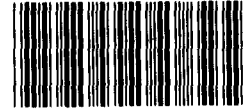


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Testimony



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Air Force Procurement of  
C-5 Crash Damage Kits

Statement of  
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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 be here today to give you a status report on our review of actions by the Air Force in acquiring C-5 aircraft crash damage kits from Lockheed Aeronautical Systems Company. The C-5 system managers concluded that the kits would save time and money in repairing future crash damage. The Air Force began buying the kits in 1986.

On July 29, 1988, you asked us to review the purchase of the kits by the San Antonio Air Logistics Center (ALC) to (1) examine the circumstances leading to the ordering of kits, (2) examine whether the Air Force justified that acquiring the kits made good sense, (3) review the procurement process, including the pricing of parts, and (4) review an allegation that a U.S. Air Force Colonel (now retired) violated conflict of interest laws during the procurement process.

We found that

- the C-5 system managers identified requirements for crash damage repair kits based on two crashes and one lightning strike, which did not provide sufficient data for making such a determination;
- the C-5 system managers, after identifying requirements, did not make an economic analysis to evaluate the soundness of the acquisition;
- the Air Force did not fully achieve expected cost reductions for parts because delays in ordering the kits precluded a tie-in to C-5B production;
- Air Force officials questioned the type of parts being procured and the prices being proposed by Lockheed; and

-- the Colonel did not comply with provisions in a conflict of interest law requiring that he report his employment contacts and disqualify himself from procurement functions involving Lockheed; however, we did not find any evidence to indicate that his actions regarding the purchase of the kits were influenced by employment contacts.

#### BACKGROUND

The Air Force began considering the acquisition of C-5 crash damage kits after extensive damage occurred to the undersides of two C-5As in crash landings in 1983--the first, on July 31, 1983, at Shemya Air Force Base (AFB) and the second, on November 17, 1983, at Travis AFB. On February 3, 1984, Lockheed Aeronautical Systems Company, formerly Lockheed-Georgia (the manufacturer of the C-5) developed preliminary information for C-5 crash damage kits. The kits were planned to include structural components and other parts that could be used in repairing certain crash damage. On March 14, 1984, Lockheed officials discussed the kits with San Antonio ALC officials, who are responsible for C-5 repairs. The San Antonio ALC added components and parts to repair outer wing sections to the crash damage kit requirements after the outer wing of a C-5A aircraft was damaged by lightning at Dover AFB on September 9, 1985.

The Air Force repaired the three C-5A aircraft and returned them to service at a cost of about \$51 million, which included both parts and labor. Returning the aircraft involved in the landing accidents to service required about 3 years. ALC officials said that the cost of parts to repair the three aircraft were significantly lower because such parts were available from the C-5B production line and the wing modification program. Also, the officials said structural parts with long lead times were available, which would have otherwise caused extensive delay in returning the aircraft to service.

At the San Antonio ALC, the Airlift Aircraft Systems Program Management Division is responsible for determining logistics support requirements for the C-5. The Colonel, who had been Chief of the Division since June 1984, signed a memorandum to the ALC Resource Management Division dated April 25, 1986. This memorandum specified the requirement and acquisition plan for C-5 crash damage repair kits and requested funding. The ALC issued two provisioned item orders to Lockheed for 147 kits totaling \$68.6 million. The first order was on December 8, 1986, for an estimated amount of \$44.6 million, and the second was on February 27, 1987, for an estimated amount of \$24 million. These kits would repair from two to three aircraft with damage to the underside of the fuselage and two aircraft with damage to outer wings. They were to consist of structural parts with long lead times and other parts for use in repair of potential future mishaps. However, the orders did not define the specific types of parts, quantities, and prices. Lockheed, which had previously identified some of the major components and assemblies in a statement of work, was to further define the kit parts in price proposals before final negotiations.

Before the kits were ordered, the Colonel, who had signed the April 1986 memorandum, retired from the Air Force on July 1, 1986. He began working for Lockheed on February 2, 1987, as a regional representative in the International Marketing Division.

An attachment to this statement identifies key events in the acquisition of C-5 kits.

#### AIR FORCE ACQUISITION OF C-5 CRASH DAMAGE KITS

##### Requirements Based on Insufficient Data

Data on the three C-5A accidents were used in identifying crash damage kits requirements. However, these accidents do not provide

sufficient data for valid statistical projections of the number, timing, or severity of future C-5 accidents. The Air Force does not have servicewide guidance for planning, developing, and acquiring crash damage kits. The uncertainties of aircraft accidents and the diversities of damages that could result create difficulties in determining requirements. For example, the C-5 kits cannot be used to repair a C-5A severely damaged in a fire at Travis AFB on December 30, 1988. The aircraft has a hole about 13 feet by 33 feet in the upper fuselage.

#### Economic Analysis Not Made

The C-5 system managers did not have a sound basis for identifying the kit requirements. Furthermore, they did not make an economic analysis. Air Force regulations suggest that an economic analysis should be prepared when deciding to commit resources if total investment exceeds \$1 million. In this case, in which data on requirements are insufficient and future costs and benefits are very uncertain, an economic analysis would have offered a means of systematically assessing both monetary and non-monetary costs and benefits across alternatives. An economic analysis helps to reach conclusions about the soundness of an acquisition, and it would have provided information on whether buying the crash damage kits in advance of future needs is prudent.

#### Delayed Procurement Prevented Full Tie-in to Production

The Air Force's prime cost justification for the kits was that buying the parts through a tie-in to the C-5B production would provide parts at about 50 percent of future costs. Air Force planning for the kits began early enough to achieve a tie-in with production. However, more than 2 years passed before the kits were ordered, which prevented the Air Force from fully achieving its primary goal of a tie-in. Air Force officials stated that work on other programs with higher priorities caused the delay.

On March 19, 1986, Lockheed notified the ALC that kit requirements were needed by June 1986 to ensure the concurrent manufacture of some parts with C-5B production. The ALC set a November 30, 1986, target date for submission of the orders to make the production tie-in. Both of the kit orders, however, were submitted after the target date. The Air Force has not determined to what extent a tie-in to production was achieved. The price proposals from Lockheed indicate the expected cost reductions were not achieved. Air Force officials are questioning the proposals.

Lockheed's late submissions of pricing proposals and other pricing problems have caused delays in definitizing the orders. Lockheed submitted the last pricing proposals in September 1988, about 18 months later than originally required. The primary reason for the delay was the complexity of the kits, which contain over 6,600 parts.

#### Proposed Prices Being Questioned

Lockheed's proposed prices for the kit parts were substantially higher than those paid for the same parts under the C-5B production contract. Subsequently, the Air Force Plant Representative Office (AFPRO) at Lockheed reviewed 18 sample parts and noted that Lockheed proposed prices did not account for transfer from excess C-5B production parts. AFPRO's analysis showed Lockheed's recorded value at about one-tenth of the price proposed to the Air Force. For example, a shim with a recorded value from the production line of \$22.09 had a proposed price of \$211.13. In response to AFPRO's concern about transfers from production, Lockheed proposed about a \$1 million reduction to recognize transfers from production.

Air Force officials believe that ongoing reviews will resolve

pricing concerns before contract negotiations. They anticipate that the negotiation will not be completed before May 1989.

#### Types of Parts Being Questioned

Even though the Air Force's primary justification for the method and timing of the acquisition was to buy structural parts with long lead times during C-5B production runs, the kits include many small items, such as washers, fasteners, shims, and pads, that are not structural components with long lead times. A cost analyst from the Air Force Contract Management Division, Air Force Systems Command, questioned the type of parts being ordered. After a cursory review of parts descriptions and Lockheed's proposed prices in June 1988, the analyst's trip report noted that the Air Force is buying items it may not need and that might be purchased at less cost elsewhere.

#### POTENTIAL CONFLICT OF INTEREST ISSUES ASSOCIATED WITH C-5 CRASH DAMAGE KITS

The Colonel involved in the alleged conflict of interest had employment contacts with Lockheed that are covered by a conflict of interest statute. However, we did not find any evidence to indicate that the Colonel's actions in the acquisition of C-5 kits were influenced by potential employment. His major role appears to have been limited to signing the April 25, 1986, memorandum, which specified the kit requirement and requested funding. The memorandum was prepared by an engineer, according to the engineer and other officials. The engineer said that a Branch Chief in the Colonel's division directed him to prepare the memorandum. The memorandum was approved by the engineer's supervisor and the Branch Chief before the Colonel signed it.

The Branch Chief and the Deputy Chief of the Airlift Aircraft Systems Program Management Division were the primary promoters of

the kits, according to their statements and those of other ALC officials. The Deputy Chief stated that he developed the idea for the kits while assigned as the Military Airlift Command (MAC) representative at the ALC. In a 1985 memorandum to MAC Headquarters, he summarized the request for the kits and suggested that MAC emphasize the importance of the kits to the ALC. He stated that procurement of the C-5 kits was one of his prime objectives when he became Deputy Chief in March 1986 and that the Colonel had little involvement in the planning to procure the kits. In addition, the Colonel's supervisor in the Directorate of Materiel Management stated that the procurement was supported by several other ALC officials.

The Colonel signed the April 1986 memorandum before any identified contact with Lockheed about employment. When he retired on July 1, 1986, the kits were still an unfunded requirement. We did not find any evidence that the Colonel had any role in the procurement after his retirement.

Legal Requirements Not Met  
After Employment Contacts

Contacts between defense contractors and certain Department of Defense (DOD) officials, identified as "covered defense officials," regarding future employment opportunities for the officials are governed by 10 U.S.C. 2397a, which became effective in November 1985. As a covered defense official who participated in the procurement function, the Colonel was required by section 2397a to report contacts concerning employment with a defense contractor to both his supervisor and the designated agency ethics official and disqualify himself from future participation in procurement functions with that contractor. The Colonel did not comply with the reporting requirement or disqualify himself.

The Colonel participated in procurement functions as defined by section 2397a for the C-5 kits, as evidenced by his signature on



the April 1986 memorandum. That memorandum specified the requirement for the kits and the contractor that would perform the work, described an acquisition plan, and detailed the funding requirements. In response to the memorandum, the Resource Management Division at the ALC informed the Colonel in May 1986 that he "...as the originating activity, should prepare fully defined, quantifiable, defensible procurement package(s)."

We identified three contacts the Colonel had with Lockheed concerning future employment before he retired from the Air Force. He spoke with Lockheed officials on two occasions regarding future employment and submitted an application to Lockheed before he retired. However, he did not interview with Lockheed until after he retired and did not receive a confirmed offer of employment with Lockheed until December 23, 1986, about 6 months after he retired. Nevertheless, the Colonel's involvement with the procurement from Lockheed and his contacts with Lockheed about future employment required that he comply with the reporting and disqualifying requirements.

Under section 2397a employment contacts are to be reported to both the supervisor and the designated agency ethics official. The Colonel told us that although he was unaware of the requirements of section 2397a when he was nearing retirement (the DOD regulations addressing this section were not issued until May 6, 1987), he did recall telling his immediate supervisor and possibly the Major General, who heads the ALC, that he filed an employment application with Lockheed. However, neither of the officials remembered the Colonel notifying them of contacts with Lockheed about potential employment. Neither records of the Judge Advocate, the designated agency ethics official for the ALC, nor the Colonel's statements indicate that the Judge Advocate's office was notified of the contacts.

Additionally, neither Air Force records nor the Colonel's statements indicate that he was disqualified from dealings with Lockheed. He continued to function in his usual capacity and had further contact with Lockheed in procurement functions as defined by section 2397a. In June 1986 he made a visit to Lockheed to review the status of ongoing work.

Under section 2397a, the Secretary of Defense is authorized to determine if a person has failed to report promptly contacts with a contractor or failed to disqualify himself or herself if required to do so. Furthermore, penalties are identified. The section provides that where the Secretary so determines "...(i) the person may not accept or continue employment with the defense contractor during the 10-year period beginning with the date of separation from government service; and (ii) the Secretary may impose on the person an administrative penalty in the amount of \$10,000, or in such lesser amount as may be prescribed by the Secretary, taking into consideration all the circumstances."

We have concluded that the Colonel did not comply with the requirement of section 2397a; however, we did not find any evidence to indicate that his actions regarding the purchase of the kits were influenced by employment. However, we plan to refer this matter to the Secretary of Defense for his determination.

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This concludes my prepared statement. At this time, I will respond to any questions you may have.

CHRONOLOGY OF KEY EVENTS IN ACQUISITION OF C-5 KITS

<u>Date</u>	<u>Event</u>
December 1969 to May 1973	Air Force procured 81 C-5A aircraft from Lockheed.
December 1982	Air Force awarded Lockheed a contract with options for 50 C-5B aircraft.
July 31, 1983	C-5A was damaged in a crash landing at Shemya AFB, Alaska.
November 17, 1983	C-5A was damaged in a gear-up crash landing at Travis AFB, California.
February 3, 1984	An internal Lockheed document provided preliminary information for establishing crash damage kit configurations.
March 14, 1984	San Antonio ALC and Lockheed officials met concerning the procurement of C-5B crash damage kits.
December 14, 1984	First statement of work was prepared for C-5 fuselage crash damage kits.
April 19, 1985	The ALC Airlift Aircraft Systems Program Management Division prepared an internal memorandum requesting that a request for proposal be initiated for crash damage kits.
August 1, 1985	Statement of work prepared in December 1984 for fuselage kits was revised.
September 9, 1985	The outer wing of a C-5A was damaged by lightning at Dover AFB, Delaware.
November 4, 1985	An ALC internal memorandum suggested that kits should be procured using the revised statement of work and that Lockheed would be providing a rough order of magnitude price on the statement of work.

March 19, 1986

A Lockheed letter stated that orders for some parts had to be placed by June 1986 to ensure manufacture concurrent with the C-5B production.

April 1986

The Colonel, who was the Chief of the Airlift Aircraft Systems Program Management Division, announced his intention to retire and submitted the paperwork. Retirement orders were prepared on April 23, 1986.

April 25, 1986

The Colonel signed a memorandum establishing requirements, acquisition plan, and funding requirements for C-5 crash damage repair kits to the ALC's Resource Management Division.

May 1986

The Colonel told a Lockheed official that he filed paperwork to retire and would be seeking employment after retirement. The Lockheed official provided this information to the Director of Lockheed's International Marketing Division.

May 15, 1986

On or about this date, the Colonel and a Lockheed official discussed employment, and the Colonel requested an application for employment.

May 19, 1986

Lockheed sent the Colonel an application for employment.

May 24, 1986

The Colonel completed an application and later submitted it to Lockheed. Also, according to the Colonel, he discussed the Lockheed application and contacts with his immediate supervisor and the ALC Commander.

May 28, 1986

The ALC added the crash damage kits requirement for \$88 million to the March 1986 budget cycle. MAC Headquarters initiated the action and the C-5 System Program Manager concurred with it.

May 28, 1986  
The Colonel signed Statement of Employment (Form 1357), as required by DOD regulations. The statement, which enables DOD to determine whether retired regular officers are engaged in activities prohibited by laws or regulations, reflected that the Colonel would not be employed as of the date of his retirement (July 1, 1986).

June 2, 1986  
Lockheed received the Colonel's employment application.

June 2 to 5, 1986  
The Colonel made a visit to Lockheed to review the status of ongoing work.

July 1, 1986  
The Colonel retired from the Air Force.

July 1986  
A Lockheed official interviewed the Colonel for possible employment but told him that a position was not available at that time.

July 28, 1986  
The Airlift Aircraft Systems Program Management Division prepared an internal memorandum on preliminary planning information, outlining details of the type/number of kit parts to be procured.

July 29, 1986  
MAC Headquarters sent a message to the Director of Materiel Management at the ALC supporting the procurement of the C-5 kits.

July through  
December 1986  
The retired Colonel sought employment with several companies.

September 30, 1986  
The ALC prepared a memorandum describing the management philosophy and general strategy for provisioning crash damage kits.

November 30, 1986  
The San Antonio ALC established this date as the target for awarding kit orders to tie-in to C-5B production.

December 2, 1986                   The ALC notified Air Force Headquarters and Air Force Logistics Command (AFLC) of intentions to obligate \$44,560,816 (fiscal year 1987 spare parts funds) for the kits under an undefinitized contract.

December 8, 1986                   The ALC issued the first order for C-5 crash damage repair kits at an estimated value of \$44,560,816.

December 23, 1986                  Lockheed offered the Colonel employment.

January 5, 1987                    The AFPRO, in an internal document, decided to decline delegation of negotiation for the first order because the AFPRO believed the items being bought were not the type of items authorized under the provisioned item contract.

January 6, 1987                    Lockheed sent confirmation of the Colonel's acceptance of the employment offer.

January 15, 1987                  AFPRO notified the San Antonio ALC of the decision to decline negotiation authority for the first order.

February 2, 1987                  The Colonel reported as an employee in Lockheed's International Marketing Division responsible for marketing C-130 aircraft in Middle Eastern countries.

February 3, 1987                  The Colonel signed an updated Statement of Employment (Form 1357) that showed new employment with Lockheed.

February 18, 1987                 Lockheed requested that the submittal date for price proposal for kits be set no later than July 15, 1988, rather than within the 90-day due date of March 8, 1987, because of the complexity and magnitude of the order.

February 26, 1987

The ALC notified Air Force Headquarters and AFLC of its intentions to obligate \$24,086,816 (\$23,552,066 of fiscal year 1985 spare parts funds and \$534,750 of fiscal year 1986 funds) for the kits under an undefinitized contract.

February 27, 1987

The ALC issued the second provisioned item order at an estimated value of \$24,086,816 for C-5 crash damage kits. These kits were in addition to the kits under the first order.

June 3, 1987

AFPRO notified San Antonio ALC of the rationale (as indicated in the January 1987 internal document) for declining negotiation authority for the kit orders.

August 19, 1987

The ALC affirmed AFPRO's responsibility to negotiate and definitize the two crash damage kit orders.

January 25, 1988

The ALC notified AFPRO that the kit orders were proper use of provisioned item orders and that the ALC would assume responsibility for negotiating and definitizing the orders.

February 2, 1988

Lockheed forwarded to the ALC its proposed plans to submit crash damage kits price proposals.

March 31, 1988

Lockheed submitted to the ALC and AFPRO price proposals for some of the kits.

April 15, 1988

Lockheed submitted additional price proposals.

April 18, 1988  
AFPRO notified the ALC of its cost analysis process for reviewing the C-5B crash damage kit proposals and indicated its review of the first price proposal showed potential overpricing.

April 27, 1988  
Lockheed submitted additional price proposals.

May 20, 1988  
The Commander of Air Force Contract Management Division, Air Force Systems Command, disapproved AFPRO's request to review pricing of a sample of parts as opposed to a review of all parts included in C-5B kit orders.

May 27, 1988  
Lockheed submitted additional price proposals.

June 2 through 3, 1988  
An analyst from Air Force Contract Management Division visited Lockheed to review the kit orders and processing procedures. The analyst cited concerns with some of Lockheed's proposed unit prices and discussed alternatives to expeditiously accomplish the necessary pricing work.

June 3, 1988  
The ALC amended the shipping instructions to change storage location for the crash damage kits from Kelly AFB, Texas, to the Aerospace Maintenance and Regeneration Center at Davis-Monthan AFB, Arizona.

July 7, 1988  
The Comptroller of the Air Force contacted the Office of the Secretary of the Air Force regarding a review of the crash damage kit orders. The Comptroller suggested that the Air Force consider a stop work order until the need for the kits can be thoroughly reviewed and the contents properly identified.



July 26, 1988

In response to the Comptroller's concern, the Deputy Assistant Secretary of the Air Force, Acquisition Management and Policy, contacted AFLC to request (1) a review of the overall acquisition of the crash damage kits, (2) an assessment of other issues, and (3) a recommended course of action by August 3, 1988.

July 29, 1988

The Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, requested a GAO review of the C-5 kits.

August 9, 1988

The Chief of Staff, AFLC, in response to the July 26, 1988, request, cited several misconceptions about the kits. AFLC indicated that no action would be taken to stop work or terminate the acquisition because it believed the buy was justified.

September 29, 1988

The Acting Assistant Secretary of the Air Force for Readiness Support notified the Deputy Assistant Secretary of the Air Force of the need to justify acquiring the kits if the procurement was to continue.

September 30, 1988

AFPRO issued an internal memorandum concerning the impact of Lockheed stock transfers (using residual parts from C-5B production for kit orders) and cost estimates for kit parts.

October 5, 1988

AFPRO requested that Lockheed provide documentation that (1) substantiated approval of the stock transfers, (2) verified that the allocated costs of the stock transfers were eliminated from costs of the C-5B contract, and (3) verified that the government had been properly reimbursed for an amount equal to the unliquidated progress payments traced to the transferred property.

October 6, 1988 AFPRO requested that Lockheed update the kit proposals because of the stock transfers and other factors involving parts from C-5B production inventory.

October 18, 1988 The Acting Assistant Secretary of the Air Force for Readiness Support requested a thorough review and revalidation of the kit requirements by the Air Force logistics office and a response by November 4, 1988.

October 27, 1988 The Deputy Assistant Secretary of the Air Force, Acquisition Management and Policy, replied that stopping work may not effectively minimize the cost exposure but could result in increased costs for the kits.

November 15, 1988 AFPRO noted that Lockheed's response concerning the stock transfers and other actions was still pending because Lockheed was working to sort out information and determine exactly what had happened.

December 15, 1988 Progress payments to date on the order totaled \$21,829,074.

December 21, 1988 Lockheed proposed a reduction of about \$1 million to recognize transfers of parts from C-5B production.

December 30, 1988 The upper fuselage of a C-5A at Travis AFB was damaged by a fire.