

Smash monetarism to build maglev rail systems

by Anthony K. Wikrent

The "Pittsburgh project," a plan to revitalize the "rust belt" industries of the U.S. Great Lakes region by building magnetically levitated (maglev) transportation systems, was proposed afresh the first week of June. The renewal of this proposal comes as similar schemes are being proposed for the state of New York and the Baltimore-Washington area in the United States, as German Chancellor Helmut Kohl and French President François Mitterrand reach agreement to extend French and German high-speed rail networks eastward into Poland and Russia, and as the Chinese government is proposing to construct high-speed rail transportation along the ancient trans-Asiatic "Silk Route." The increasing number of such proposals underscores the importance of shaking free from the tattered remnants of failed "free-market" and International Monetary Fund dogmas, and taking up once again a Hamiltonian overview of national needs and purposes, including recognition that general economic and technological progress is the common interest of the community of nations.

One would think that the need for such a return to national economic sanity would be especially evident in the United States. It was the United States that pioneered the technology for magnetic levitation, beginning with experiments by rocket scientist Robert Goddard in the 1930s. By the late 1960s, various U.S. companies were ready to begin construction of demonstration projects, waiting only for funding. But the United States forfeited its expansive lead, solely through economic obtuseness. Not only proposals for maglev systems, but also conventional high-speed systems have been stymied or outright abandoned in Florida (Orlando Airport); Texas (Dallas, Houston, San Antonio); California (Los Angeles, and Los Angeles to Las Vegas); Ohio (Cincinnati, Columbus, Cleveland); Illinois and Michigan (Chicago to

Detroit); Illinois, Wisconsin, and Minnesota (Chicago, Milwaukee, Minneapolis-St. Paul); Colorado (Greeley, Denver, Colorado Springs); North Carolina (Raleigh, Durham, Winston-Salem, Charlotte); and Alabama (Birmingham, Montgomery, Mobile). The culprit: lack of financing.

If the nation's banking and financial system cannot or will not fund such basic infrastructural development, and lets a national technological lead in such technology wither and die over the span of 20 years, perhaps the question ought to be asked: What's wrong with the banking and financial system?

The Pittsburgh Maglev Project

The idea of making the Pittsburgh region into a center of maglev manufacturing was first put forward in 1978. In February 1990, the Maglev Working Group, a consortium of industry, labor, and local and state governments, led by Carnegie Mellon University's Rail Systems Center, reissued the proposal, calling for the construction of a \$300-648 million maglev system connecting downtown Pittsburgh with the airport. This pilot project would be the seed crystal for a 30-year program for a regional maglev system connecting the cities of the Great Lakes region with those of the East Coast, at an estimated cost of \$29 billion.

At the time, Prof. Richard Uher, head of Carnegie's Rail Systems Center, expected the rapid emergence of private-public partnerships to provide the financing for the Pittsburgh Maglev Project, as it was called. Since Japanese interests had provided \$250,000 for the initial study, Uher was especially hopeful that a "Golden Triangle Project" would materialize, in which Japanese financing would purchase German maglev technology that would be manufactured by U.S. industry.

Now, four years later, the Pittsburgh consortium, having established a corporation named Maglev, Inc., has further

refined its study, and reissued its proposal. The study rejects the inherently flawed cost-accounting approach which, for three decades, has led dozens of similar studies to conclude—wrongly—that maglev technology is simply too expensive, insisting instead that a maglev system operating at its full potential, especially its top potential speed of over 300 miles per hour, can generate enough revenue to cover its operating expenses, and some of its capital construction costs as well.

The most significant aspect of the Maglev, Inc. report flows from its recognition that the minimum turning radius of a maglev vehicle operating at its top speed of 311 mph is nearly four miles, or 21,000 feet. The analysis performed for Maglev, Inc. found that even with a reduction in speed to 250 mph, a maglev system would be able to use only 55% of already-existing rights-of-way, such as, for example, those available along interstate highways. Confining a maglev system to only already-existing rights-of-way cuts the potential top speed to less than 150 mph. The report thus distinguishes itself by calling for the creation of entirely new rights-of-way that will allow a maglev system to operate at its full potential. The first guideline listed in the study is, “When outside metropolitan areas, develop new right-of-way and keep speed above 250 mph.”

The disaster of monetarist methodology

At issue here is something much more fundamental than mere speed. As was demonstrated by *EIR* Economics Editor Chris White in a Nov. 6, 1992 feature article, the key to determining the true cost of any transportation system is to focus on the carrying capacity per unit of time of the system under consideration. Looking only at the investment cost per mile or per kilometer is inherently flawed. As White pointed out:

“The number of passengers carried per transport unit multiplied by unit frequency per hour, gives a number of passengers carried per hour. This is called the line capacity of the mode of transportation. The passengers are carried at a certain speed. The line capacity of the system multiplied by the operating speed gives the productive capacity of the system—the number of passenger-miles or passenger-kilometers produced per hour. . . .

“Increasing the speed at which passengers are carried . . . increases the productive capacity of the system, just as increasing the number of passengers carried increases the line capacity. Increasing speed of service, therefore, also should decrease cost, just as a system which can carry more passengers than another ought to be cheaper than the other.”

Thus, even though a maglev system’s investment cost per kilometer is four times greater than upgrading Amtrak’s Boston-Washington Metroliner from 85 mph to 100 or even 150 mph, the investment per passenger-kilometers capacity per hour of a maglev system is at least 15% cheaper (and as little as one-quarter the cost, when the line capacity of the Japanese EDS maglev is used for the calculations instead of the German EMS maglev).

Standing in sharp contrast to the Maglev, Inc. report is the November 1993 report of the U.S. General Accounting Office (GAO), “High-Speed Ground Transportation: Issues Affecting Development in the United States,” which is afflicted by the inherently flawed monetarist/cost-accounting methodology exposed by White. The GAO report, in turn, relies on a 1991 study by the National Research Council, “In Pursuit of Speed: New Options for Intercity Passenger Transport,” which gave the following estimates for investment cost per mile: Japanese maglev, \$30 million per mile; French TGV, Japanese Shinkansen, and German ICE (all conventional steel wheel on steel rail technologies), \$20 million per mile; and an incremental approach to improving Amtrak’s Metroliner, including the use of the tilt trains developed in Sweden, Italy, Spain, or Britain, \$10 million per mile.

The key to attaining high speeds is to have dedicated rights-of-way. Amtrak has concluded that running trains at over 100 mph through at-grade crossings will result in derailment in the event of a collision, inflicting severe injuries or death on passengers. Not only does the GAO reject the apparently costlier options of \$20 million and \$30 million a mile, but at \$6-20 million per project to eliminate at-grade crossings, the GAO concluded that it was also too expensive to eliminate all at-grade crossings. Thus, under the GAO approach, the maximum top speed for any system over much of its route would be 100 mph. And this, after the GAO itself defined high-speed ground transportation as operating at over 150 mph! The obvious conclusion: Why bother building anything?

The Maglev, Inc. report is also noteworthy for having abandoned Uher’s hope of four years ago for private financing, and forthrightly calling for government funding to cover most, if not all, of the initial capital costs. But this step is unfortunately too little, too late. The United States has reached the precarious position that it will soon be spending almost the entirety of federal revenues on interest payments and other costs of servicing a national federal debt of around \$4 trillion.

The import of this is a very unpleasant truth that President Bill Clinton is only beginning to realize: The United States has lost its economic and financial sovereignty to the nation’s creditors. Rather than bellowing about being forced by the bond market to act like “Eisenhower Republicans,” what Clinton must do is lead the country back to a reassertion of control over its financial affairs. A dozen or more regions, states, and localities have proposed and desire maglev systems. Here is a project of vital national significance, which awaits only funding and leadership. And here is a banking and financial system which refuses to provide the former, and threatens to eviscerate anyone providing the latter. It is high time to adopt a national outlook, based upon the American System economics of Alexander Hamilton, that will ensure the development of a coherent national system.