No Technical Limits to Bering Strait Project

by Louis T. Cerny

These remarks were delivered by Louis T. Cerny, then executive director of the American Railway Engineering Association (AREA), at a meeting on the Bering Strait proposal to build a tunnel across the Project, in Washington, D.C. on June 22, 1992. Cerny was executive director of the AREA from 1979 through 1994. Currently, he is a professional engineer in private consulting practice. The speech remains highly relevant today, as international support grows to implement this great infrastructure project.

I'll have to admit straight out that when I first heard about this project, I was extremely skeptical, and my initial thoughts were that this was another crack-pot idea. I thought—what a crazy idea to go all the way north to the Bering Strait and then to come back south when we have this wonderful infrastructure already in place called the Pacific Ocean.

If someone would have asked me whether the distance from Acapulco, Mexico to Bombay, India was shorter via an all water route or an all land route using a tunnel under the Bering Strait, it would have seemed obvious that the shortest distance between these two tropical locations would be by water. But in fact no, the land distance via the Bering Strait is shorter than the shortest all-water route between Acapulco, Mexico and Bombay, India. The usual wall maps of the world are based on being correct near the equator, but I found that they greatly exaggerate the distances in the far north.

As you can tell, I could have lost a lot of bets about the geographic relation between cities in Asia and North America before I looked at a polar view of the world. As shown on this slide [**Figure 1**], a straight line drawn between Chicago and Beijing, China falls north, not south, of the Bering Strait. If the Bering Strait tunnel existed to connect the main continents of the eastern and western hemispheres, a whole bunch of new geographic relationships come into place.

With [Russian President] Boris Yeltsin having been here last week, I know the emphasis at this meeting is properly on the connection between the United States and Russia, of development in Siberia, and of course the tunnel and railway would advantageously accomplish those very worthwhile purposes. In addition to that potential, the geographical relationship I just mentioned means that this route also would provide better connections between North America and the Orient, a new higher speed route for Pacific Rim freight.

Most of us here are familiar with the double stack trains that carry containers stacked one upon the other. These trains have made huge inroads in the way that goods move between the Orient and the United States. Previously most goods between the Orient and the East Coast moved by ship through the Panama Canal. However, about half the cargo traffic between the Orient and New York now moves across the Pacific by ship, and then by double stack trains from the Pacific Coast of the United States.

A typical present-day cargo shipment from China to North America involves moving the containers by train from points in China to the sea coast, a transfer from railway cars to ocean ships, a trip over the Pacific Ocean, a transfer from the ship to railway double stack trains, on which the cargo is carried to the final destination.

Advantages of the Bering Strait Tunnel

If the Bering Strait Tunnel and Railway existed, trains could run without change of equipment all the way from the Orient to North America. This would have three advantages over the present method involving ocean transport. First of all it would save two transfers—from land to water, and then from water to land. The railways of China and Korea

U.S.-Russia Rail Project Can Be Easily Implemented

In a June 23, 2007 communication, Louis Cerny made the following observations:

There are three additional ideas that I would add:

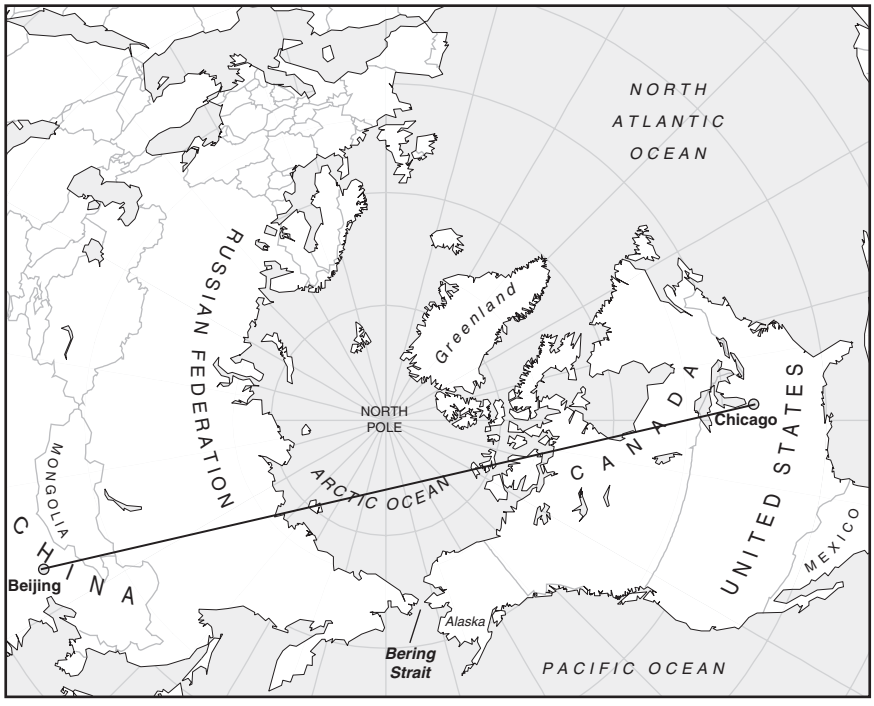
First, that the portion of the line in Russia can be initially built to the Russian gauge and later converted to dual gauge by the time the tunnel is complete. This would then allow for use of Russian-North American, internal Russian, and China-North American traffic.

Second, that the tunnel could be also used for trains that carry road vehicles, such as are used in the English Channel tunnel. These trains could run from the end of the paved road network in Alaska to the end of the paved road network in Siberia.

Third, that the construction and maintenance of a railroad on permafrost is nothing new, and there are many proven techniques which can be used, including where permafrost conditions change over time.

The strongest point I want to emphasize is that the project, while a very large project, is clearly possible from an engineering standpoint.

FIGURE 1
Most Direct Trajectory From Chicago to Beijing



The shortest distance between Chicago and Beijing actually passes north of the projected Bering Strait tunnel, as this polar-projection map demonstrates.

are technologically compatible with those in North America. They use the same track gauge (distance between the two rails of the track) and they use compatible couplers and air brakes. Therefore, one set of railway equipment could be used from China all the way to North America thus saving two land-to-water transfers. This is the first major advantage.

The second advantage is that the distance by rail would be shorter than via the Pacific Ocean for the reasons I talked about earlier, when showing the polar map. The third major advantage is that, since this new railway would obviously be built to high standards, the running speeds of the double stack trains typically 55 to 70 miles per hour, are much faster than that of ocean ships.

So with this new railway and tunnel we would have a much improved Pacific Rim cargo service that eliminates two land-water transfers, travels over a shorter route, and runs at a higher speed than the route using boats across the Pacific Ocean. While railways have never before been a competitor in intercontinental freight, the Bering Strait project could change all that and create a better service for cargo around the Pacific Rim than has ever existed previously.

Since Russia's railways are a different gauge, (the distance between the two rails of the track is different) than those in North America, traffic in the main part of Russia would require a change of equipment.[1] In the case of containers, this involves transferring the container from one train to another, and this one transfer could not be avoided, for traffic that used the existing Russian railway system for part of its journey. However, by making the new railway the same gauge as in North America, all the way to the Chinese border, we do away with any need for transfers for freight moving to and from North America to China and Korea, since the track gauge there is the same as in North America.

The advantage of using the standard gauge to China is that it would provide a seamless access to the vast railway network in China itself. Over 30,000 miles of railway are in the Chinese network; all this track is basically compatible with most North American equipment, and the North American equipment is compatible with Chinese equipment.

The Chinese railway network is still expanding, and has generally been built to high standards. It covers China in a dense network, serving all of the more populated areas of China, along with much of the desert and mountain areas. Most of the lines in China have been constructed in the last half of the 20th Century, making the age of its railway lines on average, among the newest in the world. While some recently built steam locomotives are still used, the majority of its trains are pulled by modern diesel or electric engines.

The connection of the new Interhemispheric Bering Strait Railway with the Chinese railways would be made in the far northeast of the country, where the Russian Trans-Siberian railway is only a few miles north of the Chinese-Russian border. The link of the new Bering Strait railway with the Trans-Siberian railway would thus only be a short distance from the connection with China. The Chinese network also makes connections with compatible track in Korea. This extensive Chinese network provides a wide spread resource to anchor that end of the railway. The North American railway network, of course, provides extensive coverage of Canada, the United States and Mexico.

Connection of U.S. and Asian Rail Networks

The new line would connect these two extensive compatible transportation networks so that any point on either rail-

1. The standard railway gauge, which is used in the United States, Europe, and elsewhere, is 4 feet, 8½ inches (1,435 milimeters) between tracks. The broad gauge, which is used in Russia and elsewhere, is 5 feet (1,520 milimeters)—ed.

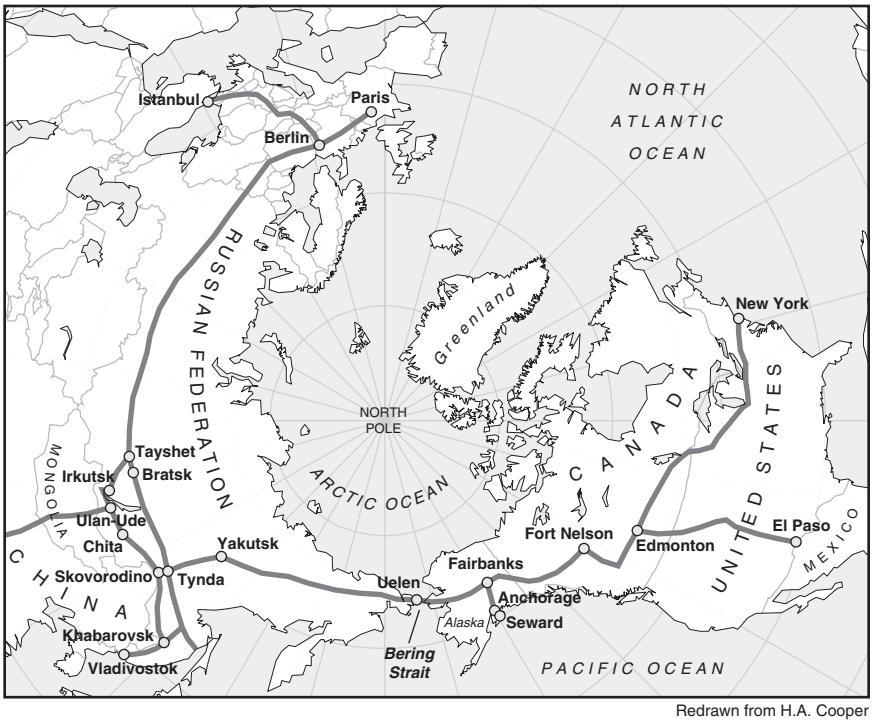
way network will be accessible to the other without any change of equipment. This could bring the economy of China, Korea, and other parts of the Orient into much closer coordination with that of North America.

That is why it is so important to build the line to standard gauge. If the part in Russia was built to Russia's gauge, one transfer between trains would still be necessary for any traffic from Russia going to North America. But two changes of trains would be required for traffic from the Orient to North America, one at the Alaskan-Russian border and another at the Russian-Chinese border. Obviously, this would badly damage the advantage of through trains handling Pacific Rim traffic, without adding any advantages to Russia-North America traffic, and it would also necessitate a change of trains for traffic from Northeastern Siberia to North America that would not be needed if the entire line is built to standard gauge.

Looking even farther into the future, a tunnel between the Japanese island of Hokkaido and the Russian island of Sakhalin, and a relatively short tunnel of perhaps three or four miles between the island of Sakhalin and the mainland of Asia, could connect the new railroad to the rail network of Japan, where their bullet trains run on the same gauge of track as trains here in the United States.[2] Connections to India and other Asian areas are also possibilities.

The tunnel under the Bering Strait would also allow shuttle trains such as those being built for the tunnel between France and England, to shuttle highway traffic between where the roads end in Alaska and where they begin in Russia, thus giving motorists from North America access with their vehicles to all of Asia, Europe, and Africa, and vice versa.

FIGURE 2
Future Global Rail Connections, as Seen From North Pole



Redrawn from H.A. Cooper

This plan for extending the Eurasian Land-Bridge across the Bering Strait and into the Americas has long been supported by EIR.

Project Is Eminently Feasible

One of the things that is impressive about the feasibility of this project is that it does not involve any unprecedented accomplishments. We are not talking about a project like getting a person to the moon, which had never been done before. It is simply a large quantity of types of work that have been done before, at other places. The railway itself involves no special new technology, and the railway construction presents no unusual difficulties. The project would involve about 4,500 miles of track, which is less than three times the length of the Transcontinental Railroad which was completed across the United States in 1869 with the famous golden spike ceremony. Certainly now, 123 years later, it would be possible to build a railway more than twice this length. There are already modern railways north of the Arctic Circle that have functioned for many years in reliable heavy-duty service, and this rail line would not even need to be north of the Arctic Circle at any point. The entire line would have daylight at least part of every day of the year.

The line would also connect the presently isolated Alaska Railroad with the contiguous North American Railway network.[3]

Because of the location of the two islands between Alas-

2. On May 17, 2007, Vladimir Klimenko, head of the state-run Russian Railroads department for liaison with federal and regional authorities, announced that Japan is ready to invest about 300 billion rubles (some $12 billion) to construct a railroad link between Hokkaido, Japan's northernmost island, and the Russian island of Sakhalin. The islands would be connected through a tunnel underneath the La Perouse Strait—ed.

3. The 470 mile (750 kilometer) Alaska Railroad extends from the city of Fairbanks, heading southward, through the city of Anchorage, to Seward on Alaska's southern coast—ed.

ka and Siberia, the longest continuous length of tunnel under water would be about 22 miles, just a little less than the continuous underwater distance of the Channel tunnel between France and England. The Bering Strait is a shallow body of water no deeper than the English Channel, so the tunnel need not be at any significantly greater depth than the English Channel tunnel. In fact the tunnel would be much less deep than the existing railway tunnel connecting the main Japanese island of Honshu with the island of Hokkaido.

…The rock beneath the Bering Strait is sound and the tunnel would involve no unprecedented difficulties in this regard.

From an engineering standpoint and from a standpoint of economics it is obvious that this is not a project that is going to be started tomorrow, but could easily be part of a future world economy in a time frame from ten to twenty years. In discussing this tunnel project, its feasibility assumes an expanding level of world commerce and prosperity, and it also assumes the continued lessening of the international tensions that have restricted trade and economic developments in the past.

This plan does fit in with the growing trend to interconnect the rail networks of the world. The new line connecting China and the Commonwealth of Independent States in Khasakstan has recently been completed, and of course we are all familiar with the impending connection of the British and European continental railway networks through the Channel tunnel. In the last decade, for the first time, all four main islands of Japan have been connected by rail. A tunnel under the Straits of Gibraltar to connect the the rail network of Europe and North Africa is being proposed. A plan has recently been proposed by the Official Economic Planning Agency in Central America to connect the railways of Central America to form a continuous standard gauge from Mexico to Panama. But the Bering Strait tunnel project is the key link, connecting the western hemisphere with the eastern hemisphere. In this new era of peace between Russia and the United States, perhaps even a name such as the World Peace Tunnel is not too grandiose, since it would link by land transport all the continents of the world except Australia and Antarctica.

The AREA [American Railway Engineering Association] is forming a technical committee to work on the engineering aspects of this project.

…[T]he AREA encourages the detailed study of a railway from North America to Asia via a tunnel under the Bering Strait. In addition to the advantages of joining the United States and Russia with a railway, one of the main economic justifications for this project is the present and future Pacific Rim traffic, which railroads could handle in one seamless trip without changing modes of transportation from the Orient to North America via a route shorter than that presently used and at speeds higher than presently run.