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MILITARY AIRCRAFT

Considerations in Reviewing the Air Force Proposal to Lease Aerial Refueling Aircraft

Statement of Neal P. Curtin, Director
Defense Capabilities and Management



Mr. Chairman and Members of the Committee:

I appreciate the opportunity to appear before you today to discuss the Air Force's report on the planned lease of 100 Boeing 767 aircraft modified for aerial refueling. These aircraft would be known by a new designation, KC-767A. Section 8159 of the Department of Defense Appropriations Act for fiscal year 2002 authorizes the Air Force to lease up to 100 KC-767A aircraft. We received the report required by section 8159 when it was sent to the Congress on July 10. We subsequently received a briefing from the Air Force and some of the data needed to review the draft lease and lease versus purchase analysis. However, we were permitted to read the lease for the first time on July 18 but were not allowed to make a copy and so have not had time to fully review and analyze the terms of the draft lease. As a result, my testimony today will be based on very preliminary work. I will (1) describe the condition of the current aerial refueling fleet, (2) summarize the proposed lease as presented in the Air Force's recent report, (3) present our preliminary observations on the Air Force lease report, and (4) identify related issues that we believe deserve further scrutiny.

To determine the condition of the current fleet, we used data from an ongoing study of tanker requirements being done for this committee's Subcommittee on Readiness. Specifically, we obtained and analyzed KC-135 and KC-10 mission capable rates, fleet inventory records, utilization records, maintenance records, and other documents; and we met with knowledgeable officials at the Air Force's KC-135 Systems Program Directorate at Tinker Air Force Base in Oklahoma and the Air Mobility Command at Scott Air Force Base in Illinois, among other officials. To summarize and analyze the report of the proposed lease, we reviewed the report, initiated our analysis of the draft lease, and received a briefing from the Office of the Assistant Secretary of the Air Force (Acquisitions), Air Mobility Programs. To identify key issues for further scrutiny, we identified issues raised by the Air Force in the report of the proposed lease, but we believe the Air Force did not explain fully. We also identified additional costs the Air Force expects to incur to field the new aircraft.

Background

While numerous military aircraft provide refueling services, the bulk of U.S. refueling capability lies in the Air Force fleet of 59 KC-10 and 543 KC-135 aircraft. These are large, long-range aircraft that have counterparts in the commercial airlines, but which have been modified to turn them into tankers. The KC-10 is based on the DC-10 aircraft, and the KC-135 is

similar to the Boeing-707 airliner. Because of their large numbers, the KC-135s are the mainstay of the refueling fleet, and successfully carrying out the refueling mission depends on the continued performance of the KC-135s. Thus, recapitalizing this fleet of KC-135s will be crucial to maintaining aerial refueling capability, and it will be a very expensive undertaking.

There are two basic versions of the KC-135 aircraft, designated the KC-135E and KC-135R. The R model aircraft have been re-fitted with modern engines and other upgrades that give them an advantage over the E models. The E-model aircraft on average are about 2 years older than the R models, and the R models provide more than 20 percent greater refueling capacity per aircraft. The E models are located in the Air National Guard and Air Force Reserve. Active forces have only R models. Over half the KC-135 fleet is located in the reserve components.

The rest of the DOD refueling fleet consists of Air Force HC- and MC-130 aircraft used by special operations forces, Marine Corps KC-130 aircraft, and Navy F-18 and S-3 aircraft. However, the bulk of refueling for Marine and Navy aircraft comes from the Air Force KC-10s and KC-135s. These aircraft are capable of refueling Air Force and Navy/Marine aircraft, as well as some allied aircraft, although there are differences in the way the KC-10s and KC-135s are equipped to do this.

Condition of Aerial Refueling Fleet

The KC-10 aircraft are relatively young, averaging about 20 years in age. Consequently, much of the focus on modernization of the tanker fleet is centered on the KC-135s, which were built in the 1950s and 1960s, and now average about 43 years in age.

While the KC-135 fleet averages more than 40 years in age, the aircraft have relatively low levels of flying hours. The Air Force projects that E and R models have lifetime flying hours limits of 36,000 and 39,000 hours, respectively. According to the Air Force, only a few KC-135s would reach these limits before 2040, but at that time some of the aircraft would be about 80 years old. Flying hours for the KC-135s averaged about 300 hours per year between 1995 and September 2001. Since then, utilization is averaging about 435 hours per year.

According to Air Force data, the KC-135 fleet had a total operation and support cost in fiscal year 2001 of about \$2.2 billion. The older E model aircraft averaged total costs of about \$4.6 million per aircraft, while the

R models averaged about \$3.7 million per aircraft. Those costs include personnel, fuel, maintenance, modifications, and spare parts.

The Air Force has a goal of an 85 percent mission capable rate. Mission capable rates measure the percent of time on average that an aircraft is available to perform its assigned mission. KC-135s in the active duty forces are generally meeting the 85 percent goal for mission capable rates. Data on the mission capable rates for the KC-135 fleet are shown in table 1.

Table 1. Mission Capable Rates for KC-135 Aircraft in May 2003

Component	Number of aircraft	Mission capable rate (percent)
Active	245	85
Reserve R models	52	82
National Guard R models	115	75
Reserve E models	16	75
National Guard E models	115	79

Source: Air Force data.

For comparison purposes, the KC-10 fleet is entirely in the active component, and the 59 KC-10s had an average mission capable rate during the same period of 81.2 percent.

By most indications, the fleet has performed very well during the past few years of high operational tempo. Operations in Kosovo, Afghanistan, Iraq, and here in the United States in support of Operation Noble Eagle were demanding, but the current fleet was able to meet the mission requirements. Approximately 150 KC-135s were deployed to the combat theater for Operation Allied Force in Kosovo, about 60 for Operation Enduring Freedom in Afghanistan, and about 150 for Operation Iraqi Freedom. Additional aircraft provided “air bridge” support for movement of fighter and transport aircraft to the combat theater, for some long-range bomber operations from the United States, and, at the same time, to help maintain combat air patrols over major U.S. cities since September 11, 2001.

The Air Force Report on The KC-767A Aircraft Lease

Section 8159 of the Department of Defense Appropriations Act for fiscal year 2002,¹ which authorized the Air Force to lease the KC-767A aircraft, also specified that the Air Force could not commence lease arrangements until 30 calendar days after submitting a report to the House and Senate Armed Services and Appropriations Committees (1) outlining implementation plans and (2) describing the terms and conditions of the lease and any expected savings. The Air Force has stated that it will not proceed with the lease until it receives approval from all of the committees of the New Start Notification.² The Air Force also submitted the report of the proposed lease to the committees as required by section 8159. I will now summarize the key points that the Air Force made in this report to the committees:

- The Air Force pointed out that aerial refueling helps to support our nation's ability to respond quickly to operational demands anywhere around the world. This is possible because aerial refueling permits other aircraft to fly farther, stay aloft longer, and carry more weapons, equipment, or supplies.
- The Air Force indicated that KC-135 aircraft are aging and becoming increasingly costly to operate due to corrosion, the need for major structural repair, and increasing rates of inspection to ensure air safety. Moreover, the report indicates that the Air Force believes it is incurring a significant risk by having 90 percent of its aerial refueling capability in a single, aging airframe.
- The Air Force considered maintaining the current fleet until about 2040 but concluded that the risk of a "fleet-grounding" event made continued operation of the fleet unacceptable, unless it began its re-capitalization immediately. The Air Force considered replacing the KC-135 (E model) engines with new engines but rejected this changeover since it would not address the key concern of aircraft corrosion and other age-related concerns.

¹ Department of Defense and Emergency Supplemental Appropriations for Recovery from and Response to Terrorist Attacks on the United States Act, 2002, Pub. L. No. 107-117, § 8159, 115 Stat. 2230, 2284-85 (2002).

² The New Start Notification, submitted to the Armed Services and Appropriations Committees on July 11, 2003, was required by section 133 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003, and is being used by the Air Force as the trigger for executing the lease. Pub. L. No. 107-314, § 133, 116 Stat. 2458, 2477 (2002).

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- The Air Force eventually plans to replace all 543 KC-135 aircraft over the next 30 years and considered lease and purchase alternatives to acquire the first 100 aircraft. The Air Force added traditional procurement funding to the fiscal year 2004-2009 Future Years Defense Program in order that 100 tankers would be delivered between fiscal years 2009 and 2016. Conversely, the report states that under the lease option, all 100 aircraft could be delivered from fiscal years 2006 to 2011. To match that delivery schedule under a purchase option, the Air Force stated that it would have to reprogram billions of dollars already committed to other uses.
 - *Office of Management and Budget Circular A-94* directs a comparison of the present value of lease versus purchase before executing a lease. In its report, the Air Force estimated that purchasing would be about \$150 million less than leasing on a net present value basis.
 - The Air Force plans to award a contract to a special purpose entity created to issue bonds needed to raise sufficient capital to purchase the new aircraft from Boeing and to lease them to the Air Force.³ The lease will be a three-party contract between the government, Boeing, and the special purpose entity. The entity is to issue bonds on the commercial market based on the strength of the lease and not the creditworthiness of Boeing.
 - *Office of Management and Budget Circular A-11* requires that an operating lease meet certain terms and conditions including a prohibition on paying for more than 90 percent of the fair market value of the asset over the life of the lease at the time that the lease is initiated. The report to Congress states that the Defense Department believes the proposed lease meets those criteria.
 - If Boeing sells comparable aircraft during the term of the contract to another customer for a lower price than that agreed to by the Air Force, the government would receive an “equitable adjustment.” The report also states that Boeing has agreed to a return-on-sales cap of 15 percent and that an audit of its internal cost structure will be conducted in 2011, with any return on sales exceeding 15 percent reimbursed to the government.
 - According to the report, if the government were to terminate the lease, it must do so for all of the delivered aircraft and may terminate any planned aircraft for which construction has not begun, must give 12-months advance notification prior to termination, return the aircraft, and pay an

³ The Air Force would pay the interest on the bonds through its lease payments.

amount equal to 1 year's lease payment for each aircraft terminated. If termination occurs before all aircraft have been delivered, the price for the remaining aircraft would be increased to include unamortized costs incurred by the contractor that would have been amortized over the terminated aircraft and a reasonable profit on those costs.

- The government will pay for and the contractor will obtain commercial insurance to cover aircraft loss and third party liability, as part of the lease agreement. Aircraft loss insurance is to be in the amount of \$138.4 million per aircraft in calendar year 2002 dollars. Liability insurance will be in the amount of \$1 billion per occurrence per aircraft. If any claim is not covered by insurance, the Air Force will indemnify the special purpose entity for any claims from third parties arising out of the use, operation, or maintenance of the aircraft under the contract.
- At the expiration of the lease, the Air Force will return the aircraft to the special purpose entity after removing, at government expense, any Air Force unique configurations.
- The contractor will warrant that each aircraft will be free from defects in materials and workmanship, and the warranty will be of 36 months duration and will commence after construction of the commercial Boeing 767 aircraft, but before they have been converted into aerial refueling aircraft. Upon delivery to the Air Force, each KC-767A aircraft will carry a 6-month design warranty, 12-month material and workmanship warranty on the tanker modification, and the remainder of the original warranty on the commercial components of the aircraft, estimated to be about 2 years.

Considerations in Reviewing the Proposed Lease

Because we have only had the Air Force report for a few days, we do not have any definitive analytical results. However, we do have a number of questions and observations about the report that we believe are important for the Congress to explore in reaching a decision on the Air Force proposal.

1. What is the full cost to acquire and field the KC767A aircraft under the proposed lease (and assuming the exercising of an option to purchase at the conclusion of the lease)?

While the report includes the cost of leasing, the report does not include the costs of buying the tankers at the end of the lease. The report shows a present value of the lease payments of \$11.4 billion and a present value of other costs, such as military construction and operation and support costs of \$5.8 billion. This totals to \$17.2 billion.

If the option to purchase were exercised, the present value of those payments would be \$2.7 billion. Adding these costs to the present value of the lease payments and other costs, this would total \$19.9 billion in present value terms.

The costs of the leasing plan have also been presented as \$131 million per plane for the purchase price, with \$7.4 million in financing costs per plane, both amounts in calendar year 2002 dollars. If the option to purchase were exercised, the price paid would be \$35.1 million per plane in calendar year 2002 dollars. Adding all of these costs together, the cost of leasing plus buying the planes at the end of the lease would total \$173.5 million per plane in calendar 2002 dollars or \$17.4 billion for the 100 aircraft.

2. How strong is the Air Force's case for the urgency of this proposal?

As far back as our 1996 report, we said that the Air Force needed to start planning to replace the KC-135 fleet, but until the past year and a half, the Air Force had not placed high priority on replacement in its procurement budget. While the KC-135 fleet is old and is increasingly costly to maintain due mainly to age-related corrosion, there has been no indication that mission capable rates are falling or that the aircraft cannot be operated safely. By having 90 percent of its refueling fleet in one aircraft type, the Air Force for some years now has been accepting the risk of fleet wide problems that could ground the entire fleet; it is really a question of how much risk and how long the Air Force and the Congress are willing to accept that risk.

3. How will the special purpose entity work?

Under the Air Force proposal, the 767 aircraft would be owned by a special purpose entity and leased to the Air Force. This is a new concept for the Air Force, and the details of the workings of this entity have not been presented in detail. It is important for the Congress to understand how this concept will work and how the government's interests are protected under such an arrangement. For example, what audit rights does the government have? Will financial records be available for public scrutiny?

4. What process did the AF follow to assure itself that it obtained a reasonable price?

Because this aircraft is being acquired under the Federal Acquisition Regulations, the Air Force is required to assure itself through market analysis and other means that the price it is paying is reasonable and fair. To assess this issue, we would need to know how much of the \$131 million purchase price is comprised of the basic 767 commercial aircraft and how much represents the cost of modifications to convert it to a tanker. There is an ample market for commercial 767s, and the Air Force should have some basis for comparison to assess the reasonableness of that part of the price. The cost of the modifications is more difficult to assess, and the Air Force has not provided us the data to analyze this cost. It would be useful for the Congress to understand the process the Air Force followed.

5. Does the proposed lease comply with the OMB criteria for an operating lease?

Office of Management and Budget Circular A-11 provides criteria that must be met for an operating lease. The Air Force report says that the proposal complies with the criteria, but the report points out that one of the criteria is troublesome for this lease. This criterion, in particular, provides that in order for an agreement to be considered an operating lease, the present value of the minimum lease payments over the life of the lease cannot exceed 90 percent of the fair market value of the asset at the inception of the lease. Depending on the fair market value used, the net present value of the lease payments in this case may exceed 90 percent of initial value. Specifically, if the fair market value is considered to include the cost of construction financing, then the lease payments would represent 89.9 percent. If the fair market value were taken as \$131 million per aircraft, which is the price the special purpose entity will pay to Boeing, then the lease payments would represent 93 percent. We do not have a position at this time on which is the more valid approach, but we believe the Air Force was forthright in presenting both figures in its report. Congress will need to consider whether this is an important issue and which figure is most appropriate for this operating lease.

6. Did the Air Force comply with OMB guidelines for lease versus purchase analysis in its report?

A-94 specifies how lease versus purchase analysis should be conducted. Our preliminary analysis indicates that the Air Force followed the prescribed procedures, but we have not yet had time to validate the Air Force's analysis or the reasonableness of the assumptions. The Air Force reported that under all assumptions and scenarios considered, leasing is more expensive than purchasing, but by only about \$150 million under its chosen assumptions. In a footnote, however, the report points out that if the comparison were to a multiyear procurement, the difference in net present value would be \$1.9 billion favoring purchase.

7. Why does the proposal provide for as much as a 15 percent profit on the aircraft?

The Air Force report indicates that Boeing could make up to 15 percent profit on the 767 aircraft. However, since this aircraft is basically a commercial 767 with modifications to make it a military tanker, a question arises about why the 15 percent profit should apply to the full cost. One financial analysis published recently said that Boeing's profit on commercial 767s is in the range of 6 percent. Did the Air Force consider having a lower profit margin on that portion of the cost, with the 15 percent profit applying to the military-specific portion? This could lower the cost by several million dollars per aircraft.

Other Issues Related to the Lease Proposal

In addition to the questions and observations presented above on the Air Force report to the Congress, we believe there are a number of additional considerations that Congress may want to explore, including the following:

- **What is the status of the lease negotiations?** The Air Force has informed us that the lease is still in draft and under negotiation. We believe it is important for the Congress to have all details of the lease finalized and available to assure that there are no provisions that might be disadvantageous to the government. Just last Friday, the Air Force let us read the draft lease in the Pentagon but has not provided us with a copy of it, so we have not had time to review it in detail.
- **What other costs are associated with this lease agreement?** In addition to the lease payments, the Air Force has proposed about \$600

million in military construction, and it has negotiated with Boeing for training costs and maintenance costs related to the lease agreement that could total about \$6.8 billion over the course of the lease. In addition, AF documents indicate that there are other costs for things like insurance premiums (estimated to be about \$266 million) and government contracting costs.

- **Given the cost of the maintenance agreement, how has the Air Force assured itself that it received a good price?** The Air Force estimates that the maintenance agreement with Boeing will cost between \$5 billion and \$5.7 billion during the lease period. It has negotiated an agreement with Boeing as part of the lease negotiations, covering all maintenance except flight-line maintenance to be done by Air Force mechanics. This represents an average of about \$50 million per aircraft, with each aircraft being leased for 6 years, or over \$8 million per year. We do not know how the Air Force determined that this was a reasonable price or whether competition might have yielded a better value. A number of commercial airlines and maintenance contractors already maintain the basic 767 commercial aircraft.
- **What happens when the lease expires?** At the end of each 6-year lease, the aircraft are supposed to be returned to the owner, the special purpose entity, or be purchased by the Air Force for their residual value, estimated at about \$44 million each in then-year dollars. If the aircraft were returned, the Air Force tanker fleet would be reduced, and the Air Force would have to find some way to replace the lost capability even though lease payments would have paid almost the full cost of the aircraft. In addition, the Air Force would have to pay an additional estimated \$778 million if the entire 100 aircraft were returned; this provision is intended to cover the cost of removing military-specific items. For these reasons, returning the aircraft would probably make little sense, and the Congress would almost certainly be asked to fund the purchase of the aircraft at their residual value when the leases expire.
- **How is termination liability being handled?** If the lease is terminated prematurely, the Air Force must pay Boeing 1 year's lease payment. Ordinarily, under budget scoring rules, the cost of the termination liability would have to be obligated when the lease is signed. Because this could amount to \$1 billion to \$2 billion for which the Air Force would have to have budget authority, this requirement was essentially waived by Section 8117 of the Fiscal Year 2003 Department of Defense Appropriation Act. This means that if the lease were terminated, the Air Force would have to find the money in its budget to pay the termination amount or come to Congress for the appropriation.

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- **If the purpose of the lease is to “kick-start” replacement of the KC-135 fleet—as the Air Force has stated—why are 100 aircraft necessary, as stipulated under this lease arrangement?** The main advantage of the lease, as pointed out by the Air Force, is that it would provide aircraft earlier than purchasing the aircraft and without disrupting other budget priorities. It is not clear, however, why 100 aircraft is the right number to do this. Section 8159 authorized up to 100 aircraft to be leased for up to 10 years. The Air Force has negotiated a shorter lease period, but stayed with the full 100 aircraft to be acquired from fiscal years 2006 to 2011. The “kick-start” occurs in the early years, and by fiscal year 2008 the Air Force would have 40 new aircraft delivered. We do not know to what extent the Air Force (1) considered using the lease for some smaller number of aircraft and then (2) planned to use the intervening time to adjust its procurement budget to begin purchasing rather than leasing. Such an approach would provide a few years to conduct the Tanker Requirements Study and the analysis of alternatives that the Air Force has said it will begin soon.

In the coming weeks, we will continue to look into these questions in anticipation of future hearings by the Senate Armed Services Committee and the Senate Commerce Committee.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer any questions that you or Members of the Committee may have.

Contacts and Staff Acknowledgments

For future questions about this statement, please contact me at (757) 552-8111 or Brian J. Lepore at (202) 512-4523. Individuals making key contributions to this statement include Kenneth W. Newell, Tim F. Stone, Joseph J. Faley, Steve Marrin, Kenneth Patton, Charles W. Perdue, and Susan K. Woodward.

Related GAO Products

Military Aircraft: Information on Air Force Aerial Refueling Tankers. [GAO-03-938T](#). Washington, D.C.: June 24, 2003.

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U.S. Combat Air Power: Aging Refueling Aircraft Are Costly to Maintain and Operate. [GAO/NSIAD-96-160](#). Washington, D.C.: Aug. 8, 1996.

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