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Defense Primer: United States Military Aviation

Background

Military aircraft provide the United States a range of military capabilities, including deterrence against attack, power projection, situational awareness, air defense, and logistical support to U.S. forces around the world. The Department of Defense (DOD) employs more than 13,000 aircraft across military branches (see **Table 1**). Congress funds the development, acquisition, and sustainment of all U.S. military aviation, sets policies regarding those platforms, and provides oversight of programs as well as a range of supporting activities.

Joint Air Operations

Each military service has its own aviation assets, personnel, and training. In an operational theater, a Joint Force Commander oversees joint air operations, which involve more than one military service, on behalf of the joint fighting force. According to the Joint Chiefs of Staff, a Joint Force Commander will direct the desired degree of control of the air, which can range from no control to a neutral situation, to air superiority of a specific area, or to air supremacy of an entire area.

U.S. Air Force

The U.S. Air Force controls most of U.S. airpower, defined in doctrine as "the ability to project military power through control and exploitation in, from and through the air." The Air Force has five core functions: air superiority; global strike; rapid global mobility; intelligence, surveillance, and reconnaissance (ISR); and command and control (C2). Its fleet of about 5,000 aircraft includes advanced fighters, long-range bombers, aerial refueling tankers, cargo haulers, ISR, and C2 aircraft. The Air Force also supports other military branches and allies. For example, Air Force cargo aircraft carry troops, and aeromedical transports evacuate forces injured in battle. Air Force ISR aircraft provide strategic and tactical intelligence, and Air Force combat aircraft work with ground forces to deliver weapons on targets.

U.S. Navy

Naval officials envision an aviation force that enables sea control and joint warfighting. Naval aircraft support aircraft carrier air wings with aircraft for strike, maritime patrol, ISR, electronic attack, vertical lift, and defense missions. According to the DOD Annual Aviation Inventory and Funding Plan FY2022 report, the Department of the Navy (including the Marine Corps) operates about 4,000 aircraft. The Navy has nine carrier air wings that operate on aircraft carriers. Each air wing consists of more than 60 aircraft.

U.S. Marine Corps

The Marine Corps uses aviation to provide fires (the use of weapons), fire support, and mobility to Marine forces. The six functions of Marine aviation are air reconnaissance, anti-air warfare, electronic warfare, offensive air support, assault support, and control of aircraft and missiles. The Marines' 2022 Aviation Plan states that the Marines had 1,262 aircraft in its inventory. Reportedly, the Marines plan to publish their next Aviation Plan in December 2024.

U.S. Army

The Army states that its aviation mission "is to find, fix and destroy any enemy through fire and maneuver and to provide combat support and combat service support in coordinated operations as an integral member of the combined arms team." Army supports other military services, combatant commands, multinational forces, and partner governments with air assault, attack, reconnaissance, special operations, and sustainment aircraft. According to data in a September 2024 Congressional Budget Office report on the Availability and Use of Army Aircraft, about 80% of Army aircraft are manned rotorcraft.

Table 1. DOD Annual Aviation Inventory for All Services, FY2025-FY2035 Projections

Aircraft Type	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Air Refueling	560	568	573	583	580	583	586	590	593	596	600
Airlift/Cargo/Utility	4528	4506	4513	4469	4455	4453	4448	4445	4370	4326	4288
Anti-Surface/Submarine	669	664	654	642	640	639	636	635	634	633	632
Attack Helicopter	953	952	951	950	949	948	947	922	897	872	852
Combat Search/Rescue	86	78	78	75	75	75	75	75	75	75	75
Fighter/Attack	3124	3042	2996	2981	2973	2983	3003	3022	3032	3063	3067
ISR/Scout/C4	819	757	687	677	666	663	659	662	634	627	630
Long Range Strike	145	147	150	155	138	136	143	143	133	143	153
Special Ops Forces	498	504	510	508	519	519	519	519	519	519	519
Trainers	2018	2018	2013	2032	2015	2024	1938	1947	1965	1928	1940
Total	13400	13236	13125	13072	13010	13023	12954	12954	12840	12764	12732

Source: Department of Defense, Annual Aviation Inventory and Funding Plan FY2022 report, accessed on InsideDefense.com.
Notes: These Department of Defense projections are based on aircraft category. Inventory levels may change based on operational needs, industrial base considerations, and budget constraints. Long-term projections are less accurate.

Major Procurement Programs

Current major DOD aviation programs include the following:

The **F-35 Lightning II,** the primary strike-fighter aircraft for the Air Force, Marine Corps, and Navy. DOD currently operates more than 500 F-35s and plans to purchase a total of 2,470; 19 other governments intend to purchase the aircraft. The F-35 is the largest defense acquisition program in U.S. history.

The **B-21 Raider** bomber is replacing B-1 and B-2 bombers. The Air Force, which plans to purchase at least 100 of the stealthy, penetrating strike aircraft, estimates the B-21 will begin operations in the mid-2020s.

The **KC-46A Pegasus** aerial refueling tanker is replacing the KC-135 Stratotanker. The Air Force has a fleet of about 100 KC-46s and has plans to purchase 179.

The **CH-53K King Stallion** is a heavy-lift helicopter for the U.S. Marine Corps, which was declared operational in 2022 and is replacing the CH-53E. The Marines intend to purchase 200 CH-53Ks.

The U.S. Army continues to purchase **AH-64 Apache** attack helicopters, **UH-60 Black Hawk** utility helicopters, and **CH-47 Chinook** heavy-lift helicopters, platforms that it has used for decades.

Research and Development Programs

DOD is embarking on a number of new major research and development efforts for a next generation of aircraft. Those programs include the following:

Next-Generation Air Dominance (NGAD) is an Air Force family of systems. NGAD includes an effort to replace the F-22 Raptor fighter and another effort to build the **Collaborative Combat Aircraft (CCA)**, an uncrewed, so-called "loyal wingmen" that can fly alongside an NGAD, other fighter aircraft, or with companion CCAs.

The Navy is developing the **F/A-XX**, a sixth-generation fighter that could enter service in the 2030s. Like the Air Force, the Navy intends to fly the new fighter alongside uncrewed CCA.

The Army is building prototypes of a **Future Long-Range Assault Aircraft** designed to fly faster and farther than the UH-60 Black Hawk that it could eventually replace.

Issues for Congress

Aircraft Fleet Size and Mix

Congress may weigh how to balance the cost of maintaining aging fleets, buying new aircraft, and developing new aircraft against the backdrop of changing operational needs. The Air Force has recommended retiring legacy aircraft to invest in new-generation fighters. Some analysts argue that DOD needs more aircraft of multiple types. Others contend that DOD spends too much money already. Members may consider whether the military will have enough aircraft to support DOD plans to confront potential threats from the People's Republic of China and Russia and whether current systems have the range, payload, and networking capacity to support DOD plans for distributed operations.

Congress may increase pressure on the Air Force for more detail about the size of the Air Force's fighter fleet. Congress requested a report outlining fighter force structure plans in the FY2024 National Defense Authorization Act (NDAA), P.L. 118-31, Section 148. The House-passed FY2025 NDAA, H.R. 8070/H.Rept. 118-529, Section 155, states that the committee would limit travel funding for the Secretary of the Air Force if the Secretary does not submit the detailed report on long-term Air Force fighter force structure. The Senate Armed Services Committee (SASC) report on the FY2025 NDAA, S.Rept. 118-188, Section 136, requests an annual fighter force structure report; it does not include a limitation on funding.

The U.S. Air Force is reportedly seeking to retire 250 aircraft in FY2025 to invest more funding in the development of newer aircraft and abide by provisions of the Fiscal Responsibility Act, P.L. 118-5. The Senate-reported S.Rept. 118-188, Section 138, would approve an Air Force request to retire some fighters: A-10s, F-15C/Ds, and F-16C/Ds. If adopted, the provision would block the retirement of F-15E and F-22 fighters. The House-passed H.Rept. 118-529 (H.Rept. 118-529 §154) would prohibit the retirement of F-15E fighters, with some exceptions, until the Secretary of Defense submits a fighter aircraft capability and requirements study.

Congressional committees differ in the levels of funding they seek to authorize or appropriate for aircraft procurement. The House-passed H.Rept. 118-529/H.Rept. 118-529 recommends reducing the overall amount for DOD aviation procurement. The SASC, which added $25 billion for overall defense spending, would authorize an increase in aircraft procurement funding. The House-passed (H.R. 8774/H.Rept. 118-557) and Senate-reported (S. 4921/S.Rept. 118-204) legislation for an FY2025 Defense Appropriations bill recommend more funding than DOD requested for aviation procurement.

Uncrewed Aircraft

The war in Ukraine, conflicts in the Middle East, and potential conflict in the Asia-Pacific have highlighted the utility of uncrewed aircraft. DOD responded with the Replicator initiative to field thousands of uncrewed systems by August 2025. The individual services have initiatives, as well. For instance, Air Force officials have discussed plans to purchase up to 1,000 CCAs; Army officials are discussing how future aircraft operate in terms of formations of helicopters that fly with or can launch smaller uncrewed Air-Launched Effects. Congress may consider how uncrewed aircraft could expand the military aviation fleet. Members may also consider the extent to which the promise of uncrewed aircraft is achievable both technically and from a cost and industrial perspective.

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