

# Shanghai's Maglev Launched: Revolutionary Step for Eurasia

by Rainer Apel

As the old year ended, the 21st Century was launched in rail transportation, in a cooperation between Germany and China which points toward the development of the Eurasian Land-Bridges. One of two 31-kilometer (20-mile) tracks of the world's first magnetic levitation railroad line, between Shanghai's Long Yang station and the international airport at Pudong, was officially inaugurated on Dec. 31 at 10:10 a.m. local time. The launching ceremony was attended by Chinese Prime Minister Zhu Rongji, German Chancellor Gerhard Schröder, numerous Cabinet ministers from either side, and leading industry and scientific representatives from China and Germany.

The maiden voyage of the "maglev" was applauded by a jubilant crowd of Chinese along the entire track, as uncontested evidence that with this first commercial maglev route in the world, China has achieved the number-one rank of the world's nations in, not only land transportation investment, but 21st-Century railroad technology.

China's Xinhua news agency characterized the first trip as a "flight," which "sped off, quickly disappearing into the morning mist," and spoke of the realization of "the traditional, long-aspired-to dream of Chinese philosophers, to be able to run with the wind." Zhu stressed the "miracle" construction of the line in just over a year, and noted that the maglev's energy consumption is only about one-fourth that of aircraft for comparable capacity and even speed.

Ekkehard Schulz and Heinrich von Pierer, chairmen of the Thyssen-Krupp and Siemens firms leading the German industrial consortium that is manufacturing the Transrapid maglev train system, stated their pride that German technology has been able to make this breakthrough to commercial maglev transport, in China. "With the construction of this Transrapid stretch in record time [23 months], we have proven that top achievements in technology can be made even in a complex great project," von Pierer said. "We are very confident that we can fulfill our commitment to make the route ready for full commercial use in time." The second line of the project will be completed by the end of 2003, so that from 2004 on, regular transfer in both directions at 10-minute intervals will be possible. "A new era of transport

by train begins," said Schulz. "I am sure that not only Germany, but also many other countries will follow the Chinese model, now."

With the first phase of full commercial operation starting in 2004, the Shanghai-Pudong maglev train will be able to transfer 10 million passengers annually, and 20 million by 2010, at the time of the World's Fair taking place in Shanghai that year.

## More Maglev Routes Planned

German Transport Minister Manfred Stolpe, who also took part in the maiden voyage, told the press afterwards that Zhu Rongji had assured him of 300 kilometers (200 miles) more of maglev projects in the Shanghai region and between Shanghai and Zhejiang (about 200 kilometers to the south) to be built in the coming years. Detailed agreements on those projects still have to be worked out and signed by China and Germany.

Apart from being a spark for the realization of 21st-Century transport technology throughout the rest of China, the maglev's maiden voyage in Shanghai will also remoralize all those Germans who have—so far with no success—campaigns for commercial maglev routes to be built in Germany. A grand maglev project that would have connected Germany's two biggest cities—Berlin and Hamburg—was scrapped three years ago, under the impact of insane Maastricht "Stability Pact" budget-balancing, which prevented the German government from granting an additional mere \$1.5 billion to secure the construction of that 280-kilometer project. The government opted, instead, for two "alternate" regional projects of 78 and 34 kilometers, respectively, between Düsseldorf and Dortmund, and between Munich and its international airport. But these also have not moved yet—for the same reason of tight money policy.

Now, with the entire German nation having enthusiastically watched the Chancellor's Dec. 31 maiden voyage, it is certain that the question when Germany will finally enter the era of commercial maglev transport, will be posed more forcefully than ever before.

Many people in Germany and abroad have come to be-



*China's Prime Minister Zhu Rongji points out the Transrapid magnetic-levitation train's velocity display to German Chancellor Gerhard Schröder, on its New Year's Eve maiden trip from downtown Shanghai to Pudong Airport. The "maglev" reaches 215 mph on this, the world's first such rail line. Schröder's message spoke of Germany's contribution to international stability and development with its technological skill used for building at home and across Eurasia.*

lieve that even if the funds were secured, it were virtually impossible to complete such a technologically ambitious project in Germany, because of bureaucracy and "environmentalist" sabotage; but recent Elbe River floods showed this to be untrue. A crucial railway bridge at Eilenburg, in the eastern German state of Saxony whose infrastructure has been devastated by the big August 2002 floods, was partially rebuilt within only 36 hours! The restored section of that bridge again allows one-line transfer between the cities of Leipzig and Dresden. The Eilenburg project worked because the German government had decreed that flood-devastated regions could be rebuilt in record time, bypassing the usual bureaucratic and extreme ecologist procedures. After removing the destroyed old railway bridge, engineers from all parts of Germany formed a crash project team that restored half of the bridge with prefabricated components "overnight." The example shows what is possible when aspects of military engineering are applied in the civilian economy.

### **An 'Army Corps' Engineering Approach**

This was the secret of the Shanghai maglev line: There, the chief engineer of the project, known as "Commander Wu," organized the work in three rotating shifts, with military-like discipline; the entire 20-mile maglev track from Shanghai to Pudong—each mile requiring nearly 5,000 tons and several different types of steel, with changing girder lengths and shapes and very precise tolerances—was completed between February 2001 and December 2002. The track was essentially ready by September 2002, after which two additional months

were taken to conduct the concluding technical tests.

With that approach, one can forecast that those additional 300 kilometers of maglev projects discussed on the maiden voyage, will be completed, not in 10 times the period needed for the 31 kilometers Shanghai-to-Pudong, but in the same time. Led by chief engineers like Commander Wu, crews will begin work along the entire 300 kilometers of new maglev routes simultaneously, and complete their stretches all at once. It could be done in Germany, as well—it just has to be done.

Chancellor Schröder delivered his traditional New Year's Eve address to the German people from China, and pronounced, "On this day of New Year's Eve, we have inaugurated the Transrapid: a technology of the future, developed here in Germany. . . . We here in Germany have

everything required to have success. But we must also want that success. Nobody must block or hinder it. Everybody should march ahead with his own potentials, to make the whole thing progress. Worldwide, not just in the ascending . . . markets of Asia, the people are counting on Germany. They count on our economic power and on our ingenuity. And, they trust in our contribution to stability and to the peaceful development of the world." Schröder seemed to reflect what Helga Zepp-LaRouche had advised him to say (and do), in her nationally-circulated "Open Letter to the Chancellor," 10 weeks ago.

The breakthrough of the Shanghai project—which, prior to the signing of the Chinese-German contract in January 2001, most people would not have been able to even imagine—also reflects the immense campaigning invested in Germany, in China, and in many other countries, by the movement of U.S. Presidential candidate Lyndon LaRouche, on behalf of such a pilot technology venture. From his 1990-91 "Productive Triangle" proposal, Helga Zepp-LaRouche's "New Silk Road" campaigning from China to the Mideast during the 1990s, through the Eurasian Land-Bridge and "Strategic Triangle" (China-India-Russia) policies, the LaRouches have urged governments of Europe, Russia, South and East Asia, to make a bold step out of the ailing world monetarist system of the late 20th Century, towards the productive world economy of the 21st Century, with pioneer technologies like the maglev train.

The transfer of people and commodities across the land mass of Eurasia, from the West Coast of Europe to the

East Coast of Russia and China, should be done on maglev trains which would travel at speeds twice or thrice those of the fastest conventional trains that existed at the end of the 20th Century. Being able to travel comfortably on land with almost the speed and smoothness of an aircraft, is made possible by maglev trains of the kind that Germany has developed with its Transrapid system. This revolution in transport technology is possible, because the maglev train does not run on wheels, but is elevated by a magnetic field created between the track and the train. The train itself is then moved forward by a second magnetic impulse that propels the system against the track's own field.

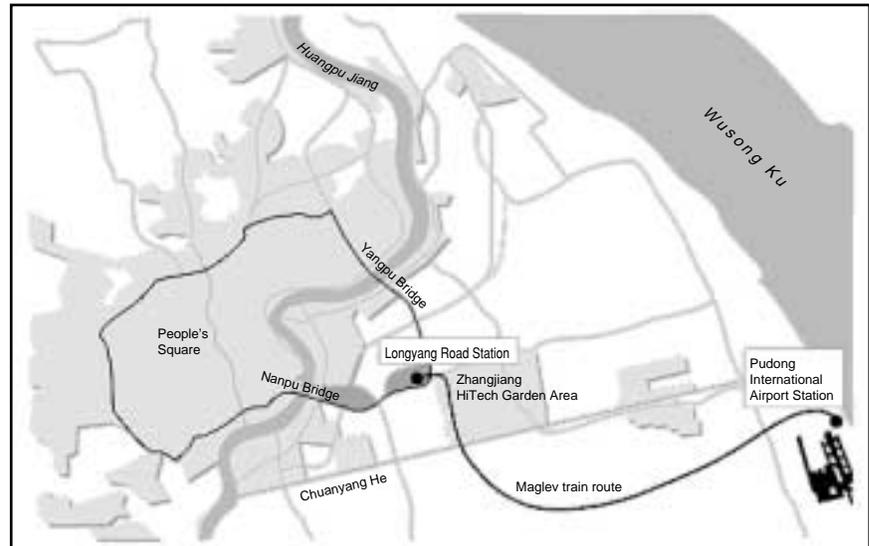
As the technology develops, higher speeds than the 430 kilometers (260 miles) per hour reached by the Shanghai maglev, will soon be possible. The track of the Shanghai-Pudong maglev train has been built in such a solid way, that it will allow trains travelling at speeds well above the current 260 miles/hour. The plant near Pudong that manufactured the 2,600 pylons for the 31 kilometers of maglev track, is of a size that cannot be explained just by the need to produce for this one project. Several future maglev projects of this kind can be carried out with pylons produced at that plant.

The perspective for a broader maglev future is already there, undoubtedly. And that future will be a common Chinese-German one: Disembarking from the maglev train after the spectacular maiden voyage, the German Chancellor spoke of "technology transfer" from Germany, and of the fact that "this would be fair, and it would benefit the other nations."

### Manufacture Shifting to China

Indeed, it is generally expected that future maglev projects in China will be carried out by Germans and Chinese working as equal partners. For the Shanghai-Pudong project, Germans provided the Transrapid trains and many of the electrotechnical components, whereas the Chinese built the track, the stations, and some electro-technical equipment. Chinese engineers contributed im-

FIGURE 1  
**Shanghai-Pudong Maglev railroad Opens**



Source: Transrapid.



The world's first "maglev" train leaves Shanghai on Dec. 31, 2002. The maps show the Shanghai route to Pudong Airport, and the longer projected maglev lines being planned by China and Germany, whose Siemens and ThyssenKrupp firms developed the Transrapid technology. On board speedometer (inset) shows the 260 mph speed reached by the train.

mensely, to make an acceleration of the project possible with new construction methods. In the future, more and more, if not all, of the maglev trains will be manufactured in China itself. And, maglev experts on the German and Chinese side have already portrayed a future in which maglev trains will be built throughout Asia, and worldwide,

FIGURE 2

### Planned Maglev Projects in China



Source: Transrapid.

by Chinese-German consortia.

It cannot be ruled out, that once the maglev train goes into a commercial era also in Germany, the projects there will be carried out by a similar consortium from the two countries. There is no reason for Germans, the developers of the new technology, to be annoyed by that: Mankind as a whole, and its giant infrastructure needs, are just too big for Germany alone. Together with China, and with other nations joining in the coming years, the job of providing mankind with an infrastructure that is up to the requirements of the 21st Century, can be done within a timeframe of two or three generations.

The children who have been able to watch this maglev maiden voyage on their family TV sets, will be able to travel, as grandparents, to any place in the world, by similar and even faster trains.