BUSINESS

Larger Version of Boeing Dreamliner Makes Maiden Flight

By JON OSTROWER

Updated Sept. 17, 2013 7:34 p.m. ET

Boeing Co. unveiled a new version of its 787 Dreamliner that the company hopes will redeem a jet program beset by embarrassing delays and technical challenges.

The 787-9 that made its first flight on Tuesday from Boeing's Everett, Wash., factory looks a lot like the 787-8, the version that has been flying passengers since late 2011. The "Dash Nine," as the new plane is known within Boeing, is 20 feet longer than its predecessor, can fly a few hundred miles further without additional fuel, and—with a capacity of 270 to 290 seats—can hold about 40 more passengers.

But underneath the new plane's carbon-fiber skin are big changes in how Boeing designs and builds the aircraft—including bringing more of the process back in house after outsourcing it. The changes are intended to ensure that the new plane meets customer expectations, with fewer of the design and production missteps that have plagued the cutting-edge 787.

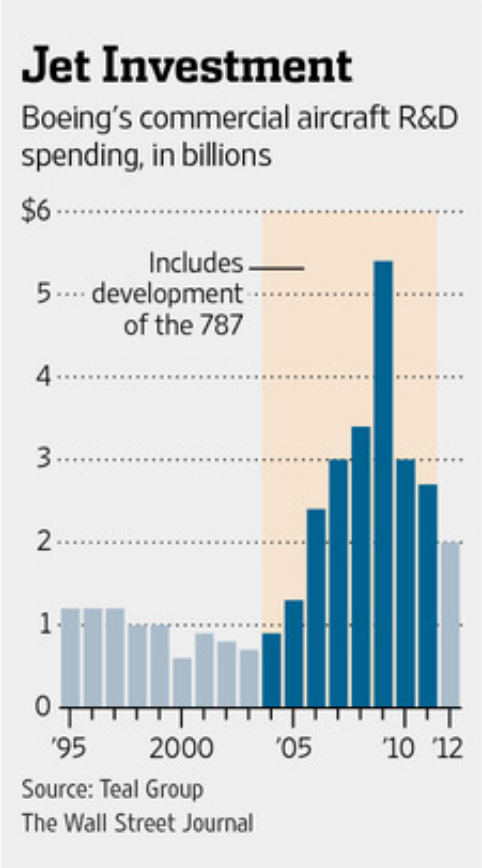
Boeing hopes the extended 787-9, which made its maiden voyage Tuesday, will redeem a program troubled by delays and glitches. *Associated Press*

"We're beginning to lay the seeds of a track record that hopefully will translate into confidence with our customers," said Scott Fancher, Boeing's vice president of airplane development. He ran the 787 program from December 2008 to early last year and helped overhaul how Boeing designs its jets.

The Dash Nine builds on Boeing's experience with the smaller 787-8, which was grounded by regulators world-wide for 3½ months after batteries burned on two aircraft in January. The bulk of the Dash Nine's changes, though, were set in motion before those incidents, and are focused not on safety but on efficiency—for Boeing and its customers.

The original 787 was hailed for its technological advances. It boasts the first fuselage and wings on a commercial jetliner made mostly of carbon composites, and its advanced electrical system replaces many functions previously performed by mechanical and pneumatic systems.

Boeing also adopted a new approach to making the plane, outsourcing much of the design and manufacturing to suppliers in an effort to slash its share of the investment cost. Boeing engineers designed only 40% of the parts for the original Dreamliner, Mr. Fancher said.



The approach brought problems. Boeing's suppliers, in turn, outsourced to subcontractors, which caused design changes to pile up and feuds between Boeing and its suppliers.

Originally scheduled for delivery in May 2008, the 787-8 didn't make its commercial debut until more than three years later, a costly delay. Barclays Capital estimates Boeing that spent more than $12 billion to develop the original 787, not including factory equipment—more than double what analysts say was Boeing's original estimate of $5 billion. Barclays says the 787-9 cost an additional $3.5 billion to $4 billion. Boeing doesn't disclose its development spending for the 787.

For the Dash Nine, Boeing reversed course, designing 60% to 70% of plane internally, Mr. Fancher said. That's comparable with its previous all-new jet, the long-range 777, which was first delivered in 1995.

Boeing also has started manufacturing more of the plane itself, hoping that will help the company increase total Dreamliner output to 10 planes a month, its fastest pace ever for a twin-aisle jet. Boeing builds seven a month today and will soon move to the record rate.

For the first Dreamliners, Boeing manufactured 25% to 30% of each plane in house. That has increased to 35% for the line as a whole and the share is even greater for the 787-9. Its horizontal tail, for example, is now designed and manufactured at a Boeing facility in Salt Lake City, instead of by an Italian supplier that has struggled with quality control.

To cut weight and assembly time, Boeing has redesigned some multiple-piece components into single pieces, including parts of the windshield and body frames.There are "hundreds, maybe thousands" of small and large changes from nose to tail to lighten the aircraft and make it easier, quicker and less expensive to assemble, Mr. Fancher said.

The Dash Nine's original due date of 2010 was delayed by the broader problems that bedeviled the first version. But the current plan for initial delivery next year has remained relatively stable since late-2011. Mr. Fancher said assembly and engineering have remained on time.

The Dash Nine is Boeing's "chance to make things right, and live up to the original promise of the program," said Richard Aboulafia, a vice president at the Teal Group aerospace consulting firm.

Customers have high expectations. The new version accounts for 41% of Boeing's 936 Dreamliner orders. And orders for the Dash Nine and the 787-10, which is slated for 2018 delivery, have accounted for three-quarters of new 787s sold since 2009. The list price of the Dash Nine is $249.5 million, before the discounts that are typical in the industry, compared with $211.8 million for the 787-8.

Boeing currently sells each Dreamliner for less than it costs to manufacture. But the company says the Dreamliner program already is profitable, based on accounting standards that allow it to average estimated costs over 1,100 deliveries expected to stretch to the end of the decade. That makes it crucial for Boeing to bring costs down with revised supplier agreements and factory changes, and to sell jets that command higher prices. After discounts, Barclays estimates Boeing will be able to sell the 787-9 on average for about $10 million to $12 million more than the smaller model, or about $110 to $112 million.

Boeing hasn't disclosed production plans for the Dash Nine. A person familiar with its planning says the Dash Nine quickly will dominate production, accounting for a quarter of the 200th to 300th Dreamliners the company builds, half of the next 50 planes and 70% of the 50 planes after that. Mr. Fancher declined to comment on the pace of the Dash Nine's introduction.

Boeing has continued to develop what it can do with composite technology and is still learning as it moves on from the hard lessons of the 787-8. The company this year told customers—after manufacturing had begun—that it would have to reinforce part of the structure that connects wings to the body after analysis showed that the area needed to be strengthened.

Boeing says the reinforcement caused a "minor impact" on the schedule during assembly but didn't affect Tuesday's flight or the Dash Nine's scheduled first delivery to Air New Zealand Ltd. in the middle of next year.