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MILITARY READINESS

Actions Needed for DOD to Address Challenges across the Air, Sea, Ground, and Space Domains

Statement of Diana Maurer, Director, Defense Capabilities and Management

GAO-24-107463

GAO Highlights

Highlights of GAO-24-107463, a testimony before the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

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Why GAO Did This Study

DOD is continuing its work to maintain the U.S. military's advantage across all domains in a new security environment characterized by great-power competition. To meet that goal, DOD's focus is rebuilding and restoring readiness while also modernizing its forces. DOD's readiness rebuilding efforts are occurring in a challenging context that requires the department to make difficult decisions regarding how best to address continuing operational demands while preparing for future challenges.

This statement provides information on readiness challenges across the air, sea, ground, and space domains.

This statement is primarily based on published GAO reports since 2021 that have examined aspects of military readiness, operations, and sustainment in the air, sea, ground, and space domains. This statement also is based on a draft report on space readiness that was provided to DOD in February 2024 for review and comment. To perform all this work, GAO analyzed Army, Navy, Air Force, Marine Corps, and Space Force readiness, maintenance, personnel, and training data and interviewed cognizant officials.

What GAO Recommends

In the reports summarized in this statement, GAO has made over 100 recommendations to help improve readiness across and in each of the domains. Most of these recommendations have not yet been implemented, as discussed in the testimony.

View GAO-24-107463. For more information, contact Diana Maurer at (202) 512-9627 or maurerd@gao.gov.

What GAO Found

The top priority of the 2022 National Defense Strategy is to defend the U.S. homeland by addressing the growing multi-domain threat posed by China. As the Department of Defense (DOD) addresses this priority, GAO's body of work has shown that U.S. military readiness has been degraded over the last 2 decades due to a variety of challenges, including high operational demands. Implementing GAO's open recommendations will help DOD address these challenges and enhance readiness. The figure below shows selected GAO recommendations that DOD has not yet implemented.

Selected Open GAO Recommendations to Address Persistent Military Readiness Challenges

Source: GAO. | GAO-24-107463

Chair Hirono, Ranking Member Sullivan, and Members of the Subcommittee:

Thank you for the opportunity to be here today to discuss Department of Defense (DOD) readiness.

For decades, the United States enjoyed unchallenged or dominant military advantage. DOD could generally deploy forces when it wanted, assemble them where it wanted, and operate how it wanted. In the 2018 *National Defense Strategy*, however, DOD noted that every warfighting domain—ground, sea, air, space, and cyberspace—is contested. Potential adversaries, most notably China and Russia, have developed and enhanced their own capabilities. The top priority of the subsequent 2022 *National Defense Strategy* is to defend the U.S. homeland by addressing the growing multi-domain threat posed by China.

At the same time, our work has shown that conflicts during nearly 2 decades have degraded U.S. military readiness. We have reported on DOD's historic readiness levels for many years, observing a decline in readiness as overall demand for the joint force remains high and is likely to remain high to support global needs.[1] To maintain the U.S. military's advantage across all domains in a new security environment characterized by great-power competition, DOD is working to rebuild and restore readiness while also modernizing its forces. We have made numerous recommendations in our reports intended to aid DOD in its efforts.

We recognize that DOD's readiness rebuilding efforts are occurring in a challenging context that requires the department to make difficult decisions regarding how best to address continuing operational demands while preparing for future challenges. An important aspect of this—across all of the military services—is determining an appropriate balance between maintaining and upgrading weapon systems currently in operational use and acquiring new platforms able to adapt to and overcome rapidly advancing future threats.

[1]In 2022, we reported that readiness increased in the ground domain and declined in the sea domain from fiscal year 2017 through fiscal year 2021, and rating changes were mixed in the air and space domains. GAO, *Military Readiness: DOD Domain Readiness from Fiscal Year 2017 through Fiscal Year 2021*, GAO-22-105279C (Washington, D.C.: May 18, 2022).

This testimony provides information on readiness challenges that exist across the air, sea, ground, and space domains.

This statement is based primarily on prior GAO reports, which we cite throughout this statement. Most of our cited work was issued from February 2021 through April 2024 and examined aspects of military readiness, operations, and sustainment in the air, sea, ground, and space domains. We also include our work examining readiness issues across these domains. To perform our prior work, we analyzed Army, Air Force, Navy, Marine Corps, and Space Force readiness; maintenance, personnel, and training information; and interviewed cognizant officials. The reports cited throughout this statement contain more details on the scope of our work and our methodologies.[2]

This statement also includes information on readiness in the space domain that is based on ongoing work. We expect to report on the results of this work in May 2024. To perform this work, GAO analyzed relevant documentation and interviewed cognizant officials.

We conducted the work on which this statement is based 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.

Various Actions Can Help DOD Address Persistent Readiness Challenges across the Air, Sea, Ground, and Space Domains

Cross-domain

Each service operates across multiple domains. For example, each of the services uses cyberspace. All conduct or depend on space operations.

[2]We have also issued several classified reports concerning readiness issues since February 2021. We cite these reports where appropriate and discuss information that DOD has deemed publicly releasable.

Army and Marine Corps forces operate from the air, Navy forces can influence land battles, and Air Force operations routinely affect multiple domains. DOD recognizes, and we have previously reported on, the importance of military operations working across multiple domains. In our prior work, we have found a variety of readiness challenges such as service member fatigue and missile defense sustainment that cut across multiple domains and military services.

Service Member Fatigue

Fatigue caused by inadequate sleep can negatively affect a service member's performance and has contributed to accidents resulting in deaths and hundreds of millions of dollars in damage to ships, vehicles, and aircraft.[3] DOD is aware that impairment from fatigue can be equivalent to the effects of alcohol intoxication and significantly increases the risk of physical injury. However, we found in March 2024 that many service members were not getting the DOD-recommended 7 or more hours of sleep each day.[4] The department's overarching guidance about fatigue emphasizes the importance of service members obtaining at least 7 hours of sleep for optimal performance and readiness.[5] For over a decade, DOD surveys have found that the majority of service members reported sleeping 6 or fewer hours per night.

In a nongeneralizable survey that we conducted for our March 2024 report, respondents cited similar issues with inadequate sleep. Our survey focused on six general military occupations with the potential to be affected by fatigue: fixed-wing pilots, rotary-wing pilots, remote pilots, aviation maintainers, on-alert operations, and motor vehicle operators. We found that many respondents are sleeping too little, and roughly half of respondents have poor sleep quality regardless of quantity. Survey respondents provided examples of how sleep deprivation had affected

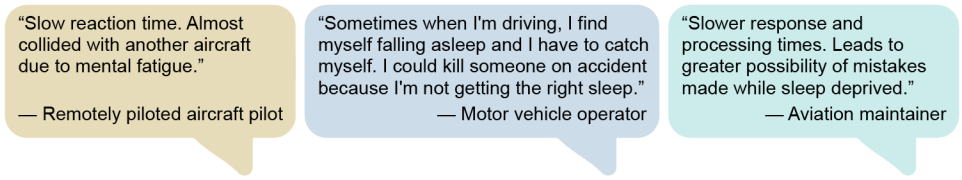
[3]We reported on the extent of sailor fatigue and made four recommendations for the Navy to more effectively manage fatigue. See GAO, *Navy Readiness: Additional Efforts Are Needed to Manage Fatigue, Reduce Crewing Shortfalls, and Implement Training*, GAO-21-366 (Washington, D.C.: May 27, 2021). In October 2023, we found that the Navy had not taken actions to fully implement three of the four recommendations. See GAO, *Navy Readiness: Challenges to Addressing Sailor Fatigue in the Surface Fleet Continue,* GAO-24-106819 (Washington, D.C.: Oct. 11, 2023). Also, see National Commission on Military Aviation Safety, *Report to the President and Congress of the United States* (Dec. 1, 2020).

[4]GAO, *Military Readiness: Comprehensive Approach Needed to Address Service Member Fatigue and Manage Related Efforts,* GAO-24-105917 (Washington, D.C.: Mar. 26, 2024).

[5]*See, e.g.*, DOD Instruction 1010.10, *Health Promotion and Disease Prevention* (Apr. 28, 2014) (incorporating change 3, effective May 16, 2022).

their work—from nearly colliding with another aircraft to falling asleep on the job (see fig. 1).

Figure 1: Examples of Service Members' Statements Regarding How Sleep Deprivation Has Affected Their Work



Source: GAO survey responses. | GAO-24-107463

DOD and the services have taken steps to address fatigue-related issues, such as developing guidance on fatigue management. However, DOD faces challenges with oversight and enterprise-wide collaboration in managing fatigue, such as:

- DOD has not identified and delegated sufficient oversight authority at the department level relating to fatigue, and the military services have not assigned leadership to oversee service-level efforts. Without an assessment of DOD's oversight structure and assigning DOD and service-level leadership, DOD will be hindered in its efforts to limit and manage fatigue across the department.
- We identified nearly 130 fatigue-related research projects that the Army, Navy, Marine Corps, and Air Force conducted from 2017 to 2023. Forty-eight of these projects studied the use of wearable devices to track sleep data among other uses, with many of them using the same type of technology or even the same model. Establishing a list of all fatigue-related research will help DOD gain visibility and reduce any fragmentation that may exist, which could lead to cost savings.

We made nine recommendations in this area in 2024, including that DOD assess its fatigue-related oversight structure, assign DOD and service-level leadership to oversee fatigue-related efforts, and create and maintain a list of all relevant research projects. DOD generally concurred with our recommendations.

Challenges in Specific Regions

European Deterrence Initiative

In July 2023, we reported that DOD should establish performance goals and measures to improve oversight of the European Deterrence Initiative

(EDI).[6] The EDI was established in 2015 to help boost military readiness of European allies and deter Russian aggression. Its activities have enhanced U.S. military posture in Europe by supporting the deployment of additional U.S. rotational forces and expanding the number of locations where U.S. forces operate. From fiscal year 2015 through fiscal year 2023, $35.1 billion has been spent on EDI activities. This funding has supported a variety of military activities in Europe, including troop rotations, intelligence activities, and construction of projects such as airfields, ranges, and other military facilities. Currently, DOD organizes EDI activities under five lines of effort, as shown in table 1.

Table 1: The Department of Defense's European Deterrence Initiative Lines of Effort

Line of effort	Description
Increased Presence	Increasing U.S. military forces in Europe through rotations of ground, air, and maritime units
Exercises and Training	Participating in exercises and training with allies and partner countries to improve the readiness of U.S. forces and U.S. forces' ability to work with allies and partners
Enhanced Prepositioning	Prepositioning stocks of equipment, munitions, and fuel in Europe
Improved Infrastructure	Subject to final agreement with host nations, selective infrastructure improvements that expand the ability to operate from key locations and support military activities, operations, and readiness
Building Partner Capacity	Providing partner countries with the capability and capacity to defend themselves and enabling their participation as full operational partners against threatening actors

Source: GAO analysis of Department of Defense budget materials. | GAO-24-107463

The military services have collected information from monitoring and assessing some initiative activities, including construction projects and military exercises. However, DOD has not established performance goals and measures for the initiative, so we recommended that it do so. By implementing our recommendation, DOD would be in a better position to assess EDI activities, support budget requests, and justify resource expenditures. In addition, both DOD and Congress would better understand the return on investments, which would improve oversight.

We continue to conduct work reviewing cross-domain challenges in the European region. We have ongoing work on DOD efforts to train Ukrainian forces and expect to report on the results of that work in summer 2024. We have another ongoing review of the effect of Ukraine

[6]GAO, *European Deterrence Initiative: DOD Should Establish Performance Goals and Measures to Improve Oversight*, GAO-23-105619 (Washington, D.C.: July 10, 2023).

assistance on U.S. military readiness and expect to report on the results of that work in early 2025.

Marine Corps Posture in the Indo-Pacific

In March 2020, the Marine Corps issued Force Design 2030, which describes the Marine Corps' intent to modernize to address threats in the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility including long-range strike capabilities, gray zones, and maritime-centric warfare. Specifically, the Marine Corps plans to increase the number of rocket artillery batteries and unmanned aerial vehicles and to integrate training more fully with the Navy. Additionally, the Marine Corps has called for divestments in equipment such as tanks and heavy helicopter squadrons and reductions in the total number of active Marines to enable littoral maneuver and support smaller, more expeditionary operations.

However, we found in May 2023 that the Marine Corps did not meet all military training needs, such as different types of live-fire training, at training ranges within INDOPACOM.[7] The Marine Corps instead uses alternatives to meet these requirements, such as returning forces to the continental U.S. to train and using rotational forces, exercises, and virtual training. The Marine Corps has been unable to meet its training requirements at training ranges in INDOPACOM for almost a decade. We recommended that the Marine Corps complete an analysis of unmet training requirements and develop a plan to identify and remediate these unmet requirements at ranges within INDOPACOM. DOD partially concurred with our recommendation.

We continue to conduct work reviewing cross-domain challenges in the Indo-Pacific region. We have ongoing work on prepositioned assets in the Indo-Pacific region and expect to report on the results of that work in late 2024. We also have ongoing work on fuel logistics in a contested Indo-Pacific environment and expect to report on the result of that work in spring 2025.

New Multi-Domain Units

The Army and Marine Corps conduct multi-domain operations so that ground forces are able to operate freely in other warfighting domains and, if necessary, are able to overwhelm an adversary's forces by simultaneously combining capabilities across different domains, such as air, land, sea, space, and cyberspace. By employing multi-domain

[7]GAO, *Marine Corps Indo-Pacific Posture: Actions Needed to Address Training Challenges,* GAO-23-105783C (Washington, D.C.: May 5, 2023).

operations, ground forces will create windows of opportunity for the joint force to penetrate the adversary systems.

In March 2024, we reported on how the Army and Marine Corps have developed and fielded multi-domain units, addressed challenges associated with their development, and how these units have been incorporated into regional plans, exercises, and operational activities.[8] Both services face various challenges in developing units such as the Multi-Domain Task Force and Marine Littoral Regiment to meet the urgent need to sustain and strengthen U.S. deterrence across domains and theaters in the midst of growing threats to a stable and open international system. The challenges include establishing personnel, organizational structure, facilities, sustainment, and having unclear authorities for key capabilities. Until DOD addresses the challenges, the multi-domain units may be limited in their ability to accomplish their missions at a time when it is crucial for them to succeed.

Missile Defense Oversight

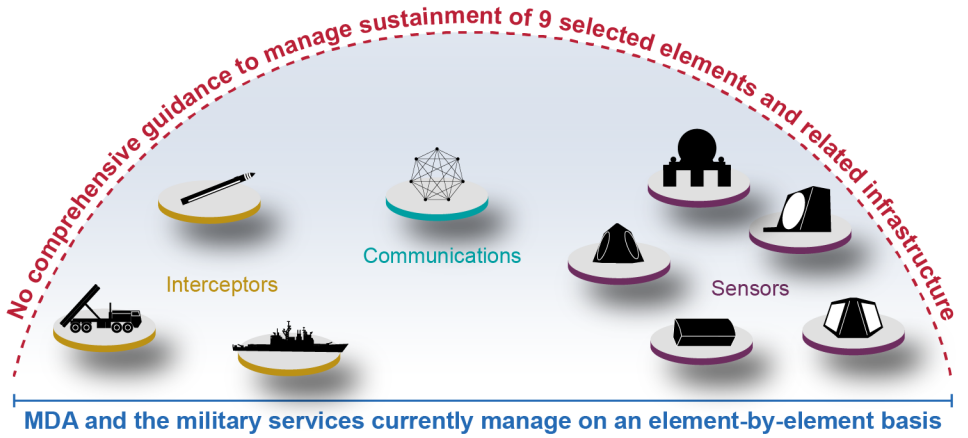
DOD's Missile Defense Agency has spent over $194 billion since 2002 to develop a layered Missile Defense System to defend against missile attacks. In June 2023, we reviewed readiness and sustainment information for nine fielded Missile Defense System elements, including interceptors, sensors, and those used for communications.[9] The Missile Defense Agency and the military services have roles in operating these elements.

We found that DOD reports on missile defense readiness using different metrics across different systems. The services also have element-specific sustainment plans, but DOD has not identified a specific entity responsible for overseeing the sustainment of the Missile Defense System (see fig. 2).

[8]GAO, *Force Structure: Army and Marine Corps Face Challenges Developing New Multi-Domain Units,* GAO-24-106266C (Washington, D.C.: Mar. 14, 2024).

[9]GAO, *Missile Defense: DOD Needs to Improve Oversight of System Sustainment and Readiness*, GAO-23-105578 (Washington, D.C.: June 7, 2023).

Figure 2: Lack of Comprehensive Guidance to Manage Sustainment of Selected Missile Defense Elements



Source: GAO analysis of Department of Defense and Missile Defense Agency (MDA) information. | GAO-24-107463

DOD also does not have an approach for prioritizing and making department-wide sustainment decisions for the Missile Defense System. For example, while the Missile Defense Agency and the Army recognized corrosion as a challenge, the Army had not constructed new facilities on Guam to protect missile defense batteries from corrosion due to the prioritization of other projects and resource constraints. To address these issues, we recommended that DOD update guidance on how to report Missile Defense System readiness and develop comprehensive guidance for sustaining the Missile Defense System. DOD concurred with both recommendations and is in the process of taking steps to address them.

We have ongoing work reviewing Guam missile defense sustainment and plan to report on the results of that work in winter 2024.

Special Operations Forces

Special operations forces are active and reserve military forces that are specifically organized, trained, and equipped to conduct and support special operations. Special operations missions and activities range from direct action to strategic reconnaissance, security force assistance, countering weapons of mass destruction, and hostage recovery. Special operations forces need to be agile, precise, and adaptable. They also face particular challenges that affect their readiness.

For instance:

- **Command Oversight: In** March 2024, we highlighted the increased oversight responsibilities of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict over U.S. Special Operations Command.[10] Even with increased staff resources for the Secretariat for Special Operations, its staffing levels remained below those identified as needed to effectively oversee the command. Furthermore, policies were not fully documented and there was confusion about the Secretariat's administrative role within the department that limit consistent civilian oversight of the command. We made three recommendations to address these issues, and the department concurred with them.
- **Aircraft Purchases:** DOD currently plans to acquire 62 new airplanes in stages through fiscal year 2027 to support special operations missions. U.S. Special Operations Command is required to analyze operational requirements to ensure that purchases like these planes meet mission needs but did not complete the analysis before acting to buy the planes. Also, DOD's special operations mission requirements have changed in recent years, but DOD is only now beginning to evaluate the number of planes it needs. In December 2023, we made two recommendations to address these issues.[11] DOD concurred with one recommendation and partially concurred with the other. As of April 2024, DOD was in the process of assessing the number of planes it would need but likely will not complete this analysis until fiscal year 2025.
- **Foreign Language Proficiency:** U.S. special operations forces often need to know foreign languages to do their jobs overseas. The military services identify foreign languages for missions and how many personnel should know them. However, planning officials could not explain how they align language needs with missions, and some of the identified needs may not be accurate or relevant. Also, many special operations forces are not meeting language proficiency goals—in part because there are not consistent consequences for them if they do not. Further, we found that less than half of these personnel completed any foreign language training, and the average

[10]GAO, *Special Operations Forces: Documented Policies and Workforce Planning Needed to Strengthen Civilian Oversight*, GAO-24-106372 (Washington, D.C.: Mar. 4, 2024).

[11]GAO, *Special Operations Forces: DOD Should Slow Acquisition of Armed Overwatch Aircraft until It Conducts Needed Analysis*, GAO-24-106283 (Washington, D.C., Dec.14, 2023).

number of annual training hours completed was much less than required—due primarily to competing training demands and priorities. In October 2023, we made four recommendations to address these issues, and DOD concurred with them.[12]

- **Operational Stress and Wellness:** Multiple deployments and busy training schedules can stress U.S. special operations forces and their families. To help, DOD established the Preservation of the Force and Family program, which offers services such as physical therapy and counseling. However, it is unclear whether this program is achieving its purpose because DOD has not fully defined its performance goals and measures. For example, DOD lists "neurocognitive assessments" as a way to measure program performance, but it does not describe what these assessments are or how to conduct them. Further, we found that other key program terms are poorly defined. In April 2023, we made three recommendations to address these issues.[13] DOD concurred with our recommendations but has not yet taken actions to fully implement them.
- **Gender Inclusivity:** Women make up fewer than 10 percent of special operations forces—but are about 19 percent of DOD's service members. However, U.S. Special Operations Command may not have the information it needs to fully assess the barriers affecting women's careers. For example, it does not have full access to timely, complete data on its assigned personnel, including incidents of discrimination, harassment, and sexual assault. In December 2022, we made eight recommendations to address gender inclusivity issues and DOD concurred with them.[14] As of January 2024, DOD has not provided status updates on its efforts to address these recommendations.
- **Management Challenges:** Over the last 20 years, DOD has increasingly deployed its special operations forces around the world to address the nation's most complex and sensitive security challenges. The number of personnel that perform this work has increased—from 45,700 in fiscal year 2001 to 73,900 in fiscal year 2021. DOD collects

[12]GAO, *Special Operations Forces: Enhanced Training, Analysis, and Monitoring Could Improve Foreign Language Proficiency*, GAO-24-105849 (Washington, D.C., Oct. 31, 2023).

[13]GAO, *Special Operations Forces: Actions Needed to Assess Performance of the Preservation of the Force and Family Program,* GAO-23-105644 (Washington, D.C.: Apr. 27, 2023).

[14]GAO, *Women in Special Operations: Improvements to Policy, Data, and Assessments Needed to Better Understand and Address Career Barriers,* GAO-23-105168 (Washington, D.C.: Dec. 15, 2022).

and uses data to oversee these forces while they are deployed. However, we found issues with the data, such as not using standard terminology and not offering complete, readily available information on these deployed personnel. In October 2022, we made two recommendations to address these issues.[15] DOD concurred with both recommendations but has not yet taken actions to fully implement them.

We have several ongoing reviews of special operations forces, including work on training accidents and intelligence, surveillance, and reconnaissance. We plan to report on the results of that work later in 2024.

Air Domain

Aircraft Condition

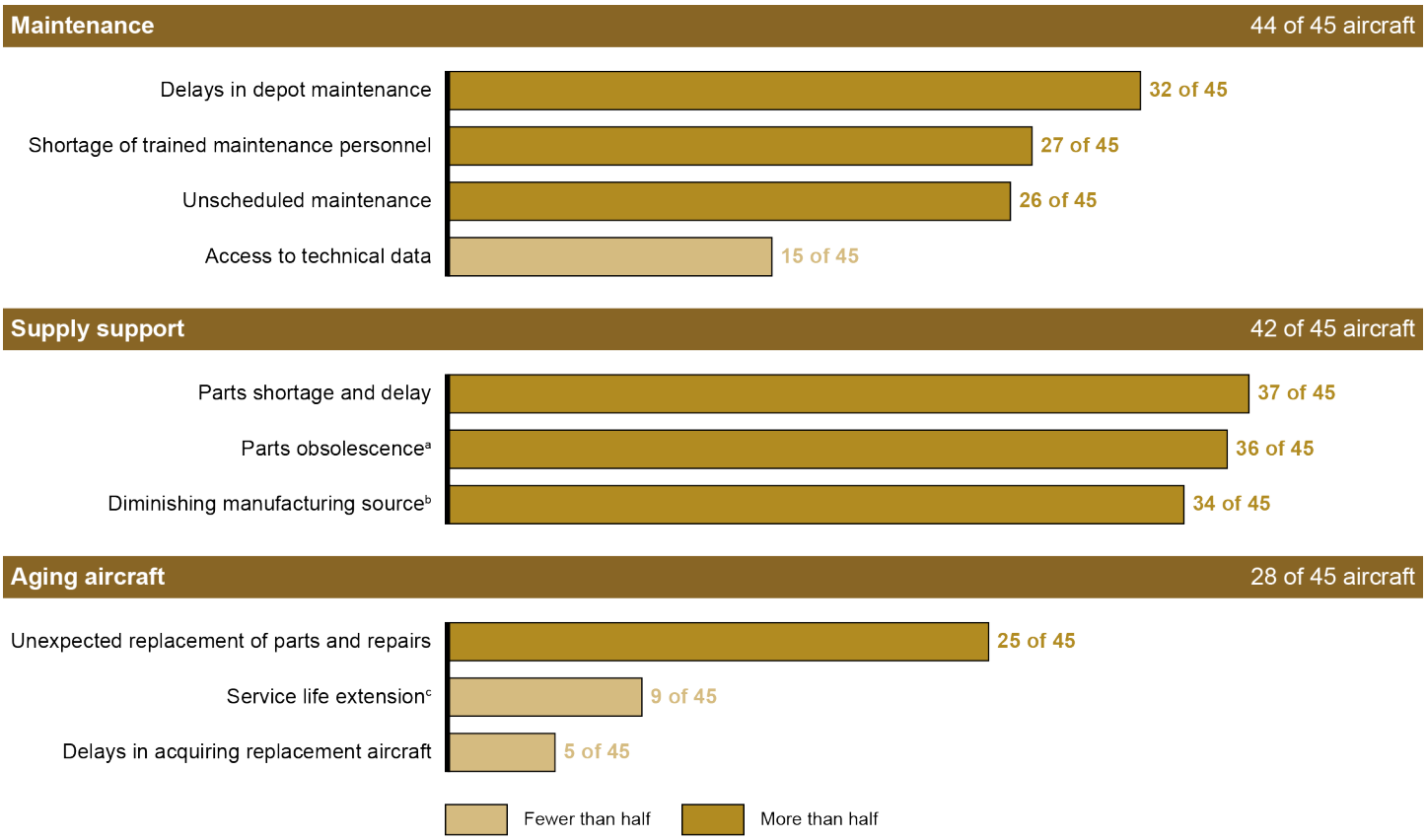
We have issued a series of reports on aircraft sustainment and have found that 47 of the 49 aircraft we reviewed did not meet DOD's mission capable goals.[16] The mission capable rate, which is the percentage of total time when the aircraft can fly and perform at least one mission, is used to assess the health and readiness of an aircraft fleet. Additionally, many of the aircraft we reviewed were facing one or more sustainment challenges related to maintenance constraints, supply support, and the age of the aircraft. According to program officials, these challenges affect mission capable rates and the costs required to sustain those aircraft.

Figure 3 shows the sustainment challenges that we determined were affecting each of the aircraft that we reviewed.

[15]GAO, *Special Operations Forces: Better Data Necessary to Improve Oversight and Address Command and Control Challenges,* GAO-23-105163 (Washington, D.C.: Oct. 5, 2022).

[16]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). We reported separately on the Army's combat helicopters—the AH-64 Apache, CH-47 Chinook, and UH/HH-60 Black Hawk—examining materiel readiness goals, maintenance challenges, and sustainment plans. See GAO, *Combat Helicopters: Actions Needed to Fully Review Readiness Goals and Address Long-Standing Maintenance Challenges*, GAO-22-104607SU (Washington, D.C.: Feb. 15, 2022).

Figure 3: Sustainment Challenges Affecting Selected Aircraft



Source: GAO analysis of Army, Navy, and Air Force information. | GAO-24-107463

[a]Obsolescence refers to a lack of availability of a part due to its lack of usefulness or it no longer being current or available for production.

[b]Diminishing manufacturing sources refers to a loss or impending loss of manufacturers or suppliers of items.

[c]A service life extension refers to a modification to extend the service life of an aircraft beyond what was planned.

We have two ongoing reviews related to aircraft readiness, and plan to report on the results of both reviews later this year. The first review examines fighter aircraft sustainment budgeting. The second review examines the Air Force's model for generating ready forces.

F-35 Sustainment and Costs

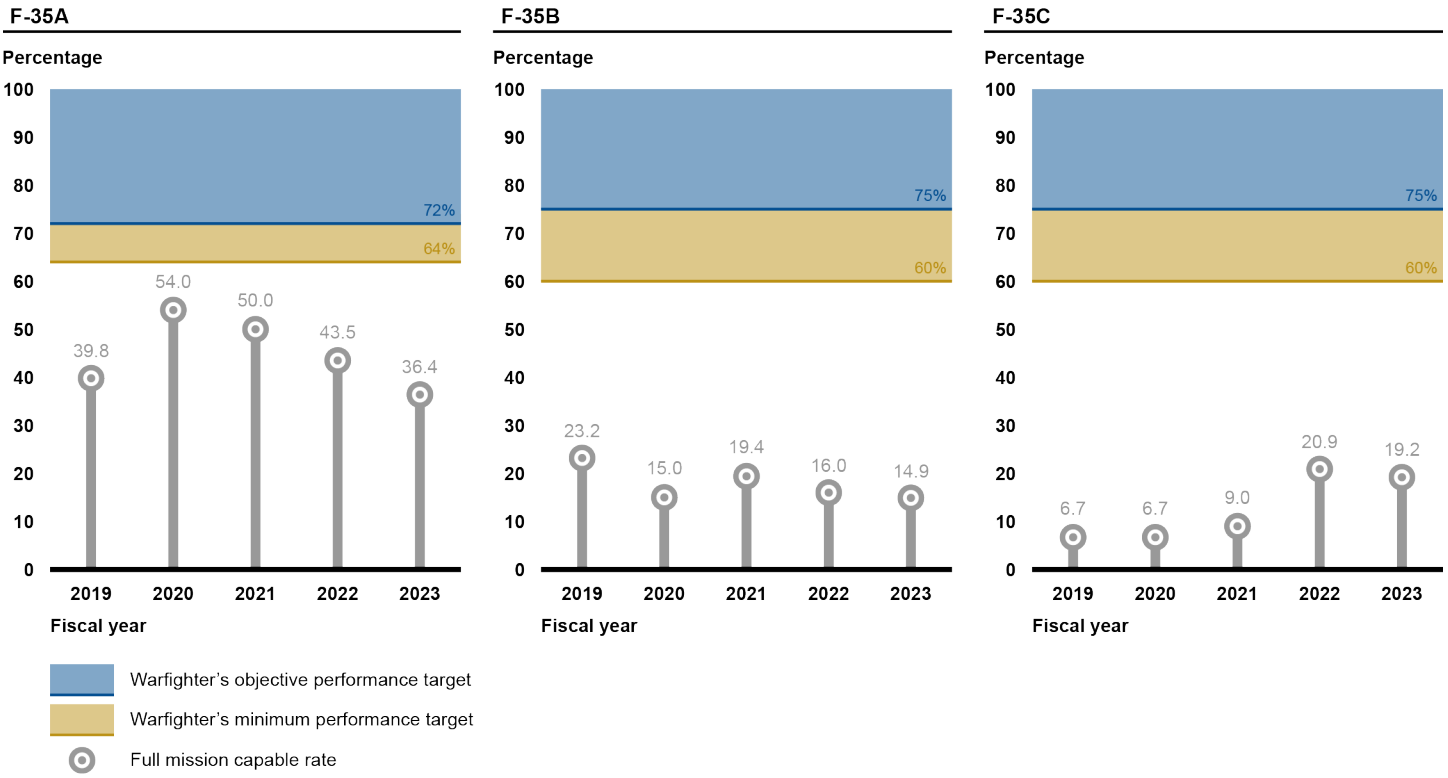
The F-35 Lightning II aircraft—a growing portion of DOD's tactical aviation fleet—faces significant sustainment challenges. With over 600 F-35s now in service with the Air Force, Navy, and Marine Corps, the F-35 is DOD's most ambitious and costly weapon system. Current DOD plans call for

procuring 2,470 F-35s at an estimated total acquisition cost of about $442 billion, and an additional $1.58 trillion in sustainment costs for the aircraft. We found in April 2024 that the F-35 has not met its targets for mission capable rates for the past several years.[17]

In fiscal year 2023, the F-35A and F-35B variants were below the full mission-capable minimum-performance target by more than 27 and 45 percentage points, respectively (see fig. 4). Furthermore, each F-35 variant in fiscal year 2023 did not meet its target for mission-capable minimum performance by at least 13 percentage points (see fig. 5). DOD officials have told us that recurring issues with parts reliability and maintainability continue to negatively affect the program. When programs overpromise a weapon's prospective performance and deliver systems that cannot achieve their requirements, such as mission capable and reliability and maintainability goals, the warfighter receives less capability than originally promised.

[17]GAO, *F-35 Sustainment: Costs Continue to Rise While Planned Use and Availability Has Decreased*, GAO-24-106703 (Washington, D.C.: Apr. 15, 2024).

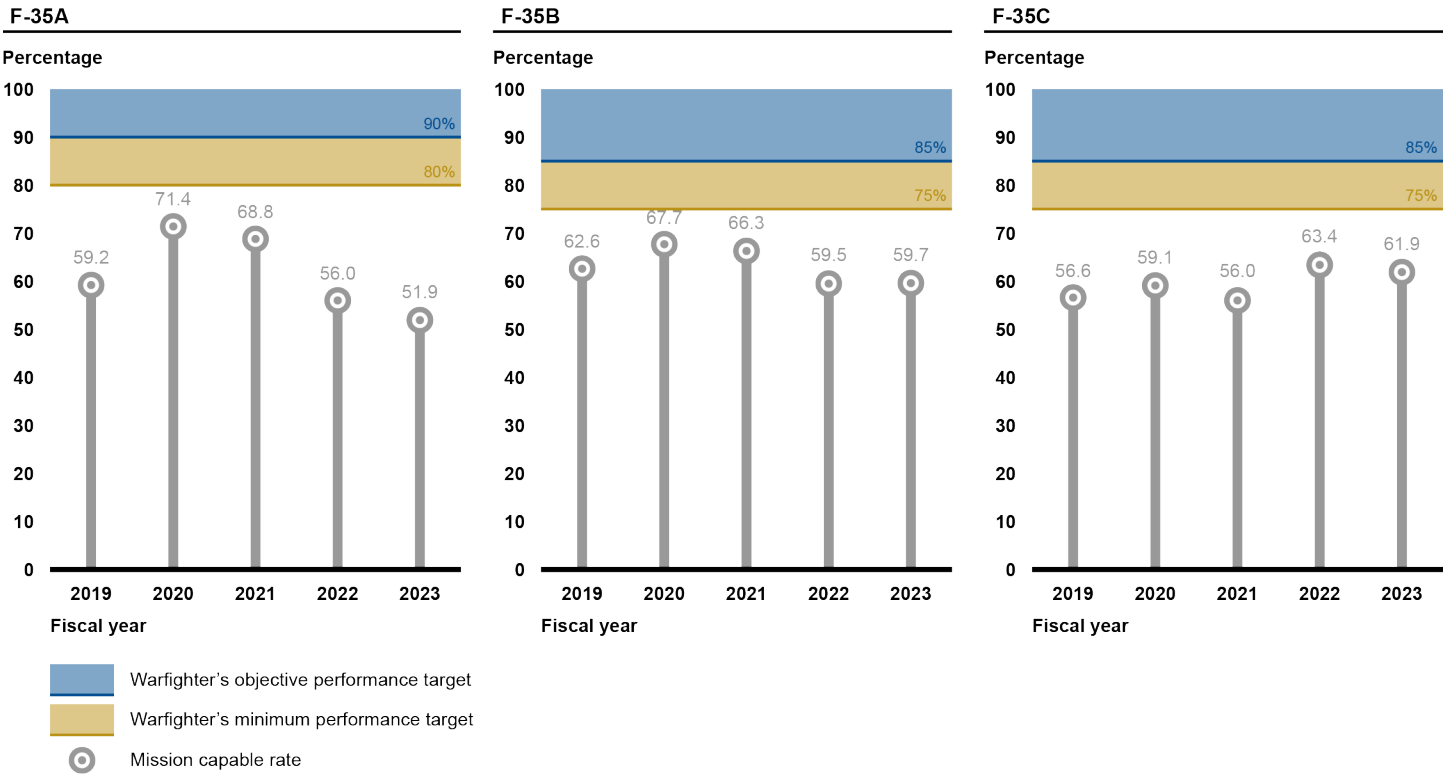
Figure 4: F-35 Full Mission Capable Rates by Variant, Fiscal Years 2019 through 2023



Source: GAO analysis of Department of Defense and Lockheed Martin information. | GAO-24-107463

Note: The full mission capable rate assesses only aircraft that are in the possession of F-35 units. It measures the percentage of time during which these aircraft are fully capable of accomplishing all tasked missions. The warfighter's minimum and objective performance targets are those requirements established for non-deployed F-35 aircraft by the U.S. Air Force for the F-35A, by the U.S. Marine Corps for the F-35B, and by the U.S. Navy for the F-35C, in their respective performance-based arrangements.

Figure 5: F-35 Mission Capable Rates by Variant, Fiscal Years 2019 through 2023



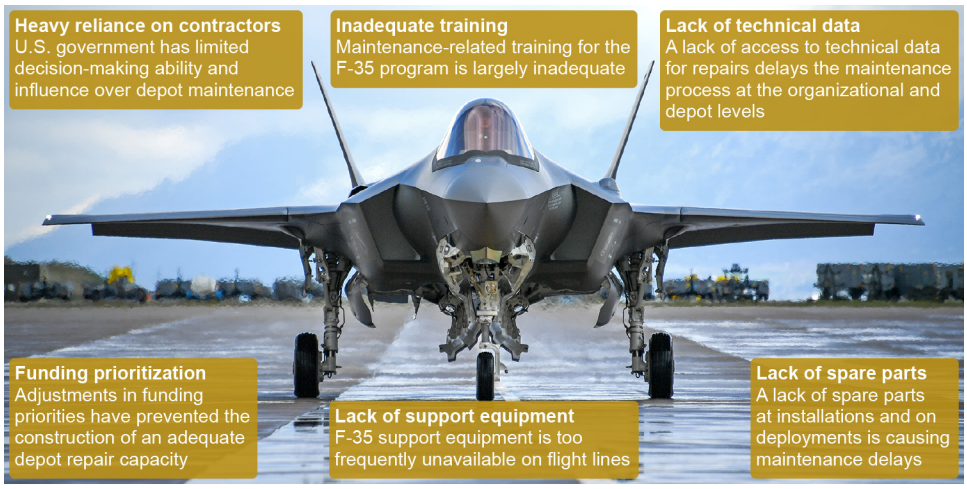
Source: GAO analysis of Department of Defense and Lockheed Martin information. | GAO-24-107463

Note: The mission capable rate assesses only aircraft that are in the possession of F-35 units. It measures the percentage of time during which these aircraft are safe to fly and able to perform at least one tasked mission. The warfighter's minimum and objective performance targets are those requirements established for non-deployed F-35 aircraft by the U.S. Air Force for the F-35A, by the U.S. Marine Corps for the F-35B, and by the U.S. Navy for the F-35C, in their respective performance-based arrangements.

In September 2023, we found that several maintenance challenges negatively affected F-35 readiness and the ability of the aircraft to achieve mission capable goals.[18] The F-35s' poor mission capable rates were due in part to challenges with depot and organizational maintenance (see fig. 6).

[18]GAO, *F-35 Aircraft: DOD and the Military Services Need to Reassess the Future Sustainment Strategy*, GAO-23-105341 (Washington, D.C.: Sept. 21, 2023).

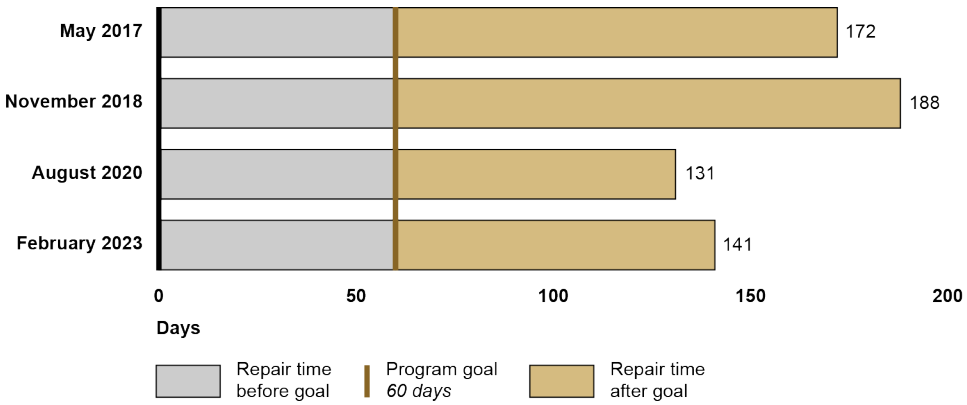
Figure 6: Key Maintenance Challenges That Negatively Affect F-35 Readiness



Source: GAO analysis of Department of Defense information; U.S. Air Force/R. Nial Bradshaw. | GAO-24-107463

For example, the program has been behind schedule in establishing depot maintenance activities to conduct repairs. As a result, component repair times remain slow—over double DOD's desired goal of 60 days—as shown in figure 7. These slow repair times have resulted in over 10,000 components waiting to be repaired—substantially above desired levels. At the same time, a lack of technical data, spare parts, and training hinders the ability of maintainers to maintain the aircraft.

Figure 7: Average Time for Repair of an F-35 Component Compared to the Program's Goal



Source: GAO analysis of DOD and Lockheed Martin information. | GAO-24-107463

Note: According to program officials, the program's repair time goal is 60 to 90 days depending on the complexity of the repair. We are using 60 days in the graphic to represent the top end of that goal.

In September 2023, we also reported that, by design, DOD relies heavily on its contractor to lead and manage F-35 sustainment (see fig. 8).[19] However, in recent years, DOD has expressed a desire to have more governmental control over sustainment activities.

Figure 8: Responsibility for the 12 F-35 Sustainment Elements

Prime contractor responsibility	Government responsibility
• Information technology systems continuous support • Maintenance planning and management • Supply support • Support equipment • Sustaining engineering • Technical data • Training and training support	• Design interface • Facilities and infrastructure • Packaging, handling, storage, and transportation • Personnel • Product support management

Source: GAO analysis of Department of Defense data. | GAO-24-107643

Note: The F-35 Product Support Business Case Analysis report identifies the responsibilities for the government listed in this table as well as the roles of the prime contractor, which DOD officials described as prime contractor responsibilities.

We found that, as DOD seeks expanded government control, it has neither (1) determined the desired mix of government and contractor roles, nor (2) identified and obtained the technical data needed to support its desired mix. We recommended that DOD reassess F-35 sustainment elements to determine government and contractor responsibility, identify any required technical data, and make final decisions on changes to F-35 sustainment to address performance and affordability. DOD officials told us they were working to do this as part of their efforts to transfer all functions relating to the management, planning, and execution of sustainment activities for the F-35 from the F-35 Joint Program Office to the Secretary of the Air Force and the Secretary of the Navy. Section 142 of the National Defense Authorization Act for Fiscal Year 2022 requires this transfer to occur by October 1, 2027.[20]

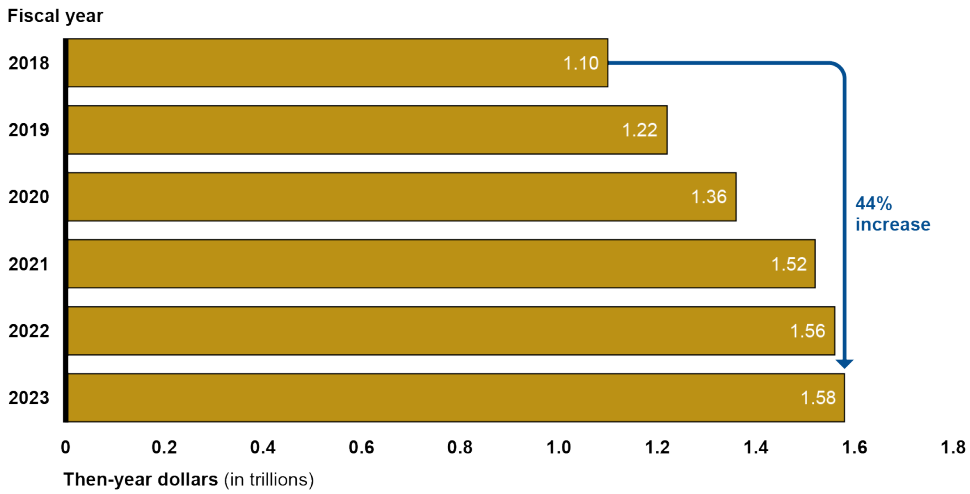
In addition to performance challenges, in April 2024 we reported that the F-35's estimated operating and support costs for its fleet through 2088 continued to grow as shown in figure 9.[21]

[19]GAO-23-105341.

[20]Pub. L. No. 117-81, § 142 (2021).

[21]GAO-24-106703 and GAO, *F-35 Sustainment: DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability*, GAO-21-439 (Washington, D.C.: July 7, 2021).

Figure 9: Growth in the F-35 Joint Program Office's F-35 Lifetime Sustainment Cost Estimates, Fiscal Years 2018 through 2023

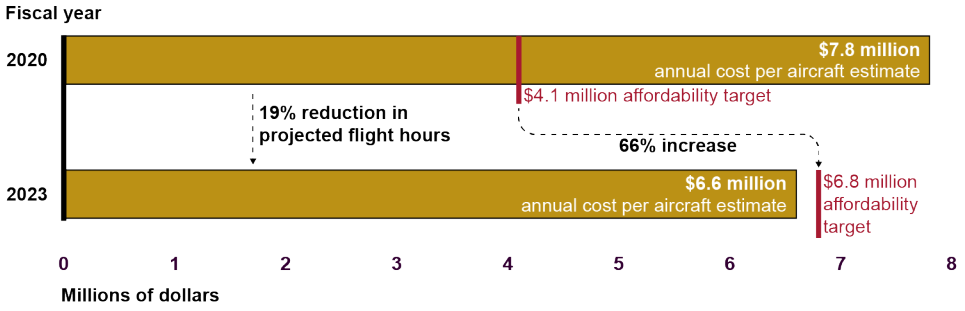


Source: GAO analysis of Department of Defense data. | GAO-24-107463

Note: Then-year dollars account for costs in the years they are spent, including the effects of inflation. Prior to 2022, the F-35 Joint Program Office produced two cost estimates per year. In this figure, we have included the second cost estimate only as that represents the most updated estimate for that year.

The Air Force, Navy, and Marine Corps project they will fly the F-35 less than originally estimated on an annual basis. F-35 Joint Program Office and military service officials told us that this reduction in planned flight hours reflects lower-than-anticipated use up to this point and evolving projections in the use of the aircraft in the future. In part due to this reduction in flight hours, the services are now projecting they will meet most of their affordability targets (i.e., the amount of money they project they can afford to spend per aircraft per year, for operating the aircraft). For example, according to the program's 2023 estimates, the Air Force will pay $6.6 million annually to operate and sustain an individual F-35 aircraft. This continues to be well above the $4.1 million 2018 target; however, in 2023, the Air Force increased the amount of money it says it can afford to spend per F-35 aircraft to $6.8 million per year (see fig. 10).

Figure 10: Change in the Cost per Air Force F-35 Aircraft per Year Estimate, 2020–2023



Source: GAO analysis of Department of Defense data. | GAO-24-107463

We have published a series of reports examining sustainment of the F-35 and how problems with sustainment affect readiness. Since 2014, we have made 43 recommendations designed to improve the department's operation and sustainment of the F-35 program. While DOD concurred with many of these recommendations, and has implemented some of them, 30 (about 70 percent) remain unimplemented. For example:

- In 2022, we found that the sustainment strategy for the F-35's engine did not meet the desired outcomes of the military services and we made recommendations designed to improve that strategy.[22] However, DOD has not yet fully implemented these recommendations.
- In 2019, we found that F-35 aircraft were not able to perform as many missions or fly as often as required largely due to spare parts shortages and difficulty in managing and moving parts around the world.[23] We made several recommendations designed to improve the program's management of its spare parts. However, many of these recommendations, such as improved approaches to creating spares packages for deploying F-35 units, remain unimplemented.

We have an ongoing review examining F-35 operational deployments and plan to report on the results of that work in late 2024.

[22]GAO, *F-35 Aircraft: DOD Should Assess and Update Its Engine Sustainment Strategy to Support Desired Outcomes*, GAO-22-104678 (Washington, D.C.: July 19, 2022).

[23]GAO, *F-35 Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges*, GAO-19-321 (Washington, D.C.: Apr. 25, 2019).

Sea Domain

Ship Sustainment

We have reported extensively on the sustainment challenges facing the Navy's surface ships, submarines, and aircraft carriers in the last several years. Figure 11 shows key sustainment challenges that we determined were affecting selected ship classes.

Figure 11: Sustainment Challenges Affecting Selected Navy Ship Classes

	Ticonderoga-class cruiser (CG-47)	*Nimitz*-class aircraft carrier (CVN-68)	*Arleigh Burke*-class destroyer (DDG-51)	*Freedom*-class littoral combat ship (LCS-1)	*Independence*-class littoral combat ship (LCS-2)	*America*-class amphibious assault ship (LHA-6)	*Wasp*-class amphibious assault ship (LHD-1)	*San Antonio*-class amphibious transport dock (LPD-17)	*Whidbey Island*-class dock landing ship (LSD-41)	*Harpers Ferry*-class dock landing ship (LSD-49)
Service life longer than anticipated	●	●							●	●
Unexpected replacement of parts and repairs		●	●	●	●		●	●		●
Delays in depot maintenance	●	●	●	●	●	●	●	●	●	●
Delays in intermediate maintenance	●		●		●		●			
Shortage of trained maintenance personnel	●		●	●	●	●	●	●	●	●
Unscheduled maintenance	●	●	●	●	●	●	●	●		
Diminishing manufacturing sources	●	●	●		●		●			
Parts obsolescence	●	●	●	●	●		●	●		●
Parts shortages and delays	●	●	●	●	●		●	●	●	●

● Applicable maintenance issue

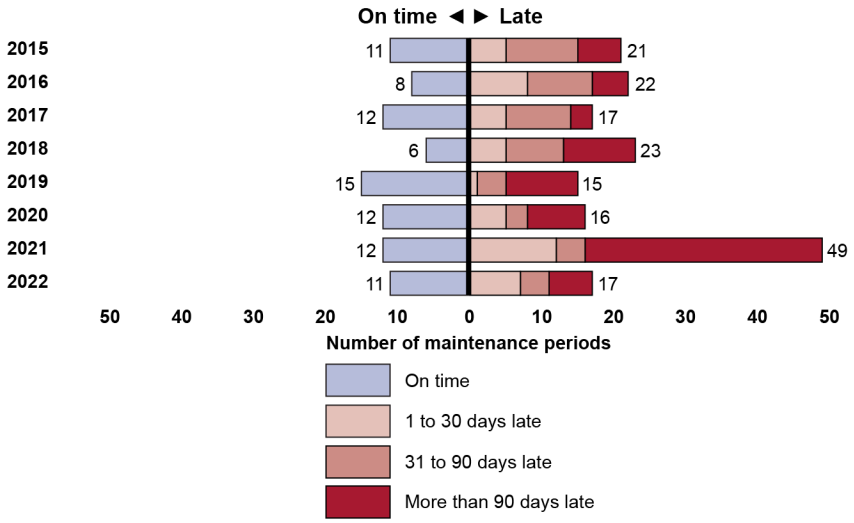
Source: GAO analysis of Navy information. | GAO-24-107463

Note: Diminishing manufacturing sources refers to the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software.

We have also reported that sustainment challenges hinder the Navy's ability to generate naval forces for deployment. For example, in January 2024, we found the Navy continued to face maintenance delays with only 20 percent (12 of 61) of carrier strike group maintenance phases on time

in fiscal year 2021 and 39 percent (11 of 28) maintenance phases on time in fiscal year 2022 (see fig. 12).[24]

Figure 12: On-time Maintenance Frequencies with Carrier Strike Group Ships Overall, Fiscal Years 2015–2022



Source: GAO analysis of Navy data. | GAO-24-107643

We have a wide range of ongoing reviews examining sustainment issues across the sea domain. Later in 2024, we plan to issue reports on Navy ship maintenance led by sailors, Army watercraft readiness, cruiser modernization, the Navy's amphibious warfare fleet, and the shipbuilding and repair industrial base.

Shipyard Condition

In prior reports, we found that fewer aircraft carriers and submarines are available for training and operation when their maintenance is not completed in time. The Navy will have difficulty addressing aircraft carrier and submarine maintenance delays, backlogs, and other sustainment challenges given the poor condition of infrastructure at the Navy's four

[24]We examined the extent to which the Navy met it maintenance goals under its force generation model—referred to as the Optimized Fleet Response Plan—and what factors, if any, have hindered its performance. We found the Navy continued to fall short of the maintenance goals it established for sustainably generating ready forces. GAO, *Navy Readiness: Challenges Persist in Sustainably Producing Ready Naval Forces*, GAO-24-106363C (Washington, D.C: Jan. 11, 2024).

public shipyards.[25] The Navy's public shipyards are critical to maintaining the readiness of its fleet of nuclear aircraft carriers and submarines, and to supporting ongoing operations around the world. The four shipyards are Norfolk Naval Shipyard in Virginia, Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility in Hawaii, Portsmouth Naval Shipyard in Maine, and Puget Sound Naval Shipyard and Intermediate Maintenance Facility in Washington. These shipyards provide the Navy with the capability to perform depot-level maintenance on ships, emergency repairs, ship modernization, and ship deactivations.

The Navy has taken several actions in recent years to improve its public shipyards.[26] In 2018, the Navy began a 20-year effort to modernize and optimize its shipyards, known as the Shipyard Infrastructure Optimization Plan. The plan includes efforts to address limitations with three major facets of the public shipyards' operations: dry docks, facilities, and capital equipment.

However, in June 2023, we found that the Navy had made limited progress in implementing its Shipyard Infrastructure Optimization Plan.[27]

- **The Navy has not developed a full cost and schedule estimate for its plan and reports that it will not be able to do so until fiscal year 2025—3 years later than originally planned.** The Navy reported that it cannot develop an estimate for the full Shipyard Infrastructure Optimization Plan until 2025, after each shipyard completes its detailed infrastructure plan identifying specific facility projects. The Navy cited several challenges that complicate creating a complete cost and schedule estimate including project uncertainty,

[25]We reported in May 2022 on the condition of 21 depots operated by the military services, including the four public shipyards. We found that, since fiscal year 2016, the condition of the depots' infrastructure—their facilities and equipment—generally has remained in the fair-to-poor range and has not improved, while backlogs of facility projects grew by $3.1 billion. We made two recommendations to improve the DOD strategy for addressing deteriorating facilities and equipment. See GAO, *Military Depots: DOD Strategy for Addressing Deteriorating Facilities and Equipment Is Incomplete*, GAO-22-105009 (Washington, D.C.: May 9, 2022). The two recommendations—(1) identifying in annual budget submissions the minimum level of annual investment needed to prevent further infrastructure deterioration and (2) completing the depot infrastructure strategy to fully address all required elements—have not been fully implemented.

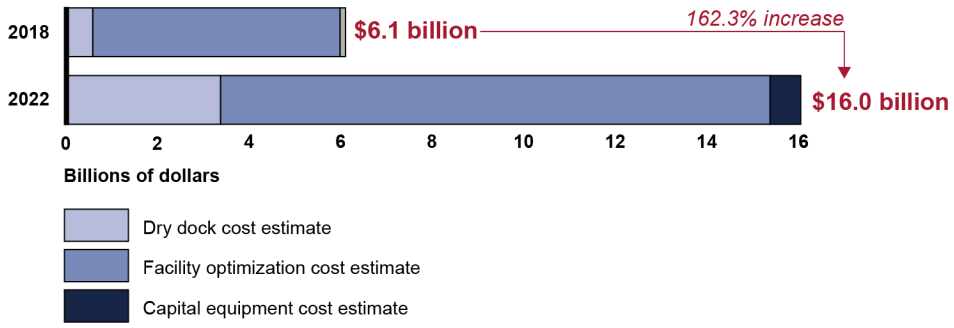
[26]GAO, *Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards*, GAO-22-105993 (Washington, D.C.: May 10, 2022).

[27]GAO, *Navy Readiness: Actions Needed to Address Cost and Schedule Estimates for Shipyard Improvement*, GAO-23-106067 (Washington, D.C.: June 28, 2023).

volatile commodity prices, and obtaining expertise in challenging project areas.

- **Navy's cost estimates for implementing its plan have increased.** In 2018, the Navy estimated it needed 14 dry dock projects at an estimated cost of about $4.5 billion to ensure it had enough capacity to conduct future carrier and submarine repairs. However, in its 5-year Shipyard Infrastructure Optimization Plan update issued in April 2022, the Navy estimated the first two of these projects at Portsmouth and Pearl Harbor would cost over $5 billion and exceed the original estimate for all 14 dry dock projects.[28] In addition, the Navy's Pearl Harbor shipyard-specific plan estimated the cost to complete the projects for the preferred alternative at $16 billion, an increase of $9.9 billion or 162 percent above the 2018 estimate (see fig. 13).[29] The Navy's estimated costs to implement the plan significantly increased due to several factors, such as expanding the scope of individual projects as well as identifying additional projects that were not part of the original cost estimate.

Figure 13: Comparison of 2018 and 2022 Shipyard Infrastructure Optimization Program Cost Estimates for Pearl Harbor Naval Shipyard, Then-Year Dollars



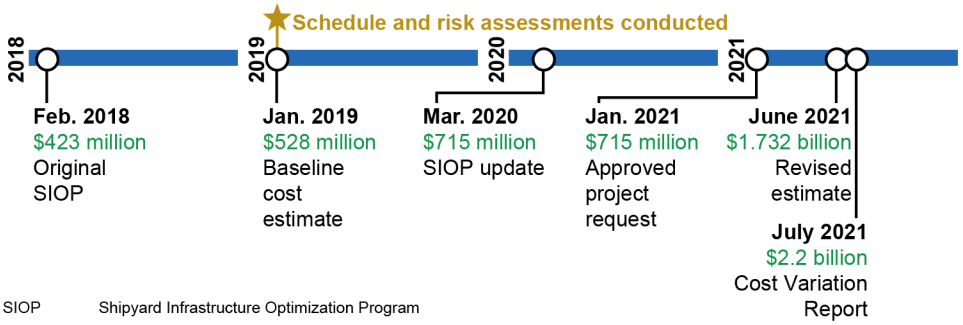
Source: GAO analysis of Navy documents. | GAO-24-107463

[28]Assistant Secretary of the Navy for Research, Development, and Acquisition, *The Shipyard Infrastructure Optimization Program (SIOP): Updated Five-Year Plan* (Apr. 21, 2022).

[29]Shipyard Infrastructure Optimization Program officials noted that this is the estimated cost for the preferred course of action laid out in the Pearl Harbor plan, but that leadership had not yet approved that course of action as of March 2023.

- **The Navy's cost and schedule estimates for the Portsmouth Naval Shipyard dry dock project followed most, but not all, GAO best practices.** The dry dock project at Portsmouth Naval Shipyard was the first and only key Shipyard Infrastructure Optimization Plan project underway as of January 2023. We identified two issues with the estimates. First, the Navy's cost sensitivity, risk, and uncertainty analyses were based on the preliminary design and were not updated to reflect the final design (see fig. 14). The cost estimate grew from $528 million for the baseline cost estimate to $2.2 billion for the final amount, in part due to a lack of competition. Second, the Navy's schedule did not accurately determine key tasks or document the flexibility available in its activities without affecting the program's finish date.

Figure 14: Changes in Cost Estimates for Portsmouth Naval Shipyard Dry Dock Project



SIOP Shipyard Infrastructure Optimization Program

Source: GAO analysis of Navy documents. | GAO-24-107463

We have made 13 recommendations related to the Navy's public shipyards. The Navy concurred with our recommendations and has fully implemented five of them. Addressing our remaining recommendations could assist the Navy in reaching its goals of improved shipyard capacity and performance. For example, following cost and schedule estimating best practices for key Shipyard Infrastructure Optimization Plan projects would help Navy leadership make informed decisions, prepare for unanticipated costs, and focus on critical activities, which could improve Shipyard Infrastructure Optimization Plan results. Completely implementing the Shipyard Infrastructure Optimization Plan will involve funding well above the levels allocated in recent years for shipyard infrastructure, as well as significant planning and sustained management attention over the next several decades.

Crewing Shortfalls

In prior reports, we found that the Navy routinely assigned fewer crewmembers to its ships than its workload studies have determined are needed to safely operate and maintain them.[30] For example, we found that as of November 2023, the Navy had approximately 16 percent fewer enlisted sailors than required across 177 battle force ships.[31] Until the Navy takes action to fill required positions with qualified sailors, personnel shortfalls will likely continue to be a leading factor causing inadequate sleep and sailor fatigue.

Further, we also found that the data the Navy uses to monitor the personnel readiness of the fleet are not sufficiently reliable, which leads to inflated numbers of sailors who appear to be qualified for their positions. Specifically, the Navy applies some business rules to this data that result in counting some junior enlisted sailors as filling positions that require more senior-level sailors. Our analysis of the data found that when we removed one of the rules that counts junior sailors in positions of more senior-level sailors, the "fit" across the ships in our scope fell by almost 6 percent.[32] As a result, until the Navy removes these business rules, it will continue to rely on data that do not provide an accurate understanding of the true extent of the skill and experience gaps across the fleet.

We made 11 recommendations aimed at improving the Navy's reliability and management of ship crewing data. Among other things, we recommended that the Navy remove the rules that count junior sailors as filling positions of senior sailors. In written comments, the Navy concurred with six recommendations, partially concurred with two, and did not concur with three. We continue to maintain that all of our recommendations are warranted.

Ground Domain

Equipment Standards

From 2020 through early 2024, the Army has been taking steps to implement and to improve its revised approach to generate ready forces. The approach is called the Regionally Aligned Readiness and

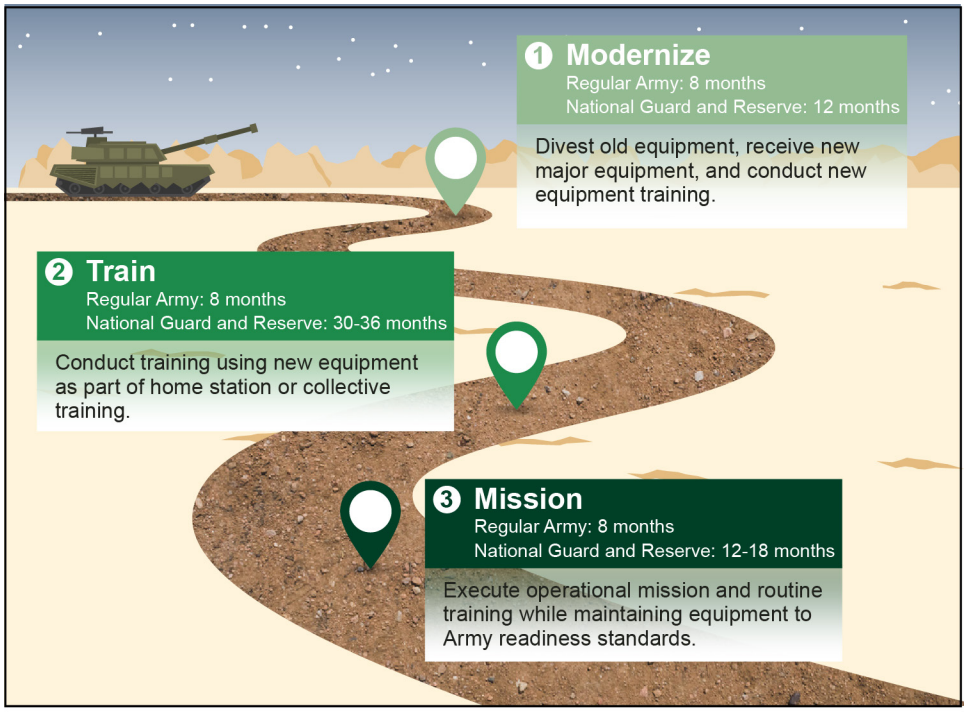
[30]GAO-21-366 and GAO-24-106819.

[31]These ships included aircraft carriers, amphibious assault ships, amphibious transport dock ships, attack submarines, cruisers, destroyers, and mine countermeasures ships. GAO, *Navy Readiness: Actions Needed to Improve the Reliability and Management of Ship Crewing Data*, GAO-24-105811 (Washington, D.C.: Apr. 29, 2024).

[32]The Navy measures both "fill"—the rate that positions on a ship are filled by sailors—and "fit", which is the rate that the positions are filled with sailors who have the skills and qualifications for the positions.

Modernization Model (ReARMM). The Army uses ReARMM to prepare forces for combat, including fielding new equipment on a more predictable schedule, to ensure that units train and deploy with the most modern equipment (see fig. 15). In April 2024, we reported that the Army met its initial goals of aligning units with geographic regions and providing forces to combatant commands; developing and meeting unit life-cycle schedules; and fielding upgraded and new equipment to combat units, such as air defense systems.[33]

Figure 15: ReARMM Phases, General Lengths, and Activities



Source: GAO analysis of Army information. | GAO-24-107463

Note: ReARMM refers to the Regionally Aligned Readiness and Modernization Model.

Among the Army's ReARMM implementing steps are identifying priority units and fielding upgraded, new, and priority modernized equipment to units. However, we found that the first two transfers of major equipment under ReARMM to Army National Guard units included equipment that

[33]GAO, *Army Modernization: Actions Needed to Support Fielding New Equipment*, GAO-24-106274SU (Washington, D.C.: Apr. 11, 2024).

did not meet required condition standards, according to officials. Without identifying and implementing a means to reasonably assure units transfer equipment that meets condition standards, receiving units will continue to be at risk of incurring unexpected costs and delays in their modernization and training.

According to the Army's modernization strategy, ReARMM is a key component for fielding modernized equipment more rapidly to units. However, in fielding new equipment through ReARMM, we found that the Army has been unable to fully complete key planning elements for training, facilities, and personnel, and other planning elements needed to operate and sustain the equipment. The Army has taken steps to manage the risk of units not having some of the planning elements completed, such as training strategies or necessary facilities for the new equipment. However, the Army expects to continue to face challenges completing requirements in some of the other planning elements before fielding new equipment.

We made three recommendations to the Army to improve the continued implementation of ReARMM. Among other actions, we recommended that the Army identify and implement corrective actions that would reasonably assure that equipment sets meet required condition standards before they are transferred to other units during their ReARMM life cycle. We also recommended that the Army review and determine opportunities to better complete planning elements by the time it fields new equipment. The Army concurred with these recommendations.

Army Rail System

The Army depends on rail transportation as the primary means of moving ammunition, tracked vehicles, and other items needed by deploying units from their bases to ports of embarkation within the United States in support of contingencies and exercises. During a contingency, Army officials stated that they would use rail to move about 67 percent of equipment from a fort or base to a shipping port. In 2003, for example, nearly 1 million tons of unit equipment moved by rail in support of Operation Iraqi Freedom.

A 2020 simulation of deployment from a single fort in support of a large-scale combat operation demonstrated the need for more than 2,200 rail

cars over a 3-day period.[34] More than 600 of those cars were required to move a single Armored Brigade Combat Team.

The Army has taken actions to improve management of its rail system, such as conducting inspections to monitor track conditions and track repairs. However, over 550 miles (59 percent) of track on Army installations was in such poor condition that the track was closed pending repairs, according to our 2021 report.[35] Also, the Army has not determined if it would have enough rail operating crews (see fig. 16) to support large-scale combat operations and had not determined how many trained personnel would be needed for such operations.

Figure 16: DOD Personnel Moving Equipment on Non-Restricted Track

Source: Department of Defense. | GAO-24-107463

If the Army does not require a quality assurance program for overseeing the management of rail track, the Army may be unaware of Army rail track conditions and will not be able to fully inform decision makers with timely information so they may address any gaps to help support the missions of combatant commanders. Further, if the Army does not quantify and

[34]In the 2-year period 2017 through 2018, the Army reported an increased operational tempo that included more than 135 opportunities to practice deployment or redeployment tasks including brigade-size unit movements.

[35]GAO, *Defense Transportation: The Army Should Take Action to Better Ensure Adequate Rail Support to Combatant Commanders*, GAO-21-411 (Washington, D.C.: Aug. 23, 2021).

address the risks of any shortfalls of crews, the Army and DOD may not be certain that they can fully support a large-scale combat operation.

We made three recommendations to the Army to require and implement a quality assurance program to inform decision-making in providing oversight of rail track conditions, to determine the requirement for trained rail operating crews, and to quantify the risk of any shortfall of crews. The department concurred with all three recommendations, and we are reviewing documentation regarding the Army's efforts to address them.

We also have an ongoing review of DOD logistics in Europe and expect to report on the results of that work later in 2024.

Space Domain

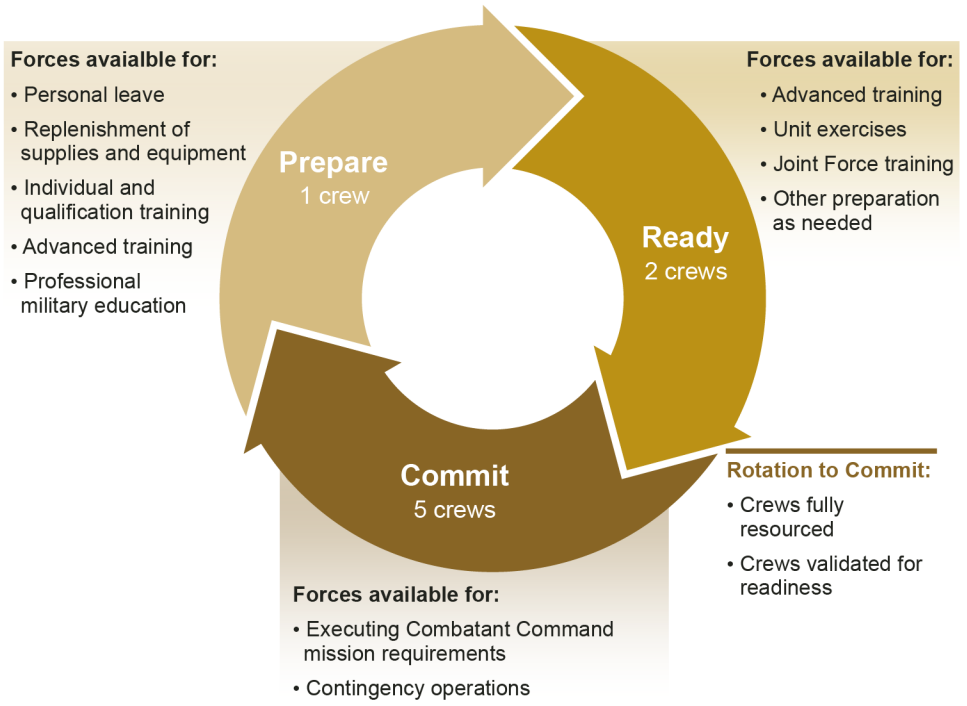
DOD's ability to conduct space operations is critical to national security. In the face of Chinese and Russian efforts to limit access to U.S. space capabilities, DOD has made maintaining current and future readiness for space operations a top priority.

Force Generation

We expect to issue a report in May 2024 on DOD's readiness for space operations. The report will describe, among other things, Space Force's efforts to address current and future readiness challenges for contested space operations through its force generation model and through efforts to fully resource new systems.

Space Force established a force generation model—referred to as SPAFORGEN—in early fiscal year 2022 that was intended to address its current readiness challenges. Many space units operate in place continuously from their home station, and officials noted these units lack a deployment cycle that includes time for rebuilding readiness. SPAFORGEN establishes a cycle of three phases intended to ensure the Space Force can sustainably present ready forces to combatant commands. Under SPAFORGEN, each participating unit establishes eight operational crews that cycle through three phases called Prepare, Ready, and Commit. (see fig. 17).

Figure 17: Space Force's Force Generation Model (SPAFORGEN)—Prepare, Ready, and Commit Phases



Source: GAO analysis of Department of Defense information. | GAO-24-107463

In our draft report, we found that Space Force has not fully analyzed or reported all the personnel, and the types of personnel, that the service needs to fully implement SPAFORGEN. While a September 2023 Space Force report identified a shortfall of nearly 2,000 military personnel to implement SPAFORGEN, the report did not include estimates of the civilian or contracted personnel that will also be necessary to implement the model.

We also found that training-related limitations affected Space Force's implementation of SPAFORGEN. Specifically, Space Force faces interrelated challenges that include shortfalls in training personnel, limitations in training capability, and variation in the SPAFORGEN phase lengths among operational space units. Without a plan for how to navigate these challenges, Space Force will continue to face challenges ensuring SPAFORGEN provides opportunities for training and exercises as intended.

We plan to recommend that Space Force ensure it analyzes and reports the number of military, civilian, and contracted personnel required to implement SPAFORGEN. Also, we intend to recommend that the service develop a plan to ensure its execution of SPAFORGEN meets its stated purpose of generating space readiness by providing opportunities to participate in training and exercises.

As described in our draft report, the future readiness of DOD to conduct space operations relies not just on new or upgraded systems but on combat-ready units able to effectively operate those systems. In August 2023, Space Force took a positive step by establishing guidance outlining the actions needed to ensure operational space units are fully resourced with the appropriate personnel and training capabilities required for day-to-day operations prior to operationally accepting a new system. However, translating this guidance into reality will likely require significant resources—resources that the service has not identified.

We plan to recommend that Space Force assess its ability to implement its new guidance, to include identifying, analyzing, and responding to factors that limit the Space Force's ability to implement the guidance.

Space Control

In November 2021, we issued a readiness and force structure report on space control—operations that ensure freedom of action in space for the United States and its allies and deny an adversary's freedom of action in space.[36] We reported that DOD's efforts to reduce shortfalls in space control were underway but that longstanding challenges persisted. We recommended that DOD incorporate space control in plans for rebuilding readiness and identify milestones and metrics to assess progress toward addressing identified readiness issues. Also, we recommended that DOD establish uniform threat standards that units would use when assessing their readiness to conduct their mission in a contested space environment. DOD concurred with these recommendations but as of April 2024 had not yet taken action to implement them.

Further, we recommended that DOD set specific measurable objectives and milestones for implementing DOD's space control goals over the next decade, as laid out in the *Defense Space Strategy*. DOD partially concurred, stating that it did not need a separate implementation plan and will rely on existing processes. However, we found that the strategy does

[36]GAO, *Space Operations: DOD Efforts to Improve Space Control Shortfalls Underway but Longstanding Challenges Persist*, GAO-22-530C (Washington, D.C.: Nov. 8, 2021).

not establish specific measures and milestones to assess progress in meeting its identified objectives. In addition, DOD officials stated that they intend to use the budget process to oversee implementation of the strategy. However, we previously found significant limitations to relying on the budget process for complex force structure decisions. The department's lack of specific measurable objectives or milestones could significantly impede its ability to understand if its efforts and investments are sufficient and timely.

We have an ongoing review of the basing selection process for U.S. Space Command and expect to report on the results of that work in late 2024. We also have an ongoing review of the integration of allies and partners in space operations and expect to report on the results of that work in early 2025.

While DOD develops and deploys new weapon systems and considers new approaches for how its units organize and operate, it will continue to depend on many of today's capabilities for decades to come. As a result, DOD will need to continue to balance rebuilding the readiness of its existing forces with its desire to modernize.

Chair Hirono, Ranking Member Sullivan, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Diana Maurer, Director, Defense Capabilities and Management, at (202) 512-9627 or maurerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. GAO staff who made key contributions to this testimony are Jodie Sandel (Assistant Director), Steven Banovac (Analyst-in-Charge), Ava Bagley, John Bumgarner, Aaron Chua, Nicole Harris, Briana Lalman, Amie Lesser, Richard Powelson, Michael Shaughnessy, Michael Silver, Nicole Volchko, and Chris Watson.

Related GAO Products

The following list contains both public reports, which are available on GAO's website, and reports that are not publicly available. Report numbers with a C or RC suffix are classified. Report numbers with a SU suffix are sensitive but unclassified. Classified and sensitive but unclassified reports are available upon request to personnel with the proper clearances and the need to know.

Navy Readiness: Actions Needed to Improve the Reliability and Management of Ship Crewing Data. GAO-24-105811. Washington, D.C.: April 29, 2024.

F-35 Sustainment: Costs Continue to Rise While Planned Use and Availability Have Decreased. GAO-24-106703. Washington, D.C.: April 15, 2024.

Army Modernization: Actions Needed to Support Fielding New Equipment. GAO-24-106274SU. Washington, D.C.: April 11, 2024.

Military Readiness: Comprehensive Approach Needed to Address Service Member Fatigue and Manage Related Efforts. GAO-24-105917. Washington, D.C.: March 26, 2024.

Force Structure: Army and Marine Corps Face Challenges Developing New Multi-Domain Units. GAO-24-106266C. Washington, D.C.: March 14, 2024.

Special Operations Forces: Documented Policies and Workforce Planning Needed to Strengthen Civilian Oversight. GAO-24-106372. Washington, D.C.: March 4, 2024.

Weapon System Sustainment: DOD Identified Operating and Support Cost Growth but Needs to Improve the Consistency and Completeness of Information to Congress. GAO-24-107378. Washington, D.C.: February 29, 2024.

Navy Readiness: Challenges Persist in Sustainably Producing Ready Naval Forces. GAO-24-106363C. Washington, D.C.: January 11, 2024.

Special Operations Forces: DOD Should Slow Acquisition of Armed Overwatch Aircraft until It Conducts Needed Analysis. GAO-24-106283. Washington, D.C.: December 14, 2023.

Special Operations Forces: Enhanced Training, Analysis, and Monitoring Could Improve Foreign Language Proficiency. GAO-24-105849. Washington, D.C.: October 31, 2023.

Navy Readiness: Challenges to Addressing Sailor Fatigue in the Surface Fleet Continue. GAO-24-106819. Washington, D.C.: October 11, 2023.

F-35 Aircraft: DOD and the Military Services Need to Reassess the Future Sustainment Strategy. GAO-23-105341. Washington, D.C.: September 21, 2023.

European Deterrence Initiative: DOD Should Establish Performance Goals and Measures to Improve Oversight. GAO-23-105619. Washington, D.C.: July 10, 2023.

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