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DECISION ON ABM

The doomsday vistas of thermonuclear war—deaths in the tens of millions, whole cities carbonized, an entire nation reduced to a state of barbaric anarchy—are surely the most agonizing that any U.S. President must confront. Last week Richard M. Nixon, just eight weeks in office, was face to face with what could prove to be the most crucial decision of his Presidency: whether the security of the U.S. requires the deployment—and if so, to what extent—of an anti-ballistic-missile (ABM) defense system.

In the end, the President decided that the nation must proceed with at least a limited deployment of ABM, and though this decision failed notably to quiet the protests in the Senate's increasingly crowded dovecote, it represented at least a measure of victory for ABM's opponents. Once again, Richard Nixon had steered a meticulously plotted middle course among the alternatives that lay before him, partially placating both the pro- and the anti-ABM forces, and apparently maintaining for himself and the nation a considerable degree of flexibility for the future.

The President rejected outright the proposals for a hardened ABM system designed to protect the population in the event of all-out nuclear war. "There is no way," Mr. Nixon told the nation bluntly, "even if we were to expand the limited Sentinel system . . . that we can adequately defend our cities" against a determined Soviet attack.

He also refused to delay all ABM deployment as a number of senators and scientists had urged, contending primarily that the system was unworkable (page 26). A postponement of even a year at this stage, he said, would mean a delay of two years in setting up the missile sites at a time when Chinese missilery is proceeding apace and Russia is expanding its own nuclear weaponry.

City Defense: Mr. Nixon also vetoed the compromise approved by President Johnson in late 1967. This so-called Sentinel system, already in the process of deployment until Mr. Nixon suspended construction last month, was designed ostensibly to protect the nation's major cities from an unsophisticated Chinese attack or an accidental missile launching. A two-tiered defense of long-range Spartan and close-in Sprint missiles was to have been based at the outskirts of major population centers.

"The Sentinel program previously adopted should be substantially modified," he declared, and his modifications

clearly thinned down the ABM system (promptly redubbed "Safeguard"). Safeguard's primary mission will be to protect the U.S.'s nuclear striking force, not its population, and the ABM batteries will accordingly be deployed near missile launching sites and strategic-bombing bases, not near the cities (except Washington, which will enjoy special protection as the nation's top military command post). Whereas Sentinel's arsenal would have had about 750 Spartans and Sprints, Safeguard's will probably in-



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Nixon chooses Safeguard over Sentinel

clude only 350 to 400. Whereas Sentinel would have had fifteen sites, Safeguard will have twelve and will begin with only two—one in Montana and one in North Dakota—the first of which will not be completed until 1973.

The President also stressed that Safeguard will be a highly flexible system, subject to a searching annual review at which its dimensions could be expanded or reduced depending on the extent of the enemy threat, the progress of international talks on arms control, and any advances in ABM technology.

Opponents of the ABM, who had mustered roughly half the Senate into their ranks in recent weeks and had high hopes of blocking any deployment, immediately sensed themselves disarmed if not defeated. For the Safeguarded Sentinel was shrewdly designed to meet a number of the objections, on grounds of foreign and domestic policy, that had

thrown the ABM's future into jeopardy:

■ It soothed the fears of city dwellers who had lately kindled a good deal of political heat under the Sentinel program. As they watched ABM sites being prepared in their suburbs, citizens of Boston, Chicago and Seattle (the first three Sentinel sites) had nasty visions of accidental nuclear explosions, deadly fallout from Sprint blasts in the air overhead, and even widespread blindness among those who happen to look upward at the moment of nuclear flash. Under the Safeguard system, city folk would not be threatened by bombs bursting in air but still would enjoy some protection from small-scale nuclear attack, thanks to the long-range Spartans.

■ It was specially designed to persuade the Russians that this was not an offensive gesture, calling for a riposte from their side. In the arcane logic of nuclear confrontation, ABM defenses deployed around cities can actually be interpreted as provocative, since they strengthen a nation's capacity to withstand a reprisal attack and therefore its willingness to risk striking first. ABM's deployed around missile-launching sites, however, only strengthen a nation's capacity to launch its own reprisals against a first strike by the other side; they enlarge its power to deter, but not to initiate, nuclear war.

■ The decision was carefully accompanied by other measures to calm Soviet apprehensions: Mr. Nixon went out of his way to stress that there would be no increase in U.S. offensive weaponry despite the recent Russian buildups, and that in fact the defense budget would be shaved about \$2.5 billion below the Johnson Administration's estimates. "Our program," the President declared, "provides an incentive for a responsible Soviet weapons policy and for the avoidance of spiraling U.S. and Soviet arms budgets." The Russians, he noted, had not been dissuaded by Sentinel from agreeing to hold talks on arms control, and he thought that Safeguard would give them "even less reason to view our defense efforts as an obstacle to talks."

■ The Safeguard system would probably be cheaper than Sentinel. The cost estimate for full deployment was \$6 billion to \$7 billion, some \$3 billion less than what some analysts thought Sentinel was likely to have cost. And because of the phased deployment of Safeguard, the outlay for 1969 and 1970 could be a full \$1 billion lower than the \$2.8 billion expenditure requested by the Johnson Administration.

Despite these modifications, the ABM system seemed headed for a bumpy flight in the Senate. For nearly a year, a nucleus of Senatorial anti-anti-missileers had waged a relentless struggle against the project, and hardly any of them showed signs of giving up. South Dakota Democrat George McGovern branded the President's decision "the first major blunder of his Administration," and Mr. Nixon himself, announcing his decision, conceded that the vote on Safeguard's

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appropriation would be "very close."

At one point, the prospect of managing even to slim down the Sentinel plan had seemed remote. When the project came up before the Senate Armed Services Committee for its first authorization, Georgia's Richard Russell, ranking baron of the Senate's military establishment, bothered to call only witnesses favorable to the program. But two prominent Republicans, Kentucky's highly respected John Sherman Cooper and Illinois's energetic Charles Percy, had their doubts, did their homework, and soon managed to kindle the flames of revolt.

Unimpressed: Dovish senators in both parties, suspecting that Sentinel might well reflect the same Pentagon impetuosity that seemed to them so ruinous in Vietnam, took a close look at the ABM and came away unimpressed with either the necessity or the wisdom of constructing it. Even conservatives such as Barry Goldwater and Everett Dirksen confessed qualms. Majority Leader Mike

York—testified against immediate ABM deployment. By midweek, one Senate head count of the anti-ABM faction produced an outright majority of 54. Eleven of the Senate's twelve freshmen (the exception: Alabama Democrat James B. Allen) had either joined or were leaning toward the rebels. When the President delayed until Friday the decision he had promised to announce at the first of the week, it seemed likely that the Senate revolt had forced a last-minute reappraisal of what some suspected was an earlier decision to go ahead with Sentinel except for some minor adjustments in the ABM sites.

Whether the more extensive Safeguard modifications would prove sufficient to win back a majority for ABM deployment remained to be seen; the vote will not take place until the Defense Department appropriation comes to the Senate floor several months from now. It will doubtless cruise through the House—Speaker John McCormack and Majority



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Scientists York, Killian and Kistiakowsky testify on ABM: But will it work?

Mansfield made no secret of his opposition, and newly elected Democratic Whip Edward Kennedy came over to the anti-ABM camp with his own stockpile of national prestige and a coterie of science advisers whom he commissioned to prepare an independent report on the ABM.

Then, when President Nixon ordered Sentinel deployment stopped in February, William Fulbright's Foreign Relations Committee convened hearings before a special subcommittee on disarmament to air the anti-ABM case. Scientific experts hammered away at the ABM system's alleged technical faults. China experts heaped doubt upon the danger of nuclear attack on the U.S. by Peking. The crescendo came early last week, when three prominent scientists who had acted as advisers to the Eisenhower Administration—MIT's James R. Killian Jr., Harvard chemist George B. Kistiakowsky and California physicist Herbert F.

Leader Carl Albert joined GOP floor boss Gerald Ford in firm support of the new plan—and most old Capitol hands expect this momentum, plus White House pressure, to drag back some of the Senate waverers to the President's side.

But so far most of the rebels seemed to be standing firm, and there was no doubt that a number of the questions raised by Sentinel have survived its reincarnation as Safeguard:

Will it work? Safeguard's technology is identical to Sentinel's, which is basically the same as Nike-X's, which was rejected as inadequate when it was first developed and is subject to all sorts of hazards and strains. In view of the nuclear test ban treaty, Safeguard can never be properly tested and might turn out to be only partially effective. In a way, President Nixon's conversion of the ABM from a population defense to a launching site defense reflects this possibility. In the

fending a city, to allow half the missiles to get through would be a catastrophe; in defending Minuteman sites the nation could afford to lose half its ICBM's—and still have enough left to inflict unacceptable damage on the attacker.

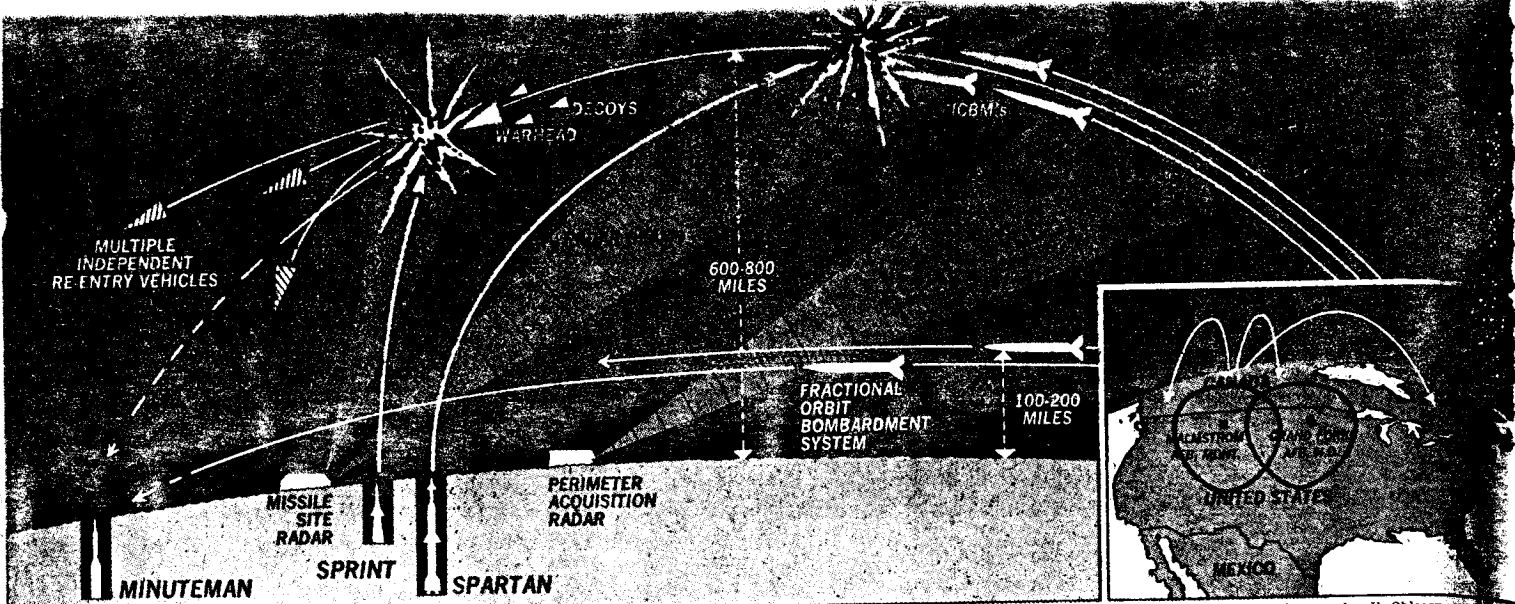
Will it strengthen the national security? The ABM's opponents point out that any defensive system can always be neutralized if the enemy strengthens his offense. Russia could overcome Safeguard by simply flooding an attack zone with more warheads than the ABM's could handle. ABM deployment, as York warned the disarmament subcommittee last week, could thus lead to a costly upward spiral of the arms race in which "you are actually worse off if the defense system doesn't work perfectly." At present, the U.S. has a marked offensive lead and the Russians a marginal advantage in defensive technology. Soviet leaders may now fall under great pressure to develop more and better multiple warheads, suborbital bombs and decoys to overwhelm the U.S. defense.

What effect will it have on the non-nuclear nations? By coincidence, President Nixon's ABM decision came just a day after the Senate ratified the international treaty barring the spread of nuclear weapons. Many of the nations now without nuclear weapons of their own resent being asked to renounce such weapons while the nuclear powers continue to build up their own arsenals. ABM deployment, some fear, may fuel this opposition to the treaty.

How much will it cost? President Nixon has pledged to keep the Safeguard system limited and its costs in the \$7 billion range. But, as Defense Secretary Robert McNamara warned in 1967, "there is a kind of mad momentum intrinsic to the development of all new nuclear weaponry. If a weapon system works—and works well—there is strong pressure from many directions to produce and deploy the weapon out of all proportion to the prudent level required." ABM critics fear that once the system is begun, there will be an inexorable tendency, spurred by industry and the military, to keep expanding it, at a time when the vast amounts of money involved are sorely needed elsewhere on the domestic scene. "We always hear the farthest rumble of a distant drum," Oklahoma Sen. Fred Harris complains, "but not the voice of a hungry child."

One thing seems clear: whether Safeguard is voted up or down, the Senate has shaken off the sheeplike submission with which it has passed virtually unchallenged almost all defense appropriations since the start of the cold war. A new mood of skepticism about the wisdom of the Pentagon and the proficiency of its contractors has been born of the stalemate in Vietnam, the Pueblo fiasco, the shortcomings found in recent weaponry such as the F-111 fighter plane, the M-16 rifle and the Sheridan tank. To win the \$7 billion Safeguard, President Nixon will have some convincing to do.

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Safeguard: Spartan and Sprint missiles, guided by radars, would protect Minuteman ICBM's from attack

How It Works—If It Works

The anti-ballistic missile (ABM) has traveled under several aliases over the last twelve years. In 1956, it tried to slip into the U.S. arsenal under the name of Nike-Zeus. In 1963, it was Nike-X. In 1967, it was Sentinel. Now it is Safeguard, unofficially, anyway, and prospectively part of America's strategic forces.

Whatever its name and however proficient its advocates claim it to be, the ABM is basically the same system it was several years ago—when the Johnson Administration debated its effectiveness as a defense against a nuclear-missile attack. While there have been improvements made in the various missiles, radars and computers that make up Safeguard, there has been no major technological advancement that would suddenly make the ABM an irresistible attraction. The only significant change in ABM has been the political climate surrounding the system.

Network: Safeguard consists of two separate radars and two distinct missiles, linked by a complex computer and communication network. The Perimeter Acquisition Radar (PAR) is a sentry constantly on patrol; its electronic beam sweeps endlessly back and forth across the skies for objects as far as 1,500 miles away. The detection of warheads heading toward the U.S. will cause the computer system to turn on the second radar system, the Missile Site Radar (MSR). Each of the MSR's four sides is covered by many small, individual radars. These small units can be controlled by the computer to form one powerful fire-hose stream of energy to follow one object, or they can be arranged in groups, like individual water-jets of a shower head to follow upwards of several dozen targets simultaneously. This characteristic, called "phased array," is the key to MSR's role in the Safeguard system. This radar not only must plot with extreme accuracy the path of incoming warheads and dis-

tinguish between true bombs and decoys, but must also guide the U.S. interceptor missiles to the right point in space where, hopefully, destruction occurs.

To blunt the thrust of an attack as soon as possible, and as far away from the U.S. as possible, the system's computer sends a Spartan missile to intercept the enemy's warheads while they are still above the earth's atmosphere and about 400 miles distant. Operating in the vacuum of space, where the blast of an explosion is without any real punch, the Spartan's 2- or 3-megaton warhead is designed to release a tremendous quantity of X-rays that damage the control electronics inside the enemy's re-entry vehicle.

Filter: If the warheads get past the Spartan, the Safeguard system then waits until they enter the earth's atmosphere. Like a filter, the atmosphere would retard lightweight objects—presumably decoys—while the heavier pieces—presumably nuclear warheads—plowed on. Once the apparent warheads come within 100,000 feet of their target, the Safeguard system dispatches its Sprint missiles. These small (27 feet tall, 4½ feet in diameter) missiles accelerate from their underground cells with an abruptness that makes a dragster seem like a Model T. This acceleration also arms the Sprint's nuclear warhead; the missile climbs rapidly to altitude and, when in close proximity to the enemy vehicle, is set off by a command from the Safeguard's computers. Operating within the atmosphere, the Sprint makes its kill through a combination of blast, heat and radiation.

That, supposedly, is the way the Safeguard ABM ultimately is to protect Washington, D.C., and U.S. strategic forces based in 25 states. Initially, the Nixon Administration intends to deploy probably less than 50 Spartans and Sprints, plus PAR and MSR radars.

These will protect the 500 Minuteman ICBM's buried, in what have been long touted as invulnerable silos, beneath the soil near Malmstrom Air Force Base, Mont., and Grand Forks AFB, N.D. (The Navy's fleet of 41 Polaris submarines, each carrying sixteen ballistic missiles, is not protected by the Safeguard ABM.)

Safeguard proponents insist that the system is justified if it saves even a few of the U.S. offensive weapons from an all-out Russian attack, or if it blunts a limited strike such as the Chinese are expected to be capable of in the mid-1970s. But would the system be that effective? Some scientists think so; others think not.

The complexity of Safeguard is staggering. There are so many millions of pieces that must work, precisely and promptly at any given instant, that roughly one-tenth of the system's prodigious computer circuits is given over to constant self-examination of the system. Then there is the problem of programing the computers, for computers can only do what they have been instructed to do. Trying to anticipate all of the possible situations that would result in the total chaos of a nuclear attack is, to say the least, formidable.

Problems: There are, for example, the problems posed by multiple warheads, decoys, nuclear "smokescreens," fractional orbit bombardment systems (FOBS), and missiles fired from submarines lying not far from U.S. coastlines. The Army insists that it has considered all of these possibilities and that the Safeguard-Sentinel can counter most of them—though the Army also readily admits that the system would offer little resistance to an all-out Soviet attack.

There is, of course, no way of knowing that Safeguard will live up to even its limited claims unless the ultimate test of a nuclear attack presents itself. Under ideal conditions, the system probably would intercept some warheads. But no one has ever identified the "ideal conditions" of nuclear warfare.