

A thunderous start



The P-8A Poseidon means a lot to Boeing. Just ask the people who work on this aircraft.

By DEBORAH BANTA DUSTMAN

For Boeing, Monday, March 31, was the start of much, much more than just another workweek.

On that day, final assembly of the first P-8A Poseidon for the U.S. Navy began on plan and on schedule at the Boeing Commercial Airplanes factory in Renton, Wash. The fuselage of the first aircraft arrived by train from Spirit AeroSystems in Wichita, Kan., and BCA mechanics in Renton started installing floor panels, systems, wires, tubing and other small parts on the aircraft's fuselage section.

The P-8A Poseidon is the U.S. Navy's newest aircraft in 30 years to serve maritime patrol and reconnaissance missions. Integrated Defense Systems and BCA have been working together with the program's key industry partners for more than four years to plan, design and build the P-8A, a military derivative of the Next-Generation 737-800.

"It's a very exciting time for our team—IDS and BCA together—designing and building a fully tactical airplane through the Boeing Production System," said Mo Yahyavi, Boeing vice president and P-8 program manager for BCA. "The fuselage is built by Spirit AeroSystems; airplane final assembly is performed by BCA; and the mission equipment is installed by IDS. That's called working together."


"The start of final assembly of our first test aircraft is a tremendous milestone," said Bob Feldmann, Boeing vice president and P-8A program manager for IDS. "When you see this kind of teamwork coming together, delivering a no-traveled-work, perfect fuselage into the start of our production line, it's just an incredible feeling—just incredible!"

Feldmann added that working together as one Boeing team is one of the keys to success for the P-8A program as employees manage complex aircraft-integration and export-compliance issues. The program expects to deliver the first test aircraft to the Navy in 2009.

The P-8A platform represents a new solution with mission systems that provide the latest in anti-submarine warfare, anti-surface warfare, and armed intelligence, surveillance and reconnaissance capability. The aircraft's open architecture will enable its customers to insert weapon system upgrades and future technologies in an affordable and timely way to meet evolving threats.

The Boeing employees who plan, design and build the P-8A Poseidon shared with *Boeing Frontiers* their excitement about—and priorities for—working on the program. Their comments appear on the following pages. ■

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The fuselage for the first P-8A Poseidon arrives at the Boeing factory in Renton, Wash., from Spirit AeroSystems in Wichita, Kan. Boeing recently began final assembly on the first P-8A.

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‘Big Green’ arrives at Renton

Ray Figueras, Product Support Director, P-8A Program, Integrated Defense Systems

Ray Figueras (right) was one of the first Boeing employees to work on the P-8A Poseidon program. On March 31, he and dozens of program representatives anxiously waited at Boeing Renton for the arrival of the first Poseidon fuselage by train from Spirit AeroSystems in Wichita, Kan. Joining Figueras for an exuberant shipside visit the next day were fellow P-8A IDS Support Systems engineering managers Melvin Eng (left) and Thomas Helgeson.

“In 2003 I was lucky enough to chronicle our exploits as we took a Next-Generation 737-800 around to Navy bases selling a Boeing solution to the multimission maritime aircraft competition. I tagged that aircraft as ‘Big Green,’ in deference to the protective coating it still had applied. Today (March 31) at 5:48 p.m., YP-001, 2599, T-1, P-8A, the real Big Green, rolled into the yard at Boeing Renton. To say it was a milestone event does not give credit to how far we have come. The state of Washington has few thunderstorms each year, and rarely any lightning. But just as Big Green entered the train well, thunder rolled, lightning flashed and it started hailing—hard. I am sure it was Poseidon* marking the arrival of his offspring.”

* Figueras’ reference to Poseidon is from the literature of ancient Greeks, who believed the mythological figure was the god of the sea. Poseidon, also referred to as Neptune in Roman mythology, was believed to have power to offer calm seas, which sailors relied upon for safe voyages. The Greeks and Romans both believed that, when angered, the god of the sea could cause lightning, storms, shipwrecks and earthquakes.

‘A perfect marriage of BCA and IDS’

Melvin Eng, P-8A Support Systems Senior Manager, Integrated Defense Systems

Melvin Eng (above, left) visited Boeing Renton’s new Final Assembly Line 3 the morning after the first P-8A fuselage “flew” by crane into the factory to start the last phase of production on the first test aircraft. Eng is responsible for the continuing airworthiness of the airplane as it goes through the next stages toward the hand-off from BCA to IDS this summer.

“The P-8A is the perfect marriage between the commercial and military sides of our business. We’re bringing the best of Boeing to this product, with BCA building the airplane and IDS installing the mission systems—without the need for costly, time-consuming structural modifications. We believe it’s a Lean, efficient, best-value way to build a military derivative from a commercial platform, that nobody else can do. And by working together as one Boeing team, we’re building outstanding teamwork and leveraging best practices in our planning and production processes—both within Boeing and across our industry-partner team.”



JIM ANDERSON PHOTO

‘Crew eager to face new challenges’

Perry Moore, P-8A Director of Manufacturing Operations, Commercial Airplanes

Perry Moore (right, with IDS Vice President Tony Parasida) regularly meets with P-8A mechanics to see how he can facilitate production issues and ensure the program keeps its delivery commitments to IDS and the U.S. Navy.

“Even though our crew is very experienced, everyone’s excited to face new challenges of working on such a unique aircraft. Our team is using standard best practices of the Boeing Production System, incorporating the nine tactics of Lean and proven processes that fit with Poseidon’s build requirements. This is an opportunity to bring everything together so we can leverage efficiencies and gains we’ve already achieved on our 737 final assembly lines. One of the most significant new 737 Lean process improvements we’re trying is the use of what we call the ‘Alaska tool,’ which streamlines the flow of the airplane as

it moves between final assembly positions by reducing the need for movable scaffolding. Our team is always on the hunt for opportunities to do the job better, faster and safer, and so we’re looking to make more Lean improvements. That’s how we plan to continue providing a best-value product for Boeing and our U.S. Navy customer.”

‘This changes the way we’ll do derivative airplanes’

Tony Parasida, Integrated Defense Systems vice president, Airborne Antisubmarine Warfare and Intelligence, Surveillance and Reconnaissance Systems

Tony Parasida (above, left) leads the IDS division of ASW & ISR Systems, which counts the P-8A Poseidon among its programs. Because of the mission of the P-8A Poseidon, the aircraft requires few observer windows—a striking fact apparent from inside the fuselage where, on March 31, quality control inspectors began work after taking delivery from Spirit AeroSystems.

“For me, it’s important to look back on why Boeing was awarded the P-8A Poseidon contract by the U.S. Navy. The award to Boeing and our industry partners was made because our customer received our commitment that we would deliver an aircraft using a different business model. By working together as one Boeing team, we’re fundamentally changing the way this aircraft is planned, designed and built. As a result, we can provide tremendous savings to the U.S. Navy and taxpayers by eliminating unnecessary rework, cost and schedule flow times and improving quality for every aircraft we deliver. It’s unbelievably significant, as this changes the way we’ll do derivative airplanes forever.”



DEBORAH DUSTMAN PHOTO

‘Getting it right from the get-go’

Steve Cobb, P-8A Quality Inspector, Commercial Airplanes

Steve Cobb started with Boeing as a 747 mechanic in 1979, but the P-8A Poseidon is his first start-up airplane program. Cobb more recently volunteered to move from Final Assembly to serve as a Conformity Coordinator on the P-8A program. His mission is to help ensure Renton Engineering’s Integrated Product Teams create designs so that parts go together easier and faster with first-pass quality.

“My job is to catch ‘produceability’ issues early. The P-8A program is trying to avoid habits of the old days, when the tendency was to throw issues ‘over the fence’ to be fixed later. Now, I ask Engineering three things: ‘Can I understand the drawing? If I build the part to specification, will it perform as intended? Can I easily inspect the part after installation?’ Being side-by-side with Engineering allows me to suggest ways to simplify part designs so they can fix issues before they release drawings. With the 400-plus entries I’ve made so far, we’ve eliminated drawing errors on parts and installations that affect P-8A electrical, plumbing, interiors and other systems across our Wings, Systems & Installation and Final Assembly areas in Renton. I hope to see this role duplicated on other airplanes, because I see it as a value-added way of getting it right from the get-go.”

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‘Export compliance affects everyone’

Tracie Wilds, P-8A Program Contracts Manager, Commercial Airplanes

Tracie Wilds oversees a team of employees who manage complex contract details for the P-8A program’s integrated work statement shared by BCA and IDS.

“Boeing as an enterprise has invested nearly four years developing, implementing, training and communicating about our export control plans to maintain compliance with the International Traffic in Arms Regulations. Export compliance affects everyone, and hundreds of processes used to plan, design and build a military aircraft in-line within Boeing’s commercial production system. The P-8A Contracts organization manages a large volume of working-together issues and processes across Boeing and our supply chain. Like everyone else, we’re challenged and committed to do our jobs well and find ways to comply effectively and productively with export controls that enter the contracts arena.”



DEBORAH DUSTMAN PHOTO



ALAN MARTS PHOTO

‘Boeing Renton’s legacy of performance is growing’

Helene Michael, vice president, 737 Manufacturing, Commercial Airplanes

As the leader of 737 Manufacturing on the Boeing Renton site, Helene Michael (right, with engineer Hyungsuk Kim) is excited to open the program’s third final assembly line with the start of P-8A Poseidon production.

“What a tremendous job people have done to get to this point! I speak on behalf of the thousands of employees past and present who take great pride in the proven performance of the Next-Generation 737. As we open Final Assembly Line 3, the new home of the P-8A Poseidon, Boeing Renton’s legacy of performance is growing. Our employees can enjoy a closer connection with the airplanes we provide to the men and women in military service. And we can share the honor of helping deliver a military derivative of the best-selling airplane in the world.”

P-8A status update

The P-8A Poseidon is designed to provide the U.S. Navy with the newest and most advanced capabilities in antisubmarine warfare; antisurface warfare; intelligence, surveillance and reconnaissance. A military derivative of the Next-Generation 737-800, the P-8A will replace the Navy’s fleet of P-3C Orions.

Under the system development and demonstration contract for the P-8A that the Navy issued in 2004, Boeing will build five test vehicles: three

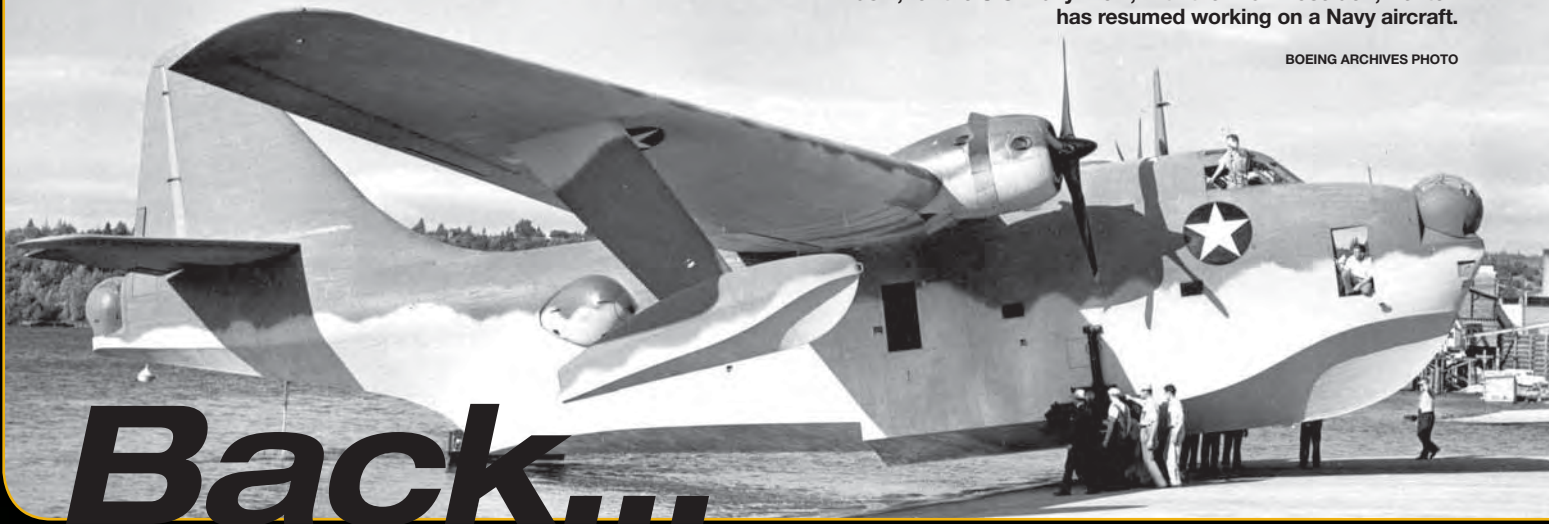
flight-test and two ground-test aircraft. The first flight-test aircraft now is in final assembly at the Boeing factory in Renton, Wash. Last month, P-8A teammate Spirit AeroSystems began production of the fuselage for the first ground-test airframe.

The first flight-test aircraft will be delivered to the U.S. Navy in 2009, with initial operational capability planned for 2013. Flight testing will take place at Naval Air Station Patuxent River, Md. The Navy plans to purchase 108 production P-8As.

—Ellen LeMond

The Sea Ranger aircraft was built at the Boeing site in Renton, Wash., for the U.S. Navy. Now, with the P-8A Poseidon, Renton has resumed working on a Navy aircraft.

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Back...

to the future

Renton returns to roots building Navy aircraft

The P-8A Poseidon, a military derivative of the Boeing 737-800 that will be used by the U.S. Navy, is being built in the heart of Boeing Commercial Airplanes' production system in Renton, Wash. In a twist that's both ironic and natural, the first mission of the Renton site was to build aircraft for the Navy.

In 1941, the United States needed a location to build the XPBB-1 Sea Ranger, an experimental flying boat that would serve as a long-range flying boat, bomber and patrol airplane. The Boeing XPBB-1 Sea Ranger, or the Model 344, was the largest twin-engine airplane built at the time of its first flight in 1942. It used a wing similar to the four-engine B-29 bomber and incorporated aerodynamic features of the Boeing Model 314 Clipper.

The Navy ordered 57 Sea Rangers to be manufactured at a new plant on 95 acres in Renton, on the south shore of Lake Washington. The waterfront site provided natural protection from prevailing winds, so it was easier to launch seaplanes directly from the plant. The Sea Rangers were designed for a "boosted takeoff" by being catapulted from huge barges. Although the normal range of the aircraft was 4,245 miles (6,832 kilometers), designers believed this distance could double if fuel was saved by the catapulted takeoff.

However, before the first Sea Ranger was finished, it was surrounded by B-29 bombers: In mid-1942, the U.S. military changed its strategy and favored land-based bombers. Only one Sea Ranger

was built, and the aircraft was nicknamed the "Lone Ranger." The Boeing 25-year tradition of building seaplanes ended when the Lone Ranger flew out of Renton for the last time on Oct. 25, 1943, heading for the Navy base in San Diego. This one-of-a-kind seaplane served the Navy in a variety of ways for several years before it was placed in storage at the Norfolk Naval Air Station in Virginia.

The Renton plant was traded to the Army for North American B-25's (PBJ-1s in Navy service) that were built at the NAA plant in Kansas City. The Kansas City facility was slated to produce B-29s, but Renton was seen as a better choice. So the Navy agreed to give up Renton for the B-25s it wanted from Kansas City. After World War II, the Renton plant eventually became a manufacturing facility for Boeing commercial jet transports.

Now, some 67 years from its beginning as a military aircraft assembly site, Boeing Renton connects with its past by building a military derivative based on a commercial platform—the U.S. Navy's newest marine patrol and reconnaissance aircraft, the P-8A Poseidon.

For more about the history of the Renton site, visit www.boeing.com/commercial/facilities/rentonsite.html on the World Wide Web. For more about the Sea Ranger, visit www.boeing.com/history/boeing/xpbb1.html.

Renton and defense

Here's a list of the military aircraft built at the Boeing site in Renton, Wash., between the XPBB-1 and the P-8A Poseidon.

- B-29 Superfortress
- TB-50H
- KC-97 Stratofreighter
- KC-135 Stratotanker
- E-3 AWACS
- VC-137
- T-43A
- E-6
- C-32
- C-40