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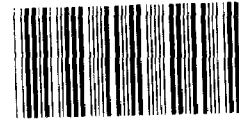
GAO

Report to the Ranking Minority Member,
Committee on Armed Services, U.S.
Senate

July 1988

ICBM MODERNIZATION

Selected Funding Options for the Small ICBM



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National Security and
International Affairs Division

B-223636

July 7, 1988

The Honorable John Warner
Ranking Minority Member
Committee on Armed Services
United States Senate

Dear Senator Warner:

On March 14, 1988, you asked us to review several funding options available to preserve a program decision on the Small Intercontinental Ballistic Missile (ICBM) for the next administration. Specifically, you requested us to provide information on the level of funding that would be required in fiscal year 1989 to continue (1) a missile program without regard to the lead time necessary to requalify program contractors, (2) both the missile and basing portions of the program without regard to the lead time necessary to requalify program contractors, (3) the missile portion of the program and minimize the time needed to restart full-scale development, and (4) both the missile and basing portions of the program and minimize the time needed to restart full-scale development.

On April 12, 1988, we briefed your staff on the results of our review. This report summarizes the data presented at that meeting. More detailed information is provided in appendixes I through III.

Funding Required for the Four Small ICBM Program Options

The program office estimates that it would need the following fiscal year 1989 funding for the four Small ICBM program options you asked us to review:

- \$500 million to continue a missile program.
- \$600 million to continue both the missile and basing portions of the program.
- \$900 million to continue the missile portion of the program and to minimize the lead time to start the missile full-scale development program.
- \$1.2 billion to continue the missile and basing portions of the program and to minimize the lead time to restart the weapon system full-scale development program.

Status of Current Program

In its fiscal year 1989 budget request, the Department of Defense proposed terminating the Small ICBM program. However, in response to congressional concerns, the Department requested \$200 million so the next

administration would have the option to continue the program. Accordingly, on April 1, 1988, the Air Force restructured the Small ICBM program based on a budget of \$900 million—\$700 million appropriated for fiscal year 1988 and \$200 million requested for fiscal year 1989. This restructured program is now a missile test program consisting mainly of missile development activities and hardware deliveries to support two missile test flights currently scheduled between January and June 1989. Program officials stated that the current Small ICBM program is no longer in full-scale development and its previously scheduled 1992 initial operational capability date is not achievable under the \$900 million program.

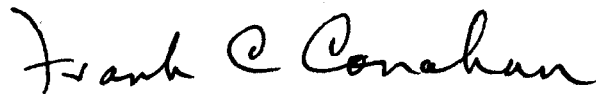
In general, if a \$200 million budget is sustained in fiscal year 1989, program officials stated that few meaningful development activities would take place after the test flights (i.e., during the last quarter of fiscal year 1989). Under the restructured program, the program office will retain subcontractors and vendors only as long as necessary to support the flight tests. It will terminate most of the subcontractor and vendor base by the beginning of July 1988 and the entire contractor base at the end of fiscal year 1989.

We performed our work between March and May 1988 in accordance with generally accepted government auditing standards. The program office developed the information relating to the costs of the four options at our request. We reviewed and discussed these estimates with program officials, but we did not independently validate the assumptions to arrive at these estimates. We obtained information from the Office of the Secretary of Defense, Air Force Headquarters, Washington, D.C., and the Ballistic Missile Office, Norton Air Force Base, California. We discussed this report with officials at Air Force Headquarters and the Ballistic Missile Office, and we have included their comments as appropriate. As requested, we did not obtain official comments from the Department of Defense.

As arranged with your Office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 5 days after its issue date. At that time, copies will be made available to the appropriate congressional committees; the Secretaries of Defense and the Air

Force; the Director, Office of Management and Budget; and other interested parties upon request.

Sincerely yours,

A handwritten signature in cursive script that reads "Frank C. Conahan".

Frank C. Conahan
Assistant Comptroller General

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Abbreviations

AFB	Air Force Base
ICBM	Intercontinental Ballistic Missile
IOC	initial operational capability

Restructured Small ICBM Program and Fiscal Year 1989 Funding Options

The Air Force has restructured the Small ICBM program twice since the beginning of fiscal year 1988—in January and April 1988. In December 1987, the Small ICBM program received a fiscal year 1988 appropriation of \$700 million, about \$1.0 billion less than the program office's estimate. Thus, in January 1988, the program office restructured its activities to accommodate the reduced funding. The program office continued the missile and basing portions of the program, delayed some development activities or deferred them until later in the program, and deleted a few tasks. In restructuring the program, the program office assumed that the Congress would appropriate approximately \$1.0 billion in fiscal year 1989. Program officials stated that although this restructure increased concurrency due to the deferred development, a 1992 initial operational capability (IOC) date would still have been attainable.

In its fiscal year 1989 budget request, the Department of Defense proposed terminating the program. However, in response to congressional concerns, the Department requested \$200 million so the next administration would have the option to continue the program. Accordingly, on April 1, 1988, the Air Force restructured the program a second time. It planned a \$900 million 2-year program—\$700 million appropriated for fiscal year 1988 and \$200 million requested for fiscal year 1989. The program's original fiscal years 1988/1989 budget request for research, development, test, and evaluation was \$4.4 billion—\$2.2 billion in each fiscal year. The program office later revised its budgetary requirements to \$1.7 billion in fiscal year 1988 and \$1.8 billion in fiscal year 1989. Appendix II shows the application of current program funding and lists planned activities deferred or deleted due to restructuring.

After the second restructure, program officials stated that the Small ICBM program is no longer in full-scale development and a 1992 IOC date is not achievable. The restructured program is currently a missile test program consisting mainly of missile development activities and hardware deliveries supporting the first two test flights currently planned for the first half of calendar year 1989. Hardware acquisitions will include two flight test missiles and spare missile components, and test support and missile handling equipment necessary to support the planned flight tests. In addition, contractors will deliver one hard mobile launcher engineering test unit (full-scale development configuration) intended for mobility testing. Some of the remaining nonflight test development tasks include continuing the system requirements analysis for the weapon control system, conducting an additional phase of hard mobile launcher mobility testing (during the winter and spring of 1988-1989), and continuing some engineering design and development of

selected missile components intended for other ICBM modernization enhancements. Program officials stated that the Air Force will scale down or terminate most other development activities. Some examples are the hard mobile launcher canister and launcher test program, the weapon control system preliminary design review, and the land navigation testing. Under the restructure, normal full-scale development activities such as supportability, nuclear certification, nuclear hardness and survivability validation, and training are not affordable.

In general, if a \$200 million budget is sustained in fiscal year 1989, program officials stated that few meaningful development activities would take place after the flight tests (i.e., during the last quarter of fiscal year 1989). The program office will retain subcontractors and vendors only as long as necessary to support the flight tests and terminate the program's entire contractor base by the end of fiscal year 1989.

The program office estimates the restructured program will require at least 18 months to restart, if the program receives no additional funding before the end of fiscal year 1989 (through a supplemental appropriation) and the fiscal year 1990 budget is approved after September 30, 1989. The 18 months is necessary so the program office can negotiate and award new contracts, the contractors can hire and train sufficient personnel, and the program can achieve a development pace similar to its pace after the first restructure in January 1988. A key effort, according to Air Force officials, will be to reassemble the supply lines that feed the full-scale development program. Program officials could not estimate the amount of funding necessary for fiscal years 1990 and 1991 to support their 18-month restart estimate, but they stressed that the estimate is driven more by time frames required to award new contracts and for the contractor's new hires to acquire sufficient knowledge of their tasks. Program officials also stated that any estimate of an IOC for a program under these circumstances is premature and dependent on too many factors that are uncertain at this time.

Contract Reductions and Available Funding

The program's major associate contractors have had funding limitations placed on their fiscal year 1988 and 1989 efforts because the program's funding has been reduced below planned levels. As of the beginning of May 1988, the program office had already obligated most of the fiscal year 1988 funds—\$554 million of the \$700 million appropriated. It would use the balance of \$146 million, plus the \$200 million planned for fiscal year 1989, to fund associate contractors, government laboratories, and program office contractor support (see app. III). Martin Marietta

Corporation, which is responsible for assembly and test of the missiles, and Rockwell International, which is responsible for guidance and control system integration, would receive about \$156 million of the \$168 million designated for contractors.

Program officials explained that the actual level of development effort for the restructured \$900 million program will largely depend on (1) the results of contract negotiations for the cost of the restructured program and terminated activities, and (2) the amount of termination costs that the program office actually funds. In regard to the latter, program officials stated that the Office of the Assistant Secretary of the Air Force for Acquisition has agreed to fund Special Termination Costs for the program which includes personnel severance pay and settlement expenses. Therefore, program office estimates do not include these costs.

Small ICBM Fiscal Year 1989 Funding Options

The Small ICBM program office estimates that the fiscal year 1989 funding requirements necessary to meet the four program options identified by Senator Warner range from \$500 million for a missile only engineering program to \$1.2 billion for a restarted weapon system full-scale development program. The estimates consider the impact associated with losing most of the subcontractor and vendor base by the beginning of July 1988 and terminating most of the outyear efforts for the associate contractors.

The program office based the estimates on the assumption that the final level of fiscal year 1989 funding will be known by October 1, 1988. The longer the level of fiscal year 1989 funding remains uncertain, the longer it will take to recover the contractor, subcontractor, and vendor personnel and expertise base lost due to the partial terminations issued on April 1, 1988.

Data obtained from the program office relative to the four program options are provided below. The estimated funding for each represents an amount in lieu of the current proposed fiscal year 1989 budget of \$200 million.

- To continue a missile program without regard to the lead time necessary to requalify program contractors, subcontractors, and vendors, the Air Force would need \$500 million in fiscal year 1989. The program office estimate includes a missile engineering development program that continues the current pace of missile development beyond the first two test

flights (three quarterly test flights, versus the two currently planned). This level of funding would (1) bring all the missile subcontractors and vendors back on board, (2) start the acquisition process for outyear flight test hardware to support four more flight test missiles, and (3) restart missile component design which would result in Critical Design Reviews in fiscal year 1990.

- To continue both the missile and basing portions of the program without regard to the lead time necessary to requalify program contractors, subcontractors, and vendors, the Air Force would need \$600 million in fiscal year 1989. Such a weapon system engineering development program would continue the same missile development efforts stated above plus restore some additional basing development tasks. The tasks added back to the program include completing the weapon control system requirements definition and conducting the weapon control system Preliminary Design Review during fiscal year 1989. Contractors would deliver a second hard mobile launcher engineering test unit whose design would be sufficiently complete to undergo a Critical Design Review during fiscal year 1990.
- To continue the missile portion of the program and minimize the lead time to start the missile full-scale development program, the Air Force would need \$900 million in fiscal year 1989. In addition to the tasks that could be completed for the \$500 million missile program discussed above, the additional \$400 million would allow the restart of operational missile software development; the planning for missile supportability, producibility, and deployment; the fabrication of missile qualification hardware; and the development and initial acquisition of necessary missile support equipment for full-scale development, operational testing, and deployment. With full funding in the outyears, a flight qualified missile would be available in early 1992.
- To continue the missile and basing portions of the program and minimize the lead time to restart the weapon system full-scale development program the Air Force would need \$1.2 billion in fiscal year 1989. The new full-scale development program would involve a greater risk and have more schedule concurrency compared to the program at the beginning of fiscal year 1988. The weapon system IOC date would slip 6 months to June 1993. (Under this estimate IOC is redefined to 2 systems on alert instead of 10.) According to program officials, the change in the IOC date and definition are primarily due to the immaturity of the weapon control system design. The weapon control system efforts are behind the rest of the weapon system development and even with the changes, the weapon control system as initially conceived would not be available at

IOC. In addition, the weapon system's repair depots would not be operational at IOC; therefore the Air Force would need some interim contractor support for system maintenance to support the initial operational units.

The restarted full-scale development program includes all the tasks in the previously described options, plus others such as restarting the environmental and siting analysis effort, and resuming activities for hard mobile launcher supportability, producibility, and deployment planning. This option would restore the program's subcontractor and vendor base. As contractor personnel come back on board, the program's development pace would increase until eventually the program is operating at the same pace it had before the first restructure.

Small ICBM Program Funding

Dollars in millions

	Restructure ^a	
	First	Second
Activities to be funded		
Reentry system	\$15	\$20
Assembly and test	91	136
Guidance and control	120	155
Propulsion	168	204
Basing	135	127
Remaining laboratory/agency support	33	37
Remaining general support	138	221
Total	\$700	\$900
Activities deleted, deferred, or reduced		
Deleted alternate initial navigation system development	\$-120	
Deleted propulsion second sources	-45	
Reduced management reserve	-200	
Revised contract estimates to reflect target price vs. ceiling price	-95	
Deferred some planned contract changes	-175	
Reduced laboratory and agency support	-125	
Reduced general support	-30	
Deferred contractual efforts	-215	
Total	\$-1,005	

^aThe first restructure is for a 1-year program, and the second is for a 2-year program.

Small ICBM Program Available and Planned Funding for Fiscal Years 1988 and 1989

Dollars in millions

Appropriated for 1988	\$700.0
Obligations as of May 1, 1988	-553.8
Remaining fiscal year 1988 funds	146.2
Planned fiscal year 1989 funding	+200.0
Total	\$346.2
Funds for specific contractors	168.2
Funds for government and other related activities ^a	178.0

^aArnold Engineering Development Center for full-scale rocket motor flight proof tests.
 Western Space and Missile Center, Vandenberg AFB for missile flight test and test supports.
 Naval Weapon Center, China Lake for full-scale rocket motor test.
 Electronics Systems Division, Hanscom AFB for weapon control system support.
 Department of Energy/Sandia Laboratory for reentry vehicle support.
 Waterways Experiment Station for hard mobile launcher stability tests and terrain studies.
 Malmstrom AFB for hard mobile launcher mobility tests.
 Contract restructure and partial termination liability uncertainties.
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