SDI Testing May Ignite Antisatellite Race

The world will witness an expanded antisatellite (ASAT) weapons race in the 1990s unless the United States restrains testing of systems now being developed under the Strategic Defense Initiative (SDI), predicts Paul B. Stares, a research associate at the Brookings Institution. He contends that such a race is needless, but likely, unless America's posture on testing missile defense systems changes.

The Soviet Union's relatively crude antisatellite system, says Stares, does not pose a significant threat to western military and civilian satellites. The Soviets, in fact, have offered to dismantle the system in exchange for assurances that the United States will not deploy its own. But in a new book, *Space And National Security*, Stares warns that the opportunity to prevent a second stage in the militarization of space (the first stage being reconnaissance, communications, navigational, and battle-support satellites) may soon be lost.

"If we are really serious about constraining antisatellite systems, we have to take a hard look at SDI systems," Stares recently told a group of journalists. The problem is that the kinetic energy devices, lasers, particle beams, and other weapon systems being developed under SDI to shoot down nuclear missiles also are suitable for killing satellites. The author notes that these weapons will become "de facto ASAT devices long before they can prove their feasibility for deployment as strategic defense weapons."

Not only does continued ASAT testing jeopardize chances for negotiating an ASAT ban, says Stares, it may force the Soviets to deploy more sophisticated ASAT systems in the next decade. Even though testing of some ground-based defense systems is allowed under the Antiballistic Missile Treaty, Stares contends, it is in the United States' interest to refrain from testing.

"There is a middle ground between outright prohibition and complete, unrestrained development," he says. Specifically, the United States can continue to conduct basic SDI research that does not involve testing in space.

Such a course also may be in the best interest of SDI, the author notes, because ASAT systems threaten to render SDI systems ineffective. "I don't think a space-based defense system can survive in an unrestricted ASAT environment," Stares says. Even if it could, he argues that SDI is not yet "at a level that requires major testing in space."

Congress is expected to extend a moratorium on testing ASAT systems. Congress, however, continues to provide limited support for the F-15–launched miniature homing vehicle and to fund excimer laser research (*Science*, 19 June, p. 1512). Stares recommends mothballing the homing vehicle program altogether, to encourage the Soviets to restrain their ASAT activities.

At present, American satellite systems are more sophisticated and versatile, and have longer lifetimes than Soviet systems. The Soviets must expend greater resources and launch more satellites to obtain a like amount of information. Furthermore, Stares notes that the U.S. military—the Navy in particular—has developed evasive techniques to avoid detection by Soviet satellites.

Rather than deploy new ASAT systems, Stares says the United States should:

- Continue to improve the survivability of key military and civilian space systems.
- Avoid becoming overly dependent on space systems.
- Conduct more exercises to enable the armed forces to operate under hostile conditions when there is a loss of space-based communications and battle-support systems.
- Explore other nondestructive means of countering the threat from Soviet satellite systems.
- Agree to a 5-year moratorium on the testing of ASAT weapons and, over the long term, negotiate a complete space-weapons deployment ban.

Stares concedes that these strategies are less than a perfect defense. There will always be a threat from nuclear-tipped missiles and electronic jamming, he notes. But maintaining the status quo, says the author, is better than allowing space to be populated with a host of ASAT systems. Says Stares, "Given that on balance the United States gets more from its satellites than the U.S.S.R. gets from theirs . . . it means that the United States will be the net loser if more sophisticated antisatellite weapons are deployed." ■

MARK CRAWFORD

Soviet Research to Be Self-Directed

The Soviet government has promised that all industrial enterprises in the U.S.S.R. in the future will be free to decide the content and direction of their own research programs, and will no longer be required to follow detailed requirements laid down by central administrators in Moscow.

The promise was made during the meeting of the Supreme Soviet in Moscow at the end of last month. It is one of a sweeping range of political and economic measures designed to revitalize the Soviet economy by drastically reducing the tight centralized controls that have operated since the time of Joseph Stalin.

Soviet leader Mikhail Gorbachev earlier told the Central Committee of the Soviet Communist party that the Soviet Union was falling significantly behind the West in the development of new technologies. One essential move in reversing this trend, he said, was the introduction of more competition into scientific and industrial research.

"In the past, the view was often aired that the existence of parallel scientific research, planning, and design organizations led to a dissipation of forces, duplication, and irrational expenditures," Gorbachev said. "But experience has convinced us that the monopoly position of certain organizations seriously hampers scientific and technological progress and costs society much more."

The new rules providing greater autonomy to industrial research groups are included in a draft law on state enterprises, which is being promoted by Gorbachev as the cornerstone of his efforts to revitalize the industrial sector. Under the new law, for example, all companies will be required, in principle, to cover their operating costs through the sale of their products, rather than depend directly on government subsidies.

Companies will, as part of this strategy, be expected to tailor their research activities to their predicted future needs, rather than merely follow guidelines laid down by Moscow. They will also be encouraged to place contracts with universities and other research institutions, which will, in turn, be expected to earn a substantial amount of their income from such contract research.

"The draft law frees the enterprise from detailed planning of science and technology regulated from above," Nicolai Ryzhkov, chairman of the U.S.S.R. Council of Ministers, told a meeting of the U.S.S.R. Supreme Soviet on 29 June. "All curbs on deciding the number of plant scientists, designers, and technologists, and their salaries and the conditions for providing them with labor incentives are being removed."

Ryzhkov said that giving every industrial enterprise its own "vital interest" in using the achievements of science and technology was seen as "virtually the main task" of the current restructuring of the country's industrial activity. ■ DAVID DICKSON