An eye on the future

The U.S. Navy is seeking a new signals intelligence aircraft. Here's why Boeing thinks its EP-X provides the best-value solution.

By Eric Fetters-Walp

Syd Abernethy knows firsthand how vital a role signals intelligence aircraft play in support of U.S. warfighters and coalition forces. He previously commanded U.S. Navy electronic warfare airplanes and flew the EP-3 Aries, the service's eyes and ears in the sky.

Abernethy, the former commander of Naval Air Station Whidbey Island, Wash., is part of a Boeing team working to develop a new 21st century signals intelligence airplane. Abernethy said that if Boeing wins the competition to design and build the Navy's new EP-X aircraft, it will be based on the P-8A Poseidon, a Next-Generation 737 military derivative aircraft Boeing is building for the Navy that will provide greatly enhanced anti-submarine warfare capabilities.

"Boeing's EP-X system will transform airborne intelligence, surveillance, reconnaissance and targeting for the U.S. Navy. It is designed for rapid future growth, adaptability and mission flexibility," said Abernethy, Boeing's EP-X Business Development manager for Integrated Defense Systems.

Boeing is one of three companies, along with Lockheed Martin and Northrop Grumman, that were awarded contracts in 2008 to refine EP-X concepts for the Navy. In the coming months, the Navy will solicit proposals and select contractors for the next phase of requirements development, with contract award expected by 2012.

Boeing executives said they feel the company can provide the best value to the Navy. Not only has the company teamed with capable partners, but it can leverage its work on the Navy's P-8A Poseidon and present the service with an aircraft that's already successful as a multimission platform.

"The Navy has already spent the money to militarize the 737, and there's a great deal of commonality between the P-8A and the EP-X," said Tim Norgart, Boeing director of business development for Airborne Anti-Submarine Warfare & Intelligence, Surveillance

and Reconnaissance. “Part of our premise is the Navy shouldn’t have to pay for that twice. We want to give the customer the opportunity to recapitalize on the investment it’s already made.”

WHAT’S NEEDED ON THE EP-X

After flying for four decades, the venerable Lockheed-built EP-3 Aries is “desperately” due for replacement, Norgart said. Like the Aries, the new EP-X must be capable of carrying a wide variety of surveillance technologies and a crew that can flex in size to meet mission needs. For the new aircraft, the Navy also wants additional signals transmission and receiving capabilities.

All that will allow the aircraft to improve on the EP-3’s mission of gathering and relaying crucial intelligence about opposing military forces during war or quietly keeping tabs on communications coming from potentially unfriendly parties. The EP-X will complete the triad of next-generation maritime aircraft the Navy plans to use to secure the U.S. coastline and other interests. Boeing’s P-8A Poseidon and Northrop Grumman’s Broad Area Maritime Surveillance unmanned aerial vehicle are the two other legs of the triad.

With the P-8A, Boeing has demonstrated it can fully construct a militarized version of the 737-800 while staying on schedule and within cost. In fact, the P-8 program in January acquired a new customer—and its first international customer—when the Indian government selected the P-8I as the Indian navy’s new long-range maritime reconnaissance and anti-submarine warfare aircraft.

Final assembly on the first P-8A began a year ago at the 737 assembly plant in Renton, Wash., where the P-8A is built from the ground up specifically for its unique mission. That approach, which requires extra security measures and strict compliance with U.S. International Traffic in Arms Regulations, saves time and money compared to the old way of doing business: building a commercial airplane and then significantly modifying it afterward for the military.

“We’ve established the model for how to design and build a militarized plane like this,” said Fred Bruner, Boeing P-8A Production Operations manager.

Choosing the Boeing 737 platform also would provide commonality in software, parts and maintenance work between the Poseidon and the EP-X.

“The argument that the Navy should be able to take advantage of the investment it already has made makes sense because of the small number of EP-3 replacements needed,” said Paul Summers, Boeing’s director of Airborne Signals Intelligence Campaigns. The Navy has said 19 to 26 aircraft is the right number for EP-X. For the P-8A, the Navy requirement is 108 planes.

Beyond that, the 737 is the right-sized airplane for the job, Summers said. The 737-based EP-X would be about 13 feet (4 meters) longer than the EP-3, with a similar crew capacity. It also would provide better speed, altitude capability and time-on-station performance than the EP-3. Abernethy said the 737’s reliability and availability of parts also would be a great advantage over the existing signals intelligence aircraft.

For its bid, Boeing has teamed with Argon ST and Raytheon. Fairfax, Va.-based Argon is a leading designer and developer of signals intelligence sensors and systems. Raytheon, whose technology is aboard the existing EP-3 airplanes, also is a member of Boeing’s P-8 industry team. It will be responsible for the EP-X’s sensors and multi-intelligence integration.

“Between the three of us, the Navy has a very capable and experienced industry team,” Summers said.

The need for a new signals intelligence aircraft is clear, said Norgart, who pointed out that situational awareness and intelligence

PHOTOS: (LEFT) Syd Abernethy is part of the Boeing team aiming to win the competition to design and build the U.S. Navy’s new EP-X signals intelligence aircraft. Boeing’s EP-X bid will be based on the P-8A Poseidon, a Next-Generation 737 military derivative aircraft. **MARIAN LOCKHART/BOEING ARTIST RENDERINGS: MATT WARDIAN/BOEING**

are more vital than ever in today's operations. The EP-3s have regularly supported ground operations in Iraq and Afghanistan.

"We've really seen over the past few years intelligence, surveillance and reconnaissance (ISR) come to the forefront. When you're fighting the war on terrorism, you can't have enough ISR assets," he said. "The P-8A and EP-X will continue to be important in gathering intelligence and protecting battle groups for the Navy."

For Boeing, winning the EP-X contract would not only complement its P-8A program, it would give the company an aircraft that might be attractive to the defense forces of other nations.

Having retired from the Navy two years ago, Abernethy said it's great to be part of the EP-X program and involved in the competition. "I'm confident we're offering the service a better airplane and a more capable mission system for the future," he said. ■

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Tale of the tape:
Boeing's proposed EP-X

Propulsion: Two CFM56-7B engines each providing 27,000 pounds (120,107 newtons) of thrust

Length: 129.5 feet (39.47 meters)

Wing span: 123.6 feet (37.64 meters)

Height: 42.1 feet (12.83 meters)

Maximum gross takeoff weight: 189,700 pounds (85,909 kilograms)

Speed: 490 knots (564 mph, 789 kilometers per hour)

Range: 1,200+ nautical miles (1,381 miles, 2,222 kilometers)

Ceiling: 41,000 feet (12,496 meters)

Crew: Five to 24