

Updated January 29, 2025

Future Long-Range Assault Aircraft (FLRAA)

Background

The U.S. Army is developing the Future Long-Range Assault Aircraft (FLRAA) to serve as a next-generation aircraft for vertical lift, air assault, maritime interdiction, aeromedical evacuation, combat search and rescue, humanitarian relief, and tactical resupply. The Army intends for FLRAA to eventually replace the Sikorsky UH-60 Black Hawk medium-utility helicopter, which was designed more than 50 years ago. Army Futures Command Commanding General James E. Rainey testified that the Army needs FLRAA to have the ability to fly twice as far and twice as fast as previous rotorcraft, a capability he called essential for operations in the Pacific region. The Army is under contract with Bell Textron to build a FLRAA prototype of its V-280 demonstrator aircraft. The Administration has asked Congress for \$1.26 billion for FLRAA research, development, test, and evaluation in FY2025 (see **Table 1**).

UH-60 Black Hawk

The Army plans to begin operating FLRAA in the 2030s and, in the meantime, continue to purchase Black Hawk helicopters. According to Army budget documents, the UH-60M is “the Army’s utility helicopter for the near and midterm force,” supporting maneuver commanders in air assault, general support command and control, and aeromedical evacuation. Congress authorized the Administration’s FY2025 budget request for continuing the purchase of 24 Black Hawks annually under a five-year contract that began in 2022 and ends in 2026. The service may also follow through on another multiyear proposal to purchase up to 255 UH-60s from FY2027 to FY2031. The Black Hawk is operated by at least 35 governments.

Future Vertical Lift

FLRAA is one component of the Army’s plan—launched in 2009—to modernize its aviation assets. That Army effort, called Future Vertical Lift (FVL), focused on replacing Cold War-era aircraft with rotorcraft that could fly more supplies, faster, for longer distances, more reliably, and with less logistical support. That plan took on even greater relevance as the U.S. military turned its attention to potential conflict with China and Russia, which have advanced air defenses that would force the United States to operate at longer ranges.

Under FVL, the Army had intended to develop FLRAA, a Future Attack Reconnaissance Aircraft (FARA), and two new Unmanned Aerial Systems (UAS) programs. The Army proposed canceling FARA in its FY2025 budget request. The Army plans for FLRAA’s and FVL’s UAS programs to continue. (See CRS In Focus IF12592, *Army Future Attack Reconnaissance Aircraft (FARA) Program*

Proposed Cancellation: Background and Issues for Congress, by Jennifer DiMascio.)

To achieve “transformational increases in speed, range, and maneuverability,” the Army is seeking FLRAA, an aircraft that would cruise at speeds of up to 280 knots—compared with the Black Hawk’s cruising speed of 151 knots. The Army states FLRAA should fly with up to 12 passengers for at least 1,700 nautical miles (nm) without refueling. FLRAA should be able to fly at altitudes of 6,000 ft., in up to 95-degree heat.

In 2014, the Army awarded initial contracts to Bell and a Sikorsky-Boeing team, marking the start of a FLRAA competition. Each team produced a demonstrator, from which the Army could select a vendor that would produce a prototype aircraft. Bell developed a V-280 Valor demonstrator, which flew for the first time in December 2017. Sikorsky and Boeing built the SB-1 Defiant X demonstrator, a compound helicopter that uses twin coaxial rotors for lift and a pusher propeller to generate speed. The Defiant flew for the first time in March 2019.

In 2022, the Army awarded a \$1.3 billion contract to Bell Textron to deliver by 2025 a digital FLRAA prototype based on the firm’s V-280 Valor tiltrotor aircraft. Sikorsky challenged the contract award, but the Government Accountability Office (GAO) upheld the Army’s decision, citing Sikorsky’s failure to adequately address a requirement for a modular open system architecture (MOSA) that would allow for faster, easier software upgrades. Congress in the National Defense Authorization Acts of 2017 and 2021 (P.L. 114-328 §805 and P.L. 116-283 §804) required major defense acquisition programs to adopt a MOSA approach. The Army says it will continue to need the right level of data rights to ensure the government can use third-party suppliers for upgrades and sustainment.

Bell V-280

Figure 1. Bell V-280



Source: U.S. Army/Courtesy photo.

The V-280 uses a tiltrotor design. Tiltrotors can take off and land vertically like a helicopter and then tilt their rotor blades forward to fly like an airplane. The U.S. Marine Corps, Navy, and Air Force operate another tiltrotor aircraft, the V-22 Osprey. Bell chose a more conventional design for the V-280 compared with the V-22, according to an industry official. For example, only the V-280 proprotors and gearbox flip forward, rather than the entire engine. The clutch design on the V-280 is simpler, and the V-280 has a straight wing, which eliminates the need for the kind of mid-wing gearbox that exists on the V-22. The V-22 also has a V-shaped tail.

Bell has teamed with Rolls-Royce on a propulsion system for the V-280: two Rolls-Royce AE1107F turboshafts. Other FLRAA subcontractors include Safran (landing gear); Moog (flight-control computers and other components); GE Aerospace (common open architecture, digital backbone, voice and data recorder, and health awareness system); and Astronics Corporation Electrical (power and distribution system).

Program Status

The Army says its FY2025 budget request would fund activities for FLRAA engineering and management and development. Among other things, the funds would continue development of a digital backbone with an underlying structure that meets the Army’s MOSA objectives. As stated above, the Army prioritized an open system approach to the FLRAA program to ease future sustainment, facilitate software upgrades, and connect more easily with other sensors and weapons. In May 2024, the Army designated FLRAA as a “pathfinder program,” one that would set an example for how to implement digital engineering to achieve those goals. U.S. Special Operations Command has reportedly contributed to design discussions and requested the FLRAA include space on the aircraft to house a specialized radar in the nose, add hardware for a refueling probe, and other modifications.

On August 2, 2024, the Army announced that FLRAA had entered the Milestone B engineering and manufacturing development phase, following a successful preliminary design review in April and an Army Systems Acquisition Review Council meeting in June. The service said the Milestone B decision allowed the Army to exercise the first of nine contract options, including the detailed design and build of six prototype aircraft. The first FLRAA prototype flight is planned for 2026. Low-rate initial production would then follow in 2028, with initial fielding of aircraft planned for 2030.

FLRAA Funding

Congress in P.L. 118-159 authorized the president’s request for funding FLRAA, and versions of the FY2025 Defense Appropriations Act passed by the House and the Senate Appropriations Committee recommend fully funding the Administration’s request for FLRAA research, development, test, and evaluation in FY2025.

Table 1. FLRAA Budget Request, FY2025-FY2029
(in \$ millions)

	FY2025	FY2026	FY2027	FY2028	FY2029
Milestone B Support	1,254	844	827	698	726
Procurement	0	0	266	439	787
Total	1,260	844	1,093	1,136	1,513

Source: Department of Defense, FY2025 Budget Estimates, Army Research, Development, Test & Evaluation, Volume II, Budget Activity 5D, March 2024.

Considerations for Congress

Oversight by Congress may include the following:

- Army officials have stated that future attack aircraft should be flown without humans in the cockpit. Other industry officials say that human pilots will always have a role on the battlefield. Members of Congress could conduct hearings or discussions about the need for human pilots, which could affect the future of the FLRAA program.
- Congress may continue oversight of experimental efforts for FLRAA to work with other platforms, including Air-Launched Effects. ALE could be a swarm of small UAS that could provide surveillance, target tracking, jamming, or communications to expand the FVL’s ability to operate in contested environments.
- The Army is continuing to manufacture UH-60 Black Hawks for its own use and use by foreign governments. Members of Congress may consider the feasibility and budgetary implications of modernizing the Black Hawk alongside the creation of the new FLRAA platform.
- Some Members have expressed concern about the choice of a tiltrotor aircraft, pointing to recent fatal accidents involving V-22 Osprey aircraft. The Senate Appropriations Committee in S.Rept. 118-204 “encourages” Army officials in charge of aviation to collaborate with Navy officials on lessons learned about development and operation of tiltrotor aircraft that might be applied to the FLRAA. Congress may examine whether or not that has taken place and what resulted.
- Congress also may consider oversight of whether FLRAA meets the Navy’s needs for a Future Vertical Lift-Maritime Strike platform.

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