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

MISSION ANALYSIS AND
SYSTEMS ACQUISITION DIVISION

B-207025

APRIL 9, 1982

The Honorable Caspar W. Weinberger
The Secretary of Defense

Attention: Director, GAO Affairs

Dear Mr. Secretary:

Subject: Opportunities to Reduce the Cost of Some B-52 Modifications (MASAD-82-30)

Following Presidential approval of the B-1B program, the Air Force revised its plans in October 1981 for structuring the strategic bomber force. In addition to buying 100 B-1Bs, the revision changed the mix of B-52G and H models that are to be equipped to carry cruise missiles. The major changes to this force involve reducing the number of B-52Gs to be converted to cruise missile carriers from 172 to 105, retiring all B-52Ds by the end of 1986, and equipping all 96 B-52Hs with cruise missiles. The 67 B-52Gs not being equipped with cruise missiles are to remain primarily as strategic penetrating bombers but will also assume the conventional bombing role previously assigned to the B-52Ds.

As part of our ongoing review of the overall modernization of the strategic bomber force, we have paid particular attention to the Air Force's plans for modifying the B-52 force. We found that certain costly items may not be needed in view of the missions of the various models of the B-52 force and their expected life in the force. More specifically,

--the offensive avionics system (OAS) modification could be scaled back on 67 B-52Gs by deleting unneeded components for a potential savings of $21.6 million,

--using certain components acquired for B-52Ds on other B-52 aircraft could further reduce OAS funding needs by $33.3 million, and

--a $35 million modification to comply with SALT II may not be needed on B-52Hs that have been modified to carry cruise missiles.

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Each of these issues are discussed individually below.

THE OAS MODIFICATION PACKAGE COULD BE SCALED BACK ON SOME B-52Gs

The Air Force should adjust the OAS modification program to fully reflect the October 1981 revised plan. Air Force plans and funding requests are predicated on acquiring the complete OAS modification package for all B-52Gs and Hs, but certain components of the OAS modification are not necessary for B-52Gs that will not be equipped with cruise missiles. We believe at least $21.6 million can be saved in fiscal years 1983 and 1984 if the unneeded components are not acquired.

The OAS modification program has been ongoing for several years. It replaces existing systems which have low reliability, are costly to maintain, and are difficult to support. This modification program also provides improved capabilities needed for carrying the Air Launched Cruise Missiles as well as more accurate weapons delivery.

The OAS modification includes redundant inertial navigation and computer processor systems to ensure successful cruise missile launch even if the primary units fail. For the 67 B-52G aircraft not being equipped with a cruise missile's carrying capability, this level of redundancy is desirable, but not required, according to Air Force officials. These officials told us other B-52 systems, such as the radar, electro-optical viewing system, and the attitude heading and reference system could provide the necessary position information to complete a nuclear or conventional mission should the inertial navigation system fail. By way of comparison, the recently improved bombing and navigation system installed on B-52Ds contains only one inertial navigation system. The 67 B-52Gs will assume the roles of these B-52Ds as they are retired.

Without the redundancy and reliability requirements for cruise missile missions, one of the three computer processors included in the OAS modification could also be eliminated. Air Force officials told us two computer processors have sufficient capacity to provide mission essential capabilities for the 67 B-52Gs not being equipped with cruise missiles.

The inertial navigation and computer processor systems included in OAS are costly items. Deleting redundant units from the OAS modification planned for the 67 B-52G aircraft could reduce the Air Force's fiscal year 1983 and 1984 OAS budgets by $13 million and $8.6 million, respectively. We have not computed the additional savings expected from reduced installation costs and spare parts procurement if these items were not acquired or

installed in 67 B-52G aircraft. Moreover, since our work focused on high cost items, a comprehensive review of the OAS and the mission needs of these aircraft may reveal other unneeded components and possibly additional savings.

Air Force officials with whom we discussed this issue agreed with our position, but they emphasize these savings must be weighed against increased systems development and support costs. They believe deletion of one inertial navigation system and one computer processor from OAS would require a major revision to the OAS software and necessitate additional flight testing. They also believe the resulting loss of OAS system commonality across the B-52 force would increase support and training costs. Finally, we were told there is insufficient time to reconstruct the OAS system without delaying the installation schedule for the affected aircraft.

The objections raised by the Air Force seem reasonable, but without supporting cost data this reasoning cannot be evaluated. We noted that a cost benefit analysis has not been made in support of this Air Force position. We believe a preliminary study of both the potential savings and associated costs of scaling back OAS on 67 B-52Gs, consistent with the bomber's future mission and expected life in the force, should be done.

USE OF EXISTING ASSETS FROM RETIRED B-52Ds COULD FURTHER REDUCE OAS FUNDING NEEDS

Additional reductions in the OAS funding needs for B-52Gs and Hs could be accomplished by using the inertial navigation systems and computer processors previously acquired for retiring B-52Ds. Air Force officials told us these inertial navigation systems are identical to those used in OAS, and the computer processors could be modified, thereby reducing the number of new units that must be acquired for the Gs and Hs. This could reduce the OAS funding needs by $33.3 million.

With respect to the inertial navigation systems, the Air Force has acquired 108 units for B-52D aircraft. Because B-52Ds are to be retired over the next several years, we believe these units should be considered in determining the number of units to buy for B-52Gs and Hs. The timing of the retirements and the availability of the inertial navigation units is consistent with the needs of the B-52Gs and Hs. If this were done, we estimate a savings of $6 million could be reflected in the 1983 budget request and $15.6 million in the 1984 estimate. We also estimate that $2 million of the fiscal year 1982 funds and $2.5 million of the funds requested for fiscal year 1983 for long lead procurement would also be unnecessary if the existing assets from B-52Ds were used.

The Air Force also bought 110 computer processors for the B-52Ds which are similar to those being acquired for the B-52Gs and Hs. Air Force Logistics Command officials told us the B-52D computer processors could be returned to the manufacturer and modified for use in the B-52G and H modification program. They estimate this modification would cost about half as much as acquiring a new computer processor. Accordingly, we estimated that the fiscal year 1984 program could be reduced by $7.2 million if the computer processors bought for B-52Ds were used instead of acquiring new units.

Air Force officials with whom we discussed this issue agreed that all available assets acquired for B-52D aircraft should be used. They said the current plan is to reduce the fiscal year 1984 procurement of inertial navigation systems and computer processors for B-52Gs and Hs by 44 units because these are not needed by active B-52D squardrons. Once all B-52Ds are retired, now planned for 1986, they said the remaining usable assets will be applied against Air Force requirements that exist at that time.

At a minimum, we urge you to ensure Air Force plans to reduce inertial navigation system and computer processor acquisitions in fiscal year 1984 are pursued and that the 1984 budget reflect these reductions. We further believe these plans should be revised to recognize the remaining 64 navigation units and 66 computer processors being used by active B-52D squardrons. The Air Force's position of waiting until all B-52Ds retire to account for usable assets is, in our opinion, too late. Inertial navigation systems and computer processors for B-52Gs and Hs are to be acquired in fiscal years 1983 and 1984. Failure to account for all usable B-52D assets now could result in buying more items than are needed.

STRAKELETS MAY NOT BE NEEDED ON B-52H CRUISE MISSILE CARRIERS

To comply with SALT II, the Air Force plans to install strakelets 1/ on 96 B-52Hs as each aircraft is modified to carry cruise missiles even though it is not clear strakelets are either needed or are the most cost effective means of satisfying SALT II provisions. The high cost of this project, $35 million, may be avoidable.

Under SALT II, aircraft capable of carrying cruise missiles must be clearly distinguishable from those that do not have this

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1/Strakelets are aerodynamic fairings located where the front of the B-52's wing meets the fuselage.

capability. The agreement requires that all aircraft of a given type be counted as cruise missile carriers as soon as one is so modified unless a distinguishing observable difference is present. Strakelets were chosen by the United States to provide the observable difference between B-52Gs converted to cruise missile carriers and B-52s not yet converted. These devices also house enlarged air inlets that provide more cooling air for B-52G systems including those supporting Air Launched Cruise Missiles.

As a result of the administration's decision to convert all 96 B-52H aircraft to cruise missile carriers, the Air Force also plans to acquire and install strakelets on each B-52H as it is converted to a cruise missile carrier. As stated above, the requirement for installing strakelets on B-52Hs ties back to SALT II's cruise missile carrier identification provisions. Yet, Air Force officials told us the B-52H aircraft are already observably different from other B-52s because of their larger turbofan engines. This difference was recognized by the Soviet Union in discussions leading to SALT II. Air Force engineers also confirmed that strakelets are not needed to meet B-52H cooling requirements.

Accordingly, it is not clear to us that strakelets must be installed on the B-52Hs or that they are the least costly means of satisfying the special identification requirements of the SALT II agreement. A less costly alternative to strakelets, such as a special marking, may be sufficient if any markings are required.

CONCLUSIONS

Key elements of the Air Force's revised plan for the B-52 bomber force include limiting the number of B-52Gs to be equipped with cruise missiles to 105, converting all 96 B-52Hs to cruise missile carriers, and retiring all B-52Ds by the end of 1986. The remaining 67 B-52Gs, not being equipped with cruise missiles, continue as strategic and conventional bombers. The adoption of this force structure offers the opportunity for a potential savings of about $90 million if the recommendations contained in this report are adopted. This savings is summarized on the following page by fiscal years.

Potential Savings

Source of savings	Budget savings available FY 82	FY 83	FY 84	Total
	(in millions)			
Eliminating unneeded OAS components for conventional B-52Gs	$ -	$13.0	$ 8.6	$21.6
Using existing B-52D components	2.0	8.5	22.8	a/33.3
Dropping plans to install strakelets on B-52Hs	-	-	-	b/35.0
Total	$ 2.0	$21.5	$31.4	$89.9

a/Includes $11.7 million savings expected from the Air Force's plans to recognize 44 sets of B-52D assets.

b/Proposed savings over procurement and installation schedule from 1983 to 1990.

RECOMMENDATIONS

Recognizing the administration's strong commitment to eliminate unneeded programs as our military capabilities are strengthened, we recommend you direct the Air Force not to procure any additional OAS modification kits or components until

--fiscal year 1983 and 1984 requirements for inertial navigation systems and computer processors have been reduced to account for those not needed on 67 B-52Gs and those already acquired for B-52Ds and

--a comprehensive review of the OAS package and related B-52 mission needs has been made and any additional unneeded kits or components have been eliminated.

We also recommend you direct the Air Force not to install strakelets on any B-52H aircraft until you are satisfied this installation is necessary and that no less costly alternative is available.

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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 would appreciate receiving a copy of your statement when it is provided to the congressional committees.

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

Sincerely yours,

W. H. Shelley, Jr.
Director