

Edited extract from: *Department of the Army Historical Summary, FY 1971*
(Washington, D.C.: U.S. Army Center of Military History, 1973, pp. 37-43.)

Missile Systems

When the President's decision to proceed with the limited deployment of a ballistic missile defense system, designated as SAFEGUARD, was announced on March 14, 1969, three basic objectives were set forth: protection of U.S. land-based retaliatory forces against a direct attack by the Soviet Union; defense of the American people against the kind of nuclear attack which Communist China is likely to be able to mount within the decade; and protection against the possibility of accidental attacks from any source. At that time, the President also stated that "this program will be reviewed annually from the point of view of technical developments, the threat, and the diplomatic context, including any talks on arms limitations," so as to "insure that we are doing as much as necessary, but no more than required by the threat existing at that time."

The deployment requested by the President in early 1969, and approved by the Congress late that year, called for the installation of SAFEGUARD sites in two Minuteman inter-continental ballistic missile (ICBM) fields—Grand Forks, North Dakota, and Malmstrom, Montana. The method of proceeding beyond this first step (Phase 1) would be dependent on future annual reviews.

The Modified Phase 2 SAFEGUARD program for fiscal year 1971, approved by Congress in late 1970, consisted of continuing construction of the two Phase 1 sites at Grand Forks and Malmstrom, and adding two additional Sprint remote launch sites at each location; deploying a third site in the Minuteman fields near Whiteman Air Force Base, Missouri; and accomplishing advanced site preparation (but not initiating construction) of a fourth site for defense of the Minuteman fields near Warren Air Force Base, Wyoming.

This year a complete and comprehensive review of SAFEGUARD was again conducted in accordance with the President's commitment of March 14, 1969. The review reached several conclusions: that development, production, and construction progress of SAFEGUARD had been satisfactory; that while there had been an unexplained slowdown in the deployment of current Soviet ICBM systems, tests of modifications of several missiles (SS-9, SS-11, SS-13) continued, and even at present missile deployment levels, qualitative force improvements such as Multiple Independently Targeted Reentry Vehicles (MIRV's) could pose a threat to the survival of U.S. land-based ICBM's; that the continued deployment of Soviet Y-class nuclear powered ballistic missile submarines, and the testing of a new long-range submarine-launched ballistic missile (SLBM), could pose a threat to the U.S. strategic bomber force; that the People's Republic of China, in an effort to develop its own ICBM system, had made progress in that direction, and that the initial system could be ready as early as 1973, with the mid-1970s a more likely time; and

that although there was progress in the Strategic Arms Limitation Talks (SALT), results of the negotiations were not conclusive enough to allow a basic change of plans for SAFEGUARD.

During this year, the research and development portion of the SAFEGUARD program progressed satisfactorily. At Meck Island on the Kwajalein Atoll in the Pacific, the prototype Missile Site Radar (MSR) became operational in September 1968. It met or bettered most of its design objectives, and no serious deficiencies have been found. In March 1968, checkout of the MSR data processing system was initiated, and the system was operational as a multiprocessor early in 1969. In July 1969, tracking of local targets was accomplished with the initial software, and in December 1969, two ICBM's, launched from Vandenberg Air Force Base, California, were successfully tracked.

While the MSR was being built and tested, a limited engineering development model of the Perimeter Acquisition Radar (PAR) was constructed and activated at the General Electric Plant in Syracuse, New York, in 1969. No serious technical problems were encountered in its development. In December 1969, the Spartan interceptor successfully completed development testing at Kwajalein Island. Sprint development testing was completed in August 1970, and system tests with Sprint began soon after. As of June 30, 1971, fifteen system tests had been conducted (thirteen of these involved the firing of Sprint or Spartan missiles, and two involved only MSR tracking of an ICBM-launched test target). There were two unsuccessful tests and one partly successful test; the remaining twelve were completely successful. With the exception of an unsuccessful test on June 26, 1971, the causes of troubles were diagnosed and corrective action was taken. Study to determine the reason for the unsuccessful June 26 test was under way. There were five successful tests involving Spartan, one a salvo of two missiles guided simultaneously by the MSR and its data processor. There were also five successful tests involving Sprint, one a similar salvo launch of two Sprint missiles. Future system tests will be against more sophisticated ICBM-launched test targets as well as additional targets boosted by Polaris missiles.

The Atomic Energy Commission (AEC) has carried on its warhead testing satisfactorily. Tests of weapon features were conducted, and some weapon output measurements were made. Warhead sections with instrumented simulated warheads (no nuclear material) were flight-tested on both Sprint and Spartan missiles. Preparations were under way for further underground warhead tests and additional flight tests of certain warhead components as part of the system tests.

A summary of the year's construction status for the first two SAFEGUARD sites at Grand Forks and Malmstrom is shown in the following table:

<u>Sites</u>	<u>Components</u>	<u>Percent Completion June 30, 1971</u>	<u>Construction Completion</u>
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Grand Forks	PAR and MSR	62	December 1972
	Remote launch	6	December 1972
Malmstrom	PAR and MSR	5-10	Mid-1973
	Remote launch	No activity	Mid-1973

Design release for approximately 90 percent of all SAFEGUARD hardware items has been made. All of the ground equipment, including the radar and associated computers and ancillary equipment for Grand Forks and Malmstrom but excluding site test and maintenance data system equipment, is being procured. Tactical software packages for Grand Forks are being manufactured. Production of the Spartan and Sprint missiles to be deployed at the first site is under way. Engineering for the Whiteman Air Force Base site is in progress. Site survey is complete for the potential Warren site.

Construction of the first SAFEGUARD site near Grand Forks was proceeding satisfactorily. Award of the next construction contract for Malmstrom was withheld pending negotiation in accordance with Executive Order 11588 to reduce labor costs, which were in excess of government estimates. Schedules for the first site, Grand Forks, remained unaffected, but the Malmstrom schedule slipped pending award of the construction contract.

Over-all, there were no technical problems that would affect a decision to continue SAFEGUARD deployment in fiscal year 1972.

In the year's SAFEGUARD review, developments in the threat from other nations were carefully evaluated. The Soviets have built up their ICBM forces at a rapid rate during the past five years and, as of the end of 1970, had some 1,440 operational launchers. In April 1971, intelligence sources reported that the Soviets had started a new ICBM silo construction program. The new silos were unlike any other previously constructed, and it was not known what their purpose was or how many would be built.

The implications of these trends were still unclear. In any case, by mid-1972 the Soviets were expected to have over 1,500 operational ICBM launchers. Beyond 1972, projections concerning Soviet ICBM launchers and re-entry vehicles were less firm. Regardless of the direction in which the Soviets proceed, a key question will remain—that of the degree of missile accuracy. If the accuracy could be substantially improved, the projected Soviet SS-9 missile force could pose a serious threat to the future survival of Minuteman silos.

In addition, the Soviet ICBM threat was augmented by a substantial nuclear-powered, ballistic-missile submarine fleet, which is presently a fast-growing element of the threat. At the current production rate of seven to eight such vessels per year, the Soviet Union could have by 1974 an operational force of Y-class nuclear powered ballistic missile submarines comparable in size to the current U.S. Polaris force. A longer range

submarine-launched ballistic missile (SLBM) was also under active development, but deployment could not be estimated.

As for the strategic nuclear threat from the People's Republic of China, progress toward achieving an ICBM capability was continuing. Assessments indicated that the Chinese could attain an initial ICBM operational capability within three years after flight-testing commenced. The start of testing has not yet been confirmed, but a reduced range test of an ICBM may have occurred in late 1970. Thus, the earliest possible date for deployment would be 1973, but a year or two later is a more likely date. Significant numbers of ICBM's probably could not be deployed until late in the decade, according to the best projections.

Shortly after the United States announced in 1967 that it was to deploy the SENTINEL system, the Soviets agreed to arms talks. Although progress was made in the subsequent SALT talks, the Soviet threat to the U.S. land-based strategic retaliatory forces continued to grow. Pending a formal agreement on strategic arms limitations between the United States and the Soviet Union, SAFEGUARD proceeded on a measured program to provide for the defense of the U.S. strategic land-based system.

As the President announced two years ago, the deployment of SAFEGUARD depended on the evolution of the Soviet and Chinese threats and on the outcome of SALT. As determined in the annual review, threat developments dictated continuation toward full SAFEGUARD deployment pending the results of SALT.

In March 1971 the Secretary of Defense asked the Congress for authorization to implement the following proposed SAFEGUARD program through fiscal year 1972: continue construction at Grand Forks and Malmstrom; in 1971, start construction at the Whiteman site (already authorized in the fiscal year 1971 budget); and take steps toward deployment of a fourth site at either Warren Air Force Base in Wyoming or Washington, D.C. The details of engineering, initial hardware procurement, contract bidding, and construction awards continued at Warren, along with site survey and engineering at Washington, D.C. These measures would be carried out simultaneously to provide the President maximum time to decide which location is best for deployment of a fourth site without causing unnecessary delays. Under the fiscal year 1972 request, deployment would be limited to one of the two locations.

This program would sustain progress toward U.S. strategic objectives and extend the defense of Minuteman, pending a satisfactory agreement in SALT. Additionally, the program would maintain the capability to provide for defense of the National Command Authority (NCA) as part of one option in the U.S. SALT position, and would preserve the option for deployment of area defense against small attacks at some future time. However, no funds were requested for area-only sites this year.

This program should also contribute to progress in SALT. The Soviets had indicated particular concern over a U.S. area anti-ballistic missile (ABM) defense, but the proposed program does not request authorization for additional area defense sites beyond those which already protect Minuteman and NCA. The United States had indicated a willingness to modify its long-range plans for SAFEGUARD if a strategically acceptable arms control agreement with the Soviet Union could be reached. By opening the option to deploy a defense of Washington, the United States is also responsive to the developments in SALT where the possibility of limiting the ABM part of an agreement to an NCA defense was discussed.

In essence, the fiscal year 1972 SAFEGUARD program proposal continues to reflect the President's basic premise, namely, continued development at a measured, orderly, and sufficient pace, subject to review and modification as circumstances dictate.

A continuing analysis of SAFEGUARD's capabilities indicated that while the system could cope with the threat to Minuteman for which it was designed, it would need augmentation if the threat grew beyond the ability of the presently planned SAFEGUARD deployment. Accordingly, it was decided to initiate a program of prototype development which could augment SAFEGUARD during the last half of this decade. This program was designated as HARDSITE Defense. Rather than expanding the defense by using costly SAFEGUARD MSR's, it would use smaller and less expensive radars to provide a cost effective augmentation to SAFEGUARD. Budgeting for the HARDSITE Defense prototype program is \$65 million for fiscal year 1972.

Of the \$3.7 billion authorized and approved for SAFEGUARD through 1971, \$3.3 billion had been obligated but only \$2.3 billion was expended as of June 30, 1971.

Total Department of Defense acquisition costs were estimated to be \$6.2 billion for the currently approved three-site program (including advanced preparation for a fourth site) and \$13.7 billion for the completion of the full twelve-site SAFEGUARD deployment, if the fastest possible schedule were to be adopted for the fiscal year 1972 budget. These estimates included an increase of \$0.3 billion over last spring's \$5.9 billion estimate for the currently approved three-site deployment and an increase of \$3 billion over last spring's \$10.7 billion estimate for the full twelve-site deployment. These increases of \$0.3 billion and \$3 billion resulted from a further stretch-out over last year's schedule (\$0.1 billion for the three-site and \$0.7 billion for the full twelve-site deployment) ; from added inflation factors (the inclusion of projected price level increases through deployment completion versus constant December 1969 dollar levels used for last year's estimate—\$0.6 billion for the three-site and \$1.9 billion for the twelve-site deployment) ; and from revised configuration and cost estimates (a net decrease of \$0.4 billion for the three-site and net increase of \$0.4 billion for the twelve-site deployment). An additional \$2.5 billion in Department of Defense acquisition costs will be required after fiscal year 1971 to complete the currently approved three-site deployment and an additional \$10

billion to complete the full twelve-site deployment, assuming adoption in fiscal year 1972 of an accelerated schedule.

These costs do not include an estimated \$0.9 billion for nuclear warheads for the three-site or \$1.2 billion for the twelve-site deployment that would be borne by the Atomic Energy Commission. The above expenditures are also exclusive of operating costs, which, for the period after completion of the deployment, are estimated to be \$135 million annually for the currently approved three-site deployment and \$375 million annually for the twelve-site deployment. These cost estimates, moreover, did not include certain indirect costs which were budgeted elsewhere, such as national range support, family housing, and certain Army-wide costs for hospitalization, maintenance of the Army training base, and base operations support.

Of the \$1.381 billion requested in fiscal year 1972, the bulk of the funds (\$1.248 billion) will be necessary for the continuation of the previously authorized sites at Grand Forks, Malmstrom, and Whiteman; \$114 million is needed to carry through the work at the Warren Air Force Base site, involving advance procurement of hardware items and award of the construction contract for the major technical facilities. A lesser amount—\$19 million—is required for advance preparation activities in the vicinity of Washington, D.C.

At the beginning of 1971, Congress initiated a program to provide funds for community assistance to areas affected by the impact of SAFEGUARD installations in Montana and North Dakota. Federal departments having responsibility for administering the public laws under which communities may request funds were contacted by the SAFEGUARD System Office, and memoranda of understanding were negotiated for processing such requests with the Departments of Transportation, Housing and Urban Development, and Agriculture and with the Public Health Service of the Department of Health, Education, and Welfare. As of June 30, 1971, a total of 70 impact assistance requests had been received for evaluation on an individual basis: 24 had been approved, 19 had been disapproved, and 27 were pending. Requests for apportionment of \$7 million of the \$11.8 million appropriated for such purposes were approved by the Office of Management and Budget in response to requests for assistance from affected communities in North Dakota and Montana.

Finally, during the year, congressional critics of SAFEGUARD argued, as they had in the past, that the system would not give effective protection commensurate with its cost. In addition, critics continued to contend that deployment would have a deleterious effect on SALT. On the other hand, congressional supporters pointed to the orderly progress of the system's limited deployment, held that it added credibility to the U.S. deterrent, and saw the ABM program as leverage for use during SALT negotiations.