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The Air Force's C-5B Should Cost Study

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Before the
Subcommittee on Oversight and
Investigations
Committee on Energy and Commerce
House of Representatives



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Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before the Subcommittee today to discuss the Air Force should cost study on the final option for 21 C-5B aircraft. Specifically, I will address the events which led to the Air Force's decision to conduct a should cost study and the methodology upon which the study was based. I will also comment on how the study's objective and conduct compared with guidance and policy established in Federal Acquisition Regulations and Air Force Should Cost Pamphlet (70-5).

EVENTS LEADING TO SHOULD COST STUDY

In December 1982, the Air Force awarded Lockheed Georgia Company a firm fixed price contract with options for the next four fiscal years for up to 50 C-5B aircraft. The initial contract price, including options, of \$7.8 billion for the 50 aircraft has subsequently been adjusted to about \$7.2 billion, including downward adjustments of \$674.2 million in accordance with economic price adjustment (EPA) provisions in the contract. To date the Air Force has acquired 29 aircraft under the basic contract and fiscal year 1984 through fiscal year 1986 options at a total price, including adjustments, of about \$4.8 billion. Twenty-one additional aircraft are included in the fiscal year 1987 option which has not been exercised. The option price in the contract is about \$2.4 billion. The Air Force has authorized long lead contractor efforts and obligated \$348.9 million toward the option price.

The chart below shows the original contract and option quantities and prices as originally negotiated, and the quantities and prices, as modified, through October 31, 1986. The contract modifications included a revision of prices related to the economic price adjustment clause, a movement of two aircraft from the fiscal year 1985 to the fiscal year 1987 option, and other miscellaneous changes.

C-5B CONTRACT PRICES

	<u>Original</u>		<u>As modified through Oct. 31, 1986</u>	
	<u>Quantity</u>	<u>Total price (millions)</u>	<u>Quantity</u>	<u>Total price (millions)</u>
Basic contract (FY 1983)	1	\$ 578.5 ^a	1	\$ 565.1 ^a
Option 1 (FY 1984)	4	1,126.0 ^a	4	1,070.6 ^a
Option 2 (FY 1985)	10	1,687.5 ^a	8	1,260.0 ^a
Option 3 (FY 1986)	15	2,036.7	16	1,872.1
Option 4 (FY 1987)	<u>19</u>	<u>2,393.3</u>	<u>21</u>	<u>2,443.4</u>
	50	\$7,822.0	50	\$7,211.2
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^aIncludes costs associated with production start up, tooling, and test equipment.

Exercise of the fiscal year 1985 option

Acquisition regulations require the Air Force, before exercising an option, to determine whether the price is still fair and reasonable. The contract called for the Air Force to decide whether to exercise the fiscal year 1985 option by November 30, 1984. In May 1984, the Air Force program office requested the Air Force plant representative to make a limited analysis of the costs being incurred by Lockheed, to compare with the price negotiated for the fiscal year 1985 option. The Air Force Audit Agency had initiated a similar, but independent, survey of the fiscal year 1985 option in April 1984.

Based on these preliminary analyses which projected that Lockheed's costs would be less than estimated, the program office requested in August 1984 that Lockheed provide certified cost or pricing data for the fiscal years 1985 through 1987 options. Lockheed took the position that certified cost or pricing data

was not required prior to exercising an option and offered to provide updated financial data which would give the Air Force a basis for deciding whether to exercise the option. Accordingly, the program office, based on the provisions of Defense Acquisition Regulation 3-807.6(e), concurred that certified cost or pricing data was not required and accepted Lockheed's offer to provide updated financial data. The data was received by the program office in September 1984.

In analyzing Lockheed's financial data, the Air Force program office recognized two significant factors. First, inflation was lower than the forecasted rate used to price the contract. Second, the contractor could realize excessive profit because it was experiencing lower costs than it had estimated when the prices of the basic contract and the options were negotiated.

The EPA clause in the contract provided for adjustment of the prices if actual inflation differed from the initial estimates. Accordingly, the program office and Lockheed agreed to reduce the estimated inflation rate specified in the EPA clause from 7.8 to 5.6 percent. This change resulted in a \$439.6 million reduction in the contract price.

Government analyses also identified a potential for excessive profit. The Defense Contract Audit Agency (DCAA) stated in a June 21, 1984, report that Lockheed's original contract proposal included "significant levels of excessive labor and labor related costs" due in part to lower wage rates negotiated in the collective bargaining agreement.¹ In August 1984, preliminary results of the Air Force Audit Agency survey

¹The Air Force is currently pursuing a defective pricing case based on Lockheed's alleged failure to provide current, accurate, and complete information about its negotiating position with labor unions.

cited above estimated a profit rate of 29 percent including extra profit of \$162 million on the fiscal year 1985 option and \$315 million on the fiscal years 1986 and 1987 options.

The program office's financial assessment of the fiscal year 1985 option price projected a low and high estimate of profit that constitutes a range of 5.4 percent, most of which was above the 15 percent negotiated profit level. Program office officials said that there was uncertainty about profit projections because the program was still in its early stages (the first aircraft was not yet delivered). Although these officials were concerned, they believed at the time, that there was insufficient information to justify renegotiating the contract.

In order to keep the contract options intact, the Air Force and Lockheed negotiated a profit-sharing clause whereby the government would receive a percentage of all profits above 17 percent. Air Force officials told us the profit sharing clause was added as a safeguard against excessive profits and to address the concerns raised by other organizations as described above.

After the contract had been restructured to adjust for inflation and add the profit sharing clause, the Air Force concluded that the fiscal year 1985 option price was fair and reasonable and exercised the option on December 20, 1984. The Air Force Audit Agency concluded in their May 28, 1985, final report that "the Air Force took satisfactory action to restructure the contract". However, the Commander of the Air Force Contract Management Division stated that while this profit sharing arrangement was a "tremendous improvement," it had drawbacks. For example, it ". . . allows the contractor to generate unnecessary costs which would otherwise have to come out of their profit. . ." In other words, the government would, in effect, share in funding such costs through the profit sharing provision.

Exercise of the fiscal year 1986 option

To assess the price of the fiscal year 1986 option for 16 aircraft, the program office again requested that the contractor provide updated financial data on the option price. That data and other information was evaluated by the Air Force and the Air Force Plant Representative.

The Defense Contract Audit Agency warned that the contractor's financial data, was not accurate, current, and complete and should not be used as the basis for deciding whether to exercise the option. The Commander of the Air Force Contract Management Division said that failure to obtain certified cost or pricing data could adversely affect the price the Air Force would ultimately pay for the 50 aircraft. The Commander said that if the prices of the options were renegotiated the Air Force would receive the full benefit of cost reductions rather than a percentage share based on the profit sharing clause. As previously discussed, the program office believed the Defense Acquisition Regulations did not require Lockheed to submit certified cost or pricing data.

Air Force assessments of the fiscal year 1986 option showed profit levels above 17 percent. However, the program office did not believe profit at that level would be excessive when all factors were considered. For example, if a determination were made to renegotiate the option, the contractor could include the engine in the cost base for profit calculation. If engine costs were included in profit calculations, the program office's estimate of profit would be considerably lower. The program office further reasoned that opening the contract to renegotiation could result in the Air Force paying profit on the engine costs, and could also result in increased subcontract costs if Lockheed were directed to obtain new subcontract

proposals. The program office concluded that "...the best interests of the Government will be served by exercise of the FY 1986 C-5B option as currently priced". Subsequent to exercising the fiscal year 1986 option the contract price was reduced \$223.6 million in accordance with provisions of the EPA clause.

In a November 14, 1985, memo giving final approval to exercise the fiscal year 1986 option, the Commander, Air Force Systems Command, stated that the Air Force should plan to be in a position to renegotiate the fiscal year 1987 option if required by further cost experience or by program changes in the budget process.

The fiscal year 1987 option and
the should cost study

In February 1986, the program office asked Lockheed to submit a proposal supported by current, accurate, and complete cost and pricing data for 19 aircraft, with variations in quantity for increases or decreases of up to four aircraft. The Air Force told Lockheed the new proposal was needed because of program and budget uncertainties. However, subsequent correspondence between the Air Force and Lockheed indicated that the primary concern was whether the price was fair and reasonable. Air Force officials told us that increasing estimates of Lockheed profits was a major factor in requesting a proposal.

Lockheed initially refused to submit a new proposal because it had a fixed price contract, with options, for up to 50 aircraft and believed the requested action would affect this contractual arrangement. It was not until after five additional requests by the Air Force and discussion between the Commander, Air Force Systems Command, and the Chief Executive Officer,

Lockheed Georgia Company, that Lockheed agreed to submit a new proposal for 21 C-5B aircraft. The proposal was submitted to the Air Force on June 6, 1986.

The Air Force's decision to do a should cost study coincided with its request for a new proposal from the contractor. The Air Force made the decision on the basis that a should cost study was needed to assist in determining whether the fiscal year 1987 option should be exercised or renegotiated. Based on the results of the study, the Air Force notified Lockheed on September 26, 1986, that it would not exercise the fiscal year 1987 option because it no longer considered the existing option price to be fair and reasonable, notwithstanding the profit sharing provision which had been added to the contract.

SHOULD COST STUDY WAS LIMITED
BY TIME AND DESIGN

While the should cost study was used to support the decision to renegotiate the contract, it did not include some of the elements of a should cost study as found in Federal Acquisition Regulation (FAR) 15.810, Air Force supplements to the FAR, or the Air Force Should Cost Pamphlet (70-5). Reasons given by the Air Force for not following the guidance include

- there was insufficient time to effectively plan and accomplish an in-depth study,
- the study's scope and methodology were limited to meet the Air Force objective of determining whether the fiscal year 1987 option should be exercised, and
- certain areas for analysis, in particular those aimed at improving plant efficiency and operating effectiveness, were not emphasized because Air Force officials felt

there was not enough time left in the C-5B program to realize significant savings from recommended improvements.

Because the study was tailored to meet time constraints and a limited objective the Air Force is currently conducting additional fact-finding and analyses to establish a negotiating position.

Insufficient time to effectively plan and accomplish an in-depth study

Lockheed's new proposal was submitted on June 6, 1986, and the should cost team began work at the contractor's plant about two weeks later. At this time, the Air Force's schedule showed that they wanted to make a decision by September 29 whether or not to exercise the option. This would allow adequate time to renegotiate the option price, if necessary, and exercise it by November 30. Action by November 30 was necessary to avoid increased cost resulting from disruption of the program.

Air Force officials said this was a very compressed time schedule to effectively plan and accomplish an in-depth study as set out by criteria and practice. The should cost team chief believed that Lockheed's proposal was needed before work could start and that the late submission of the proposal served to limit the time available to do the job. The should cost team first met about one week after the proposal was received and began work on-site about one week after that.

Because of the compressed schedule, formal detailed study plans--which Air Force guidance states are critical to performing an effective study--were not prepared. Instead, most planning was done on an informal basis as the study progressed and was largely based on the study team members experience. Team

participants told us that their experience was essential in identifying areas for analysis. Most added that more up-front planning would have been helpful.

Fact finding and analysis took place at the contractor's plant during June through August, and study team members spent about 6 weeks on-site. We were told that about 3 to 4 months is usually needed to perform an in-depth study.

Scope and methodology of the study were limited

The purpose of the should cost study, as well as the compressed time schedule, limited the scope of the Air Force's review and the methods used to analyze the contractor's proposal. The FAR states that one objective of a should cost study is to develop a negotiating position. However, as discussed above, the stated objective of the study was to evaluate the contractor's proposal in sufficient detail to decide whether the option should be exercised. We were told the study went into sufficient depth to make this decision but that additional fact finding is necessary to develop a negotiating position.

Air Force management identified areas where a should cost study was not performed and recommended areas where follow-up was necessary to develop a negotiating position. For example, reviewing officials found that the team's position on material costs was heavily influenced by historical prices paid by Lockheed for the same or similar items. They also found that Lockheed did not have an Air Force approved purchasing system from November 1984 to March 1986. As a result, they recommended that the team needed to assess the impact the discrepancies in the purchasing system had on the price history and whether material prices were the lowest obtainable.

Subcontracts was another area identified where a should cost study was not performed. Rather, the Air Force performed a cost analysis of subcontract costs which was considered a prudent method of evaluation. The Air Force believed that further efforts to evaluate or reopen these subcontracts would not result in a lower C-5B price because of the potential that total subcontract costs would increase if Lockheed were directed to obtain new subcontract proposals.

Economy and efficiency reviews
were not emphasized

One of the major points that differentiates should cost studies from more limited cost analyses is a should cost study's emphasis on identifying uneconomical, inefficient, or outdated practices in the contractor's management and operations. A should cost study quantifies findings in these areas in terms of their impact on costs. However, Air Force officials told us that economy and efficiency issues were not emphasized on the C-5B study. They said there was not enough time remaining before completion of the program to implement recommended changes (e.g., acquisition of new equipment, alterations to plant layout etc.) and obtain payback.

For example, the Air Force decided that a review of General Electric's manufacturing methods, processes, and labor standards would be nonproductive because the potential for benefits from such a review was considered to be minimal. According to Air Force officials, should cost recommendations to improve efficiency normally require substantial lead time for implementation. They felt that sufficient time did not remain for cost effective implementation of significant changes, such as new capital equipment or plant layout changes, because the last engine from the fiscal year 1987 procurement would be delivered in August 1988. As such, the engine contract was evaluated using

cost analysis techniques looking at past cost data which, according to the Air Force, was appropriate given the circumstances.

CONCLUSIONS

In retrospect, concern that Lockheed might substantially underrun the expected costs of producing the C-5B aircraft indicates that the Air Force should have given greater consideration to renegotiating the C-5B contract as early as mid-1984. At that time there was almost total agreement that the contractor was expected to achieve a profit rate higher than the 15 percent which the Air Force had negotiated. However, because there was uncertainty about the probable amount of the underrun the Air Force chose to insert a profit sharing clause into the contract to reduce any profit over 17 percent rather than renegotiate the contract.

While the profit sharing clause offered some protection against excessive profit it did not alleviate concern about the fairness and reasonableness of the contract price. Accordingly, the Air Force notified Lockheed that a new proposal was needed in order to determine if the price of the fiscal year 1987 option was fair and reasonable. To evaluate this proposal and determine whether the fiscal year 1987 option should be exercised or renegotiated the Air Force chose to perform a should cost study.

Because the should cost study did not start until June 1986 and was limited in objective, scope, and methodology, opportunities were missed which might have justified negotiating a lower contract price. The study was essentially used to determine whether the last option should be exercised, and to begin to establish a negotiating position if it were decided not to exercise that option under contract terms that existed at that

time. The Air Force eventually decided to renegotiate the option price, and is currently conducting further analysis to define a negotiating position.

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In addition to our work on the should cost effort we were asked to comment on our work on C-5B spare parts. We have previously briefed the Subcommittee staff on this work. We were concerned because the Air Force was procuring spare parts through Lockheed rather than directly from vendors. In fact, the Air Force had previously procured some of the spares from vendors. In addition, the Air Force used an unpriced contract action called a provisional item order (PIO) to place spare parts orders with Lockheed. Under the PIO, orders are placed at estimated prices that will be definitized (negotiated) at a later date. Some of these estimated prices were higher than prices paid previously for the same items. The Air Force in a written response, dated October 31, 1986, stated that the PIO would no longer be used to purchase spares when the items had been previously purchased from vendors. We are continuing to look into various aspect of the C-5B spares issue. For example, we are reviewing how requirements for war reserve material and forward supply support are determined and the procedures followed to account for deobligated funds. We will keep the Subcommittee fully apprised of the progress of our review.

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This concludes my prepared testimony. I would be happy to answer any questions you may have. Thank you.