Boeing Composite Manufacturing Center Begins Fabricating 787 Vertical Fin

Fabrication of the first composite stringers for the 787 vertical fin, Boeing's all new commercial airplane, began Sept. 13 at the Composite Manufacturing Center (CMC) at Boeing Frederickson in Pierce County, Wash. The vertical fin is the largest major Boeing 787 Dreamliner assembly built by an internal Boeing supplier. CMC plans to deliver its first fully functional vertical fin to 787 Final Assembly in Everett, Wash., in Spring 2007.

To accommodate the new work, the Boeing Fabrication manufacturing business unit is streamlining its factory, implementing a pulsed moving line for the 787 vertical fin. This will allow both the 787 vertical fin and 777 empennage to be built in the building's original footprint.

Boeing's Composite Manufacturing Center is responsible for designing the entire structure, including composite and metal subcomponents; manufacturing and assembling the vertical fin's main box, or center section; working together on supplier selection and co-management; integration of sub-tier-supplied components; functionally testing and certifying all structures and systems, such as hydraulics, electronic actuators, signal lights and wires; delivering on-time; and providing life-cycle support.

The vertical fin assembly and horizontal stabilizer make up the empennage, or tail structure, of an airplane. The vertical fin assembly is an elliptical airfoil comprised of the leading edge, center box and rudder which, together, function as flight control surfaces that maintain yaw, or side-to-side horizontal movement of an airplane in flight.

Fabrication start of the 787 vertical fin began with the push of a button by Boeing CMC employee, Don Hall, flat tape laminating machine operator. The process involves laying down composite tape to build up a "charge," with the part then formed on a tool and cured in a large autoclave prior to assembly.

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