

# Ports Considering Maglev Trains to Cut Smog

**Officials see magnetic levitation technology as a clean, high-speed way to move goods inland, ease traffic congestion and reduce pollution.**

By Dan Weikel, Los Angeles Times Staff Writer, <dan.weikel@latimes.com>, November 28, 2006

Searching for ways to reduce air pollution and highway congestion, local harbor officials might resort to so-called maglev trains to haul cargo containers to and from the Los Angeles and Long Beach ports — the first freight application of the technology anywhere in the world.

Now under study at Cal State Long Beach are three maglev proposals to shuttle cargo to rail yards in Los Angeles and to inland distribution centers in Victorville and Beaumont.

In the months ahead, the Southern California Association of Governments and the ports of Los Angeles and Long Beach are planning to launch their own feasibility studies of the technology.

Maglev, or magnetic levitation, trains produce no air pollution along their routes and are powered by magnetic fields in guideways that pull them along at speeds up to 300 mph. So far, two systems have been built for commercial passenger service in China and Japan.

Adapted for freight, researchers say, maglev trains could do the work of thousands of trucks and conventional locomotives, cutting harmful emissions in the port area and alleviating congestion on rail and highway corridors that serve the nation's largest harbor complex.

"If we are going to get serious about cleaning up the port, we need to bring electric power into the transportation system. We need to be

emission free if we are going to grow," said S. David Freeman, president of the Los Angeles Harbor Commission. "Maglev is one of several options we are looking at. It has a lot going for it."

The search for new technologies became more imperative on Nov. 20 when the ports of Los Angeles and Long Beach approved a \$2-billion plan to transform the harbor into a clean-air model for seaports worldwide.

To achieve that goal, many proposals are being considered, including alternative rail systems, emissions controls and low-sulfur fuels for trucks, heavy equipment, locomotives and cargo ships.

But cleaning the air and keeping the cargo moving will be a monumental task. By 2030, the ports of Los Angeles and Long Beach are expected to handle the equivalent of 21 million, 40-foot cargo containers annually — triple today's volume.

Truck trips on the Long Beach Freeway are expected to increase from 40,000 a day to more than 90,000 in the next 25 years.

Demand for freight rail service is also expected to more than double, choking the existing track network in Southern California. Congested corridors already are delaying freight trains going into and out of the region.



TESTING: S. David Freeman, president of the Los Angeles Harbor Commission, in hat, strolls past a model maglev train at the General Atomics test track in San Diego. (Don Bartletti / LAT), October 17, 2005

"Just widening roads is not going to cut it," said Sam Gurol, director of maglev systems for

General Atomics in San Diego, which is developing a system for cargo containers.

General Atomics is participating in a study of maglev systems by the Center for the Commercial Deployment of Transportation Technologies at Cal State Long Beach.

Researchers are evaluating a 4.7-mile system between Terminal Island in the Port of Los Angeles and the proposed Southern California International Gateway, a rail terminal to the north. The line would cost about \$575 million to build and \$9.2 million a year to operate.

Also under study is a 20-mile, \$2.4-billion line along the Long Beach Freeway, and a 100-mile network that would connect the port to distribution hubs in Victorville and Beaumont. The estimated cost is about \$8.5 billion.

Capable of traveling 90 mph, the trains would run on elevated guideways built in highway medians or along utility rights of way.

Spurs would extend from the main line to port terminals where heavy equipment would shuttle containers from ships and storage yards to maglev cars.

At their destinations, similar methods would be used to transfer the containers to trucks and trains.

Researchers say maglev freight systems are becoming economically attractive because of the need to reduce air pollution and the high cost of building highways and conventional rail lines.

At roughly \$100 million a mile, the cost of building a maglev system for cargo is approaching that of building a mile of freeway in urban areas.

It is also cheaper than the \$200 million a mile required for maglev passenger trains — an enormous cost that has often been an impediment to commercial projects.

After almost a half century of research in Europe and Asia, Japan and China have built the only two maglev passenger lines in the world.

If the freight system is built, the Cal State Long Beach study indicates that moving containers by maglev would cost considerably less than by trucks or conventional trains.

The estimated savings ranges from 25% to 50%.

“This technology is coming. No doubt about it. The costs are coming down,” said Steven Hinds, program administrator for the Cal State Long Beach research center.

Officials at the Southern California Assn. of Governments, a regional planning agency, say, however, that the Cal State study may have overstated the economic feasibility of the maglev system by underestimating the costs of moving cargo at port terminals and rail yards.

Danny Wu, the manager of SCAG’s goods movement program, said association officials discussed the Cal State Long Beach study about six months ago.

“We felt they did not consider all the complexities of the logistics chain,” Wu said. “They underestimated the costs, which goes to feasibility.”

Gurol said the research team would welcome input from other agencies interested in maglev because some factors could have been overlooked for the study.

“This is a new way of moving shipping containers,” Gurol said. “Even when you go talk to the ports, there are many questions they can’t answer about moving cargo.”

Some of the issues, SCAG officials say, will be addressed in future studies planned by the ports and SCAG, as well as the environmental review for improvements proposed for the Long Beach Freeway.

“We still need to do the assessments,” said Philip Law, manager of SCAG’s transportation corridor program. “What makes maglev attractive are zero emissions and electric power, which gives it an advantage over diesel trucks. But it’s pretty expensive, and how to get containers from ships to the trains needs to be worked out.”

## Proposed maglev routes

Three proposed alignments for a maglev cargo system that would serve the ports of Los Angeles and Long Beach are under study by the Center for the Commercial Deployment of Transportation Technologies at Cal State Long Beach. They range from a 4.7-mile starter line to a 100-mile system that would reach transportation hubs in Victorville and Beaumont.



Source: Center for the Commercial Deployment of Transportation Technologies

Los Angeles Times