

Japan's maglev train runs test at over 310 mph (w/ Video)

September 2 2013, by Bob Yirka



(Phys.org) —Moving toward its goal of building a high-speed magnetic levitation (maglev) train line between Tokyo and Osaka, Central Japan Railway Co has resumed testing of its L0 (L Zero) train—demonstrating speeds just above 310 miles per hour (500 km per hour). That makes it the longest and fastest maglev train in the world.

Maglev trains are able to travel very fast all while using less energy than conventional trains because they allow the train to ride on a cushion of air—friction from the wheels on the track is eliminated. Most in the

field expect they will require less maintenance costs as well. But what's still not clear is if the lower operating costs will make up for the dramatically greater installation cost. The line between Tokyo and Osaka is expected to cost approximately \$90 billion and it won't be completed until 2045 (an initial line is expected to begin operating between Tokyo and Nagoya in 2027 reducing travel time from 95 to 40 minutes).

In the test, a five car train carrying reporters made its way around a 26.6-mile track in approximately nine minutes. Riders were able to track their speed via overhead video screens. Those onboard reported a smooth, reasonably quiet ride. Those witnessing the test standing near the track, on the other hand, reported feeling a [shockwave](#) and a deafening noise as the train passed. It's that second group that has the train developers worried—before track can be laid, the train must pass environmental impact studies.

The train does have wheels—it rides on them when the train is at low speed—then rises up above the track when it reaches approximately 93 mph. On the test run, the train reached its [peak speed](#) just three miles into the trip, which would suggest riders would feel pushed back into their seats, but those on board reported no such sensation. The test run also marked the resumption of testing after the track was made longer. Also, by bringing reporters aboard for the initial trial, the train's developers expressed their confidence in the train's performance, its suitability as a mode of mass transportation and its safety. Passengers were allowed to move about the rail cars during all parts of the trip. And though much of the trip occurred underground, they also reported that looking out the window when aboveground offered little more than blurs for landscapes near the train, but beautiful imagery of more distant objects as the train sped along.

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