FEBRUARY 23, 1998

Infrastructure, Not Money, Fosters Development of Nations

by Lyndon H. LaRouche, Jr.

Mr. LaRouche delivered this speech to a private seminar.

We have, in the United States, two so-called national newspapers. And, it's typical of our present conditions, that these are very bad things, together with our television so-called news. One of these newspapers, which comes out five days a week, is the *Wall Street Journal*, which is a newspaper, although a very bad one. It's bad in the sense that it's evil, especially since about 1970, when a new editor took over the editorial page, who is the present editor of the publication, and who has played a key role in creating the so-called Friedmanite or monetarist faction in the United States. In other words, the *Wall Street Journal* is a voice from the outer space that does not exist, and from a world that will not exist very long, if it continues to listen to the *Journal*.

The second one, which is more popular, comes out seven days a week, and it's not a newspaper; it just pretends to be one. It's called *USA Today*. If you look at it, you say, "This is not a newspaper. This is written for people who are too stupid to read the morning comic book."

But what's relevant, and as you know, looking at different cultures, sometimes you find certain clues that tell you what's wrong with that culture. And, you look at national popular television. You look at our national entertainments, what people spend money for. You go into typical bookstores, including university bookstores, and you look at the subject matters which are sold in the bookstores. Then you look at some of the leading newspapers, and you look at other entertainment, which tells you more about a people and its condition, than anything else. Because when they're working, they're doing as they're told; when they're going to entertainment, they're doing what they're telling themselves, and they reveal their inner self.

Now, look, this is a section of this newspaper, *USA Today*. This section is called "Money." In former times, you would have newspapers that would have a section called "Business," "Economics," or, even in the *Wall Street Journal*, "Finance." This: "Money." "Money." "Money!" It tells you a great deal about what's wrong, why funny things happen in the United States: because people are thinking about *money*.

We weren't like that always. We always had greedy people, but we didn't have people who thought that money itself was a god—not many of them. It used to be the case, even in entertainment, that if you presented a character in entertainment in the United States, who was interested only in money, this would be typically, in a movie, for example, an evil person, the man who is thinking only about money, who has no other morality. Money. And that, unfortunately, has become a very large factor in the population of the United States, especially in the wealthiest, and most influential by virtue of wealth, circles.

In former times, before the middle of the 1960s, for example, there would be different concerns among people, such as infrastructure. For example, take the subject of education. Education, science, and infrastructure are the most important parts of an economy. Good education creates the potential in the young for

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Editor's Note: This speech was first published in *EIR* Vol. 25, No. 17, April 24, 1998, pp. 26-35.

Schiller Institute

A Schiller Institute delegation visiting the Institute of Nuclear and New Energy Technology (INET) at Tsinghua University in China in May 1996, where a 10 MW high-temperature gas cooled test reactor (HTR-10) was being built. Such safe, efficient nuclear reactors are essential for China's future.

the creativity, the capabilities of the adult. Health, of course, is indispensable; a family that has a high death rate, early mortality, can not provide the nurture for the children needed. And, if you have a society in which you have a high death rate, you can not develop the children as well economically as you can in one which has longer life.

Without infrastructure, no economy can work. Look at Southeast Asia, for example, and compare China, for example, with the leading machine-tool economies in Europe, say the United States and Germany as examples. What people in Southeast Asia lack, is infrastructure.

You have the fourth most populous nation in the world, Indonesia, which has an inclination to high technology, as typified by a man who is presently a candidate for Vice President, B.J. Habibie. Habibie, educated in aeronautical science at Aachen University—a very good education—is the leading industrial magnate in Indonesia, who brought in an aircraft industry top-down. But Indonesia does not really function, because it has very poor infrastructure, and because the national leadership has not yet understood how to approach infrastructure.

Indonesia is an island nation, a nation of many islands, which means that there's a lot of water. And, the land area has a large coastline. Therefore, it has a natural, built-in transportation system, a water system. Therefore, the most important thing for Indonesia is to develop, in the region of the entire sea area, high-speed, efficient waterborne transport, to develop all the islands together. So, where China has a northwest territory development, inland and northwest territory, to develop itself fully, the potential for Indonesia is to develop all the islands, as an integrated nation to an integrated economy.

Another example, another problem is that the greatest obstacle to development in Southeast Asia, is very poor machine-tool capability. They actually are still colonial economies. The so-called Asian Tiger phenomenon—except for Korea, which is special—the Southeast Asia Tiger phenomenon was a farce. It was never true! Because to have a true, viable economy, you have to have a sovereign economy.

Think back to times of warfare. For example, China has developed as a nation under conditions of threat of war. Therefore, China will think, in economy, also in terms of national security, not just needs of the people. "But what if the world turns against us? Can we survive if the world turns against us?" This is not only good military thinking, this is also right thinking under all economic conditions. "Do we have the capability of surviving, if the world blockades us? Could we get by? Could we maintain our people?"

Well, the most important thing is the so-called machine-tool industry. The machine-tool industry has two aspects to it. One aspect is the machine-tool industry which is virtually a scientific laboratory: the people who invent machine-tool designs. Then, you have a secondary machine-tool industry, in which designs which are already developed as designs, are adapted to various uses. These are also the machine-tool industries which do the repairs on high-technology industry.

Just think: In Indonesia, or Thailand, or Malaysia, or the Philippines today, think of the problem if a machine, if a modern machine breaks down. How can they repair that machine? How many miles do they have to send to bring in a technician to repair that machine? They have no local capability for sustaining their own

industry. In China, of course, it's important to increase greatly the size of the machine-tool sector, particularly in the areas where the new development will occur, in order to have the machine-tool repair capability and technical training capability, to support the industries that go into these areas.

So, these are important characteristics.

The Best Example: Space Exploration

One of the best ways of thinking about this, is to think about space exploration. Now, space exploration is a perfect example of the Machine-Tool Principle carried to its most advanced level.

For example, during the middle of the 1980s, I developed a design for a 40-year program to begin the colonization of Mars. Why would it take 40 years? I worked it out step by step. Because, in order to do each step, you have to complete a previous step. First of all, you have to change the way you go into space. A rocket into space from Earth is not efficient. It's not efficient! It wastes fuel. First, you take a plane, a high stratosphere plane, a jet which goes to a high altitude, and carries a rocket on its back. You put a low-altitude station in, and then you build another rocket plane at that level, which goes to what is called geostationary orbit. This is the space platform level.

Then, you have to colonize the Moon, not so much with people, but with industries, to build craft to go to Mars. They're big. Do you want to put all that weight from Earth up into space? Very costly. Go to the Moon. There's raw material on the Moon. Use nuclear technology for automated industry on the Moon, to make the parts for the big spaceships.

Then, you send all your space equipment to Mars. You put it in orbit around Mars. You develop high-speed technology, so that you can get to Mars within days, not months: constant acceleration. That is, ballistic trajectory to Mars is very slow, it takes months. Only twice a year can you have a good journey to Mars. If you want to have a journey to Mars constantly, you have to have constant power, a constant-powered flight. Then you park everything around Mars. You drop everything to Mars' surface, and you begin to build a habitat for human beings.

To do each of these steps in sequence, with a good program, would take 40 years. Therefore, we can conquer space with technology, but also with infrastructure. The ability to develop the infrastructure for human existence, is the precondition for human existence and production. And these technologies which we would use for Mars, are the same technologies we would use to make the desert habitable on Earth. If we can build a city on Mars, we can build a city in any desert. If we can transform Mars to make it more habitable, we can transform any part of Earth to make it more habitable.

All of this requires technology, machine-tool technology. So, if we think about space exploration as the frontier of infrastructure, then we look back at Earth, we have a better understanding of how infrastructure works on Earth. So, think of ourselves as visitors from space colonizing Earth. We need to make the Earth habitable for human beings, and for the kinds of production human beings require. So, we think of ourselves as man in the universe, and Earth is our first colony. And then we have the right thinking.

So, everything you say about infrastructure, should have that mental outlook. We are conquering space, beginning with Earth. And this requires a constant drive of improved technology, which enables us to do the things to create the infrastructure to conquer Earth. This is true of soft infrastructure, such as education, science itself, health care. We have to improve the conditions of life of the human being, the human mind, the human body, protect it. Science to develop the knowledge of society. Infrastructure. Preconditions for development.

Man's Transformation of Nature

If you want to have an industry, you have to move materials to it and from it. Therefore, you require an efficient transportation system which has a low physical cost of transportation per ton of weight. The most efficient, of course, is rail—rail or magnetic levitation—the lowest in the cost, physical cost per ton mile. Roads are very inefficient, and the only time you use roads, is when it is inefficient to build rail. And you try to use them only for very short distances, because they're very costly, per ton mile, relative to rail. Rail is much cheaper. Water is the cheapest, but that's not land. But, water is slow.

Therefore, if you wish to move freight, and you don't want to have a lot of freight in the system, if you don't want to produce a big inventory, then you will want higher-speed travel, in order to reduce the cost of inventory. If you have, for example, coal, or iron ore, you would prefer to move that by water, because water is so cheap. And, therefore, if it goes more slowly, you don't care, because the cheapness of water transportation is an advantage.

You also require power. Now, power has quality, as well as quantity. The generally easiest measure of power efficiency, is what is called *energy flux density.* In other words, you take a square centimeter of a surface area. You have something flowing, like water, or electricity, or whatever, flowing down a tube. You want to know how much energy is going through a cross-section area, one centimeter, for that flow, energy as represented by motion of water, energy as represented by electrical power, or whatever. So, energy flux density.

Now, certain sources of power have very high energy density. Very low, is muscle power, animal power: very poor. Open, simple burning of wood fuel: very poor. Sunlight: very bad. Sunlight is very poor. You can not get efficient power from sunlight, only in small quantities, and only for special uses. Let the plants have the sunlight, they know how to use it efficiently!...

Now we have more efficient chemical power, chemical reactions. They're more efficient than burning, simple burning. For example, one of the most efficient chemical sources of power is the simple combustion of oxygen and hydrogen. It's much better, for example, to use methane for airplanes, than it is to use gasoline or kerosene. So generally, what we would do—in many cases, for chemical power, if you use a nuclear plant, or a thermonuclear plant, you can convert water into hydrogen and oxygen, by dissociation. You then can use the hydrogen as a fuel for local use, or you can make methane, natural gas, so-called, and you can use that as a fuel, which is much more efficient than gasoline. Also, when you use combustion of oxygen and hydrogen, your waste product is water, which is not a bad thing to have. It's not a pollutant.

So, those are the most advanced. Look at the Periodic Table. You can generally tell from the Periodic Table of Chemical Elements, what is the most efficient chemical process for energy. But that's not too good.

You go further: You go to the atomic nuclear level. Now, the energy flux density will be 100 to 1,000 times as efficient for nuclear energy, as for chemical energy. Thermonuclear energy will be 100 times or greater more efficient than nuclear energy. We have another reaction we know, a physical reaction we know, which is about 1,000 times more efficient than thermonuclear fusion. It's called matter-anti-matter reactions. These occur in the laboratory. We measure them, but we do not yet know how to control them. One of my objectives in my Mars program, was to say, "We have 100 years to develop this technology. We must find out, in 100 years, how to control it. Because it's a thousand times more efficient than thermonuclear fusion."

So, energy; again, infrastructure. To create a habitat for human beings, and to create a habitat for industry and agriculture, we must transform nature, to bring nature, per square kilometer, up to a quality which is, for human beings, favorable, and also for industries. These qualities include transportation, soil development, water management, power, communications. Then, living places for people, which means education, health care, science services.

When you get industry, the next thing you require with industry, is machine-tool industry. If you want to maintain a factory, you should have a repair shop that can maintain the machines. The machine-tool industry is the first industry, the most important industry, the mother of all other industry. The machine-tool industry.

The Eurasian Land-Bridge

Now, how do you do that? Well, let's take the Land-Bridge [see Figure 1: Eurasia: Main Routes and Selected Secondary Routes of the Eurasian Land-Bridge]. You are very familiar with China, more than I am, so I don't have to tell you about China. But, in general, look at the condition of China. We have the problem of the inner area, which is poorly developed economically, where people live, but they're poorly developed; where the people are poor. Number-one problem.

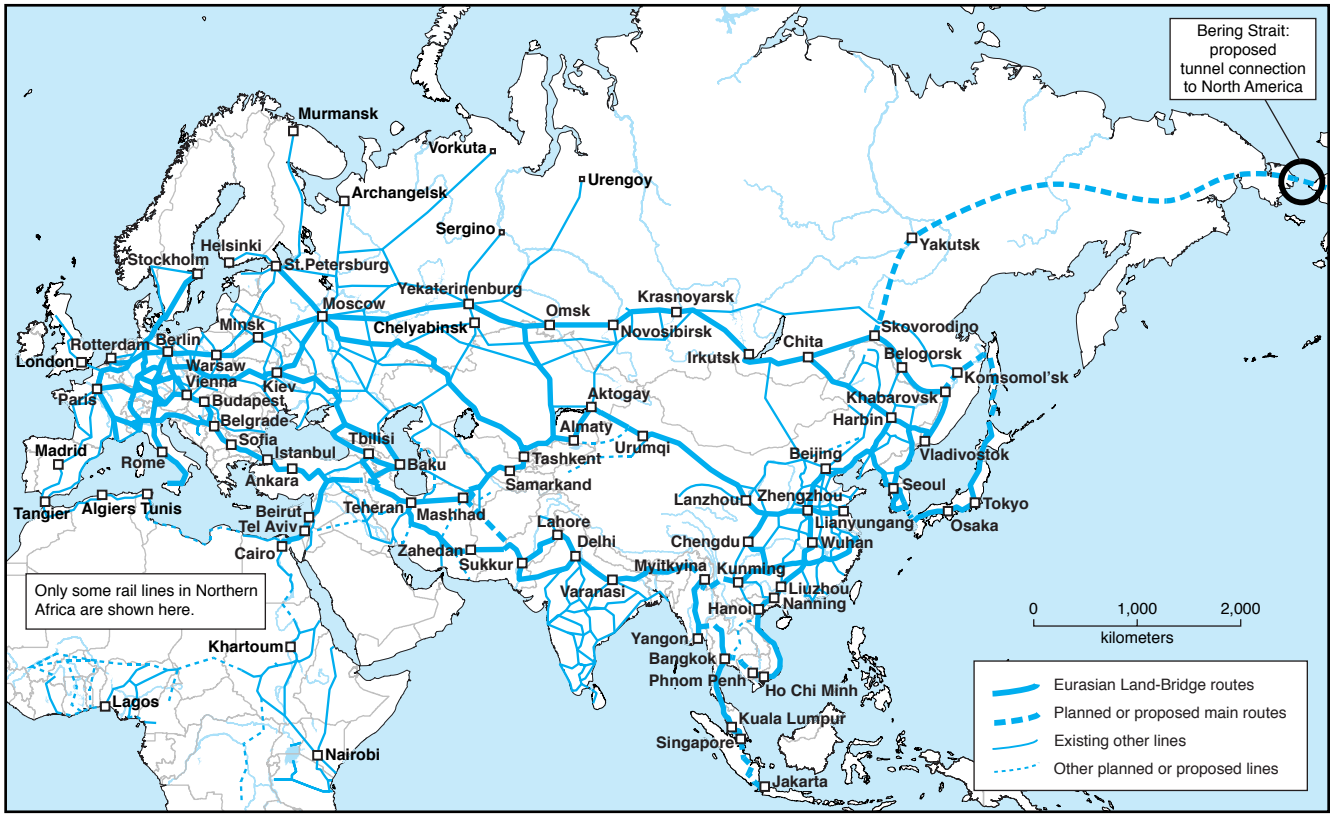
Number-two problem: not enough land area developed, so that you can have population growth. How do you do that? The northwest, areas which are now desert or semi-desert: You must open up the desert. Well, the problem is very much like the problem we studied in the Sahara: How do we deal with northern Africa?

Well, what you do, is you take the desert area, and you design a Silk Road. But not just a Silk Road, not a transportation route. Along the transportation route, you move gas pipelines, water pipelines, power stations, everything. Develop the land area on either side, 50, 100 kilometers either side of the rail line, and you conquer that amount of desert. You want to do more, more desert? Make another development line, another transportation line, the same thing, off the main line.

And, in that process, you can control the desert. It's like conquering the desert. It's like a military flanking operation against the desert. We are now going to defeat the desert! It may take us 50 years, but we will defeat the desert. In our children's, our grandchildren's time, the desert will be conquered.

FIGURE 1

Eurasia Main Routes and Selected Secondary Routes of the Eurasian Land-Bridge



So, what we do is, we go through these areas. We say, "Are there people here?" Well, in inland China, there are people there. Not in the desert area, not so many. "How many people can we employ in these areas? What resources do these areas have, for this infrastructure?" All right. The farmers will produce food. So, we will feed people who work on this project in this area. This will be now new income for the farmers, a new market for the farmers.

You have unemployed people? They don't have to go to the coastal cities for work; the work will come to them. But, they don't have skills. So, we will have to have skilled cadres move in to train them and guide them in the new employment, and to develop their skills. More teachers. You will need more education. More health care, more services, in order to psychologically integrate the local population, with the benefits of the work.

So, the thing starts with the infrastructure project, development project. You now can bring in the machine-tool support, the local branch of the machine-tool industry, which means you can bring in any industry that fits that area.

Infrastructure Development in Europe

This is true all over the world, with the building of large-scale transportation projects. In Europe, it used to be canals. From the time of Charlemagne on, canals; over 1,200 years ago. Then it became, later, roads and railroads; in modern times, railroads.

Then, the development of mass power distribution. We had the first burning of fuel. The discovery of coal as a fuel to replace wood was a great advantage in Europe, and the development of that, which occurred in the Sixteenth Century and Seventeenth Century. Because we were destroying forests. A forest is an ecological resource. It should not be used just for fuel. It helps to control the environment. The forest is the most efficient transformation of sunlight into biomass. It's a very useful resource for wood, for many other things we get from the forest and its surrounding areas. It maintains part of water management. You have forests, you have watershed.

So, these developments occurred in a natural way. We kept adding new technologies. Every step started with two things, infrastructure, and soft infrastructure:

that is, education, health care, science, transportation, power, land development, land management. These things became the stimulant and the precondition for creating new kinds of industries.

If you look at the importance of river development in Europe, for example....You take the Rhine River, the Elbe and so forth—these were crucial in the early development of parts of Germany. For example, in medieval times, you had the development of what was called the Hansa. These were the shipping groups that went across the North Sea and the Baltic Sea. You have here the Rhine system, which is down in Bavaria and so forth [see Figure 2: Existing and Proposed New Waterways in Europe]. And you have over here the Elbe system, and so forth.

So, the rivers were natural communication, natural highways. So, you would have the areas of Germany, particularly in mountain areas, say in Bavaria, what is today Bavaria, or what was the Hartz Mountain area, and other areas. You had Saxony. You had areas where there were mountains with large mineral resources. You had primitive types of metal industry. And these would become the resources by the Rhine system, the Elbe system, and so forth, which would now be connected to the sea, which would then be connected to this shipping transport along the coast, among various parts of Europe.

So, early economic development utilized a natural infrastructure, which was the rivers. To improve on the rivers, we added canals to connect rivers to each other. This improved the density in Europe. Look at the canal system, the development of the canal system in Europe, from the time of Charlemagne, and look at the plans which were laid out in the time of Charlemagne, some of which were just recently completed. For example, the canal connecting the Rhine River to the Danube River for transportation, which is the connection of the North Sea to the Black Sea, was only completed recently. And this was a design which was intended over a thousand years ago.

So, the development of Europe before railroads was largely based on cheap water transport using rivers, and increasing the usefulness of rivers by adding canals, as happened in China. The same question, of how to use a canal to develop China. How not to use it, how to use it.

This was a combination of rivers and canals. By linking canals across one river system to the other, you now take the natural highway of water highways, and you add to them the artificial highways, and that gives you the cheapest cost per ton for movement of freight. So, if you have bulk freight, like heavy freight; like fuel, for example, petroleum, oil, you want very low cost. For low cost, you must pay the price of slow freight, slow transportation. So, water transportation is perfect. Grain, coal, ore, many other types of things, which are cheap, low cost per ton, better to move slower.

So, what happens is, naturally, when you create infrastructure development, where you bring generally new land, which may have been inhabited before, but it's not economically useful—it costs too much to produce in that locality—you now make it potentially, economically, more productive, by developing infrastructure.

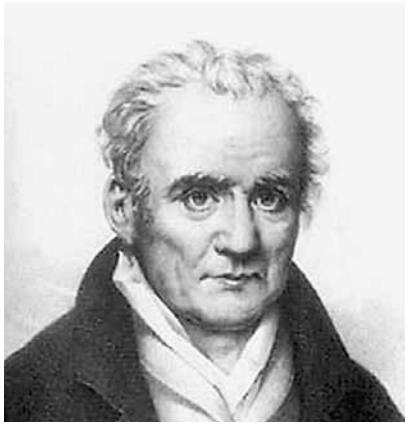
For example, you actually may develop improved agriculture. Look, for example, in Germany, you will find they had a more intelligent approach to use of land, than they do in the United States. In the United States, we have big, sprawling suburbs outside cities. The farms are pushed away. Farmland is pushed more and more away. In Germany, it's much more intelligent. You will find farmland up next to the big factory, which is a natural, economical thing, as also for China. If the farmland is right next to the city or the town, then the population of the city and the town will get its food more cheaply, more readily, right from the local area. So, the planned development of agricultural land, and new techniques of agriculture, including artificial environments for food growing in inclement areas.

What do you do in a desert area? Not good for farming, perhaps. But, you may have an artificial environment for high-quality food; vegetables, for example, under special conditions, a special environment. For example, plants like carbon dioxide. People do not like carbon dioxide; it's not good for them. But a plant is very happy. Give a plant energy, especially sunlight, lots of carbon dioxide, and adequate water, and minerals, the plant is very happy. It grows very fast. So, you may create special environments, which are good for plants, but not good for people. And you will grow food under these artificial conditions, which will be much more efficient and much less costly, actually, in terms of the result, than growing it under open field conditions.

So, the development of an area then, by infrastructure, now creates the potential for industry, private industry, which otherwise did not exist, provided you have the machine-tool capability.

Now, look at this from a standpoint of credit, devel-

opment credit. You take a large-scale project, like the Land-Bridge project. So, the state will create credit, and create a network of companies. You probably will have a state agency, which is responsible for all of the political aspects of the project, because in any project, you have political aspects. You have to acquire land. The project—a rail system, a transportation system—requires land. This land may already be being used for something else. This is the responsibility of the state, as in the Three Gorges Dam, to take charge of that problem. You had to move people in China from one area to another area, to make the Three Gorges Dam possible. This is the responsibility of the government. No private company could do that.



Gaspard Monge (left), the founder of the École Polytechnique, and his student and friend Lazare Carnot (right), who developed the concept of the modern machine-tool industry.

So, the government creates an agency, like the TVA in the United States ... a general master agency for that area, responsible for that project in that area. Now, at that point, you can have private contract companies, typical in the United States, come in.

The Tradition of Lazare Carnot

In the United States, we also did something else, which also is probably good for China. From 1814 on, the development of the U.S. military, first the Army and then the Navy, was based on the development of the military as an engineering force. The way this happened, is that the foundations of modern industry were established in France, beginning 1792-1794, by Lazare Carnot, who was then the commander of the French forces, who achieved the victory against the invasion of France, under his leadership.

Not only was he a military genius by training, he was also a scientist. Lazare Carnot developed the concept of the modern machine-tool industry. As a commander of military forces, he revolutionized warfare in two years. Modern warfare, as we know it from the Nineteenth Century and the Twentieth Century, was invented by Lazare Carnot, in two years, in taking a French army which was being defeated, and converting it into an undefeatable land force, by changing the structure of the military in a way which was immediately imitated in Germany, by people like Scharnhorst, in the development of the Landwehr in Germany, and other things.

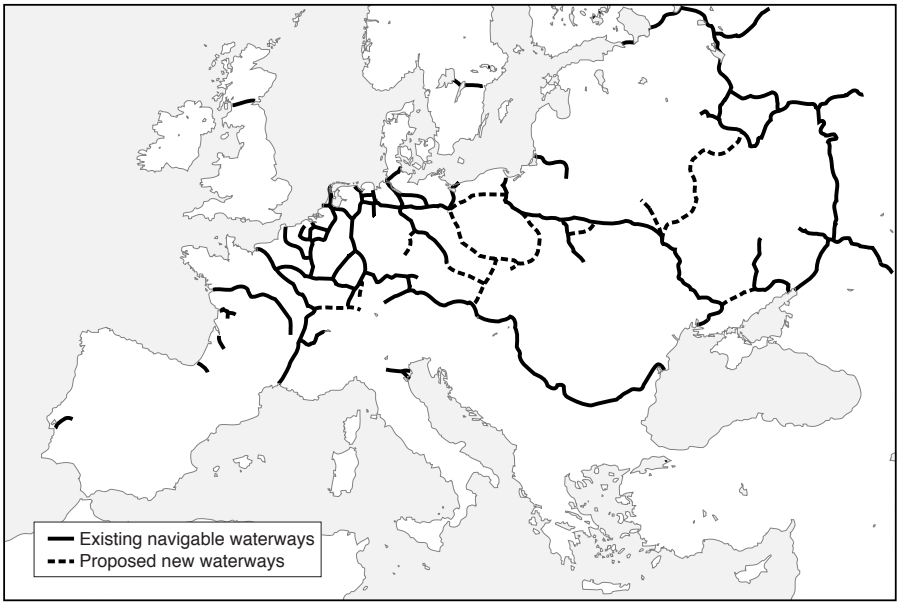
But, he also applied the Machine-Tool Principle, and introduced it, with industries centered around Paris, to run a crash program. For example, Lazare Carnot developed the techniques for mass production of mobile field artillery. And one of the features of the French Army under Carnot, was that it developed the use of mass mobile field artillery as a new device in warfare, which changed the character of warfare. And such things.

Lazare Carnot's teacher and friend was Gaspard Monge. Gaspard Monge is a very famous person, who founded the École Polytechnique in France. This École Polytechnique was a continuation of the work of Leibniz. It was a copy of Leibniz's model for the Academy. Monge and Carnot were both, scientifically, followers of Leibniz.

Now, Napoleon ruined much of this. But, in 1814, when the Restoration government destroyed the power of Monge and Carnot, the people from the École Polytechnique went to various places. Gaspard Monge, who was older, retired, and died in 1818. Lazare Carnot, who had been his student at one time, lived in Germany, in Magdeburg, as a refugee from France. He died in 1823. During this period, he was one of the advisers to the German military.

Because what happened, was that the patriotic faction in France, under conditions of the occupation of France by the Restoration, moved into Germany and worked very closely with people such as the brothers von Humboldt, and others, to transform science, move science, which was dying in France, into Germany. And

Existing and Proposed New Waterways in Europe



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Alexander von Humboldt, the brother of Wilhelm von Humboldt, was the key leader in bringing together places like Göttingen with people from the École Polytechnique, who were refugees, into Germany. And Germany from 1827, 1828, became the world's leader in science—where France had been the leader in science earlier—because of this change.

Among the places these people went, from the École Polytechnique, they went to the United States. And, West Point Military Academy, under Sylvanus Thayer, under the Presidency of President Monroe, was revolutionized to become the center of scientific and engineering training in the United States. Out of this came the Corps of Engineers. So, the military officers graduating from the military academy were chiefly all trained as engineers. The Corps of Engineers, the military corps of engineers, from that time until after World War II, was the leading builder of mass infrastructure in the United States.

It has been shown that the way to develop the best quality of military, is to develop it as a corps of engineers, because it has the highest quality, intellectual quality, because of its scientific work. It has a close relationship to the people, because of the benefit of what it does for the people. It has high morale, and it does not lose, but gains, military capability, because of its technological quality. It can more quickly adapt in any area; it can do what it has to do to survive.

An army depends upon logistics, which is infrastructure, mainly infrastructure. An army must develop its own infrastructure. It can not say, "We don't have the road." It must build the road. The army can not say, "We don't have the bridge." It must build the bridge. And, it must do it quickly, and efficiently. So, all efficient armies, in modern times, have been based on engineering principles, and the training of the officers as engineers. Thus, the engineering corps of the military becomes an integral part of the civilian infrastructure development of the country, and becomes an arm of the government in these large-scale infrastructure projects.

In the United States, it used to work two ways. Some projects would be direct contracts to private businesses, which would make a contract with the government to develop infrastructure: a power station, electrical station, whatever; either a state government or national government.

In many cases, however, the Corps of Engineers would make the contract. That is, the Corps of Engineers would be responsible to build a big dam. But, the Corps of Engineers would make a contract, a government contract, with private contractors, to work under the direction of the Corps of Engineers, to carry on the project. Then, the Corps of Engineers, and these contractors, would make other contracts with suppliers of materials: for steel, for concrete, whatever.

Then, you would have to have people provide for the housing for the workers for these projects. So, the result of that, is that the government credit, which goes through the government to the private contractors, now begins to stimulate every part of the private economy in the affected areas. It happens that government is very inefficient in running industry—the problem that China is trying to deal with. So, you want ingenious, capable people to run the industries, who will not have to wait for the government to tell them what they have to do; who can solve problems; who can prove that they know how to run the industry. Let them succeed.

The Vital Role of the National Government

But the overall direction, especially in infrastructure, must come from the government. Otherwise, chaos! A military corps of engineers is a good example of the role government can play efficiently. And, if you could study

the work of military engineering forces in the United States and in Europe during the Nineteenth Century, and the first half of the Twentieth Century, these are good things to study to understand how a military corps of engineers can work in a national economy.

But, through these contracts that go out to private contractors, is how you get the civilian economy engaged. The stimulation of activity in the private industry, private sector, by these contracts, then becomes the catalyst which causes the growth of the private sector.

What is being done in the United States today, is insane. What was done in virtually every country in the world in the past 30 years, is insane. The idea that you let the private sector run the economy: insane. Can not be done.

One of the great inventions of all the inventions, that which is the greatest, in the success of European civilization in the past 550 years, the greatest of all inventions was the modern nation-state, the sovereign nation-state. And, the one phrase which identifies the principle of the nation-state, is the phrase, in English, "all the people." Who is responsible for *all* the people? Who is responsible for *all* the land area? Who is responsible for the protection and development of *all* the people? Who is responsible for the protection and development of *all* the land area? That can only be an agency of all the people, which must be sovereign. It must be a sovereign national government of all the people of all the territory.

This government must then protect and provide for the private and personal initiative. Infrastructure is the natural economic expression of the functions and responsibilities of government. Development of the land area, development of the territories, protection of that development, and development and protection of *all* the people. That is the responsibility of government, whether it's government on the national level, or whether some parts of government are assigned to the local level, regional level.

What's happening today, is the destruction of government. What has been happening in the past 30 years, is that we've been going back to feudalism: Eliminate government, let local power run everything. In China, that would be called the warlord system, the return of the world to a warlord system. And, everyone in China knows, who's had the experience, of the importance of that change. The great achievement, the great struggle of the Chinese people was, after all these times of trouble, to establish a suitable form of national government to unify the people, and to protect them from the evils of these local powers playing against each other, the parasites.

Whatever happened in Chinese policy, the policy of all patriotic China movements, whatever other conflicts they had, was one thing, Kuomintang or Communist Party, the same thing: Eliminate the evil. Unify the country. One country, one government, one people, and one agency responsible for—what? The development of all the people, the development of all the land, which takes account of the world around it, and has a moral attitude toward the world around it, but has its own responsibility to take care of its own people, its own land. And, infrastructure expresses the natural functions of government, which it can assign to private interests to help it, but for which it is responsible. In the final analysis, whatever is done to the land, whatever is done to the people, is the responsibility of the government. And, the government can never eliminate, from its own responsibilities, those charges.

If the government does that well, if the government wishes to improve agriculture, industry, to have technological progress, the government will foster those private interests which do that. The government will build universities as science centers. The government will have the universities and science centers cooperate with the machine-tool industry, with which it has a natural relationship; with the entire medical profession, with which it has a natural relationship; with all science and development.

The government, and the government alone, can sponsor space programs. No private interests can competently sponsor a space program. A space program is a function between the machine-tool sector and the universities and the government. It's the only kind of space program that can work, by the nature of the program.

So, if these principles are understood, there is no problem in making policy. There are problems *within* making policy, but the idea of what the policy should be, is no problem. *Stimulate the growth of infrastructure for the purpose of making it possible to have growth*. And you find that producing the credit, and supplying the credit for these projects, through national institutions which sub-contract with private institutions, and which selects private institutions on the basis of performance—

For example, let's take the case of China, which we've been looking at in a somewhat limited way, which you know better than I do, by far. Let's take the

question of big industries, which were state industries, which are very inefficient. The inefficiency comes from the rice bowl principle, that the industries assume the responsibilities for the rice bowl for a lot of people. The responsibility for the people lies with the government. So, people who are not productive, are maintained on the industry payroll, because they are the ones who are responsible for the people. So, the industry does inefficient things, in order to meet the responsibilities to the people. It makes work for people where they are not efficient. It supports them, where they should be supported by some state. But, there is no agency for that.

So, the question is, in Europe, as in Germany, or in the United States in an earlier period, that problem was solved by a Social Security system, in which the whole national economy maintained a Social Security system to care for people who did not have work, or who were old, or whatever; but, to care for them. It's a responsibility. Whereas, industry was free of that responsibility, except for the condition of the people who worked for it. And therefore, the industry could concentrate on doing its job, the private industry.

So therefore, this is the kind of problem we face, how to make efficient industries. And, it's not a question of government industry, or non-government. That's not the problem. The problem is how you design it.

And, it's better to use ... the German notion of *Auftragstaktik.*[1] The general function of the private industry, and also of the state sector, but the private industry especially, is *Auftragstaktik*. The government calls people from various industries together—business conferences, conferences on economy, calls together experts. All kinds of conferences, experts from each industry come, they talk. Discussion occurs. The government gets a sense, and others get a sense, of what the situation is.

Then, the government says, "Well, let's go in this direction." Now, all the people who have participated in these conferences, all the industries: now they know what they need. And the government says, "Do that. We'll cooperate. Our policy is this." And, that division of labor between the private sector and the government, is the way these things will work. The key is government's responsibility for infrastructure, which is the way to get credit and collaboration with the private sector.

1. Auftragstaktik is roughly translated as "mission tactics." It refers to the idea that soldiers are assigned a mission, but they are expected to use their own ingenuity to figure out how to achieve the goal. See Andreas Ranke, "Schlieffen, Carnot, and the Theory of the Flank," *EIR*, Vol. 25, No. 6, February 6, 1998, pp. 62-70..

Prospects for China's Future

And people who are good, and good managers in assisting the government in infrastructure projects, will be good managers in other aspects of industry. But the key things that have to be understood, are infrastructure and machine-tool sector. And, the great problem of Southeast Asia, and, to a lesser degree, the problem of China, is insufficient development of the machine-tool sector.

For example, let's take a couple of things. China has a limited space sector. Very important. You're not a sovereign state these days, unless you have a space sector. China is also working on developing a high-temperature gas-cooled reactor, or high-temperature reactors, nuclear. Very important. Because what you need in China, is, you need to be able to have, very quickly, energy in areas where new industries are coming up. Without energy, they will not function.

Now, we already see in China the problems of the transportation system, because of moving coal. Railroad use for movement of coal for energy, is one of the great burdens of China. So therefore, if you increase the amount of energy production, which is what this means, where are you going to get the railroads to move the coal?

What's the answer? You need a nuclear reactor, which is more efficient, which puts less strain on the transportation system, much less. And, you want one which can be used by Chinese who are not of the highest training, for safety reasons.

So, you want a highly safe, very efficient reactor, which you can move—which is small enough to be moved to local areas. You put two, three, or four small reactors together in an area, so that if one goes down, the other three function. And the modern gas-cooled reactor, which was developed in Munich, in Germany, which China now has its own version of, is working to develop it, is ideal. This comes from 100-200 megawatts, and it's possible to make larger ones; we recommend generally, from what we had from the man who developed this, who recently died, who was long a friend of ours, that the 100-200 megawatt self-regulating reactor is the best model. And, I would move two or three, or four, small such reactors into an area, for its energy supply, because it makes it simple. If it has a problem, it shuts itself off. And the specialists come in and fix it. But, in the meantime, you have not eliminated the source of power, because you have two or three other reactors which are functioning, which will continue to supply enough power.

And, in any case when you put power sources into

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The Three Gorges Dam on the Yangtze River in central China, is the world's largest power-producing facility of any kind. The hydroelectric gravity dam also increases shipping capacity on the river and reduces flood potential, and its reservoir provides water for agriculture and industry.

an area, you must anticipate growth. So, you will put more power than you actually require into an area, because you anticipate growth, the need for more power. And, you wish to encourage people to use power, as opposed to inefficient manual labor. So, you create the possibility.

In other ways, in the chemical industry, the high-technology aspect—which is closely related naturally to universities, such as space program, nuclear program, other programs, machine-tool industry generally—is the way to improve, rapidly, local areas. Because then the nation has the ability to supply to a local area a package of services which the local area, the local administration, can assimilate and utilize to make the project work.

For example, new schools: You have a new industry, you need new schools. The labor in the area does not understand the technology. Maybe many of them are farmers, or worked at low-skill work. How do you take farmers or low-skilled workers who have come off the farm, to engage in modern production? You must have a package, a training package, and cadres to enable them to succeed.

The advantage, of course, is that, instead of moving unemployed peasants from an internal area, or low-skilled people to Shanghai or someplace else, to the coastal areas, to work in low-skilled industries—which is bad for China, in the long run; it may be useful in the short run, to get some foreign currency, but, in the long run, it's bad for China, because the people are not developing. They are away from their families. They have dislocation, psychological dislocation. It's much better to develop the people in an area, than it is to move people out of the area, to new areas. There are exceptions, but generally, that's the rule. Psychological effects, cultural effects, political instabilities; all of these things come from this kind of business.

And, therefore, you have a package of infrastructure. "We want our part of the project," each area says. Fine. China's policy is to do this. As fast as possible, each area should have its own projects. It will uplift the morale of the people. You will make the local political units much more effective, because they can now do something for the people. Very important. If government is useful to the people, the people like it, or they will come to like it. They may have questions at first.

But, you must have the power, you must have the cadres, you must have the science, and the general infrastructure. And they must be brought into an area as a coherent, organic unit. Forget the money part. If you do the right things physically, the money part will work out. And the national level simply has to set its priorities properly. But, do the right things physically, and the money part takes care of itself, under a good national money policy.

If the people are producing more, if they're happier and more secure, if they're advancing in their knowledge, it's good. So, what is good physically and psychologically, and socially, is good. If that is done through the infrastructure and industry, you've done the best. If the national system supports that policy, it will work. And the interior of China and the deserts will be cultivated, and everything will be better. It will merely take generations and lots of work, which has been the history of mankind everywhere. Every success we've had, we've always done it that way. If we stop doing it that way, we have trouble.