BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Chairman, Subcommittee On Research And Development Committee On Armed Services House Of Representatives

Costs Of Alternative Munitions Lift Trailers For Strategic Bombers

Munitions lift trailers are large support vehicles used to transport and load nuclear weapons on strategic bombers.

GAO's evaluation indicates that acquisition of 90 newly designed lift trailers for B-1B bombers would cost about $10 million less over 15 years than the same number of lift trailers of current design. If competition could be introduced for the existing trailers, a savings of $3 million to $5 million might be realized. Nevertheless, the life cycle cost of the new design trailers would still be $5 million to $7 million lower.

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AUGUST 28, 1985

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NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-218826

The Honorable Melvin Price
Chairman, Subcommittee on Research
and Development
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

On April 16, 1985, you asked us to evaluate the impact of an Air Force proposal to develop and acquire a new type of munitions lift trailer for B-1B bombers instead of acquiring additional quantities of existing lift trailers. Munitions lift trailers are large support vehicles that are used to transport and load nuclear weapons on strategic bombers. The Air Force needs 90 trailers to support B-1B bombers as they are deployed. The new lift trailer would be manufactured by PACCAR, Inc., which was selected by the Air Force following a 1984 industry-wide competition and a subsequent comparison against an existing lift trailer that is being acquired from the AAI Corporation. You also asked us to evaluate the potential savings that might be obtained if procurement of AAI type lift trailers for the B-1B were opened to competition.

In summary, our evaluation of Air Force cost estimates indicates that acquisition, operation, and support of 90 PACCAR lift trailers for the B-1B bombers would cost about $10 million less, over 15 years, than the same number of AAI lift trailers. If competition could be introduced for the existing trailer, a savings of $3 to $5 million might be realized. Nevertheless, the life cycle cost of PACCAR lift trailers would still be $5 to $7 million lower.

BACKGROUND

Because existing munitions lift trailers, which were designed to support B-52 bombers, could not satisfy B-1B lift height requirements, and because the trailers were considered too complex and too costly, the Air Force initiated, in 1984, an industry-wide competition for a simplified munitions lift trailer. At about the same time, the Air Force approved

development of an improved version of the lift trailer being acquired from AAI for B-52 bombers. Since this improved version also met Air Force lift trailer requirements for the B-1B bomber, the Air Force completed a two-step selection process. It selected the PACCAR lift trailer as the best of the new designs offered by industry and then compared this design with AAI's improved lift trailer. This comparison showed both lift trailers met all Air Force performance and schedule requirements but the life cycle cost of the PACCAR trailer was less. Accordingly, in December 1984 the Air Force announced its decision to select PACCAR to develop and produce 90 lift trailers for B-1B bombers. Since that time, there has been considerable congressional debate about which trailer should be procured.

LIFE CYCLE COSTS ARE LOWER FOR PACCAR LIFT TRAILERS

Air Force analysis of life cycle costs for the trailers showed that the cost to acquire and operate 90 PACCAR trailers over a 15-year period would be $11.6 million less than the cost to acquire and operate 90 AAI trailers. We reviewed the life cycle cost estimates and found they were understated by $1.3 million for the PACCAR lift trailer and were overstated by $0.4 million for AAI lift trailers. With these revisions, the life cycle cost of the PACCAR lift trailers was still about $10 million less than that of the AAI lift trailers.

Our review showed that the Air Force analysis did not include certain development costs for PACCAR trailers, such as those for provisioning data, follow-on test and evaluation, and government travel associated with technical data verification. Also, costs for weapon system contractor assistance during lift trailer development and production were overestimated. Finally, certain production costs were omitted, including those for potential engineering changes, support equipment, interim contractor support, transportation, and depot and weapon system manuals. Air Force estimates for operation and support costs for the PACCAR lift trailer appeared to be reasonable. The following table summarizes the Air Force estimate of PACCAR lift trailer life cycle costs and the results of our analysis.

Cost category	Air Force estimate	GAO analysis	Difference
	(000 omitted)		
Development	$ 6,150	$ 6,017	$ (133)
Production	21,600	23,045	1,445
Operation and support for 15 years	4,814	4,814	0
Total	$32,564	$33,876	$1,312

Our review of the life cycle cost estimates for the AAI trailer showed the Air Force overestimated the cost of initial spare parts and did not include the costs of interim contractor support and transportation. Air Force estimates of the operation and support costs for AAI lift trailers appeared to be reasonable. The following table summarizes Air Force life cycle costs for AAI lift trailers and the results of our analysis.

Cost category	Air Force estimate	GAO analysis	Difference
	(000 omitted)		
Development[a]	$ 0	$ 0	$ 0
Production	39,900	39,526	(374)
Operation and support for 15 years	4,312	4,312	0
Total	$44,212	$43,838	$ (374)

[a]Development of the AAI lift trailer was completed in 1984 and therefore is not a relevant cost for a future procurement.

As shown in the tables above, our estimated life cycle costs are $33,876,000 for PACCAR lift trailers and $43,838,000 for AAI lift trailers. Accordingly, our analysis indicates that the cost to acquire and operate 90 PACCAR lift trailers would be about $10 million less than the cost to acquire and operate 90 AAI lift trailers. This difference is almost entirely due to the lower production cost of PACCAR lift trailers.

The results of our evaluation should be used with some caution because the life cycle cost estimates do not reflect potential development risks associated with the acquisition of a new lift trailer. The AAI lift trailer is in production, while the PACCAR lift trailer is only in the design phase of development. Even though there is a firm, fixed price, negotiated

contract with PACCAR covering the majority of development and production costs, there probably is a certain, not quantifiable, degree of risk inherent in the development process that could increase Air Force costs for the PACCAR lift trailer. Accordingly, while available data shows the PACCAR lift trailers would cost less than the AAI lift trailers, the difference in costs may be less than the data suggests.

POTENTIAL SAVINGS FROM COMPETITIVE PROCUREMENT OF CURRENT LIFT TRAILERS

We found that there is general agreement among knowledgeable Air Force officials that two or three companies would be interested in a competition to produce the AAI type lift trailer. Some Air Force officials believe a 10-15 percent unit cost reduction, or an approximate savings of $3 million to $5 million for a procurement of 90 AAI type trailers, may be possible. If a savings of $3 million to $5 million were realized, available data indicates that an equal number of PACCAR lift trailers would cost $5 to $7 million less. Also, Air Force officials told us it would take about a year to conduct this competition and another year or more to deliver the first unit; consequently, delivery requirements for lift trailers at B-1B bomber bases in 1987 would not be met on schedule.

POTENTIAL LIFT TRAILER SCHEDULE PROBLEM

Our work was limited to an evaluation of the life cycle costs of alternative munitions lift trailer procurements. Other factors, however, such as the ability of the contractors to deliver lift trailers when needed, are also important. Because 7 months have passed since PACCAR was selected to develop a new lift trailer, PACCAR must develop, test and produce new lift trailers in less time than originally proposed. Air Force officials told us that they believe PACCAR can still deliver lift trailers when needed, but they acknowledge that the schedule risk is increasing. If a decision on the type of lift trailer the Air Force should buy is delayed further, a serious schedule problem could result for the PACCAR trailer.

IMPACT ON THE TOTAL BOMBER FORCE

During the 15-year period for which lift trailer life cycle costs were estimated, the Air Force plans to produce and deploy Advanced Technology Bombers (ATBs). Since these new bombers will require munitions lift trailers, we examined the impact of procuring either PACCAR or AAI lift trailers for these bombers as well as for B-1B bombers. For purposes of this analysis we assumed 90 lift trailers for use with the ATBs, the same number

as are being procured for the B-1Bs. We performed this analysis because, at about the same time ATBs are deployed, the Air Force plans to retire its older B-52G bombers, which would make about 61 AAI munitions lift trailers available for use with ATBs. Because the Strategic Air Command wants only one type of lift trailer for each type of bomber, the Air Force can either buy 29 additional AAI lift trailers for the ATBs to supplement those available from retiring B-52Gs or buy 90 new PACCAR lift trailers for the ATB and retire the 61 AAI lift trailers when B-52Gs are retired.

To identify the most cost effective lift trailer procurement approach, we compared the life cycle cost estimates of both lift trailers for the total bomber force, including B-52s, B-1Bs, and ATBs. We examined the following alternative procurements: all PACCAR lift trailers, all AAI lift trailers, and a mix of PACCAR lift trailers for B-1Bs and AAI lift trailers for ATBs.

Our analysis shows that procurements of PACCAR lift trailers for both B-1Bs and ATBs would result in the lowest life cycle cost for the total bomber force. A mixed procurement of PACCAR lift trailers for the B-1B and AAI lift trailers for the ATB would cost about $1 million to $3 million more. Comparatively, buying all AAI lift trailers would cost about $6 million more than buying all PACCAR lift trailers.

AGENCY COMMENTS

In its official comments on a draft of this report, the Department of Defense agreed with the information provided. (See appendix.) The Department stated, however, that it could not comment on the accuracy of our assumptions regarding the number of lift trailers that might be required to support the advanced technology bomber since this aircraft's support requirements have not been defined.

OBJECTIVES, SCOPE, AND METHODOLOGY

We conducted this evaluation during May and June 1985 to determine the life cycle cost impact of developing and acquiring a new type of munitions lift trailer in lieu of buying additional quantities of an existing lift trailer. We analyzed the Air Force life cycle cost evaluation of PACCAR and AAI lift trailers. We discussed the individual cost elements included in this evaluation with Air Force officials responsible for the elements, and made certain changes to reflect more current information. We also identified several cost categories that had been omitted, obtained estimates for these omitted costs, and reconciled our revised cost estimates with the Air Force.

Using these life cycle costs, we developed and analyzed the life cycle costs of alternative lift trailer procurement approaches the Air Force could adopt in meeting its lift trailer requirements over the next 15 years.

The life-cycle cost estimates we obtained from the Air Force and used in our evaluation were in constant 1984 dollars. Additionally, while acquisition cost estimates were reasonably certain since they were based on firm, fixed-price, negotiated contracts, government costs associated with operation and support were estimates derived from the most current information available. Accordingly, these estimates are suitable for comparing alternative procurements but do not reflect actual costs the Air Force would incur in the future.

Our review was made in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Chairmen, Subcommittees on Defense, House and Senate Committees on Appropriations, and House and Senate Committees on Armed Services; and the Secretaries of Defense and the Air Force. We will also make copies available to others upon request.

Sincerely yours,

David A. Lattleton

for Frank C. Conahan
Director

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

ACQUISITION AND
LOGISTICS

13 AUG 1985

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report, "Cost Alternatives Of Munitions Lift Trailers to Support Strategic Bombers," dated July 3, 1985 (GAO Code No. 392144/OSD CASE No. 6707A).

DoD has carefully reviewed the draft report. The report is correct and accurate in its conclusion that the Air Force is pursuing the most cost effective course in satisfying the munitions lift trailer requirements to support strategic bombers. The DoD, therefore, concurs with the GAO findings, with one minor exception. The DoD cannot comment on the accuracy of the GAO assumptions with regard to the number of lift trailers that might be required to support the force of Advanced Technology Bombers (ATB), since support requirements for the ATB are still being defined.

The opportunity to comment on the draft report is appreciated.

Sincerely,

James P. Wade, Jr.

(392144)

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