

That's the ticket!

How an FAA Designee helps ensure that Boeing delivers on its promises

Kathy Landino, an FAA Designee, begins an inspection during a night shift. FAA Designees support Boeing manufacturing around the clock with three shifts. Every Boeing jetliner needs an Airworthiness Certificate before it's delivered to a customer.

MARIAN LOCKHART PHOTO

By BEV HOLLAND

When Kathy Landino joined Boeing Commercial Airplanes in July 1977, she had no idea that 30 years later her name would be on the airworthiness certificates for a good portion of Boeing 737 airplanes flying today. An average of two planes a week receive her signed certificate above the main entrance door, signifying to the flying public that the plane is in condition for safe operation.

After beginning work in Boeing's receiving warehouse, Landino went on to

hold a number of positions at BCA, including final assembly inspector and customer quality support representative. Today she's one of eight authorized individuals at the Boeing Delivery Center in Seattle who perform U.S. Federal Aviation Administration conformity inspections and issue airworthiness approvals for parts and aircraft. Issuing FAA Certificates of Airworthiness is a process referred to as "ticketing." After ticketing the airplane, Landino files her paperwork with the FAA while Field Operations personnel move the airplane into position for its new owners, Boeing's customers.

The efforts of Landino and her fellow FAA airworthiness designees play a major role in ensuring that Boeing delivers on the promises it makes to its customers. These designees are authorized to conduct FAA conformity inspections—meaning that they're empowered to confirm the airworthiness of parts and aircraft after reviewing all final documents that specify how an airplane was designed, planned, built and inspected.

"Everything begins and ends with the customer," said Paul Wolf, senior manager for FAA Designee Administration who's responsible for Landino and more than 200



other FAA Designees globally. “The cash register doesn’t ring until an aircraft is issued an original FAA Certificate of Airworthiness, either by the FAA or one of our designees acting on behalf of the FAA.”

CERTIFICATE REQUIRED

When Boeing has demonstrated to the FAA that a new aircraft design meets the standards for airworthiness certification, the FAA issues a type design approval, known as a Type Certificate. A Production Certificate (PC) is issued to Boeing after it has proved to the FAA that it can reproduce an aircraft in conformance with its type de-

sign, in compliance with the Quality Management System. The Production Certificate number the FAA assigned to Boeing is PC700; this number also can be found on the aircraft data plate, signifying which FAA approval covers its manufacture.

In every case, an original Certificate of Airworthiness is required before an aircraft is delivered to a customer and the customer operates it in commercial service. The process at Boeing is extensive, involving thousands of employees and suppliers who add their expertise to the product. In fact, it could be said that all BCA employees are responsible for airplane quality and safety.

The 787 Dreamliner is currently going through both Type and Production Certification efforts, leading to airworthiness certification and delivery.

Wolf noted that type-design certification is the cornerstone of the process.

“Compliance and conformity go hand-in-hand,” he said. “Everything about the plane’s design, along with production’s conformance to that design, means the plane will be in condition for safe operation. Every FAA Designee has to have complete trust in the production and quality management systems that go into each plane in order to issue an Airworthiness Certificate. All FAA Designees essentially perform the duties on behalf of the FAA within The Boeing Company.”

INSPECTIONS ARE INTEGRAL

Part of a designee’s job involves inspecting airplane components. “The inspection process is one element of a continuous effort by Boeing, the FAA, and its designees to ensure quality and safety,” Wolf said. “The FAA and its designees are a vital part of the checks-and-balances system that ensures a safe air transport system.”

Landino is familiar with parts inspection. She spent four years as an inspector in the Materials Review Segregation Area and five years as an inspector on the 727 and 737 production lines.

Long before a part or system enters production, it undergoes a series of lab tests and FAA conformity inspections. Once prototype structures have been built, all major components complete rigorous stress and endurance tests that go way beyond conditions that would be encountered during the service life of the airplane. For a new-model aircraft, such as the 787, this also involves many months in Flight Test where all systems are tested and the airplane is operated to the extremes in order to demonstrate that it complies with the requirements.

Those initial tests assure that the design and processes used to build each plane are sound and satisfy the compliance requirements for aircraft-certification eligibility. This also establishes the process foundation for aircraft to be built in exactly the same way—which enables the ability to obtain a Production Certificate.

“My colleagues and I perform final inspections for the FAA, but production workers on the line have to make sure that they build quality and safety into each plane every day,” Landino said.

WALKING THE PLANE

A critical part of Landino’s responsibilities is the “ticket walk” to certify new airplanes just off the production line.

Her first step is to review all the paperwork from design and production, including flight manuals, engine manuals, lab test results—and even “squawks” (flight discrepancies documented by a flight crew) and reports from test pilots after they fly the plane. “Everything is kept in a log where any one of the designees can refer to it,” Landino said. Her signature is in the log book of each plane she inspects.

Once she deems all the paperwork satisfactory, Landino moves to the next step. Donning her canary yellow safety vest, Landino walks out to the flight line at Boeing Field in Seattle, where the new planes are sitting on the tarmac. She literally walks around the plane, inspecting everything from wheel wells to emergency lights. Inside she checks the emergency equipment and safety features, such as emergency floor lighting.

If everything looks good, she’ll sign the Airworthiness Certificate and slide it into a plastic holder over the front cabin door (in a Boeing 737). The inspection process takes anywhere from 30 minutes to two hours—pretty short compared to the years required for a new type design and months to build millions of parts, test and assemble them into a Boeing airplane.

All along, FAA personnel and designees are reviewing documentation and inspecting production lines, making sure every part conforms to the certificated design.

And it all circles back to the customer. “Compliance to the processes that Boeing has documented to safely design and build aircraft and parts is what enables us to obtain Certificates of Airworthiness—and deliver what we committed to our customers,” Wolf said. ■

beverly.j.holland@boeing.com