**Planes, Trains and Hyperloops: One of These Could Apparently Get You from L.A. to San Francisco in 30 Minutes**

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All Things D

Tesla's Elon Musk (R) is interviewed by All Things D's Walt Mossberg and Kara Swisher.

[Elon Musk](http://topics.time.com/elon-musk/) didn’t want to talk about Hyperloop technology because he knew it would overshadow [the message he was trying to get out](http://techland.time.com/2013/05/30/tesla-promises-to-add-charging-stations/) about his electric car company, Tesla. But he couldn’t help himself.

“I think probably I’ll be able to talk about the Hyperloop idea in… it’ll be pretty soon,” said Musk. “There’s a Tesla announcement we’ve got next month around June 20th or so. I think at some point after that, it will be a good time to talk about the Hyperloop idea.”

Musk was responding to an audience member’s question ([watch the video here](http://allthingsd.com/20130529/hyperloop-a-really-fun-way-to-travel-from-sf-to-la/)) at the All Things D conference this week, saying, “The basic thought is: Is there a better way to travel quickly from, say, downtown L.A. to downtown [San Francisco](http://topics.time.com/san-francisco/)? That’s better than the high-speed rail that’s being proposed? Because the high-speed rail that’s being proposed would actually be the slowest bullet train in the world and the most expensive per mile in the world.”

“And that something better is the Hyperloop?” asked All Things D’s Walt Mossberg.

“It’s a train? A plane? An automobile? A transporter machine?” added All Things D’s Kara Swisher.

“It’s a cross between a Concorde and a rail gun,” answered Musk. “Actually, I should throw something else in there to make it sound even more bizarre. It’s a cross between a Concorde, a rail gun and an air hockey table. If they had a three-way and had a baby somehow.”

As [Business Insider reports](http://www.businessinsider.com/what-is-elon-musks-hyperloop-2013-5), this newfangled transportation system would apparently be able to shuttle people the 380+ miles between L.A. and San Francisco in 30 minutes. What’s more, it might, as Business Insider surmises, be based on a concept from a physicist’s paper that was released all the way back in 1972.

R.M. Salter, the author of the paper and an employee of the Rand Corporation, called his version of the system very high-speed transit, or VHST, suggesting that it could be used to travel from [New York](http://topics.time.com/new-york/) to L.A. in 21 minutes in an underground tube. “Salter suggested making a few stops across the country because it would be more practical. It would also allow for other tube routes,” says Business Insider’s Jay Yarow.

How would such a system work? Says Yarow:

Salter explained how it could work by saying, “The VHST’s ‘tubecraft’ ride on, and are driven by, electromagnetic waves much as a surfboard rides the ocean’s wave. The EM waves are generated by pulsed, or by oscillating, currents in electrical conductors that form the roadbed structure in the evacuated tube way. Opposing magnetic fields in the vehicle are generated means of a loop superconducting cable carrying on the order of a million amperes of current.”

He says the VHST would be highly efficient. Unlike a plane, “it does not have to squander unrecoverable energy climbing to high altitudes.”

The VHST would accelerate to its maximum speed, then coast for a short while, then decelerate, says Salter. It would use all its kinetic energy to accelerate, and that power would be returned when it decelerates through energy regeneration.

In 1972, the Rand Corporation said it had already examined speeds of 14,000 miles per hour. At that speed, it would take 21 minutes to go from Los Angeles to New York City.

Sounds great. So where’s our VHST? It’s 2013.

“The VHST would have to be underground. Digging the tunnels would be the biggest problem with creating the VHST,” writes Yarow. “It would require political agreement and high costs to dig the actual tunnels. (90% of the cost would be building tunnels.)”

An underground tunnel running from New York to L.A. doesn’t exactly sound cheap. Imagine trying to get Congress to get together on something like this, too.

If Musk’s Hyperloop idea is based roughly on the same technology, it might make for a good proof-of-concept on a smaller scale – especially if money’s already being put aside for a high-speed rail system of some sort. It’ll take some doing, but if Musk and company can somehow get this thing off the ground, it would be an incredible advancement in travel.

One of Yarow’s last lines sums it up well: “Obviously, anything like this is a long shot.” After June 20th, we’ll hopefully find out whether or not it’s a shot worth taking.

Read more: <http://techland.time.com/2013/05/31/trains-planes-and-hyperloops-one-of-these-could-apparently-get-you-from-l-a-to-san-francisco-in-30-minutes/#ixzz2VBGOEqCH>