

GAO@100 Highlights

Highlights of [GAO-21-439](#), a report to the Committee on Armed Services, House of Representatives

Why GAO Did This Study

The F-35 aircraft, with its advanced capabilities, represents a growing portion of DOD's tactical aviation fleet—with about 400 of the aircraft fielded. DOD plans to procure nearly 2,500 F-35s at an estimated life cycle costs of the program exceeding \$1.7 trillion—with \$1.3 trillion of those costs being associated with operating and sustaining the aircraft.

A House Report accompanying the National Defense Authorization Act for Fiscal Year 2020 included a provision for GAO to review F-35 sustainment efforts. This report, among other things, assesses the extent to which (1) the F-35 has met warfighter-required mission capable rates; and (2) DOD has reduced the F-35's estimated life cycle sustainment costs and made progress in meeting its affordability constraints. GAO reviewed program documentation, analyzed performance and cost data, collected data from F-35 locations, and interviewed officials.

What GAO Recommends

Congress should consider (1) requiring DOD to report annually on progress in achieving the affordability constraints, and (2) making F-35 aircraft procurement decisions contingent on DOD's progress in achieving these constraints. GAO is making four recommendations to DOD, including assessing cost reduction efforts and F-35 program requirements, and developing a plan to afford to sustain the future F-35 fleet. DOD partially concurred stating it will work to meet the intent of the recommendations in an expeditious manner. GAO continues to believe DOD should address the recommendations prior to declaring Milestone C.

View [GAO-21-439](#). For more information, contact Diana Maurer at (202) 512-9627 or maurerd@gao.gov.

July 2021

F-35 SUSTAINMENT

DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability

What GAO Found

F-35 mission capable rates—a measure of the readiness of an aircraft fleet—have recently improved, but still fall short of warfighter requirements. Specifically, from fiscal year 2019 to fiscal year 2020, the U.S. F-35 fleet's average annual (1) mission capable rate—the percentage of time during which the aircraft can fly and perform one of its tasked missions—improved from 59 to 69 percent; and (2) full mission capable rate—the percentage of time during which the aircraft can perform all of its tasked missions—improved from 32 to 39 percent. Both metrics fall below the services' objectives. For example, in fiscal year 2020 the Air Force F-35A full mission capable rate was 54 percent, versus a 72 percent objective.

Since 2012, F-35 estimated sustainment costs over its 66-year life cycle have increased steadily, from \$1.11 trillion to \$1.27 trillion, despite efforts to reduce costs. The services face a substantial and growing gap between estimated sustainment costs and affordability constraints—i.e., costs per tail (aircraft) per year that the services project they can afford—totaling about \$6 billion in 2036 alone (see fig.). The services will collectively be confronted with tens of billions of dollars in sustainment costs that they project as unaffordable during the program.

Gap between F-35 Affordability Constraints and Estimated Sustainment Costs in 2036

Service and aircraft	2020 JPO CPTPY estimate in steady state ^a	Affordability constraint	Gap between projected cost and affordability constraint	Planned aircraft total in steady state ^a year 2036	Total cost overrun in steady state ^a year 2036
Air Force F-35A	(\$7.8)	- \$4.1)	= \$3.7	x 1,192	= \$4.4 billion
Marine Corps F-35B	(\$9.1)	- \$6.8)	= \$2.3	x 353	= \$812 million
Marine Corps F-35C	(\$7.9)	- \$6.8)	= \$1.1	x 67	= \$74 million
Navy F-35C	(\$9.9)	- \$7.5)	= \$2.4	x 273	= \$655 million
CPTPY cost per tail (aircraft) per year					Almost \$6 billion

Costs in millions unless otherwise noted

Source: GAO analysis of Joint Program Office (JPO) data. | GAO-21-439

Note: Costs are in constant year 2012 dollars, as that was the year when the F-35 program was most recently re-baselined. ^aSteady state years for the F-35 program are defined in each respective service's affordability analysis as: US Air Force/F-35A – 2036-2041; US Marine Corps/F-35B – 2033-2037; US Navy/F-35C – 2036-2043. Steady state refers to the program's peak operating point.

The Air Force needs to reduce estimated costs per tail per year by \$3.7 million (or 47 percent) by 2036 or it will incur \$4.4 billion in costs beyond what it currently projects it could afford in that year alone. Cost reductions become increasingly difficult as the program grows and matures. However, GAO found that there is no agreed upon approach to achieve the constraints. The F-35 program estimates that it will declare Milestone C—a decision point for moving into full-rate production of the aircraft—sometime in the 2021-2023 time frame. Without assessing cost-reduction efforts and program requirements (such as number of planned aircraft), and developing a plan prior to declaring Milestone C, the Department of Defense (DOD) may continue to invest resources in a program it ultimately cannot afford. Congress's requiring DOD to report on its progress in achieving affordability constraints and making F-35 procurements contingent on DOD's demonstrated progress would enhance DOD's accountability for taking the necessary and appropriate actions to afford sustaining the F-35 fleet.