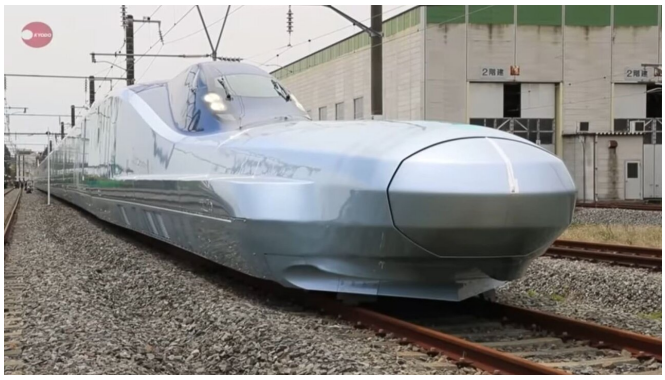
Bullet train champion in Japan will debut in 2030, now being tested

14 May 2019, by Nancy Cohen



Testing for a train capable of 249mph (400 kph) speeds is to happen about twice a week at night. Bloomberg said ALFA-X is the world's fastest bullet train— well, for now, it is holding that title. Japan has also been working on a maglev train.

ALFA-X is short for Advanced Labs for Frontline Activity in rail eXperimentation.

The rail company is East Japan Railway (JR East). This is a 10-car bullet train.

Bloomberg's Reed Stevenson: "Japan is pushing the limits of rail travel as it begins testing the fastest-ever shinkansen bullet train, capable of speeds of as much as 400 kilometers (249 miles) per hour."

According to *The Mainichi*, "Operators will attempt to run the bullet train at its maximum speed of 400 kilometers per hour."

Joe Pinkstone, *Daily Mail*, commented on the train in the bigger picture. "This continues Japan's push into bullet train technology, but magnetic rivals are in operation which surpass it in terms of raw speed." It might be dethroned by the maglev between Tokyo and Nagoya when the latter starts operations in 2027. The magnetically levitated train will run mostly through deep tunnels, at a top speed of 505 kilometers per hour, 314mph.

So, that is in 2027, whereas the bullet train is to be in service in 2030. Wow, that long? Why not sooner?

David Grossman in *Popular Mechanics* had answers. He said that integrating a new train into such a complex system takes time. "The Alfa-X is longer than current trains—51 feet (16 m) versus the current 49 (15 m)—and features a 72-foot long (22 m) nose, which is an experiment to see if it will be quieter when entering tunnels."

JR East considers ALFA-X "as a test platform" to evaluate research and development. According to the company site, this is an "E956 Shinkansen test train."

The Mainichi said ALFA-X was being tested with 16-meter-long and 22-meter-long noses to examine which type will be better at reducing noise.

designboom talked about ALFA-X technical features that included vibration and temperature sensors; air brakes on the roof in addition to conventional brakes; magnetic plates near the rails; and specialist equipment on board to help reduce the impact of earthquake tremors.

The shinkansen refers to a network of high-speed railway lines in Japan.

Grossman in *Popular Mechanics* told readers that the "Japanese shinkansen, or bullet trains, are perhaps the best known regional train system in the world. Often seen as a symbol of Japanese efficiency, the trains have helped shape the modern nature of the country."

Back in December, *The Japan Times* ran an article looking at the test trains. The headline referred to "a nose for speed" for a reason.

"Car No. 1 of the test train, which was shown Wednesday features a 16-meter nose-shaped front. The nose of the trailing No. 10 car is expected to be even longer, at about 22 meters." This month, Bloomberg reported on the car that would mostly be "a sleek nose, measuring 22 meters (72 feet)."

Once it enters operation, JR East plans to operate it at 360 kph (224 mph)—that is, In day-to-day operations, said Megan Guess, *Ars Technica*, "the train would shuttle passengers at 360kph, or roughly 224mph."

Grossman reported that the train will be built by Kawasaki Heavy Industries and Hitachi. "During the tests, the engineers hope to push the Alfa-X to a little past 248 mph (400 km/h). The tests will run twice a week for the next three years."

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