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Fast transport by heavy rail

To: Senators Tom Daschle, Trent Lott, Edward Kennedy, and John Kerry, and Representatives Tom Davis, Jennifer Dunn, and Adam Smith.

Honorable Members of the U.S. Congress:

With regard to the question of transportation infrastructure appropriations, it is clear that transportation infrastructure has been neglected to the severe detriment of our national expense ledger. Cash expenses without any compensating ledger entry manifest as wasted time and fuels, air pollution costs, and loss-of-opportunity costs.

I recommend an article, "The Evolution of Transport," which gives a brief review of maglev systems, in *The Industrial Physicist*, April/May 2001, pp. 20-24.

We need to address leading edge construction and system renovation, and make the necessary transportation system appropriations that will enable us to function as a leading industrial and services nation, both domestically and in the export-import trades. We should not advocate a Japanese-style public-works stimulus here, since the failure of that stimulus to revitalize Japan's economy was caused by the failure to delink the administrative bureaucracy from large corporations. Reliance on export-driven profits instead of the development of a consumer market has also contributed to the national malaise. We need to develop and encourage our export-driven trades and manufacture with transportation efficiencies, a slightly weaker dollar compared with other curren-

cies, and better and multilateral trade negotiations that demand slightly more than we have thus far gained in these negotiations.

All these factors need to be coupled with our involvement in south and southwest Asia.

Eric Hands

Team Leader and Senior Delegate

Business Advisory Council (2001)

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Tunnels

I read with great interest your article "The Evolution of Transport." I am very much in agreement with all of your points, including the importance of maglev. However, the reality of maglev's future rests on our ability to economically build and maintain the foundation roadway that is required. Tunnels eliminate some of these foundation problems as well as countless others, while saving the surface environment, but they also offer other possibilities for transportation, as you describe. Air cushion/air levitation technology is well proven by the use of surface-effect vehicles, such as the landing craft/air cushion amphibious vehicles employed by the U.S. Marine Corps.

I have been working for 20 years on tube-enclosed air levitation, a system of moving standard-size containers through underground pipelines. This has been well studied by the U.S. Department of Transportation and at the Southwest Research Institute in San Antonio, Texas.

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Whichever system eventually wins out, I think the use of subterranean corridors is the road to the future of transportation.

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Students

As a senior physics student, I find *The Industrial Physicist* to be a useful and interesting magazine. I think more students should be exposed to TIP to help further their understanding of the industrial physics workplace, since many of us will be entering it soon.

TIP has articles about current and future applications of many modern physics instruments. From these articles, I can gain insight into what physicists in industry do and with what types of instruments they work. Many of the instruments I've read about were new to me, and the articles gave me a good understanding of how they work and what they can be used for. This type of information often isn't covered in classroom lectures.

I started one of my current research projects because of an article I read in TIP about quantum-cascade lasers (April/May 2001). I had never heard of QCLs, but the story gave me plenty of information with which to get started on learning about them. And the articles about theoretical designs are awesome. In the same issue, there was a story about magnetic levitation/propulsion trains. It was like something from science fiction, but this time it was real. It's inspiring to see what can come from the brain-tiring calculations that we physics students endure in our classes.

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