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These Are No Ordinary Times



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These Are No Ordinary Times

Impeachment Collapses, Battle Won: Go Like Hell with LaRouche's American System

by Barbara Boyd

Jan. 30—Lyndon LaRouche once said that since 1763—at the end of the French and Indian Wars, when George Washington realized his sole enemy was the British—all of world history has been a battle between the American System of physical political economy and the British system of rentier finance, the oligarchical system now embodied in Wall Street and the City of London.

[As of this writing,] it is highly likely that tomorrow or Saturday the move to convict the President will collapse in the Senate. Just in time for the Iowa caucuses and just ahead of the President's State of the Union address on February 4.

Nothing in this war—and it is a war for the Constitution and our nation—is certain, as the adversary is wounded but not yet defeated. That is a dangerous circumstance. But, it is very possible that a wave of optimism can now take off, using that powerful, physical force in the universe referred to by President Trump at Davos. In such a mass-strike situation, everything becomes possible, as the President said, provided we give leadership. And we have to do that now. We have to pull rank on behalf of that reservoir of ideas left to us by Lyndon LaRouche, which is the only viable path to rebuild the United States and establish economic justice and prosperous economies throughout the world as a whole.

Internationally, the situation remains very danger-

ous. A key part of the strategy by the oligarchy is to pull the President into another war in the Middle East. The novel coronavirus has just been declared a world health emergency. Stupid people are using this to attack China, when China is doing huge and incredible things to contain this virus, things which our country probably is not capable of doing in its present, divided state. So, the



C-SPAN

In his State of the Union Address on February 4, 2020, President Trump introduced 13-year-old Iain Lanphier, an eighth grader from Arizona, who aspires to go to the Air Force Academy. Iain says, "Most people look up at space. I want to look down on the world." Sitting beside him is Charles McGee, born in Cleveland, Ohio a century ago, who is one of the last surviving Tuskegee Airmen—Iain's great-grandfather.

summit called for by Helga Zepp-LaRouche regarding a meeting of Trump, Putin, and Xi on the issues of war and peace, now will have to include talks, which have probably already started, concerning ending this health threat and taking new scientific initiatives to cure it and similar diseases.

The Forgotten Men and Women Enter the Battle

But we have, now, as the result of this battle so far, ever since this President took the Oval Office, a huge population in the U.S. actually understanding for the first time in my lifetime, that being a citizen and participating in politics is a life-and-death matter. They understand that some awful force is at work to subvert their participation, to steal their vote, and they identify that awful force with the devastation this country suffered through two terms each of George W. Bush and Barack Obama. They call it the Deep State, the military-industrial complex, or other misnomers for the Anglo-Dutch Financial Empire.

It stalks them in the form of an opioid epidemic, a healthcare system which does not work and that they can neither access or afford, the wounded veterans and dead friends which are the result of endless wars, and an economy which does not yet have the ability to support either large or stable families, to allow young people to have children because they see a viable and stable future.

Lyndon LaRouche throughout his lifetime told the world that this force was the British Empire and its policies toward the working and productive classes. That Empire exists as a state of mind and a state of organization of society to which Donald Trump represents an existential threat. He represents that threat because of his attacks on globalization, because of his instinct to reindustrialize the U.S. economy, because of his overt support of space travel and human discovery, because he is a builder who thinks big, and, as fundamentally, because of his love of working people. This is something that Lyndon LaRouche would have found unique in a baby boomer.

Remember that Obama, the Bushes, Clinton, and Carter all proclaimed, in the wake of the destruction of the Bretton Woods system in 1971, that you can't put the toothpaste back in the tube, that you can't come back and have an industrial and manufacturing economy, that the gig economy will exist forever, and that the U.S., henceforth, was a service economy governed by global institutions. NAFTA (the North American Free Trade Agreement) and other free trade agreements which Trump just reversed, were a key part of disintegrating the U.S. industrial and agricultural economy.

LaRouche argued constantly and persistently that putting the toothpaste back in the tube was the key to the nation's survival. Now, Trump is attempting to do

exactly what they said could not be done, and is having some success in the process. Much remains to be done, but it can only be quickly done with the weapons provided by LaRouche. The tens and hundreds of thousands who are turning out for Trump's rallies see that it is possible to be optimistic again. And, we have been steadfast in demonstrating that the coup against Trump is being conducted by the Empire, by the House of Lords, and by their satraps in the intelligence business, the media, and established government entities here.

Putin and Xi represent similar personalities as Trump. The enemy, the British, label all of them "authoritarian personalities" just as they labeled LaRouche and Franklin Roosevelt. Their sin is that they are dedicated to getting things done for the well-being of their nations.

And we have also just experienced, from the President's lawyers, a master class on the U.S. Constitution that our universities are simply incapable of teaching. LaRouche PAC will be making videos of the highlights of these arguments, particularly Alan Dershowitz's argument on the differences between the American constitutional system and the British parliamentary system, which our founders absolutely rejected and which the Democrats and their imperial friends are seeking to reimpose here.

So, the groundwork has been laid in the U.S. for a huge breakout come the Senate vote of acquittal. And what the President and his supporters need right now to win, is the ideas of Lyndon LaRouche for rebuilding this country and for developing the entire world, quickly, seizing the high ground now, before the enemy, wounded as it is, gets a chance to regroup.

Bloomberg the Malthusian Avatar

I want to absolutely contrast LaRouche's grand vision with something else, a looming threat on the horizon, because it illustrates the nature of the battle. That is Michael Bloomberg. Bloomberg is an emergent threat, and he is, actually, the physical representation of that oligarchy that Lyndon LaRouche fought all his life, and which Donald Trump and his supporters have been fighting, even if they don't yet know it fully. I wrote an opening salvo on Bloomberg. But that is hardly sufficient.

If it is clear to people who this guy is and what he represents, and why it is different from the American System and LaRouche's advances on the American System of political economy, then the means for victory

are really at hand. Bloomberg, the villain before you, is the bankers' candidate pure and simple, the British Empire's candidate, as he has been since he first entertained running for the Presidency in 2008. And, it is clear in the mess which is the Democratic Party, that this guy may actually emerge as the key rival to Trump following the South Carolina primary. And you have a President who, however clumsily, advocates the American System, and has broad support throughout the working class and the producer segment of the American population. I ask you, could you ever describe for me a better environment for LaRouche's ideas taking hold and coming into reality here?

I want to refer you to two articles which appeared in *EIR* in 2008, when LaRouche focused on Bloomberg as the next Mussolini, and designed an intelligence project which exposed the British roots of this guy and his plans to reduce most of the population of the world and the world's social organization to that found in medieval feudalism. [One](#) was called "The British Genocidal Roots of Mayor Bloomberg's Madness" and the [other](#) was called "Rohatyn, Bloomberg Peddle Post-Nation-State World." The first article pins Bloomberg as a British agent, someone who groveled before the Tory Party in 2007 with the proposition, "You forgive us for 1776 and we forgive you for 1812."

The second article detailed an oligarchical scheme to destroy nation-states, and, in the United States, the power of individual states themselves. Instead, nation-states globally, and the states in the U.S., would be replaced by the cities and their immediate metropolitan areas as the primary unit of government. These modern city-states, in turn, would be ruled by a global financial elite, just as in feudal times.

Oligarchical Green

If green policies are implemented with the resulting necessity of eliminating whole swaths of the population who can no longer be supported, this is what you get. In addition, Bloomberg, and his mentors George

Shultz and Felix Rohatyn, have been advocates of both privatized infrastructure and privatized armies—ideas which have resulted in the looting of formerly vital infrastructure here, and projects which, when undertaken, actually loot the public rather than conferring any benefits. The privatization of intelligence and military forces has been underway for some time. As in feudal times, rich people would deploy the private armed forces—the institutions of government itself would no longer be really necessary, as people were reduced to addressing small, very local issues of no real importance.

Now think about that in terms of what is now "Fly-Over Country" in the U.S. and the continuing population deserts which are our rural areas. This policy, has, in fact been underway for a very long time. It is a deliberate starving of formerly vital areas of the economy in order to make way for the bankers' plan for government, following the inevitable new collapse of their system. Do you think city-states could conquer something like the novel coronavirus? If you think they could, just study the history of the Black Death. This week, Bloomberg has been rolling out the big city mayors whom he and George Soros have bought for their feudal city-states project, and they are endorsing Bloomberg, rounding up votes for him.

All of Bloomberg's foul ideas, of course, are absolutely the opposite of those of Lyndon LaRouche, who called for wholesale reindustrialization of the United States, the building of vast new manufacturing and physical infrastructure, creating thousands of productive jobs, and fed by a relentless frontier of new discoveries resulting from a crash program for space exploration and development of thermonuclear fusion power. Whole new cities would be built and populated, the beautiful way that the Dome of Florence was built, as President Donald Trump referenced so forcefully in his speech at Davos.

We now have a great opportunity before us. Let's seize it now, when we absolutely can!

Cover This Week

President Trump is drawing tens of thousands to his re-election campaign rallies, 10-15% of whom say they did not vote in the last four general elections, and 25% of whom identify themselves as Democrats, something that has never happened before.



Public domain

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The Jan. 27, 1989 Jailing of Lyndon LaRouche Defined an Era, Which Now Must End

[Watch](#) The LaRouche Case video

[Watch](#) the LaRouche Memorial video

[Sign](#) the Petition to Exonerate LaRouche
at lpac.co/exonerate

I. LaRouche's Science of Physical Economy

AUGUST 2, 2013

LAROCHE ON HAMILTONIAN ECONOMICS

Cancel Wall Street! Bring Back Glass-Steagall!

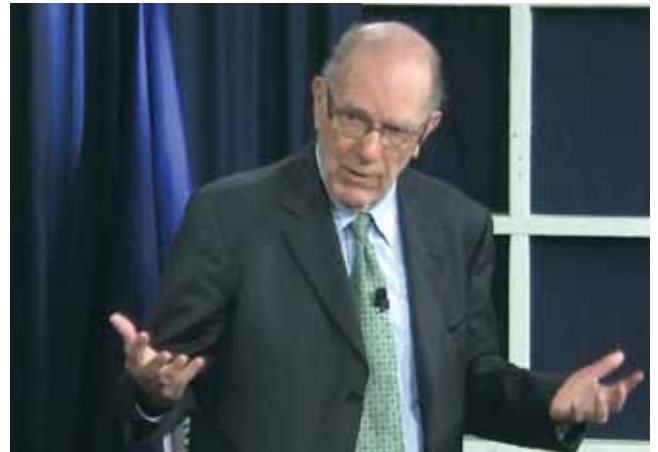
At the start of his weekly webcast on Aug. 2, 2013, Lyndon LaRouche was asked, and responded to, a question from a regional Building Trades Council leader from the Mid-Atlantic area. Here is the exchange.

Q: Mr. LaRouche, I'm extremely upset about the rapidly diminishing economic and political strength of the labor movement in this country. With the collapse of the economy, and the alarming weakness of the unions, the quality and quantity of full-time, productive family-sustaining jobs are rapidly disappearing. The latest disgusting trend toward part-time workers, as a means of avoiding paying for workers' health care, represents another body-blow to the standard of living and general health of the American worker and his or her family.

What we're seeing in Detroit is that Wall Street is looting the health care, pensions, and other benefits that unionized workers negotiated in a prior period of greater economic and political strength. I wish I could say that it is primarily the Republican Party that has been in bed with Wall Street in this looting process, but it's not true. The Democrats are equally guilty. I'm disappointed and angry about the silence of our national union leadership. This kind of collapse could not have happened without their complicity.

My question is: 1) What can we do to restore the health of the union movement as an engine for development, in restoring a large-scale infrastructure/economic development orientation across the nation? And, 2) what, in addition to the re-enactment of Glass-Steagall, can we do to put a halt to the looting of pensions and health-care programs?

Editor's Note: This transcript appeared first in *EIR* Vol. 40, No. 31, August 9, 2013, pages 29-32.



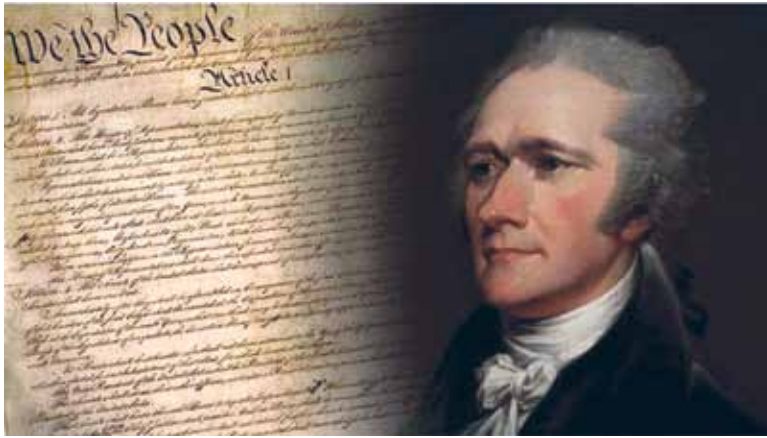
LPAC-TV

"You have to go back to the principles which were clearly understood by the Founders of this nation, notably the economic policies of Alexander Hamilton." —Lyndon H. LaRouche, Jr.

Lyndon LaRouche: Well, dealing with the pension problem is actually fairly straightforward: Those bums should be punished. Exactly that. Because this is not our policy.

The problem here is the fact that for many years, and many particular Presidents and incumbencies, and so forth, that the arguments that have been placed in designing policy have been based on certain *European* standards, which are not intrinsically American standards. That's the first problem. The European standard is simply what you're seeing in the United States today! And this is not our policy, this is not the intention of our Constitution.

Our Constitution was based, in terms of economic and social policy, on what was done by Alexander Hamilton. And Alexander Hamilton had nothing to do with what most people think are politics, or economy—nothing at all. Because our system is not a European system. But unfortunately, Europe has invaded the United States



EIRNS

Alexander Hamilton and the U.S. Constitution.

through our institutions, largely through British banking institutions which have taken over the control of the Congress of the United States. Today we function on the basis of, really, a British system, a British-style system, or a European-style system—which is not the American System.

The Principle of Production

The American System was the assumption that: How do we organize a currency, rather than a European currency? A European currency is gold and silver, chiefly. You take a pile of gold and silver, and that's your wealth. Now you go around and you park this wealth in order to attract suckers to meet the conditions of the people who are the bankers. That's what the system is; that's what the system is *now*.

The system in the Congress now, is a fraud. It has no relationship to the purpose of the United States and our policy. Our policy is: We are not slaves of gold and silver! We never depended upon gold and silver, except in dealing with foreigners. But among ourselves, we're not supposed to rely on gold and silver; we're supposed to rely on *production*. And production, which was defined by Alexander Hamilton as a principle, is what made the United States successful.

But then, some of our Presidential leaders and so forth—their Presidencies—screwed things up but good. And since that time, except with very exceptional circumstances—like Franklin Roosevelt and a few other Presidents—we have never had a leadership which corresponds to our Constitution.

And so therefore, that's the key problem here. And members of the Congress have, in the main, no understanding whatsoever of our Constitution. They *don't care* about our Constitution. They care about wheeling and dealing. They act like a European parliamentary system

with American footprints or something.

Now, the problem on Glass-Steagall is that people don't understand Glass-Steagall. They *think* they do; even many of my own associates don't have any understanding whatsoever of what Glass-Steagall means. They give the *name* Glass-Steagall, but the content is missing.

For example, let's take the case of what Alexander Hamilton used. You have farmers, and you have machinists, and so forth. Now, the farmer will produce a crop, and at the end of that point, the farmer needs to get some payment. So therefore, then you have the others who produce now come in, and *they* do something. So, this transfer of agricultural production, and industrial or manufacturing production, went as a *physical* operation—not a monetary operation. All you had to do was put a price, which was your fair-price estimate, on what these things represent in value.

You do *not* deal on banking. You *use* banking; but banking is largely used in order to make the funding arrangements and payments arrangements among farmers and industrial workers, machinists, and so forth. All of this is laid out very clearly by Alexander Hamilton.

What happened is, we had some other people who came in, who opposed Hamilton strongly, and opposed President Washington. And as a result of this corruption, we've had only a few Presidents of the United States who I would consider not skunks. I mean, some of them are not bad people, but when it comes to their politics, their policy, their outlook, their conception of policy-making, they're skunks, and a big disappoint-



FDR Library

President Franklin D. Roosevelt, delivering one of his famous Fireside Chats from his home in Hyde Park, New York, on Christmas Eve, 1943.

ment. They're not Americans; they're some kind of a hybrid of Europeans.

Two Hotspots of Corruption

The other side of the thing is, the United States has been controlled increasingly by British banking—not only from Britain, but in New York City, and in the City of Boston. These are two hotspots of corruption in the United States. Because the British banking system *has controlled American banking!* And that's what the Wall Street thing is today.

Now, this Wall Street *evil*—and it is an evil; it's not an error, it's an evil—my view is: Cancel Wall Street! And Glass-Steagall's intention now is to eliminate Wall Street—utterly eliminate it. Because it has no value as banking. It has no particular place in our Constitutional system for banking. Our system was a credit system, and the idea of money and so forth was based on the understanding of a credit system. We had set agreements, which would implicitly be satisfactory to all kinds of people, and to the needs of the American people. And we had that under great Presidents. Franklin Roosevelt is particularly typical of that. Others, John F. Kennedy was one of that persuasion, and *tried* to be of that persuasion. And they killed him, because they didn't like his policy. They wanted to destroy the United States, and when they killed him, they were able to do what they were not able to do otherwise.

Their intention was to send the United States to a war in Indochina. Now, that war in Indochina was a disaster. It lasted, essentially, for about a decade. And this war ruined the United States, and *we never really recovered from it*. We got involved with other wars, which the British arranged. These were not in our interest.

And you take the case of Douglas MacArthur, who exemplifies what our military policy is. He was not out to kill, he was out to win—and there's a difference—and win quickly, and to win efficiently, and not to get into bloody messes. And that was his policy. And that was his policy at the time on the Indochina problem; that was *exactly* his policy, his advice. That's the way it should have happened. We should never have gone into Indo-

china. We were never going to get anything from going into Indochina. Leave it for them to solve their own problems. There's no reason why we should mess ourselves up by getting involved in this nonsense.

Sometimes there are major wars, and we've had major wars. The Civil War was a major war. There have been other major wars which we've had to fight. But we went to win, not to kill. The basic idea of the flanking operation is typical of that thing.

So, what we're dealing with now, you have a bunch of people, including our own associates, who really do not understand economics. They *think* they do, because

they've been reading books and hearing stories, and being told this advice by various people. But they have no understanding, because they say "We're going to win the election, and when we win the election"—that's the proposition—"if we win the election, then we're going to do the following things." Well, that is nonsense. That is absolute nonsense.

What you have to do is go back to the principles which were clearly understood by the Founders of this nation, notably the economic policies of Alexander Hamilton. The problem is that our own people, who are supporting Glass-Steagall, still do not understand what Glass-Steagall means. Because Glass-Steagall means Franklin Roosevelt, and it means also Alexander Hamilton—the same thing. And the problem we've got now, is we don't have an

Alexander Hamilton perspective on the U.S. economy. And the danger is, if we don't have that Alexander Hamilton outlook, we are incapable of assuring the support of the citizens.

Because the citizen, given this kind of stuff, is simply going to react as a "maybe" person: "Well, maybe they will do something for us, maybe they won't"—that kind of thing. Whereas if you get to the truth of the matter, and *actually* present the ideas of Alexander Hamilton—what that means—as opposed to these monetarist and other kinds of nonsense which people foolishly believe in—then we can win.

If you could present to the American people now what that actually means, what Alexander Hamilton's policy *means*—and there are a number of people among us who



EIRNS/Stuart Lewis

New York Stock Exchange, 11 Wall Street, Manhattan.



Library of Congress



Office of War Information/Alfred T. Palmer

During World War II, America's machine tool industry was mobilized, and its workforce upgraded, both on a crash basis, to defeat fascism. Shown are B-24 Liberators being produced, one every hour, and a team of riveters, at Ford Motor Company's Willow Run Bomber Plant, near Ypsilanti, Michigan.

LaRouche: Hamilton Gave Us Our Glass-Steagall Principle

In answer to a question on the subject of Glass-Steagall by a journalist, Lyndon LaRouche said:

The origin of Glass-Steagall lay in the exposition by Alexander Hamilton's "Report on the Subject of Manufacturers," for the George Washington Administration. The kernel of that presentation of the original physical-economic principles of the United States, was presented as an exposition in the interrelationship between a virtual succession of agriculture and manufacturing. Each phase of the physically defined value of the margin of production, added to the total level of per capita wealth of the nation. The end-price was the "value added" by each phase in the succession.

Thus, while money was employed as a kind of lubrication of the productive process, it was the gain in the net increment added, which located the notion of the value of the contributions of the people of the nation to the intended rate of net improvement of the per-capita output of the succession of seasons.

The driver of that process, is the intellectual progress expressed by the persons engaged in the process of production of the net output. Otherwise, mobilizing the population to a higher standpoint of outlook on the future, is the essentially practical principle of success in economy.

understand that, at least understand it superficially, maybe not with the greatest profundity, but they understand it—and if you could get the majority of, say, trade union workers, skilled workers, if you could mobilize them, *they* would readily be capable of understanding.

Detroit's Machine-Tool-Design Industry

For example: What happened to the auto industry? The auto industry is shut down. Now the people of Detroit and related areas are being subjected to terrible conditions. It's not necessary. We should never have shipped the auto industry overseas, instead of keeping it in the United States. Now, that doesn't mean I'm opposed to the auto industry being built up outside the United States. That's not the point. If you're going to put the auto industry in large degree outside the United States, as in China and so forth, what you're going to do, is you're going to take the American industry, the auto industry, and you're going to do what we did with World War II. You are suddenly going to take the *machine-tool-design industry*—and this was destroyed! We had areas of production from World War II all over the United States. The whole territories and the locations existed—they still did exist, up until the shutdown of the auto industry.

The shutdown of the auto industry inside the United States has *bankrupted* the basis of the U.S. economy. We no longer have productive industries! We have small shop kinds of production. But the kind of mass production, combined with great skill, under the leadership of the working force—this is gone. As a result, *we are bankrupt*.

I'm not going to go back into China and Japan and Korea and so forth, and insist that those industries be returned to the United States. No. That's not our policy.

Our policy is what? Is to build up our machine-tool-design capabilities and related capabilities, and turn them loose again. Because we have a lot of things to produce which are not just automobiles. We have a lousy national transportation system. People are driving cars where they shouldn't do it—partly because they're drunk, and partly for other reasons.

But in any case, what we should be doing, is going to a higher level. Now, what do we have? We don't have enough water to maintain the lives of our citizens—because of foolishness, because of foolish policies. But if we build up the kind of things that are needed to maintain our food supply, which we are losing now, and if we build up a mass-transportation system, and a design for that which elimi-

going to get this, and this, and this, in each of the communities in the United States. Water industries. Power industries. We're going to go to *high technology*.

The tendency now is to destroy us, by a subversive bunch of enemies called "Greenies." The Greenie actually destroys the per-capita productivity of the people of the United States in two ways, one directly, and one implicitly.

So therefore, we've come to the time, that we've got to talk to the American people, the population, and define an actual program comparable to the test of Alexander Hamilton: industry, high technology, power, thermo-nuclear power, and nuclear power! Large-scale water systems, giant water systems to transform whole territories of the western and cen-



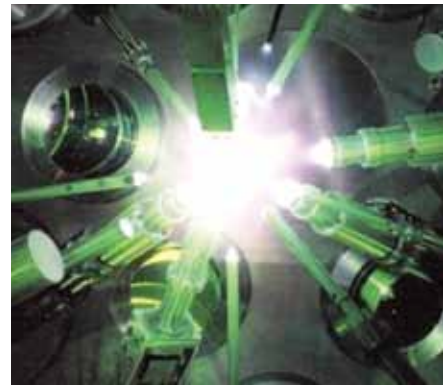
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LLNL

Alexander Hamilton's program of industrialization, as expressed today (l. to r.) in a center-pivot irrigation system in Idaho, the Susquehanna River nuclear power plant in Pennsylvania, and the OMEGA laser at the University of Rochester's Laboratory for Laser Energetics in New York. All are the product of, and depend on, constantly improving the culture and skills of the labor force, as exemplified by the computer Numerical Control machine operator shown above, inspecting a machined casting.

nates the requirement of so much automobile travel, that would be a great economic benefit. We also have to build up a whole new water system for the western part of the United States. We're now losing our food. Our food production is disappearing. Well, we could fix that. How? With high technology. What's high technology? Well, it's machine-tool technology, and things like machine-tool technology. We should put our investment into machine-tool technology.

Now, if you're going to do that, now you go to the voter out there, and you start talking about Glass-Steagall. Now they've got some real action. This means we're

tral United States. *These* are the things we must do! And when you do *that*, you're increasing the productivity of the American population, you're *increasing the actual physical income* of every part of the United States. You're increasing the productivity of the United States, without increasing the burden on the working people.

And *that* is the great change that has to happen *now*; and it has to happen within my own organization, which needs to have a refresher course in what economics is. Economics is what most of them think is not being *practical*: *It's making a revolution, making a revolution in technology*, to take off where the auto industry left, and win!

German Farmers Stage Huge Tractorcade Protests: ‘No Farmers, No Food, No Future!’

by Rainer Apel

Feb. 1—This year’s “Green Week” in Berlin, the big, annual international agriculture exhibition, took place January 17-26, and was accompanied by the most massive protest actions of German farmers in many years. Opening day saw 5,000 tractors rolling into Berlin, the German capital, from all parts of the country. Additional protest rallies were staged regionally, ranging from 2,500 tractors in Stuttgart, down to 150 tractors in each of many smaller cities. The list of larger cities that saw farmers’ protest actions on that day is impressive: Hanover, Bremen, Kiel, Dresden, Mainz, Fulda, Dessau, Magdeburg, Giessen, Saarbruecken, and many more. All in all, tens of thousands of farmers with their tractors took to the streets in protest. Those tractor rallies continued throughout Germany during the entire ten days of the Berlin agricultural exhibition.

With slogans like, “No Farmers, No Food, No Future” and “We Work for Your Food,” placed on big placards plastered on the front of their tractors, the farmers protested against the excessive new regulations planned by the European Commission, which claim to be protecting the climate, nature and wildlife, but are in reality ruinous for farmers, and helping nothing. In addition, farmers are demonstrating against the impossibly low prices they receive.

Under the European Union (EU) green mandates, there are planned decrees of all kinds that include cutting the use of fertilizers by 20 percent; placing a total ban on nitrate fertilizer; banning the planting of cover crops, the “between crops” sown during the periods



EIRNS/Matthias Woelki

Farmers demonstrating in Berlin, Germany on January 17, 2020. The sign reads: ‘They don’t sow and they don’t reap, but they know everything!’

when the main crops are not growing; and banning insecticides and pesticides. Finally, there is the idea that farmers should exit agriculture altogether and switch to becoming “energy producers” by turning their arable fields into wind power parks.

On the price situation, highlighted in these protests, dairy farming has now become a loss-making venture, with farmers receiving only 20 cents per produced liter of milk, while 40 cents (at least) is needed to make any profit at all.

Finally, the German farmers are protesting against being slandered as “insect killers” and “soil poisoners” by the greenies, for whom the protection of insects ranks above providing for the security of food for mankind—for which purpose the intensive methods of modern agriculture are the best precondition.

The EU Is Trying to Starve People

The German farmers are also pointing out that the planting of cover crops—“between crops”—is crucial

to improving the soil for the later planting of main crops, and that trying to ban that practice by EU decrees would lower the yields and harvest volume considerably.

On the other hand, no ban exists for those non-farm investment funds and other speculative financial entities that are making profits through “land-grabbing.” Speculators acquire farms that have been driven into high debt and can no longer be maintained by farmers. Land-grabbing has become an increasing pattern along with the rise in heavily-indebted family farms. Protection against land-grabbing has become a leading demand of the protesting farmers. The increase in land-grabbing has gone right along with the expansion of cost-cutting, mass production of low-quality food at the expense of traditional farming.

European Commission (EC) policies overall, running under the misleading name, “Common Agricultural Policy” (CAP) have put a huge question mark over the future of farming. Farmers have become increasingly hesitant to make major investments, because their projects and improvements are almost certain to be a failure, due to the unending interference of EU bureaucrats into the process of producing food. A survey carried out by the Thünen Institute in Germany has delivered alarming evidence of the consequences of disinvestment in the agricultural sector, which in Germany alone employs 600,000 people—including those who manufacture modern tractors and agro-machinery, those who produce fertilizers, and those who construct agricultural facilities like livestock buildings.

The EC is a main target of the protests in Germany—as it is in France, Netherlands, Ireland, and elsewhere. But the German protests are also focused on the German



EIRNS/Matthias Woelki

The woman's sign reads: “Family Farms Not Factory Farms!” Farmers' demonstration in Berlin, Germany on January 17, 2020.

government, particularly on Agriculture Minister Julia Klöckner, who has been paying weak lip service to the farmers' cause, but continues to serve as a transmission belt for the greenie policies of the EC in Germany. Revealing is Klöckner's announced project of launching regional events from March on, at which farmers are supposed to enter a “dialogue” with greenies. The framework of these events is the unscientific claim that “climate protection is without any alternative, so farmers have to accept that.”

Huge Tractor Rallies

Germany's farmers are not accepting that proposition. At the huge tractor rally on January 17 in Berlin, the slogan on many banners read: “They do not sow, they do not harvest, but they claim to know everything!” The farmers denounced the notorious ecology-mongers, who unceasingly design new ways to burden farmers with decrees and production bans. Farmers are

not against dialogue, but they insist that politicians begin taking the concerns of the countryside seriously, which includes real economic investments instead of pumping taxpayer money into new rural wind farms.

On that issue, farmers have broad support from other layers of the population that live and work in the countryside. The dramatic loss of votes for the leading establishment parties in recent regional elections is the proverbial writing on the wall. The established parties' disinter-

est in the farm sector mirrors their disinterest in investing in regional public infrastructure of all kinds—roads, railroads, waterways, bridges, and so on.

But so far, Agriculture Minister Klöckner has not shown any inclination to change her attitude. She has even created a special hashtag, #Landkinder (countryside kids), presenting, among other absurdities, an



CC/Olaf Kosinsky

Julia Klöckner, German Agriculture Minister.

image that shows two girls lighting a bulb with a small windmill standing in a garden. This is unabashed propaganda for the transformation of the agricultural sector into a sphere of experiments with inefficient, and very costly “renewable energy sources” like wind and solar power.

Being discontented with the toothlessness of their official agricultural associations, the German farmers have developed communication channels of their own, working via internet media such as Facebook and WhatsApp. Their new protest movement is called *Land schafft Verbindung* (The Land Makes the Link); it has adopted a mode of surprise in protest actions. One hundred tractors or more may show up during rush hour in the morning for short road blockades, then, after one or two hours, roll off again in a well-coordinated way, only to return for another tractor rally in the late afternoon or evening. Bonfire vigils are held on the fields to voice protest during the evenings and at night, and farmers are also appearing in impressive numbers, all of a sudden, at public events featuring leading politicians, to take over discussions to make their cause heard.

Creative Interventions

This surprise method has been quite efficient, and the protest movement keeps growing. The dynamic developing in Germany now greatly resembles the one seen in the Yellow Vest citizen protest movement in neighboring France, which began as a broad public outcry against new taxation plans of the French government, but has recently begun to tackle other economic issues.

On January 31, spontaneous protest actions in Germany were coordinated by the Land Makes the Link network, bringing out tractors in many cities. This was prompted by the government’s decision the day before, to grant farmers EU1 billion in compensation for losses from the impact of the EU’s new restrictive fertilizer decree. The farmers issued a statement denouncing the so-called compensation as a “bribe for silence,” and announced that they would continue their protests. They delivered the statement to the *Bundestag* (Parliament) members’ offices, in addition to state-level officials.

In Lower Saxony, over a dozen farmers parked their tractors at the entrance to the state capital. They were able to talk directly with the legislators; others targeted



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Yellow Vests protest in Tours, France on February 2, 2020.

towns throughout the state, including Leer, Emden, Papenburg, and Walsrode. The farmers spontaneously showed up at offices of political parties to deliver their protest, at the center of which was the demand that German politicians finally make an effort to *change* EU policies, instead of swallowing them uncontested, and then using the tactic of giving farmers some money to try to calm them down. Henriette Struss of the farmers’ protest network told the media, “We won’t be corrupted.” Others called the compensation an “insult.”

The Farmers Commission of the Schiller Institute has been intervening into this building protest ferment in Germany with leaflets pointing to the necessity of an in-depth reform of the general banking system with a clear emphasis on prioritizing commercial banking and real-economic investment over the pumping of money into derivatives and other financial bubbles by investment banks. The leaflets call for a debt write-off for highly indebted farms, and making available low-interest credit for new investments and modernizations in the farming sector. The leaflets clearly state support for family farming and the protection of the countryside against speculative financial interests that want to replace wheat and rye with crops grown only for bio-fuels.

One Humankind

The Schiller Institute leaflet circulated January 17 also stressed the point that action on the big picture—

for the strategic defeat of geopolitics—is essential. Schiller Institute President Helga Zepp-LaRouche wrote of the necessity for “A New Bretton Woods credit system with long-range cooperation with the New Silk Road, by means of which the industrialization of Southwest Asia and Africa can be organized,” and other features of this broad perspective, including replacing “the backward-looking geopolitics and confrontation with Russia and China ... [with] confidence-building cooperation to achieve the common aims of mankind.” Zepp-LaRouche cautioned against a limited view:

[There are] millions of people who are now taking to the streets in many countries.... The danger lies in campaigning only on the particular issue that pertains to oneself. Therefore, farmers are protesting against the existential threat to farmers, truck drivers are protesting against the high fuel prices, and health care providers are protesting against staffing shortfalls,

etc. What will happen to such protest movements? In the best-case outcome, there would be a little concession on a concrete issue, a few settlements, and then demoralization would set in, and the protest would fade away.... There is a solution. It depends on taking responsibility for the whole, and not merely for their own particular issue.

In this spirit, U.S. farm belt leaders sent a message of support on the first of February to the German farmers. (See box.)

Faced with a situation in which—according to United Nations reports—more than a billion humans do not have enough to eat and are constantly threatened by starvation, it is a genocidal crime to destroy efficient farming with greenie ideologies. In all the pro-agriculture campaigns of the Schiller Institute, there has been one leading slogan: “Redet nicht von Überschüssen, solang Millionen hungern müssen!” (Don’t talk of surpluses when millions are going hungry!)

WE ARE ROLLING WITH YOU!

Message to Farm Friends in Germany From Farmers and Ranchers in the United States

Feb. 1—We farmers, ranchers and agriculture friends in the United States send our support to your fight in Germany. You are right! Let us put a stop to green hysteria. Let us have fair pricing and independent family farms. No more mega-cartel control.

We can produce good food, care for the land and water, and carry out real science and love for mankind. Starting now! There is no limit to growth, and never too many people, once we get our nations on track.

We call on the great-power leaders of Europe, the U.S., Russia, China, India and any other nation willing, to get together, to start working out the measures for a new era of peace and plenty. End the commodity speculation and bail-outs. Put in Glass-Steagall type regulations for sound banking. Issue credit for new infrastructure for high-tech electricity, transportation, water systems, and more, especially space-travel agriculture. No more green cave-man outlook. Fire or retire all the professional negotiators for rotten cartel-serving trade deals and

green swindles. End the sanctions and warfare.

We, the undersigned, express our Trans-Atlantic support.

You have revved up the engines. We are rolling with you!

IOWA—Bob Baker, Keota

KANSAS—Tony Anderson, Vice President, Kansas Cattlemen’s Association

KANSAS—Tyler Dupy, Executive Director, Kansas Cattlemen’s Association

MINNESOTA—Andy Olson, Windom

NORTH DAKOTA—Lorraine Wagner, Linton

SOUTH DAKOTA—Ron Wiczorek, Mt. Vernon; former Independent candidate for U.S. Congress 2018

INDIANA—Jim Benham, President Indiana Farmers Union

Please circulate our greetings and contact us any time, including to coordinate Trans-Atlantic action—Robert “Bob” Baker bb888k@gmail.com

Act on the Novel Coronavirus Immediately!

by Debra H. Freeman, DrPH

Feb. 2—Late on Friday, January 31, the Trump administration [declared](#) the coronavirus outbreak to be a public health emergency in the United States. At the time of the declaration, only seven Americans had contracted the virus. As of this writing the number has risen to eight. The declaration follows the [declaration](#) of a Public Health Emergency of International Concern by the United Nations World Health Organization (WHO) a day earlier.

The declaration by the WHO, as reported in this publication, praised China's extraordinary effort to contain the outbreak, and was clearly specifically intended to unleash international assistance to other countries with far less robust public health and medical capabilities that might also be affected.

The U.S. public health emergency designation itself wasn't surprising. However, some of the measures that accompanied the declaration were highly unusual.

One hundred ninety-five Americans evacuated from China's Hubei Province have been confined to a California military air base for seventy-two hours of health screenings followed by a mandatory fourteen-day quarantine. The Pentagon announced on Saturday that it had approved a request from the Department of Health and Human Services for housing an additional 1,000 people through February 29. The Pentagon statement added that four military installations—two in California, one in Colorado, and one in Texas—were currently being readied to



CC/SISTEMA 12

As a precaution to contain the novel coronavirus, health authorities have closed the Huanan Wholesale Seafood Market in Wuhan, China.

accept people.

The action marks the first mandatory quarantine order the U.S. has issued in more than fifty years. According to the Centers for Disease Control and Prevention, the last time a quarantine was used was in the 1960s for smallpox.

Alex Azar, Secretary of Health and Human Services and chairman of the coronavirus task force set up by the administration, also announced that, for at least the next fourteen days, U.S. entry would be denied to all foreign nationals who had recently been in China. This does not apply to U.S. citizens and permanent residents. Those arriving from Hubei, of which Wuhan is the capital, will have to undergo a fourteen-day mandatory quarantine upon arrival, while those arriving from any other part of China must undergo



Alex Azar, U.S. Health and Human Services Secretary, signing the Public Health Emergency Declaration for the coronavirus in the U.S. on January 31, 2020.



cc/China News Service

Infrared cameras in Wuhan's railway station check passengers' body temperature before allowing them to board the trains.

mandatory screening and monitoring.

China [criticized](#) the move; Foreign Ministry spokeswoman Hua Chunying said it went against WHO recommendations—not to impose travel bans:

A friend in need is a friend indeed. Many countries have offered China support in various means. In sharp contrast, certain U.S. officials' words and actions are neither factual nor appropriate.

The Situation on the Ground in China

So, what is the actual situation?

U.S. cases reported remain at eight, and federal health officials continue to emphasize that the risk to Americans remains low. On Sunday, the first death outside of China was reported in the Philippines.

In China itself, despite extraordinary and unprecedented measures to contain the virus, the number of new cases continues to rise rapidly. According to official statistics released Friday, the number of new confirmed cases rose tenfold in just the past week. Between Saturday and Sunday, over 2,000 new cases were confirmed, bringing the total number of confirmed cases to 14,400. Three hundred and five people have died.

A new, peer-reviewed [study](#) by University of Hong

Kong scientists, published January 31 in the medical journal *The Lancet*, said the outbreak could be even worse than it appears and could get dramatically worse over the next week or two. They estimated that 75,815 people in Wuhan have likely been infected as of January 25—nearly eight times the number of reported cases. The study estimated that, even accounting for the containment measures China has taken, infected people would pass the virus to two to three others, on average, meaning the infected population would double every 6.4 days.

Xinhua, the official China news agency, reports that the People's Liberation Army sent 1,400 medical staff from the armed forces to Wuhan on Sunday to treat patients at the new 1,000-bed Huoshenshan Hospital, which was built in just ten days and is due to open February 3. Two other new hospitals, capable of handling an additional 2,000 patients each, are under construction and ex-



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Chinese citizens registering to be admitted to one of the purpose-built hospitals in Wuhan that have just been completed.

pected to begin operations within the next week.

The World Begins to Mobilize

Meanwhile, since January 10 when China publicly released the genetic sequence of the new virus, an intense international effort has been underway to learn more about the new virus and develop a vaccine as rap-



as in the confirmed modes of transmission and overall virulence of the virus, seem to indicate that the virus itself is changing or mutating. So far, at least five different strains have been identified.

Yes, there have been some important scientific advances made in the effort to arrest the spread of the novel coronavirus, but greater international collaboration is urgently required. Attempts to use the situation to intensify an adversarial relationship between the U.S. and China must be brought to a rapid halt. One such example is the absolutely asinine statements

China has completed the construction of two new 1,000-bed hospitals in Wuhan in less than ten days each (with a third on the way), to cope with the outbreak of the novel coronavirus.

idly as possible. Researchers believe they may have made significant progress in finding an effective method of immunization.

made by Commerce Secretary Wilbur Ross, who in an interview with Fox Business Network said:

A research team at the National Institutes of Health (NIH) in Maryland said it had prepared a modified version of a key section of the virus to encourage the body to produce antibodies against the disease. The Coalition for Epidemic Preparedness Innovations (CEPI) has announced it would commit \$11 million to three programs led by the companies Inovio Pharmaceuticals and Moderna, and the University of Queensland, with the hope of having a viable vaccine in production within sixteen weeks, although testing for safety and efficacy will take much longer.

I don't want to talk about a victory lap over a very unfortunate, very malignant disease, but I

Much of the research builds on work done during the severe acute respiratory syndrome (SARS) outbreak that first emerged in China in 2001, another coronavirus thought to be similar to the Wuhan virus. But research is still at an early stage, and there are no guarantees that any of the designs developed so far will be safe and effective enough to be used in the current outbreak in China.



A coronavirus patient being wheeled into Wuhan's Huoshenshan Hospital's negative pressure ward.

think it will help to accelerate the return of jobs to North America. Some to U.S., probably some to Mexico, as well.

The issue is also complicated by the fact that the dramatic escalation in the numbers of infected, as well

Other top American health experts have insisted that the federal government's resources and energies are



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Wuhan's new purpose-built Huoshenshan Hospital begins accepting patients.

better spent restoring America's public health infrastructure rather than on imposing travel bans.

Dr. Michael Osterholm, director of the Center for Infectious Disease Research and Policy (CIDRAP) and an adjunct professor at the University of Minnesota Medical School, [told](#) *Minnpost*:

Every health care organization in the country should be dusting off any of their plans they've ever had for mass infection events like this where they need to hospitalize many more patients.

Dr. Osterholm observed that at present, hospitalizations from just the yearly flu season are taxing hospital bed resources. Further,

If there are mass outbreaks, it's not as though FEMA (Federal Emergency Management Agency) will be able to set up everywhere to add beds. It's not just beds that could be in short supply. Many common drugs that are acutely needed are manufactured in China, and some of them already face shortages. If China shuts down

Carney (among other participants at the recent bankers confab in Davos) have long sought, to depopulate the planet.

Schiller Institute Call for a Four-Power Summit

Schiller Institute President Helga Zepp-LaRouche

issued a [call](#) January 6 for a summit among Presidents Trump, Putin, and Xi, to initiate a New Paradigm of relations among all nations, addressing the great issues of war and peace through cooperation on the common aims of humanity. This current global health emergency makes such a meeting even more urgent, and with the participation of India's Prime Minister Modi.

Joint action, led personally by the leaders of these great nations, is needed to ensure that

adequate resources are mobilized internationally so that nations can provide for even their most poor, limit the virus' spread, and initiate the broadest scientific cooperation possible, so that appropriate measures to contain and cure this current virus can be found and implemented in the shortest time possible.



CC/Maynard Clark

Dr. Michael Osterholm, Director of the University of Minnesota's Center for Infectious Disease Research and Policy.

Witnessing an Unprecedented Mobilization to Save Lives

A press conference called by the World Health Organization (WHO) presented its decision on January 30, 2020, declaring that the “the novel coronavirus outbreak” in China is a Public Health Emergency of International Concern, “to enable international coordinated cooperation to cope with it in all its ramifications.”

Dr. Tedros Adhanom Ghebreyesus, the Director General of the WHO spoke, along with other colleagues, and took questions from two reporters there and two from the online audience. We present here an edited excerpt from his exchange with a reporter from the Associated Press (AP). Dr. Tedros highly praised the medical and political leadership he saw in his just completed trip to China. The full audio of the 25-minute press conference is available [here](#).



Dr. Tedros Adhanom Ghebreyesus, Director General of the World Health Organization.

Jamie, from Associated Press: Dr. Tedros, thank you very much.... The second question just has to do with your visit to [Chinese President] Xi Jinping. I just want to make sure that we understand when the last time that a DG [Director General] like you flew to a country to meet with the head of state during an evolving outbreak to request more detailed data and permission. Why was that necessary? And, if China was responding transparently and efficiently, why was that necessary? Thank you.

Dr. Tedros: Thank you very much Jamie.... On my trip to China: I have done it to other countries too, before. So going to the field, visiting countries, having first-hand information, is very important. That's why I had to visit, to see for myself what's happening. And I came back so impressed.

I have never seen, in my life, this kind of mobilization. Maybe you're following the Wuhan Hospital which is being built in ten days. Big hospital. But

that's not the only thing. You know the measures they are taking—which I believe will reverse the tide. Going there and witnessing that is very important. Witnessing how the leadership is leading the response is very important.

The other impressive part is, it's the President himself who is leading this effort. The day that we arrived the Prime Minister was actually in Wuhan. And all the ministers are involved, relevant ministers. This is impressive. Witnessing that kind of leadership and interacting with those leaders who're leading an outbreak [response] personally, [provided] me real experience, and actually a learning experience.

I recommended to other countries globally to have that kind of political commitment and leadership at the highest level possible. When that happens, I know things happen on the ground too. So, I think visiting China was very important. I many times [have visited] other countries where there were outbreaks. This one was special because I was able to learn many things from what China is doing, and I'm very confident by what they're

doing. I have seen the capacity, and I believe that they will control this outbreak as soon as possible. They have all the capacity that is needed. Not only what they're doing is protecting their people, but I know from the figures also, you know that it's protecting the rest of the world. Outside China we only have 98 cases, and no deaths. If strong measures were not taken in China this would not have happened.

That's why I also said we have to appreciate what China is doing. This declaration is not because China is not doing what it can. It's actually doing more than China is required to do. This is to protect especially countries with weaker health systems, and to prepare for that. For your information, during my discussion with the President and other officials, they're willing to support countries with weaker health systems with whatever is possible. That is why I said in my speech earlier, in many ways, China is actually setting a new standard for outbreak response.

II. No Limits to Growth

Controlled Thermonuclear Fusion: The Time is Now

by Joel Dejean

This is an edited transcript of a class given by Joel Dejean, an electrical engineer who worked for years in the defense industry, on January 25, 2020, to a meeting in Houston, Texas with LaRouche PAC and Schiller Institute members, and members of the public.

Jan. 25—There are no limits to growth—that is the response we can all provide to Greta Thunberg and her controllers like Prince Charles and Michael Bloomberg. Lyndon LaRouche wrote the book, *There Are No Limits to Growth!* in 1983—that was 37 years ago. He was responding to the idea of “limits to growth”—that all of us were going to have to cut down our consumption, and eventually cut down our population—was being promoted.

Five and a half years ago, LaRouche elaborated his economic views in a rather short statement of principle, known as the “Four Laws.” (You’ve heard of the Ten Commandments that came down on a “tablet,” but I don’t know what operating system Moses used.) LaRouche came up with his Four Laws for economic revival, survival, and expansion. This starts with the return to Glass-Steagall: we separate commercial banking from investment banking. We create a national bank from which you can issue credit for great projects such as high-speed rail, fission power plants, and small modular fission reactors. LaRouche’s Fourth Law presents the idea of using a science-driver policy to drive the economy forward. Similar to the Manhattan Project, and the NASA Apollo project, LaRouche called for a crash program for a revival of the space program and fusion power—controlled thermonuclear power.

What is Nuclear Fusion?

The Universe has already shown us the way. The most abundant power source in the universe is thermo-

nuclear fusion inside the stars. Our star, the Sun, is a perfect example. It has the advantage of having a huge mass, more than 300,000 times the mass of the Earth. At the core of the Sun, you have the conditions to fuse lighter elements like hydrogen into heavier elements like helium, releasing a huge amount of energy in the process. Since we don’t have such massive gravity available to us on Earth, we have to use different methods to achieve those pressures. We have had thermonuclear fusion on Earth for about 68 years, in the form of a thermonuclear (fusion) bomb.

The first device was tested in 1952; it was called “Mike.” It was about the size of this library, a huge device, and it was triggered by a smaller fission bomb. The yield on the fission bombs like the Hiroshima or Nagasaki bomb was in the range of 10-20 kilotons, or 20,000 tons of TNT-equivalent energy released. The first thermonuclear device tested released over 1,000 times that yield, so it was in the megatons, 10-megaton range. That is not a very efficient power plant—because it blows itself up when you use it! So, the goal since the ’50s has been to control the thermonuclear fusion so you can use it as a limitless power source.

The Road to Controlled Fusion Energy

There are two major methods of achieving fusion. While we have not achieved breakeven—more energy released than required to induce the fusion—as of January 2020, we are coming closer and closer. One physicist compared it to the idea that, “if you are climbing a mountain, you go up the mountain until you reach the summit.” Well, we’re about seven-tenths of the way up. We haven’t reached the summit yet. Pessimists keep repeating, “Well, because we haven’t done it, that means we’ll never achieve it.” It’s the repeated sour line, “Fusion is 30 years away, and it will always be 30 years away.”

Let's look at two examples of what man has done in the past, the first one being man-powered flight. If you think back, man had been dreaming of flying like birds for thousands of years, but it was only 117 years ago that we first achieved powered flight. The Wright Brothers, think back: Where did they get their education? Where did they go to school? Where did they get their aeronautical engineering degree? They were mechanics and they had their own bicycle shop; they observed the flight of birds, and were able to figure it out. But the first engine that they used for powered flight had about 8 horsepower and produced about 90 pounds of thrust. The length of the first flight was about 212 feet. That's less than the wingspan of your average big jumbo jet.

Think about what followed after that. Within 66 years, we went from flying the mere length of a football field, to landing on the Moon, almost 250,000 miles away. There were a lot of steps in between. Let's look at one important step. Robert Goddard, from Massachusetts, figured out in the 1920s how to use liquid fuel, liquid oxygen and kerosene to power a rocket. His first major test was in 1926: The rocket lifted off and went up a total of 42 feet. Think of going 42 feet in the air in 1926, and then a mere 43 years later, we're landing on the Moon. This demonstrates that once you make a breakthrough, you can have progress rapidly.

This January is also the 100th anniversary of an editorial from that so-called great scientific publication, *The New York Times*, published on January 13, 1920, ridiculing Goddard because Goddard had proposed to build a rocket that could reach the Moon and *The New York Times*, in its infinite wisdom, said that Goddard obviously did not know what the average high school student of physics knew, that for every action to get a reaction, you needed something to push on. They ridiculed Goddard because, obviously, you could not get the reaction in a vacuum like space. They only made a correction on July 17, 1969, the day after the Apollo 11 launch. So, while they may not have been right the first time, they do eventually correct the error of their ways.

Two Major Approaches

I want to now go through the two major ways that we are reaching fusion, controlled thermonuclear fusion, in the United States and in the world today. The

FIGURE 1



CC/Lseaveratnif

A technician works on a target positioner inside the National Ignition Facility (NIF) target chamber.

first one I want to touch on is what is going on at the National Ignition Facility, a part of the Lawrence Livermore National Laboratory, out in the Bay Area near San Francisco. **Figure 1** shows the target chamber. The outside is about three football fields in length, where you have a bank of lasers, 192 lasers, that are amplified hundreds of thousands, eventually millions of times; it starts out with the infrared wavelength and it will go all the way out to the ultraviolet. When they hit the chamber, you have the 192 laser beams converging on a small target.

This capsule is called the *hohlraum* (cavity, referring to its interior) where the lasers hit, and they hit the sides of the *hohlraum*, and produce x-rays that impinge on a small target about the size of an aspirin tablet at the center of the *hohlraum*, and the laser energy put into the target is over a million joules. A joule is equal to one watt of power lasting for one second. Let me give you an example. A superbolt of lightning produces about one million joules of energy.

So, you have a target, the size of an aspirin tablet, with two different isotopes of hydrogen: deuterium (one proton and one neutron), and tritium (one proton and two neutrons) brought up to high temperatures—close to 150 million degrees Centigrade, which is about ten times the temperature of the core of the Sun. You need sufficient density of the isotopes, and you need sufficient confinement time. Given those parameters, you can achieve fusion, and we have achieved fusion using this method. This machine at the National Ignition Facility, which is about ten years old,

has been in operation for the last few years; it took about ten years to build.

What we have not achieved yet is to get more energy out of the reaction than it took to trigger the reaction; so it hasn't reached breakeven, or it hasn't ignited the fuel so that the reaction becomes self-sustaining.

The other method of producing controlled thermonuclear fusion on Earth is to generate a plasma and control the plasma with magnetic fields. Plasma is the fourth state of matter. You have solid, liquid, gas, and then plasma, where the particles of a gas are moving so fast that the nucleus and the electrons orbiting the nucleus become separated; so you have positive ions and electrons, called a plasma, which is electrically charged and therefore can be controlled by a magnetic field.

The most famous device for doing that is called the International Thermonuclear Experimental Reactor (ITER), which is being constructed now in southern France by a consortium of 35 nations. France, the European Union, the United States, Russia, China, Japan, Korea, and India all share in the cost of the [ITER project](#). They probably need to recruit the North Koreans and the Iranians to help boost this along.

But it's a combined effort, a worldwide effort, to produce an experimental device that will go beyond breakeven. The goal is that within five years from now, by 2025, to be able to power up this device using deuterium and tritium as the fuel, heat the fuel, and with 50 megawatts of input to achieve 500 megawatts of output, so a gain of ten, for at least ten minutes. That's the goal of the experiment.

The Magnets

The type of magnets they use are not just your regular magnets, they're superconducting magnets. In order to reduce the resistance from running a current through the wires, in which you then generate the magnetic field, they



Lawrence Livermore National Laboratory

An inertial confinement fusion fuel microcapsule. It is two millimeters in diameter and contains a central reservoir of deuterium-tritium (D-T) gas mixture, a frozen D-T solid-fuel layer, and an outer ablator layer.

cool the wires to close to absolute zero or close to -460 degrees Fahrenheit or -270 degrees Centigrade, colder than deep space. If you cool the magnetic coils to that temperature, you can have an increased strength of your magnetic field, you can contain your plasma, you can heat the plasma and achieve fusion. This is being worked on: There are machines at Princeton, at General Atomics in San Diego, and in Europe there is the Joint European Torus (JET). The Chinese are building a new machine, so are the South Koreans. This has been worked on all over the world for the last 60 years.

Recently, at the National Ignition Facility, one of the physicists there,

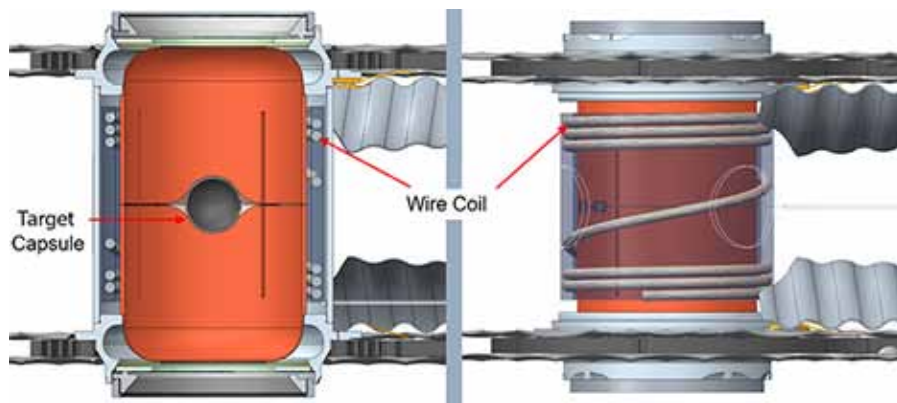
John Moody, suggested to his colleagues that to accelerate the ignition using lasers, why don't we combine the idea of magnetic confinement of the target, with the use of lasers to heat and initiate the reaction.

It's called "magnetized inertial confinement fusion." If you have a coil around the *hohlraum*, you magnetize it by running current through it, and then you hit the *hohlraum* with lasers, and initiate the fusion reactions, heat the fuel elements in the tablet. With the magnetic field around this *hohlraum*, you will be able to contain the alpha particles (helium



Lawrence Livermore National Laboratory

The National Ignition Facility. NIF is the world's largest and highest-energy laser system and the nation's largest scientific project.



Lawrence Livermore National Laboratory

Conceptual diagrams of a NIF hohlraum fitted with a B-field (magnetic-field) coil.



Lawrence Livermore National Laboratory

A coil-wrapped hohlraum target installed at the end of a NIF diagnostic instrument manipulator.

nuclei) that are generated by the fusion reaction.

And again, just to review, if you have deuterium and tritium—deuterium with two nucleons (protons and neutrons) and tritium with three—if you were to use basic arithmetic you would expect to get five nucleons. But, in nuclear physics, 2 plus 3 does not equal 5. It equals a smaller amount, maybe 4.95. So what happens to that missing mass? Well, it was through the theoretical work of Einstein, and others who followed him, that the conversion between mass and energy was recognized as energy = mass times a constant, namely the speed of light squared, or $E = mc^2$,

which gives you a huge amount of energy for a small amount of mass conversion. We have seen that fusion involves a mass-to-energy conversion. So, if you can initiate that, containing it with magnetic fields increases the chance of reaching ignition. At Lawrence Livermore they are scheduling a series of experiments this coming summer to verify that.

So, if you think of all the work that's gone on, even without major crash programs to fund it, we have gone up toward the summit. We have achieved fusion, but we haven't achieved breakeven in any of these experiments—yet.

However, think back to powered flight. We took a major step, but it was a step of about 212 feet. If you think back to Goddard, we had the rocket, but it went up about four stories. You could have said then, “well, that's not success,” but we built on those breakthroughs to achieve the aeronautics and the space program we have today.

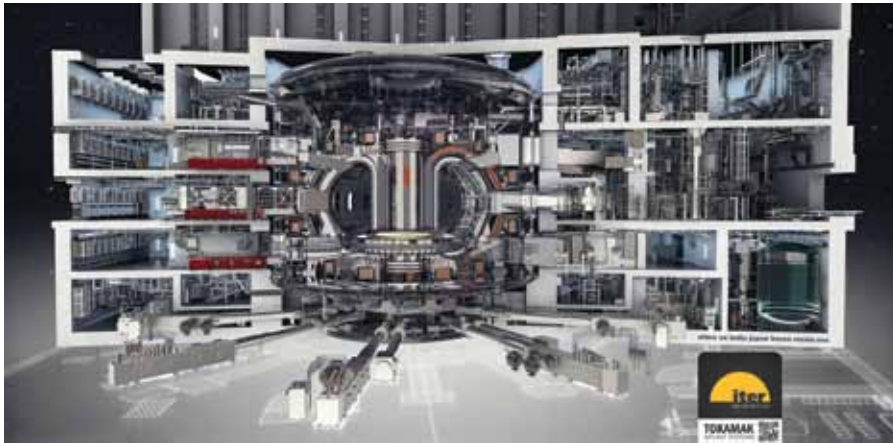
International Collaboration

So think about LaRouche's Fourth Law. If we were to collaborate like we're doing with the ITER, and accelerate those programs, not only with the tokamak—the magnetic fusion—but also with laser fusion, then we could achieve breakthroughs. The French have a similar laser facility in France in which they have about half of the energy level of the U.S. Na-



© ITER Organization, <http://www.iter.org/>

International Thermonuclear Experimental Reactor site at the end of 2019.



Oak Ridge National Laboratory

A cut-away drawing of the ITER tokamak and plant systems.

tional Ignition Facility, and they have achieved fusion, but again they haven't reached breakeven. So, if we accelerate these programs and combine them with the use of what's called high-temperature superconductors—there's a team near MIT, of MIT graduates, near Cambridge, Massachusetts, that has designed a smaller magnetic confinement system using high-temperature superconductors—then we could achieve significant breakthroughs.

The idea is that you can reduce the size of your magnets, using high-temperature superconductors. "High temperature" does not mean room temperature; it means you are going from almost absolute zero to 77 degrees Kelvin (minus 320 Fahrenheit), which is pretty warm when you consider that if you could achieve superconductivity at that temperature, you can have the same effect as we've had previously, but only by reaching almost absolute zero. The less resistance in a magnet, the stronger the magnetic field. We're talking about magnetic fields of five to ten tesla. Tesla, besides being a car, and a rocket company, is among other things, a unit of magnetic field strength.

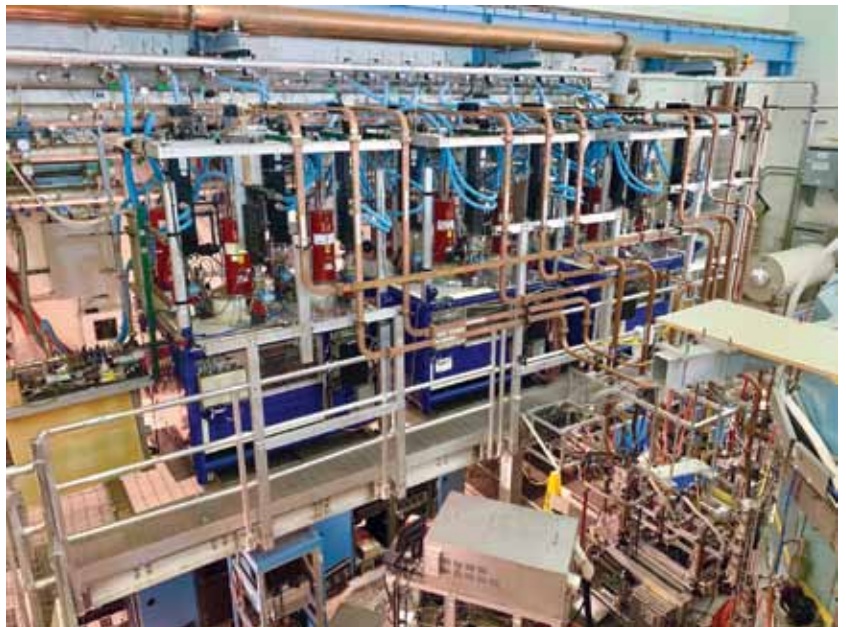
To think about that kind of magnetic field, let's look at the unit used for the Earth's magnetic field, which is the gauss. The Earth's magnetic field strength is about half a gauss. The magnets you may have on your refrigerator door are about fifty gauss. If you go to

the hospital and get an MRI, it uses about 50,000 gauss. Ten thousand gauss is equal to one tesla in magnetic field strength units.

So, with these fusion devices, we are talking about huge magnetic fields. If you can shrink the size of the magnet, instead of having an experimental tokamak the size of a football stadium, you could reduce the device to about the size of a truck, a flatbed truck. That's what they are attempting to do in Boston. There are about a dozen companies around the country that are implementing this idea

of using smaller compact magnetic fusion devices to achieve what is being attempted with the large ITER. The one in Boston is being funded by the Italian oil company, Eni.

So you have funding for these various smaller experimental compact magnetic fusion reactors. There are a couple of them in New Jersey around the Princeton satellite system. Lockheed Martin, the major defense contractor, is working on a system; in California, you have Tri-Alpha Energy; a company in Vancouver, Canada called General Fusion, which is working on a system in which they compress the gas and use mag-



Steve Jurvetson

Microwave Energy Injector for Commonwealth Fusion Systems.

netic fields to heat the gas. They are experimenting with that to get compact magnetic fusion going. There is a lot of work being done around the country and around the world. The idea is to accelerate it to a crash program, to do what happened with powered flight. What drove us from going just 212 feet in one flight, to crossing the Atlantic, crossing the Pacific, and going around the world? Well, you had something, which came out of World War I. It was actually created before the U.S. got into World War I. It was called the National Advisory Committee on Aeronautics (NACA).



<https://www.pexels.com>

Cathedral of Santa Maria del Fiore in Florence, Italy.

The Partnership

Before NACA, there were constant squabbles over patent rights. The U.S. government stepped in and created this advisory committee to help, not only to work out these patent disputes, but to promote the science of aeronautical engineering, aeronautical science, such as building wind tunnels. That was the beginning of what eventually became NASA. There was a role for the government in not only coordinating the breakthroughs, but you also had the flight contracts initially awarded by the U.S. Postal Service. Before there were passenger flights, the postal service started using airplanes to speed up mail distribution across the country. So, that was the government coordinating with private companies to promote development of a brand-new technology.

We can use similar methods: If you look at the Apollo project, the government didn't build rockets, but coordinated the construction of the various components that eventually got us to the Moon. That's the model that we could be using. LaRouche, in his Four Laws, shows how we can finance that type of breakthrough. You have to have the leadership to actually push for a real science driver. The dividends from actually funding these crash programs are quite impressive. Look at the spinoffs, the NASA projects, and the civilian nuclear power program, which was a spinoff of the Manhattan Project. We have that positive experience in our history.

President Donald Trump went back further than just a mere hundred years ago. He just gave a speech in Davos, and initially we weren't even sure if he was going

to go there, because the whole theme of Davos—from Greta Thunberg to Prince Charles and Mark Carney—is the idea that we have to reduce our carbon footprint. We have to stop dirtying up the air and water, that mankind is just a pollutant, which has to be controlled. What's behind all that talk is population reduction.

LaRouche went back to the same period as Trump in his famous book, *The Science of Christian Economy*. It was written about ten years after the first book I showed you, *There Are No Limits to Growth*. *The Science of Christian Economy* was part of his prison writings. LaRouche was in prison from 1989 to January 1994, and he kept himself busy, by writing one book after another. You see what he chose for the cover of his book was the *Duomo*, the cathedral, in Florence, Italy.

President Trump Echoes LaRouche

Just a week ago, President Trump went to Davos in the middle of this environmental suicide pact; he introduced the thought that a few hundred miles from the Davos Congress Centre in Switzerland, you have examples of what mankind has done, by looking up, instead of digging in the mud, by looking up to the stars. Trump touched on the cathedral in Florence; he said that the cathedral's dome was not built in a day; the construction of this dome began in 1296, and it wasn't completed until 140 years later. In between you had the Black Plague, wiping out whole villages in Europe. Add to that, that the people who initiated this project didn't have any idea how they would actually build the dome.

They began construction nonetheless, and initially built an octagon base that went up to a certain height. But it was Filippo Brunelleschi who figured out how the dome could be constructed without using all the timber in the entire region around Florence as a supporting structure. He used the catenary principle to build this dome, and it was completed. Imagine the President of the United States using this image, and saying that instead of listening to the doomsayers or saying that we have reached the limits to growth and we have to cut back, left and right, that mankind is not governed by the doomsayers, but by the visionaries. While the people who began this project did not have an idea of how to actually complete it, just like today, we don't have the exact method of how we're going to achieve breakeven fusion, but we have a goal and we know what it's going to take to get there.

This project, over 140 years, to build the largest dome in Europe, was the center of what Nicolas of Cusa organized as the Council of Florence, which was really the beginning of the Renaissance, the breakpoint from the Middle Ages into the modern era. If you look at the very top of the dome, the sphere at the very top of the cathedral was designed and constructed by Leonardo da Vinci and his collaborators. We can see that the whole of the European Renaissance gave us the science that allowed for a much greater capacity to feed and clothe a larger population, which led to the breakthroughs of Kepler and Leibniz, Riemann, and eventually Einstein and Planck.

The Renaissance as a Paradigm of Creativity

This European Renaissance is what we should use as our model, instead of the flagellants and the doomsayers that we have with the global warming fraud, which seems to still dominate the world of science. Speaking of the world of science, you may have heard



public domain

Visitors stand atop Brunelleschi's dome.

that the minute-hand of the Doomsday Clock has been moved up closer to midnight. This was done recently by the Union of Concerned Scientists, which is now headed up by that "great scientist" Jerry Brown, better known as "Governor Moonbeam." You have a pessimism that has taken over the scientific community. What's taught in most colleges now, most universities, as "science" is rubbish; they no longer have civil engineering programs, you have "environmental science," and the whole focus is how to reduce our carbon impact, our carbon footprints. Very little funding, just a small amount, is going towards breakthrough technology for the future.

So, for the President to use this Renaissance example, which LaRouche had used repeatedly over the last 30 to 40 years, shows you that our ability to get the Presidency—and nations like China

and Russia and the real thinkers in Europe, Africa, and South America—to collaborate on these great projects, shows tremendous potential. He's showing the way; he might not know how to complete the project, but he's at least pointing you in the right direction. That gives us an idea that we too have a tradition, a Renaissance tradition. We merely have to look back just at the last hundred years, look back at the history of powered flight.

If you think about it today, every day almost 2 million people board an aircraft just in the United States. If you think back to the turn of the 19th into the 20th century, how many people thought we would achieve controlled, powered manned flight? If you think of the steps we took from powered flight to landing and walking on the Moon and returning safely, it was only a mere 66 years. And, think of how long it took to build the cathedral dome: 140 years. I'm sure that if we use the examples of the past, we can get to controlled thermonuclear fusion in the coming ten years, and we can actually beat the record of the building of the dome by a great number of years.

Your Life on Mars

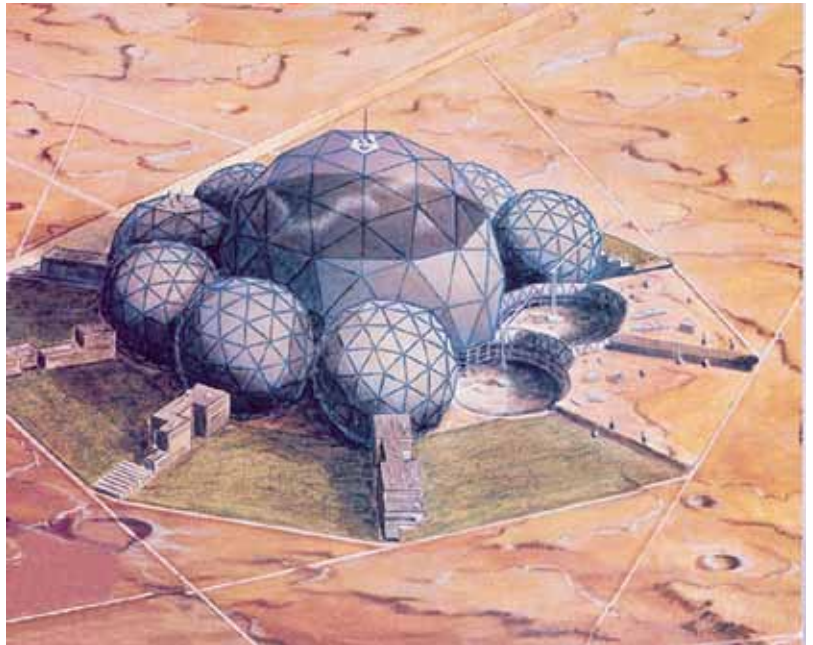
by Michael James Carr

Feb. 2—As with the case of water slowly heating up, almost imperceptibly, until it goes through a phase change, suddenly becoming powerful steam, the recent decades have seen a slow but steady accumulation of decisions, actions and discoveries which are about to make mankind a multi-planetary species.

Of course this is not accidental, but the deliberate result of the individual initiatives of outstanding people too numerous to mention, but at least a few should be remembered with extraterrestrial cities towns and stations named for them—Konstantin Tsiolkovsky, Wilbur and Orville Wright, Robert Goddard, Hermann Oberth, Wernher von Braun, Sergei Korolyov, Krafft Ehrlicke, and of course Lyndon LaRouche—for their persistence against all odds in working towards creating the future we are now entering. We hope to increase the value of their work by our successful leaps forward now, just as the actions we take now will only achieve complete success via the succeeding transformations to be made by our descendants.

The day is not far off when LaRouche's science city will be operating on Mars and Krafft Ehrlicke's Selenopolis, a lunar industrial city, will export water and hydrogen and oxygen, as well as structures and vehicles made of the abundant titanium, magnesium and iron found there. Once a minimal human/robotic division of labor is established on the Moon, the Moon has the advantage of having the lowest transfer costs from the surface to Low Earth Orbit (LEO) and anywhere else in space. It is so easy to use a simple MagLev launch track to move anything from the lunar surface to lunar orbit. And it's even easier to head anywhere else from lunar orbit.

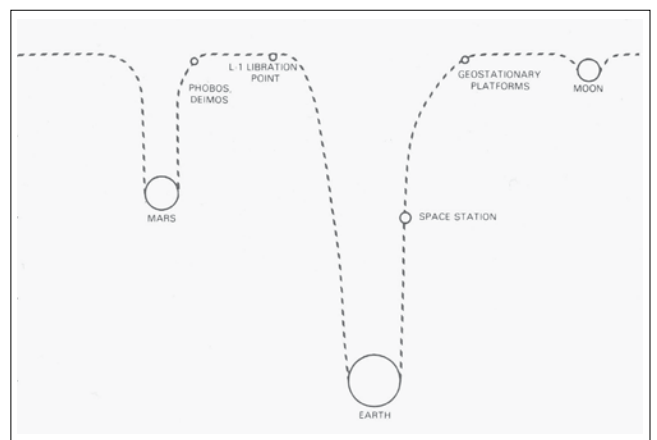
In the process of mining water and minerals, the processing will also accumulate large quantities of lunar Helium-3 (exceedingly rare on Earth), which is the perfect fuel for fusion power and especially fusion propulsion systems. Since all products of Helium-3



Christopher Sloan

An artist's conception of Lyndon LaRouche's vision of a city on Mars.

based fusion are electrically charged, the reaction products are easily directed out of a rocket via magnetic nozzles. It is this Helium-3 which makes possible safe human travel to Mars in just a few days.



Pioneering the Space Frontier by the National Commission on Space, 1986.

The relative effort required to reach Low Earth Orbit in the vicinity of the Space Station, is much greater than that required to achieve Geostationary Orbit on the Moon. The relatively small Gravity Well of the Moon makes it an ideal pit stop to pick up supplies and fuel en route to anywhere else.



CC/Steve Jurvetson

Fish and vegetable farming at Edenworks in Brooklyn, New York. Similar indoor farming methods will operate underground on the Moon. Can we get plants or forests to grow on the Martian surface?

Fusion rocket powered passenger tugs featuring continuous acceleration, and slower freight tugs, will bridge the distances between the orbiting transfer stations above Earth, Moon and Mars. Between Earth and LEO, passengers fly aboard spaceplanes that make such connections as simple as today's airline operations. For bulk freight deliveries to LEO, shipments are launched via a superconducting MagLev launch track called the StarTram. On the Moon and Mars, reusable rocket-powered pods link the surface to the orbiting transfer stations.

LEO, Moon and Mars based universities and research labs spin off more and more new industries to develop new processes and discoveries into valuable products of trade.

Starting on the Moon, underground farms will provide vegetables, while meats and grains will come in from Earth in exchange for the lunar exports. Like the lunar farms, Selenopolis will be located beneath the lunar surface for passive protection from radiation and meteorites. But the experience on the Moon will provide the exciting prospect of turning Mars green. Could we find plants that could survive on the open surface of Mars with a little help from man? Besides the greenhouses to be built there, could we get plants or lichens growing in the thin Martian atmosphere? The thin atmosphere is 95% CO₂ (good plant food), but the weather

is very cold most of the time. Could we artificially intervene to warm Mars? Place solar reflectors in orbit to increase the temperature in growing areas? Either way, we begin with the systems perfected on the Moon.

What are the effects of living in the new cities on these heavenly bodies? How do the children develop? How is human thought and culture altered? Where could we set up colonies after Mars? These are questions to be answered further down the line. In the meantime, we are moving into the immediate future of an Earth-Moon-Mars economy. The era of geopolitics and predatory financial schemes is over. The era of interplanetary Man, the New Paradigm, begins. We review here some important transition points in this process.

Oligarchical control is failing because normal productive people have

been abused to the limit of their tolerance are now beginning to think outside the oligarchy's prescribed patterns. It is also failing because Lyndon LaRouche spent his life teaching all who would listen. He developed plans for the industrialization of every backward area on Earth. He taught his most advanced ideas to the poorest people and nations as well as to the prosperous.

He applied a related idea of Nicholas of Cusa to global problems—that the greatest potential of each individual and each nation can only be realized if *all* are developed to the maximum possible. LaRouche insisted that each country, however poor, must seek to leapfrog into the most advanced areas of science; that each nation should have its own space and research institutions. Work on the frontiers of science will drive a society to its better future.

The combination of LaRouche's decades of interventions and the desire of people everywhere to solve their problems and move onward and upward has outflanked the oligarchy. More than seventy nations have national space agencies seeking to participate and contribute in some way to the spread of civilization outward from Earth and to advance their own productivity and prosperity.

In particular, once poor and backward, China is coming forth with plans to develop the resources of the Moon (including Helium-3) as an integral part of a new

economy compassing both Earth and the Moon. India has a satellite orbiting Mars and is about to send its first astronauts into space aboard its own newly developed spacecraft. Rather than such initiatives leading to competition and conflict, the result is a spur to unified efforts to take up the challenge posed by Lyndon LaRouche in 1987, when he proposed a forty-year project to build a science city on Mars.

And now amazing progress is ongoing—not yet everything required, but still quite a leap forward from ten to twenty years ago. Within the next several months, the International Space Station (ISS) will have two new taxi services added to the existing *Soyuz*. This summer will see four spacecraft from four different international teams head off to Mars. Russia will soon launch its first nuclear powered “space tug” as an important contribution to the cislunar space infrastructure. There are many such projects that demonstrate the opportunities open to those young people willing to take up the exciting challenges ahead.

From Above

Back in 1987, when Lyndon LaRouche laid out a [plan](#) to build a science city on Mars over the course of forty years, he insisted that the city’s purpose would be to build and manage a fleet of telescopes positioned along the ecliptic of the Mars orbit around the Sun to enable a synthetic telescopic aperture with the diameter of the Martian orbit. The point was, and still is, that what humanity knows is extremely miniscule as compared to what we really need to know. Are we blindly speeding through space?

But first, before going further to discuss ongoing progress, we must digress a moment to deal with the oligarchical hangover. As LaRouche outlined, the full Moon-Mars project requires a return to regulated banking (Glass-Steagall prevention of looting of savings in commercial banks), and the establishment of national banks with authority to create credit for investment in approved categories of productive activity and infrastructure. Also, a New Bretton Woods agreement with fixed exchange relationships between national currencies will be necessary to allow for long term international productive investments that protect all sides from currency manipulations. These measures will require the minimal cooperation of Presidents Trump, Putin and Xi, as well as Prime Minister Modi and other leaders able to come forward in building the new, non-predatory world economic/financial system.

These economic underpinnings are necessary, because without regulated banking and currencies fostering productive investment, investments in frontier areas come only as “equity investments” which give venture capitalists controlling influence over the activities of entities working in frontier areas of science and production. We need functioning public credit and currency systems to allow scientists, engineers and production people to make the future-oriented decisions needed for the most rapid progress. Over and over we have seen equity investors stop needed long-term investments, in order to loot the short-term returns of industry.

Secondly, we must establish the metric for comparison of ongoing efforts with the requirements of the updated overview of the Krafft Ehrlicke-Lyndon LaRouche space program [presented](#) in “Moon-Mars Crash Program Under a Four-Power Agreement,” in the October 26, 2018 *EIR*. It says, in part,

As with the Apollo Project of the 1960s, we are dealing with a critical path of problems to be solved. Each solved problem affects all of the subsequent problems in the path; nevertheless, we don’t tackle these problems sequentially, but simultaneously. In this way, as unknowns are resolved, workable architectures begin to appear out of the haze of uncertainty. The problems to be overcome are huge but manageable. Here are some:

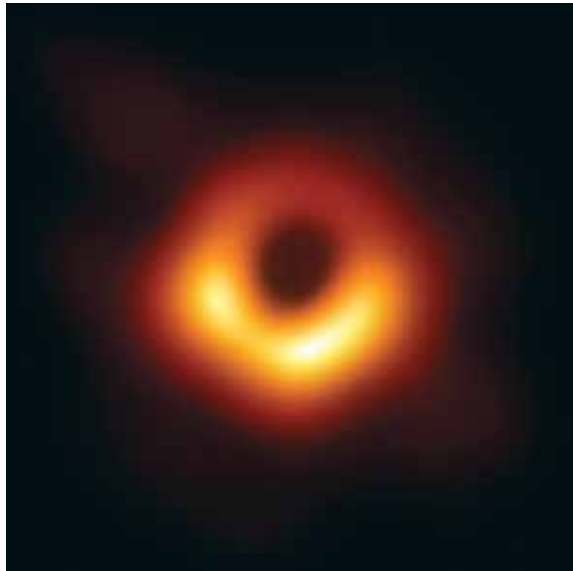
- Compact fusion and fission propulsion systems
- Routine spaceplane access to Low Earth Orbit (LEO) for humans and delicate hardware
- Completely new, heavy-lift maglev launch technology
- Removal or control of LEO space junk
- New construction techniques for Lunar and Martian settlements
- Technologies to “live off the land” on the Moon and Mars
- Mining and manufacturing technologies
- Technologies for space farming and food preparation
- Air and water recycling and creation
- Healthcare in space
- Space defense against harmful radiation and meteorite impacts
- Psychological effects of long-term separation from Earth

- Physiological and psychological effects of childhood development on the Moon and Mars.

Since about 1967, which saw funding for the Apollo Project peak, along with the beginning of the British Tavistock Institute's all-out assault on American scientific progress, the American space program has turned away from pursuing revolutionary "best solution" technologies, towards "cost effective" or "off the shelf" derivative technologies instead. Yet, "off the shelf" technologies actually tend to cost more—because they do not lead to revolutionary effects throughout the rest of the economy. For the space program does not return revenue paid out by the Man in the Moon or by little green Martians, but rather through the transformation of the Earth's economy by new ideas and technologies transmitted out of the program.

It is this conveyor belt of new technologies and optimism fed into the American economy which led to returns of far more than \$10 for each dollar invested into the revolutionary Apollo program. And, even this is really a faulty measure of value, because the power at the command of one dollar before Apollo was much inferior to the power at the command of a dollar after Apollo had transformed the technologies of every area of product and production.

Having understood this much, it is best practice to put resources into multiple possible solutions for a problem (even into apparently "far out" possible solutions), because the successful revolutionary solution will more than pay for the other failed solutions. And in fact, the economic consequences of such "failures" can be enormously beneficial.



European Southern Observatory

This image, created by the Event Horizon Telescope, a planet-scale array of eight Earth-based radio telescopes, revealed the first direct visual evidence of a supermassive black hole and its shadow, fifty-five million light-years from Earth in the center of Messier 87, a massive galaxy in the Virgo cluster.

Astronomy

In April 2019, the international collaboration of eight astronomical facilities around the world which, together, constitute the Event Horizon Telescope, succeeded in creating the first image of the horizon around a black hole (emissions of matter just before it is sucked into the hole region itself).

In 2018, the 64-dish radio telescope MeerKAT began operation in South Africa. The MeerKAT will soon be linked with a radio telescope system in Australia to create the seed crystal of the twenty-nation intercontinental Square Kilometer Array (SKA). Over time this system will have a collecting space

(synthetic aperture) of one square kilometer.

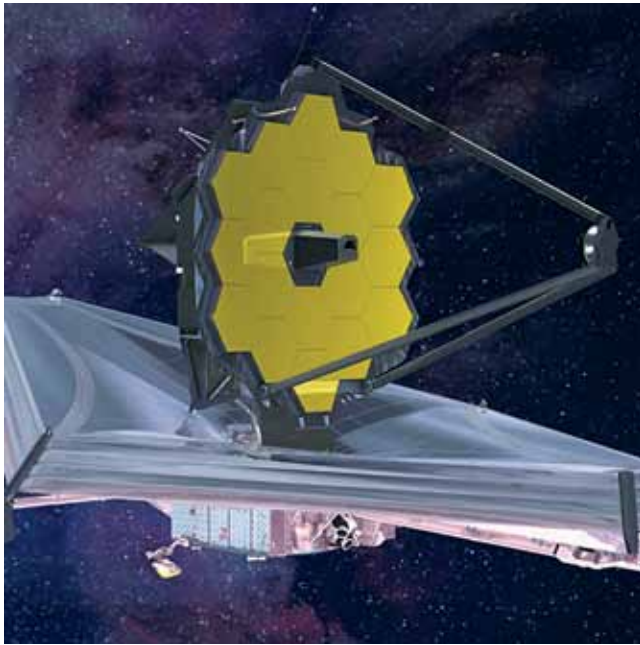
At the end of 2019, the Netherlands-China Low Frequency Explorer (NCLE)—far removed from Earth-based radio noise aboard the CNSA (China National Space Agency) Chang'e-4 Queqiao relay satellite—began a radio-frequency mapping of the heavens.

The Chinese five-hundred meter Aperture Spherical Telescope (FAST, nicknamed Tianyan, "Eye of the Sky"), a radio telescope, [began](#) began operational work in January 2020. It is the largest single-reflector radio telescope in the world.



Xinhua Press

China's Five-hundred meter Aperture Spherical Telescope (FAST).



NASA

An artist's rendering of the James Webb Space Telescope in action.

In March of 2021, the James Webb Space Telescope, a joint NASA-European Space Agency-Canadian Space Agency project, is expected to be launched on an Ariane rocket to begin its study of the heavens in the infrared spectrum. Its resolution is expected to top that of the Hubble Space Telescope, whose images suggest that there are at least ten times more galaxies than pre-

viously thought—perhaps 100 to 200 billion galaxies! The Webb Telescope will orbit the Sun a million miles further out from the Sun than Earth.

In 2023, the Giant Magellan Telescope, composed of seven of the largest monolith mirrors in existence, is expected to begin observations from atop a mountain in Chile. It is expected that images from this system will be ten times sharper than those from the Hubble Space Telescope. It will overcome the distortions introduced by the intervening atmosphere by using a computer-aided technique called speckle interferometry.

Atop another mountain in Chile, the European Extremely Large Telescope, with 798 hexagonal mirror segments combining to create a primary mirror thirty-nine meters across, is expected to begin observations in 2024.

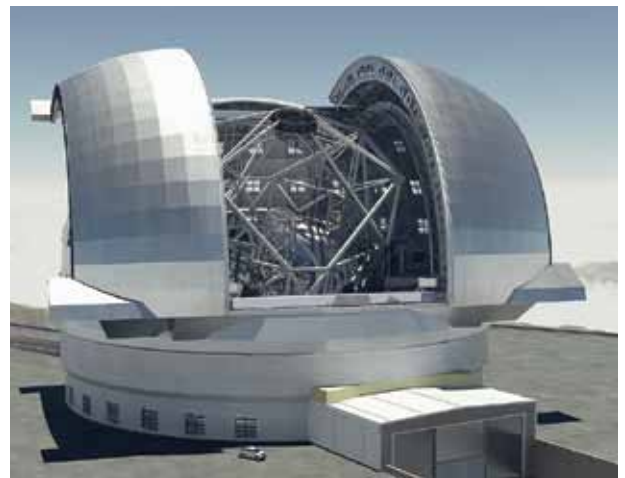
Other important systems are both operational and planned for the near to medium future. The excitement created by the Hubble's revolutionary discoveries and the demonstrated new capabilities for pointing mirrors with extreme precision created wide support in the world public and even inside governments to proceed to build the dream machines of astronomers. You can see that LaRouche's Mars orbit aperture telescope proposal is only a few steps beyond what is already in progress.

Besides the dreams, there are also nightmares to contend with, such as the risk of Earth's collision with large asteroids or comets. In 2013, after the meteor explosion above Chelyabinsk, Russia, the International Asteroid Warning Network was established to pool global resources to track such threats and propose countermeasures. Also in 2013, NASA's Planetary



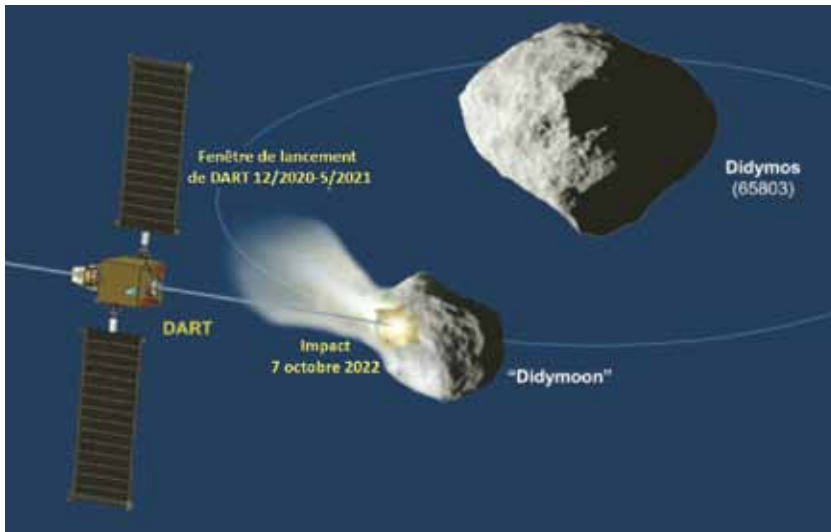
GMTO Corp.

Artist's concept of the completed Giant Magellan Telescope, situated in the Atacama Desert, 115 km (71 mi) northeast of La Serena, Chile.



European Southern Observatory

An artist's conception of the Extremely Large Telescope.



NASA

A schematic view of the Double Asteroid Redirection Test (DART) mission.

Defense Coordination Office repurposed an orbiting infrared telescope along with other assets to seek out and map potentially hazardous Near Earth Objects. In 2021, the office will launch the Double Asteroid Redirection Test (DART) Mission aboard a SpaceX Falcon 9 and accelerate into deep space using solar electric propulsion systems to the moonlet of the near Earth asteroid Didymos to test out the effectiveness of kinetic collision in altering asteroid orbits. The 2022 collision will be monitored by Earth-based telescopes and radars to determine the effects of the impact.

If one millionth the effort expended upon the nonexistent “Global Warming Crisis” were applied to Planetary Defense, humanity would *truly* be safer. This work needs to be greatly expanded. Giant meteor or comet impacts on Earth are indeed a nightmare scenario for civilization.

Mars and Deep Space

This summer of 2020 will see the Earth-Mars relationship approach its biennial optimal launch trajectory configuration. This time around, four spacecraft will be launched for Mars:

1. NASA’s soon to be renamed *Mars 2020* rover—a derivative of the Mars *Curiosity* rover with some new features, including autonomous driving capabilities and a small helicopter

2. CNSA’s Mars orbiter and rover atop a Long March V launcher, which recently returned to operational status

3. European Space Agency (ESA) and Russian State Corporation for Space Activities (Roscosmos) rover, named *Rosalind Franklin*

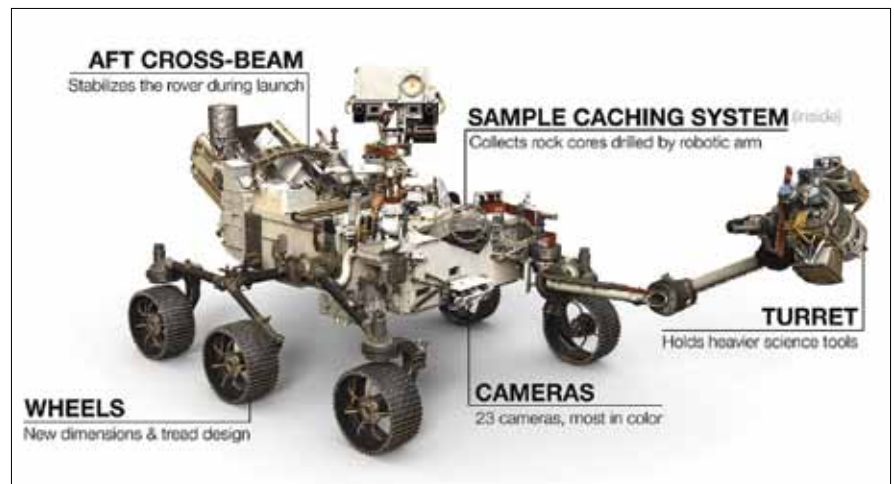
4. The United Arab Emirates’ Mars orbiter, named *Hope*, being built in Colorado, to be launched on a Japanese rocket this summer.

These spacecraft will join the already existing human infrastructure at Mars: NASA’s *Curiosity* rover and NASA’s three orbiters, the ISRO’s (Indian Space Research Organization) *Mangalyaan*, ESA’s *Mars Express*, and the joint ESA/Roscosmos *ExoMars*.

The 4 new Mars spacecraft will launch and then “coast” for months on force-free trajectories until reaching the vicinity of Mars. This is fine for these early scouting robots but unacceptable as a means of human transport to Mars.

Fission and Fusion

On the surface of Mars, the *Curiosity* rover and the new NASA rover turn the heat generated by the natural process of radioactive decay of Plutonium-238 dioxide into the electricity needed to power the rover operations. BWX Technologies (formerly Babcock and Wilcox) is developing more powerful, but still compact, small-scale nuclear reactors that could power anything from orbital space stations to bases on the Moon



NASA

NASA’s Mars 2020 Rover.

or Mars. Russia's Roscosmos has announced that in 2030 it will launch a nuclear-powered tug spacecraft for deep space operations. Such vehicles are ideal for moving freight between Earth and Lunar orbits. Fission-powered rockets (called nuclear thermal rockets or NTRs because they use the heat of nuclear fission to heat an inert gas to approximately twice the temperatures and exhaust velocities of chemical rockets) could halve the travel-times to Mars, but that is still months.

Work in Russia and at the U.S. Department of Energy and NASA's Marshall Space Flight Center should continue and expand in these areas, but the minimal solution for sending even initial astronauts to Mars (not to mention building bases and cities on Mars) is with the continuous, dense production of energy and propulsion thrust with thermonuclear fusion.

Fortunately, despite Congressional refusal to fund a serious American effort in fusion, [progress](#) around the world and at various companies has nevertheless brought this technology to the verge of initial space and commercial utilization. We list a few of the important areas of work in this area:

1. Work proceeds with NASA [backing](#) at Princeton Satellite Systems (a spinoff of the Princeton Plasma Physics Laboratory) on an actual fusion rocket engine called the Direct Fusion Drive.

2. In France, the International Thermonuclear Experimental Reactor (ITER), a giant international tokamak, is slowly being assembled. "First plasma" is scheduled for 2025 and first deuterium-tritium fusion operations in 2035, with the goal of reaching an energy gain of 10 times the energy input. This conservative design was put together in the 1990s with the intent of creating the design and manufacturing capabilities to build actual fusion power plants. However, as this process develops, breakthroughs are taking place that cause many fusion researchers to see potentially quicker pathways to operational fusion power.

3. In Cambridge, Massachusetts, with the recent breakthroughs in manufacturing high temperature superconductors, work at the Massachusetts Institute of Technology in high-temperature tokamak superconducting magnets has spun off a new company, Commonwealth Fusion, which is building new superconducting magnets that will go into a much, much smaller machine called SPARC, which will be the first net energy producing fusion machine. Beyond that, the company intends to build the first actual fusion power plant, the ARC.

4. In Palmdale, California, Lockheed Martin's Skunk Works is developing a small fusion reactor that could power ships, planes and small cities. It builds a new design of test reactor every year or two, and has now finished its fifth device. It expects to build three more generations of test devices before producing a prototype usable reactor.

5. China's new HL-2M Tokamak is expected to become operational this year, reaching sustained plasma temperatures of 200 million degrees Celsius, and taking off from the work of its EAST tokamak which currently holds the world record for tokamak plasma confinement time. It is designed to test out ideas which will be used in the ITER. China has announced plans to start building a demonstration fusion power plant in five years, which it expects to begin generating electricity by 2040.

6. Canada's General Fusion has announced that it has raised \$200 million (mostly from private investors) to allow it to build a prototype of its unusual vortex fusion machine.

7. Germany's Wendelstein 7-X [stellarator](#) fusion device is expected to demonstrate a thirty-minute plasma confinement time next year.

8. England's Tokamak Energy is working with new high-temperature superconducting magnets to produce a small reactor it hopes could generate electricity in 2030.

9. TAE Technologies, in California, expects to demonstrate net energy output in the next few years with its proton-boron fusion technology.

The imminence of commercially viable fusion power systems is indicated by the fact that there are twenty-one private companies who are members of the Fusion Industry Association, each working on unique fusion designs for practical application. And, not all companies working on fusion are in this association. We've mentioned a few of them above, but the technology is right on the cusp of producing practical machinery for accomplishing work. If you are a resourceful young person willing to apply yourself, this is the main missing link in allowing the spread of civilization to the Moon and Mars. Seize the opportunity to make history!

That Wall Street and other venture capitalists are beginning to invest in some of these companies means that fusion development has broken through the tired lies that fusion will always be fifty years away from realization. However, what has been missing is the commitment by the U.S. government to accelerate the pro-

cess with significant direct funding, and for final sprints from prototypes to production: Large-scale, cheap credit is needed, as outlined in LaRouche's Four Laws.

The Moon

Last year President Donald Trump put the establishment of the first permanent human presence on the Moon on an accelerated timetable. The program was given the name "Artemis" and has the goal of putting astronauts back on the lunar surface by 2024 and establishing a permanent presence by 2028. For Artemis, the Moon is not an end in itself, but a testing ground and logistical base for the later human operations on Mars and beyond.

LaRouche and Ehricke go well beyond that concept to insist that the low gravity of the Moon and the availability of water, Helium-3, and relatively high concentrations of metals there will make the industrialization of the Moon and development of lunar resources key to all human space operations and settlement. The Moon is the perfect spaceship shipyard and fueling station. The Artemis program is a good start in the direction of lunar industrialization, but industrialization will require propulsion breakthroughs and more political (and financial) support.

These are some goals of Artemis :

1. International collaborative project: At least 26 nations have expressed interest in participation. (It will be important to bring China into this project.)

2. Open architecture: All systems (such as docking systems, communications systems, etc.) are designed with open standards to allow any nation or company to participate.

3. Demonstration of the ability to extract lunar resources, such as water, from lunar regolith.

4. Development of the infrastructure (such as the Lunar Gateway orbiting waystation, which can function as a movable supply depot for lunar, as well as Martian operations).

5. Development of multiple private freight delivery systems to the Gateway and to the surface. For example, NASA has a pool of fourteen companies with which it



JAXA

Concept from a joint Japan Aerospace Exploration Agency (JAXA)-Toyota study for a lunar vehicle carrying two astronauts. JAXA is one of many agencies and companies interested in working in the Artemis program.

can contract delivery of payloads to the lunar surface. So far, two companies have been contracted to deliver two payloads of science and engineering experiments in 2021.

In 2019, China's *Chang'e-4* lander sprouted the first Earth seedlings on the Moon.

China has just delivered its new, as yet unnamed, human-rated spacecraft capable of Earth-orbital as well as deep space operation, to the Wenchang launch center for uncrewed testing. At some point in the near future it will fly an unmanned test aboard a Long March VB variant of the Long March V. It is designed to accommodate up to six people. A fuller review of China's



Roscosmos

A mockup and test vehicle of Roscosmos' Orel deep space crew module on display at the Moscow Air and Space Show in August 2015.



NASA

The NASA Space Launch System core stage moves from production to firing tests.

space plans is available [here](#).

Russia has also been working on a new-generation, deep-space human spacecraft in the Orel program. The first unmanned tests are expected in 2023 and the first manned mission in 2025. It is expected to carry up to four cosmonauts out past Earth orbit.

This year NASA's Space Launch System (SLS) core stage is being tested before its first flight around the Moon with an unmanned Orion spacecraft, which is scheduled for 2021. The complete SLS is the most powerful rocket ever built.

Low Earth Orbit

As of November 2020, the International Space Station (the most complicated project ever undertaken), will have been manned for twenty years. During this time, it has served as a testbed for many technologies, including wastewater recycling into drinking water and on-orbit manufacturing.

The logistical requirements of maintaining six astronauts and a very large facility in orbit, have required continuous freight and crew delivery service. Since completion of the main ISS architecture and the retirement of the space shuttles in 2011, cargo has been lofted by the Russian Progress, Japanese HTV, European ATV, and American Dragon

and Cygnus cargo transfer spacecraft, while crew transportation has rested upon the reliable Russian Soyuz system.

This year, the Soyuz will be joined by the SpaceX Crew-Dragon spacecraft and the Boeing Starliner. With the recent successful completion of its In-Flight Abort Test, the Crew-Dragon spacecraft will be ready for its first manned launch to the ISS by the end of February. The actual launch date has not yet been scheduled, but March or April would be a good guess. The Starliner will also make its first manned launch to the ISS this year, but the timing has not been announced.

As these new transport services begin to prove themselves, NASA intends to rent out manufacturing space and facilities aboard ISS to industries seeking to test microgravity production systems for products such as special metals, optical fibers, growing replacement organs, etc. As some of these production systems develop, it would be expected that some companies would want their own factories in space, which would be serviced by the SpaceX, Boeing and perhaps other commercial space transportation systems. This is primarily dependent upon the ability of SpaceX and Boeing to perfect their operations to the point that companies can consider space-based production to be an affordable and reliable proposition.



NASA/Bill Ingalls

The NASA/Boeing Starliner spacecraft shortly after landing, after its first unmanned flight test in 2019.



Axiom Space

An artist's conception of Axiom's space station, to be constructed while attached to the ISS, then detached, to form an independent commercial research complex.

On January 27, 2020, NASA announced that it will make a docking port on the ISS available to an American company called Axiom Space. The company will attach to the ISS several commercial modules it intends to build, including a node which will connect to multiple habitation, research and manufacturing modules. Eventually this complex could disconnect from the ISS and become its own separate commercial space station. Axiom Space is founded by, and teamed with, many individuals and companies with long experience on ISS.

Next year, the Sierra Nevada Corporation's Dream Chaser spacecraft will bring back the ability, lost after the shuttle retirement, of gently landing delicate cargo from the ISS on a runway.

In 2019, Reaction Engines of England achieved its goal of cooling incoming Mach 5 air down to temperatures suitable for use in a rocket motor—thus taking the place in the early stages of flight, of heavy onboard Oxygen. This means that air-breathing space planes that take off from a runway, fly to orbit, and land back on a runway, are now possible to build. Reaction En-

gines has garnered over £100 million of investment, but this [breakthrough](#) demands crash program funding from the American government to design and build a complete, integrated spaceplane with this technology. This will make human access to orbit as safe and easy as flying across the Atlantic or Pacific.

In September of 2019, the Tianhe ("Harmony of the Heavens") core module of the Chinese Space Station (CSS), was declared ready for service by the China Manned Space Agency (CMSA). Now that the Long March V rocket is back in service, launch could occur by sometime next year, with full completion of the multi-module station to take place over a two-year period following launch of the Tianhe module.

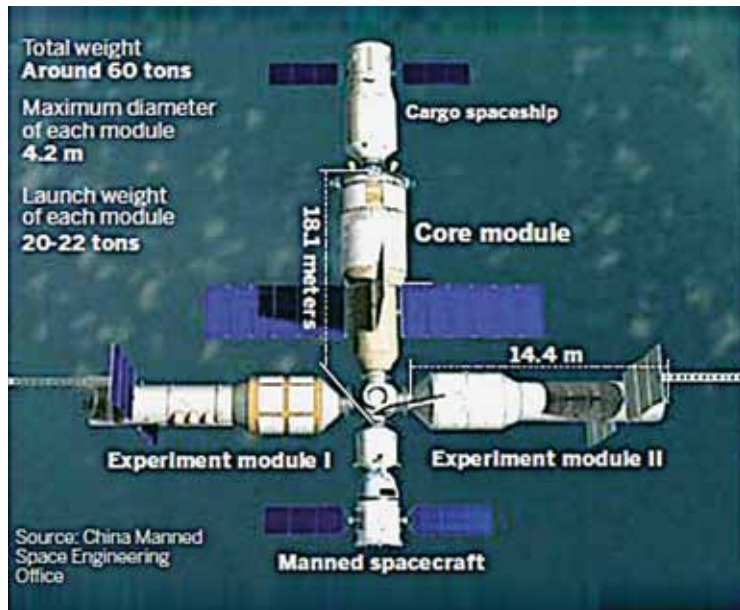
Another American company, Bigelow Aerospace, is offering to build inflatable orbital laboratories or factories for governments or private industry. It has had one of its inflatable modules in service on the ISS since 2016 and is aiming to build part of the Lunar Gateway way-station envisioned in the Artemis program. It also aims to provide

structures for Lunar and Martian surface operations.

Near the end of 2021, India is expected to launch its first astronauts into orbit aboard its new spacecraft, *Gaganyaan*. If successful, India will become the fourth nation to independently develop a human spaceflight system.

While it is very important in all respects that nations develop as much of their own productive potentials as possible, it is also important to stress the importance of international cooperation in the huge efforts involved in developing civilization on the Moon and Mars. The so-called Wolf Amendment, which prevents NASA and Chinese aerospace officials from directly meeting one-on-one to work out cooperative arrangements must be repealed! A step in the right direction will be the April 2020 State Department meeting between U.S. and Chinese aerospace officials, but it is just ridiculous that space officials can only meet when chaperoned by State Department officials.

Also, in 2025, the European Space Agency (ESA) will launch an active debris removal mission called



China Manned Space Engineering Office

Diagram of China's Tianhe Space Station.

ClearSpace-1, which will grab onto a large piece of debris in Low Earth Orbit and de-orbit it. It is a test before developing reusable systems for clearing up debris in Low Earth Orbit.

Freight to Low Earth Orbit

The development and deployment of now over 1,000 cubesats—tiny modular spacecraft made up of “cubes” measuring 10 cm x 10 cm x 11.35 cm—has created the new possibility for schools and the economically poorer countries to cheaply launch their own satellites. These can piggyback on larger satellite launches and open up Low Earth Orbit for many types of new uses. For example SpaceX is engaged in launching a system of thousands of tiny satellites in LEO which will bring space-based internet connectivity to nearly every spot on the globe. It is not the only such space-based internet swarm of satellites. So many are flying and soon to fly that astronomers are beginning to complain about streaks across their images caused by rapidly moving, low altitude satellites. Many new launch companies have formed, specifically for the purpose of launching small satellites into LEO.

Most interesting among these new companies is the California-based SpinLaunch. In 2019 it received its first U.S. government contract for a launch; it also broke ground on a new launch facility in New Mexico. It will begin test flights this year and commercial launches in 2022.

Its technology is closely held, but here is a speculative description. Like the StarTram concept, it externally imparts kinetic energy to a projectile on the ground and releases it upward into space, whereupon a small rocket burn is used to place the projectile into final orbit. Unlike the StarTram concept, this projectile would be small and accelerated around a circular or spiral track before being flung outward and upward. It is not clear how the energy is imparted: whether it is by magnetic fields or by a physical centrifuge. SpinLaunch seeks to attain a launch frequency of five times per day and a cost in the neighborhood of \$250,000 per launch.

Success of this SpinLaunch system could lead to the general realization that the larger scale StarTram concept must be built in order to ship the massive tonnages of freight that construction of bases and cities on the Moon and Mars will require.

Concluding Thoughts

There is much more that is not covered here, such as SpaceX's Starship project, Blue Origin's New Glenn, Virgin Galactic, Virgin Orbit, and even electric propulsion. Nor did we mention the one hundred or so new Chinese companies developing space systems. Nor did we discuss all relevant projects of the more than seventy space agencies of the world. It were impossible to cover everything—even were we omniscient. The good news is that *so much is in flux and development*. The point of this report is to bring to your attention the most incredible potentials of the immediate future. There is no reason to abuse drugs or alcohol. Tune your antennae to the incredible opportunities all around you and find a place in which you can make a contribution!

There is still quite a gap between what is required, as outlined by the updated Ehricke-LaRouche program, and what is happening now and on the near horizon; however, the gap is closing and the power of the opposition networks is failing. Add your voice to Helga Zepp-LaRouche's call for Presidents Trump, Putin and Xi to meet! This meeting must not only deal with hot spots and creation of the new fixed exchange-rate monetary system, but also work out even closer international cooperation in the drive to civilize the Moon and Mars.

III. Replace Geopolitics with Development

TRIPOLI TO CAPE TOWN

Turning Libya into an African Gateway to Europe Will Bring Peace to North Africa

by Dean Andromidas

Jan. 31—The Moscow and Berlin conferences on the Libyan conflict in January have given hope that the nine-year war will soon come to an end, especially since Russia's President, Vladimir Putin, has taken the initiative to ensure that success. By calling for a summit of the five permanent members of the United Nations Security Council—China, France, Russia, the UK, and the U.S.—Putin is putting together a concert of powers, thus dragging the European powers, France, Great Britain, Germany, and Italy behind the effort. Nonetheless success can only be assured by the implementation of a vigorous reconstruction and development of war-torn Libya, greater North Africa, and also the Sahel region, which has been engulfed in poverty, terrorism and instability.

Putin's efforts parallel the efforts of Schiller Institute Chairperson Helga Zepp-LaRouche, who has called on the United States and China, to join together in China's Belt and Road Initiative, through which a powerful impetus for peace and economic development can be mobilized. The reconstruction of Libya can create a gateway for a powerful development corridor from Tripoli north to Europe, and south to Cape Town.

Unlike Syria, Libya has not suffered mass destruction, but economic stagnation, instability and conflict.



Bundesregierung/Bergmann

Russian President Vladimir Putin (middle) with German Chancellor Angela Merkel (on his right) and UN Secretary-General Antonio Guterres (on his left) before the beginning of the International Conference on Libya in Moscow, January 19, 2020.

The major powers have to reverse the regime-change policy carried out by Britain, France and the Obama administration that violently overthrew the Muammar Qaddafi regime through the mobilization of the British-backed Muslim Brotherhood-linked terrorist militias, which led to the collapse of the unity of the country. This has left Libya divided between the so-called Government of National Accord (GNA) headed by Prime Minister Fayez al-Sarraj based in Tripoli, and enjoying nominal international recognition; and the Interim Cab-



DoD/Brigitte N. Brantley



CC/Magharebia

Prime Minister Fayez al-Sarraj (left), who heads the Government of National Accord in Tripoli; and Field Marshal Khalifa Haftar, who commands the Libyan National Army from Benghazi. Russian President Putin has taken the initiative to reconcile the two, and thus end Libya's nine-year war.

inet and national parliament, which decamped from Tripoli and moved to Benghazi in the east of the country. The latter, supported by the Libyan National Army commanded by Field Marshal Khalifa Haftar, is recognized by the United States, Russia, France and other countries as a major player in any settlement.

Rapid Reconstruction of Libya

It is the task of the major powers is to restore unity in the country through an economic development initiative to provide a powerful incentive to achieve cooperation. As a major oil and gas producer and exporter, Libya has the resources to rapidly restart its economy and play a major role in the economic development of Africa.

The one commitment that the two warring sides share, is to restart the infrastructure projects that were underway prior to the regime-change war forced on the country. At the center of those infrastructure projects was the construction of a railway line to form the final, missing link of the Maghreb Railway along the Mediterranean coast—stretching from Alexandria to Casablanca, linking Egypt, Libya, Tunisia, Algeria, and Morocco—in a powerful east-west economic corridor. It forms a part of the African Integrated High-Speed Railway Network conceived by the African Union.

Drafted in the early years of the last decade, the plan was to construct a 3,170 km standard gauge rail line, of which the section between Ras Ejder on the Tunisian-Libyan border to Sirte in Libya via Tripoli, was to be completed by 2012, if the regime-change war had not intervened.

The China Railway Construction Corp. (CRCC) had been in the process of building 352 km of the section stretching from Sirte westward to El-Khums. Russian Railways had already conducted a feasibility study and signed a contract to build the section from Sirte eastward to Benghazi in 2008. Another 800 km section was to be built from the iron ore deposits at Wadi Shati, near Sebha in the south of the country, to the Libyan Iron and Steel Company's (LISCO) steel mill at the coastal port city of Misrata. The U.S.'s General Electric had signed contracts in 2007 for 15 locomotives, and Italy's Finmeccanica was contracted to supply the signaling equipment.

Abdul Hadi al-Hweij, the Foreign Minister of the Benghazi-based parliament and Interim Cabinet, attended the Africa Summit in Moscow last year, where he requested that Russia take up the completion of the \$2.2 billion Sirte-Benghazi railway project. In October 2018, a high-level delegation from the Tripoli-based Government of National Accord (GNA), led by Economy and Industry Minister Nasir Shaglan, held meetings in Moscow with the leadership of the Russian Railways (RZD) company on the completion of the line from Benghazi to Sirte, despite the fact that the GNA did not have control over this territory.

In September 2019, General Electric signed a binding memorandum of understanding with the GNA to strengthen Libya's power sector by adding up to 6 gigawatts (GW) of power over the next five years, with up to 2 GW expected to be added by 2020.

In June 2019, the Libyan Iron and Steel Company (LISCO) launched a billion-dollar tender to expand its Misrata steel mill complex, already one of the largest in North Africa. These are only a few of the deals worth billions of dollars that could be signed, once the country is politically stabilized.

Nonetheless, in the context of greater African development, Libya offers a far greater potential. It can provide a great opportunity for Europe, in cooperation with China's Belt and Road Initiative as well as Russian and American interests, to take responsibility for the development of Africa. With its 1.2 billion people, Africa is the world's next China. Its industrialization will provide the same huge market for European industrial

Trans-Maghreb Rail Corridor from Casablanca to Cairo, Partially Built



products and services as China, as it becomes fully integrated with the world's industrialized regions.

Turning Libya into 'Africa's Gateway to Europe'

In 2010, Libyan academics Dr. Rajab Abdullah Hokoma and Dr. S.P. Bindra authored a [paper](#) titled, "Libyan Railway: A Gateway to Europe." Published before the murder of Qaddafi, this forward-looking paper not only reviewed the railway developments in Libya, but presented Libya as Europe's "Gateway" to Africa. Qaddafi's Libyan railway project was seen as part of a larger Grand Design for a pan-African railway network, one that is now coming into being in the form of the African Union's (AU) African Integrated High Speed Rail Network (AIHSRN). The Libya line was to be the missing link in the Maghreb Railway, but also the launching point of the 9,000 km Tripoli-to-Cape Town, South Africa rail corridor, now designated by the AU as L48 at the Tripoli end and ending in the L59 segment that reaches Cape Town (see map of AIHSRN [here](#)).

Qaddafi had been in discussions with the governments of both Chad and Niger to extend the Libyan rail network into those countries. Today, the African Union's planned L48 segment of the Tripoli-to-Cape Town corridor does exactly that. A new Libyan government should be encouraged to do its part to get this segment built.

It is necessary to develop this corridor on a priority basis to create a powerful north-south axis of develop-

ment through Central Africa. The African Union priority railway corridors in the construction of such a pan-African network are described in the Schiller Institute's [The New Silk Road Becomes the World Land-Bridge: A Shared Future for Humanity, Vol. II](#) and [Extending the New Silk Road to West Asia and Africa, A Vision of an Economic Renaissance](#). Much planning has been done, and ambitious projects have been completed, such as Ethiopia's line from Addis Ababa to Djibouti, Kenya's Standard Gauge Railway, Morocco's high-speed line from Tangier to Casablanca, and segments in Nigeria. Nevertheless, under current conditions, a fully pan-African network is decades away. What is needed is to throw away the anti-industrial Malthusianism now dominating western policy concerning Africa.

A consortium of national governments could be created—including the countries through which the railway will pass, but also the governments of the major powers, including Russia, China, the U.S., and European nations such as France, Germany, Italy and Spain—to finance railway development through low-interest, long-term credit. New financial institutions could be created, including an Africa Infrastructure Bank and a European-African Infrastructure Bank, similar to the Asian Infrastructure Bank initiated by China.

The African railway corridors will take a lesson from the transcontinental rail corridors of the Trans-Siberian Railway and the more southerly railway through Kazakhstan and China. More than just promoting trade, these corridors are becoming part of the in-

Rail Track Gauges

- 600 mm
- 950 mm
- 1000 mm
- 1067 mm
- 1435 mm
- 1435 mm U/C

Legend:
 B=Burundi
 R=Rwanda
 L=Lesotho
 S=Swaziland

Going north from Tripoli, the rail connection will link to Europe, through a proposed tunnel to Italy. Going west and east, it will link the more developed North African countries, especially Morocco and Algeria in the west and Egypt to the east. Going south, the railway will extend to South Africa, the most developed country in sub-Saharan Africa. This railway network will become a powerful tool in the construction of the other forms of infrastructure and the mega-projects required to transform one the poorest and least developed regions of the planet.

Schematic representation of the proposed North/South rail corridor from Tripoli, Libya, to Cape Town, South Africa. The map shows existing rail and rail under construction (U/C).

North Africa. Because of the lack of a rail line to large iron ore deposits in the south of Libya, LISCO buys and ships in iron ore pellets from as far away as Brazil, Sweden and Canada.

To the north, the railway could access a proposed rail tunnel between Capo Bon in Tunisia and Sicily, from which, on the Sicily side, a rail line is to pass over a proposed bridge across the Messina Strait to the boot of Italy—a land-bridge to Central Europe. Another proposed tunnel, this one across the Adriatic to Albania, would give direct access to the Balkans and entry into Eurasia, while boosting the development of Italy’s less developed southern Mezzogiorno region and South Eastern Europe. Both projects are among those detailed in the Schiller Institute reports cited above. See also the January 3, 2020 issue of *EIR* for a [report](#) on the “Ulysses Corridor” unifying all the connections between Italy, Albania, and Greece.

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connection can easily be created by establishing a railway ferry service from Misrata to the Italian port of Taranto, on the Gulf of Taranto. With a draft of 16 meters, this deep-water port is capable of receiving post-Panamax ships. Built in the 1960s as a major transshipment point for Italy, as well as to serve Italy's (and Europe's) largest steel mill that is based there—currently threatened with closure.

The collapse of the Italian economy as a result of the European Union's austerity policies, led to the closing of Port Taranto's container terminal in 2015. In August 2019, the port was given a new lease on life when the Turkish port operator, Yilport signed a 49-year lease to operate the port. Yilport is reportedly determined to turn the port into a major hub, and has set a target of processing 1.5 million containers a year.

Yilport, which operates 22 ports in Turkey, North and South America, and Western Europe, including the container terminal in Malta's free port, is part of the Yildirim Group, one of Turkey's leading industrial firms, which is active in the construction, engineering, shipping and energy sectors. It is no doubt looking across the Mediterranean to Africa, where Turkish companies have been especially active building hotels, infrastructure, railways, etc. A fast train ferry modeled after those in the Baltic, capable of carrying as many as 160 railcars, could travel between Misrata and Taranto and other Adriatic and Mediterranean ports.

South, to Cape Town

To the south of Libya, the rail corridor will follow the 15th meridian, to the city of Sebha in the vicinity of rich iron or deposits at Wadi Shati, enabling this ore to feed the LISCO steel mills in the north. Sebha, an oasis city of more than 100,000 citizens in the Libyan desert, is situated near major oil fields and could become a major metropolis in the Libyan desert, drawing labor not only from Libya but other North African countries as well.

Continuing south, the railway will run along the north-south border between Niger and Chad in the middle of the Sahel, one of the poorest regions in Africa, an area dominated by the smuggling of weapons, drugs, and people, and plagued by terrorism.

Yet this region is rich in natural resources. To the west of the railway is the Agadez region in southwestern Niger. The provincial capital of the same name is known as a key transit point for migrants making their way north to an uncertain fate awaiting them at the Mediterranean. It is also a drone base for the U.S. military. The region is home to Africa's richest uranium

mines at the desert city of Arlit, which supplies France with most of the uranium for its nuclear power plants and nuclear weapons. Yet Arlit is a city of mud houses, the only paved road being the "uranium highway," which trucks out the uranium for export to France.

Both Niger and Chad are rich in resources, including uranium, gold, aluminum and iron ores, as well as diamonds, coal, limestone, phosphate, and oil—all the makings of an industrial economy. But at present, if mined at all, it is exported unprocessed. Railway branch lines east and west of the corridor will provide the infrastructure to exploit those resources and create new, modern industrial cities.

Mega-Project: Transaqua

The major task of the north-south rail corridor is to facilitate the construction of the most ambitious mega-project ever conceived for Central Africa, Transaqua, the project to replenish and thereby revive the dying Lake Chad.

The project, fully developed in the two Schiller Institute reports mentioned, would transfer 6 to 8 percent of the water of the Congo River Basin into a 2,400 kilometer "river highway" through the heart of Africa to Lake Chad. The river highway—a navigable canal crossing the Democratic Republic of Congo, the Central African Republic, and Chad—will have dams and power plants to generate an estimated 4,000 MW of hydro-electric power—the current average power generation of Nigeria. That is the vision of Bonifica, the Italian engineering company that has proposed the project. Transaqua would enable a huge expansion of the agricultural potential of the entire region, helping to reverse the advancing desertification now underway. Once the Transaqua project is complete, the rail link would then connect Lake Chad and the 2,400 km canal to the Mediterranean, directly north.

At Chad's capital, N'Djamena, just south of Lake Chad, the railway would intersect the east-west transcontinental Djibouti-Dakar railway, which China has made a priority as part of its Belt and Road Initiative. The railway, moving south from this intersection, enters one of the world's least developed countries, the landlocked Central African Republic. The coming of the railway will unleash its huge agricultural potential. It will then enter the Republic of Congo and cross into the Democratic Republic of Congo (DRC).

With its nearly 90 million people, and its vast reserves of natural resources and huge industrial potential, the DRC is the sleeping giant of Africa. What little



CC/Skilla1st

The Addis Ababa–Djibouti Railway at Holhol Bridge, Djibouti.

infrastructure it has, is almost exclusively used for the mining industry in what has been little more than a decades-long process of looting the country. The rail corridor will not only bring modern transportation to the country, but will integrate its economy with the regions to the north and south, while enhancing the value of the Congo River as a transport artery.

Mega-Project: Congo River Bridge

Two mega-projects have been proposed for this area.

One is a road-rail bridge across the Congo River at the 15th meridian, connecting the capital cities of Brazzaville, Republic of Congo and Kinshasa, DRC. At 4 kilometers in length, it would be the second longest such bridge in the world. The second project on the Congo River is another game changer, the Grand Inga and Inga III hydroelectric projects which, when finished, will produce 51 GW of electricity, enough to light the entire region. The installed power capacity of all Sub-Saharan Africa is only 96 GW, a significant fraction of which is offline at any given time.

In his 2011 proposal for the

development of a railway network in Africa, the late Hal Cooper, a leading U.S. railway engineer, called for a bridge between Kinshasa and Brazzaville, a combined metropolitan region of over 20 million people. Cooper's plan called for four railway lines, two for cargo and passenger traffic, and two for local metropolitan commuter rail, as well as four lanes of motorway and pedestrian and bicycle lanes. Given its location at the confluence of three of the African Union-planned rail routes coming down from the north, and its intersection with one of the planned east-west cross-continental routes; and, that the

twin-city metropolitan region is home to nearly 20 million, the proposal was most reasonable.

A comparable example of such a bridge is the Yibin Jinsha River Railway Bridge, in China, the world's longest road-rail box steel arch bridge, carrying the Chengdu-Guiyang railway, connecting Sichuan's capital Chengdu (population 16 million) with Guiyang (population 4.3 million), the capital of Guizhou Province. It has two high-speed rail lines and four lanes of road traffic.

Here, with the Kinshasa-Brazzaville Bridge, we encounter the criminal denial of real development for



CGTN

China's Yibin Jinsha River Railway Bridge. At 1,875 meters, it is the world's longest road-rail box steel arch bridge, carrying the Chengdu-Guiyang high-speed rail line connecting Sichuan's capital Chengdu with Guiyang, the capital of Guizhou Province.

Africa. A feasibility study by a French company for such a bridge, calls for building only a single rail line and two lanes of road traffic, one lane in each direction. It would be a toll bridge to be built and operated by private companies on a build-operate-transfer basis. It would be built at the narrowest part of the river, but more than 60 km from the two capitals. The feasibility study is based on a growth forecast of no more than 2.4 percent annually for the two countries.

Such thinking is merely the continuation of a policy of looting the country of its resources. Given the region's real potential, such a bridge would be obsolete before it was finished. But this is not an example of economic incompetence. It must be attributed to a clear Malthusian intention to ensure that the Congo does not become the superpower that its potential offers.



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The Inga I Hydroelectric Dam, on the Inga Falls of the Congo River in the Democratic Republic of the Congo, showing the feeding canal for Inga II in the foreground.

Mega-Project: Inga Hydroelectric

The second mega-project for this area is the Grand Inga and Inga III hydroelectric projects along the waterfalls of the lower Congo River. The former would have a capacity of 40 GW of electricity production and the latter 11 GW, for a total of 51 GW. This compares with the current 158 GW now available for all of Africa! Compare this with the 2,000 GW of electrical capacity in China, which has a population comparable in size to Africa.

The biggest argument by western pundits for not building these projects is the absurd assertion that there is no market for that amount of power! Thanks to a commitment by the Chinese, the Inga III project will eventually be built. The north-south rail corridor will facilitate the creation of a railway network in the DRC as well as an electricity distribution network throughout the region.

Out with the Old, In with the New

The rail corridor will continue south along the 15th meridian to Cape Town, South Africa. Upon reaching Angola, this Standard Gauge Railway (1,435 mm) will

encounter the narrower Meter Gauge (1,000 mm) and Imperial Gauge (1,067 mm) tracks that dominate in all southern African countries, including Angola, Namibia, South Africa, Zimbabwe and others. This is the legacy of British colonial policy that built a less costly, but therefore less effective rail network, one that does not have the carrying capacity or speed of the Standard Gauge.

Either gauge-changing stations will have to be built, or else dual ("mixed") tracking can be provided, capable of carrying rolling stock of both gauges, as suggested by Hal Cooper. The best option, however, would be to tear out all the old narrow tracking and replace it with Standard Gauge, since many of the existing lines are in poor condition, making the option of replacing them with the Standard Gauge more practical.

The Tripoli to Cape Town Corridor is not a dream. It is a necessity—not just for Africa but for Europe, which has been suffering from virtually zero growth because of the European Union's bankrupt financial system and Malthusian policies. Cooperation with China, Russia and the U.S. in transforming Africa into the next China is the obvious answer.

China Can Stop a War between Greece and Turkey

by Leonidas Chrysanthopoulos

Ambassador *ad honorem* and former Secretary General of the Black Sea Economic Cooperation Organization

Greece and Turkey, two NATO members going to war? That is the current fear in the eastern Mediterranean following a series of militarily provocative moves by Turkey against Greece and Cyprus. At issue are a series of provocative challenges by Turkey to Greece and Cyprus' "Exclusive Economic Zones" (EEZs), where hydrocarbon resources have been identified. Rather than taking a diplomatic course of action or taking the issue to the International Court in the Hague, Turkey has sent warships, research vessels, and even drilling ships into these waters while sending war planes into Greek and Cypriot airspace. Mock dog fights between the military aircraft of both countries are a daily occurrence. Turkey also signed an agreement with the Tripoli based Libyan Government of National Accord to demarcate the EEZ between the two countries that clearly violates the rights of Greece and Cyprus. The agreement has been denounced by Greece, Cyprus, the European Union, Egypt, the U.S., and Russia as invalid, all of which has not deterred Turkey's actions.

Greece and Turkey almost went to war when Turkey invaded Cyprus twice, first in 1974 and later in 1987, over drilling rights in the Aegean. Now, under the provocative policies of Turkish President Recep Tayyip Erdoğan, a military conflict with disastrous consequences cannot be ruled out. Therefore the EIR is pleased to present a commentary by the Ambassador ad honorem Leonidas Chrysanthopoulos, one of Greece's very senior and accomplished diplomats, proposing that China, through its Belt and Road Initiative holds one of the keys to solving this potential crisis.

Jan. 29—China can play an important role in preventing a military conflict between Greece and Turkey. Beijing is paying close attention to what is happening in the region because of the provocative behavior of Turkey's President, Recep Tayyip Erdoğan against Greece.

China is concerned because its investment of more than EU 1 billion in the port of Piraeus, through the China Ocean Shipping Company (COSCO), would be in danger in case of a conflict. Some 4.9 million containers were transported through Piraeus last year,



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In a military conflict between Greece and Turkey, Europe's trade with China would be disrupted. Shown: COSCO's (China Ocean Shipping Company) container ship Nebula, docked at the Port of Rotterdam.

while for this year, efforts are being made to reach 5.5 million containers, an increase of 700% from 2007. The COSCO investment is also part of China's Belt and Road Initiative.

After they arrive at Piraeus, the containers are then transported by rail and air to Central Europe and elsewhere. By train from Piraeus, it takes 6 days for the containers to reach the Czech Republic and Poland, 5 days to Slovakia, 4 days to Hungary and Austria, 2 days to Serbia, Bulgaria and Romania, and 1 day to Skopje,

North Macedonia.

In case of a military conflict, the whole COSCO system will cease functioning. Of course Beijing will ask Ankara to show restraint so that it can safeguard its investment, and of course Turkey will reply, “Don’t worry, we shall not touch Piraeus in the event of a conflict.” But it’s not only Piraeus. The road and rail infrastructure will be severely damaged in a military conflict, and we have seen how necessary this infrastructure is for the transport of the containers and their contents to destinations in Central Europe and elsewhere. The supply route to Central Europe would then be disrupted and the COSCO terminals at Piraeus will become jammed with containers. Beijing knows this and is already exercising every possible pressure on Turkey so that the situation does not reach extremes.

The negative financial consequences to the economies of the Central European and Balkan countries, if there were to be a Greek-Turkish conflict, should be made clear to those countries by Greece, so that they also may exert the necessary pressure on Turkey.

The bad relations existing between Beijing and Ankara should also be underlined. The reason is the Uighur issue. Uighurs are a Turkic Muslim people, who speak a Turkic language, and historically have constituted the majority in the Xinjiang Uighur Autonomous Region in China’s far northwest. A Uighur organization for the independence of Xinjiang, which they call East Turkestan, had been operating, and was attacking the authorities with bombs and other weapons. During the late ’80s and early ’90s, the leaders of that organization were given refuge in Turkey and were supported by the Turkish government. It was a time when relations between those two countries were at their worst.

The above-mentioned points should be taken into



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China’s EU1 billion investment in the Greek Port of Piraeus, through COSCO, is part of its Belt and Road Initiative. From Piraeus, containers are transported by rail and air to Central Europe and elsewhere.



pxhere

Wall paintings adorn the old silo and dry dock buildings in the industrial area of the Port of Piraeus, the chief sea port of Athens, Greece.

consideration by the Greek government, as Turkish provocations are increasing every day, and Greece needs maximum support from other countries. China is also a permanent member of the UN Security Council and for its own reasons will support Greece.

Finally, Greece could also use the other foreign investments in the country as a protective shield against Turkish provocative actions, by warning the investors how much they will lose, should there be a military conflict between Greece and Turkey.

Concentric Circles— Wheels within Wheels

by Tony Papert

Feb. 2—President Donald Trump has said that his State of the Union Address, on February 4, will be dedicated to optimism, as was his January 21 speech to the World Economic Forum in Davos, Switzerland, where he confronted the “ecological” pessimism of the Green billionaires gathered there, counterposing Man’s intrinsic goodness and creativity as demonstrated in the European Renaissance and the building of the cupola of the Cathedral of Florence.

It is entirely possible that as the impeachment trial of the President collapses into humiliating rubble over the coming days, that the already historic levels of optimism among Americans, especially among workers and farmers, will surge to new heights. Already, their heightened optimism was illustrated by extraordinary figures showing that 25% of the crowds at the President’s recent mega-rallies have been Democrats, while 10-15% had not voted in any of the past four general elections.

This optimism does not win battles in and of itself, as we will explain, but it does provide an irreplaceable advantage to those who know how to make use of it.

At the same time, perceptive Americans have learned important negative lessons from the constant lying efforts to unseat President Trump, starting even before he took the oath of office three years ago. Namely, that the managerial elite, bridging the media, academia, government bureaucracies, and party politicians, is apparently totally corrupt. Whenever a new lie against the President is invented by *The New York Times* or another scandal-sheet, every one of them picks it up and spreads it within hours, or even minutes.

The same lesson is taught by the frequent refusal of even President Trump’s own nominees to carry out his

orders, for instance to withdraw U.S. forces from Afghanistan and to withdraw them from Syria. Whatever they do or say, the members of the managerial elite are not speaking for themselves as individuals—they are being told what to think by an outside agency—ultimately the British Empire, as Lyndon LaRouche proved over decades, and as the LaRouche Movement proved again in 2017 with the Mueller [dossier](#).

Our question is, what do these circumstances mean for the effort to revolutionize and revive the U.S. and world economies?

Over many years, the late economist Lyndon LaRouche accurately forecast the collapse of the U.S. and Western European economies, in their successive steps downward after 1945, after 1971, 1989, 1998, 2008, and more recently. Each time he made such forecasts, he also specified in detail how the economy could be rebuilt and reorganized for a sharp upward trajectory. He called for reintroduction of Franklin Roosevelt’s Glass-Steagall protections to hive off bankrupt speculative pyramids from the healthy, necessary parts of the banking system.

As in Alexander Hamilton’s design of the American System at our founding, the Federal Government would again become a major issuer of low-interest credit and provide indicative-planning direction of much private credit through participation loans. Low-interest Federal credit would be limited to productive uses and necessary services like actual healthcare, not poured into hedge-fund speculation as the Federal Reserve is doing every day. Investments would be geared to upshift the scientific-technological level of production. All this would be coupled with national crash programs of scientific-technological advancement, like the efforts towards the eventual colonization of Mars, and harness-

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ing controlled thermonuclear fusion as a limitless and virtually free source of energy for mankind.

There is much more to learn, but that may provide some degree of introduction to LaRouche's plan.

LaRouche's plan will allow us to build modern infrastructure of all kinds, revolutionize our industries, rebuild our cities, and move the frontiers of man's power beyond Earth orbit, and then beyond the Solar System.

LaRouche demonstrated how the United States, Russia, China and India could initiate a new international credit system along these principles, to replace the bankrupt International Monetary Fund system based on the bankrupt City of London and Wall Street markets. In early January, Lyndon LaRouche's widow, Helga Zepp-LaRouche, called for an [emergency summit](#) of the Presidents of United States, Russia and China, to deal with the threat to peace after the U.S. killing of Iranian Gen. Qassem Soleimani. She stipulated that the summit should also arrange preliminary discussions for such a new, growth-oriented international credit system.

It is clear that just one year after his death, LaRouche's ideas are closer to implementation than at almost any time in the past. In electing Donald Trump, and in probably supporting him more today than in 2016, a majority of Americans have trashed the economic dogmas of "free trade" and of supposedly inevitable "globalization." They have voiced their conviction, contrary to the Bushes, Clinton, and Obama, that the U.S.A. can again become a great agricultural and industrial producer nation, rather than a wrecked "post-industrial" services society. Yet at the same time, remember the obstructionism, sometimes even treason, of our managerial elite to which we referred above. How is that to be overcome sufficiently to permit the LaRouche recovery program?

The wave of optimism to which we pointed is one

part of the answer. The American "can-do" spirit has been largely lost over recent decades; now, one can feel it beginning to come back, as it lawfully would. That provides an opportunity, but not yet the answer. To overcome the opposition of the now-entrenched elite, the LaRouche program must become the common knowledge of an organic leadership spread throughout all the key economic and geographic sections of the country. Radiating out from them, it must then come to be recognized and appreciated in a general way throughout society.

It is under those circumstances that some parts of the elite can be broken from their British Empire allegiances, while others will simply have to be fired for manifest disloyalty and incompetence. And the Four Powers can overturn the British Empire by bankrupting and replacing the present usurious international monetary system.

In general, the best context for this is clearly the campaign to re-elect President Trump: The spreading of the program from a few initial seed-crystals, to the next concentric circle of organic leaders, and then out into mass organization, will best be done by helping the Trump campaign to master the tools it needs to deliver what Donald Trump has promised, and what the American people want and need. As has been said, "Donald Trump Is a Builder—Give Him the Tools," in the form of LaRouche's program. (Although that is not to exclude other avenues of organizing.)

It is for this purpose, to spread the LaRouche program through concentric circles ultimately reaching almost everywhere, that the LaRouche movement is organizing "Committees of Correspondence" throughout the United States, to consist of organic leaders from various strata and foci of the population, to master the LaRouche program, and to conspire to achieve it, predominantly by bringing it out to the broadest publics, especially through the Donald Trump campaign.

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