



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

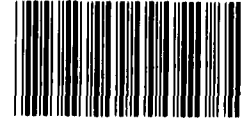
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MISSION ANALYSIS AND
SYSTEMS ACQUISITION DIVISION

NOVEMBER 15, 1982

B-207025

The Honorable Caspar W. Weinberger
The Secretary of Defense



119923

Attention: Director, GAO Affairs

Dear Mr. Secretary:

Subject: Costs and Benefits of a Common Strategic Rotary
Launcher Should Be Reassessed Before Further
Funds Are Obligated (GAO-MASAD-83-3)

The Air Force plans to acquire a multipurpose common strategic rotary launcher (CSRL) for the B-52H, B-1B, and advanced technology bombers (ATB). The objective of the program is to reduce development, acquisition, and support costs by acquiring a common launcher in lieu of several unique launchers. Issues concerning program cost, operational advantages, program concurrency, and management coordination raise significant questions as to whether this objective can be achieved. In approving the CSRL program, the Air Force canceled plans to develop and procure a unique Air-Launched Cruise Missile (ALCM) launcher for the B-52, but has not canceled plans to develop a unique ALCM launcher for the B-1B.

We are recommending that before further obligating funds for launcher development or procurement, you reassess the cost and benefits of the CSRL in comparison with unique launcher programs; determine whether the concurrency of the CSRL program is acceptable; and ensure stronger management oversight of all launcher programs for bombers. We also recommend that you select either the CSRL or a unique ALCM launcher for the B-1B.

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BACKGROUND

An Air Force study completed in August 1981 indicated that adopting a common multipurpose launcher approach could reduce the need for several unique launchers fitted to each aircraft and carrying only one or two types of weapons. In concept, the launcher would be common among strategic bombers and be capable of carrying mixed loads of existing and projected nuclear weapons. That study, although it did not include a detailed analysis of costs and benefits, concluded that a common multipurpose launcher should result in lower overall life-cycle costs than several unique launchers with individual capabilities to carry fewer types of weapons.

Based on those expectations, the Air Force established the CSRL program in October 1981 to develop a common multipurpose launcher for the B-52H, B-1B, and ATB capable of carrying mixed loads of current and projected nuclear gravity weapons, Short-Range Attack Missiles (SRAMs), and ALCM.

The Air Force considered two alternative designs for the CSRL and completed a comparative cost analysis in April 1982. In July 1982, three contracts were awarded for CSRL design studies leading to initial full-scale development in September 1982. To permit initiation of CSRL full-scale development and production, the fiscal year 1983 budget request includes \$64.1 million for development and \$22.4 million for production.

COST COMPARISON FAVORED UNIQUE LAUNCHERS

The Air Force cost study completed in April 1982 indicated that unique launchers designed for each aircraft with fewer weapon carriage options would likely have lower acquisition and life-cycle costs than proposed CSRL models. The Office of the Secretary of Defense and certain Air Force officials recently challenged the results of that study when we discussed it with them. The Deputy Under Secretary of Defense (Strategic and Theater Nuclear Forces) directed that another study be completed by the Air Force in January 1983.

Results of the April 1982 Air Force study showing estimated launcher program costs are summarized on the following page.

	<u>Unique launchers</u>	<u>CSRL candidates</u>	
		<u>265 inch</u>	<u>326 inch</u>
	(millions of 1982 dollars)		
Development	\$ 81	\$ 123	\$ 191
Production	1,022	1,211	1,550
Facilities	44	44	44
Operations and support	<u>21</u>	<u>20</u>	<u>20</u>
Total life-cycle costs	\$1,168	\$1,398	\$1,805
Increase due to inflation	<u>520</u>	<u>612</u>	<u>764</u>
Total in then year dollars	<u>\$1,688</u>	<u>\$2,010</u>	<u>\$2,569</u>

For each alternative, the study assumed 303 launchers would be acquired along with support equipment, spare parts, facilities, and operation expenses. Based on this study, the Air Force selected the less costly of the CSRL candidates for development, even though the study showed it was estimated to cost more than the unique launchers.

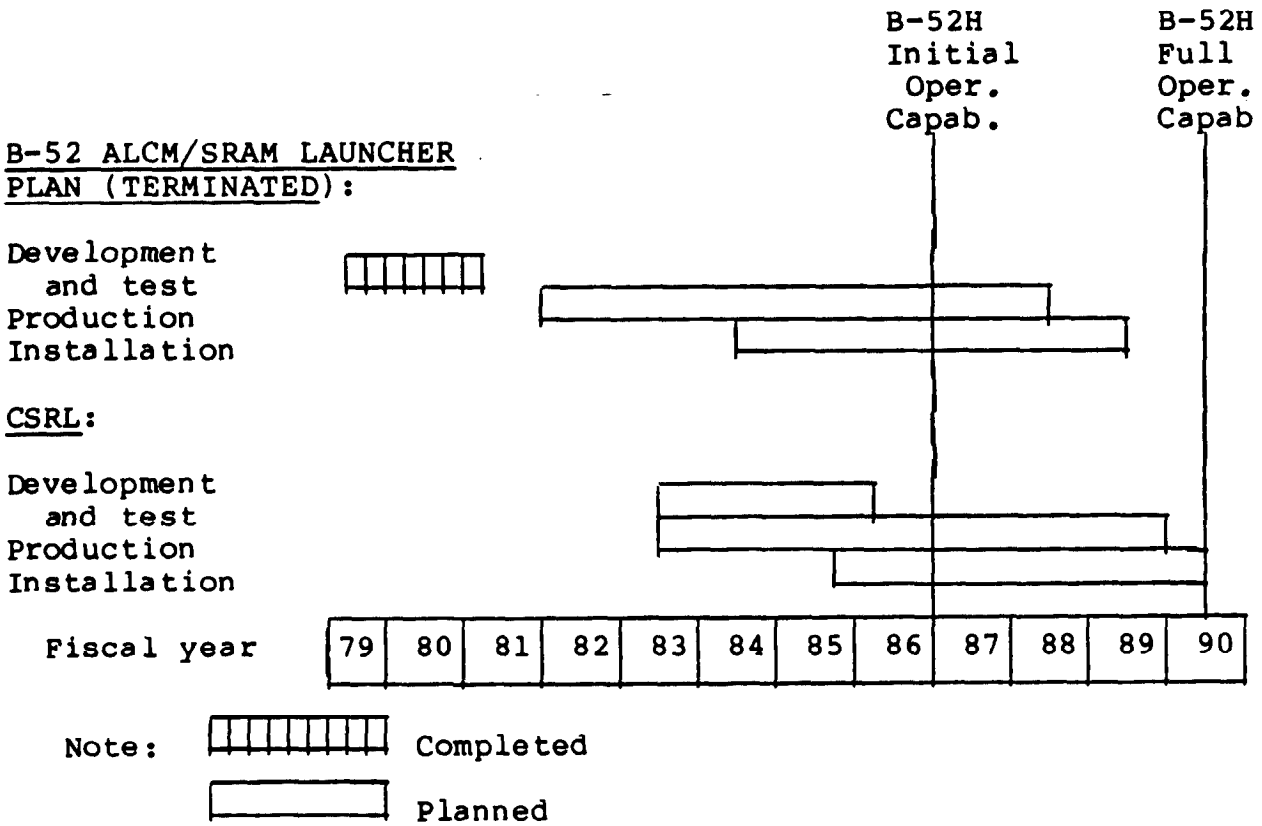
Air Force and the Office of the Secretary of Defense officials told us that the 265-inch CSRL was selected because they believed the Air Force cost analysis was inaccurate and that CSRL operational advantages would offset higher costs of the CSRL program. They believe the Air Force cost analysis understates the cost of unique launchers and overstates the cost of CSRL launchers because of inaccurate assumptions about launcher quantities and use of cost data which may be invalid. In November 1982, in response to our inquiries, the Deputy Under Secretary of Defense (Strategic and Theater Nuclear Forces) directed the Air Force to complete a cost and requirements analysis comparing separate launchers with common launchers. That analysis will be based on competitive proposals submitted by prospective CSRL contractors and launcher quantities more representative of bomber force needs. The results of that study will be critical in the decisions of which launcher programs to pursue for the bomber force.

CONCURRENCY OF DEVELOPMENT AND PRODUCTION IS A CONCERN

The selected CSRL involves greater development uncertainty and cost risk than unique launchers because of greater design

complexity and use of composite materials. These uncertainties are compounded by a highly concurrent development and production schedule which raises the potential risk of development difficulties, design changes, associated cost growth, and delayed deliveries.

When deciding to adopt the CSRL concept, the Air Force reaffirmed the need to have B-52Hs capable of carrying ALCM internally by October 1986. The Air Force initially planned to accomplish this by using a production version of the B-52 ALCM/SRAM launchers tested in 1980; however, development and production plans for that launcher were terminated when a decision was made to develop and produce a CSRL. Accordingly, the Air Force plans to develop, test, and produce the more complex CSRL and accomplish all integration efforts for the B-52H as well as the B-1B and ATB in less time than was originally planned for only the production of B-52H unique ALCM launcher. The resulting CSRL program schedule is highly concurrent calling for simultaneous development and production. The following chart shows the schedules for the launcher systems as they apply to the B-52H.



ADVANTAGES OF A CSRL ARE NOT CLEAR

Conceptually, the CSRL offers several advantages over unique launchers. Advantages include some undefined degree of improved mission planning flexibility because of the CSRL's ability to carry most nuclear weapons on a single launcher, plus a rapid reloading capability at recovery bases without a time consuming launcher exchange. On the other hand, the CSRL selected by the Air Force carries fewer weapons than unique launchers for most missions and limits growth capacity if future weapons are longer than can be accommodated by a 265-inch CSRL.

Improved mission planning and targeting flexibility may not be fully realized with the CSRL. For three categories of missions (penetration, shoot and penetrate, and standoff) unique launchers may be better matched to mission needs. For example:

- For penetration missions, unique launchers, and racks can carry more gravity bombs and SRAMs than the CSRL on both the B-52H and the B-1B.
- For the shoot and penetrate mission in which mixed loads of ALCM and penetration weapons are involved, both aircraft can carry as many ALCMs externally and more penetration weapons internally using unique launchers and racks.
- For the standoff cruise missile carrier mission, only an ALCM launcher is needed. Weapon mix is not an issue.

The clearest advantage achieved by the CSRL's multipurpose carriage capability is that bombers could be more readily reloaded at dispersal bases following recovery from an initial strike. Since a CSRL can carry most existing nuclear weapons, reloading can be accomplished rapidly without a launcher change and with a minimum of support equipment. This advantage, however, largely applies to B-52H bombers to be rearmed with gravity bombs. In our opinion, the advantages of a CSRL have not been proven to be appreciably greater than unique launchers.

MANAGEMENT COORDINATION OF ALL LAUNCHERS
MUST BE ENSURED

Management decisions concerning CSRL and other launchers for the B-52H, B-1B and ATB require a high level of oversight and concurrence. Yet, these related programs are being managed

independently, are being procured separately, and CSRL decisions are not binding on the B-1B nor ATB programs. Consolidating rotary launcher acquisitions under a single program manager would better ensure that the benefits of competition and opportunities for coordinated configuration and cost control are fully realized.

Although the CSRL and other unique launchers being developed by the Air Force carry the same family of weapons and have similar electro-mechanical requirements, program management and decisionmaking authority are dispersed. The CSRL program is managed by the B-52 Program Office while closely related unique launchers are being managed by the B-1B Program Office. These program offices are independent, managing launcher programs separately, and dealing with different manufacturers. For example, CSRL development is being competed among several prospective contractors, while the B-1B unique ALCM launcher is to be developed and procured as a sole-source item.

Not only is program management dispersed but also major decisionmaking authority for the B-1B program and access to ATB program information are controlled by the Office of the Secretary of Defense. Accordingly, the CSRL program manager can not make decisions binding on these programs, but he must provide a common launcher suitable for each.

Without strong management oversight, opportunities may be lost for maximizing common piece parts and reducing system costs. Combining all rotary launcher and support equipment acquisition efforts under a single program manager could, in our opinion, reduce coordination problems and enhance commonality and competition.

CONTINUED DEVELOPMENT OF BOTH CSRL AND
UNIQUE B-1B LAUNCHERS IS QUESTIONABLE

The Air Force directed that a CSRL be developed for use on the B-52H, B-1B, and ATB. But, program direction for acquisition of the B-1B weapon system does not require that B-1Bs use the CSRL. Rather, it requires that a unique ALCM rotary launcher be developed and acquired for B-1B aircraft. In our opinion, substantial resources could be unnecessarily committed if both a CSRL and unique ALCM launcher for the B-1B are pursued when only one is needed.

Air Force and the Office of the Secretary of Defense officials said that only one ALCM launcher will be acquired for the B-1B. However, if the CSRL is not to be acquired for the B-1B, then it is unlikely it will be acquired at all since commonality across the bomber force would not be achieved.

CONCLUSIONS

While standardization, intuitively should result in lower life-cycle costs, we believe this has not been clearly demonstrated for the CSRL, nor are clear technical advantages evident to us. Current cost estimates support acquisition of several unique launchers rather than a CSRL both in terms of acquisition and life cycle-cost. Unique launchers appear to offer most of the needed capabilities for bomber launchers.

Not only does the timing of the CSRL program require significant concurrency in development and production, but management of launcher programs for the bomber force is dispersed making coordination of designs and schedules difficult. A single manager is one mechanism which could help coordinate these closely related programs and ensure the full benefits of commonality and competition are realized.

Even though the Air Force intends to develop and produce a CSRL, it has not canceled planned development of a unique ALCM launcher for the B-1B which the CSRL is supposed to replace. Continuing both programs would result in unnecessary duplication of effort and unnecessary cost. Further, if a CSRL is not used on the B-1B, launcher commonality for the bomber force would not be achieved.

RECOMMENDATIONS

To resolve these issues concerning the CSRL and unique launchers, including cost; benefits; the risk of concurrency; management coordination; and duplication of effort, we recommend that the Secretary of Defense

- reassess the costs and benefits of the proposed CSRL and alternative unique launchers before obligating further funds for CSRL development or procurement,

- determine whether the concurrency of the CSRL program is acceptable,
- direct the Secretary of the Air Force to consolidate or otherwise strengthen management of launcher acquisition programs, and
- select either CSRL or unique ALCM launcher for the B-1B to avoid unnecessary development expense.

In response to an earlier draft of this report, the Deputy Under Secretary of Defense (Research and Engineering) requested that the Air Force, by January 14, 1983, complete a cost and requirements analysis comparing separate launchers with a common launcher along with a management plan. We believe that action can form the basis for responding to these recommendations.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Chairmen, Senate Committees on Appropriations, Armed Services, Budget, and Governmental Affairs, and the House Committees on Appropriations, Armed Services, Budget, and Government Operations; and the Secretary of the Air Force.

We would appreciate being informed of any actions taken or planned on these matters.

Sincerely yours,


W. H. Sheley, Jr.
Director