

Ukraine: Status and Challenges of DOD Weapon Replacement Efforts

GAO-24-106649 Q&A Report to Congressional Committees April 30, 2024

Why This Matters

Russia's full-scale invasion of Ukraine in February 2022 has had devastating consequences, threatening a democratic country's sovereignty, and creating a humanitarian crisis in Europe. In response, as of November 2023, Congress appropriated \$113.4 billion under four Ukraine supplemental appropriations acts. This amount includes \$25.9 billion that can be used by the Department of Defense (DOD) to replace weapons transferred to Ukraine, such as thousands of missiles and millions of rounds of ammunition.

The defense industrial base—the companies, people, and facilities needed to produce and sustain weapons—has been ramping up production to meet increased demands related to Ukraine, including replacing DOD's weapons stockpiles. DOD previously identified significant risks that may limit the defense industrial base's ability to do so. For example, a 2018 assessment identified a decline in U.S. manufacturing capacity as a key risk.¹ More recent assessments identified additional supply chain disruptions due to the COVID-19 pandemic, such as increased lead times for deliveries and supply shortages.

The Consolidated Appropriations Act, 2023, Public Law 117-328 included a provision for GAO to monitor DOD's use of Ukraine supplemental funding. This report provides information on DOD's use of the \$25.9 billion to replace weapons sent to Ukraine and actions DOD is taking to address defense industrial base challenges that could delay replacement efforts.

Key Takeaways

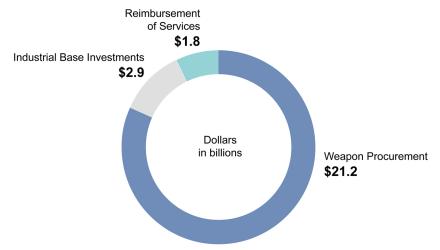
- DOD plans to use most of the \$25.9 billion in supplemental funding to replace missiles, ammunition, and combat vehicles sent to Ukraine. More than 70 percent of this funding has been obligated as of December 31, 2023.
- DOD identified multiple supply chain challenges that weapon programs are experiencing, such as long lead times for supplies. DOD is taking actions, such as identifying new suppliers and funding projects to expand industrial production capacity to help address these challenges.
- In October 2023, the administration requested an additional \$18 billion in supplemental funding for replacement to further supplement \$7.7 billion that remains unobligated. In April 2024, Congress passed legislation to provide DOD about \$13.4 billion that may be used to replace weapons sent to Ukraine.
- DOD officials are collecting lessons learned from their first-time use of supplemental funding for weapons replacement.

What is Presidential Drawdown Authority?	Presidential Drawdown Authority (PDA) allows the President to authorize the transfer of articles, such as ammunition and weapon systems, from DOD stocks to other countries in the event of an unforeseen emergency requiring military assistance. ^{2,3} When considering each PDA request, officials assess how a transfer of articles would affect the readiness of U.S. forces. DOD officials also estimate the cost of replacing the transferred articles.
	Prior to fiscal year 2022, the statutory limit for PDA transfers of articles was \$100 million in value per fiscal year. ⁴ We previously reported that PDA transfers of articles from fiscal years 2011 through 2015 averaged \$50 million per year. ⁵ These transfers generally included vehicles, such as Mine Resistant Ambush Protected vehicles, and non-combat supplies like generators, medical equipment, and clothing.
	After Russia's full-scale invasion of Ukraine, however, Congress raised the statutory limit for PDA in fiscal years 2022 and 2023 to \$11 billion and \$14.5 billion, respectively. DOD executed over 50 PDA transfers during these 2 fiscal years. In addition to vehicles and non-combat supplies, DOD provided artillery systems, missiles, ammunition, and other weapons to Ukraine.
How do military departments receive funding to replace weapons transferred to Ukraine?	Congress appropriated \$113.4 billion under four Ukraine supplemental appropriations acts. ⁶ DOD established a process for the military departments to request and receive \$25.9 billion in funding from the Office of the Secretary of Defense to replace weapons transferred to Ukraine. On a monthly basis, the military departments could submit requests to officials in the Offices of the Under Secretary of Defense (Comptroller) and the Under Secretary of Defense for Acquisition and Sustainment. These officials would check for certain requirements before approving requests. For example, funding can only be approved for replacement of weapons that have been delivered to Ukraine; weapons that are still in transit to Ukraine or have not shipped from the United States are not eligible for replacement funding.
	 According to DOD officials, the military departments can request funding to buy exact replacements of weapons delivered to Ukraine; buy newer, modern variants of weapons delivered to Ukraine; invest in the defense industrial base to accelerate the production of weapons; and reimburse service costs, including logistics costs associated with PDA transfers to Ukraine (e.g., operation and maintenance fuel costs to ship equipment overseas).
	Once requests are approved, the Comptroller transfers funds from a defense- wide operation and maintenance account to the military departments' procurements accounts to support weapon replacement or to operation and maintenance accounts to reimburse logistics costs. ⁷

How does DOD plan to use the supplemental funding for weapons replacement?

As of December 31, 2023, DOD plans to use \$21.2 billion of the \$25.9 billion in supplemental funding for replacement (82 percent) to procure the same or newer variant of weapons sent to Ukraine. It plans to use the remainder of the funding to expand the defense industrial base to accelerate the production of weapons and to reimburse the military departments for services, including logistics costs related to delivering weapons to Ukraine. See figure 1.





Source: GAO analysis of Department of Defense data. | GAO-24-106649

DOD obligated \$18.3 billion, as of December 31, 2023. This includes over 90 percent of fiscal year 2022 funding and almost 50 percent of fiscal year 2023 funding. See figure 2.

Figure 2: Status of Obligations of Funds by Year of Supplemental Appropriation for Ukraine Weapon Replacement, as of December 2023 (dollars in billions)



Source: GAO analysis of Department of Defense Comptroller data, as of December 31, 2023. | GAO-24-106649

Note: The DOD Comptroller subsequently updated the data to correct some internal reprogramming actions that were inaccurately recorded, which could result in some variations in the dollar values presented in the figure.

What type of weapons is DOD procuring with supplemental funding for replacement?

DOD obligated \$16.6 billion in supplemental funding to replace ammunition, missiles, and combat vehicles, among other weapons, as of December 31, 2023. This includes both procurement of weapons and investments in the defense industrial base to accelerate production capacity (see fig. 3).

Figure 3: Obligations of Ukraine Supplemental Funding for Ukraine Replacement by Defense Industrial Base Sector, as of December 2023 (dollars in billions)



Source: GAO analysis of Department of Defense Comptroller data. | GAO-24-106649

Note: "Other" includes miscellaneous items including engineering, electronic, and communications equipment.

The DOD Comptroller subsequently updated the data to correct some internal reprogramming actions that were inaccurately recorded, which could result in some variations in the dollar values presented in the figure.

As of December 2023, DOD had \$7.7 billion of the \$25.9 billion in supplemental funding remaining for obligation. According to Comptroller documentation, DOD plans to obligate most of this remaining funding to procure weapons in the ammunition, missile, and combat vehicle sectors.

In October 2023, the administration requested an additional \$18 billion in supplemental funding to continue replacing weapons transferred to Ukraine. In April 2024, Congress passed legislation to provide DOD about \$13.4 billion that may be used to replace weapons sent to Ukraine.

What supply chain challenges has DOD identified related to weapons replacement?

DOD identified multiple supply chain challenges related to weapons replacement, including long lead times, parts obsolescence, and supplier limitations. These are long-standing challenges, and, in some cases, the COVID-19 pandemic exacerbated them, according to DOD documentation. DOD and prime contractors have taken steps to address some of these challenges.

Long lead time growth. According to DOD documentation, long lead times associated with the delivery of supplier parts and raw materials are affecting many weapons programs. For example:

- One missile program we reviewed reported a potential lead time increase from 19 to 34 months to obtain electronic parts, such as circuit card assemblies, if left unmitigated. The program used advance procurement funds provided by DOD to buy certain parts early, which has helped maintain its 19-month lead time.
- DOD reported having difficulty obtaining materials to replenish its 155mm ammunition stock such as propellants, in part, due to surging demands across various industries and countries. Additionally, two missile programs we reviewed identified difficulties obtaining metals, such as titanium and

nickel, in a timely manner. DOD made industrial base investments to address some of these supply problems.

Obsolescent parts. DOD found that many weapons being replaced have outdated components or manufacturing tools that require upgrades to continue functioning effectively. In some cases, the components or tools are no longer made by suppliers.⁸ For example:

- One missile program identified the need to redesign a microcircuit assembly because it contained obsolete microelectronic components. The program plans to take parts from other weapons that are no longer in service until the redesign can be completed, according to DOD documentation.
- Contractor representatives from one program in our review stated that a key supplier exited the DOD market to focus on commercial sales. The program reported purchasing a license agreement from the supplier to redesign the part itself until it finds a new supplier. Until a new supplier can be found, the program is salvaging parts from other vehicles that are no longer in service.

Supplier limitations. Some existing suppliers are not able to meet the needs of DOD programs, either because production increases exceeded their capacity or quality issues disrupted their planned delivery schedules. For example:

- The Army is pursuing a planned 700 percent increase in 155mm production. To help support this increase, the Army is qualifying additional suppliers for metal shells and metal forging capabilities.
- A supplier for one missile program we reviewed had production disruptions and halted deliveries to the program for several months. In response, the program identified a second source and invested funding to increase this new supplier's production rate to meet increased production needs.

What investments is DOD making in the industrial base to increase production capacity? Since February 2022, DOD has committed or obligated over \$2.8 billion in supplemental funding for replacement to increase weapons production, as well as to help address some supply chain challenges. The projects should allow DOD to replace weapons sent to Ukraine on a faster timeline. For example, over \$2 billion of this funding supports increased production of 155mm ammunition. If DOD achieves this increased production rate, our analysis shows that it would be able to produce 2 million rounds in under 2 years. Without the funding, it would take DOD nearly 12 years to produce 2 million rounds of 155mm ammunition at the 2022 production rates prior to expansion.

Table 1 provides a summary of expansion projects and expected outcomes. The U.S. government will not realize the full effect of some of these efforts for several years.

Table 1: Defense Industrial Base Expansion Projects Using Supplemental Funding for Replacement, from February 2022– January 2024

Weapon program	Investment value (dollars in millions)	Actions and projected outcomes
155mm artillery ammunition	2,089	• Expanding current facilities and building a new facility for metal shell production
		 Modernizing facilities to increase propellant charge production
		 Increasing the workforce through new hires and adding additional shifts
Guided Multiple Launch Rocket System	121	 Providing advance procurement funds to address obsolescence and long lead challenges
High Mobility Artillery Rocket System	72	 Purchasing new equipment and tooling needed to increase production
Javelin missile	78	Increasing production of the launch unit and missile
Stinger missile	101	Purchasing test equipment to increase production rates
Armored Multi-Purpose Vehicle	28	Improving tooling processes and assembly equipment to increase production
AIM-9X Sidewinder	139	Increasing production capacity
Solid rocket motors	211	Investing in suppliers to increase production efficiencies for multiple weapons
M777 artillery tube	28	Increasing tube production capacity
Total	2,867	

Source: GAO analysis of DOD data | GAO-24-106649

A DOD official stated that additional investments will be needed to potentially further expand defense industrial base capacity. The current administration has highlighted production capacity as a key priority.⁹

How has DOD used multiyear procurement authority for replacement?

The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 authorized the use of multiyear procurement contracts by certain weapons programs.¹⁰ The military departments awarded or plan to award multiyear procurement contracts to support replacement of five weapons. A multiyear contract is for the purchase of planned requirements for up to 5 years. In general, this contracting approach is intended to result in significant cost savings for the government and can provide a stable demand signal to industry.¹¹ Table 2 provides the status of the military departments' planned use of multiyear procurement contracts for each of these weapons.

Table 2: Status of Ukraine-related Multiyear Procurement Contracts

Multiyear contracts awarded	Multiyear contract planned in fiscal years 2024 or 2025	Multiyear contract not being pursued
 155mm ammunition (5 separate awards) 	Advanced Medium-Range Air-to-Air Missile AIM-120	AIM-9X Sidewinder
	Guided Multiple Launch Rocket System	Army Tactical Missile System
	Joint Air-to-Ground Missile	High Mobility Artillery Rocket System
	 Patriot Advanced Capabiility-3 Missile Segment 	Javelin missile
	Enhancement	Stinger missile

Source: GAO analysis of Department of Defense information. | GAO-24-106649

Note: The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 authorized the use of multiyear procurement contracts for the weapon programs listed in the table above.

	As shown in table 2, five programs are not pursuing a multiyear procurement contract approach. DOD officials cited various reasons for not pursuing a multiyear approach, including uncertain demand and older programs not having a long enough time horizon to realize the benefits from a multiyear approach.
What are DOD officials' and contractor representatives' observations on implementation of multiyear procurement authority?	DOD officials and contractor representatives we spoke with provided a mix of observations about the benefits and challenges of using multiyear procurement contracts to replace weapons sent to Ukraine. For example:
	• Army officials stated that the Army leveraged several multiyear procurement contract-related flexibilities provided by Congress to reduce the time to award a contract. Army officials stated that using these flexibilities, such as (1) the ability to award a multiyear contract through modification of an existing contract and (2) limited applicability of certain statutory requirements for certifications and third-party cost analyses when entering into multiyear procurement contracts, helped to save approximately 1 year of administrative time. ¹²
	• Contractor representatives from two companies stated that due to surges in inflation over the past few years, some sub-tier suppliers are now reluctant to enter into long-term agreements that lock them into certain prices across multiple years.
	• Contractor representatives stated that some small businesses indicated that they may not want to continue being a DOD supplier because of the cost of complying with additional DOD administrative requirements. For example, some suppliers may have to provide certified cost or pricing data to DOD to determine that the prices they are charging for their items are fair and reasonable. ¹³
	Contractor representatives from one program in our review indicated that the number of suppliers that would need to provide certified cost or pricing data would more than double if a multiyear, rather than a single year, contract was awarded. This is because multiyear contracts contain multiple years' worth of requirements, so the total contract price would generally be higher and exceed thresholds for these additional requirements.
	 DOD officials told us that they expect that the overall cost savings from using a multiyear procurement contracting approach will likely be lower than the 10 percent DOD typically aims to achieve. Officials said inflationary pressures and supply chain instability, among other factors, contribute to the lower cost savings projections.
What lessons has DOD identified from procuring replacement weapons?	DOD officials stated that they have identified multiple lessons from using supplemental funding to procure replacement weapons, including lessons related to funding and contracting. In some cases, they already started implementing the lessons learned. In other cases, they may have to work with other DOD offices or the Congress to make improvements.
	Officials from the Comptroller's office, for example, are identifying lessons learned related to DOD's first use of supplemental funding for replacement weapons. They stated that they incorporated some of these into a business rules document that was issued in June 2023, to help clarify the roles and responsibilities for financial management, acquisition, and other stakeholders. Earlier in 2023, a military department official told us that there was some

inconsistency about the process and rules for weapon replacement, and that it would be helpful to have a written document to guide them.

	Comptroller officials also identified other lessons related to the execution of funding that it is seeking legislative action to change. For example, officials stated that it would be beneficial to have 3 years instead of 2 years to obligate supplemental funding to procure replacement weapons. DOD typically has 3 years to obligate procurement funding. However, a DOD official said that DOD's interpretation of the language in the Ukraine supplemental appropriation acts is that DOD has 2 years to obligate the supplemental funding. Comptroller officials told us that this can cause difficulty obligating some of the funds within the 2-year timeframe. They stated that in some cases it takes more than 20 months for a weapon system to be ready for delivery under PDA. As these funds cannot be obligated until the weapons are delivered to Ukraine, replacement funding can expire before DOD can use it to cover the transportation costs for that weapon system.
	Officials in the Office of the Under Secretary of Defense for Acquisition and Sustainment are monitoring the progress and outcomes of multiyear procurement contracts supporting replacement efforts. Officials stated that they are collecting lessons learned from contracting officials through biweekly oversight meetings. They are also collecting industry views, such as concerns about how inflation might affect their use of multiyear procurement contracts, similar to what contractor representatives told us during this review. DOD officials are identifying potential solutions such as including additional contract clauses to help offset the effects of inflation.
	Officials from the Defense Security Cooperation Agency stated that an ongoing study is assessing U.S. support to Ukraine, including use of PDA. As of January 2024, this study is ongoing.
Agency Comments	We provided a draft of this report to DOD for review and comment. DOD did not have any comments on this report.
How GAO Did This Study	To determine the extent to which DOD has used supplemental funding to replace U.S. weapons, we analyzed DOD Comptroller and military department data related to the use of fiscal year 2022 and 2023 supplemental funding. To determine the reliability of these data, we compared DOD-wide data and reports against military department level data and reprogramming documentation. DOD Comptroller officials stated that as part of DOD's continual process of internal monitoring and improvement, they identified some internal reprogramming actions as inaccurately recorded. Accordingly, officials stated that the status of amounts shown as of December 31, 2023, do not reflect subsequent corrections. While we cannot ascertain the complete reliability of the Comptroller's summary reports, we believe that these reports provide an acceptable approximation of the
	status of Ukraine supplemental funds provided to DOD, as of December 31, 2023.

how DOD used contracting authorities and requested and tracked the replacement of specific weapons systems and munitions.

To assess the extent to which DOD identified defense industrial base challenges
related to replacement activities and took actions to help mitigate challenges, we
analyzed various DOD industrial base assessments, including those related to
ammunition, missiles, and microelectronics. We analyzed the use of
supplemental and Defense Production Act funding to expand production of
certain weapons. In addition to the DOD officials listed above, we interviewed
officials from the Defense Contract Management Agency and the Office of Cost
Assessment and Program Evaluation to discuss industrial base challenges
affecting weapons across the military departments and various defense industrial
base sectors.
base sectors.

We also conducted case studies of four weapons in the missile and combat vehicle sectors—as these industrial base sectors received nearly half of the funding to replace weapons sent to Ukraine since February 2022. We reviewed documentation, including budget requests and program management reviews. We also interviewed officials from the military departments at the acquisition headquarters, program executive office, and program office levels, as well as prime contractor representatives from three defense companies to identify supply chain challenges and discuss mitigation strategies that these programs used.

We conducted this performance audit from February 2023 to April 2024 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.

List of Addressees

The Honorable Jack Reed Chairman The Honorable Roger Wicker Ranking Member Committee on Armed Services United States Senate

The Honorable Sheldon Whitehouse Chairman The Honorable Chuck Grassley Ranking Member Committee on the Budget United States Senate

The Honorable Ben Cardin Chairman The Honorable James Risch Ranking Member Committee on Foreign Relations United States Senate The Honorable Gary C. Peters Chairman The Honorable Rand Paul, M.D. Ranking Member Committee on Homeland Security and Governmental Affairs United States Senate

The Honorable Jon Tester Chair The Honorable Susan Collins Ranking Member Subcommittee on Defense Committee on Appropriations United States Senate

The Honorable Chris Coons Chair The Honorable Lindsey Graham Ranking Member Subcommittee on State, Foreign Operations, and Related Programs Committee on Appropriations United States Senate

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

The Honorable Jodey Arrington Chairman The Honorable Brendan Boyle Ranking Member Committee on the Budget House of Representatives

The Honorable Michael McCaul Chairman The Honorable Gregory Meeks Ranking Member Committee on Foreign Affairs House of Representatives

The Honorable James Comer Chairman The Honorable Jamie Raskin Ranking Member Committee on Oversight and Accountability House of Representatives

	The Honorable Ken Calvert Chair The Honorable Betty McCollum Ranking Member Subcommittee on Defense Committee on Appropriations House of Representatives
	The Honorable Mario Diaz-Balart Chair The Honorable Barbara Lee Ranking Member Subcommittee on State, Foreign Operations, and Related Programs Committee on Appropriations House of Representatives
	We are sending copies of this report to the appropriate congressional Committees; the Secretary of Defense; the Under Secretaries of Defense for Acquisition and Sustainment and Comptroller; as well as the Secretaries of the Air Force, Army, and Navy. In addition, the report is also available at no charge on the GAO website at https://www.gao.gov.
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Endnotes	¹ Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States (Report to President Donald J. Trump by the Interagency Task Force in Fulfillment of Executive Order 13806).
	² Certain authorities in the Foreign Assistance Act of 1961, as amended, enable the President to draw down articles and services from the inventory and resources of U.S. government agencies. Section 506(a)(1) allows for drawdowns of defense articles from stocks of DOD in the case of an unforeseen emergency requiring immediate military assistance to a foreign country, among other things.
	³ Section 506 of the Foreign Assistance Act of 1961, Pub. L. No. 87-195 (Sept. 4, 1961), as amended (codified at 22 U.S.C. § 2318), grants the President this authority.
	⁴ In this report, we use the term "weapons" to refer collectively to ammunition, missiles, combat vehicles, and other defense articles transferred to Ukraine under PDA.

⁵GAO, Security Assistance: Guidance Needed for Completing Impact Assessments Prior to Presidential Drawdowns, GAO-17-26 (Washington, D.C.: Oct. 20, 2016).

⁶For the purposes of this report, we use the phrase "Ukraine supplemental appropriation acts" to refer to applicable divisions of the following public laws: Consolidated Appropriations Act, 2022, Pub. L. No. 117-103, Div. N, 136 Stat. 776 (Mar. 15, 2022); Additional Ukraine Supplemental Appropriations Act, 2022, Pub. L. No. 117-128, 136 Stat. 1211 (May 21, 2022); Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023, Pub. L. No. 117-180, 136 Stat 2114 (Sept. 30, 2022); and Consolidated Appropriations Act, 2023, Pub. L. No. 117-328, Div. M, 136 Stat 5189 (Dec. 29, 2022).

⁷Transfers of defense-wide operation and maintenance amounts to various procurement accounts are authorized pursuant to Pub. L. No. 117-103, § 2301, 136 Stat. 780; Pub. L. No. 117-128, Title II, 136 Stat. 1213; Pub. L. No. 117-180, Title I, 136 Stat 2128; and Pub. L. No. 117-328, Title II, 136 Stat 5191. According to DOD guidance, items may be ineligible for replacement if the article being replaced has not been recorded as delivered in the Defense Security Cooperation Agency 1000 database or if the quantity replaced is more than the quantity provided to Ukraine.

⁸Obsolescence is when a part or component is unavailable because it is out of date and superseded by something new. Obsolescence can be associated with materiel shortages and may or may not involve a single source of supply.

⁹Department of Defense, *National Defense Industrial Strategy* (Washington, D.C.: November 16, 2023).

¹⁰James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Pub. L. No. 117-263, § 715, § 1244 (2022). This act also authorized multiyear procurement for five additional naval missiles which fall outside of the scope of this report. The National Defense Authorization Act for Fiscal Year 2024 authorized an additional six missiles for multiyear procurement, which also fall outside the scope of this Ukraine-related report. Pub. L. No. 118-31, § 1242 (2023).

¹¹The authorized multiyear contracts are subject to 10 U.S.C. § 3501. See also FAR 17.105.

¹² Pub. L. No. 117-263, § 1244(c)(2)-(3).

¹³These requirements generally apply to noncommercial contract actions of \$2 million or more awarded without adequate price competition. 10 U.S.C. § 3702; FAR 15.403.