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Boom's 'superfactory' is here. Now it just needs to be filled with workers.

Richard Craver - Jun 21, 2024

The Boom Supersonic Overture Superfactory at Piedmont Triad International in Greensboro on Monday. WOODY MARSHALL, NEWS & RECORD

Boom Supersonic remains five to six years away from the potential takeoff of supersonic passenger flight at twice the speed of today's fastest commercial aircraft.

Even though there are several more thresholds to reach, the June 17 completion of construction at the $500 million "superfactory" at Piedmont Triad International Airport represents a key symbolic milestone for one of the highest-risk, highest-reward projects in Triad and U.S. manufacturing history.

The 179,000-square-foot facility represents the most tangible, hands-on example of how far Boom is ahead of its eight global competitors in their common goal of resuming supersonic flight following the grounding of the Concorde in 2003.

The manufacturer has pledged to create at least 1,781 jobs at full production. The facility would contain 150,000 square feet for the production floor, 24,000 square feet for the office space and 5,000 square feet for the receiving area.

The ceremony "was truly a watershed moment for Boom," said John H. Boyd, a national site-selection expert based in Boca Raton, Fla.

"Our site-selection firm has been active in the aerospace sector over the years with clients Safran and Pratt & Whitney — also with new operations in North Carolina — and I've been following Boom closely.

"Commercial supersonic flight is just around the corner, and what will be coming off the assembly lines in Greensboro will take us there."

Overture is expected to be the first large commercial aircraft to be net-zero carbon from Day One, running on 100% sustainable aviation fuel.

The aircraft is being designed to carry 65 to 80 passengers at Mach 1.7 over water with a range of 4,250 nautical miles.

At Mach 1, the prototype can fly at the speed of sound, which is 761 miles per hour. Each one-tenth beyond Mach 1 represents a 10% increase beyond the speed of sound, so Mach 1.1 is 10% faster, Mach 1.2 is 20% faster and Mach 1.3 is 30% faster.

The initial Boom projection is producing up to 33 Overture aircraft annually at a projected price tag of $200 million.

In keeping with Boom's ambitious nature since its January 2022 commitment to the PTI facility, chief executive and founder Blake Scholl said during the ribbon-cutting ceremony the manufacturer plans to eventually double annual production that would require another plant that could add another 600 jobs.

The "baseline" plan is to build one more just like it here, Scholl said.

"So, we'll double up production, and we've got designs on the third one as well, that would fit right here on the same site."

Overture timeline

According to Boom executive Kathy Savitt, the Overture timeline at PTI remains: 2024, equipment installation; 2025, equipment assembly; 2026, first Overture rollout; 2027, first test flight; 2029, Federal Aviation Administration certification; and 2029: first passenger flights.

In partnership with tooling supplier Advanced Integration Technology, Boom will soon begin procuring and installing tooling, initially with an advanced test cell unit that will be used to develop manufacturing processes, optimize the flow of the assembly line, and prepare staff for Overture production.

Boom said it will take between 6 and 12 months to install the test cell.

There also will be a delivery center on the site where American Airlines, Japan Airlines and United Airlines will receive their aircraft. Boom's commercial order book stands at a combined 130 aircraft with those airlines.

In March, the XB-1 prototype of Overture made its maiden flight in March at Mojave Air & Space Port in southern California.

Boom said there could be between 10 to 20 additional XB-1 flights before reaching supersonic speeds, likely later this year. The FAA already has approved reaching supersonic speed.

Scholl expressed confidence that Boom could achieve FAA certification within a 14- to 18-month window, which he acknowledged would be on the accelerated end for the agency.

"Construction represents a major milestone toward ensuring the United States' continued leadership in aerospace manufacturing," Scholl said,

"Supersonic flight will transform air travel, and Overture provides a much-needed innovative alternative for airlines across the globe."

The biggest hurdle facing Boom "is always going to be getting the four jet engines that will power the supersonic jet through testing and FAA certification," said Keith Debbage, professor emeritus for Department of Geography, Environment and Sustainability at UNC Greensboro.

Overture will be powered by four wing-mounted engines that also enable the airliner to cruise just under Mach 1 over land. At those speeds, flying from Miami to London in just under five hours and Los Angeles to Honolulu in three hours are among the possibilities, Boom has said.

Additionally, Boom said Overture's landing gear is compatible with international airport runways and taxiways and is designed for takeoff and landing on over 600 routes around the world.

Economic impact

Boom touts studies from North Carolina-based economists that the manufacturer will grow the state's economy by at least $32.3 billion over 20 years,

As Boom prepares to bring in assembly production equipment while advancing off-site testing and flights, a looming local question is when the first full wave of hiring will commence, and when suppliers will come and where will they locate.

Scholl said Boom's first major wave of hiring will commence closer to when production equipment has become operational. He recommended perspective applicants keep an eye on the job postings at https://boomsupersonic.com/careers.

Scholl said the single biggest thing that attracted them to Greensboro and the PTI site was a place where the company could find the "talent at scale" to pursue supersonic airliner manufacture.

"This is where people already know how to build and maintain carbon fiber composite airplanes," Scholl said.

Boom will face a stiff challenge in standing out in an ever-expanding number of advanced manufacturers in the Triad, foremost from Toyota Battery Manufacturing N.C.'s pledge to create 5,100 jobs at its nearly $14 billion electric-vehicle battery plant in Liberty.

First battery production is set for early 2025. It will be increased in a phased approach, with line launches planned through 2030 to reach full production at 7 million square feet.

Economists say there are likely to be an additional hundreds, if not thousands, of supplier jobs linked to the Toyota plant, if not on the megasite campus.

"Toyota obviously has great confidence in its ability to recruit workers for the plant, but how challenging will it be for it to become the preferred advanced manufacturing employer for the Triad?" Boyd asked.

Other advanced manufacturers looking to launch or fill their workforces include Avgol Americas Inc., Deere & Co., Egger Wood Products, Honda and Honda Aircraft Co., Marshall Aerospace USA, Nucor Corp., ProKidney Corp., Renfro Corp., Siemens Mobility North America, Tex-Tech Industries, Vecoplan LLC and Ziehl-Abegg Inc.

"Downstream economic benefits (from Boom) are coming next in the form of a range of white- and blue-collar suppliers," Boyd said. "Sites within the airport, in the Triad and throughout the state are all in play."

Boyd said the mix of high-paying suppliers will be global in scope, coming in from Europe, Canada, Brazil, as well as from U.S. aerospace hubs such as southern California, the Bay Area and northern Virginia.

Debbage said not to expect Boom suppliers and subcontractors to arrive at PTI or the Triad "anytime soon."

“Instead, look for more jet engine testing in the Mojave Desert and more activity focused on raising the capital — likely upwards of $6 billion to $8 billion — to fund additional work.”

Gov. Roy Cooper has expressed confidence that the Triad and North Carolina “has the skilled workforce, infrastructure and perfect location to help Boom revolutionize air travel.”

Senate leader Phil Berger, R-Rockingham, said Boom will add to the Triad’s reputation “as an economic powerhouse, helping solidify North Carolina’s place as the top state for business.”

“Boom’s Overture Superfactory, which will produce a paradigm-changing airliner, showcases the new and innovative projects that are bringing jobs and investment here.”

Competitors

According to Tracxm.com, only Atlanta-based Hermeus Corp. — at $176 million in funding — is in the ballpark to Boom’s more than $700 million from investors, potential customers and other sources.

Boom has a goal of attracting up to $8 billion in the long term.

Boom has been made eligible for at least $116 million in performance-based local and state incentives.

In November, Boom disclosed Overture is being financed in part by Neom Investment Fund — the strategic investment arm of Neom.

Aviation Week reported that Neom is part of Saudi Arabia’s Vision 2030 project that is being developed to diversify the country’s economy away from oil. Under Neom, Saudi planners are building a series of huge resorts, industrial complexes and airports on the country’s northwest coast.

Neom Airlines is scheduled to launch operations with traditional commercial airliners by the end of 2024, then add Boom aircraft when it gains regulatory approval for flight.

Other competitors with funding are Aerion Supersonic at $27.1 million and Exosonic at $4.12 million.

Only Hermeus has joined Boom in establishing a production facility.

According to a March 18 article in The Washington Post, Hermeus is exploring the possibility of a hypersonic commercial passenger jet that would make a commercial aircraft flight between New York and London a 90-minute trip.

However, Hermeus has not conducted a test flight with its prototype supersonic aircraft.

“Boom’s race to supersonic flight is proceeding at a pace that is distinguishing it in the eyes of investors and industry analysts from other players, like the Lockheed/NASA team, Boston-based Spike Aerospace and Hermeus,” Boyd said.

“Don’t discount Boeing long term, but its supersonic program has taken a backseat to other initiatives and other more pressing demands.”

Tony Plath, a retired finance professor at UNC Charlotte, said Boom appears to have several structural advantages over the Concorde, including being a cheaper aircraft to manufacture and being more fuel efficient with a planned sustainable fuel format.

“There is likely a market for rapid transport to distant destinations at the projected $5,000 cost of a ticket,” Plath said in comparison with the average Concorde ticket of $9,000 in 2003, which would be $15,400 in 2024 dollars.

“Supersonic flight remains a risk worth taking, and I’m grateful there’s someone out there willing to take that risk here in North Carolina.” Plath said.