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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 has 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 requested and Congress provided $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. In providing funding for 26 such rotorcraft in FY2025, Congress supported the Administration's 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 strategic competition 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's plan for FLRAA continues. (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 to develop 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 temperatures of up to 95-degrees Fahrenheit.

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 for FY2017 and FY2021 (P.L. 114-328, §805, and P.L. 116-283, §804) required major defense acquisition programs to adopt a MOSA approach. The Army has said it requires certain 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's FY2025 budget request proposed funding for FLRAA engineering and manufacturing development. Among other things, the request proposed continued development of "a digital backbone" (i.e., a type of network system) with an underlying structure that meets the Army's MOSA objectives. 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 stated 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. In May 2025 testimony, Army leaders informed lawmakers that they were studying how to accelerate initial fielding of the aircraft.

In a briefing provided to congressional defense committees dated November 2024, the Army stated it anticipated delivery of up to 334 FLRAA by the end of FY2040. That quantity would support up to three light combat aviation brigades (CAB), three heavy or theater-enabling CABs, the training base, and initial U.S. Special Operations Command fielding. The Army stated it planned to field post-production modifications to enable a FLRAA MEDEVAC Mission Equipment Package capability by FY2033.

FLRAA Funding

In P.L. 118-159 and P.L. 119-4, Congress authorized and appropriated, respectively, the requested amount of $1.26 billion in research, development, test, and evaluation (RDT&E) funding for FLRAA in FY2025.

Table 1. FLRAA Budget Request, FY2025-FY2029 (Enacted and Projected)

(in $ millions)

	FY2025	FY2026	FY2027	FY2028	FY2029
RDT&E	$1,254	$844	$827	$698	$726
Procurement	$0	$0	$266	$439	$787
Total	**$1,254**	**$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

In conducting oversight of FLRAA, Congress may consider several potential issues, including but not limited to the following:

- Army officials have said future attack aircraft should be flown without humans in the cockpit. Other industry officials have said that human pilots will always have a role on the battlefield. Members of Congress could discuss the role of and need for human pilots, which could affect the future of the FLRAA program or could affect the planned purchase of manned rotorcraft platforms.
- Congress may monitor experimental efforts for FLRAA to work with other platforms, including Air-Launched Effects (ALE). ALE could be a swarm of small UAS that provide surveillance, target tracking, jamming, or communications to expand the FVL's ability to operate in contested environments.
- Army officials have reportedly announced plans to increase the speed of FLRAA development, a move that may present financial and manufacturing risks. Congress may consider whether or not to support plans to move more quickly toward initial fielding.
- Some Members have expressed concern about the choice of a tiltrotor aircraft, pointing to fatal accidents involving V-22 Osprey aircraft. The Senate Appropriations Committee in a report (S.Rept. 118-204) accompanying its reported version of the FY2025 defense appropriations bill (S. 4921) encouraged 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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