

GAO Highlights

Highlights of [GAO-23-106694](#), a testimony before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

Tactical aircraft—fixed wing fighter and attack planes—provide air-to-air, air-to-ground, and electronic warfare capabilities that are vital to the success of U.S. combat operations and homeland defense.

This testimony discusses DOD's analyses informing tactical aircraft investments, as well as challenges in the F-35 program. This statement is based on GAO's December 2022 report on DOD's tactical aircraft investments ([GAO-23-106375](#)), its April 2022 report on the F-35 ([GAO-22-105128](#)), and preliminary observations from GAO's 2023 F-35 report, expected to be issued in May. For its ongoing work, GAO interviewed DOD officials and contractor representatives, compared the F-35 delivery schedule to actual progress, analyzed F-35 modernization plans, and assessed the program's analysis of engine and thermal management modernization options. Details about the scope and methodology for published GAO reports are included in those products.

What GAO Recommends

Since 2001, GAO has made more than 50 recommendations across 20 reports aimed at improving DOD's acquisition of tactical aircraft, especially the F-35. DOD has agreed with many of these recommendations and taken action to address some of them. Of the 17 recommendations GAO made over the last 5 years, 8 remain open. Among those that are not yet implemented are several intended to address F-35 challenges and tactical aircraft portfolio management.

View [GAO-23-106694](#). For more information, contact Jon Ludwigson at (202) 512-4841 or ludwigsonj@gao.gov.

March 29, 2023

TACTICAL AIRCRAFT

Technical, Delivery, and Affordability Challenges Complicate DOD's Ability to Upgrade Its Aging Fleet

What GAO Found

Tactical aircraft are critical to achieving and maintaining air dominance during combat operations. The Department of Defense's (DOD) planned tactical aircraft fleet currently comprises 15 different types of aircraft, such as:

- the Air Force's A-10 Thunderbolt II and F-16 Fighting Falcon,
- the Navy's F/A-18E/F Super Hornet and EA-18G Growler, and
- three variants of the F-35 Joint Strike Fighter (see figure).

F-35 Joint Strike Fighter variants



Source: U.S. Air Force/Staff Sgt. Andrew Lee, U.S. Navy/Petty Officer 1st Class Jeremy Starr, and U.S. Air Force/Defense Visual Information Distribution Service. | [GAO-23-106694](#)

Most of DOD's existing tactical aircraft began flying in the 1970s and 1980s. In December 2022, GAO reported on eight studies including ones by the Air Force, Navy, and Marine Corps that confirmed DOD's longstanding need to modernize or replace its tactical aircraft fleet and emphasized affordability. However, DOD has not conducted an integrated portfolio-level analysis across all of its tactical aircraft investments. Such a review would provide DOD and Congress with needed insight into interdependencies, risks, and trade-offs among some of DOD's highest priority and biggest investments. DOD is in the process of implementing policy changes to improve its portfolio management practices.

The F-35 is key to DOD's tactical aircraft future. As of March 2023, the program has delivered over 800 aircraft, but it is more than a decade behind schedule, and \$165 billion over original estimates. It also faces other challenges:

Simulator and related testing remain incomplete. Until DOD verifies its simulator can conduct complex test scenarios that accurately replicate real-world conditions, the F-35 will be unable to complete initial operational testing.

Contractors continue to deliver late. GAO's ongoing work indicates that the contractor delivered 50 percent of aircraft late in 2022—the worst result in 6 years—and the engine contractor delivered more engines late than on time.

Block 4 content and costs continue to grow. A \$16.5 billion effort, known as Block 4, aims to upgrade the F-35 and address threats that emerged since 2000. The preliminary observations of GAO's ongoing Block 4 work point to increases in scope, costs, and delays.

Engine and thermal management system need upgrades. The system that provides cooling for the F-35's engine is underperforming, resulting in reduced engine life. The program has determined that it must upgrade both.