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## Interview: Hal Cooper

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# Rail Expert: Build the Darien Gap Rail Connector; Go Nuclear!

*Hal Cooper, Ph.D., a Seattle-based civil engineer and transportation consultant, is a longtime advocate for constructing a worldwide railroad connection. Cooper gave an interview to the May 11, 2007 EIR on the need for, and scientific requirements for building the Bering Strait rail connector, that would link Russia and Alaska. He has been a frequent speaker at scientific conferences in Russia and other countries on great infrastructure projects.*

*Here, Cooper proposes building a rail connector, not only through the Bering Strait but one through the Darien Gap, which touches on the issue that has been central to the ideas of patriotic American leaders for 125 years: building an intercontinental railway that unites North and South America, producing real economic development. Nationalists, such as Henry Meiggs, Gen. William Palmer, and James Blaine, worked to bring this into existence (see box). But in 1901, a British-sponsored assassin killed U.S. President William McKinley, putting London's stooge Teddy Roosevelt in the White House, who put a halt to the project.*

*Now, Lyndon LaRouche's proposal for a Four-Power agreement, among the U.S.A., Russia, China, and India, for a new credit system, fueling science-driven economic development, rising on top of the ashes of the current moribund system, would add help realize this inter-hemispheric rail project.*

*Cooper was interviewed by Richard Freeman on Oct. 9, and 12, 2008, and Jan. 2, 2009.*

### Linking the Hemispheres

**EIR:** In today's breakdown crisis, the building of



EIRNS videograb

*Dr. Hal Cooper, speaking to an EIR conference in Ottawa, December 2007.*

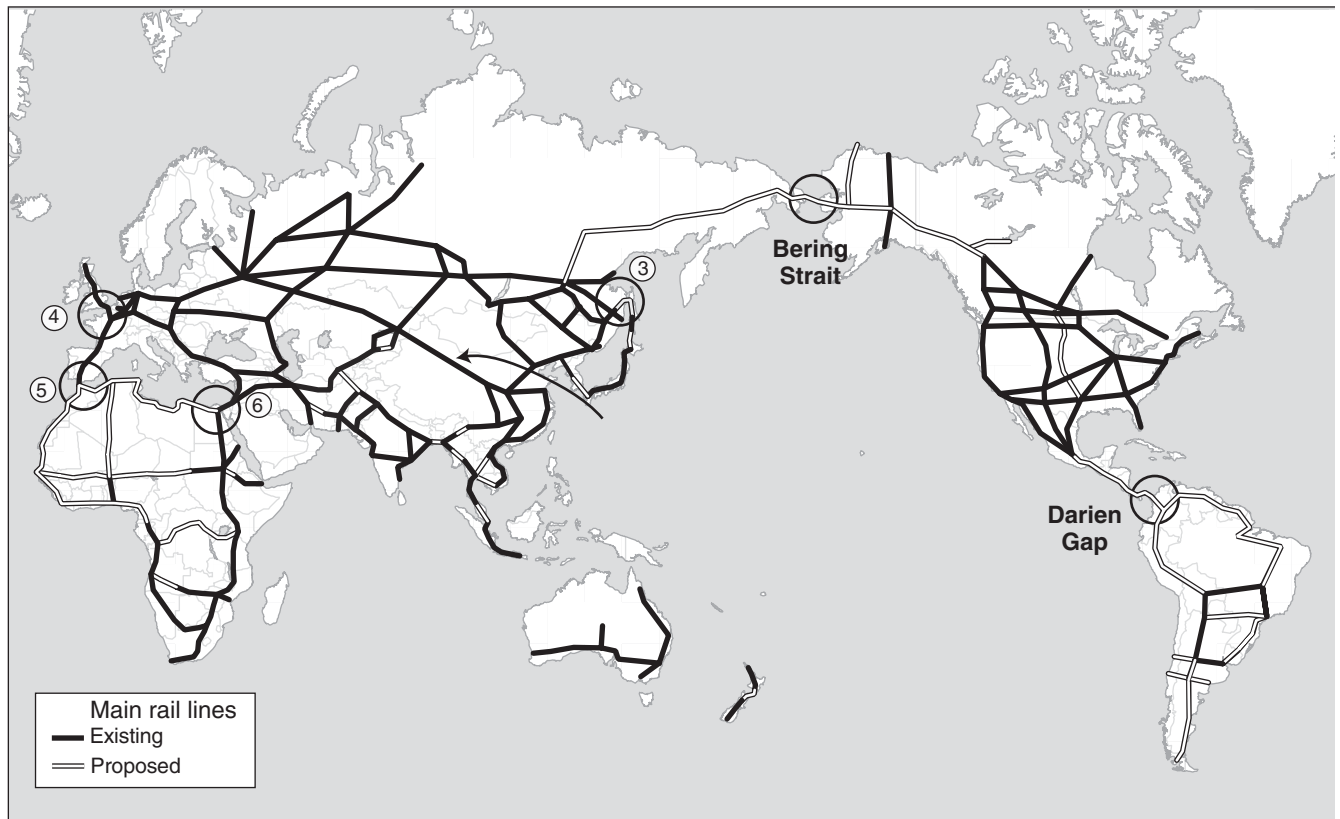
Lyndon LaRouche's proposed World-wide Land-Bridge would revolutionize world transportation, and permanently increase the productivity of the world economy, and each nation. But there are holes, significant breaks in it—the Darien Gap, and the Bering Strait—which would prevent a continuous rail trip from Paris, France to the southern tip of Chile. Please tell us about these two gaps, and what we should do to correct the problem?

**Cooper:** With the Darien Gap, that is a land connection. There's a narrow strip of land that's approximately 100 miles wide, that is the lower end of the Central American, basically archipelago, or connecting points between the continents of

North America and South America, on the border between Panama and Colombia (**Figure 1**). It would require, in this case, a rail connection of approximately 100 miles in length, and when you consider mountainous terrain and swamps at the Darien Gap, as well as mountainous terrain and permafrost at the Bering Strait, you're basically talking about the same type of connections, same distance. However, the climatic and land and plant conditions are, of course, very, very different, because the Darien Gap is in the Tropics and the Bering Strait is in the Arctic.

When you look at the map, the Bering Strait is the short-distance connection between North America and Asia, and it is the only place where there is a close-distance connection by land. The strait's channel depth is less than 200 feet; there are two islands in the middle; the cross channel distance is 53 miles. It is in relatively stable soil; I understand it's granitic, carbonate rock primarily, and it doesn't have major earth-

FIGURE 1  
**The World Land-Bridge**



Source: EIR.

quake faults there. It's doable.

Very importantly, the Darien Gap and the Bering Strait are bottleneck points for rail connections between continents, but not only between continents, but between hemispheres. We should build rail connectors through these gaps, to have a unified and unitary world railroad network to connect directly by land Africa, Asia, Europe, North America, and South America.

**EIR:** There is now discussion of infrastructure. President-elect Barack Obama is reportedly considering an \$800 billion stimulus package. Some put forward environmentalist projects, like windmill farms and transmission lines to connect them to the power grid; some put forward projects like repairing obsolete bridges, which is necessary, but doesn't break new ground. Were the new administration to advance the world rail Land-Bridge, genuinely high-speed, and preferably maglev, in the Western Hemisphere, from the Russia-Alaska interface at the Bering Strait, all the

way through North and South America, this would revolutionize the economy. This is a big project that represents a science driver. How could that set the framework for revolutionary projects, like the upgrade of the rest of the U.S. rail system, the building of nuclear power plants? How could it provide the inspiration to shift away from motor vehicle transport?

**Cooper:** Well, first of all, the building of a new rail system, especially if it's electric, doesn't use any oil. That to me is an absolute necessity to get away from the present system we have, with the oil being completely controlled by the British oligarchy and related forces. That is what has to change, in order to make the system successful through electric transportation.

Once we put a project like this in place, it really can serve as the example and the springboard, because it requires lots of businesses and industries that are new, with new technology, with new facilities, with new people and workers, and it requires the upgrading of the educational system, and it just changes people's think-

ing. That's what it does.

The problem is that everyone wants to be second, rather than the first one that starts the project. That's why it's important to get this project going. The time is about right. Projects are just springing up all over the place; there are places we never would have even thought of. So there's a movement beginning to swell from the ground up for high-speed electric transportation.

### Topological Challenges

**EIR:** Presently, is there any road that crosses the Darien Gap?

**Cooper:** No. There is the proposed route of the Pan American Highway, which has never been built. I understand it's a dirt and mud trail right now; there's no road.

**EIR:** Why is that? Because we have had years and years to build this.

**Cooper:** The powers that be in the financial world—this is the London group, with their stooges in New York in control—made sure the money was not available to do that, and it was never done. And we need to put an end to all these “no-go” shenanigans of the British oligarchy, through the World Wide Fund for Nature and others ... and start developing our economy the way we should have been intending to do all the way along.

**EIR:** You've identified two routes for rail connectors to cross the Darien Gap. There are topological challenges.

**Cooper:** Yes. Overall, the proposed Darien Gap railway connector would be built in an area characterized as being a combination of tropical rain forest and relatively low and gentle mountains with maximum el-

FIGURE 2

### Proposed Route Options for the InterAmerican Railway Through the Darien Gap of Panama



Source: Hal Cooper/EIR

evation of 2,000 to 3,000 feet (600-850 meters). There are two alternative routes (Figure 2).

The western lowland route, or western route, would be approximately 85 miles (136 km) in length through relatively flat, wet terrain, with elevations generally in the range of 200 to 300 feet through thick tropical rain forests in parallel to the Chucunaque and Tuira Rivers. Heavy rainfall, thick jungles, many insects and snakes, plus frequent flooding would be major problems much of the year. This proposed railroad route is parallel to the uncompleted Pan American Highway.

The alternative eastern mountains route, would be 95 miles in length for the Darien Gap railway connector, making it approximately 10 miles longer than the western lowlands route. The eastern route would head to the east from Metita in the Panamanian lowlands, and go over the Serrania Del Darien Mountains

to the Atlantic Ocean drainage side on relatively gentle grades through rolling hills with maximum elevations of 1,500 to 2,000 feet. It would traverse heavy tropical rain forests. The eastern route would then go on a relatively level grade on the east side of the mountains into Colombia, and then from Ungua descend on a relatively gentle grade to Chigarotto in Colombia, then going by way of the Tumarando Swamp, which will require an elevated viaduct to be constructed.

**EIR:** That means for most of the western lowland route, and a significant portion of the eastern route, through southern Panama into northwestern Colombia, one has to go through tropical rain forest, or swamp.

**Cooper:** Yes that can be done well enough. You drive piles into the ground.

**EIR:** How deep would you drive and do you know what soil lies underneath?

**Cooper:** I personally don't know; but I'm sure that it is known. I don't know how deep it is to the level of bedrock that would be required to anchor it. Of course, there are some advanced construction techniques which have been developed that can be used for building into those types of land.

The best example to look at is the Atchafalaya Causeway of Interstate 10, between Lafayette and Port Allen, Louisiana. Port Allen is just west of Baton Rouge. This area has swampland over the entire distance. The Atchafalaya Causeway is a perfect example; it's about 35 miles long. It's up on pilings, and it's about 40 feet above the water, and you just drive on it. You can just build something like that. I've driven it several times, most recently in July. Just build one of those causeways over the Darien Gap and the Tumerando Swamp, and put railroad tracks on it.

### **Prince Philip's Darien National Park**

**EIR:** The Anglo-Dutch Empire would like to stop the western lowland route. You've mentioned there's a conservation park. . . .

**Cooper:** The Darien National Park (Figure 2), which I understand was created by the government of Panama, with the lobbying of the World Wide Fund for Nature. Isn't that something? Prince Philip's favorite organization is putting national parks in the tropics of Panama.

**EIR:** An attempt to build a railway connector

through the western route, would come right up against the Darien National Park.

**Cooper:** I understand that at the present time, you sought to go by way of the western route, you would have to go through the park, unless an easement was created.

**EIR:** We might anticipate that Prince Philip's WWF would not stand for that.

**Cooper:** They would try to stop it, is my impression, based on their past activities.

**EIR:** Let's look at the rail Land-Bridge in the Western Hemisphere as a whole (Figure 3). In addition to building the railway connectors through the Darien Gap, and the Bering Strait—the strait would actually require a tunnel—there are other portions of rail that need to be built. Starting from the top, identify for us broadly what they are.

**Cooper:** In northwestern North America, once you cross the Bering Strait, from Wales, Alaska to Fairbanks, Alaska, there's no rail, that's about 580 miles, and then, from just southeast of Fairbanks, Alaska, to Fort Nelson or Dease Lake in British Columbia, there's no railroad, that's about 800 miles. There's nothing there. That's the first part, a total of 1,380 miles.

Then when you go from Tapachula, in Chiapas, Mexico [at Mexico's southern tip], basically all the way down, till you get to near Medellin, Colombia, there isn't anything, other than some very small spots.

**EIR:** So, through all of Central America?

**Cooper:** Through the entire Central American isthmus, there needs to be built new rail. That's the second to be built.

And then from the southern end of Colombia, I was going to say a place called Campos, all the way down to Santa Cruz, Bolivia, there's another large gap, where there's no rail. That's third.

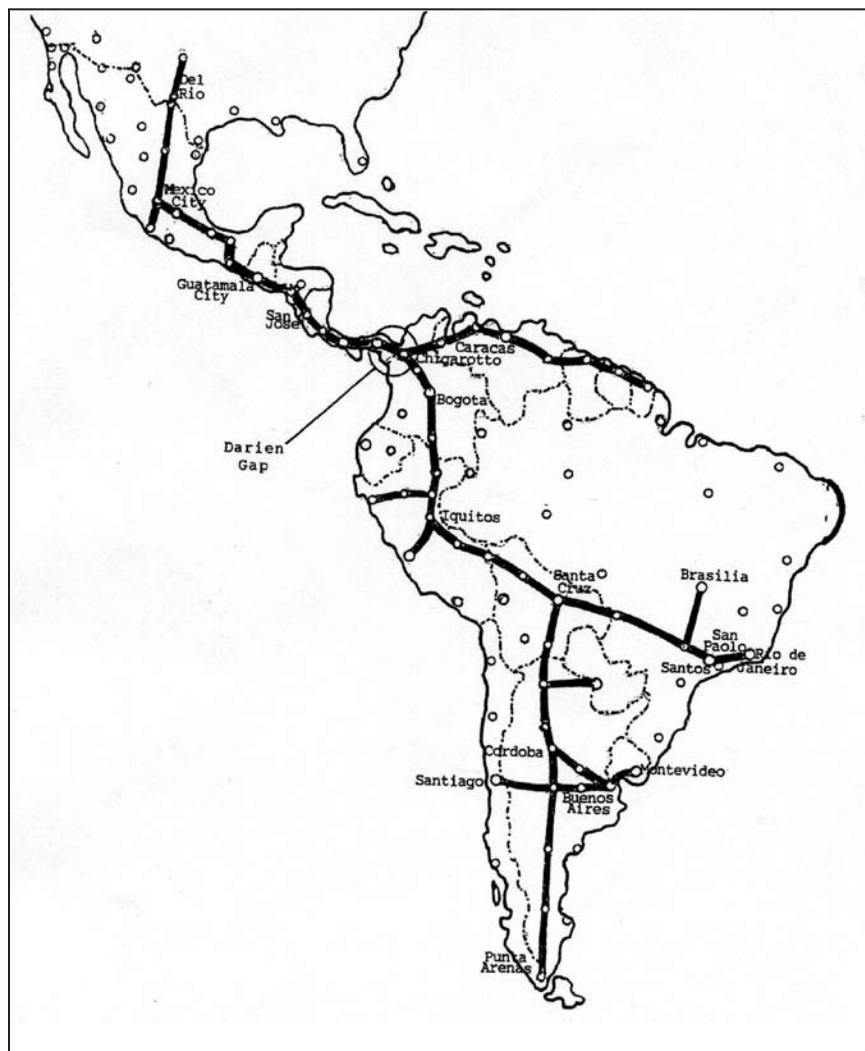
And then, from near Cordoba, Argentina, heading south to the Patagonia region, all the way down to the southern end of South America to Punta Arenas Chile, there's no rail.

### **Linking to the Bering Strait**

**EIR:** Based on what you're saying, for the Land-Bridge route from the Bering Strait, to Punta Arenas in Chile, facing out towards Antarctica, most of the rail has not been built, and must be built.

FIGURE 3

### Proposed Latin American Intercontinental Railway Network



Source: Hal Cooper/EIR

**Cooper:** Yes, that is correct.

**EIR:** How long would it take in physical build time, to build rail corridors through the Darien Gap and the Bering Strait, and through all the other gaps where there is no rail? Could you start on several stretches of the project at once?

**Cooper:** Yes, you can. All that you need is the monetary commitment and the associated political will to do it. I would say that the minimum construction time for the projects, except for the Bering Strait, is probably five years. The maximum is ten. I think that that's probably a pretty good range. We could have all this done in ten years, if we made a serious commitment to it. I think 2020 would be my idea of the time. The two gaps that

we build across that have the two most formidable barriers are the Bering Strait and the Darien Gap. Most everything else could be built more easily. The Bering Strait would take 10 to 12 years to complete including the connecting lines.

**EIR:** The benefits from this are tremendous. From Uelin, in the most northeast extension of Russia, or across the Bering Strait at Seward Peninsula, Alaska, all the way down to the lowest point that you've indicated on your rail map, which is Punta Arenas in Chile, that is 9,518 miles. How long would it take you to travel that distance by conventional rail system, and second by magnetic levitation rail system?

**Cooper:** With conventional rail ten days, and if you did it by maglev it would be two days.

**EIR:** That would be for passengers, cruising at 250 miles per hour. And how long would it take for freight?

**Cooper:** By maglev or rail, you would be looking at a ten-day trip in time.

**EIR:** All the way from the north-east tip of Russia down to the tip of

Ibero-America?

**Cooper:** Right.

**EIR:** If you covered the same distance by ship, under current conditions and whatever requirements for refueling, and so forth, how long would that take you?

**Cooper:** Twenty to thirty days, or more.

**EIR:** So, we're talking potentially, cutting the trip by eliminating two-thirds of the travel time?

**Cooper:** Two-thirds would probably be a pretty good estimate.

**EIR:** That's quite remarkable. You would be build-

ing other routes, especially east-west routes in Ibero-America, which are beginning to be seriously considered.

**Cooper:** Correct. The immediate corridor would be from Buenos Aires, Argentina west to Santiago, Chile, and east to Montevideo, Uruguay (Figure 3). As well, there's a route proposed from Iquitos, Peru and also from Paita, Peru to Santa Cruz, Bolivia, and then to Santos, Brazil. Santos is a port about 60 miles southeast of São Paulo, Brazil. Chinese, Peruvian, and Brazilian construction companies are proposing this route. One of its advantages, among others, is that it would transport Brazilian iron ore to the west coast of South America, to Paita, Peru, so that it could be shipped to China by relatively direct route by ship.

There are also other corridors.

### High-Speed and Maglev Trains

**EIR:** Were the Western Hemispheric portion of the Land-Bridge to be constructed, the routes would be electrified, to accommodate either genuine high-speed rail of the French TGV type, at 185 to 215 mph, or maglev, at 250 to 350 mph. How much new electricity generating capacity would have to be built, and would we have to go nuclear?

**Cooper:** You would probably be looking at 10,000 megawatts requirement as a minimum, if the entire system were to be electrified. If you were forecasting a higher traffic level, it would probably be on the order of 20,000 MW. My feeling is that you should be building these power plants in series, in increments of 200 to 300 miles along the proposed route. You would build the power plant to supply the electricity for the railroad. Whatever the power plant requirement for the railroad, double that, and that gives you your electricity for the regional development you need. And that's very beneficial.

You would use nuclear; it's very good. You know, you have hydro-electric, like Russia's been proposing for some of its northeastern development, and you can use coal, as long as you deal with the environmental concerns.

**EIR:** From a strategic standpoint, what do you think building the Land-Bridge would do to the economies of all the nations of Ibero-America, and their manufacturing industries?

**Cooper:** Their agriculture, manufacturing, and construction industries would become very much activated.

The standards of living would rise and poverty would be greatly reduced. The strategic importance of the Darien Gap rail connector, should it be built, is that it will allow a direct land connection by the most efficient transportation mode for freight and passengers, between North America and South America, through the isthmus of Central America. It will make it possible to upgrade the economies and societies of every one of the countries, and to eliminate their geographic isolation, which has been used in the past as a means of holding them down economically, and forcing things like the cocaine drug culture and so forth.

### Impact in the U.S.A.

**EIR:** What effect would the construction of the Land-Bridge have on the United States, and its economy?

**Cooper:** Oh, it would cause an immediate boom in building. Huge. It would also have an enormous benefit in rejuvenating our manufacturing and construction industries and so forth, many of which have gone seriously into decline because of free trade. We need to provide the maximum benefit rather than the least cost as our way of promoting this development. It would also have an enormous impact on our employment and our economy through economic multipliers.

**EIR:** Do you have any rough estimate of how many people in North and South America would be employed in productive jobs, building this grand project?

**Cooper:** Three to five million, if the system were to be built.

**EIR:** On July 25, 2007, Lyndon LaRouche forecast "the immediate onset of a global financial-monetary breakdown crisis." The world has been gripped by this crisis. This crisis opens up possibilities. With the bankers and authorities looking like fools, do you think that now is the time that we can build the Land-Bridge, bringing forth its benefits?

**Cooper:** Yes. I think the first thing we have to do is that the United States, Russia, China, and India need to develop an alliance that becomes the basis of a new financial system, exactly as Mr. LaRouche has proposed. In Latin America, we need the cooperation of all the countries, especially Argentina, Brazil, Colombia, Venezuela, and Mexico. We have to go back to Alexander Hamilton and Henry Carey, create the credits, and set a major infrastructure program with the idea of building each country's economy so that it is

economically self-sufficient, energy independent and resource independent to the greatest extent that we can; where we are focussing on individual, regional self-economic development which is actually coordi-

nated among all nations.

In the past, the United States has jumped into the morass of British economic thinking with predictable results. Now we can change that.

## U.S Patriots' War To Build The Intercontinental RR

The United States, since its creation, has fought for the science-driven economic development of the nations of Ibero-America, as exemplified by the policies of John Quincy Adams, Henry Clay, and Abraham Lincoln.

Hal Cooper's proposal to build a rail connector, across the Bering Strait, and down through the Darien Gap, touches on the issue that has been central to the ideas of patriotic American leaders for 125 years: building an intercontinental railway and economic development corridors, that unite North and South America. Nationalists such as Henry Meiggs and Gen. William Palmer, built rail systems in Chile and Peru, and in Mexico, respectively, during the latter part of the 19th Century, often against fierce Anglo-Dutch imperial opposition.

In October 1889, one of America's greatest patriots, James G. Blaine, then Secretary of State to President Benjamin Harrison, convened in Washington, a conference of leading representatives of 17 Ibero-American nations, Hawaii, and the United States. At this six-month conference, U.S. Army Corps engineers and other personnel, as well as Ibero-American experts and governmental authorities, plotted to build 5,456 miles of new rail lines that were to connect with thousands of miles already in operation. The rail lines would extend along the Atlantic and Pacific Coasts of South America, and connect every major commercial and political city in North and South America. In 1898, the U.S. Army Corps of Engineers released an eight-volume report, containing hundreds of maps and illustrations, and covering specific contours of areas along the route, specifying how the system as a whole would be built.

On Oct. 2, 1889, Blaine addressed the conference

that he had convened, stating:

"The aggregate territorial extent of the nations here represented falls but little short of 12,000,000 square miles, more than three times the area of all Europe, and but little less than one-fourth part of the globe; while in respect to the power of producing the articles which are essential to human life . . . they constitute even a larger proportion of the entire world. . . .

"We believe that we should be drawn together more closely by the highways of the seas, and that at no distant day the railway systems of the North and South will meet upon the isthmus [of Panama] and connect by land routes the political and commercial capitals of all America. . . .

"We believe the spirit of justice, of common and equal interest between the American States will leave no room for an artificial balance of power, like unto that which had led to wars abroad and drenched Europe in blood."

On May 12, 1890, Blaine submitted to the U.S. President and Congress the plan agreed on by the conference, for a "survey for a railway line to connect the great commercial cities of the American hemisphere." He said that this grand rail plan, "is an undertaking worthy of encouragement and co-operation of this Government."

Blaine also proposed the establishment of an Inter-American Bank, with sufficient credit to foster the capital-intensive development of the Western Hemisphere.

In 1893, Blaine died; in September 1901, U.S. President William McKinley, Blaine's friend and close ally on the rail project, was murdered by a British-sponsored assassin. McKinley was, at the time, organizing for this and allied plans at the Pan-American Exposition in Buffalo, New York. McKinley was replaced by the British-run traitor, Teddy Roosevelt, who immediately shut down this and related projects.

This intercontinental rail project has lain dormant more than 100 years.—*Richard Freeman*