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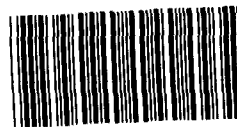
United States General Accounting Office

Report to the Chairman, Subcommittee
on Legislation and National Security,
Committee on Government Operations,
House of Representatives

May 1992

MILITARY AIRLIFT

Selected Events in the Development of the C-17



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**National Security and
International Affairs Division**

B-248139

May 4, 1992

The Honorable John Conyers, Jr.
Chairman, Legislation and National Security Subcommittee
Committee on Government Operations
House of Representatives

Dear Mr. Chairman,

In response to your February 21, 1992, request, this report provides information on selected events concerning financing of the Air Force's C-17 military transport aircraft. The aircraft is being developed by the Douglas Aircraft Company, a division of the McDonnell Douglas Corporation. We are providing information on (1) progress payments, (2) the change in accounting treatment of engineering costs, (3) the decision to split the government's contractual acceptance of the development test aircraft into two separate events, (4) reductions to the aircraft's performance specifications, and (5) the status of claims filed by the Douglas Aircraft Company. As requested, we are also providing a chronology of these events covering the period from June 1990 through September 1991 (see app. D). Your letter indicates a concern about whether the Department of Defense (DOD) took unusual steps to assist the McDonnell Douglas Corporation during this period. This material may be useful to you in evaluating that question.

Background

The C-17 military transport is designed to airlift substantial payloads over long ranges without refueling. The Air Force originally planned to buy 210 C-17 aircraft. However, in April 1990, as a result of the Major Aircraft Review, the Secretary of Defense reduced the planned purchase to 120 production aircraft at a currently estimated cost of \$35.8 billion.

The aircraft is being developed and produced under a fixed-price incentive contract¹ awarded in 1982. In addition to the test aircraft and two non-flying test airframes, the contract includes two options (lots I and II), for a total of six production aircraft. The ceiling price of the development contract, including both lots of production aircraft, is \$6.65 billion. A separate fixed price contract for a third production lot of four aircraft was

¹A fixed-price incentive contract provides for adjusting profit and establishing the final contract price by applying a formula based on the relationship of total final negotiated cost to total target cost. Under this pricing arrangement, a target cost, target profit, price ceiling, and profit adjustment formula are negotiated. If the final cost is less than the target cost, the formula results in a final profit that is greater than the target profit. Conversely, if the final cost is more than the target cost, the formula results in a final profit that is lower than the target profit.

awarded on July 30, 1991, with a target price of \$1.026 billion and a ceiling price of \$1.215 billion. Douglas and the Air Force are currently preparing to negotiate a lot IV contract for the fourth production lot of four aircraft.

Results in Brief

Each of the events discussed in this report affected the financial status of the McDonnell Douglas Corporation by increasing or decreasing DOD payments to Douglas. For example, since November 1990, increases in the cost estimate at completion of the development contract have resulted in substantially lower monthly progress payments to Douglas. On the other hand, other events have increased Douglas's cash flow. These include (1) changes in Douglas's accounting treatment of engineering charges that resulted in \$172 million being available for fiscal year 1991 progress payments that otherwise would not have been available (of which \$148 million was actually paid to Douglas in fiscal year 1991) and (2) a contract modification splitting the government's acceptance of the test aircraft into two events, resulting in Douglas receiving a payment 9 months earlier than previously agreed.

Reductions to the aircraft performance specifications also will affect the financial condition of Douglas because the reduced specifications should be achievable at a lower cost. While the Air Force received some financial consideration for these reductions, the amount is unclear because, according to the Air Force, the consideration was determined as only one part of a negotiation covering a variety of topics.

Claims against the government also could affect Douglas's financial status. In 1990 and 1991, Douglas filed seven claims totaling about \$108 million relating to the C-17 program. Two of the claims have been denied by the Air Force. Five have been initially denied and are awaiting a final Air Force decision. In all cases, these claims may be pursued further. In 1992, thus far, an additional \$237 million in claims have been filed and are under review.

McDonnell Douglas Experienced Financial Problems

In January 1991, the Defense Plant Representative Office at corporate headquarters, which had been monitoring the financial health of the McDonnell Douglas Corporation, concluded that the Corporation's reserve financing was insufficient to meet its monthly cash needs and that a minimum of \$300 million was required. Subsequently, the Corporation, through its Chief Executive Officer, requested that DOD establish a

\$1 billion advance payment pool that the Corporation could draw on to help it through a predicted cash shortfall.

In February 1991, in a meeting between McDonnell Douglas, the Air Force and officials from the Office of the Secretary of Defense, the Corporation requested about \$570 million in progress payments for work on several of its programs including the C-17. This amount represented the difference between progress payments the Corporation actually received based on the various progress payment rates applicable to each of the programs and the amount that it would have received had the rate on each of the programs been 100 percent. At that meeting, an official from the Office of the Secretary of Defense suggested that some lower amount would be considered. In March 1991, DOD denied the request because it believed that the Corporation had not exhausted other avenues of addressing its cash-flow problem.

On November 14, 1991, we testified before your Subcommittee that while the Corporation continued to face serious challenges, its overall financial position had improved since February 1991.

Increases in the Estimate at Completion Reduced Progress Payments

On May 24, 1990, the C-17 Administrative Contracting Officer from the Defense Plant Representative Office requested that Douglas Aircraft submit a revised cost estimate at completion (EAC) for the development contract. The contracting officer was concerned that the estimate being used to determine progress payments was too low to be achieved. If an EAC exceeds the contract ceiling, progress payments are reduced to reflect a portion of the expected loss—the higher the EAC, the greater the reduction in progress payment. On June 7, 1990, Douglas raised its EAC from \$5.9 billion to \$6.4 billion and received progress payments of \$205 million on June 21, 1990, and \$217.6 million on July 19, 1990. In August 1990, the contracting officer rejected Douglas's \$6.4 billion EAC and stated that no further progress payments would be made until a supportable estimate was submitted.

On September 29, 1990, Douglas submitted a revised EAC of \$6.6 billion, which equaled the ceiling price for the development contract. On October 1, 1990, using that \$6.6 billion EAC, the contracting officer approved a progress payment of \$81.2 million. Douglas had requested \$316.8 million; however, according to the DOD Inspector General, fiscal year 1990 research and development funds for the C-17 had been exhausted in July 1990 and

only the portion of the request related to production costs could be approved.

On November 1, 1990, the contracting officer rejected Douglas's \$6.6 billion EAC and, using an Air Force developed EAC of \$7.1 billion, approved a progress payment of \$59.2 million. Douglas had requested \$386.5 million, but the payment was reduced to recognize a portion of the contract overrun. On November 20, 1990, the contracting officer approved a progress payment for \$123.9 million; Douglas had requested \$459.5 million. On July 19, 1991, the Air Force increased the EAC to \$7.3 billion, and on December 13, 1991, the EAC was raised to \$7.45 billion.

Engineering Costs Reallocation

In February 1992, the DOD Inspector General reported that Douglas was allowed to inappropriately: (1) redefine the point at which the transition to sustaining engineering occurred and (2) reallocate at least \$172 million of engineering costs incurred from December 1988 to September 1990 from development to production, resulting in Douglas receiving \$148 million in progress payments earlier than it would have otherwise. Further, the Inspector General stated that the timing of the decision to implement the accounting change and make it retroactive was driven primarily by a projected shortage of fiscal year 1990 appropriated research and development funds.

According to the DOD Inspector General report, on October 11, 1990, Douglas submitted a proposal to reallocate the costs associated with sustaining engineering effort between the engineering development contract and all future production contracts. The purpose of the proposal was to reallocate a portion of costs from the development effort to production efforts. Development costs are funded with research and development appropriations and production costs are funded with procurement appropriations. The contracting officer did not concur with the proposed change but agreed to base his decision on the results of a Defense Contract Audit Agency (DCAA) review of the change.

DCAA's October 31, 1990, "Report on Audit of C-17 Journal Entry to Reallocate Sustaining Engineering" did not take exception to the accounting change. However, the DCAA report stated that the retroactive nature of the change did not comply with Cost Accounting Standards.

Separation of T-1 Delivery Milestone Into Two Parts

On September 25, 1990, the C-17 System Program Office modified the development contract to, among other things, split the government's contractual acceptance of the test aircraft (T-1) into two events. The modification specified milestone prices of \$1.65 billion for T-1 assembly complete and \$125 million for T-1's first flight. The total price for T-1's acceptance remained the same, \$1.78 billion. T-1 assembly complete was defined based on a memorandum of understanding between Douglas and the Air Force signed on June 12, 1990. The planned delivery dates for T-1 assembly complete and T-1's first flight were December 31, 1990, and June 30, 1991, respectively, revised from August 1990, the T-1 acceptance date recognized in the contract at that time.

The T-1 assembly complete milestone was certified by Douglas on December 21, 1990, and accepted by the Air Force on the following day. At that point, Douglas was eligible to receive the full \$1.65 billion for meeting the milestone. However, all but \$16.5 million of the \$1.65 billion had been previously paid to Douglas through progress payments as work on T-1 proceeded. The progress payment rate on the program was 99 percent. According to DCAA, if the contract had not been modified, Douglas would not have received the remaining 1 percent, \$16.5 million, until first flight.

T-1's first flight occurred on September 15, 1991. Prior to delivery, Douglas had been paid \$123.473 million in progress payments at the 99 percent rate for work performed under the contract line item. In July, the contract line item billing price for delivery had been modified from \$125.252 million to \$124.720 million. On September 27, 1991, the government required Douglas to reimburse it \$145,000 and withheld \$1.4 million. According to the Administrative Contracting Officer, the withhold was for waivers, deviations, and shortages.

Reduced C-17 Performance Specifications

During early 1991, Douglas and the Air Force modified the development contract to change the schedule and to reduce the aircraft performance specifications. The Air Force and Douglas agreed to reduce the performance specifications to match those of the Military Airlift Command's 1989 threshold requirements.² The modification included consideration to the government for the reduced specification changes.

Air Force officials stated that this consideration could reach \$15.5 million including (1) a \$4-million reduction in the contract ceiling, (2) a \$4-million

²Command thresholds are the minimum level or requirement that is acceptable to the operational command, according to an Air Force official.

reduction in the ceiling for the refurbishment option (Douglas is required to refurbish the first four production aircraft after flight testing and before their use by the Military Airlift Command), (3) about \$2.5 million from deleting award fee provisions from the contract, and (4) up to \$5 million for making the contractor responsible for certain foreign object damage. However, because a number of other issues besides reduced performance specifications were being negotiated concurrently, we could not determine the amount given for the reduced specifications.

In November 1991, we reported³ that Douglas was projecting the C-17, in its operational configuration, would weigh 273,918 pounds. As of March 1992, the Air Force is projecting a weight of 274,147 pounds. At that weight, the plane falls short of meeting many of the original specifications relating to the amount of weight the plane must carry, unrefueled, over specified distances and may not meet some of the reduced specifications.

Status of Claims by Douglas on the C-17 Program

When a contractor and the government disagree over who is responsible for a change or delay on a contract, the contractor is entitled to submit claims against the government requesting that the government pay the cost of the change or delay. Douglas has filed a number of claims on the C-17 program. Most claims request compensation for additional work directed by the Air Force that Douglas believes is outside of the contract. As shown in table 1, in fiscal year 1990 and 1991, Douglas filed seven claims totaling about \$108 million. Two of the claims have been denied by the Air Force. Five have been initially denied and are awaiting a final Air Force decision. In all cases, these claims may be pursued further.

Table 1: C-17 Claims Filed in Fiscal Years 1990 and 1991

Dollars in millions		
Date filed	Description of work	Amount
Dec. 17, 1990	engine logistics support analysis	\$27.0
Dec. 17, 1990	economic price adjustment	63.0
Dec. 17, 1990	lightning strike	9.0
Apr. 22, 1991	system engineering avionics facility testing	6.0
Apr. 22, 1991	support equipment engine trailer	1.5
Apr. 22, 1991	crosswind landing simulation	0.4
Apr. 22, 1991	commercial pallets	1.0
Total		\$107.9

³Defense Industry: Status of the C-17 Program and Related Issues Affecting the McDonnell Douglas Corporation (GAO/T-NSIAD-92-4, Nov. 14, 1991).

In fiscal year 1992, Douglas filed an additional \$237 million in claims that are currently under initial review by the Air Force. Further, DOD officials told us that they expect Douglas to file significant additional claims on the C-17 program relating to winglet durability and delay and disruption—that is, Douglas is expected to claim that schedule slippage and cost overruns are due to program turmoil caused by government actions.

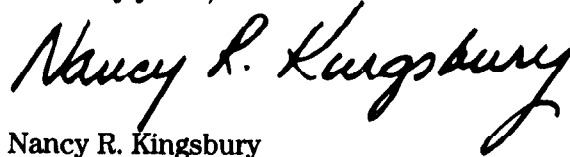
Scope and Methodology

In preparing this report, we reviewed prior GAO work and discussed ongoing work with officials of the Department of Defense Inspector General's Office, interviewed Air Force officials, and reviewed relevant documents on the C-17 program. As you requested, we did not obtain written agency comments on this report. However, we have discussed the facts and issues in this report with Air Force and DOD officials at other times and have included their comments as appropriate. Our work was performed during February and March 1992 in accordance with generally accepted government audit standards.

As agreed with your office, unless you publicly announce the report's contents earlier, we plan no further distribution until 30 days from its issue date. At that time, we will send copies to the Secretaries of Defense and the Air Force, the Director of the Office of Management and Budget, and appropriate congressional committees. We will also make copies available to other interested parties on request.

Please contact me on (202) 275-4268 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix II.

Sincerely yours,

A handwritten signature in black ink that reads "Nancy R. Kingsbury". The signature is written in a cursive style with a large, sweeping "y" at the end.

Nancy R. Kingsbury
Director, Air Force Issues

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Abbreviations

DCAA	Defense Contract Audit Agency
DOD	Department of Defense
EAC	estimate of the cost at completion
GAO	General Accounting Office
T-1	test aircraft

Selected Events for C-17 Program (June 1990 - September 1991)

June 7, 1990	Douglas Aircraft Company raised its cost estimate at completion (EAC) for the development contract from \$5.9 billion to \$6.4 billion.
June 12, 1990	Memorandum of understanding, "Definition of Assembly Complete Milestone for C-17 Aircraft T-1," was signed by Douglas and the Air Force.
June 21, 1990	The C-17 Administrative Contracting Officer approved a Douglas progress payment request of \$205 million using an EAC of \$6.4 billion.
July 19, 1990	The Administrative Contracting Officer approved a progress payment of \$217.6 million, \$14 million less than Douglas requested, using an EAC of \$6.4 billion.
August 6, 1990	The Administrative Contracting Officer rejects Douglas's \$6.4 billion EAC and states that no progress payments will be made until a supportable EAC is submitted.
September 25, 1990	C-17 System Program Office modified the development contract to split the contract line item covering acceptance of the T-1 aircraft into two line items. The modification specified billing prices of \$1.65 billion for T-1 assembly complete and \$125 million for T-1's first flight.
September 29, 1990	Douglas submitted an EAC of \$6.6 billion, which equaled the ceiling price for the development contract.
October 1, 1990	The Administrative Contracting Officer approved a progress payment of \$81.2 million using an EAC of \$6.6 billion. Douglas had requested \$316.8 million, its first progress payment request since July. The \$81.2 million was for production-related costs only because fiscal year 1990 C-17 research and development funds had been exhausted in July 1990.
October 11, 1990	According to the DOD Inspector General, Douglas submitted a proposal to allocate sustaining engineering effort between full-scale engineering development and all production buys. At least \$172 million that had been charged to the development contract from December 1988 to September 1990 was reallocated to the production effort. Of that amount, approximately \$148 million was paid to Douglas in fiscal year 1991.
October 31, 1990	Defense Contract Audit Agency issued its "Report on Audit of C-17 Journal Entry to Reallocate Sustaining Engineering." The report did not take exception to Douglas's accounting change; however, it stated that the retroactive nature of the change did not comply with Cost Accounting Standards.
November 1, 1990	Air Force rejected Douglas's EAC as too low. The Administrative Contracting Officer implemented a government-developed EAC of \$7.1 billion for computing progress payments and approved a progress payment of \$59.2 million. Douglas had requested \$386.5 million.

(continued)

**Appendix I
Selected Events for C-17 Program (June
1990 - September 1991)**

November 20, 1990	The Administrative Contracting Officer approved a progress payment for \$123.9 million. Douglas had requested \$459.5 million.
December 17, 1990	Douglas submitted three claims for additional compensation for: (1) \$27 million for engine logistics support analysis, (2) \$63 million for economic price adjustment, and (3) \$9 million for lightning strike. The first claim has been initially denied by the Air Force and is pending a final decision by the Air Force. The other two claims have been denied.
December 21, 1990	Douglas certified that the T-1 aircraft assembly complete milestone had been met.
December 22, 1990	T-1 assembly complete milestone accepted by the Air Force.
December 31, 1990	Douglas was eligible for \$1.65 billion, or 93 percent of the total delivery price (\$1.76 billion), for meeting the T-1 assembly complete milestone. Of the \$1.65 billion, all but \$16.5 million had been previously paid to Douglas as progress payments.
January 23, 1991	Defense Plant Representative Office at corporate headquarters concluded that McDonnell Douglas Corporation's reserve financing was insufficient to meet its monthly needs and that a minimum reserve of \$300 million was required.
January 24, 1991	McDonnell Douglas Corporation requested that DOD establish a \$1 billion advance payment pool that the Corporation could draw on to help it through a predicted cash shortfall.
February 7, 1991	In a meeting between McDonnell Douglas, the Air Force, and officials from the Office of the Secretary of Defense, the Corporation requested about \$570 million in progress payments for unpaid work on several programs including the C-17. An official from the Office of the Secretary of Defense suggested that some lower amount would be considered.
March 20, 1991	The Acting Under Secretary of Defense for Acquisition informed McDonnell Douglas's Chief Executive Officer that DOD was not prepared to take any action to provide unusual financing until McDonnell Douglas Corporation provides sufficient evidence that it is taking every prudent action to cope with cash shortages.
April 2, 1991	Air Force and Douglas agreed to reduce the C-17 contract performance specifications to match those of the Military Airlift Command's threshold requirements. The proposed contract modification included consideration to the government of up to \$15.5 million.

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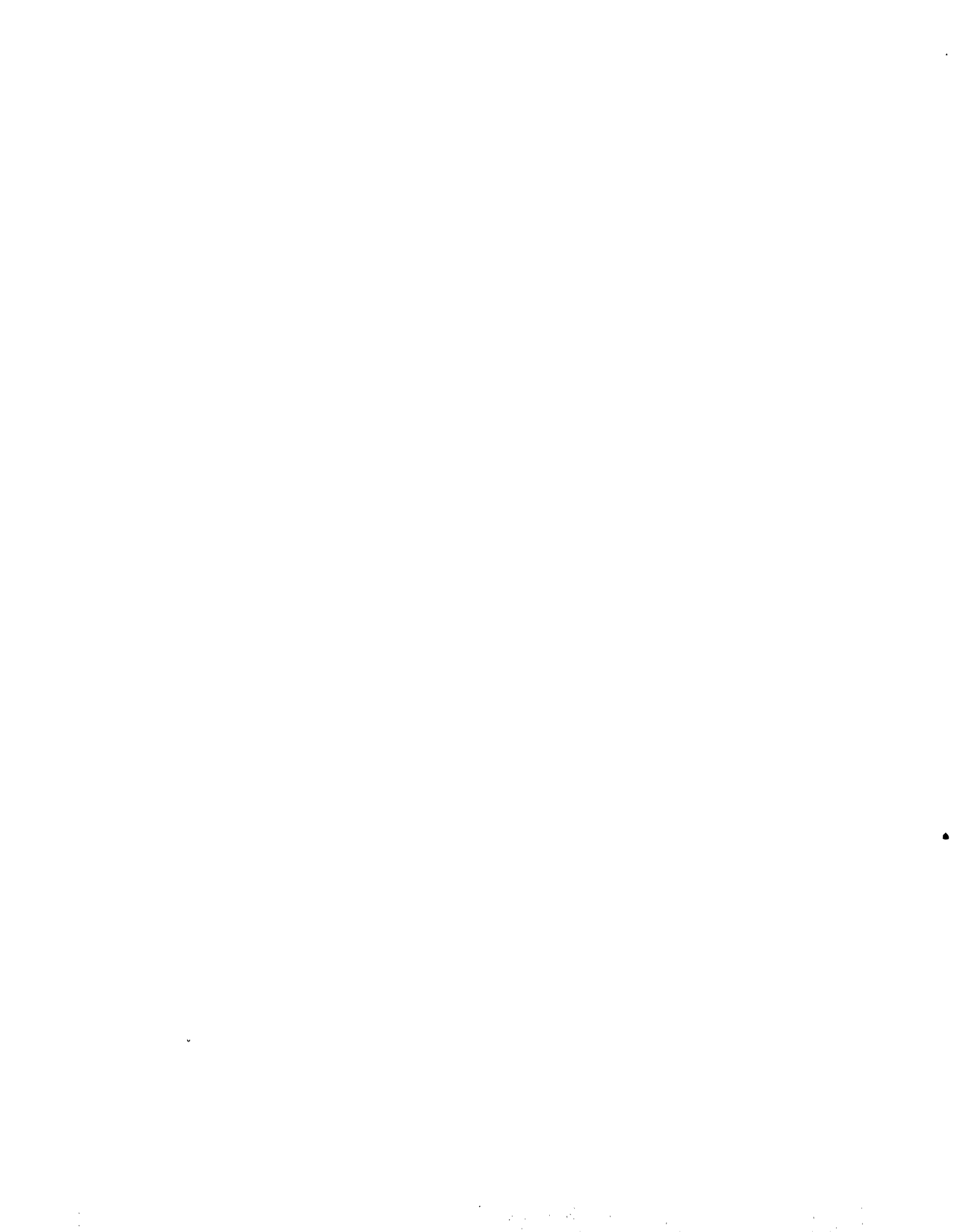
Appendix I
Selected Events for C-17 Program (June
1990 - September 1991)

April 22, 1991	Douglas submitted four claims for additional compensation: (1) \$6 million for system engineering avionics facility testing, (2) \$1.5 million for support equipment engine trailer, (3) \$.4 million for crosswind landing simulation, and (4) \$1 million for commercial pallets. All four claims have been initially denied and are pending a final decision by the Air Force.
July 19, 1991	The Air Force increased the C-17 EAC to \$7.3 billion, further reducing the amount of progress payments.
July 30, 1991	Lot III contract awarded for four more aircraft with target and ceiling prices of \$1.026 billion and \$1.215 billion, respectively. The C-17 specifications changes negotiated on April 2, 1991, (see above) are approved and incorporated into the lot III contract.
September 15, 1991	First flight of T-1, the test aircraft, occurred. Prior to delivery Douglas had been paid \$123.473 million in progress payments at the 99 percent rate for work performed under the contract line item. In July, the contract line item billing price for delivery had been modified from \$125.252 million to \$124.720 million.
September 27, 1991	The government required Douglas to reimburse it \$145,000 and withheld \$1.4 million. According to the Administrative Contracting Officer, the withhold was for waivers, deviations, and shortages.

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