Publication: Chattanooga Times Free Press; Date:2009 Oct 11; Section: Perspective; Page Number: 1

# High-speed rail

*America should shift focus to maglev trains*

***Kevin C. Coates***
***International Maglev Board***

Yoshiyuki Kasai, chairman of the Central Japan Railway (CJR), addressed a gathering of transportation officials in Washington in June to extol the virtues of his country's prodigious high-speed rail technology. Norman Mineta, former U.S. Secretary of Transportation, hosted the timely event.

I say timely because America is still trying to figure out what high-speed rail really means. For example: What qualifies as high-speed, what will it cost, will incremental upgrades get us there, and which technologies are the best? Just for the record, the internationally recognized standard for high-speed rail is a cruising speed above 150 mph.

For those who may not know, the Japanese are the originators of modern high-speed rail and Mr. Kasai's company is the world's most experienced high-speed rail operator. The CJR's Tokaido Shinkansen, or "bullet train," that runs between Tokyo and Osaka is not only the world's oldest high-speed rail line, but also the busiest, carrying more than 150 million passengers per year. In operation since 1964, the 317-mile Tokaido line now operates 309 trains per day with sustained cruising speeds of 168 mph, which enables passengers to make the trip in a reliable two hours and 25 minutes. During peak travel periods, a dozen 1,323-seat trains leave Tokyo each hour and average an on-time performance deviation of only 30 seconds.

For their entire 45 years, the Shinkansens have a perfect safety record of never experiencing a fatal accident due to derailment or collision. This statistic is even more remarkable given that peak travel hours have three- to five-minute intervals between trains.

This stellar record is not a happy accident, but the result of excellent civil, electrical and mechanical engineering, painstakingly thorough and dedicated maintenance, and a commitment by the Japanese national government to high-speed ground transportation excellence in spite of its high initial capital cost.

The Japanese pursued high-speed rail for several logical reasons: Limited available land forced a transportation policy that required minimal land use while providing maximum passenger throughput into cities; electric-powered transport reduced over-reliance on imported oil; and high-speed rail was relatively unaffected by inclement weather that would ground aircraft or cause highway delays. With years of experience building and maintaining such an intensive and successful system in a mountainous and earthquake-prone country, it should come as no surprise that CJR's engineers are internationally recognized experts on high-speed rail.

According to Mr. Kasai's book, "Japanese National Railways: Its Break-up and Privatization,"

four years after privatization in 1987, CJR purchased its fixed facilities from the Japanese government for the U.S. equivalent of $37.78 billion, which netted the government a tidy profit from the 1964 construction costs of the U.S. equivalent of $1.05 billion. CJR, which is one of six rail operators in Japan, refutes Washington's conventional wisdom that no passenger railroad in the world makes a profit. Each year, Mr. Kasai's well-run railroad earns just under a 10 percent rate of return.

Which brings me to the punch line. At the end of Mr. Kasai's speech, he showed a brief film and some slides featuring the latest technology CJR will use on its newest Shinkansen line from Tokyo to Nagoya — the MLX01 superconducting magnetic levitation train. The two cities are approximately the same distance as New York City to Washington, D.C. The MLX01 will make the trip in only 40 minutes.

Asked why they were building this new line using maglev technology, Mr. Kasai said CJR needed to be forward-looking so that it can meet not only the needs of the present, but those of the future. In spite of the fact that 80 percent of this new line will be in tunnels, Mr. Kasai explained that maglev is still the most cost-effective technology for this extremely mountainous route. He should know, because the for-profit CJR is funding this entire line without Japanese government participation.

Which brings me to the present push in America for high-speed rail. Why is it that America is embarking on a high-speed rail initiative that is so prejudiced against maglev and so weighted in favor of 45-year-old "proven" technology when clearly superior options are now available? The ill-informed argument I hear way too often is that maglev is "unproven." If this were so, why did the Chinese build a German maglev system in Shanghai, and why would the world's most successful for-profit high-speed rail company commit its own resources to build a maglev line? Could it be that America's transportation "experts" are not really experts in high-speed rail or maglev, and are themselves "unproven" in deploying such systems?

The truth is as simple as it should be obvious. Noncontact maglev transport not only enables much higher speeds, but also lowers operations and maintenance costs and allows safer, more reliable and fully automatic operations. The dirty little secret of high-speed rail is the very high annual operations and maintenance costs associated with maintaining a system subjected to repeated pounding and vibrations. Maglev technology provides an elegant escape from that expensive and energy-intensive paradigm.

America is 45 years behind the rest of the world in this area and cannot afford a false start. With the recent $14 million allocation from the Federal Railroad Administration to the Atlanta/Chattanooga maglev project, this country now has an excellent opportunity to leapfrog the old and new rail technologies that are both rooted in the 18th century. Maglev is a more sustainable transportation mode that is a bridge to 22nd century transport. Since whatever train infrastructure we build today will be around for at least 100 years, we had best be looking to real experts for guidance.

Kevin C. Coates is a Washington-based energy and transportation consultant and an authority on magnetic levitation transportation. He is also the founder of the International Maglev Board. Its Web site is www.maglevboard.net

**CHATTANOOGA HIGH-SPEED RAIL/MAGLEV PROJECT HISTORY**

**2002** — Federal Rail Administration-sponsored maglev deployment study completed for the Atlanta/ Chattanooga Corridor.

**2004** — Memorandum of understanding signed between Georgia Department of Transportation and Tennessee Department of Transportation agreeing to work in cooperation to study the possible extension of the corridor to Nashville from Chattanooga.

**2007** — Tier I Environmental Impact Study initiated by GDOT, with TDOT cooperation, for the Atlanta-Chattanooga corridor segment. EIS and potential corridor location study and analysis to be completed by early 2010.

**2008** — Maglev feasibility study, managed by the Enterprise Center, successfully completed for the Chattanooga-Nashville corridor segment.

**2009** — FRA awards $13.8 million to the Atlanta-Chattanooga maglev project to accelerate environmental and engineering activities.

**2009** – Rep. Zach Wamp successfully secures $570,000 in federal funding through TDOT to the Enterprise Center for staffing, managing, and technical services in support of the Atlanta-Chattanooga-Nashville high-peed rail corridor project.

*The Enterprise Center, Inc.*