

# It's coming together

First 787 moves down the line at new North Charleston plant *By Eric Fetters-Walp and Rob Gross*

On the Boeing South Carolina final assembly production floor, the shiny white 787 fuselage with its newly joined wings marks the beginning of Boeing's newest commercial airplane assembly line.

After fabricating, assembling and integrating 787 Dreamliner midbody and aft-body fuselage sections since the program's start, Boeing's site in North Charleston has started final assembly on its first complete airplane.

The facility is just the third in the world where twin-aisle commercial jetliners are assembled and delivered.

"It's starting to look like an airplane," said Iris Malin, a mechanical technician working at the line's "Position 0," where all the major pieces of the 787 are

staged before they are joined together. "Every day now, you come in and see something new on it."

The South Carolina employees have good reason for excitement and pride. It took less than two years for the site's Final Assembly building to be built and readied to assemble the world's most-advanced jetliner. Jeff Kerby, team lead on the production line's Position 1 wing join, said the building is near-perfect for its purpose.

"Our tooling is state-of-the-art, along with the size and scope of the 1.2-million-square-foot (112,000-square-meter) building. It was built with everything and everyone in mind, both the customers and employees," Kerby

said while on the mezzanine overlooking the factory floor.

The balconies and adjoining office areas on either side of the factory floor are designed to offer open views of the airplanes being assembled. Large windows on the factory doors let in natural light in the often-sunny location. Lessons learned from decades of Commercial Airplanes operations in the Puget Sound area and best practices from across the Boeing enterprise have been integrated into this green-field site.

"We've drawn on the best practices from across the enterprise, both in Commercial Airplanes and Boeing Defense, Space & Security, to stand up Final Assembly operations here," said

Marco Cavazzoni, Boeing South Carolina vice president and general manager of Final Assembly & Delivery.

He noted that Lean+ and other initiatives were part of this "best of Boeing" approach.

The start of final assembly on the first South Carolina-built 787 began over the summer, but months of training and preparation came first.

In late June, the airplane's first major structural component—the horizontal stabilizer—arrived via Dreamlifter, the

**PHOTO:** The first completed 787 fuselage and wing-to-body integration is shown at Position 1 inside the Final Assembly facility in North Charleston, S.C. BOB FERGUSON/BOEING





modified 747 freighter that is needed to transport large sections of the 787. Less than two weeks later, the first vertical fin and first set of 787 wings arrived, followed shortly thereafter by the first Section 41 (the nose and flight deck) from Spirit Aerosystems in Wichita.

August marked the most poignant and celebrated component arrivals, as the first midbody and aft-body sections were delivered from the Mid Body and Aft Body operations buildings across the street, accompanied by the men and women responsible for fabricating and assembling those fuselage sections. Those deliveries were filled with emotion for employees as the Final Assembly

factory rang with music, cheers, laughter and even some tears of joy.

Despite the great strides made to date, expectations are high and there are many challenges to meet between now and the day when the first 787 customer takes delivery in South Carolina.

"We have been able to attract, hire and further train some of the best people in the industry," said Jim Davis, director of Final Assembly operations. "Even with our significant investment in many months of training, this is our first airplane and we are coming down the improvement curve. Aggressive improvement is expected of us, and something we expect of ourselves."

Jack Jones, Boeing South Carolina's vice president and general manager, added that the customers who have visited the site like what they've seen.

"The customer representatives we've hosted have commented favorably on our business plan, our commitment to safety, quality and FOD (foreign object debris) control, and the amount of progress we've made in a relatively short time," Jones said. "I think what really leaps out at them the most is the enthusiasm, professionalism and pride of our workforce. Our people are great ambassadors for Boeing."

Boeing South Carolina Final Assembly will assemble and deliver three 787 jetliners a month at full production rate, with

the first Dreamliner fully assembled there scheduled to roll out in 2012. That will be an overwhelming moment for the site, Kerby said.

"You're going to see some big boys cry," he said. "It will bring a tear to the eye." ■

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**PHOTOS: (Below)** Teammates take in the view of the expansive Final Assembly production line at North Charleston, S.C. **(Inset)** The vertical fin and rudder are attached to the aft fuselage. BOB FERGUSON/BOEING



With 1.2 million square feet (112,000 square meters) of usable space, the Final Assembly building's footprint covers an area equal to 10½ U.S. football fields. The building boasts the largest open distance between support columns found in any Boeing factory: 464 feet (141.4 meters).

**PHOTOS: (Below)** Production crews meet with their lead to go over the day's work. Safety, quality, foreign object debris and tool control are stressed as part of teams' daily work routines. **(Insets)** From left, business operations, shipside support and state-of-the-art training facilities are all convenient to the production floor. BOB FERGUSON/BOEING



The Boeing South Carolina site in North Charleston now employs more than 5,000 people. That includes employees in Final Assembly, Aft Body and Mid Body Operations, the Delivery Center and other support functions.

**PHOTOS: (Below)** Boeing mechanics Leinyuy Laisin, left, and Keenan Nale work on the aft fuselage where the vertical fin is joined during final assembly. **(Insets)** From left: Louis Laughon and Arnie Gilliard; Crystal Matthews; and Nicholas Menchaca and Kevin Devaney. BOB FERGUSON/BOEING



The HUB, a new Employee Service Center, is home to a full-service cafeteria and a Boeing Store, and it features amenities including a health clinic and a place where employees can purchase sundries.

**PHOTOS: (Below)** Boeing South Carolina's cafeteria is the visual centerpiece of the HUB, the site's Employee Service Center. The HUB's many services help provide work-life balance for teammates. **(Insets)** From left, the Boeing Store at Boeing South Carolina and outdoor and indoor seating at the on-site cafeteria. BOB FERGUSON/BOEING; ALAN MARTS/BOEING



Boeing South Carolina will assemble and deliver three 787 jetliners a month at full production rate, with the site's first completed Dreamliner scheduled to roll out in 2012.

**PHOTOS: (Below)** The first 787 to be assembled at the Boeing South Carolina Final Assembly facility. **(Insets)** From left: James McLaughlin and David Lam; Duriel Oree and Buton Tran; and Noli Sanchez and Majid Soltani. BOB FERGUSON/BOEING



The South Carolina Delivery Center, which opened in November, features two passenger boarding bridges to provide covered airplane access for customers. They are the first passenger bridges to be used at a Boeing delivery center.

**PHOTOS: (Below)** Test airplane ZA002 spent nearly two months at Boeing South Carolina's new Delivery Center this fall, allowing the Delivery Operations team to practice for the site's first delivery in 2012. **(Insets)** The Delivery Center recalls aspects of Boeing facilities in Puget Sound, with modern architectural touches and hints of South Carolina Lowcountry culture. Center: Kelsey Dunn. ALAN MARTS/BOEING

