Third, a Soviet launch of their entire ICBM force from a single area—in order to overwhelm and "punch through" the defenses in that flight corridor—would have more serious consequences for their own attack.

Such a "point launch" is often cited as a sure way to saturate beam defenses: The Soviets would build many thousands of silos, but one concentrated region of silos would house all of their missiles. A massive expenditure, obviously, but anti-SDI spokesmen claim that it would force large increases in the density of beam-weapon deployment to handle a launch of the entire Soviet ICBM force "at any point in the defensive line."

The Los Alamos team demonstrates that the effectiveness of the "defensive line" is a matter of geometry, not numbers. For example, if additional layers of beam defense are deployed over the next 10 years at higher orbital altitudes, even a few such high-orbit, high-power beam weapons could devastate a "point launch." The beam weapons would retarget very rapidly, like a man with a semi-automatic weapon firing at densely-bunched attacking soldiers.

They show that a point launch, even with very fast-burn boosters in very large numbers—"the most advanced threat possible"—still only requires that the defense coverage be increased by four times. "The penalties paid by the offense for that factor of four, which extend beyond the boost phase to all phases of the engagement, cannot even be fully evaluated." The Soviets would have to develop and deploy a new generation of "very fast-burn, fully-hardened boosters. Moreover, they would have to abandon current bus technology and develop and deploy an approach that gives a nearly simultaneous release of all [warheads] and decoys at 100, 150-kilometer altitude, losing accuracy for the RVs and deception for the decoys."

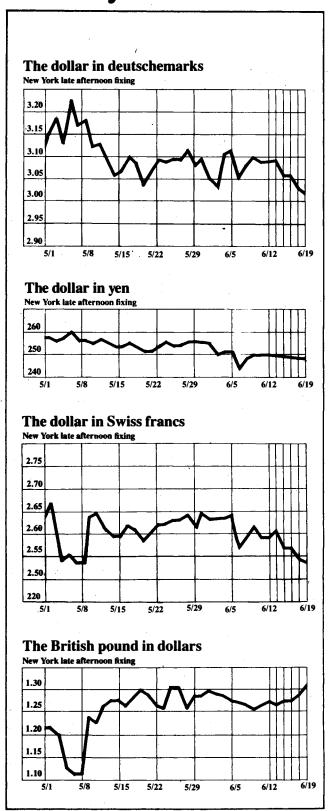
"Simultaneous point launch means nonsimultaneous arrival" at targets in the United States, which makes later interception by the defense easier, particularly in the final phase of defense. "Point launch greatly increases the vulnerability of the missiles to a variety of nuclear effects—the silo field can be prevented from launching its missiles by an attacker detonating nuclear weapons above the field—'nuclear pindown.'"

Most significantly, in a point launch, "a single *nuclear-powered* directed-energy weapon [x-ray laser] could put the entire offensive launch force at risk."

The "point launch," the scientists show, requires that only one additional beam device be deployed, or ready for deployment, for every six missiles added to the attack. The added devices deployed would "break even" with the added attack forces, even at costs of \$2-3 billion each. Thus, the defense would retain the advantage in the "defensive weapons technology race."

The author, Paul Gallagher, is Executive Director of the Fusion Energy Foundation.

Currency Rates



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