

SDI Deployment Plan Up in the Air

The program is being brought more firmly under usual channels of control in the Pentagon, deployment options are being rethought, and Congress is moving to shape the effort

PRESIDENT REAGAN'S STRATEGIC DEFENSE INITIATIVE (SDI) is facing mounting pressure, both within the Defense Department and on Capitol Hill. A controversial plan aimed at possible deployment of a first phase of defenses in the late 1990s, which was approved by former Secretary of Defense Caspar Weinberger less than 9 months ago, is being reassessed. Senior Pentagon officials are asserting more control over the program, and Congress is expected not only to cut the total budget request for SDI again this year but also to specify in detail where the funds should be spent.

These developments, coupled with serious budgetary problems facing the entire Defense Department over the next few years, could result in major changes in both the direction of the SDI program and its political status. It is becoming "just another defense program," rather than the politically protected effort it has been for the past 5 years, says one congressional observer.

Officials, who asked not to be identified, say that a key change in the status of the program occurred on 27 May, when undersecretary of defense for acquisition Robert Costello sent a memo to SDI director Lieutenant General James Abrahamson outlining new objectives for SDI. The move was seen as an indication that the program is being brought more tightly under the control of the civilian managers of the Defense Department. Abrahamson previously had broad authority to set the goals and structure of the program and he reported directly to the Secretary of Defense.

Six days later, on 2 June, the Defense Acquisition Board, a high-level Pentagon unit, decided to recommend that the plan for the first phase of SDI should no longer have the department's approval. If defense secretary Frank Carlucci accepts the recommendation, which is considered likely, the program may be reoriented—perhaps toward a series of more limited initial deployments together with more of a focus on long-term research, according to one official.

The plan that is now being reassessed was approved by the Defense Acquisition Board

last summer and was subsequently endorsed by Weinberger. It involves the development of several key technologies that could lead to the deployment in the late 1990s of a system of space-based rockets, sensor satellites, ground-based interceptors, and battle-management computers (see diagram). This system, known as phase 1, would provide an initial defense capable of stopping only a fraction of Soviet warheads.

It would be followed later by a second phase that would include additional sensors and another layer of interceptors, consisting of ground-based high-acceleration rockets, that would home in on warheads after they have reentered the atmosphere. A third phase, to follow in the 21st century, would add directed-energy weapons to the system, providing much greater capability to attack Soviet boosters before they have released their warheads in space.

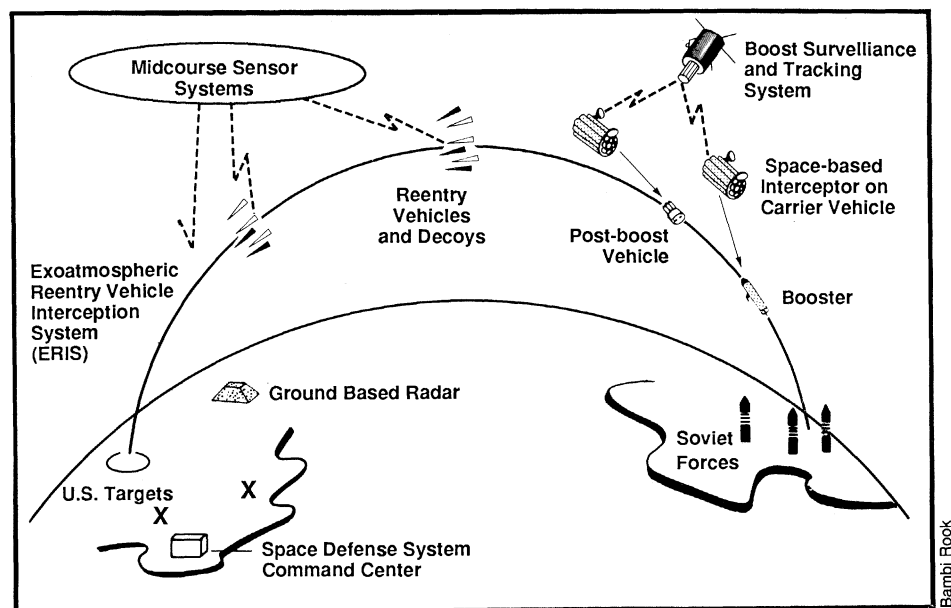
The publication of a relatively specific "architecture" of weapons and sensors that would make up phase 1 represented a significant turning point for the SDI program. Until then, SDI was seen as a research effort

designed to provide the technical basis for a decision early in the 1990s on whether to proceed with engineering development for a comprehensive missile defense system. The phase 1 plan for the first time outlined a specific system, which gave critics of SDI something concrete to shoot at. It also made it clear that, initially at least, SDI would not provide the kind of robust defenses that Reagan had in mind in 1983 when he called on scientists to help render "nuclear weapons impotent and obsolete."

Over the past few weeks, a variety of studies have raised questions about the phase 1 concept. The most widely publicized is a report by the congressional Office of Technology Assessment (OTA), which analyzed in detail progress across the board in the SDI program. The study, *SDI Technology, Survivability, and Software*, concluded that although "defense scientists and engineers have produced impressive achievements . . . questions remain about the feasibility of meeting the goals of the SDI."

In particular, "given optimistic assumptions," the phase 1 system "might be technically deployable in the 1985–2000 period," OTA concluded. However, the system initially would have limited capability. It "might destroy anywhere from a few up to a modest fraction of attacking Soviet intercontinental ballistic missile warheads," OTA said, and its effectiveness could be degraded fairly quickly if the Soviets adopted countermeasures such as the use of faster burning boosters and decoys designed to mimic warheads in space.

Moreover, the OTA study pointed out that space-based elements of all three phases



Phase 1. The "architecture" of sensors and weapons systems that would make up the first phase of SDI is currently being overhauled. [Source: SDIO]

would be vulnerable to antisatellite weapons. It also said "there may always be irresolvable questions about how dependable BMD [ballistic missile defense] software would be," and suggested that "in OTA's judgment, there would be a significant probability (i.e. one large enough to take seriously) that the first (and presumably only) time the BMD system were used in a real war, it would suffer a catastrophic failure."

SDI officials see much in the report with which they agree. O'Dean Judd, the chief scientist in the SDI Organization, said in an interview, for example, that "they did not find any technical holes in the program, other than the issue of software," on which he says OTA was incorrect. Very complex software for a variety of military systems, such as the AEGIS shipboard missile defenses, provides a firm basis to assure that the software problems are manageable, he said, and he argued that the OTA study was unduly pessimistic in its conclusions about Soviet countermeasures.

Two studies, produced by congressional Democrats, are far more critical of the phase 1 concept than OTA. A staff report by the House Democratic Caucus, *Strategic Defense Strategic Choices*, which was endorsed by 26 members from a broad political spectrum, concluded that the "Phase 1 Strategic Defense System, particularly its space-based elements, does not appear likely to meet the criteria for military effectiveness, survivability, and cost-effectiveness." Even the research supporting phase 1 "is premature and distorts the direction of needed research into strategic defense technologies," the report maintained.

The second study, by staff aides to Senators Bennett Johnston (D-LA), William Proxmire (D-WI), and Dale Bumpers (D-AK), reached similar conclusions. The report, *Star Wars at the Crossroads: The Strategic Defense Initiative After 5 Years*, argued that "a phase 1 architecture of kinetic kill space-based interceptors likely would be obsolete the day it is deployed" because of Soviet countermeasures. Like the House study, the Senate staff report also argued that research on promising new technologies is being sacrificed in favor of near-term efforts to develop phase 1 technologies.

According to Defense Department officials, a report by the Defense Science Board, which was completed in April and publicly released on 19 May, was particularly influential inside the Pentagon in the steps that led the Defense Acquisition Board to recommend that the phase 1 plan be reconsidered.

The science board recommended two divergent approaches to SDI. First, it said that

the research program should be focused on sensors, surveillance systems, and communications "necessary to provide an adequate assessment of what is actually going on, the nature and extent of the attack, and the detection and tracking of boosters and reentry vehicles." As for deployment, the science board suggested that it should take place in six steps, the first four of which would be more modest than the full phase 1 plan. They are:

- First, the deployment of 100 ground-based interceptors to provide very limited defense against a small number of missiles. Such a system would not contravene the 1972 Antiballistic Missile (ABM) Treaty.

- Second, deployment of improved space surveillance systems, again within the confines of the ABM Treaty.

- Third, deployment of ground-based interceptors around Washington to protect the national capital against a strike designed to remove the top political leadership.

- Fourth, expansion of the system including more interceptor sites and improved sensors.

- Fifth, deployment of space-based interceptors.

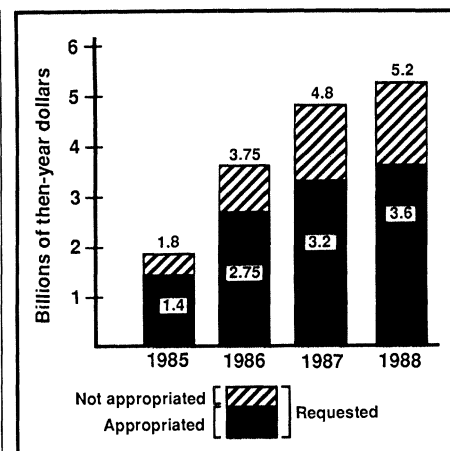
- Sixth, the addition of space-based and ground-based directed energy weapons.

Judd, who declined to discuss the specifics of the acquisition board's recommendations, says "people still think in terms of the phase 1 architecture as being basically the same things we talked about and all the elements involved. There's been a lot of talk about which ones we should do first," but "everyone is still strongly planning along the same lines that we had been," he says. Another official says, however, that if the acquisition board's recommendation is accepted, it means "the phase 1 architecture is dead."

Officials say that, in recommending that the phase 1 architecture be reconsidered, the Defense Acquisition Board has not decided to back limited, phased deployments beginning with 100 ground-based interceptors as the science board recommended. It will be reviewing the options over the summer.

A system based on limited deployment of ground-based interceptors gained some attention earlier this year when Senator Sam Nunn (D-GA), the influential chairman of the Senate Armed Services Committee, suggested that it be looked into as a means of protecting against an accidental launch.

The idea has already generated considerable opposition from critics who see it as the thin edge of the wedge of a broader SDI system. It was also recently sharply criticized by Theodore Postol of Stanford University, who testified at a congressional hearing that a system that complied with the ABM treaty would not be able to defend either coast,



Dreams and reality. Congress has consistently cut the budget request for SDI. This year, it is expected to specify where the funds should go.

would be easily overwhelmed, and would prompt the Soviets to step up work on countermeasures.

Any move toward deployment of any missile defenses would be sure to generate opposition both within the Pentagon and Congress, however, if for no other reason than that it would be extremely costly. Although some estimates have suggested that a 100-interceptor system could be built for \$5 billion to \$10 billion, the Senate staff report cited an estimate of at least \$16 billion. As for the phase 1 architecture, the Defense Department's own estimate is between \$75 billion and \$150 billion.

The Pentagon is facing a serious budget problem. Some \$300 billion needs to be trimmed from its planned expenditures over the next 5 years. As SDI is brought more under the general management structure of the Pentagon, it will be increasingly looked at in comparison with other programs during the budgetary tradeoffs.

Meanwhile, Congress is also beginning to wrest control over the details of the program from the Administration. In previous years, it has simply cut the overall budget request for the program but not specified in fine detail how the funds should be spent. This year, however, Congress is expected to place numerous restrictions on how much should go to particular programs.

Part of the rationale is to prevent growth in some programs, such as the development of space-based interceptors, in order to move the program away from deploying such systems. However, congressional aides say that other programs are being protected by members of Congress who have important contracts in their districts. This earmarking, says one observer, could make it difficult, if not impossible, to establish a rational research program as SDI is reoriented away from phase 1. ■ COLIN NORMAN