladin overhauls for foreign militaries since FY 2015.

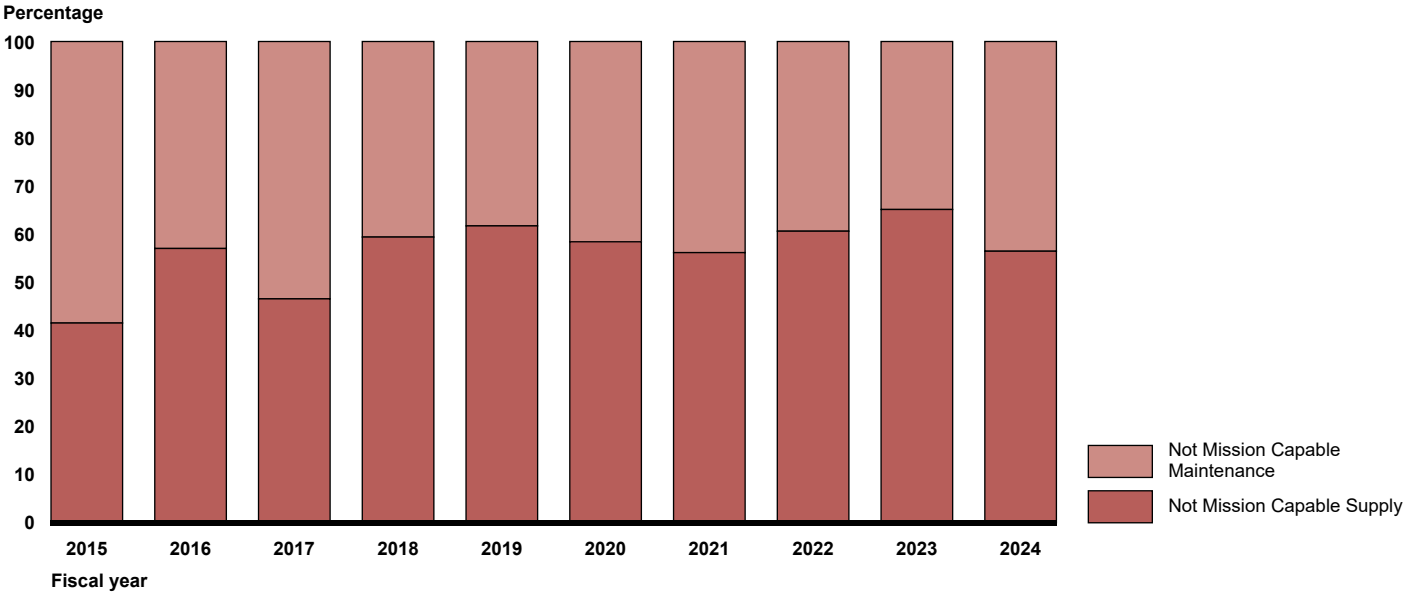
The Army reported individual Paladins as not mission capable due to a lack of parts and materiel and the time due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the Paladins because DOD deemed the information to be CUI.

The Paladin's A6 and A7 variants fill rate for depot-level repairables, which are parts and equipment repaired or refurbished for reuse, stood at 73.7 and 65.5 percent, respectively, in FY 2024.

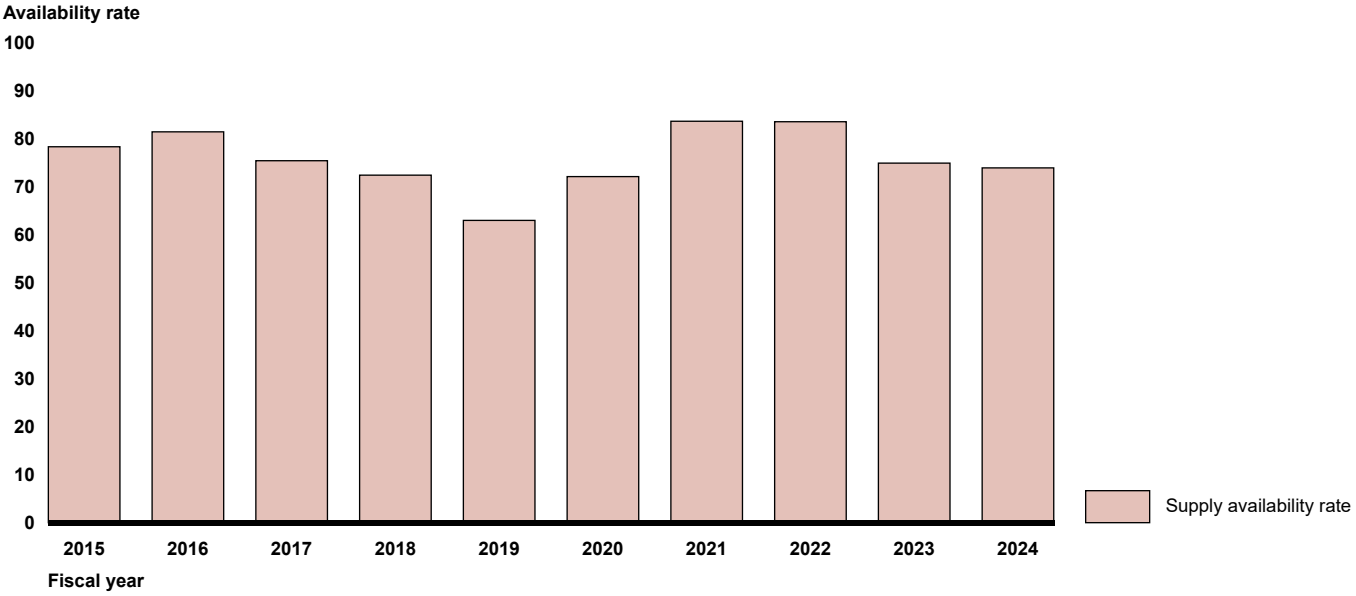
Paladin Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	35	2	15	3	0	4	0	0
Foreign	0	0	0	0	0	0	0	0	0	0

Paladin Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



Paladin Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024

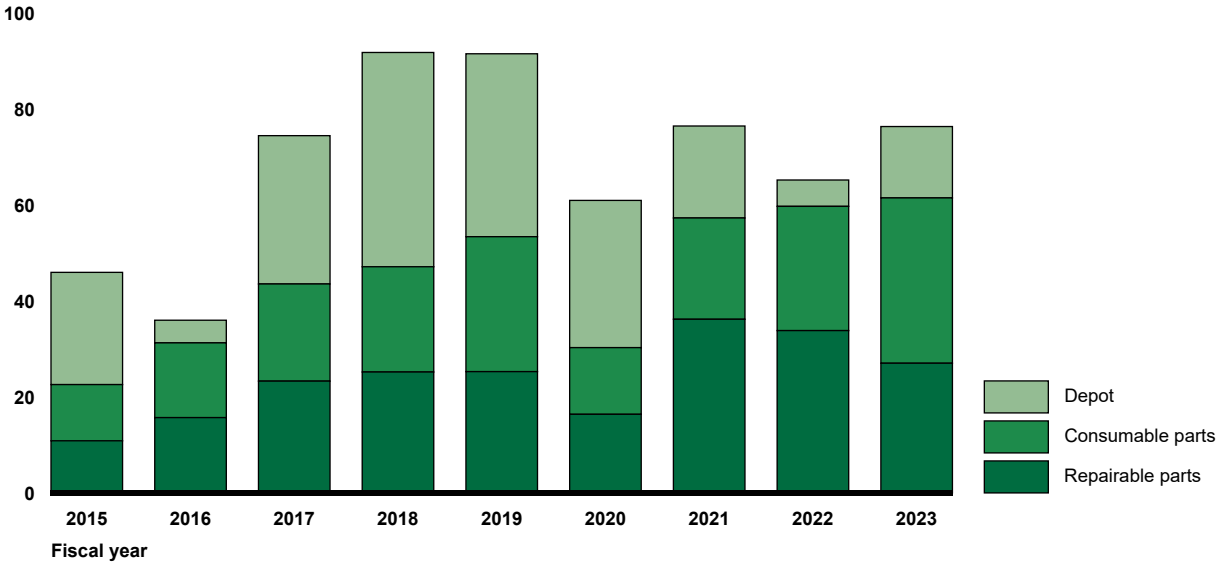


Note: Based on data provided by the Army, we could not combine order fill rates for each Paladin variant. The order fill rate above applies only to the greatest number Paladin variant, the M109A6.

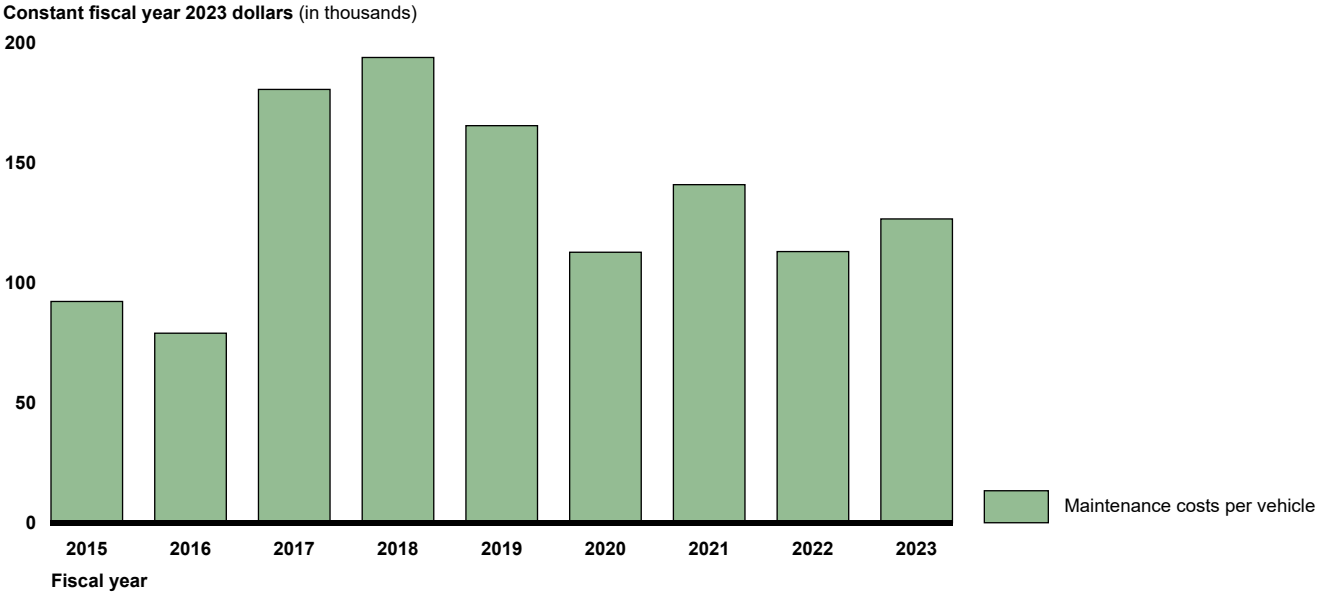
Maintenance Costs

The Paladin's total maintenance costs have increased $30.4 million since FY 2015 driven by increased parts costs. Officials stated that the lack of cyclic depot maintenance has resulted in degradation of the fleet causing costs to increase.

Paladin Total Maintenance Costs, Fiscal Years 2015–2023



Paladin Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



Stryker Combat Vehicle

Program Essentials

Manufacturer
General Dynamic Land Systems

Program Office
Ground Combat Systems
Detroit Arsenal, Michigan

Primary Depot
Anniston Army Depot, Alabama

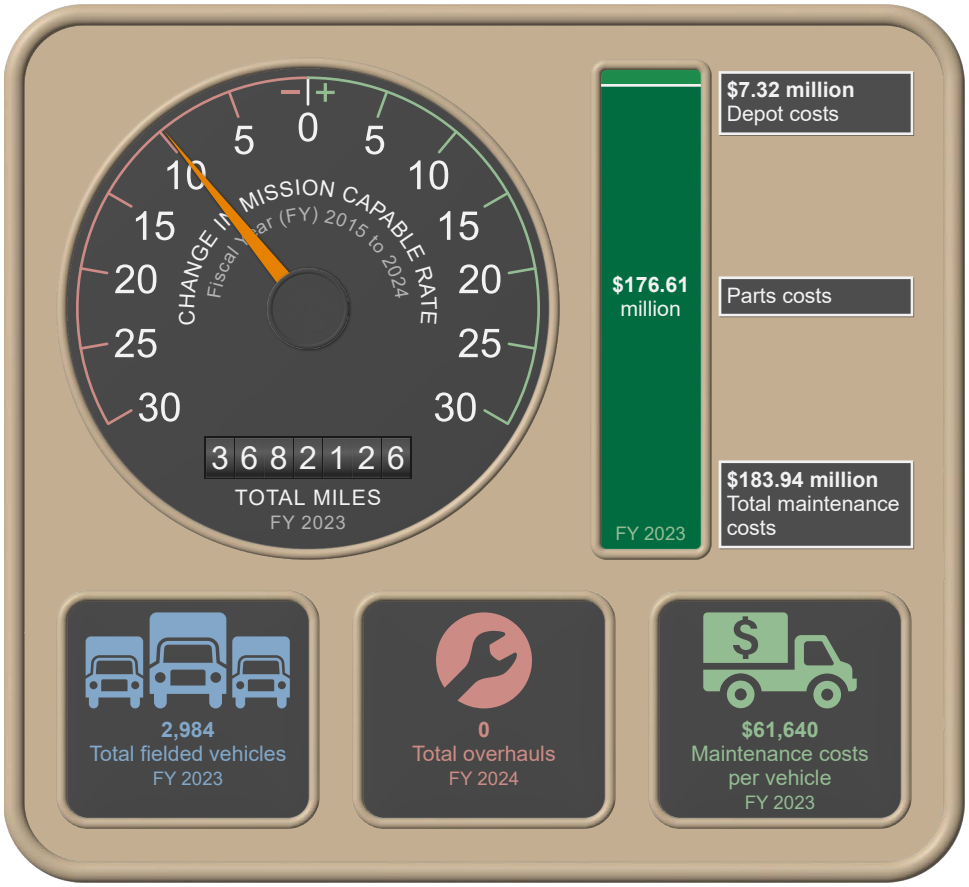
Variants and Introduction Date
- Flat Bottom Hull: 2002
- Double-V Hull: 2011
- Double-V Hull A1: 2018

Mission variants include infantry carrier, reconnaissance, mortar carrier, commander's vehicle, engineering, ambulance, and anti-tank.

Vehicle Service Life
30 years

The Stryker is an eight-wheeled, armored fighting vehicle capable of rapid movement in combat. It is the primary combat and combat support platform of the Stryker Brigade Combat Teams. The Stryker family of vehicles includes more than 20 variants including both flat-bottom and V-shaped hulls.

Stryker Sustainment Status



Mission Capable Rate and Inventory

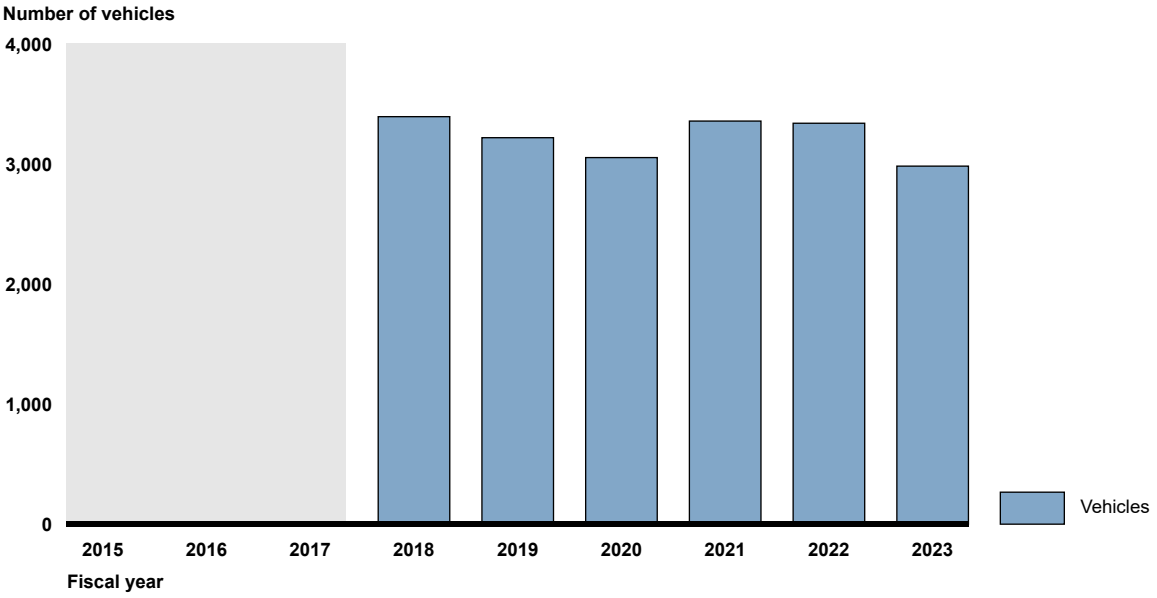
According to Army officials, the service changed how it tracked Stryker in FY 2018. As a result, we excluded FY 2015 through 2017. Stryker has not met the Army's 90 percent availability goal during FY 2015 through 2024. Army officials explained that the Stryker fleet has struggled to meet this goal due to parts and materiel challenges and a lack of Stryker maintainers at the unit level. Officials told us that parts and materiel are available at the Army and DLA level. However, the Army struggles to move these parts and materiel into the hands of unit-level maintainers. Army officials stated that this issue was a contributing factor on Stryker availability rates.

Stryker Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↑	↓	↓	↑	↓	↓	↑	→	↑	↓
Met goal	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

↑ Increase ↓ Decrease → Less than 1 percent change

Stryker Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

Stryker Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that the Stryker faced sustainment challenges in five of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Army officials cited the shortage of skilled maintainers due to the lack of depot-level maintenance, and the lack of specialized training for vehicle maintenance for soldiers in the field. For example, without sending vehicles to depots for repair regularly, maintainers lose the opportunity for hands-on training, which limits their ability to gain the necessary skills for working on the vehicles. According to officials, this shortfall was evident when the Army needed to repair Strykers for deployment to Ukraine. Additionally, Stryker officials stated that vehicle operators are infantry soldiers without specialized training in vehicle maintenance, resulting in undiagnosed issues with the vehicles. According to officials, Strykers then arrive at the depot for vehicle maintenance in worse condition than anticipated.

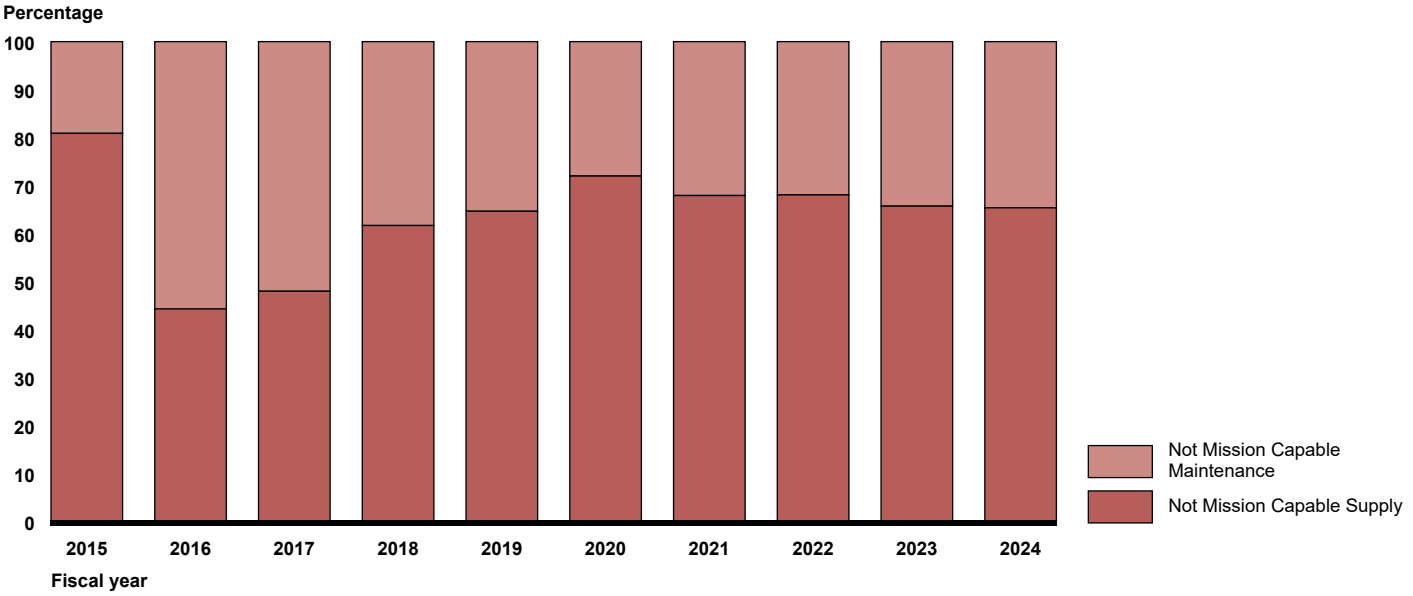
Army depots performed 160 Stryker overhauls for Army customers while performing 104 overhauls for foreign militaries since FY 2015. Army depots performed 25 Stryker overhauls for Army customers compared to 104 Stryker overhauls for foreign militaries since FY 2019.

The Army reported individual Stryker vehicles as not mission capable due to the lack of parts and materiel and due to the time for awaiting maintenance. In this paragraph, we removed specific mission capable rates of the Stryker vehicles because DOD deemed the information to be CUI.

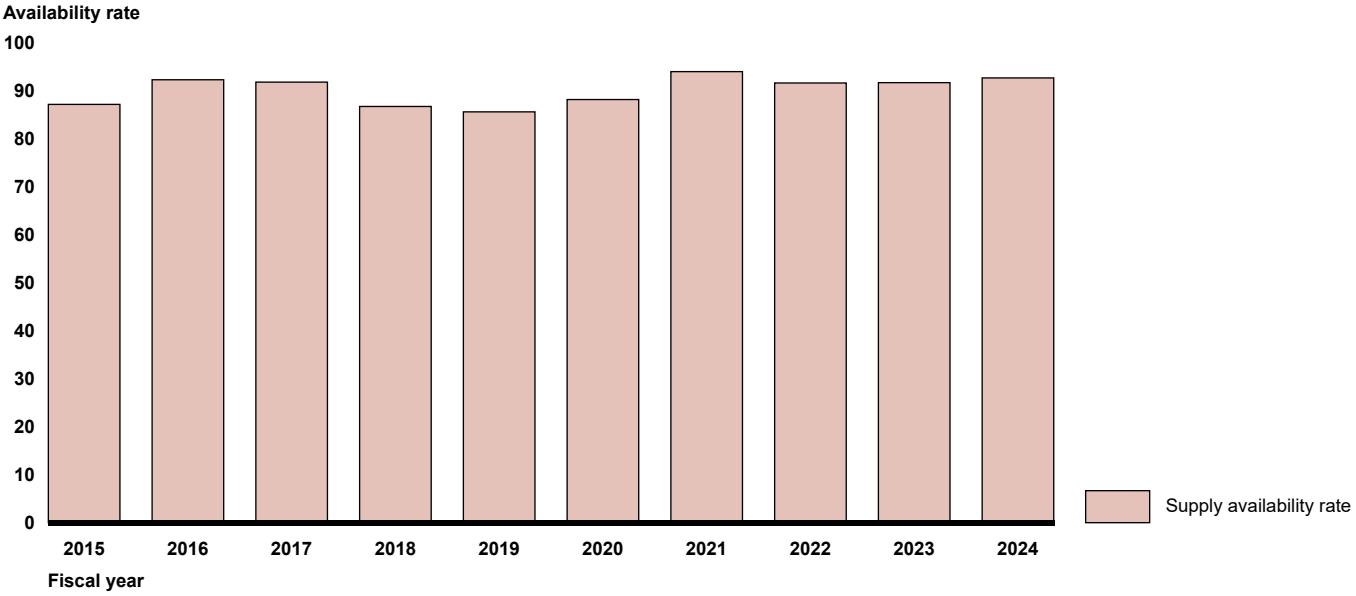
Stryker Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	110	18	7	22	0	3	0	0	0
Foreign	0	0	0	0	0	47	49	2	6	0

Stryker Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



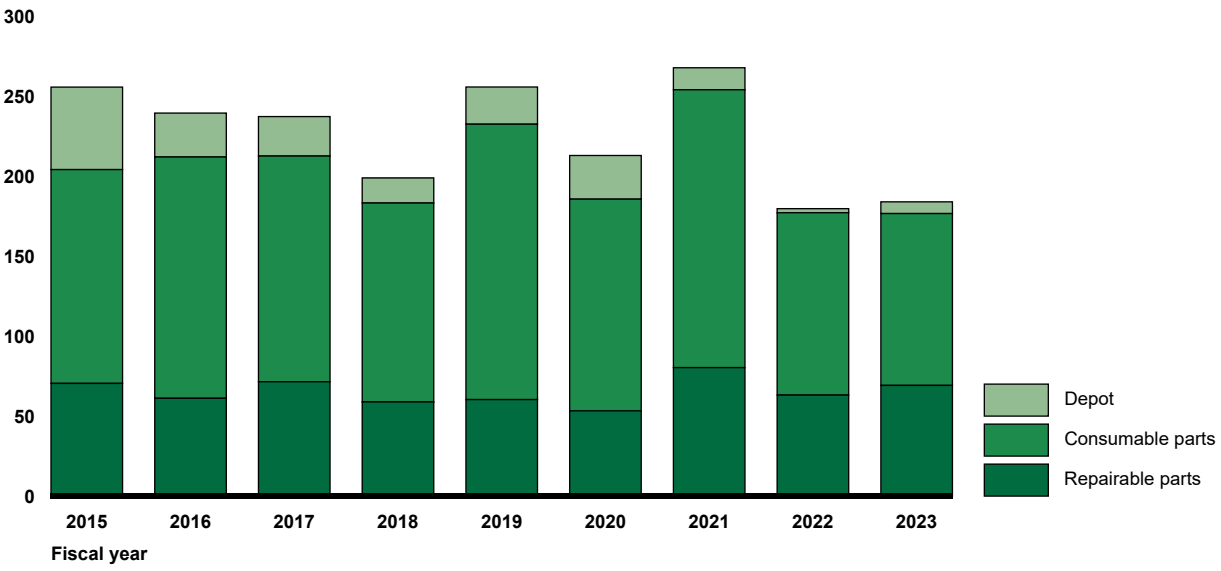
Stryker Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



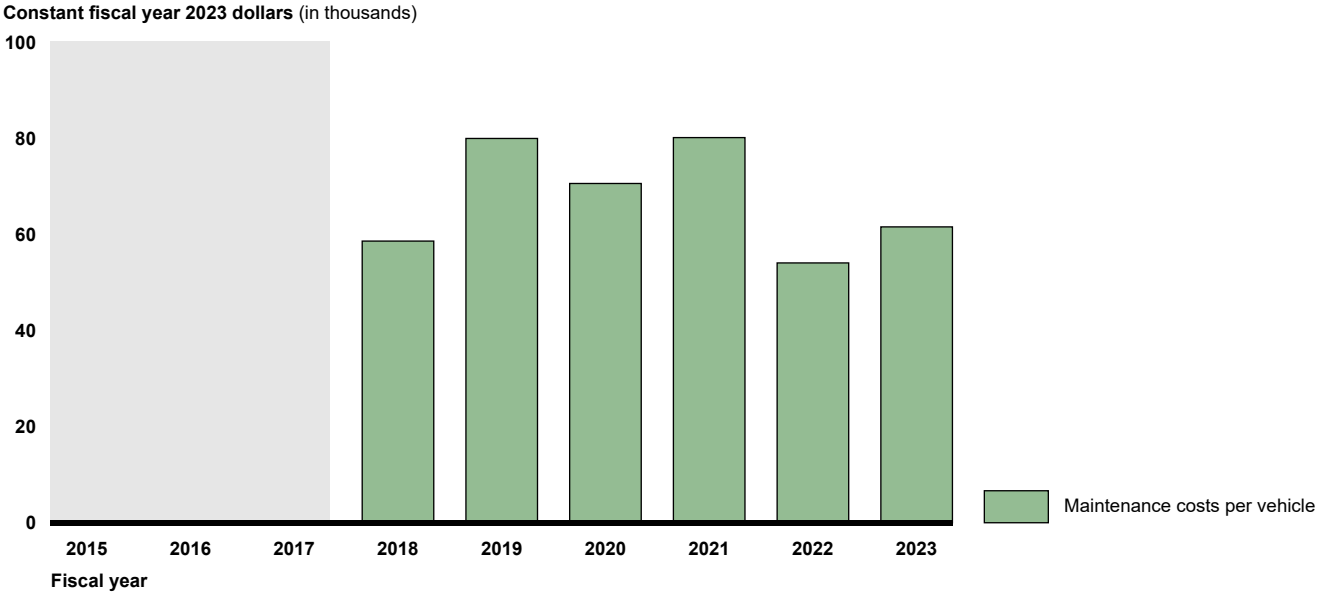
Maintenance Costs

The Stryker's total maintenance costs have decreased $71.7 million since FY 2015. According to Army officials, the service changed how it tracked Stryker in FY 2018. As a result, we excluded FY 2015 through 2017 from cost-per-vehicle calculations.

Stryker Total Maintenance Costs, Fiscal Years 2015–2023



Stryker Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



Army Support Vehicles

Family of Medium Tactical Vehicles (FMTV)

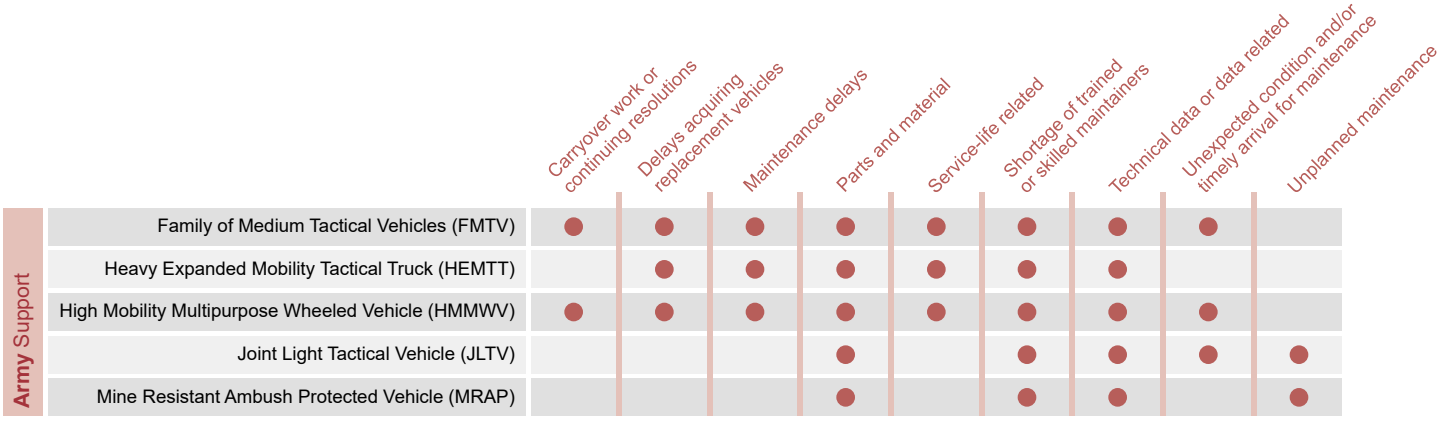
Heavy Expanded Mobility Tactical Truck (HEMTT)

High Mobility Multipurpose Wheeled Vehicle (HMMWV)

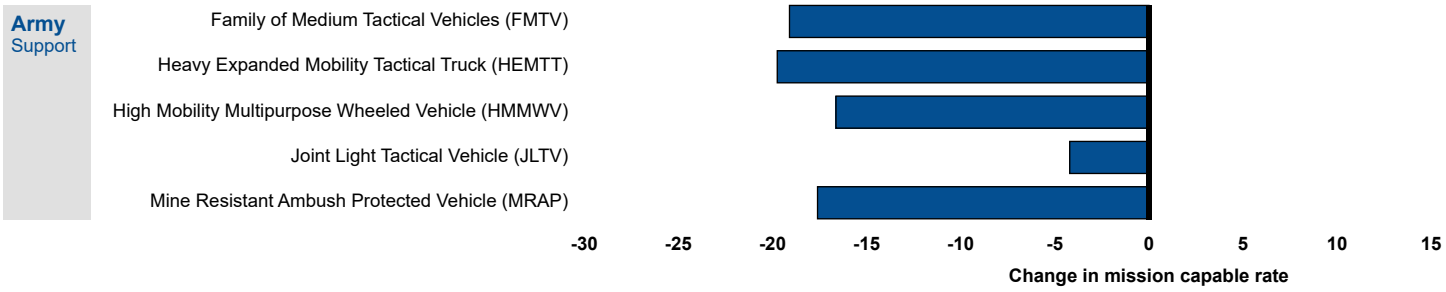
Joint Light Tactical Vehicle (JLTV)

Mine Resistant Ambush Protected Vehicle (MRAP)

Sustainment Challenges Identified by the Army as Affecting Selected Support Vehicles



Change in Mission Capable Rates for Army Support Vehicles Comparing Fiscal Year 2024 to Fiscal Year 2015



FMTV
Family of Medium Tactical Vehicles

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Combat Support and Combat Service Support, Detroit Arsenal, Michigan

Primary Depot
Red River Army Depot, Texas

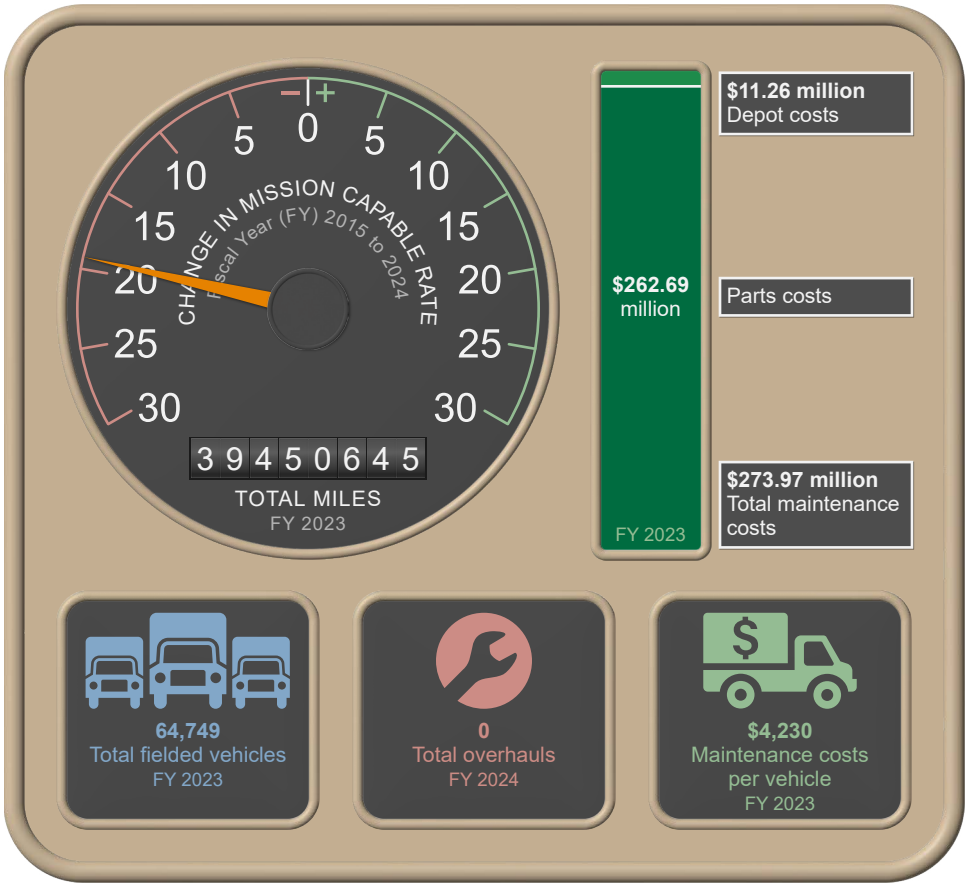
Variants and Introduction Date
- A0: 1994
- A1: 1999
- A1P2: 2008

Mission variants include cargo, tractor, van, wrecker, and dump truck models.

Vehicle Service Life
30 years

FMTV is a complete series of trucks based on a common chassis, that vary by payload and mission including 2-1/2 ton and 5-ton versions. The system is designed for rapid deployment and to operate on primary and secondary roads, trails, and cross-country terrain, in all climates.

FMTV Sustainment Status



Mission Capable Rate and Inventory

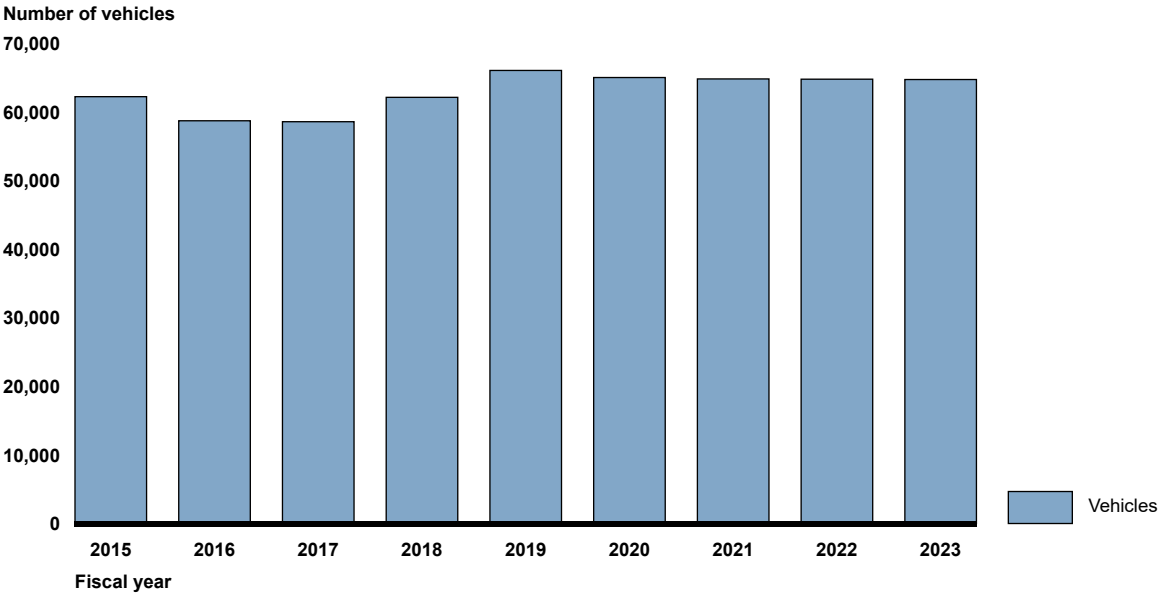
Army officials stated that the FMTV did not meet the 90 percent availability goal due to factors including service-life related aging fleet of vehicles, and difficulties in obtaining parts and materiel. Army officials also stated not having access to the technical data to provide to a new manufacturer, lead to an obsolescence program that took several years to reverse-engineer the FMTV door. Officials further stated, DLA either does not stock or has limited supplies of other parts and materiel due to limited demand, and that DLA will not stock parts when only receiving small orders once or twice per year.

FMTV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	→	↓	↓	↓	→	→	↓	↓	↓	↓
Met goal	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

FMTV Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

FMTV Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that FMTV faced sustainment challenges in eight of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated the FMTV experienced service-life related and unexpected condition or timely arrival challenges. For example, Army officials cited parts obsolescence and diminished manufacturing sources. Specifically, officials stated that the manufacturer of the FMTV transmission upgraded some components and will discontinue production of the transmissions currently in the vehicle.

Army depots performed 600 FMTV overhauls for Army customers while performing 50 overhauls for foreign militaries. Since FY 2022, the Army performed no FMTV overhauls for Army customers while performing 50 overhauls for foreign militaries.

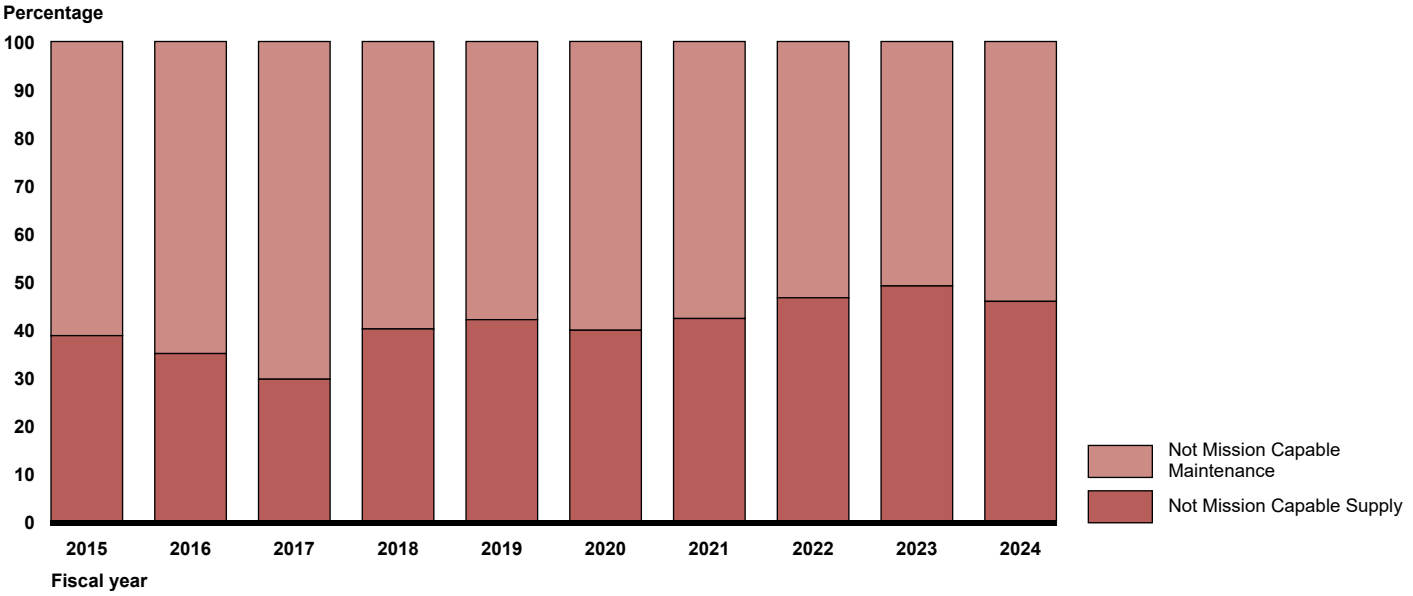
The Army reported individual FMTV vehicles as not mission capable due to the lack of parts and materiel and time due to awaiting maintenance. In this paragraph, we removed specific mission capable rates of the FMTV because DOD deemed the information to be CUI.

The order fill rate for FMTV depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 91.9 percent in FY 2024.

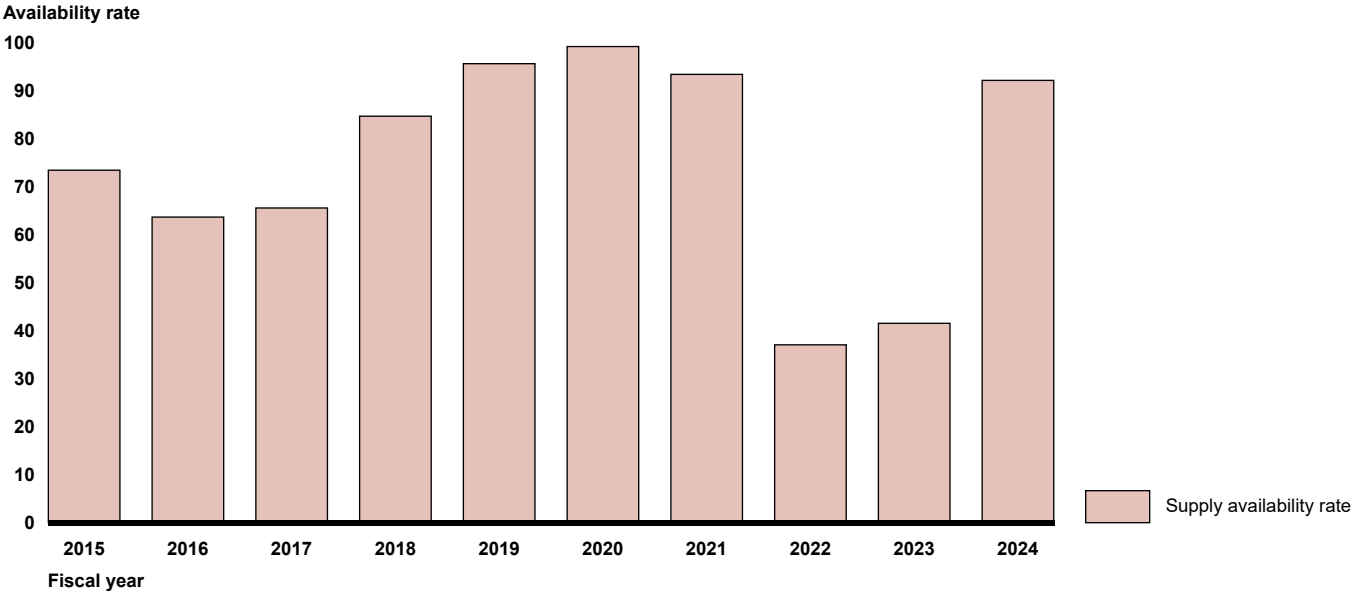
FMTV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	144	237	119	63	37	0	0	0	0	0
Foreign	0	0	0	0	0	0	0	46	4	0

FMTV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



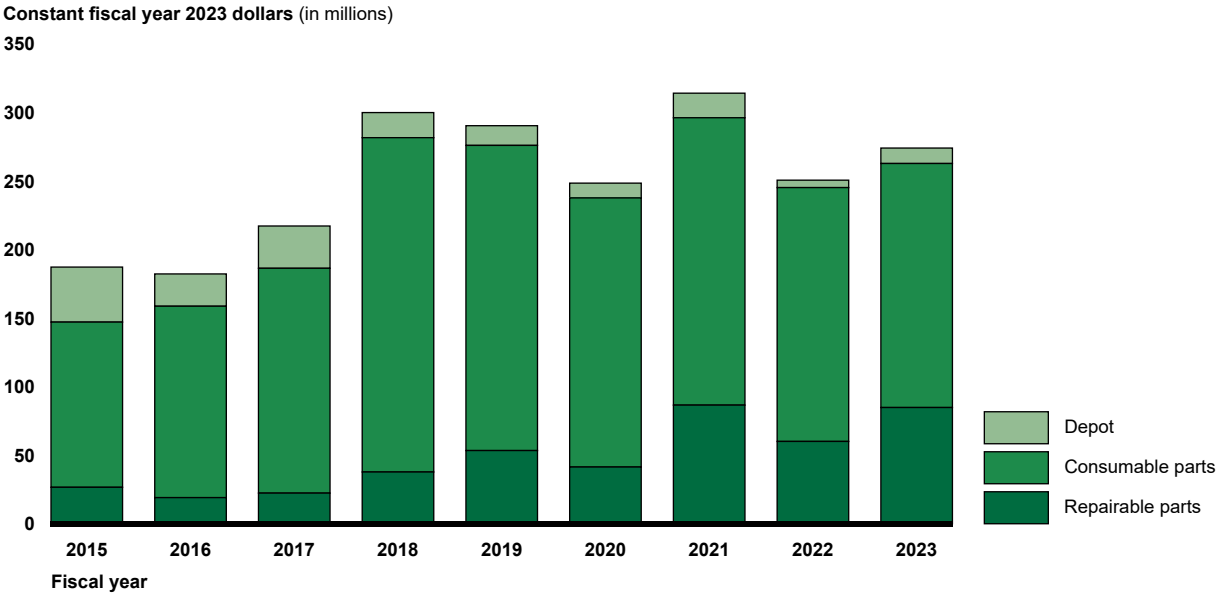
FMTV Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



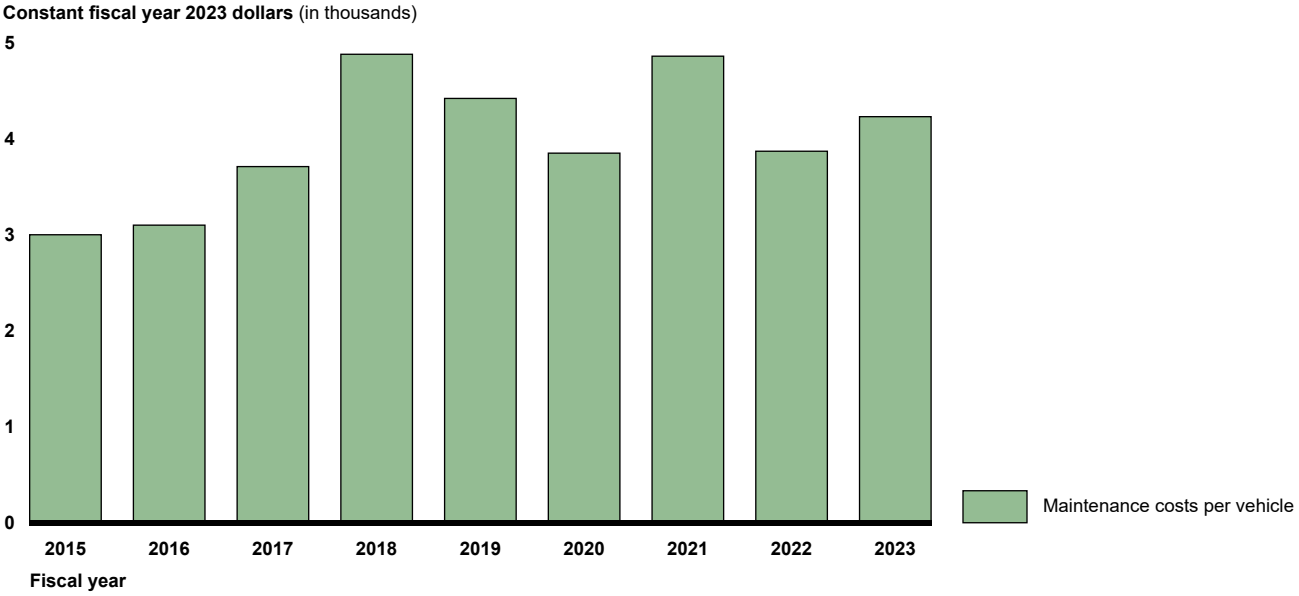
Maintenance Costs

The FMTV's total maintenance costs have increased $86.8 million since FY 2015 driven by increased parts. Officials said that maintenance costs have increased as more maintenance burden is placed on field units with limited troubleshooting expertise. Officials also stated improper repairs at field units increase costs while not returning a vehicle to fully mission capable status.

FMTV Total Maintenance Costs, Fiscal Years 2015–2023



FMTV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



HEMTT
Heavy Expanded Mobility Tactical Truck

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Combat Support and Combat Service Support, Detroit Arsenal, Michigan

Primary Depot
Red River Army Depot, Texas

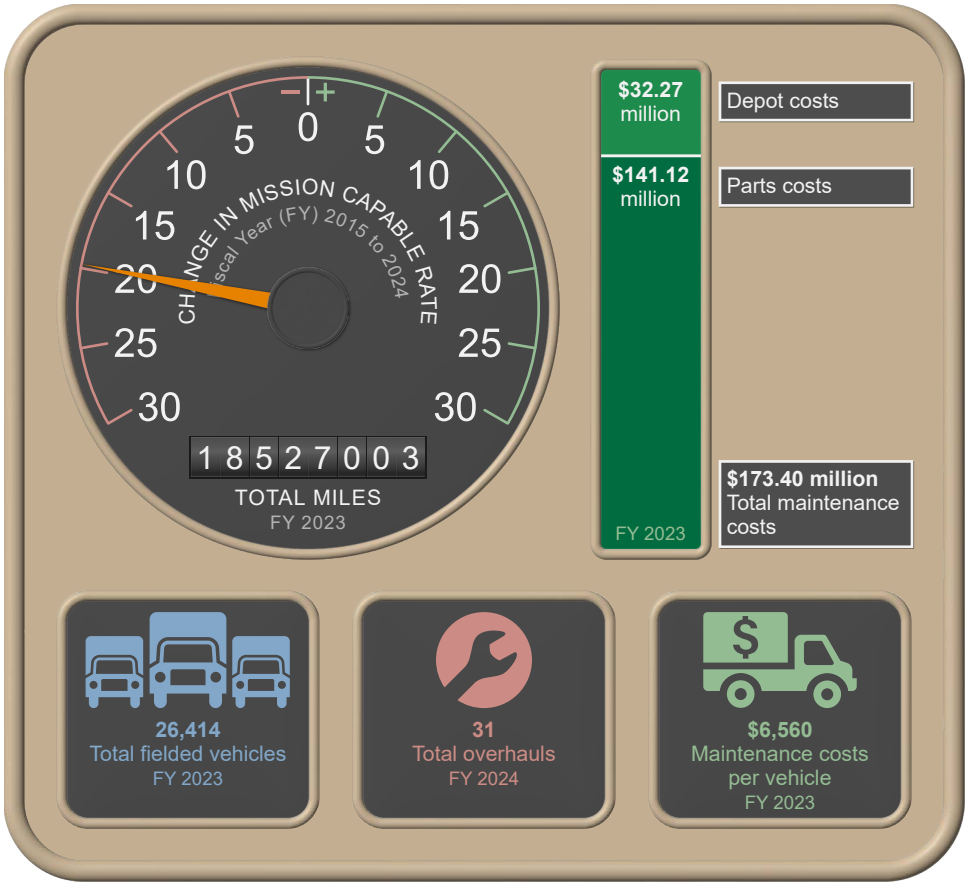
Variants and Introduction Date
- A0: 1985
- A2: 2002
- A4: 2008

Mission variants include cargo, fueler, wrecker, and firefighting variants.

Vehicle Service Life
30 years

The HEMTT consists of a family of four-axle, eight-wheel drive tactical vehicles. The HEMTT's primary mission is to deliver high tonnages of supplies to combat and combat support units.

HEMTT Sustainment Status



Mission Capable Rate and Inventory

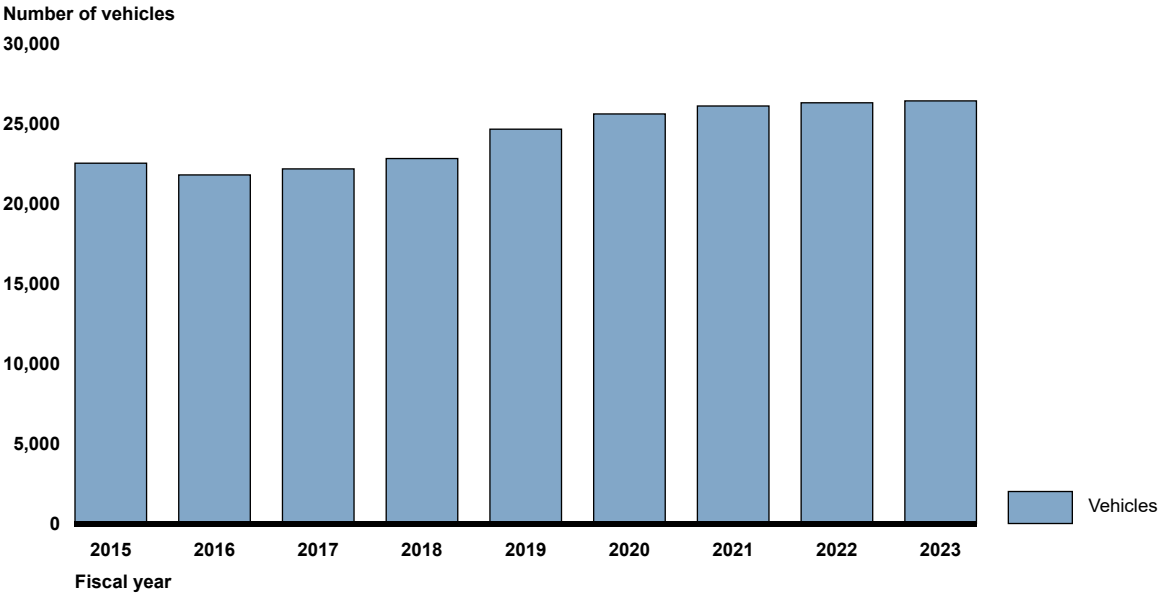
Army officials stated that the HEMTT fleet did not meet the 90 percent availability goal due to factors including an aging fleet of vehicles, and delays in obtaining parts and materiel. Additionally, officials stated that the availability of HEMTT is negatively affected by vehicles having to comply with European transporting hazardous materiel (ADR) standards, which differ from U.S. standards. HEMTT officials stated that the ADR requirement skews availability rates because otherwise fully mission capable must wait for appropriate ADR signage.

HEMTT Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	→	↓	↓	↓	→	→	↓	↓	↓	↓
Met goal	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

HEMTT Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

HEMTT Sustainment Challenges Identified by the Army

- ○ Carryover work or continuing resolutions
- ● Delays acquiring replacement vehicles
- ● Maintenance delays
- ● Parts and material
- ● Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ○ Unplanned maintenance

Army officials reported that HEMTT faced sustainment challenges in six of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated the vehicle faces difficulties related to diminished manufacturing sources that affect the ability to get steering gear, transparent armor, axles, and differentials. Army officials also described parts and materiel sustainment challenges involving sole source manufacturers, obsolescence that affects obtaining parts and materiel, and manufacturers slow to respond to requests for parts.

Army depots performed 793 HEMTT overhauls for Army customers and 54 overhauls for foreign militaries since FY 2015. The depots performed the most recent HEMTT overhauls for Army customers in FY 2021 and performed all 54 HEMTT overhauls for foreign military overhauls since FY 2022.

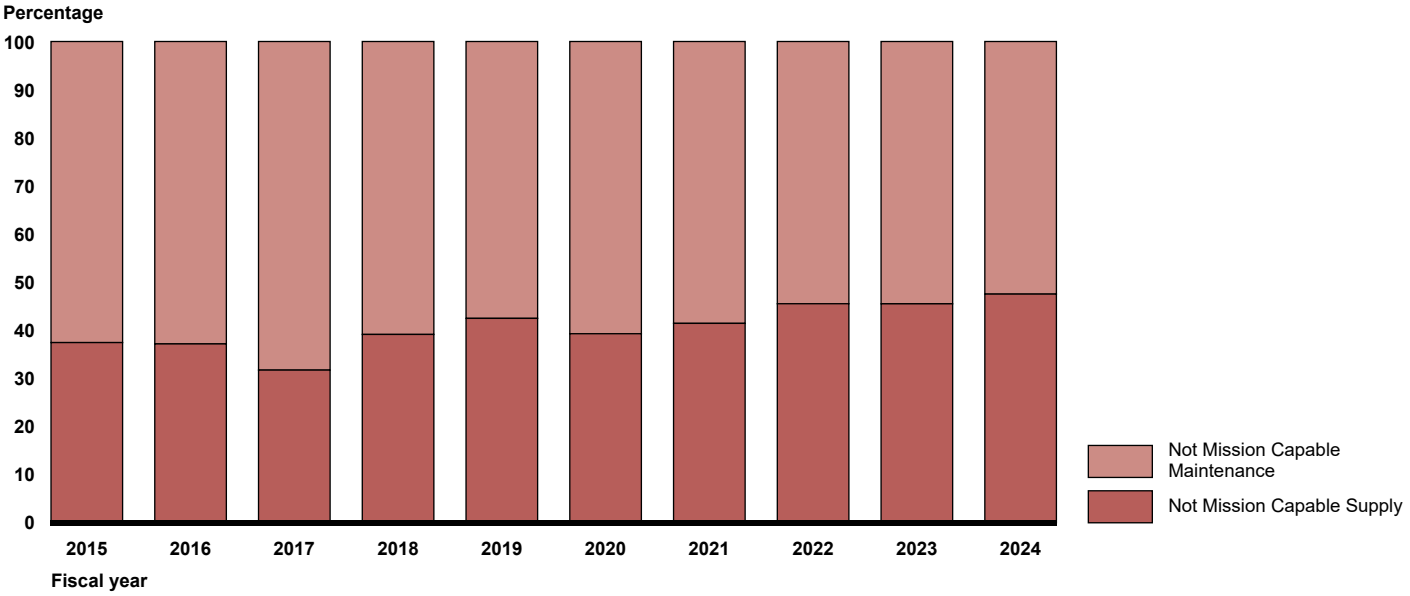
The Army reported individual HEMTT vehicles as not mission capable due to the lack of parts and materiel and the time awaiting maintenance. In this paragraph, we removed specific mission capable rates of the HEMTT vehicles because DOD deemed the information to be CUI.

The fill rate for HEMTT depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 82.9 percent in FY 2024.

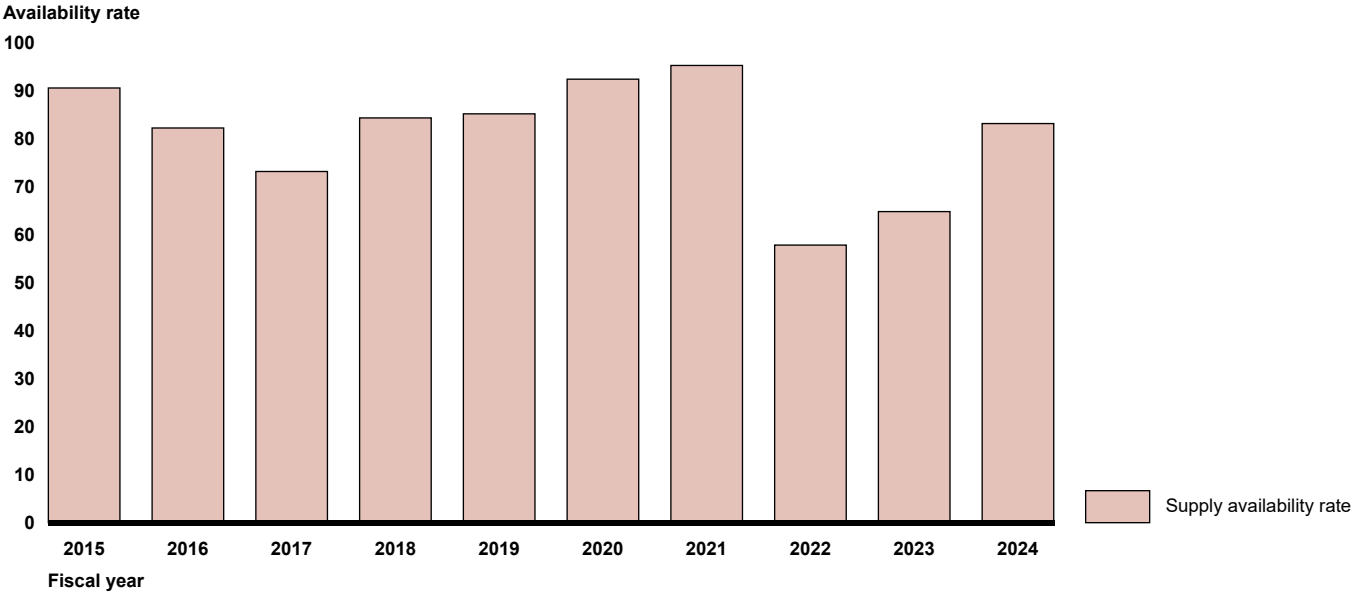
HEMTT Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	298	202	12	81	54	124	22	0	0	0
Foreign	0	0	0	0	0	0	0	23	0	31

HEMTT Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



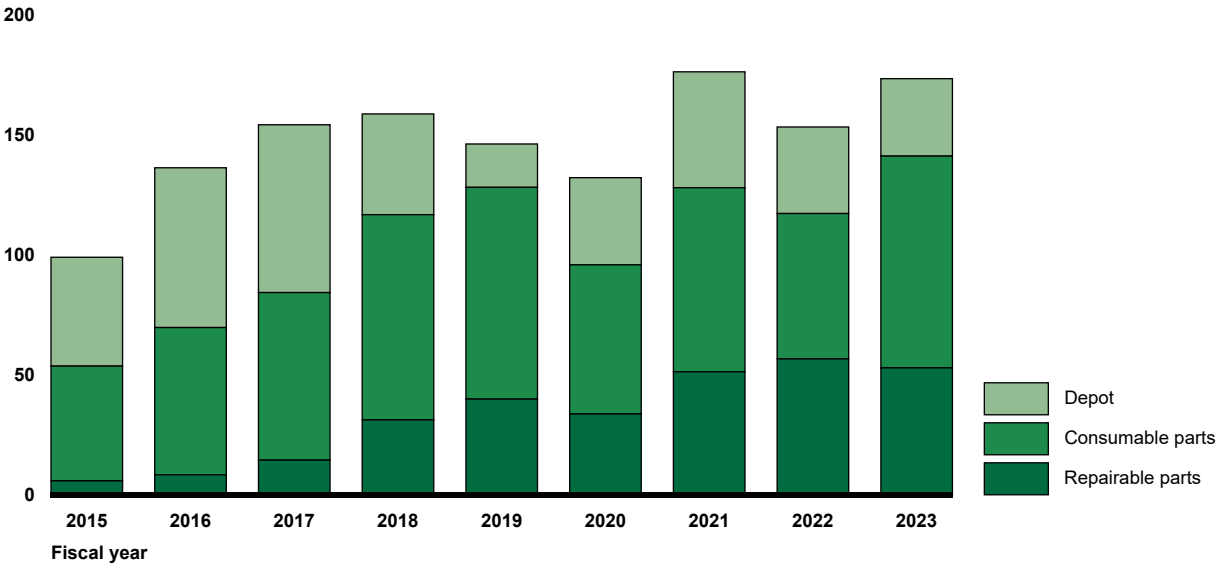
HEMTT Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



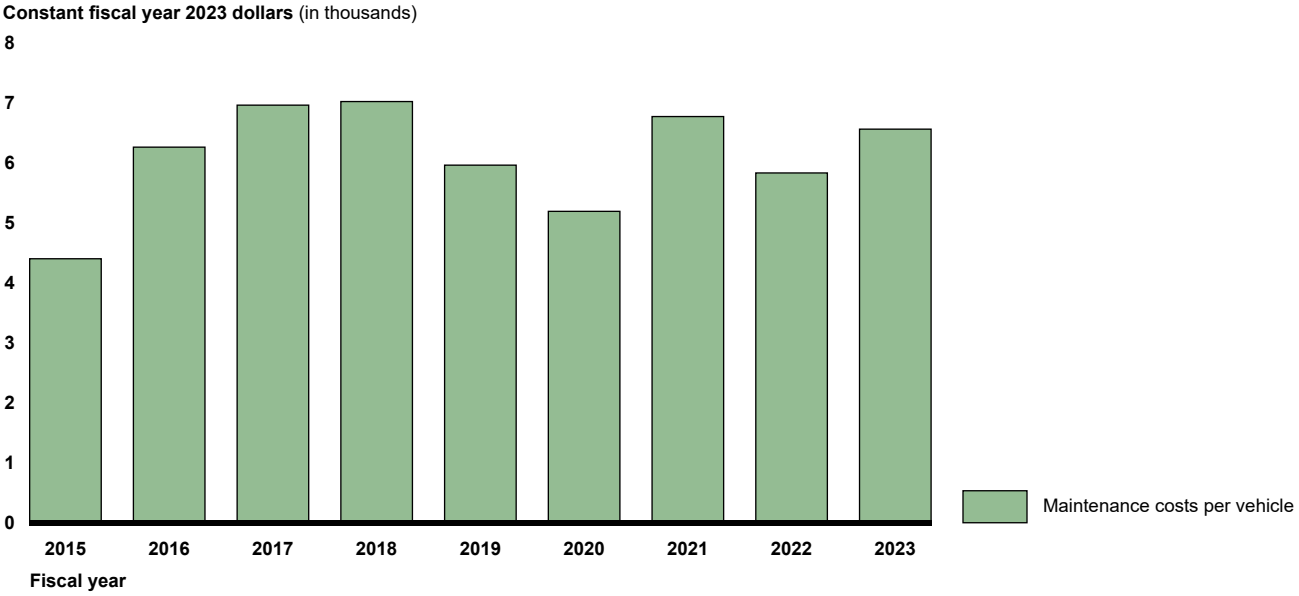
Maintenance Costs

The HEMTT's total maintenance costs have increased $74.4 million since FY 2015 driven by increased parts. Officials said that maintenance costs have increased as more maintenance burden is placed on field units with lacking troubleshooting expertise. Officials also stated improper repairs at field units increase costs while not returning a vehicle to fully mission capable status.

HEMTT Total Maintenance Costs, Fiscal Years 2015–2023



HEMTT Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



HMMWV
High Mobility Multipurpose Wheeled Vehicle

Program Essentials

Manufacturer
AM General (HMMWV)
Joint Manufacturing & Technology Center (Ambulance)

Program Office
Combat Support and Combat Service Support, Detroit Arsenal, Michigan

Primary Depot
Red River Army Depot, Texas

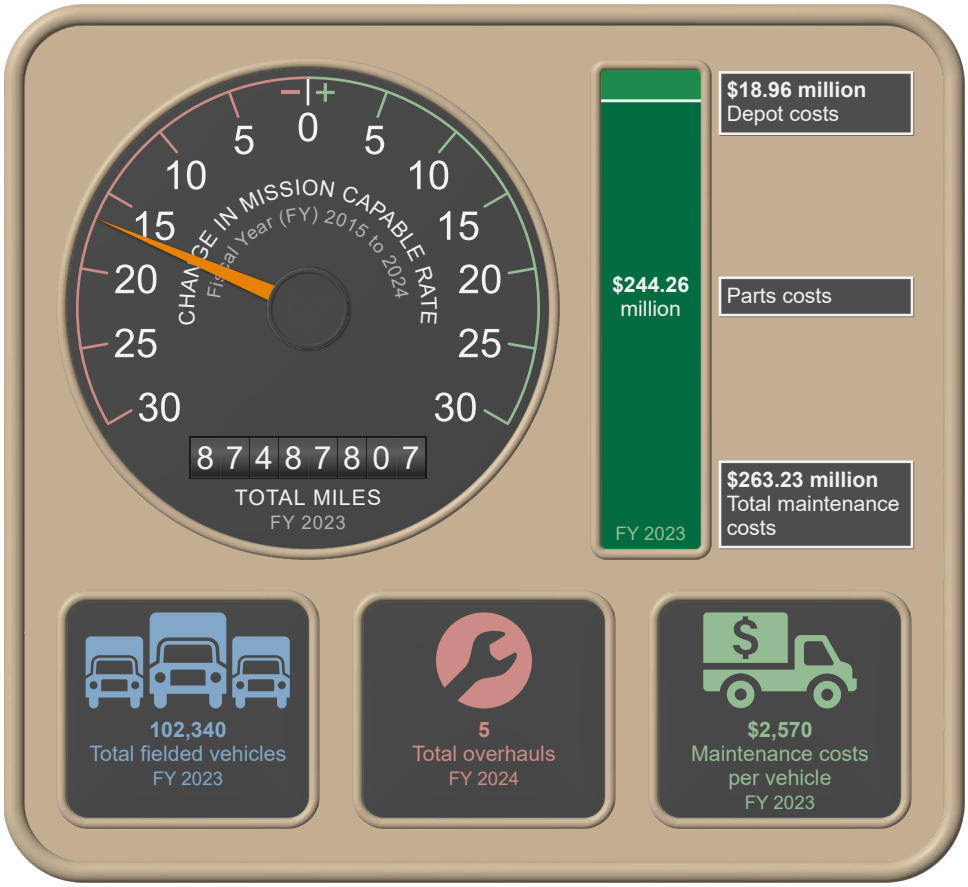
Variants and Introduction Date
- A1: 1991
- A2: 1994
- A3: 2013

Different versions of the HMMVW include Ambulance, Armament Carrier, Cargo/Troop/Shelter Carrier, Command and Control Carrier, and TOW Missile Carrier vehicles.

Vehicle Service Life
30 years

The HMMWV is a lightweight, mobile, diesel-powered, four-wheel drive, air-transportable, and air-droppable family of tactical vehicles. The HMMWV supports combat and combat service support units. Some versions have a rooftop weapon station that can accommodate various machine guns or a grenade launcher.

HMMWV Sustainment Status



Mission Capable Rate and Inventory

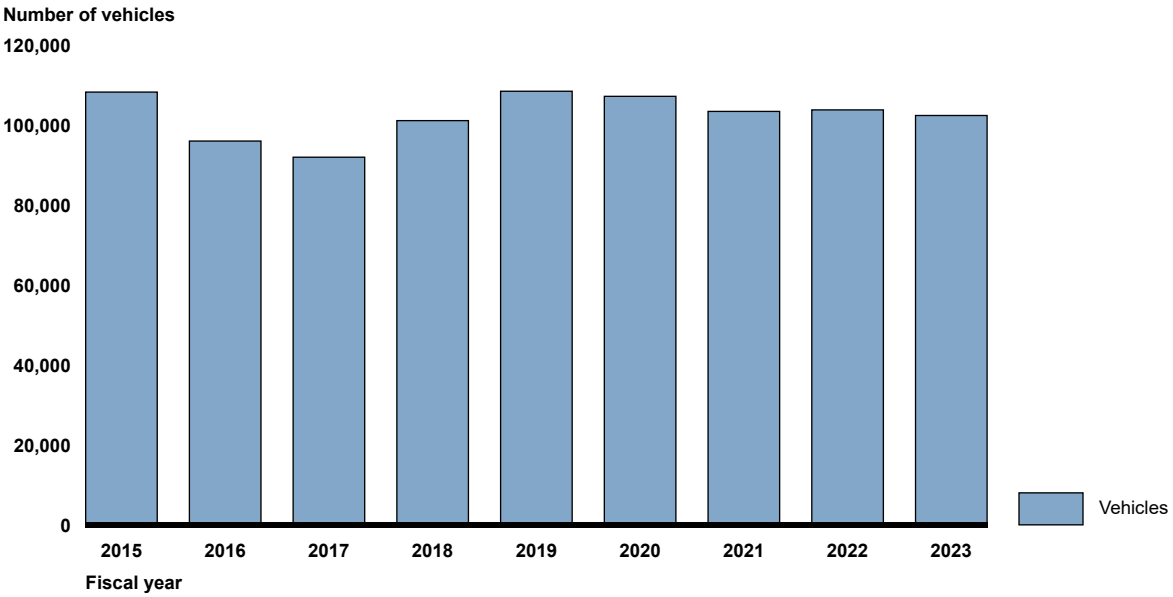
Army officials stated that the HMMWV fleet is not meeting the 90 percent availability goal due to factors including an aging fleet of vehicles and delays in obtaining parts and materiel. Army officials stated the HMMWV has an economic useful life of 15 years, which is the current average fleet age in 2025. According to officials, the Army initiated a parts-pull programs, which harvests hard to source parts from divested vehicles. Officials said the Army also works with manufacturers to develop new designs to replace obsolete parts.

HMMWV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↓	↓	↑	↑	↓	↓	↓	→
Met goal	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

HMMWV Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

HMMWV Sustainment Challenges Identified by the Army

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Army officials reported that HMMWV faced sustainment challenges in eight of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated that HMMWV faces challenges related to its extended service-life, and vehicle condition upon arrival for maintenance. Army officials stated that the poor condition of HMMWVs arriving for upgrades to their braking and steering systems often requires additional depot work.

Army depots performed 1,256 HMMWV overhauls for Army customers and 1,853 overhauls for foreign militaries since FY 2015. Army depots completed 1,636 HMMWV overhauls for foreign militaries in FY 2017.

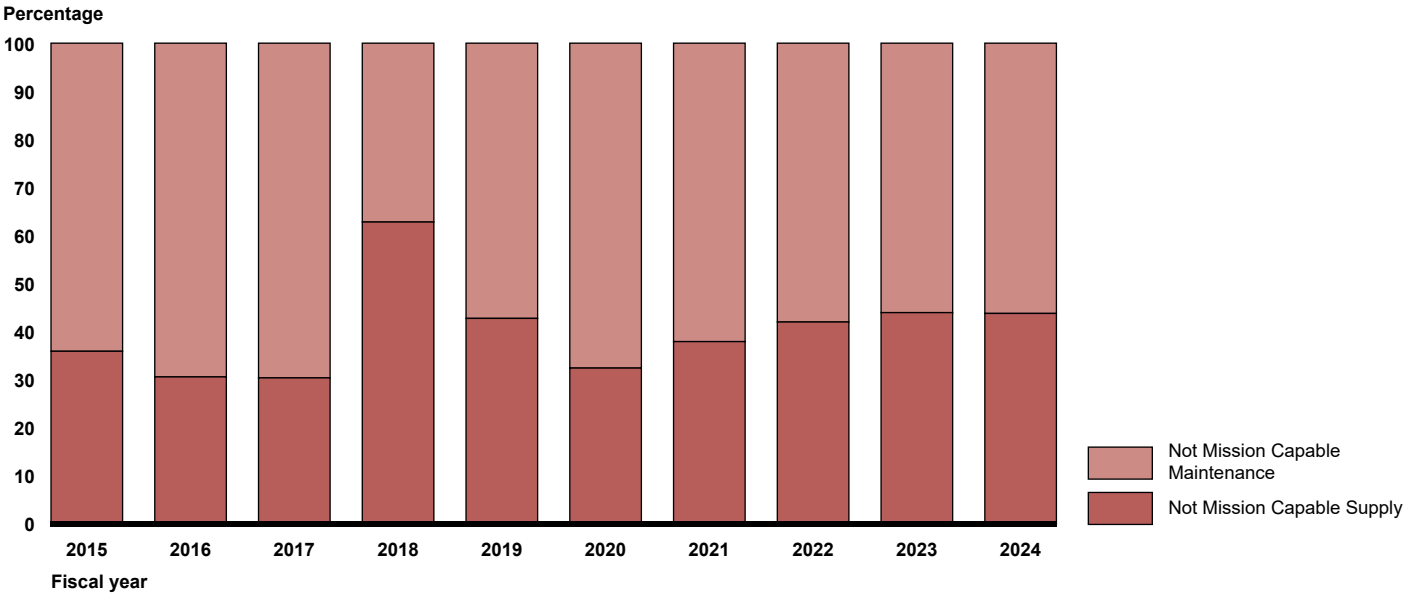
The Army reported individual HMMWV vehicles as not mission capable due to the lack of parts and materiel and the time awaiting maintenance. In this paragraph, we removed specific mission capable rates of the HMMWV vehicles because DOD deemed the information to be CUI.

The order fill rate for HMMWV depot-level repairables—parts and equipment repaired or refurbished for reuse by Army depots—stood at 83 percent in FY 2024.

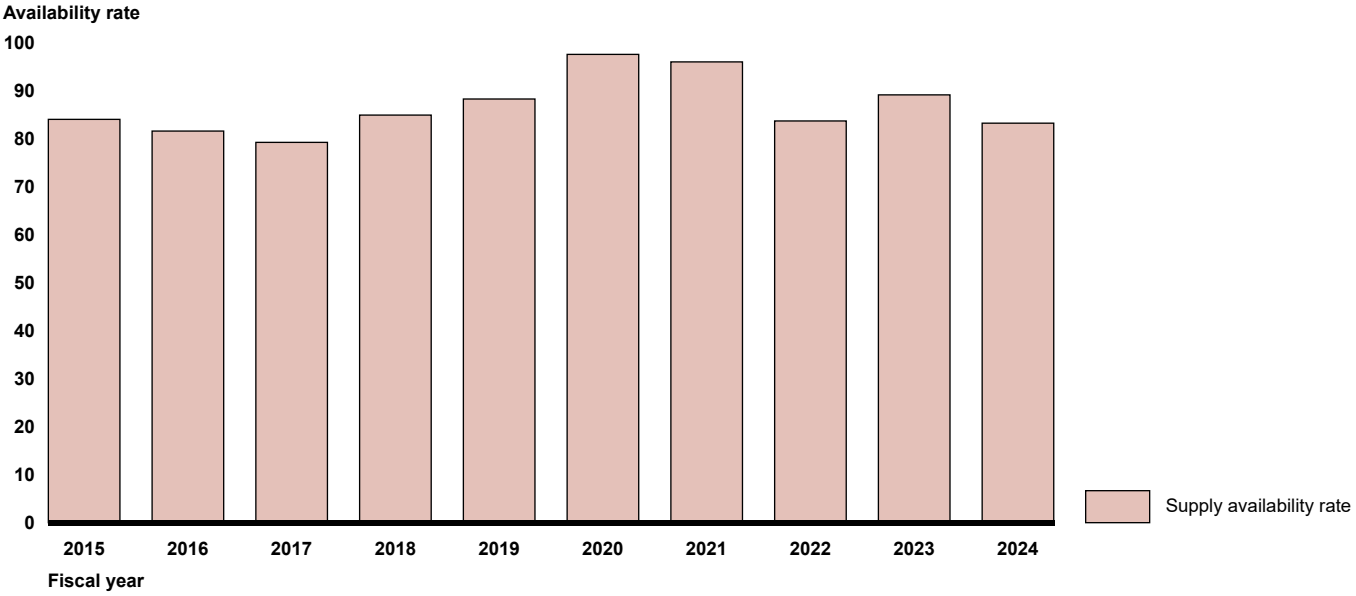
HMMWV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	800	40	194	118	28	41	0	0	35	0
Foreign	0	2	1,636	0	0	0	0	110	100	5

HMMWV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



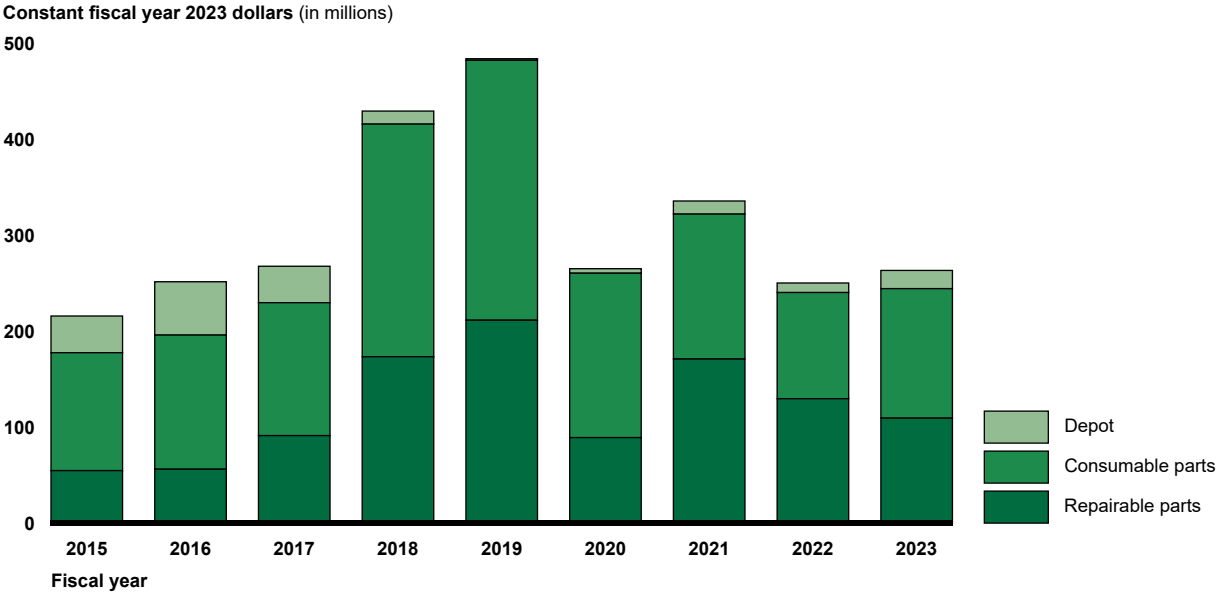
HMMWV Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



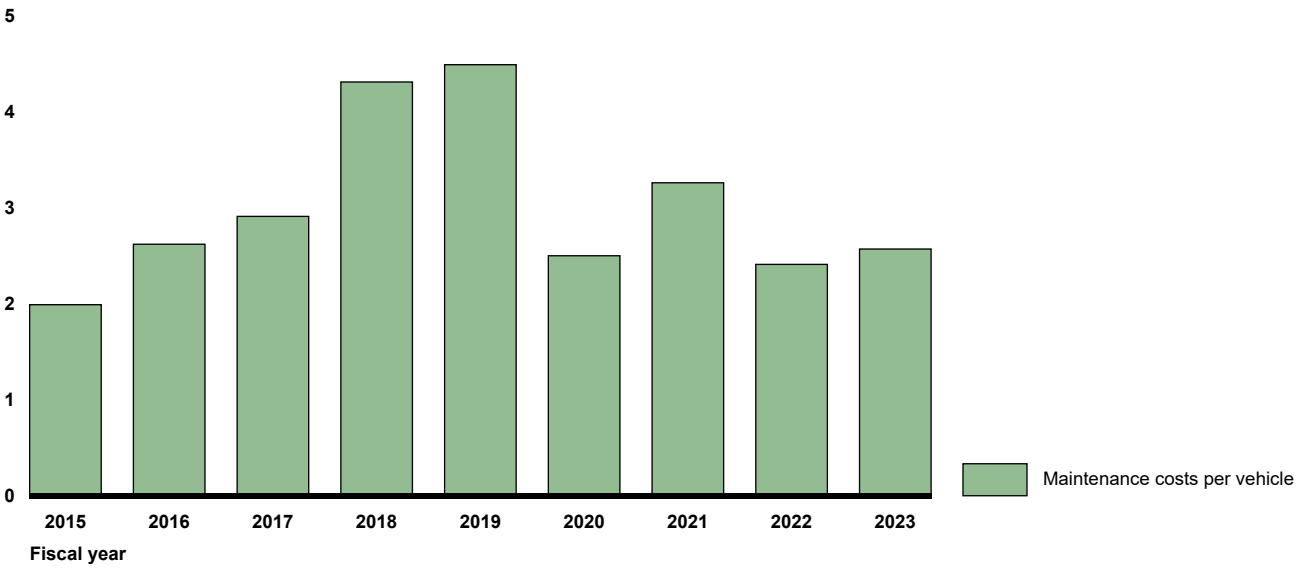
Maintenance Costs

The HMMWV's total maintenance costs have increased $47.5 million since FY 2015. Officials stated that maintenance costs increases were driven by fluctuations in costs for individual parts as opposed to an overall trend. Additionally, officials stated that inflation has increased prices for most parts and materiel.

HMMWV Total Maintenance Costs, Fiscal Years 2015–2023



HMMWV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



JLTV
Joint Light Tactical Vehicle

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Joint Program Office Joint Light Tactical Vehicles, Detroit Arsenal, Michigan

Primary Depot
Red River Army Depot, Texas

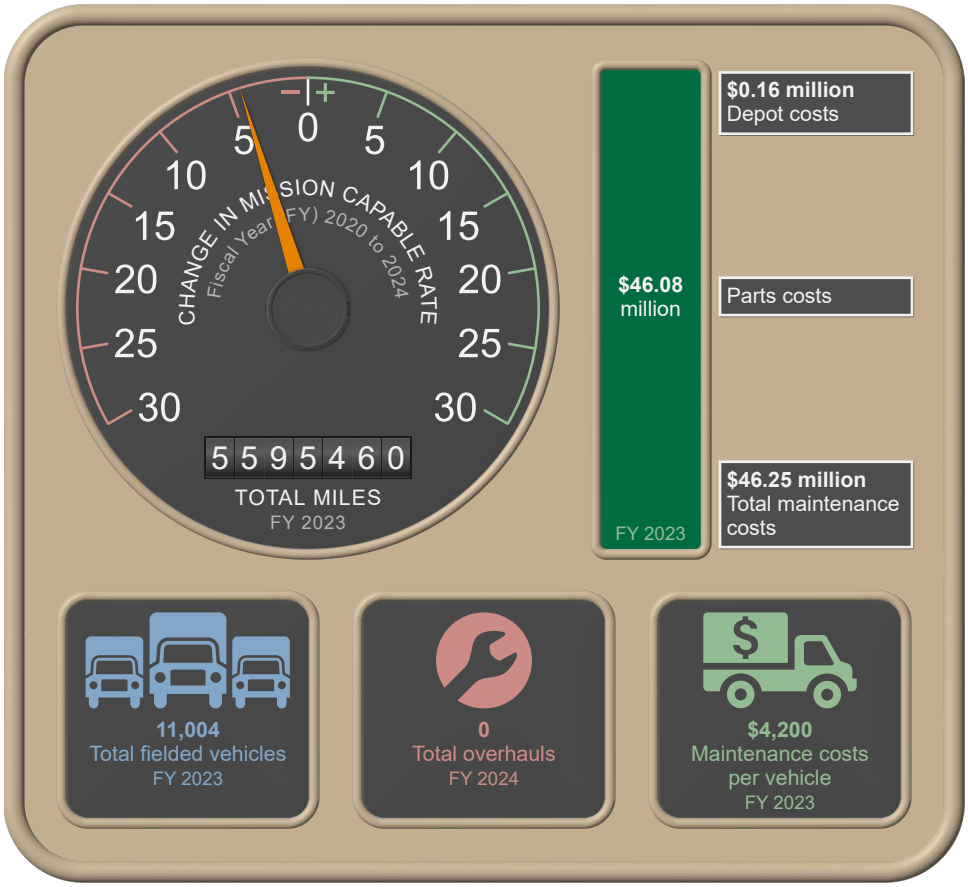
Variants and Introduction Date
• 2020

Mission variants include heavy gun carrier, close combat, utility carrier, and general purpose vehicles.

Vehicle Service Life
30 years

JLTV program is an Army-led, joint-service program designed to replace a portion of Army and Marine Corps light tactical wheeled vehicle fleets, including HMMWVs, while closing an existing gap in payload, performance, and protection. The JLTV has 2 or 4-seat versions, an increased payload capacity, and improved automotive performance.

JLTV Sustainment Status



Mission Capable Rate and Inventory

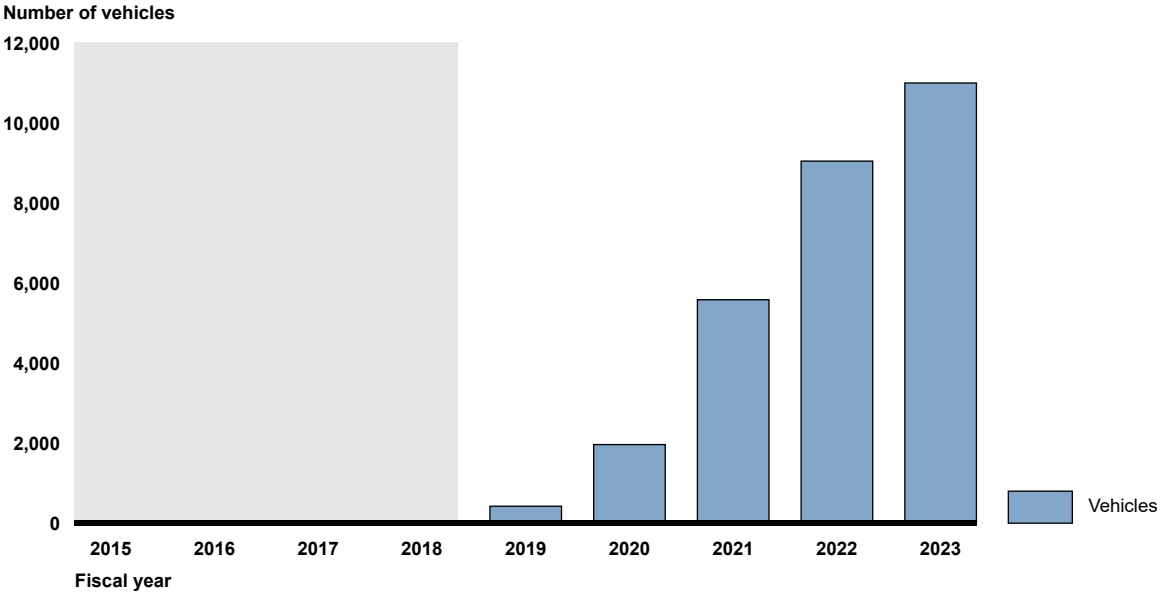
The Army first fielded the JLTV in FY 2020. However, the Army had 424 JLTVs in inventory in FY 2019. As a result of the large number of vehicles in inventory, we reported data for FY 2019. Army officials stated that the JLTV fleet not meeting the 90 percent availability goal is due to factors including a growing number of fielded JLTVs, and delays in obtaining parts and materiel. Army officials stated that product supply support is the main driver for the JLTV not meeting the full mission capable goal. Specifically, parts with long lead-times managed by the Defense Logistics Agency (DLA); the degradation of transparent armor; and the supply availability of the Driver Smart Display Units (DSDU) impact JLTV availability. To mitigate these challenges, according to Army officials, the Army is: working closely with the manufacturer and DLA via monthly meetings to reduce lead times of parts; fielding longer lasting transparent armor; and developing organic sustainment of DSDU while also establishing a contractor service repair contract.

JLTV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year					↑	↑	↑	↓	↓	↓
Met goal					✗	✓	✓	✓	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

JLTV Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

JLTV Sustainment Challenges Identified by the Army

- ○ Carryover work or continuing resolutions
- ○ Delays acquiring replacement vehicles
- ○ Maintenance delays
- ● Parts and material
- ○ Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ● Unexpected condition and/or timely arrival for maintenance
- ● Unplanned maintenance

Army officials reported that JLTV faced sustainment challenges in five of nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated the vehicle faces challenges related to the condition upon arrival for maintenance, and shortages of trained maintainers. Army officials stated that as a newer program, JLTV has a digital architecture that according to officials cause problems for maintainers in the field. For example, the digital integrated system for the JLTV has a high learning curve for maintainers to work on. They stated that as more JLTV are manufactured and fielded, the number of maintainers has not increased.

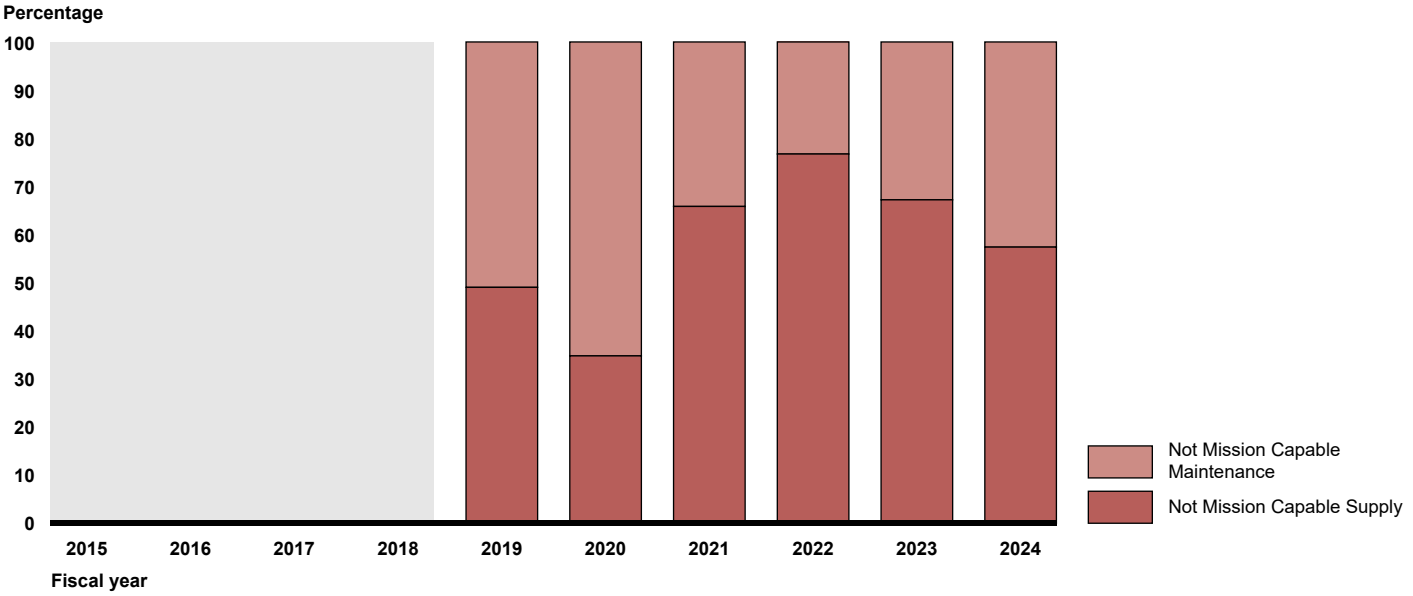
The Army reported individual JLTV vehicles as not mission capable due to the lack of parts and materiel and the time awaiting maintenance. In this paragraph, we removed specific mission capable rates of the JLTV vehicles because DOD deemed the information to be CUI.

The order fill rate for JLTV depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 49 percent in FY 2024.

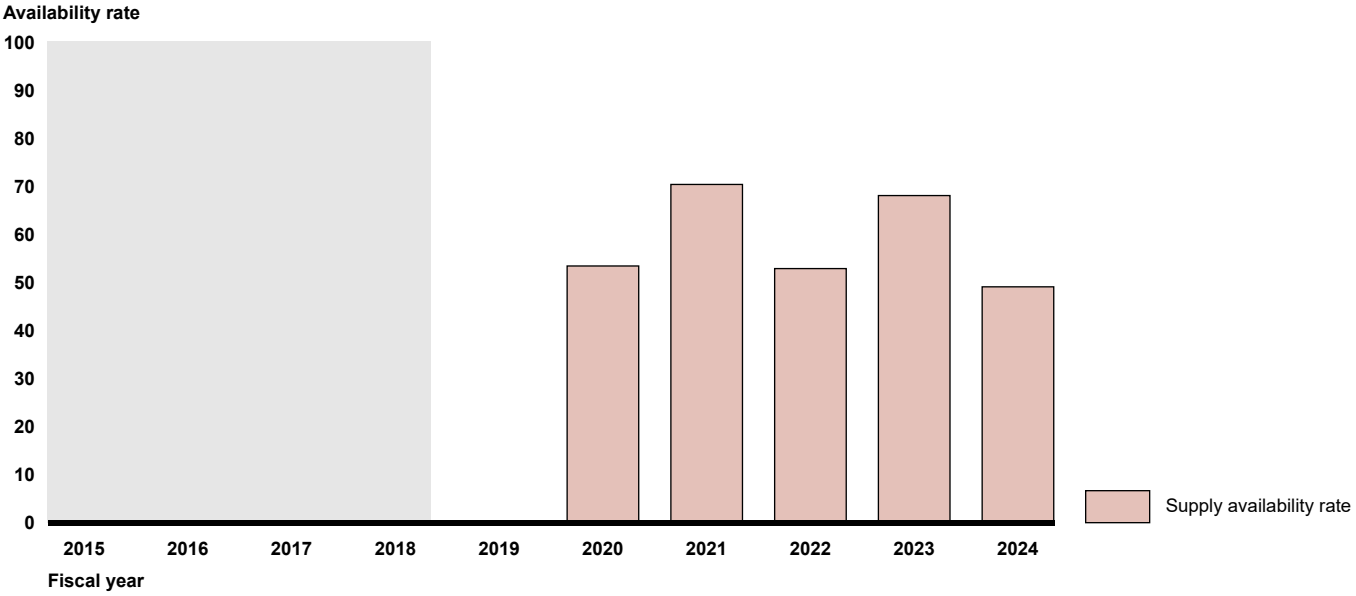
JLTV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	0	0	0	0	0	0	0
Foreign	0	0	0	0	0	0	0	0	0	0

JLTV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



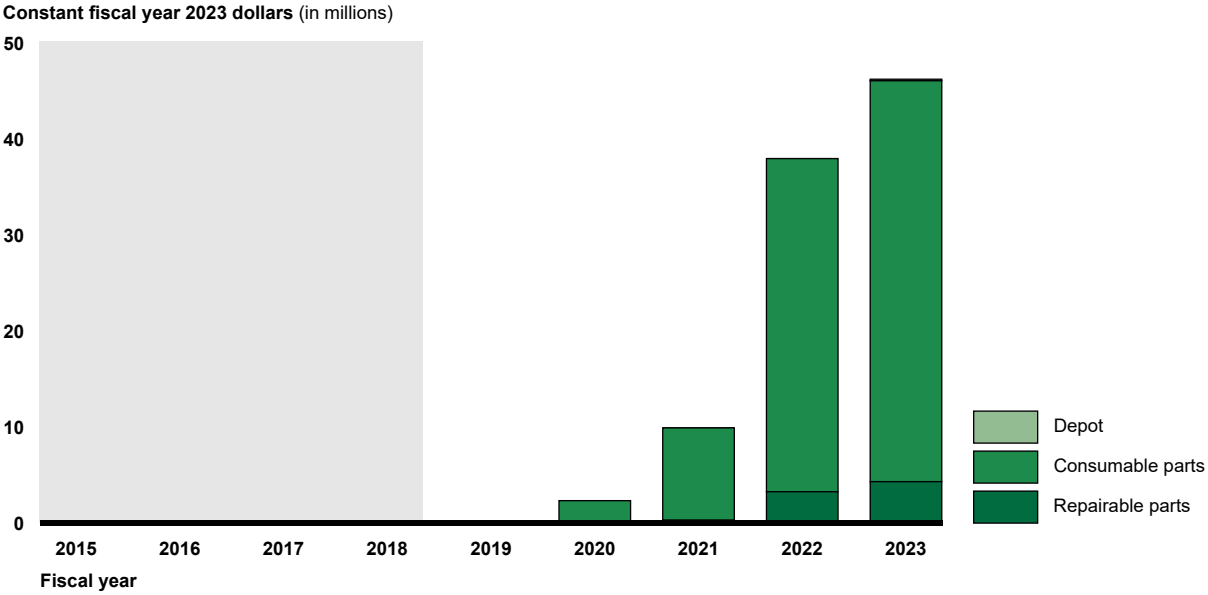
JLTV Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024



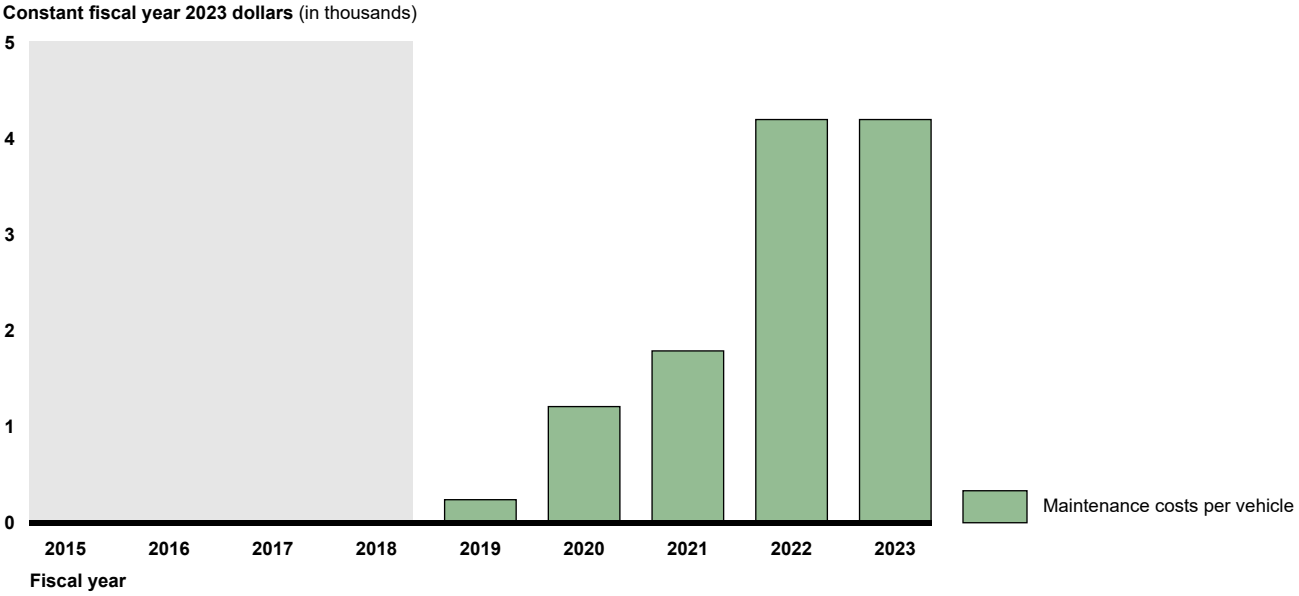
Maintenance Costs

The JLTV's total maintenance costs have increased $46.3 million since FY 2019 which according to officials were driven by increased parts and materiel costs. Officials stated that as the total number of JLTVs have increase the average age of equipment and other supply chain factors have increased too.

JLTV Total Maintenance Costs, Fiscal Years 2015–2023



JLTV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



MRAP
Mine Resistant Ambush Protected Vehicle

Program Essentials

Manufacturer
Navistar Defense and Oshkosh Defense

Program Office
Combat Support and Combat Service Support, Detroit Arsenal, Michigan

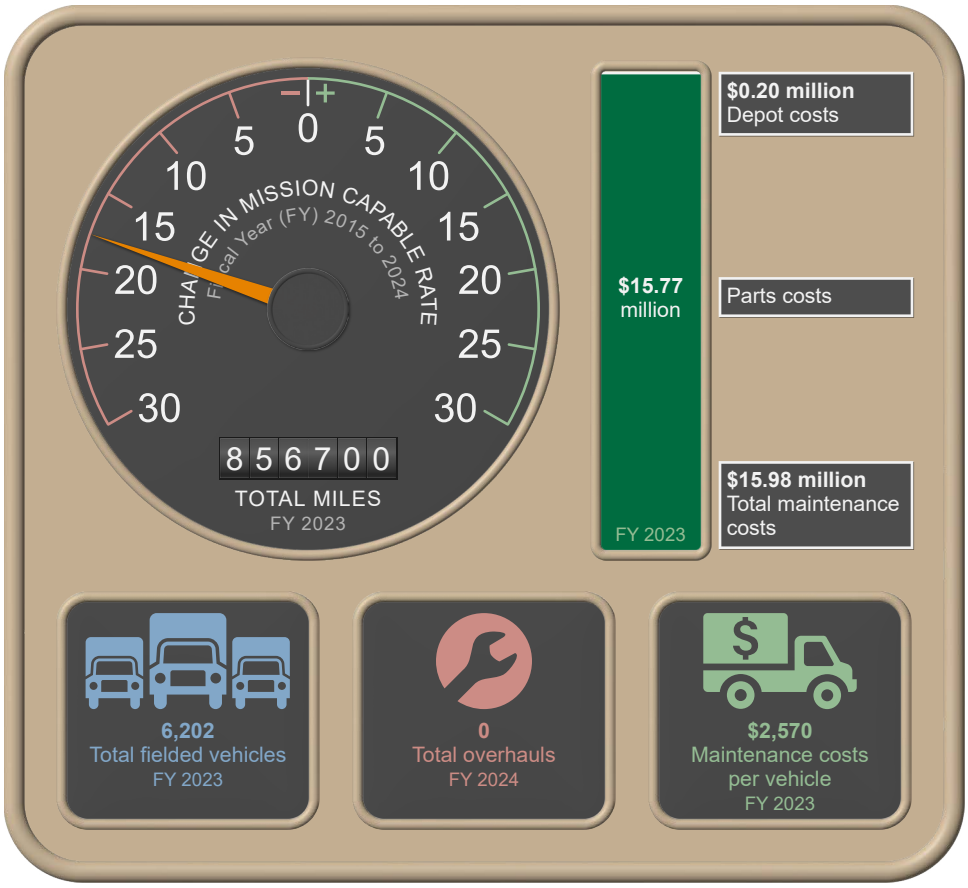
Primary Depot
Red River Army Depot, Texas

Variants and Introduction Date
- MAXXPRO: 2008
- M-ATV: 2010

Vehicle Service Life
30 years

The MRAP is designed for the transport and protection of troops and equipment using armored vehicles that have a blast-resistant, V-bottomed underbody designed to protect the crew from mine blasts, and small arms fire. Various MRAP versions include Common Remotely Operated Weapon Stations used to remotely operate various machine guns or a grenade launcher from inside the vehicle.

MRAP Sustainment Status



Mission Capable Rate and Inventory

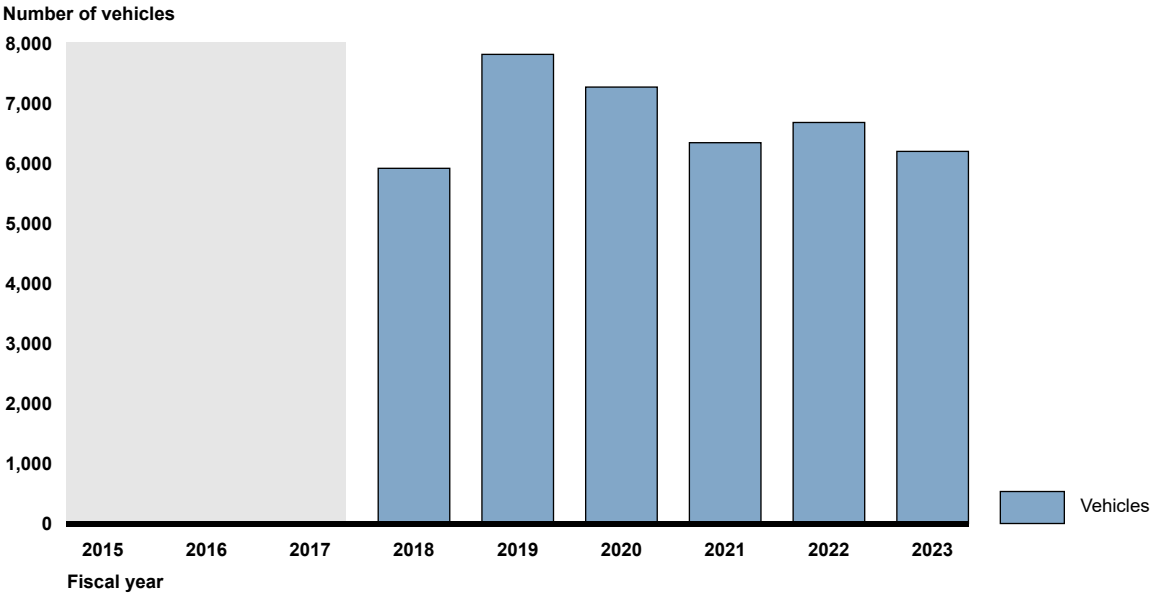
Army officials stated that the MRAP fleet not meeting the 90 percent availability goal due to factors including draw down of active-duty units using the MRAPs and parts obsolescence. Additionally, Defense Logistics Agency (DLA) does not stock many components of the MRAP due to the fleet's small size. Officials explained that a major contributing factor to declines in availability occurred when units were allowed to turn in equipment in poor conditions. Army officials stated that prior to FY 2018, the Army did not include MRAPs going through a refurbishment program in its inventory data. As a result, we excluded those years from inventory counts.

MRAP Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↑	↓	↑	↓	↓	↑	↓	↓	↓
Met goal	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗

↑ Increase ↓ Decrease → Less than 1 percent change

MRAP Total Fielded Vehicles, Fiscal Year 2015–2023



Sustainment Challenges

MRAP Sustainment Challenges Identified by the Army

- ○ Carryover work or continuing resolutions
- ○ Delays acquiring replacement vehicles
- ○ Maintenance delays
- ● Parts and material
- ○ Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ● Unplanned maintenance

Army officials reported that MRAP faced sustainment challenges in four of the nine categories that we identified. In addition to parts and materiel and technical data challenges, Army officials stated the vehicle faces challenges related to the unscheduled or unplanned maintenance. Officials also said the vehicles are currently in sustainment, with no new plans for production, and as the number of MRAP vehicles in the Army decreases, parts requests to manufacturers have dwindled leading to fewer manufacturers producing repair and replacement parts. According to officials, the existing stocks have largely been depleted by maintenance requirements for the vehicles transferred to Ukraine, which were required to meet Army ready standard.

Army depots performed 1,239 MRAP overhauls for Army customers since FY 2015 though the depots last performed MRAP overhauls in FY 2019. Army depots have performed no MRAP overhauls for foreign militaries since FY 2015. According to Army officials, as tactical vehicles, MRAPs receive minimal sustainment funding for depot overhauls.

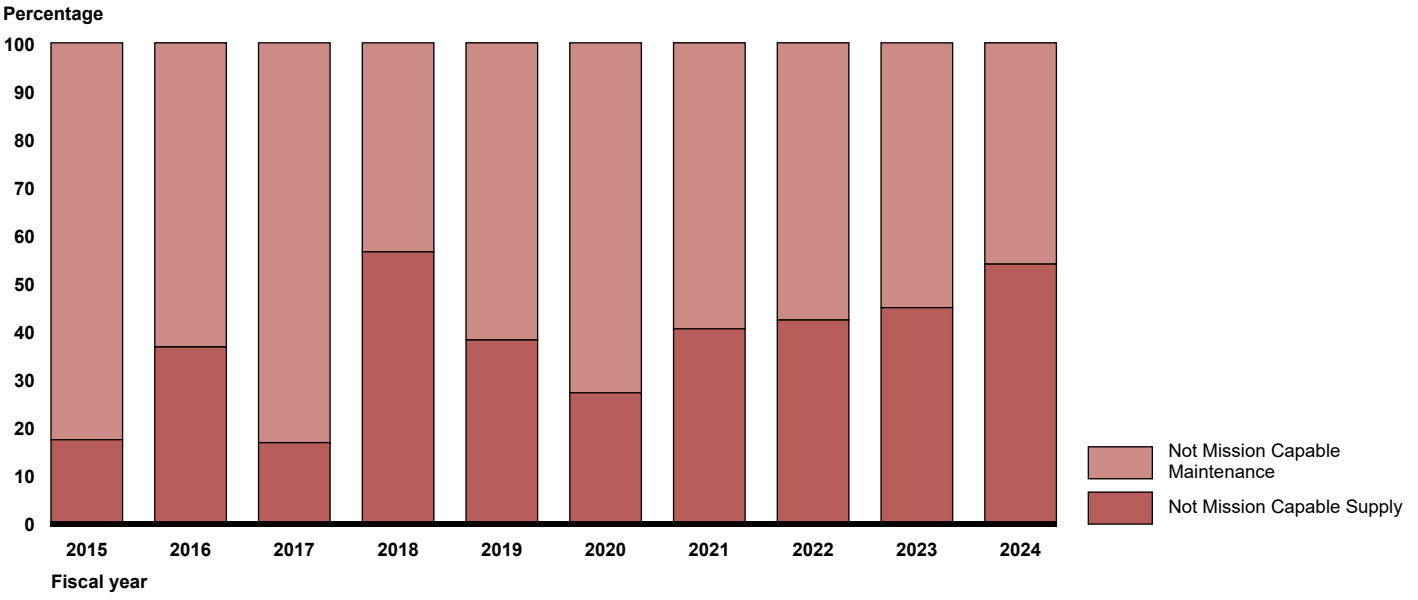
The Army reported individual MRAP vehicles as not mission capable due to the lack of parts and materiel and the time for awaiting maintenance. In this paragraph, we removed specific mission capable rates of the MRAP vehicles because DOD deemed the information to be CUI.

The order fill rate for MRAP depot-level repairables, which are parts and equipment repaired or refurbished for reuse by Army depots, stood at 51.5 percent in FY 2024.

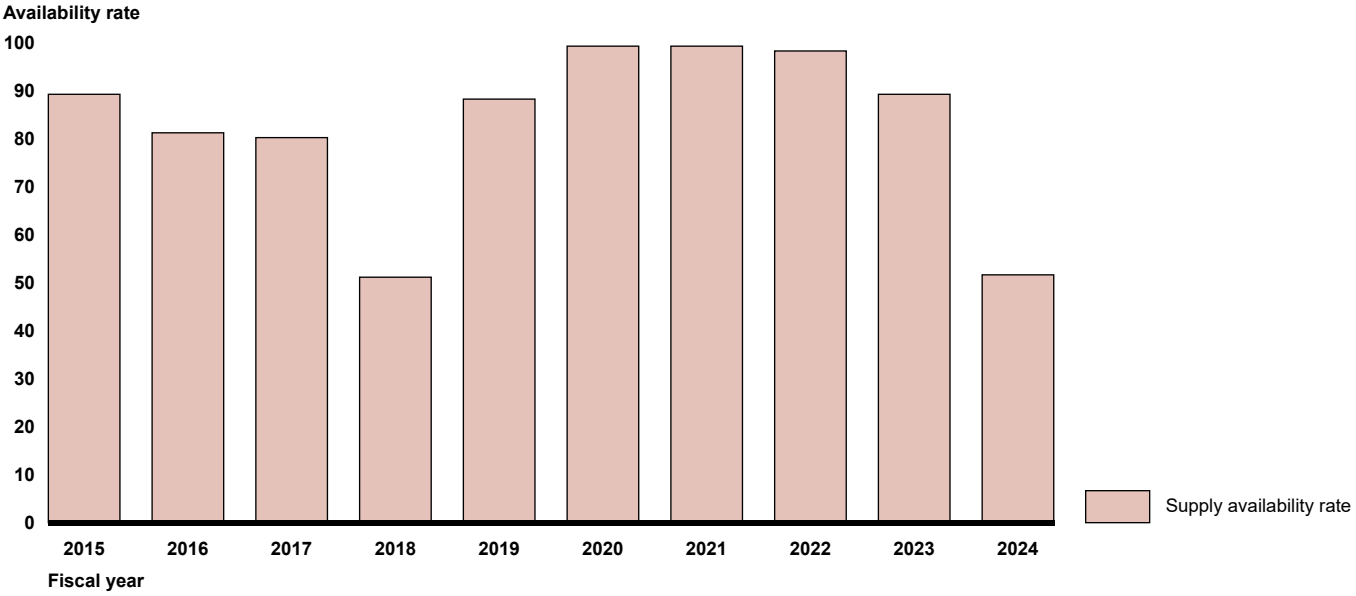
MRAP Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	29	187	416	187	420	0	0	0	0	0
Foreign	0	0	0	0	0	0	0	0	0	0

MRAP Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



MRAP Order Fill Rates for Depot Level Repairables, Fiscal Years 2015–2024

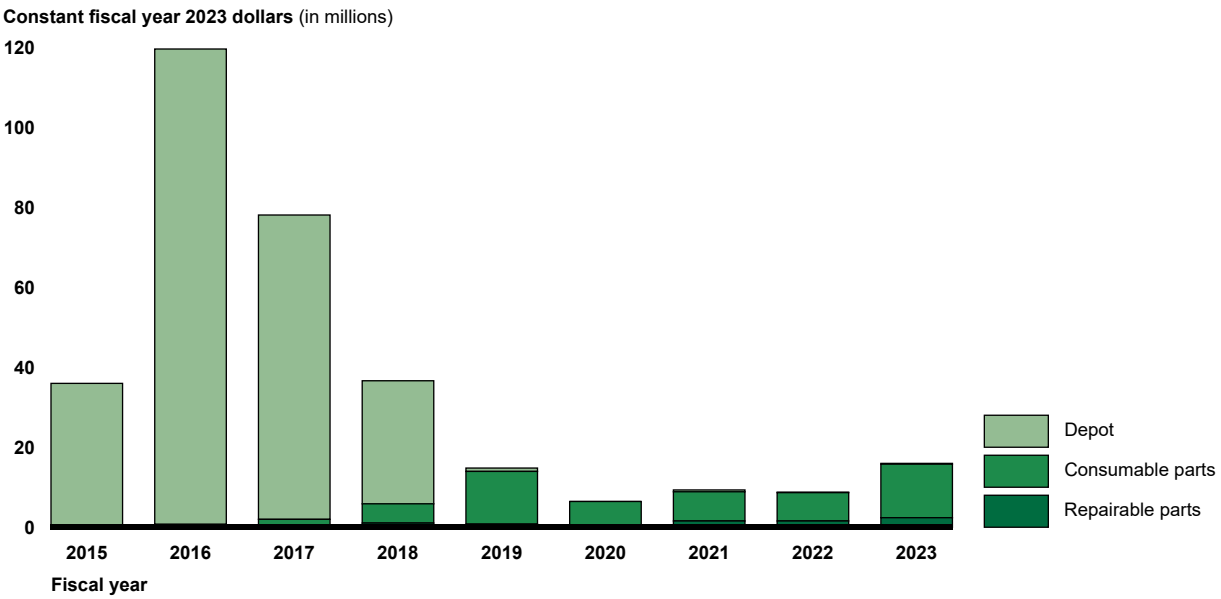


Note: Based on data provided by the Army, we could not combine order fill rates for each MRAP variant. The order fill rate above applies only to the greatest number MRAP variant, the MATV, however fiscal year 2024 accounts for all variants.

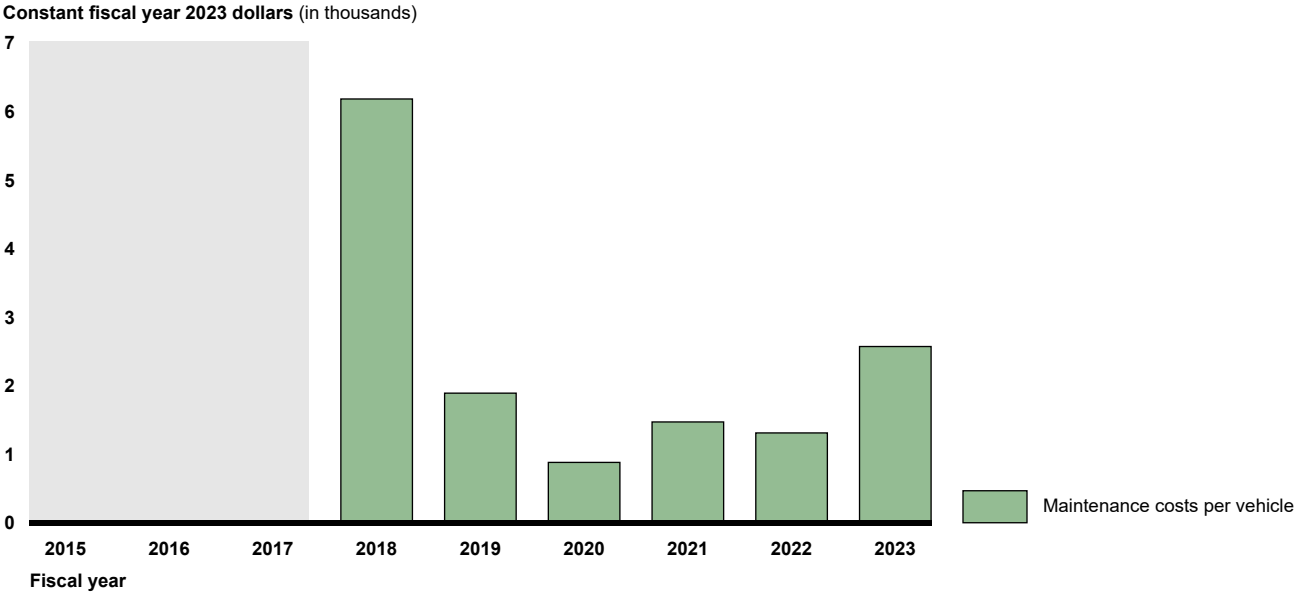
Maintenance Costs

The MRAP's total maintenance costs have decreased $20 million since FY 2015 driven by decreases in depot labor costs and parts costs. Army officials attribute the decline in MRAP maintenance to the drawdowns from overseas deployment and reduced usage of vehicles by field units. Army officials stated that prior to FY 2018, the Army did not include MRAPs going through a refurbishment program in its inventory data. As a result, we excluded those years from inventory counts.

MRAP Total Maintenance Costs, Fiscal Years 2015–2023



MRAP Total Maintenance Costs per Vehicle, Fiscal Years 2015–2023



Marine Corps Ground Vehicles

Amphibious Combat Vehicle Personnel Carrier (ACV-P)

Assault Amphibious Vehicle (AAV)

High Mobility Multipurpose Wheeled Vehicle (HMMWV)

Joint Light Tactical Vehicle (JLTV)

Light Armored Vehicle (LAV)

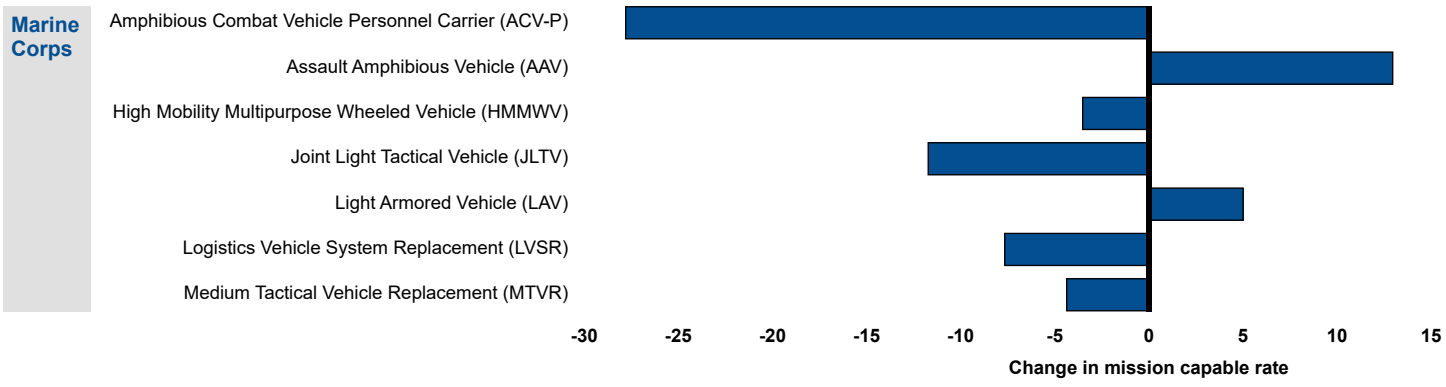
Logistics Vehicle System Replacement (LVSR)

Medium Tactical Vehicle Replacement (MTVR)

Sustainment Challenges Identified by the Marine Corps as Affecting Selected Ground Vehicles

		Carryover work or continuing resolutions	Delays acquiring replacement vehicles	Maintenance delays	Parts and material	Service-life related	Shortage of trained or skilled maintainers	Technical data or data related	Unexpected condition and/or timely arrival for maintenance	Unplanned maintenance
Marine Corps	Amphibious Combat Vehicle Personnel Carrier (ACV-P)				●		●	●		
	Assault Amphibious Vehicle (AAV)	●			●	●		●	●	
	High Mobility Multipurpose Wheeled Vehicle (HMMWV)		●	●	●	●		●		
	Joint Light Tactical Vehicle (JLTV)		●	●	●		●	●		
	Light Armored Vehicle (LAV)		●	●	●	●		●	●	●
	Logistics Vehicle System Replacement (LVSR)	●		●	●		●	●	●	
	Medium Tactical Vehicle Replacement (MTVR)	●		●	●	●	●	●	●	

Change in Mission Capable Rates for Marine Corps Ground Vehicles Comparing Fiscal Year 2024 to Fiscal Year 2015



ACV-P
Amphibious Combat Vehicle Personnel Carrier

Program Essentials

Manufacturer
BAE Systems

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 2021

The personnel carrier is the current operational variant, and planned variants include recovery and maintenance, medium caliber cannon, and command and control vehicles.

Vehicle Service Life
20 years

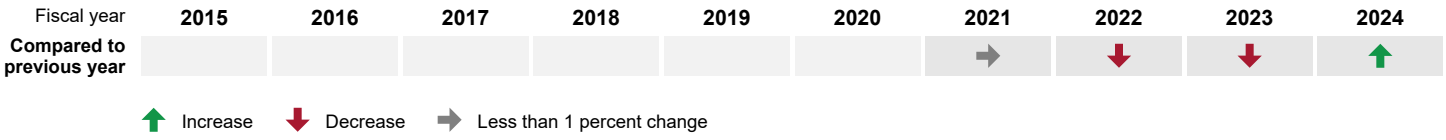
The ACV-P is an eight-wheeled amphibious vehicle intended to transport Marines from ship to shore and is the replacement program to the Assault Amphibious Vehicle (AAV). The ACV will be the primary means of tactical mobility for a Marine infantry battalion at sea and ashore.

ACV-P Sustainment Status

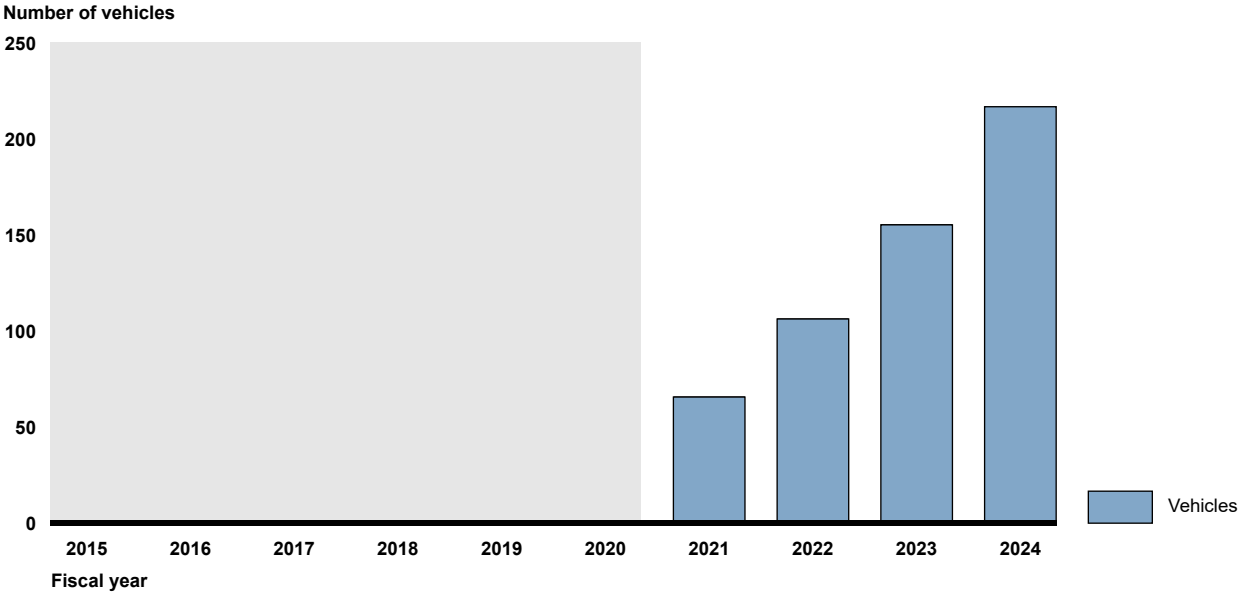
Mission Capable Rate and Inventory

Marine Corps officials told us that the ACV-P's mission capable rate has fallen because of the increase in total vehicles and competition for parts with the ongoing production line since its fielding in FY 2021. In this paragraph, we removed specific mission capable rates of the ACV-P because DOD deemed the information to be CUI. According to Marine Corps officials, sufficient spare parts and maintainers existed for the 18 ACV-Ps initially fielded; however, as the service fielded additional ACV-Ps, the number of unanticipated reliability issues grew, leading to demands exceeding the supply of available parts, maintenance facilities and maintenance personnel. In response to the low mission capable rate, Marine Corps officials told us they have implemented design changes, updates to preventative maintenance checks and services, and increased supply of critical components.

ACV-P Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024



ACV-P Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

ACV-P Sustainment Challenges Identified by the Marine Corps

- ○ Carryover work or continuing resolutions
- ○ Delays acquiring replacement vehicles
- ○ Maintenance delays
- ● Parts and material
- ○ Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ○ Unplanned maintenance

Marine Corps officials reported that the ACV-P faced sustainment challenges in three of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported the service has a deficit of trained maintainers at the field level. They further reported that because the ACV-P is a new system maintainers need significant additional training to work on the vehicle's computer systems.

The Marine Corps has not begun a depot-level maintenance cycle for the ACV-P.

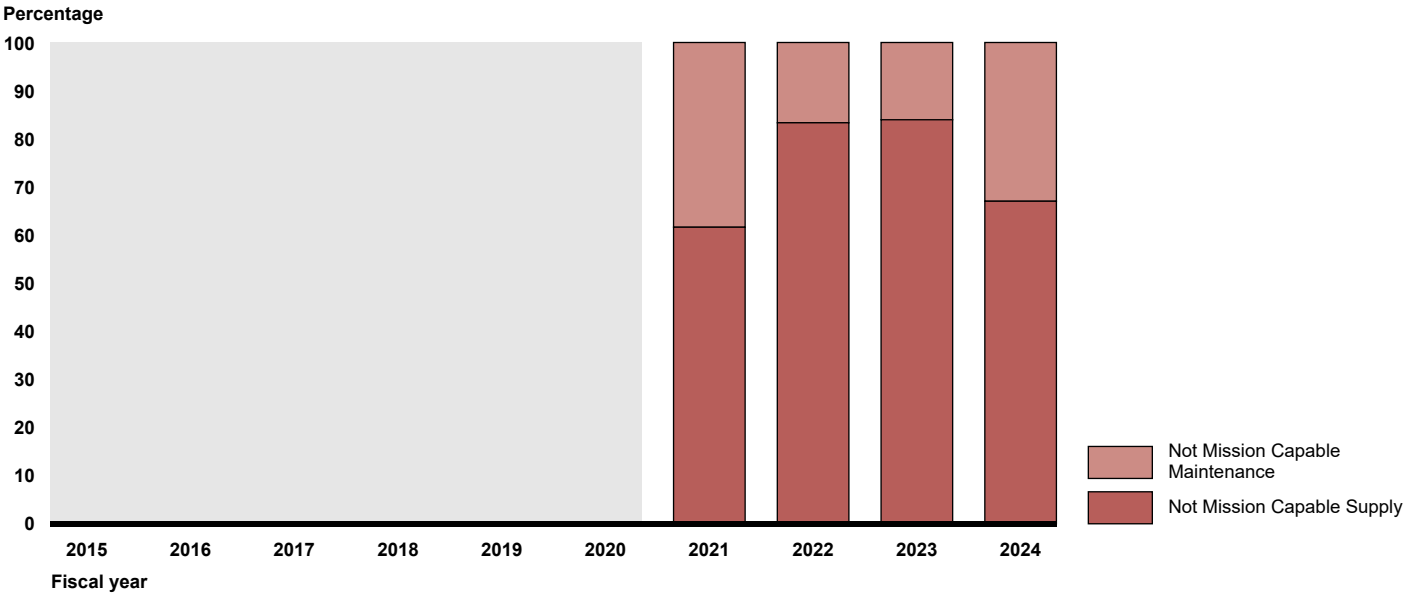
The Marine Corps reported individual ACV-P as not mission capable due to the lack of parts and materiel, time awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the ACV-P because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

ACV-P Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	0	0	0	0	0	0	0
Foreign	0	0	0	0	0	0	0	0	0	0

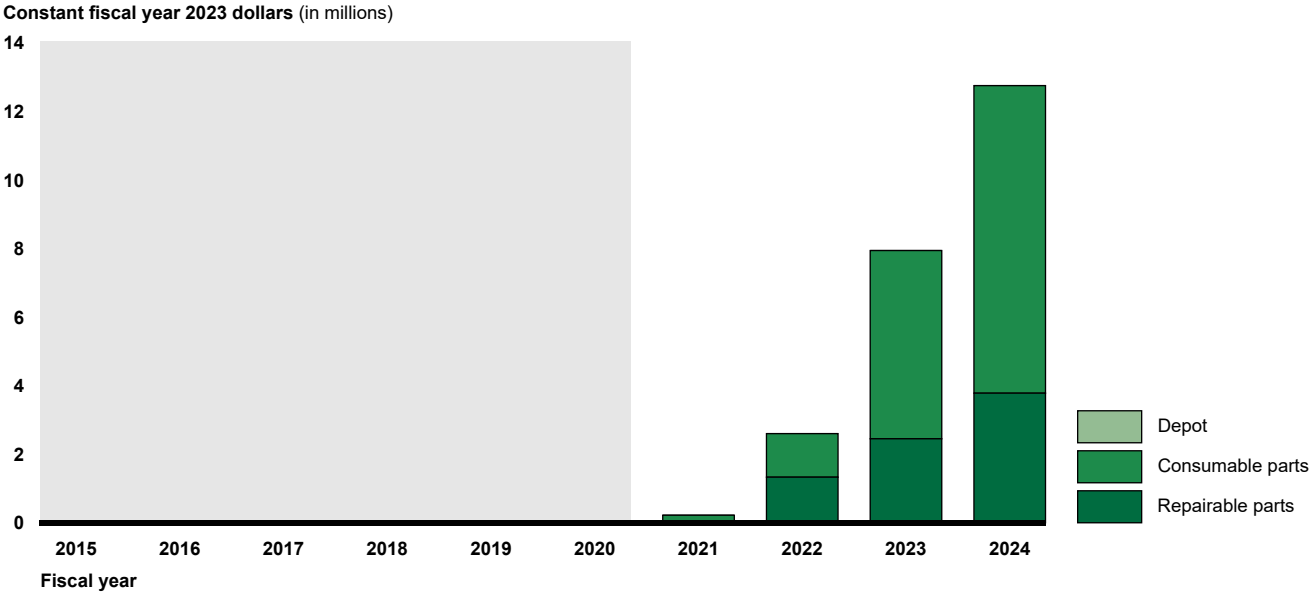
ACV-P Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



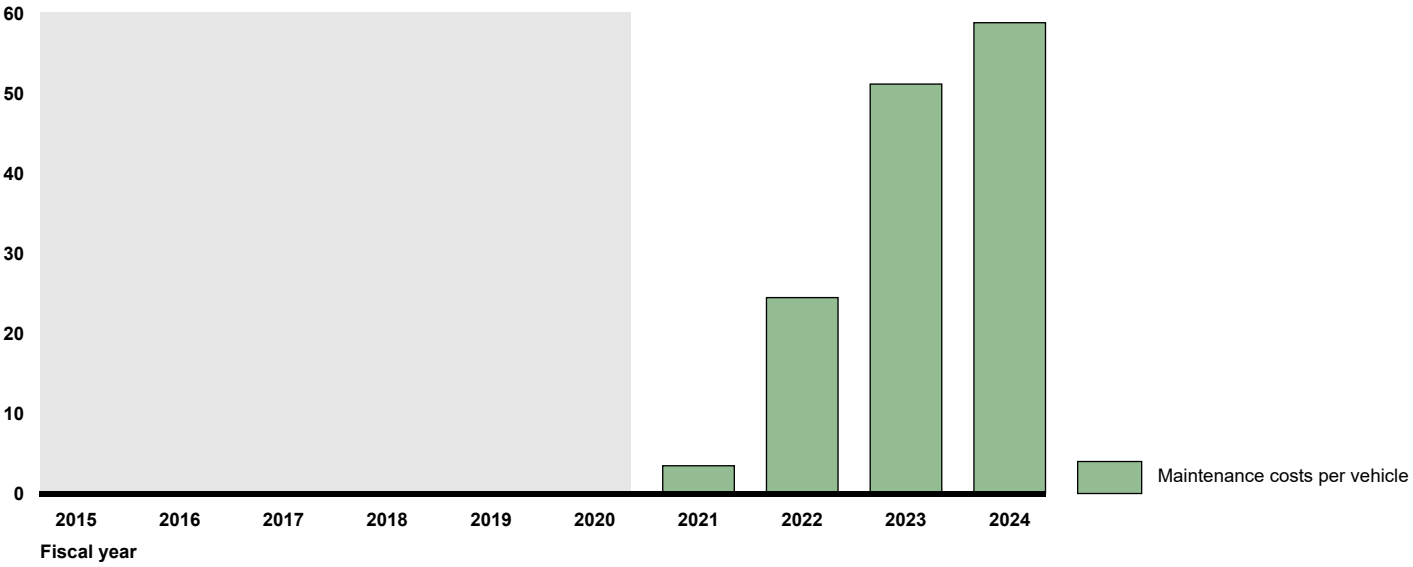
Maintenance Costs

The ACV-P's total maintenance costs have increased $12.5 million since FY 2021. Marine Corps officials told us that maintenance costs increased due to the increasing number of ACV-Ps fielded. As the service fielded more ACV-Ps, more breakdowns have occurred, and more repairs have become necessary. Additionally, Marine Corps officials explained that factors that contributed to changes in total maintenance costs include increased training exercises to support training requirements and deployments.

ACV-P Total Maintenance Costs, Fiscal Years 2015–2024



ACV-P Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



AAV
Assault Amphibious Vehicle

Program Essentials

Manufacturer
BAE Systems

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 1984

Variants include personnel carrier, recovery and repair, and command post vehicles.

Vehicle Service Life
51 years

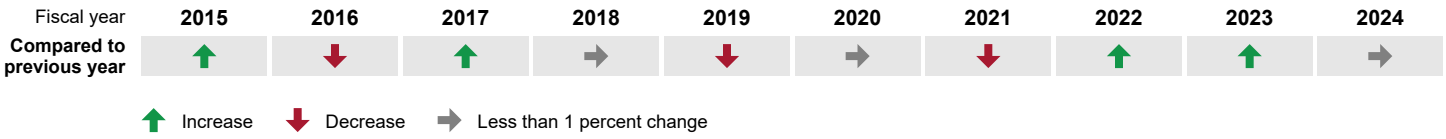
The AAV, remains the primary general-support armored personnel carrier for Marines. The Marine Corps plans to eventually replace AAVs with the ACV. In July 2020 the Marine Corps suspended waterborne activities for the AAV. As such, the vehicle could no longer serve as part of regularly scheduled deployments or train in the water during military exercises and could only return to operating in the water if needed for crisis response.

AAV Sustainment Status

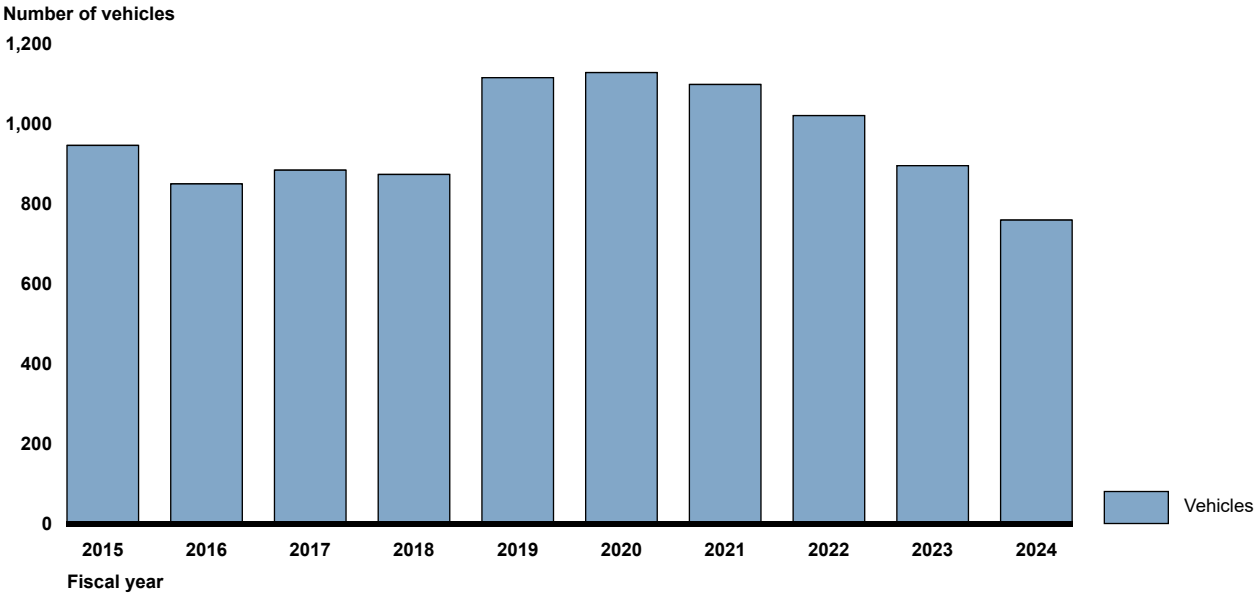
Mission Capable Rate and Inventory

Marine Corps officials told us that the AAV Family of Vehicles is a legacy platform that is nearing the end of its life and is being replaced by the Amphibious Combat Vehicle Family of Vehicles. As a result, AAVs are operated less and less thus mission capable rates of the fleet of vehicles are increasing. In this paragraph, we removed specific mission capable rates of the AAV from this paragraph because DOD deemed the information to be CUI.

AAV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024



AAV Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

AAV Sustainment Challenges Identified by the Marine Corps

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Marine Corps officials stated that the AAV faced sustainment challenges in five of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials stated that unplanned maintenance occurred when vehicles arrive at the depot in worse condition than expected. They further stated that this can happen because the units sending the vehicle often strip any useful parts and equipment prior to sending it to the depot.

Marine Corps depots performed 105 fewer overhauls on the AAV in FY 2024 than in FY 2015. However, Marine Corps officials stated that the AAV is being divested and water operations have ceased; consequently, the decline in depot overhauls have not created any adverse impacts.

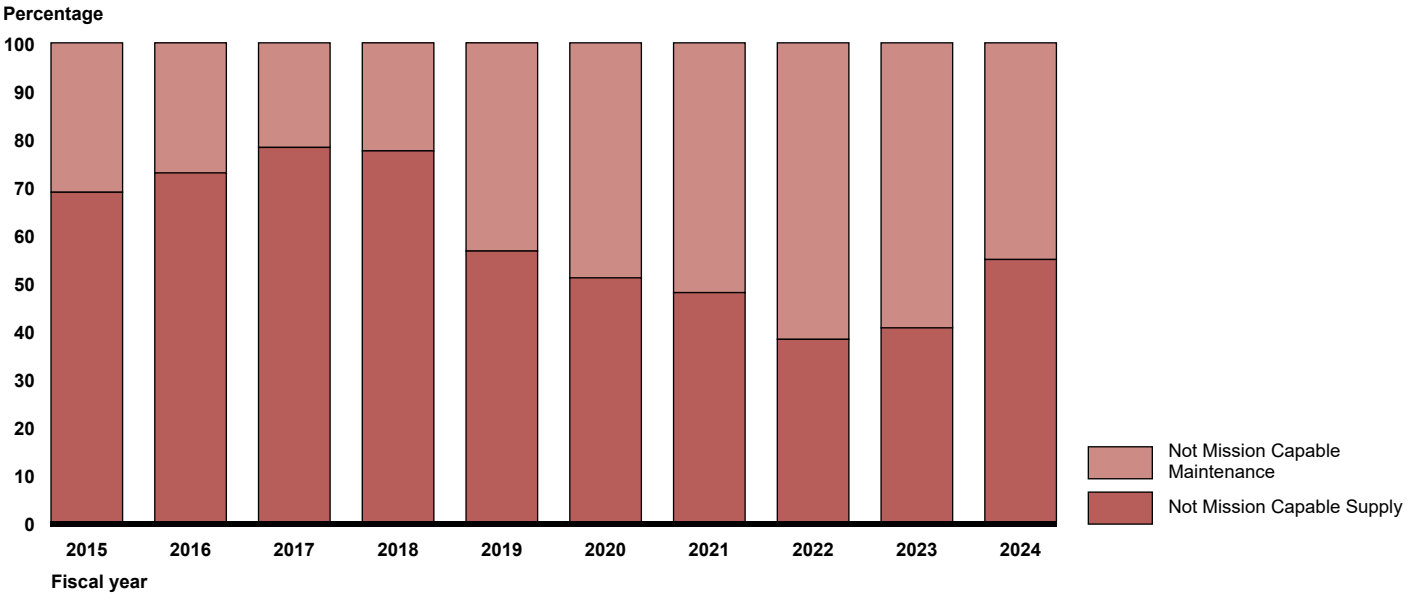
The Marine Corps reported individual AAV as not mission capable due to the lack of parts and materiel, time awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the AAV because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

AAV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	111	72	63	71	60	22	46	35	10	6
Foreign	0	0	0	0	0	0	0	0	0	0

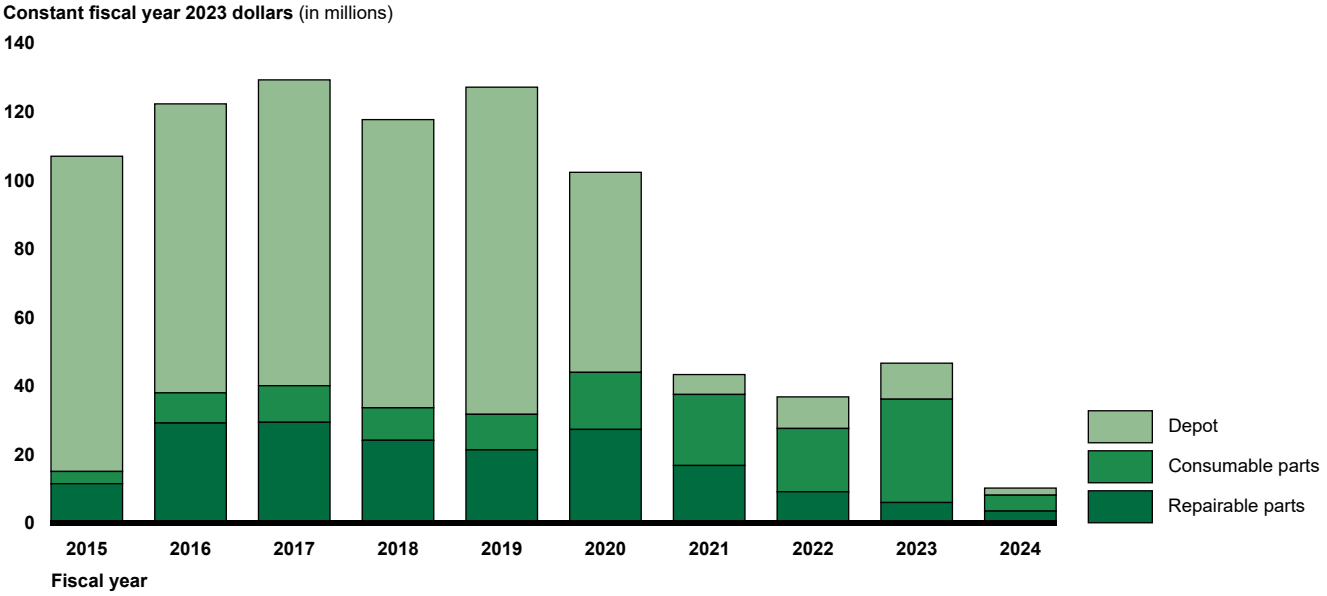
AAV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



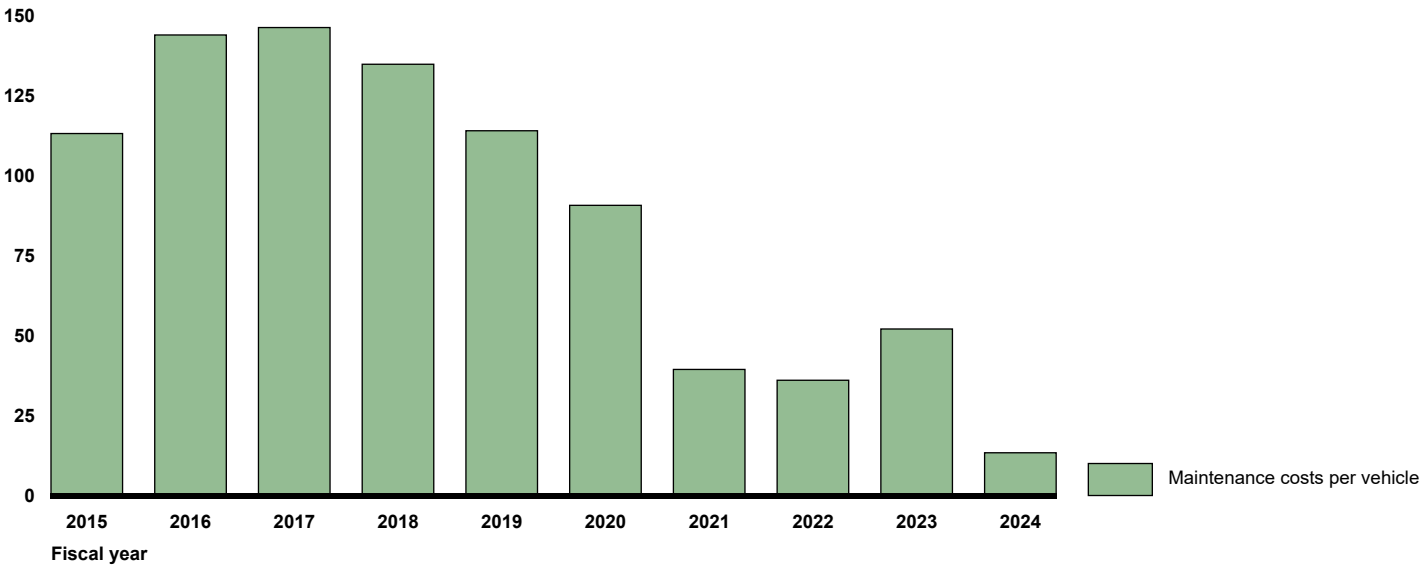
Maintenance Costs

The AAV's maintenance costs have decreased $96.8 million since FY 2015. Marine Corps officials told us that usage of this vehicle has diminished due to active divestment of AAVs and fielding of ACVs. Additionally, officials explained that following an AAV accident in FY 2020 in which an AAV sank, the Marine Corps implemented a halt in all water operations for the vehicle resulting in a further decline in maintenance needs for the vehicle.

AAV Total Maintenance Costs, Fiscal Years 2015–2024



AAV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



HMMWV
High Mobility Multipurpose Wheeled Vehicle

Program Essentials

Manufacturer
AM General

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 1985 to 2007

Variants include utility truck, ambulance, personnel carrier, cargo, armament carrier, and command and control variants.

Vehicle Service Life
23 to 45 years

The HMMWV is a lightweight, highly mobile, high-performance, diesel-powered, four-wheel drive, air-transportable, and air-droppable family of tactical vehicles.

HMMWV Sustainment Status

Mission Capable Rate and Inventory

Marine Corps officials told us that parts demand for older HMMWV variants has declined due to replacement of the HMMWV with the JLTV. The reduced demand has impacted availability of parts and led to diminishing manufacturing sources of parts. For example, Marine Corps officials told us that many of the M1114 variant's parts are unique, and the service operates few of these vehicles. As a result, acquiring parts for this variant has become more challenging or expensive. In this paragraph, we removed specific mission capable rates of the HMMWV because DOD deemed the information to be CUI.

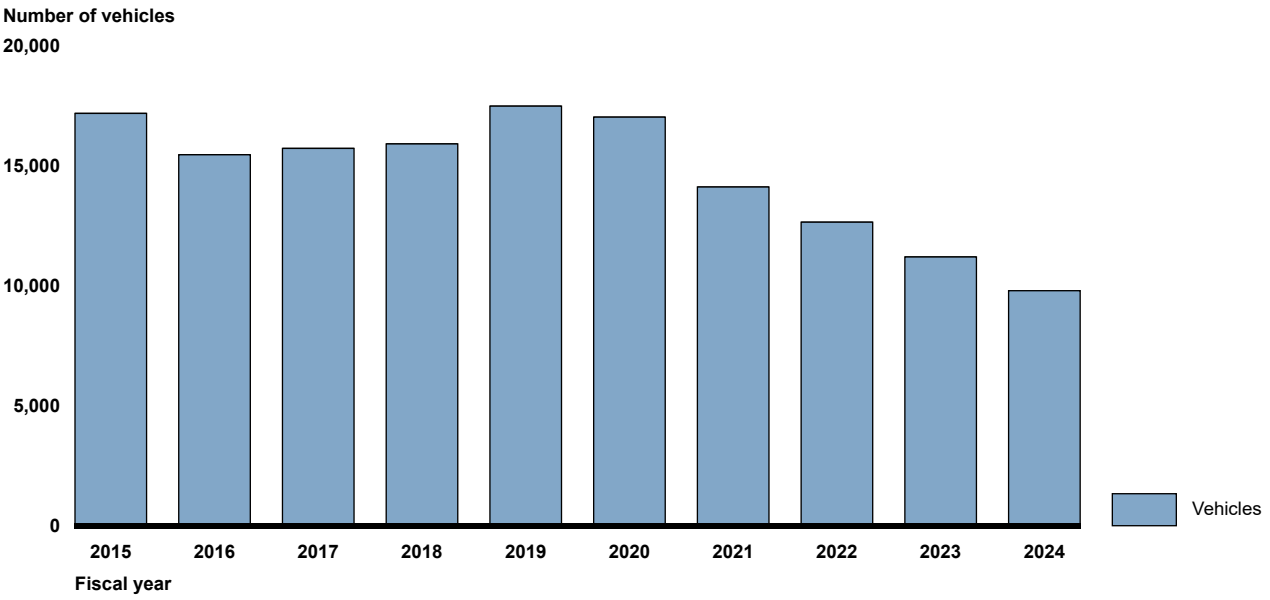
Additionally, officials explained that the average age of the remaining HMMWV family of vehicles has increased as no new vehicles have been fielded since FY 2015, which also affected the mission capable rate.

HMMWV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	→	→	→	↑	↑	↓	↓	↓

↑ Increase ↓ Decrease → Less than 1 percent change

HMMWV Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

HMMWV Sustainment Challenges Identified by the Marine Corps

- ○ Carryover work or continuing resolutions
- ● Delays acquiring replacement vehicles
- ● Maintenance delays
- ● Parts and material
- ● Service-life related
- ○ Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ○ Unplanned maintenance

Marine Corps officials reported that the HMMWV faced sustainment challenges in five of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported delays in acquiring replacement vehicles for units as a challenge. They further reported that the services experienced challenges with the age of the HMMWV as vehicle condition has deteriorated over time.

Marine Corps depots performed 110 fewer overhauls on the HMMWVs in FY 2024 than in FY 2015.

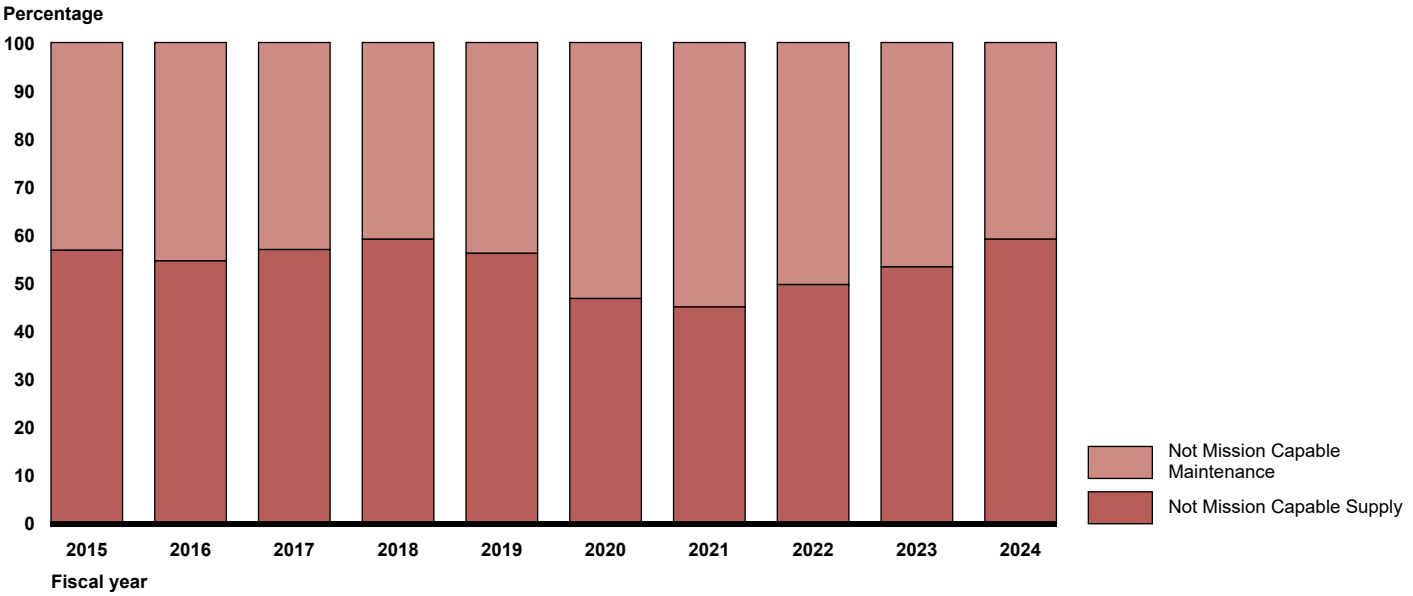
The Marine Corps reported individual HMMWV as not mission capable due to the lack of parts and materiel, the time due to awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the HMMWV because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

HMMWV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	115	53	103	174	57	33	37	21	10	5
Foreign	0	0	0	0	0	0	0	0	0	0

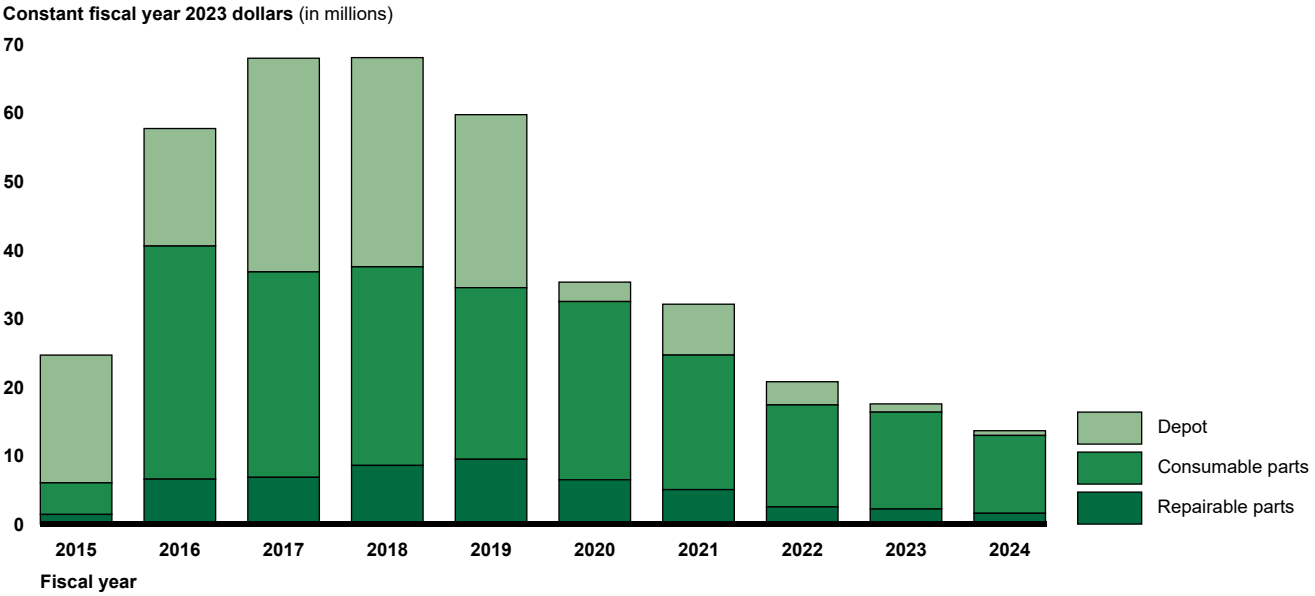
HMMWV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



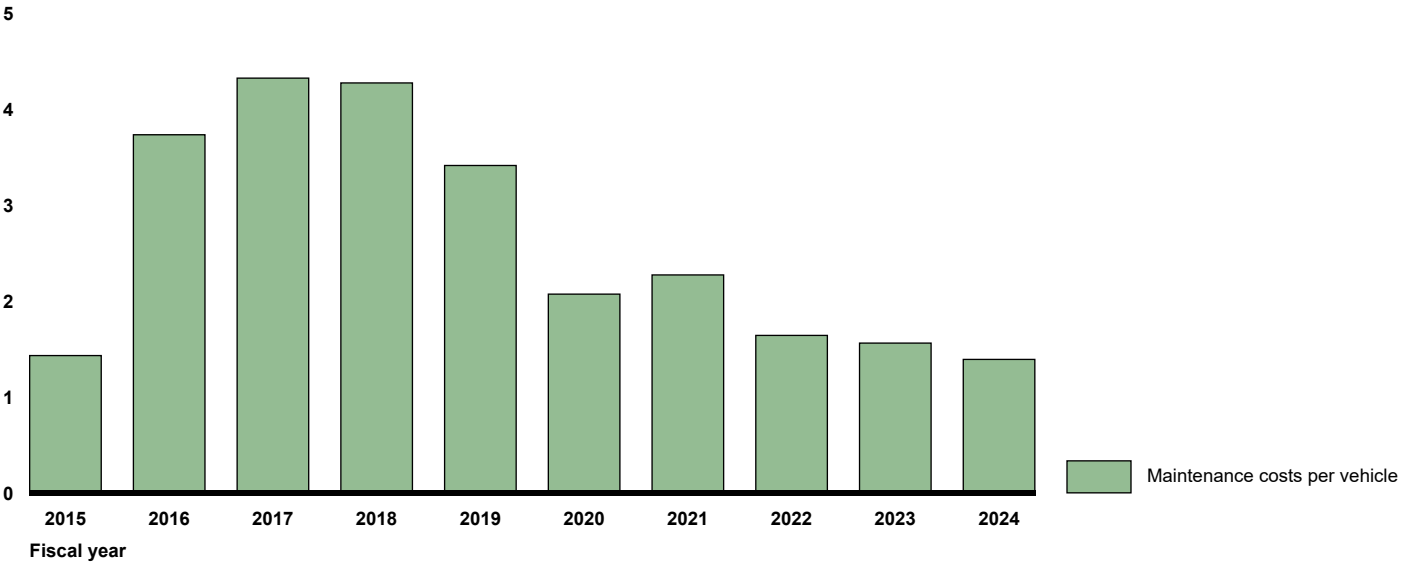
Maintenance Costs

The HMMWV's maintenance costs have decreased $11 million since FY 2015. Marine Corps officials told us that the divestment of the HMMWV and ending its depot maintenance cycle has lowered the maintenance costs for the fleet. Additionally, Marine Corps officials explained that diminishing manufacturing sources driven by lower parts and materiel demands have caused manufacturer's prices to increase.

HMMWV Total Maintenance Costs, Fiscal Years 2015–2024



HMMWV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



JLTV
Joint Light Tactical Vehicle

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 2019

Variants include heavy weapons carrier, close combat, utility truck, and general purpose vehicles.

Vehicle Service Life
23 years

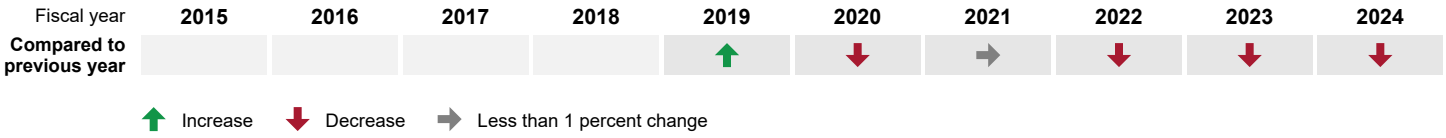
The JLTV program is an Army-led, joint program designed to replace a portion of Army and Marine Corps light tactical vehicle fleets, including HMMWVs. The JLTV provides protection for 2 to 4 passengers against certain battlefield threats with an increased payload capacity and improved performance.

JLTV Sustainment Status

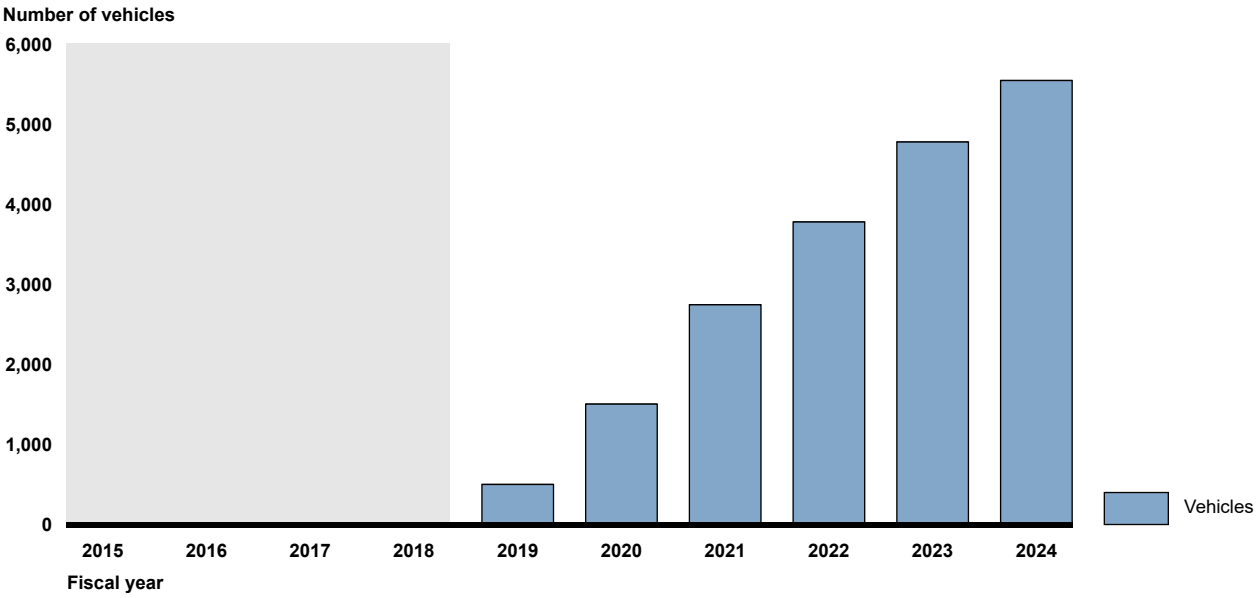
Mission Capable Rate and Inventory

The Marine Corps fielded the JLTV starting in 2019. Marine Corps officials told us that as the number of fielded vehicles and average age increases, mission capable rates will drop as compared to data from FY 2019. Officials explained that these drops in mission capable rates demonstrate the need for preventative and corrective maintenance as the vehicles are increasingly used to support operational and training requirements. Marine Corps officials stated the JLTV has a steep learning curve for maintainers due to its complexities. The Marine Corps is providing troubleshooting procedures and tools to the maintenance community to improve sustainment of the JLTV. In this paragraph, we removed specific mission capable rates of the JLTV because DOD deemed the information to be CUI.

JLTV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024



JLTV Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

JLTV Sustainment Challenges Identified by the Marine Corps

- ○ Carryover work or continuing resolutions
- ● Delays acquiring replacement vehicles
- ● Maintenance delays
- ● Parts and material
- ○ Service-life related
- ● Shortage of trained or skilled maintainers
- ● Technical data or data related
- ○ Unexpected condition and/or timely arrival for maintenance
- ○ Unplanned maintenance

Marine Corps officials stated that its JLTV faced sustainment challenges in five of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported that a shortage of trained maintainers or lack of maintainers with the right skills is a challenge. This occurs because the JLTV began fielding in FY 2019 and maintainers still need to learn how to perform maintenance and repairs on the vehicle. Marine Corps officials stated that as with fielding new equipment, there is a learning curve to becoming maintenance subject matter experts on the vehicle.

The Marine Corps depots have not yet performed any overhauls on the JLTV though we observed two damaged JLTVs at a Marine Corps depot. Officials described depot maintainers using these two vehicles to begin learning how to maintain and repair JLTVs prior to beginning planned overhauls on JLTVs at the depot.

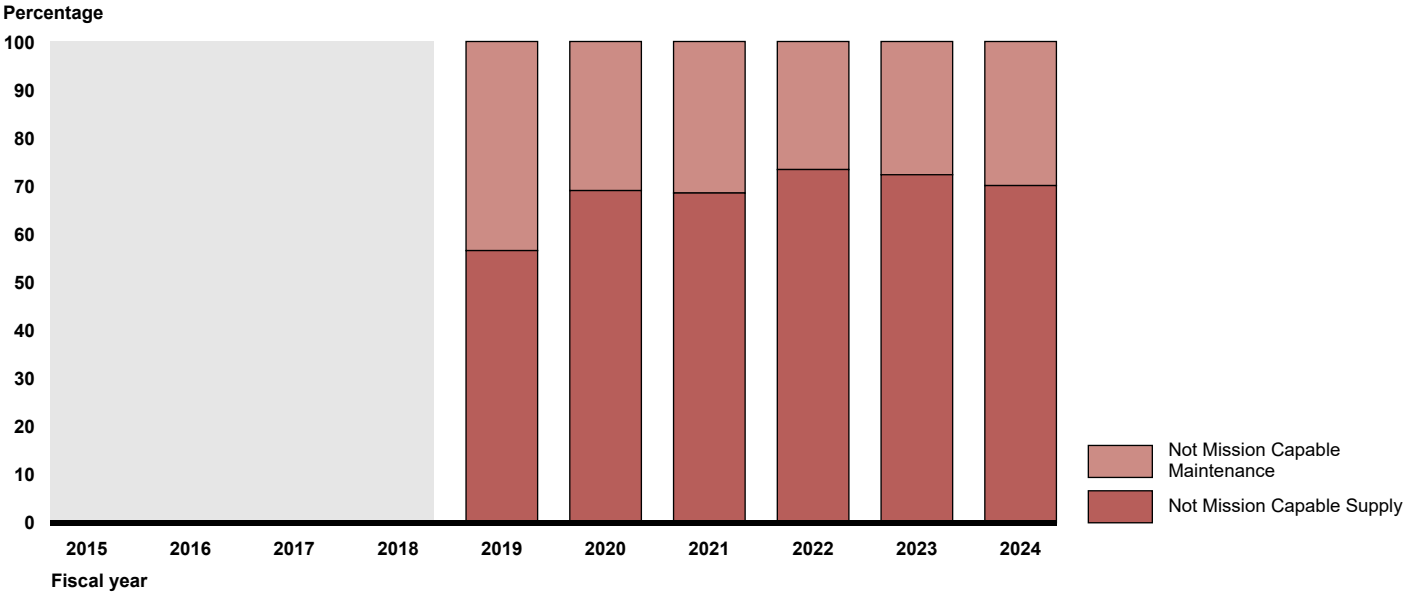
The Marine Corps reported individual JLTV as not mission capable due to the lack of parts and materiel, the time due to awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the JLTV because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

JLTV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	0	0	0	0	0	0	0	0	0	0
Foreign	0	0	0	0	0	0	0	0	0	0

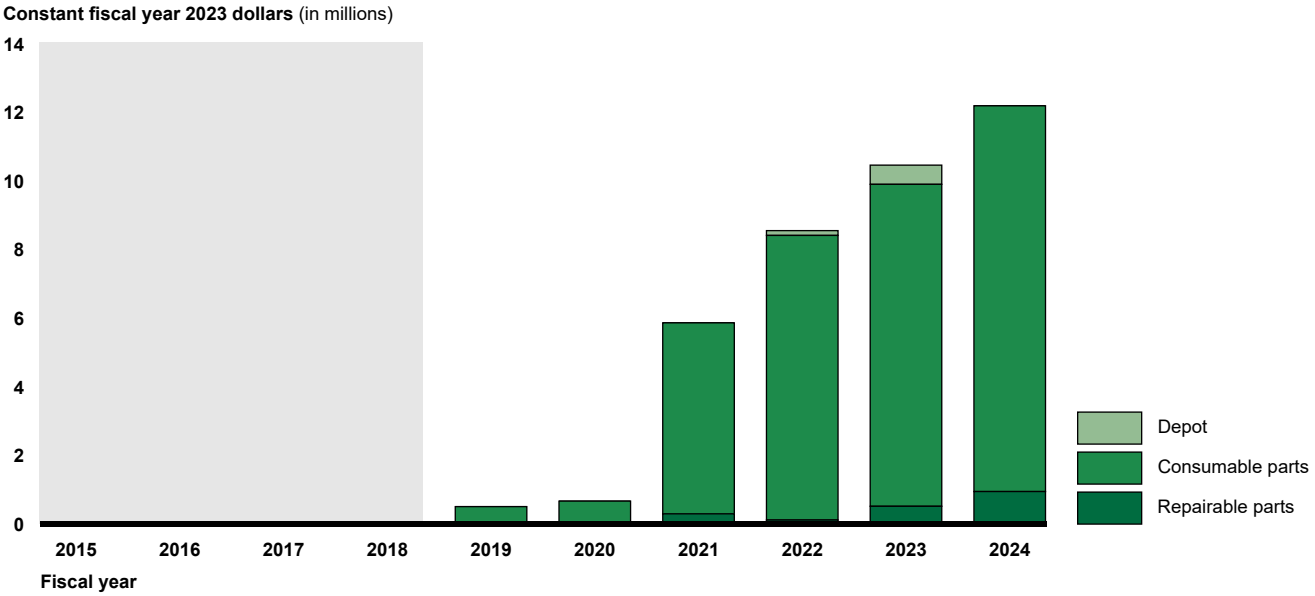
JLTV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



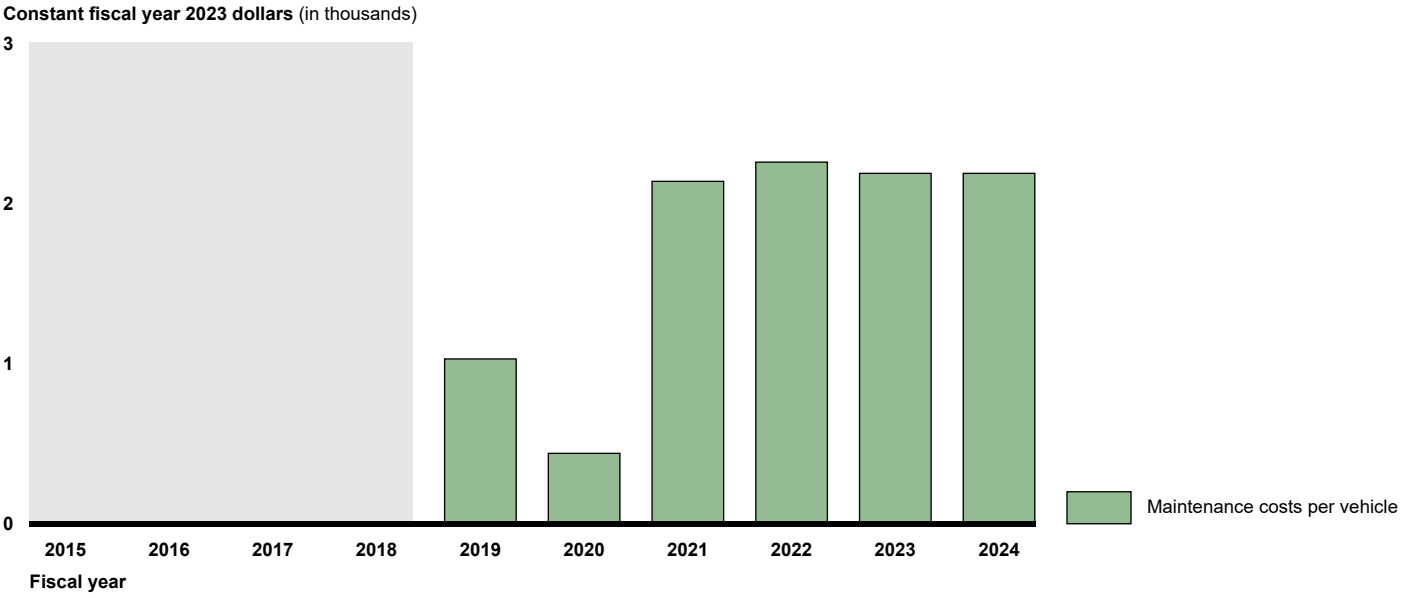
Maintenance Costs

The JLTV's maintenance costs have increased $11.7 million since FY 2019. Marine Corps officials told us that JLTV has not begun a regular depot maintenance program. Depots working on the JLTV have only done so for training purposes. These officials explained that as of February 2025, the Marine Corps has fielded over 30 percent of the planned number of JLTVs, compared to less than 1 percent in FY 2019.

JLTV Total Maintenance Costs, Fiscal Years 2015–2024



JLTV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



LAV
Light Armored Vehicle

Program Essentials

Manufacturer
General Dynamics Land Systems (GDLS)

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

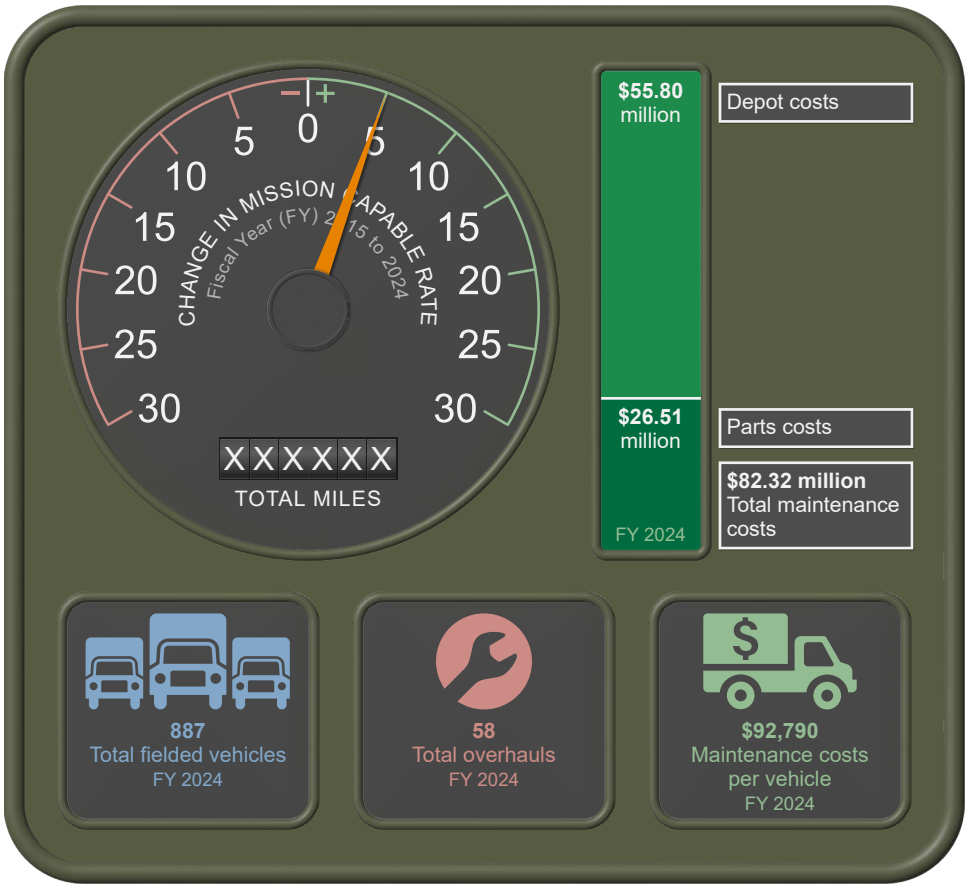
Variants and Introduction Date
• 1984 to 1998

Variants include light assault, logistics, anti-tank, command and control, recovery and repair, mortar carrier vehicles, and electronic warfare.

Vehicle Service Life
37 to 51 years

The LAV is an all-weather, all-terrain vehicle combining speed, maneuverability, and firepower to fulfill a variety of missions. The LAV supports Marines on conducting missions in all weather, such as sustained reconnaissance, counter-reconnaissance, and security operations.

LAV Sustainment Status



Mission Capable Rate and Inventory

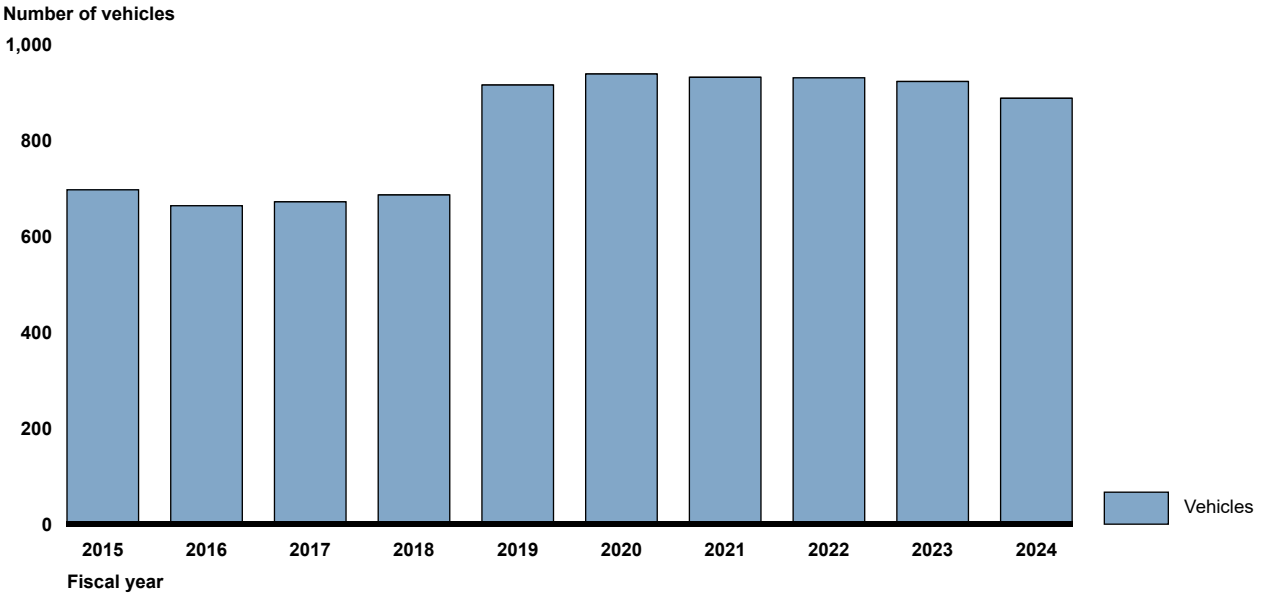
Marine Corps officials told us that the LAV's mission capable rate has steadily improved due to overall system modernization efforts and other maintenance changes. These changes have overall served to reduce maintenance downtime for the aging fleet. Additionally, officials stated that the Marine Corps holds annual maintenance integrated product team meetings with all LAV stakeholders, including reconnaissance and maintenance battalions. In this paragraph, we removed specific mission capable rates of the LAV from this paragraph because DOD deemed the information to be CUI.

LAV Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↑	↑	→	→	→	↓	↑	→	→

↑ Increase ↓ Decrease → Less than 1 percent change

LAV Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

LAV Sustainment Challenges Identified by the Marine Corps

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Marine Corps officials reported that the LAV faced sustainment challenges in seven of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported that service-life of the LAV has presented challenges due to the age of the fleet. Specifically, the LAV service life was extended 20 years beyond its planned 2015 exit date, which means the Marine Corps must manage the obsolescence of parts of its aging LAV fleet, among other things. Marine Corps officials also reported that LAV vehicles arrive at the depot in worse condition than expected. They stated that depots consistently receive vehicles that are in poor condition and missing parts and equipment including modifications. This causes the Marine Corps depots to reconfigure their maintenance schedule to account for the poor condition of the vehicles and conduct unplanned work to complete the maintenance and repairs.

Marine Corps depots performed 59 fewer overhauls on the LAV in FY 2024 than in FY 2015. The decrease in overhauls resulted in a reduction of workforce at both Barstow and Albany depots.

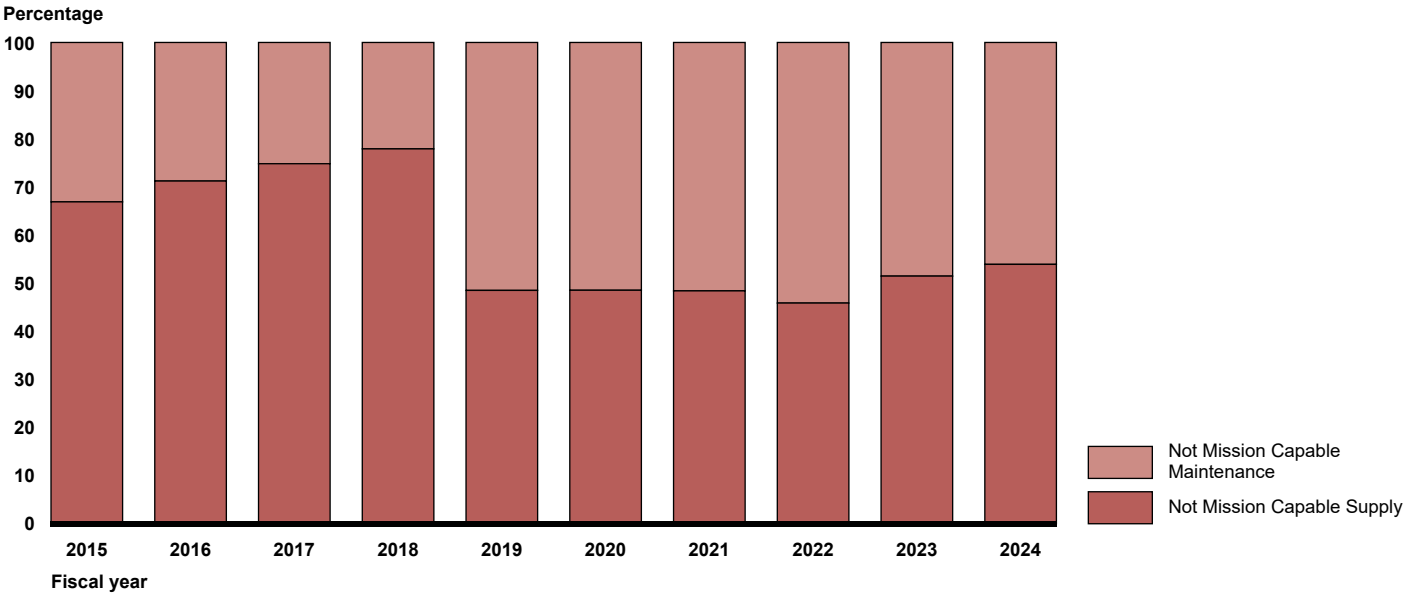
The Marine Corps reported individual LAV vehicles as not mission capable due to the lack of parts and materiel, the time due to awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the LAV from this paragraph because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

LAV Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	117	69	56	48	61	47	71	86	73	58
Foreign	0	0	0	0	0	0	0	0	0	0

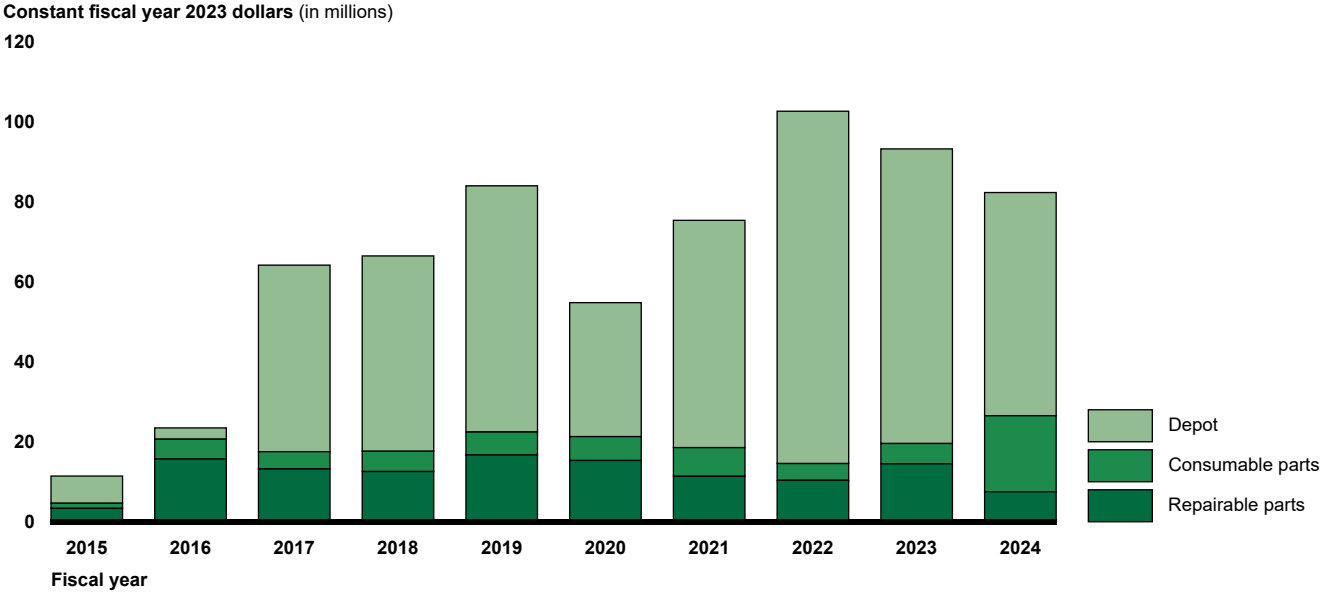
LAV Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



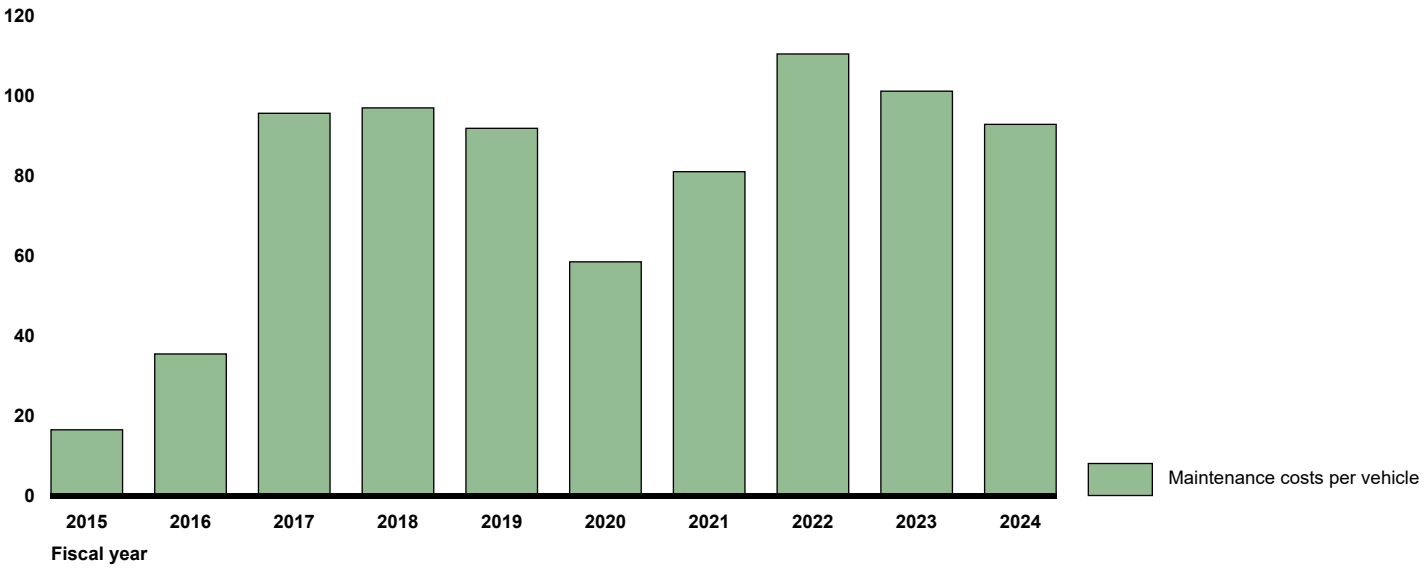
Maintenance Costs

The LAV's maintenance costs have increased $70.9 million since FY 2015. Marine Corps officials stated that costs have increased due to several factors, including materiel and upgrades that had to be procured via commercial vendors instead of sourced from organic sources such as the depots. Additionally, officials told us that certain upgrades to the LAV, such as the electronic drive and ballistic protection package, have increased costs. For example, the electronic drive has a high failure rate and high cost of repair.

LAV Total Maintenance Costs, Fiscal Years 2015–2024



LAV Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



LVSR
Logistics Vehicle System Replacement

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 2009 to 2011

Variants include cargo, tractor, and wrecker vehicles.

Vehicle Service Life
24 to 26 years

The LVSR is a heavy logistics vehicle that transports multiple tons of supplies such as fuel, water, and ammunition across the battlefield. All variants are capable of supporting machine gun turrets.

LVSR Sustainment Status

Mission Capable Rate and Inventory

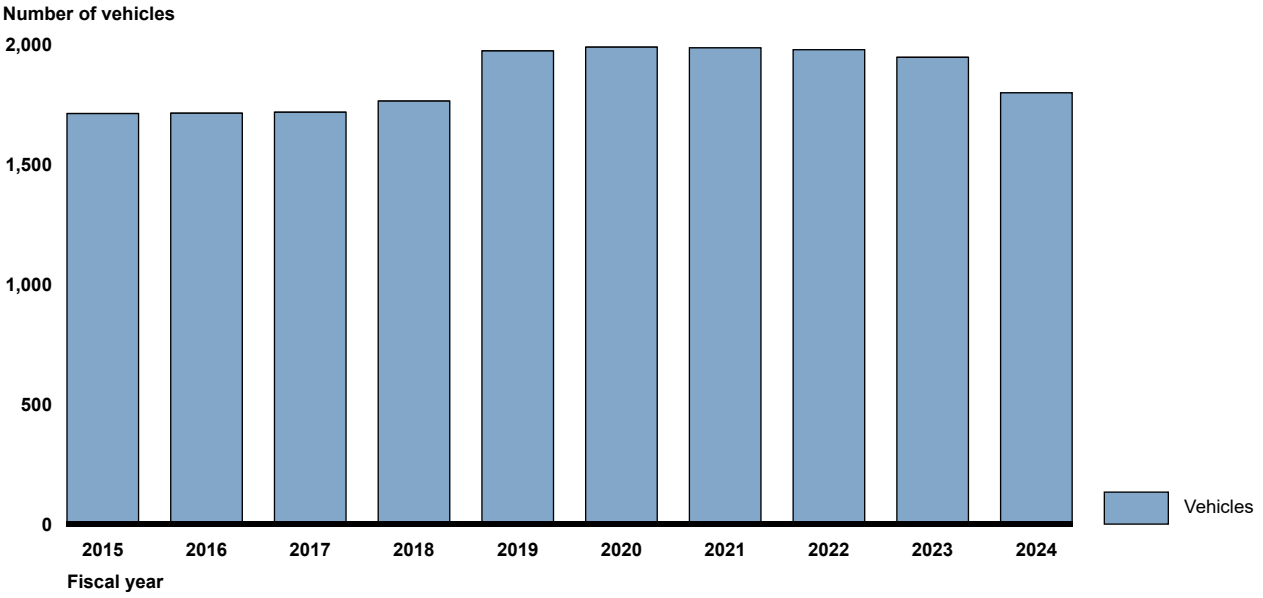
Marine Corps officials attribute the drop in LVSR's mission capable rate to the aging fleet of vehicles, parts obsolescence, parts lead times, and the release of technical instructions changing maintenance procedures which resulted in increases in not mission capable rates for LVSRs. Marine Corps officials state that the service is conducting analyses to address concerns with the current preventive maintenance schedule and procedures for incorporation into the LVSR's technical manuals. In this paragraph, we removed specific mission capable rates of the LVSR because DOD deemed the information to be CUI.

LVSR Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Compared to previous year	↓	↓	↑	↓	→	→	↑	→	↓	↓

↑ Increase ↓ Decrease → Less than 1 percent change

LVSR Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

LVSR Sustainment Challenges Identified by the Marine Corps

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Marine Corps officials reported that the LVSR faced sustainment challenges in six of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported that the LVSR's condition upon arrival for maintenance impacts the depot's ability to conduct maintenance in a timely manner because units sending vehicles to the depot for maintenance strip parts and equipment from vehicles. This means, according to these officials, depots must order additional, unplanned parts and materiel, which can lead to delays in the performance of depot maintenance. Marine Corps officials also reported that some vehicles' conditions upon arrival at the depot is so severe that it is not economical to repair, and the vehicles must be disposed of and removed from Marine Corps inventory. Marine Corps officials also reported carryover of unfinished work from year to year has presented sustainment and maintenance challenges for the LVSR.

The Marine Corps reported individual LVSR as not mission capable due to the lack of parts and materiel, the time due to awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the LVSR from this paragraph because DOD deemed the information to be CUI.

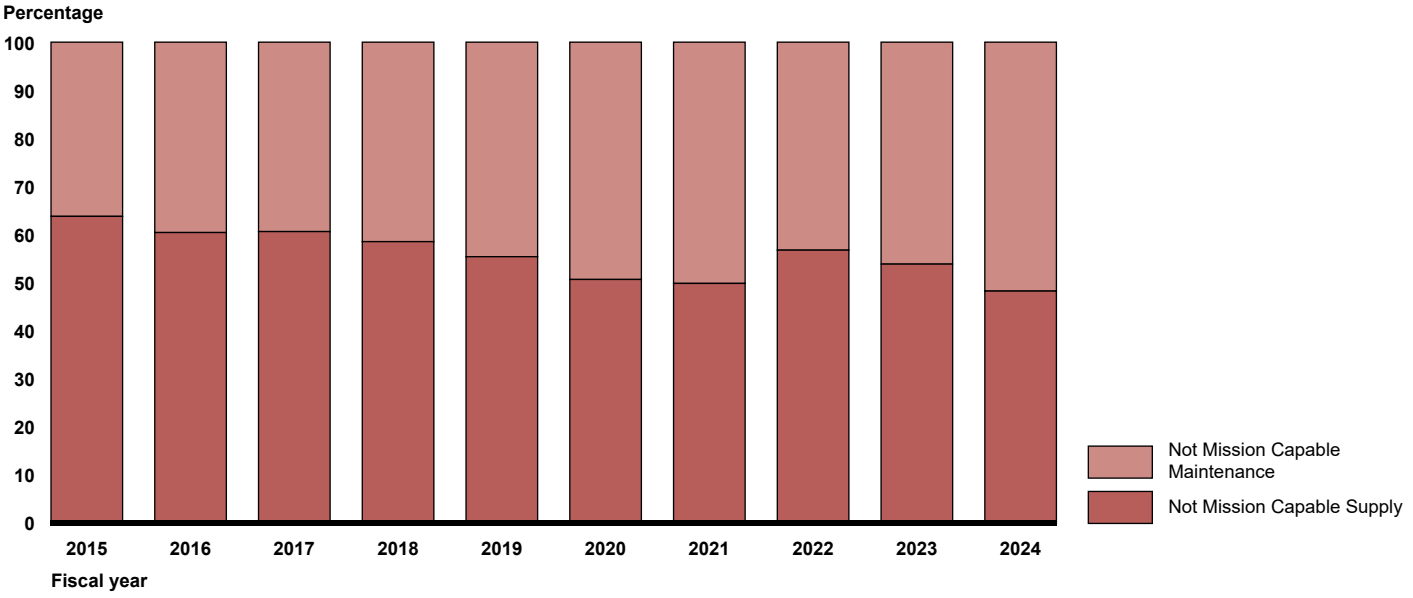
Marine Corps depots performed 33 fewer overhauls on the LVSRs in FY 2024 than in FY 2015. Officials stated the drop in overhauls has not affected mission capable rate as the units have been permitted to harvest parts from divestment vehicles.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

LVSR Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	83	61	82	3	13	11	27	16	25	50
Foreign	0	0	0	0	0	0	0	0	0	0

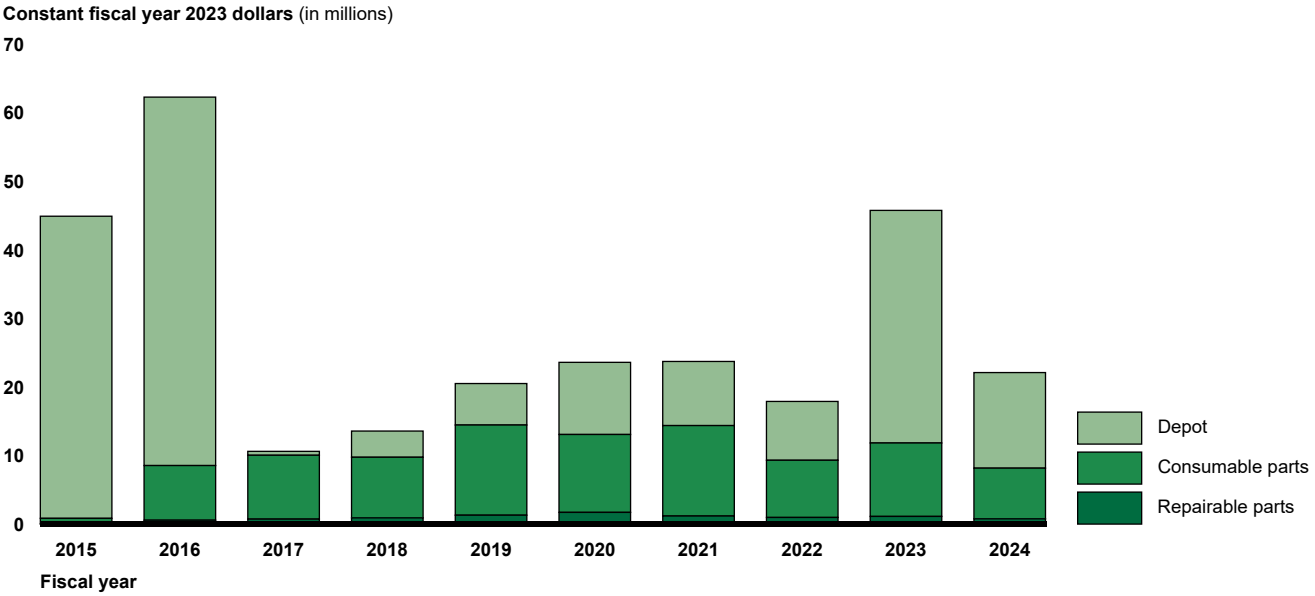
LVSR Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



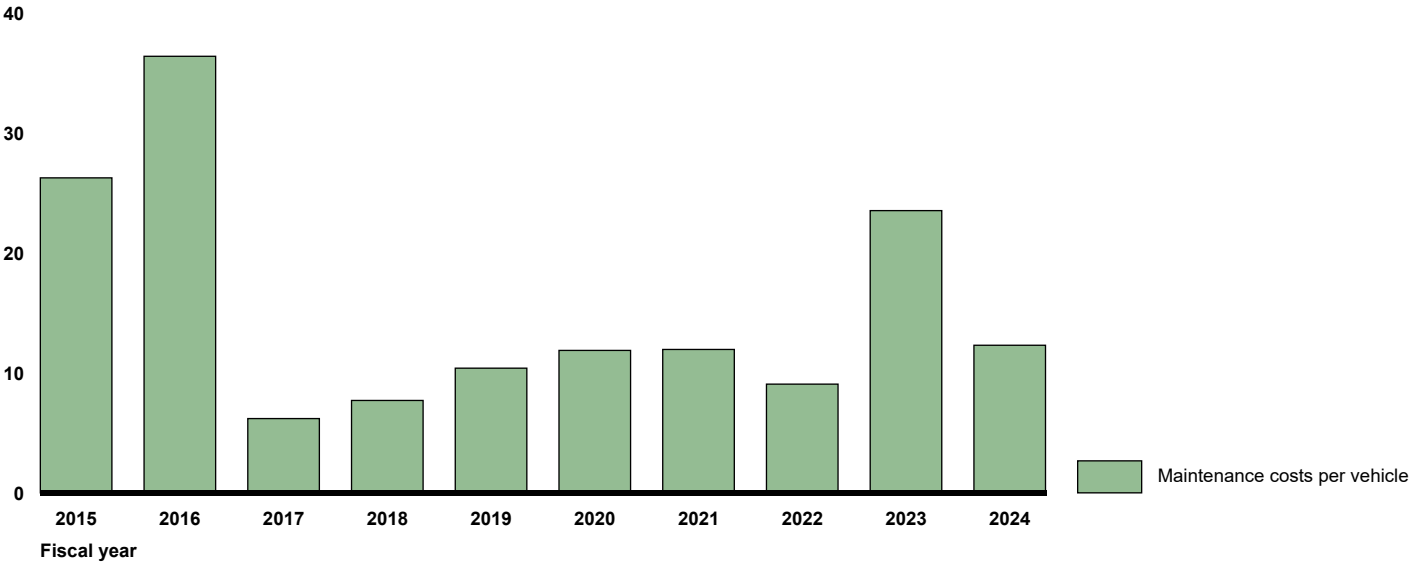
Maintenance Costs

The LVSR's maintenance costs have decreased $22.8 million from since FY 2015. Marine Corps officials told us that maintenance costs declined because the service has begun reutilizing repair parts from divested vehicles. Additionally, officials explained that the Marine Corps had a corrective maintenance contract in place for vehicles requiring repairs in conjunction with the cab corrosion repairs.

LVSR Total Maintenance Costs, Fiscal Years 2015–2024



LVSR Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



MTVR
Medium Tactical Vehicle Replacement

Program Essentials

Manufacturer
Oshkosh Defense

Program Office
Program Executive Officer Land Systems, Virginia

Primary Depot
Production Plant Albany, Georgia; Production Plant Barstow, California

Variants and Introduction Date
• 2001 to 2008

Variants include personnel carrier, cargo, dump truck, tractor, resupply vehicles, and wrecker.

Vehicle Service Life
34 to 41 years

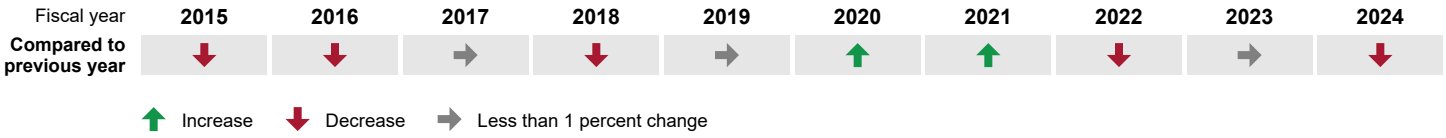
The MTVR is a medium lift tactical vehicle capable of transporting 7.1 tons of off-road payloads and up to 15-ton on-road payloads. These variants come in both armored and unarmored versions. Some armored variants have reducible height armor for greater shipboard transport flexibility.

MTVR Sustainment Status

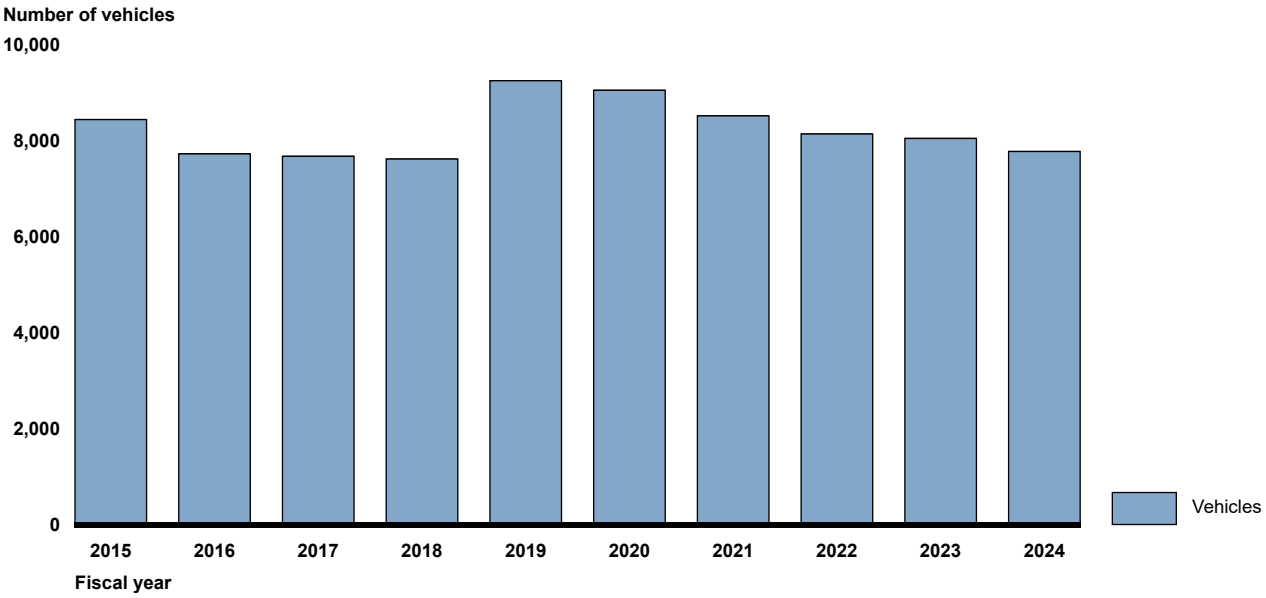
Mission Capable Rate and Inventory

Marine Corps officials attributed mission capable rate declines to the 20-year service life extension for the MTVR which extended the vehicle's exit date from 2022 to 2042. As a result, mission capable rates have been impacted by aging platforms, diminishing manufacturing sources, parts obsolescence, and parts and materiel shortages. Officials stated that the Marine Corps has authorized harvesting of parts from divested vehicles, requested additional funding when available to address parts shortages, and the depots have worked with original manufacturer and other government agencies to reverse engineer maintenance parts that are no longer produced. In this paragraph, we removed specific mission capable rates of the MTVR because DOD deemed the information to be CUI.

MTVR Mission Capable Rate Change Year over Year, Fiscal Years 2015–2024



MTVR Total Fielded Vehicles, Fiscal Year 2015–2024



Sustainment Challenges

MTVR Sustainment Challenges Identified by the Marine Corps

- Carryover work or continuing resolutions
- Delays acquiring replacement vehicles
- Maintenance delays
- Parts and material
- Service-life related
- Shortage of trained or skilled maintainers
- Technical data or data related
- Unexpected condition and/or timely arrival for maintenance
- Unplanned maintenance

Marine Corps officials reported that the MTVR faced sustainment challenges in seven of nine categories that we identified. In addition to sustainment challenges related to parts and materiel availability and technical data, Marine Corps officials reported that in FY 2019 the MTVR received a 20-year service life extension with the new exit date to be 2042, which occurred without any additional funding or support. Officials also stated that MTVR have issues with obsolete parts, spare parts availability, diminished manufacturing sources. Additionally, the condition of vehicles arriving at depots for maintenance has led to delayed depot maintenance because maintainers must order additional parts and materiel and perform unplanned maintenance. Units have stripped parts from vehicles prior to sending them to the depot. Marine Corps officials also reported that some vehicles' conditions upon arrival at the depot is so severe that it is not economical to repair, and the vehicles must be disposed of and removed from Marine Corps inventory.

Marine Corps depots performed 255 less overhauls in FY 2024 than in FY 2015.

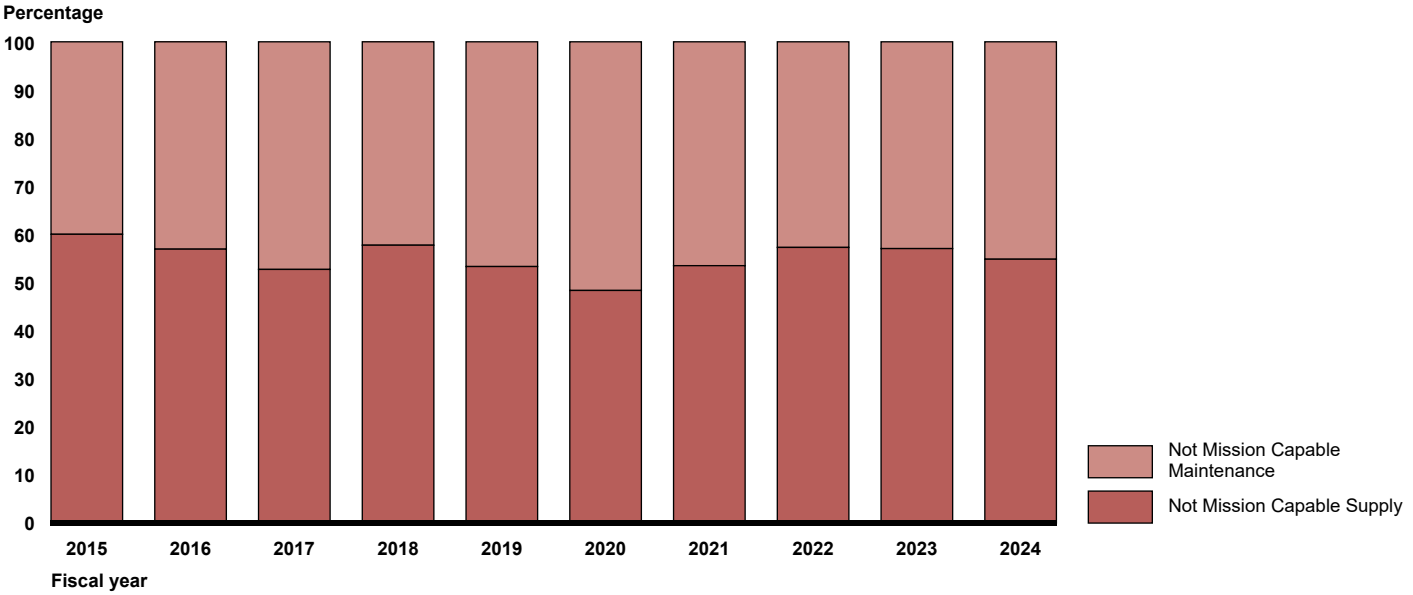
The Marine Corps reported individual MTVR as not mission capable due to the lack of parts and materiel, the time due to awaiting maintenance, and other reasons. In this paragraph, we removed specific mission capable rates of the MTVR because DOD deemed the information to be CUI.

The Marine Corps does not track order fill rates or backorders associated with depot-level repairables, which are parts and equipment that the services' depots repair or refurbish.

MTVR Domestic and Foreign Military Overhauls, Fiscal Years 2015–2024

Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic	299	144	46	45	73	70	97	94	67	44
Foreign	0	0	0	0	0	0	0	0	0	0

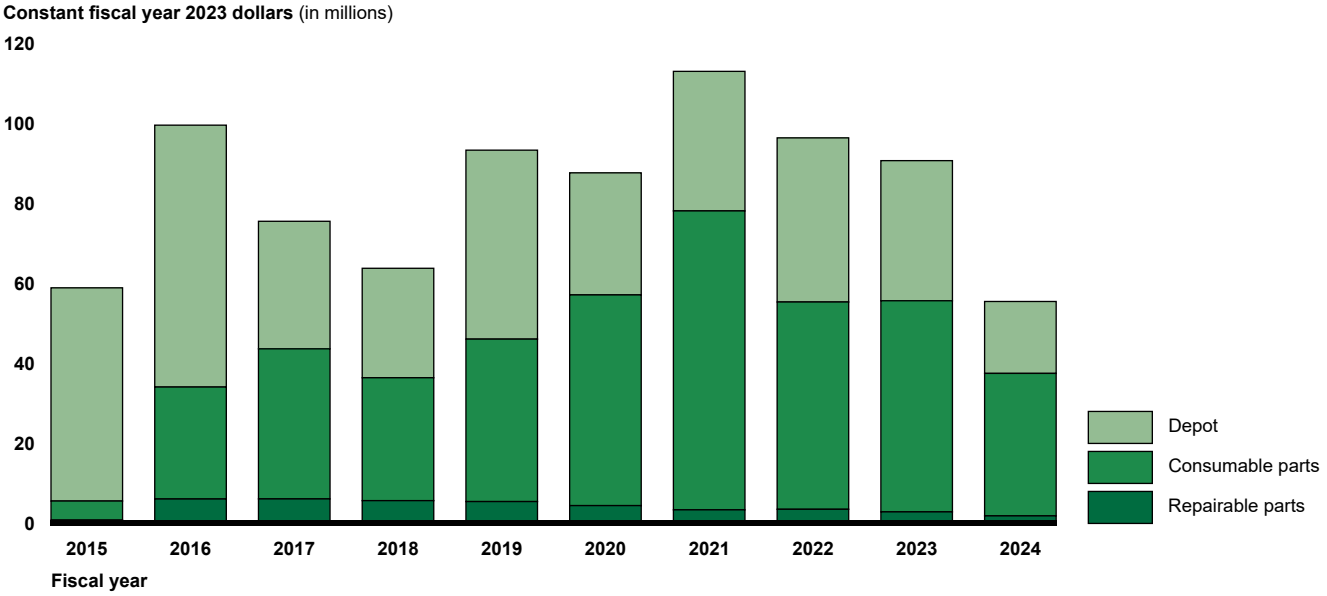
MTVR Proportions of Supply and Maintenance for Not Mission Capable Rates, Fiscal Years 2015–2024



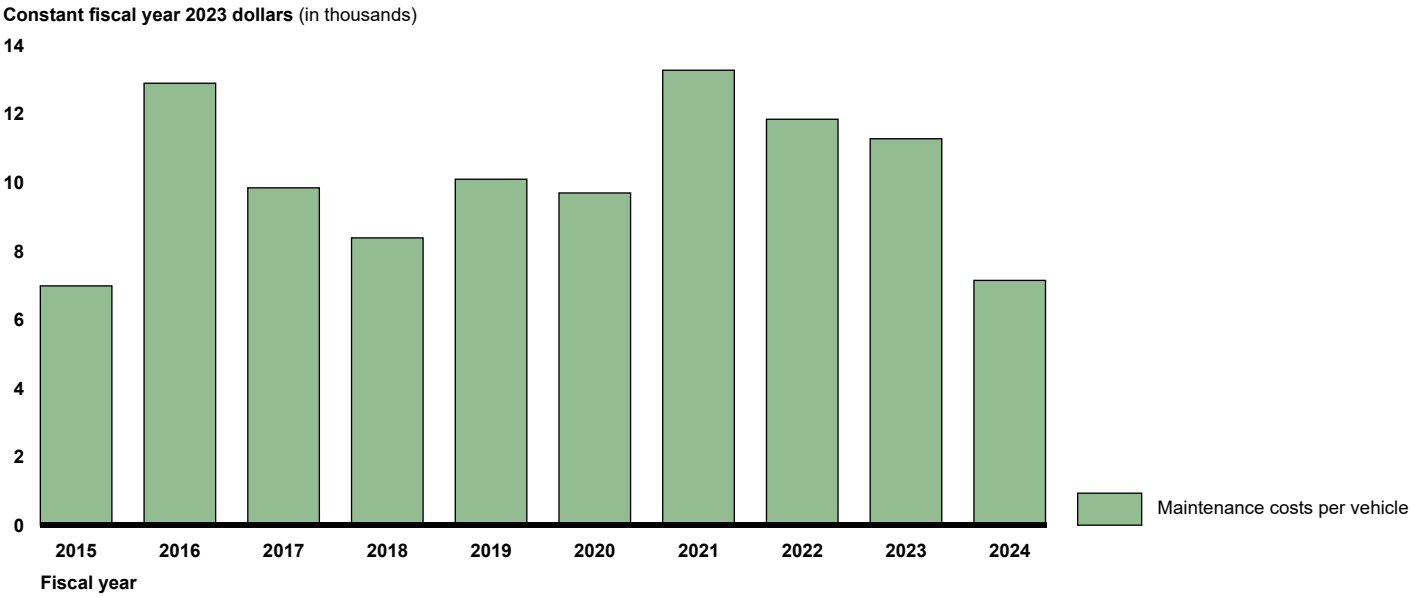
Maintenance Costs

The MTVR's maintenance costs have decreased $3.4 million since FY 2015. Marine Corps officials stated that the service divested a large portion of its MTVR fleet beginning in FY 2020. Since FY 2020, the Marine Corps has divested around 1,200 MTVRs from service leading to decreased total maintenance costs.

MTVR Total Maintenance Costs, Fiscal Years 2015–2024



MTVR Total Maintenance Costs per Vehicle, Fiscal Years 2015–2024



Appendix III: Additional Source Information for Images and Figures

Army Combat Vehicles

- **Army Combat Vehicles**

  Sources: U.S. Army Reserve/Sergeant First Class Austin Berner, U.S. Army/Staff Sergeant Kimberly Derryberry, U.S. Army/Staff Sergeant Michael Hunnisett, U.S. Army Reserve/Sergeant Jorge Reyes Mariano, U.S. Army/Staff Sergeant Xavier Legarreta, and U.S. Army/Sergeant Michael Spandau (images, L to R); GAO analysis of Army data (figures). | GAO-25-108679

- **Abrams Tank**

  Source: U.S. Army Reserve/Sergeant First Class Austin Berner (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Armored Personnel Carrier (APC)**

  Source: U.S. Army/Staff Sergeant Kimberly Derryberry (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Armored Recovery Vehicle (ARV)**

  Source: U.S. Army/Staff Sergeant Michael Hunnisett (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Bradley Fighting Vehicle**

  Source: U.S. Army Reserve/Sergeant Jorge Reyes Mariano (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Paladin Self-Propelled Howitzer**

  Source: U.S. Army/Staff Sergeant Xavier Legarreta (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Stryker Combat Vehicle**

  Source: U.S. Army/Sergeant Michael Spandau (image); GAO analysis of Army data (figures). | GAO-25-108679

Army Support Vehicles

- **Army Support Vehicles**

  Source: U.S. Army/Captain Joseph Warren, U.S. Army National Guard/Sergeant Frank Zuniga, U.S. Army Reserve/Staff Sergeant Thomas Crough, U.S. Army Reserve/Sergeant John Russell, and U.S. Army/Joseph Kumzak (images, L to R); GAO analysis of Army data (figures). | GAO-25-108679

- **Family of Medium Tactical Vehicles (FMTV)**

  Source: U.S. Army/Captain Joseph Warren (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Heavy Expanded Mobility Tactical Truck (HEMTT)**

  Source: U.S. Army National Guard/Sergeant Frank Zuniga (image); GAO analysis of Army data (figures). | GAO-25-108679

- **High Mobility Multipurpose Wheeled Vehicle (HMMWV)**

  Source: U.S. Army Reserve/Staff Sergeant Thomas Crough (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Joint Light Tactical Vehicle (JLTV)**

  Source: U.S. Army Reserve/Sergeant John Russell (image); GAO analysis of Army data (figures). | GAO-25-108679

- **Mine Resistant Ambush Protected Vehicle (MRAP**

  Source: U.S. Army/Joseph Kumzak (image); GAO analysis of Army data (figures). | GAO-25-108679

Marine Corps Ground Vehicles

- **Marine Corps Ground Vehicles**

  Sources: U.S. Marine Corps/Lance Corporal Kendrick Jackson, U.S. Navy/Petty Officer 1st Class Benjamin Kittleson, U.S. Army Reserve/Staff Sergeant Thomas Crough, U.S. Army Reserve/Sergeant John Russell, U.S. Marine Corps/Sergeant Adam Dublinske, U.S. Marine Corps/Corporal Mackenzie Binion, and U.S. Navy/Lieutenant Commander Brian Wierzbicki (images, L to R); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Amphibious Combat Vehicle Personnel Carrier (ACV-P)**

  Source: U.S. Marine Corps/Lance Corporal Kendrick Jackson (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Assault Amphibious Vehicle (AAV)**

  Source: U.S. Navy/Petty Officer 1st Class Benjamin Kittleson (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **High Mobility Multipurpose Wheeled Vehicle (HMMWV)**

  Source: U.S. Army Reserve/Staff Sergeant Thomas Crough (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Joint Light Tactical Vehicle (JLTV)**

  Source: U.S. Army Reserve/Sergeant John Russell (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Light Armored Vehicle (LAV)**

  Source: U.S. Marine Corps/Sergeant Adam Dublinske (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Logistics Vehicle System Replacement (LVSR)**

  Source: U.S. Marine Corps/Corporal Mackenzie Binion (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

- **Medium Tactical Vehicle Replacement (MTVR)**

  Source: U.S. Navy/Lieutenant Commander Brian Wierzbicki (image); GAO analysis of Marine Corps data (figures). | GAO-25-108679

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact listed above, Kevin O'Neill (Assistant Director), Scott M. Behen (Analyst-in-Charge), Anna Beischer, James "Ben" Etheridge, Christopher Gezon, Chad Hinsch, Lillian Ofili, Richard Powelson, and Micheal Silver made key contributions to this report. Tristan T. To was the Analyst-in-Charge for preparing the public version of the report.

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