

The theater probably would tend to be protected *first*, more so than even the U.S. homeland. The point is that strategic defenses, particularly space-based strategic defenses, tend to be very sensitive to the rate of attack, the missiles per unit time. Since the number of missiles in the theater is much smaller, by perhaps an order of magnitude than what is faced in an intercontinental engagement, what that means is that a concept that was just barely sized to handle the intercontinental engagement, would be oversized by a factor of 10 to handle the theater. Or, said another way, a system that was very marginal to handle the intercontinental engagement would be more than adequate to suppress ballistic missiles in the theater. And therefore the strategic umbrella actually would appear to be developed first over the theater.

FEF/EIR: Aren't the reaction-times much shorter, and isn't the battle management much more difficult in Europe?

Dr. Canavan: No, the burn-times for the theater missiles are not dramatically shorter than the boost times for strategic missiles. The time high up in the atmosphere, in which they are accessible, is quite adequate for engagement. The battle management problem is made complicated in the strategic engagement because of the need to handle a large number of objects, but this problem is much simplified in the theater.

There is a small auxiliary point that I should make with respect to the theater, and that is that should some concepts such as space-based lasers be available, those lasers could fire very far down into the atmosphere.

ence of these lasers would not only suppress the delivery of nuclear weapons or conventional weapons by ballistic means, but they also could, given modest advances in the detection and the acquisition of air-breathing crafts, suppress cruise missiles and bombers before the delivery of either nuclear or non-nuclear ammunitions in the theater as well. So that is another bonus.

The fourth and final point is that it should not be overlooked that the deployment of global layered defense will have an unavoidable and beneficial impact on theater defenses. It must be evaluated whether theater defenses are to be deployed or not. That is to say that, even if strategic defenses were deployed, but there were no underlay of those defenses specified to the theater, the mere presence of that strategic overlay would have a profound impact on the way we would go about trying to defend Europe and the way the United States would try to perform its continuing role on the defense of Europe. It is extremely important to understand that interaction, whether or not strategic defenses are applied in the theater per se.

When you put all these things together, to me what that says is that there is tremendous importance in understanding better the application of strategic defense concepts to the theater; and in doing that evaluation I think there is no substitute for an involvement of the European allies in the SDI.

Documentation

Soviet strategic defense programs

The following are excerpts from Soviet Strategic Defense Programs, released jointly by the Departments of Defense and State in October 1985. The booklet demonstrates that the Soviet Union is ahead of the United States in strategic defense programs.

The Soviet emphasis on strategic defense is firmly grounded in Soviet military doctrine and strategy, which call for the following actions in the event of nuclear war:

- destruction and disruption of the West's nuclear-associated command, control, and communications;
- destruction or neutralization of as many of the West's nuclear weapons as possible on the ground or at sea before they could be launched;
- interception and destruction of surviving weapons—aircraft and missiles—before they reached their targets; and
- protection of the Party, the State, military forces, industrial infrastructure, and the essential working population against those weapons that survived attacks by Soviet offensive forces. . . .

Marshal V.D. Sokolovskiy, in *Military Strategy*—the basic Soviet strategic treatise, originally published in 1962—defined the aim of Soviet strategic defenses in this way: "They have the task of creating an invincible system for the defense of the entire country. . . . While, in the last war, it was sufficient to destroy 15-20 percent of the attacking air operation, now it is necessary to assure, essentially, 100 percent destruction of all attacking airplanes and missiles."

. . . The Krasnoyarsk radar is designed for ballistic missile detection and tracking, including ballistic missile early warning, and violates the 1972 ABM Treaty. It is not located within a 150-kilometer radius of the national capital (Moscow) as required of ABM radars, nor is it located on the periphery of the Soviet Union and pointed outward as required for early warning radars. It is 3,700 kilometers from Moscow and is situated some 750 kilometers from the nearest border—Mongolia. Moreover, it is oriented not toward that border, but across approximately 4,000 kilometers of Soviet territory to the northeast.

. . . The Soviets are also developing components of a new ABM system which apparently are designed to allow

them to construct individual ABM sites in a matter of months, rather than the years that are required for more traditional ABM systems. Soviet activities in this regard potentially violate the ABM Treaty's prohibition on the development of a mobile land-based ABM system or components. We estimate that by using these components, the Soviets could undertake rapidly-paced ABM deployments to strengthen the defenses of Moscow and defend key targets in the western U.S.S.R. and east of the Urals by the early 1990s. . . .

In the late 1960s, in line with its long-standing emphasis on strategic defense, the Soviet Union initiated a substantial research program into advanced technologies for defense against ballistic missiles. That program covers many of the same technologies involved in the U.S. Strategic Defense Initiative, but represents a far greater investment of plant space, capital, and manpower.

Laser weapons

The U.S.S.R.'s laser program is much larger than U.S. efforts and involves over 10,000 scientists and engineers and more than a half dozen major research and development facilities and test ranges. . . . Facilities there are estimated to include several air defense lasers, a laser that may be capable of damaging some components of satellites in orbit, and a laser that could be used in feasibility testing for ballistic missile defense applications. A laser weapon program of the magnitude of the Soviet effort would cost roughly \$1 billion per year in the U.S.

. . . The Soviets are also aware of the military potential of visible and very short wave-length lasers. They are investigating excimer, free-electron, and x-ray lasers, and have been developing argon-ion lasers for over a decade. . . .

Unlike the U.S., the U.S.S.R. has now progressed in some cases beyond technology research. It already has ground-based lasers that could be used to interfere with U.S. satellites, and could have prototype space-based antisatellite laser weapons by the end of the decade. The Soviets could have prototypes for ground-based lasers for defense against ballistic missiles by the late 1980s, and could begin testing components for a large-scale deployment system in the early 1990s.

. . . In the 1960s, the U.S.S.R. developed an experimental "gun" that could shoot streams of particles of a heavy metal such as tungsten or molybdenum at speeds of nearly 25 kilometers per second in air and over 60 kilometers per second in a vacuum. . . .

Currently, the Soviets have nearly 12,000 SAM launchers at over 1,200 sites, 10,000 air defense radars, and more than 1,200 interceptor aircraft dedicated to strategic defense. An additional 2,800 interceptors assigned to Soviet Air Forces (SAF) could also be employed in strategic defense missions. In contrast, the U.S. has approximately 300 interceptor aircraft based in the U.S. dedicated to strategic defense, 118

strategic air defense warning radars, and no operational strategic surface-to-air missile launchers. These figure do not include tactical air defenses deployed by NATO and the Warsaw Pact in Europe. . . .

Passive defenses

Soviet military doctrine calls for passive defenses to act in conjunction with active forces to ensure the wartime survival and continuity of Soviet nuclear forces, leadership, military command and control units, war-related industrial production and services,

much of the general population as possible. The U.S. passive defense effort is far smaller and more limited; it is no way comparable to the comprehensive Soviet program.

Physical hardening of military assets to make them more resistant to attack is an important passive defense technique. The U.S.S.R. has hardened its ICBM silos, launch facilities, and key command and control centers to an unprecedented degree. Much of today's U.S. retaliatory force would be ineffective against those hardened targets. . . .

Soviet leaders and managers at all levels of the government and Communist Party are provided hardened alternate command posts located well away from urban centers—in addition to many deep bunkers and blast shelters in Soviet cities. This comprehensive and redundant system, patterned after a similar system for the Soviet Armed Forces, provides hardened alternate facilities for more than 175,000 key party and government personnel throughout the U.S.S.R.

Elaborate plans have also been made for the full mobilization to the national economy in support of a war effort. Reserves of vital materials are maintained, many in hardened underground structures. Redundant industrial facilities are in active production. Industrial and other economic facilities have been equipped with blast shelters for the work force, and detailed procedures have been developed for the relocation of selected plants and equipment. . . .

On April 2, 1983, a month after the President's announcement of the Strategic Defense Initiative, a published letter signed by more than 200 senior Soviet scientists denouncing the initiative appeared in the *New York Times*. It is interesting and instructive to note that a number of the signatories have been instrumental in the development of both traditional and advanced ballistic missile defensive systems: Petr D. Grushin, Vladimir S. Semenikhin, Fedor V. Bunkin, Yevgeniy P. Velikhov, Vsevolod S. Avduyevskiy, Aleksandr M. Prokhorov, and Nikolay G. Basov. Velikhov, for example, was for several years the director of the Institute of Atomic Energy laboratories at Troitsk, where lasers for strategic and tactical applications are being developed. Avduyevskiy has long been involved with strategic weapons research and now has responsibility for a number of projects concerned with the military use of space, including a space-based laser weapon. . . .