

the pioneer of nuclear energy in Brazil, was the object of an intense campaign to discredit him. Could a parallel be drawn with the campaign you are currently facing?

Piva: The campaign against Adm. Alvaro Alberto had similar motives. He was trying to create national competence in the nuclear field, and HOP is creating that competence in the space and missile field.

Both represent the mastery of advanced technologies, which promote the country's technological development and progress. The developed nations are not interested in that.

EIR: President Fernando Collor's administration wants Congress to pass a law which would prohibit any government official who has worked in sensitive areas, from performing private activities abroad for a period of 10 years. What do you think?

Piva: Passage of that law would impede foreign sales of services in the advanced technology sector. The sale of services is the most noble and advantageous export, since no wealth goes out and the brains, after they return, are more experienced and valuable. We will go back to exporting minerals, wood, and raw materials, like in colonial times.

EIR: The Aerospace Technology Center (CTA), over which you presided, has a record of scientific excellence. What is the history of its creation? Will it be a model for other Third World countries?

Piva: The CTA is a model of *teaching-research-industry* integration, which should be followed by other Third World nations.

EIR: You played a significant role in the development of Brazil's modern aerospace industry. Could you tell us a little about the projects in which you participated?

Piva: I participated in all of the CTA's space projects, from the first launches of imported rockets up to the development of all of our test rockets and the Satellite Launching Vehicle (VLS).

EIR: A campaign against the Armed Forces began in Ibero-America several years ago and began recently in Brazil. They are subjected to strong pressures, on ecological and pacifist grounds, which seek to prevent them from participating in technology projects, especially advanced technology projects. In the face of this, what can be done?

Piva: It is fundamental for the resumption of our technological development that the Armed Forces again receive support for research and development, because they are the ones who always develop advanced technology in this country. It is also necessary to turn around the campaign against the Armed Forces, since only a favorable reputation can attract good students to its ranks; and it is the high-level human element which is the greatest factor in success, especially in research and development.

Soviets made fatal blunders in energy and agriculture

by William Engdahl

At year's end 1990, the economy of the Soviet Union is being wracked by a breakdown in food distribution and threat of food emergency not seen since the bitter wartime winter of 1941, with rationing imposed in Leningrad and other major cities. Simultaneously, the energy sector of the superpower, for decades the center of its hard-currency trade potential, is in unprecedented breakdown. On Nov. 26, the Soviet Union revealed that its draft budget for 1991, presented to the Supreme Soviet, is based on an anticipated 50% drop in oil exports, with devastating consequences in lost hard-currency revenue. These two crises of the Soviet economy are intertwined.

The unraveling Soviet economy presents the most dangerous and, at the same time, potentially most positive strategic crisis the world has faced since 1913, depending on whether the Soviets adhere to the Anglo-American condominium or reorient their policies to the economic development potential of the "European Triangle" policies of Lyndon LaRouche.

Most Western observers are astonished at the apparent speed with which the Soviet Union, the world's most awesome military superpower outside the United States, is collapsing at every critical juncture. The seeds of this collapse go back some 20 years to the era of Leonid Brezhnev, when the Soviet collective leadership made a fatal strategic blunder. At that time, and for 10 years or more, the enormity of this blunder was apparent only to the extremely far-sighted.

Bad investment decisions

Beginning in the early 1970s, responding to Anglo-American overtures, Moscow made a two-pronged economic decision. It would invest the entire U.S.S.R. "social surplus" and whatever credits it took from the West, to build up the world's largest petroleum and natural gas infrastructure and production. This was exacerbated by the unshakeable commitment to put the lion's share of its new lucrative oil and gas export earnings toward building up the military machine. The remainder of the export earnings from oil and gas export would go toward purchase of unprecedented tonnages of

Western grains, to compensate for the abysmal inefficiency of Soviet agriculture production.

Thus, starting between 1973-75, Moscow began to become the single largest customer on world grain markets. Multinational grain conglomerates such as Cargill, Continental, Mitsui-Cook, and Archer Daniels Midland, some of the world's most powerful corporations, grew significantly stronger in the process of servicing the new Russian grain market.

The largest single source of grains for the Soviet market was the United States. American agriculture began to be fundamentally restructured during the 1970s as a consequence, into a captive of this export-driven commodity market, with disastrous domestic consequences for American food security, and the American family farm.

In 1976, in the wake of the first oil shock, the U.S.S.R. signed the first Long-Term Grain Agreement with the United States. Moscow began to import grain from the West at staggering volumes, from 30 million tons per year by the late 1970s up to a record 55.5 million tons in the harvest year 1984-85. This amount was equivalent to fully one-third of the average entire grain harvest of the 12 nations of the European Community (EC). Soviet grain imports have been adjusted to make up for their harvest shortfalls each and every year for the past 15 years.

The result inside the U.S.S.R. was to perpetuate a superstitious, backward, brutalized peasantry. Introduction of advanced Western chemical fertilizer methods was ignored by the various Five Year Plans. Instead, anthroposophic "soil cultism" based on the 1930s agronomy texts of L.D. Lysenko and V.R. Williams, emphasizing plant "genetics" and "organic farming," prevailed until the late 1980s. Investment in upgrading the transport, storage, and farming equipment for Soviet agriculture was ignored. The problems were swept under a rug covered with imported American and Canadian grain.

Official Soviet state policy for the 10th Five Year Plan (1976-1980) and the 11th Five Year Plan was that the state's new fixed investment in plant and equipment would be *slashed as a policy goal*. The official argument was that to renovate and re-equip old plant and equipment was "less expensive" and "shortens construction time." Economic growth rates were primarily maintained for this crucial period in the Soviet economy not through technological upgrading of the productive powers of the economy, but through increases in labor productivity—forced speedup, delayed retirement, and lengthened working hours.

The defense priority

Most calculations of the share of total Soviet economic effort devoted to military costs are far short of the real extent of the burden on the economy in the decade and a half since the first oil shock and the beginning of large Western grain purchases. Taking a calculation which sums the traditional

"military" costs for defense programs for equipment, manpower, defense R&D, add to that the areas of industrial effort which exist to directly support this military, such as the vast Soviet civil defense effort. To this add also the total economic cost of maintaining the "external Empire" and, according to a study by A.W. Marshall of the U.S. Department of Defense, the real economic cost of maintaining and increasing the military might of the Soviet Empire was a staggering 20-30% of the entire Soviet Gross National Product over the 10 years beginning in 1976.

The lure of hard currency

The lack of adequate investment into Soviet agriculture was a consequence, ironically, of the complementary policy of investing everything which was not diverted for the extraordinary 1975-85 Soviet military modernization and Armed Forces expansion, into the infrastructure of oil and gas.

In the energy sector, the consequences of this strategy are most painfully clear. When Western oil and political interests manipulated a 400% market price increase in petroleum in 1974, followed by yet another breathtaking nominal price rise to \$36 per barrel by late 1979, the temptation for Soviet planners was obviously too great. The autarkic Soviet economy turned to the West in the most vulnerable domain possible—oil and gas—and gambled almost all on the windfall of hard-currency export earnings. By the early 1980s, oil and gas exports to OECD countries accounted for an estimated 66-75% of all Soviet hard-currency export revenues.

On the surface, Soviet oil industry accomplishments since the early 1970s are impressive by world standards, even astonishing. Total production of Soviet crude oil, contrary to a famous CIA analysis released in 1977 which concluded that Soviet oil production had peaked and would go into decline over the next decades, actually rose 20% or more after that time.

Results for Soviet natural gas output were even more impressive during this period. In the decade from 1976 to 1986, Soviet natural gas output increased by 114% to a level of 686 billion cubic meters. By the early 1980s, the U.S.S.R. had surpassed the United States to become the world's largest producer of oil, some 12.5 million barrels per day (mbpd) in 1988 versus some 8.1 mbpd for the United States and as little as 4.7 mbpd for Saudi Arabia.

But beneath these impressive surface indicators lies the most serious economic crisis to hit the Soviet Union this century. By the mid-1980s, some 64% of all Soviet oil came from one region, Western Siberia. It contains some of the world's largest known oil reservoirs. But this concentration was also problematic.

During the "boom" years of the 1970s, planning officials in Moscow forced overproduction of these giant fields, especially at the giant Samotlor field. The aim was to maximize the increase in immediate output to capitalize on hard-curren-

cy export earnings in order to fuel the restructuring of the Soviet military machine. However, oil reservoirs were abused in the process. The well pressures were depleted and production rates dropped. In addition, economizing led to a failure to invest in adequate housing and other necessary infrastructure in the forbidding climate of Western Siberia. All aspects of transportation and production were let slide until Mikhail Gorbachov cited these deficiencies in an address to the Siberian oil workers in September 1985.

It was too late. Huge investments had been concentrated in these few giant remote fields. Investment in new exploration has so far yielded far more difficult and far more remote finds of new oil to replace the falling production, at per barrel costs of production many times that of the old depleted fields.

The 'reverse oil shock'

But the hammer blow was struck in 1986 when a Western policy of collapsing the world oil price—in effect a “reverse oil shock” which brought the price below \$10 briefly, its lowest level since the early 1970s—dealt a devastating blow to the vulnerable Soviet economy. Already by 1985, the Soviets faced an impossible trade-off between raising per barrel investment into existing oil production in order to merely maintain a stable oil flow, keeping investment fixed while field flows declined. With the world oil price collapse of 1986, this strategy became a shambles.

But events have not been meta-stable. Despite the gradual rise in world oil prices since 1986, the combined effects of years of disinvestment in infrastructure and pressures from Moscow to “meet plan targets” for speedy and cheap construction, made the Soviet energy sector vulnerable to a series of devastating accidents in every key area of energy production. Oil pipelines of inferior quality Soviet steel (cheaper than the imported West German Mannesmann steel pipe), with inadequately welded seams, are exploding, with fatal human and economic consequences. Lack of spare parts is causing a sharp fall in daily oil production levels and leading to the first hints of cuts in oil exports to the West since the last quarter of 1989. Eastern Europe has been the hardest hit as Moscow jettisoned customers there in order to maximize Western hard-currency income. This in turn has reduced Moscow's ability to import by barter for their oil and gas, urgently needed parts and equipment for all sectors of the economy.

Running out of gas

One of the significant problems in harvesting this year's large Soviet grain crop, which might have significantly eased the present food emergency, was the lack of gasoline for trucks and tractors, the largest consumer of “light” petroleum refined products in the U.S.S.R. The lack of the right kind of refinery capacity, called in the trade “secondary” refining infrastructure, is perhaps the critical bottleneck in the growing Soviet fuel emergency. This is because for decades vari-

ous five-year plans emphasized the production of crude for export. The secondary “cracking” infrastructure, as a result, is extremely limited. Most refineries produce a heavy fuel oil called mazut.

To turn a bad situation into a disaster, Moscow decided, after the world oil price collapse in 1986-87, that it had to control an out-of-control state budget deficit. The annual budget plan for 1990 calls for an eye-popping reduction of investment into the vital state energy sector of 40%. Just before he resigned in despair at the end of 1989, the first deputy minister of oil and gas stated, “For the last six months we have been in a vacuum. . . . Rapidly, a once-thriving industry is being ruined.” For the first time since World War II, total annual production of coal, gas, and oil declined.

The disaster at the graphite-moderated dual purpose Chernobyl nuclear reactor near Kiev in spring of 1986, during the collapse of oil prices, added another dimension of economic chaos. It led to enormous delays and cancellations of nuclear energy construction which is already causing blackouts in key industrial cities of the U.S.S.R.

The Soviet economic conjunctural crisis was already clear by the early 1980s when a group of economists led by Abel Aganbegyan and K.K. Valtukh argued against the prevailing ideology of reducing private sector investment and cutting costs. Aganbegyan made a heated argument for increased investment in the key machinery sector as the key to improving the productive potentials of the entire economy. Mikhail Gorbachov was receptive to his views. The problem is that the economy, and the Russian peasant culture, were not. Partial “reforms” have added to the chaos as an estimated 30% of all agriculture production simply rots in fields or in storage areas for lack of transport or refrigerated storage facilities. Oil output continues to fall at alarming rates for lack of adequate technology for enhanced oil recovery, sufficient spare parts, and delivery of spare parts to the oil wells. Chaos has spread like wildfire as strikes demand more results in face of declining living standards.

‘From the prison in which the politician's career expires, the influence of the statesman is raised toward the summits of his life's providential course. Since Solon, the Socratic method has become the mark of the great Western statesman. Without the reemergence of that leadership, our imperiled civilization will not survive this century's waning years.’

—Lyndon H. LaRouche, Jr.

In Defense of Common Sense by Lyndon H. LaRouche, Jr.

Available for \$5 from:
Ben Franklin Booksellers, 27 S. King St., Leesburg, Va.
22075. Telephone (703) 777-3661.

Postage & Shipping U.S. Mail: \$1.50 + \$.50 each additional book.
UPS: \$3 + \$1 each additional book.