

CRS Report for Congress

Received through the CRS Web

Air Force Aerial Refueling

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Summary

Aerial refueling aircraft are key to military air operations. The U.S. tanker fleet is numerous and effective, but old. Modernizing or replacing the current fleet of tankers presents the Department of Defense (DOD) with difficult choices in terms of desired capabilities, force structure, and budget. The Air Force's proposal to lease 100 Boeing 767 aircraft to replace its KC-135E fleet is controversial. This report will be updated.

Background

Modern military air operations require aerial refueling. Refueling aircraft, or tankers, extend the range of fighters, bombers, and other aircraft. Tankers increase the amount of time that combat and surveillance aircraft can stay "on-station," and they boost combat aircraft lethality. According to senior Air Force officials, "Clearly the tanker fleet is really some of the very fiber that holds our Air Force's unique global capabilities together. It is an essential enabler for getting to the fight and fighting the fight."¹

The majority of the Air Force's strategic aerial refueling fleet are Boeing **KC-135 Stratotankers**. The Air Force owns 544 Stratotankers: 133 E models, and 411 R models. These variants have been upgraded with modern engines that provide greater fuel efficiency and allow these tankers to offload more fuel than the original KC-135A model. The average age of today's KC-135 fleet is approximately 42 years. The Stratotanker is expected to fly until 2040. The KC-135 can carry 200,000 lbs of fuel that it dispenses to USAF aircraft through a flying boom. A drogue can be attached to the boom, enabling the KC-135 to refuel Navy, Marine Corps, or allied-country aircraft. The Multi-Point Refueling System Program will outfit by FY2008, 45 KC-135Rs with wingtip pods so the aircraft can simultaneously refuel two probe-equipped aircraft.² The KC-135 can also carry 35,000 lbs of cargo in addition to its fuel payload.

¹ Amy Butler, "Air Force Mulling Replacement for Aging, Maintenance-Needy KC-135," Inside the Air Force, May 4, 2001.

² Current plans call for 35 wing tip probe and drogue kits to be delivered to the Air Force by FY2007, and 45 KC-135s to be modified to accept the kits by FY2008.

The Air Force also owns 59 **KC-10A Extenders** (also made by Boeing). The KC-10 is newer than the KC-135, with an average fleet age of 16 years. The KC-10 can carry 356,000 lbs of fuel, almost twice as much as the KC-135. All KC-10s can simultaneously use the flying boom and two wing tip probe and drogue systems. The KC-10 can be air-refueled by a KC-135 or another KC-10 to increase its delivery range. The KC-10 can carry up to 75 troops and 170,000 lbs of cargo in addition to its fuel payload, representing approximately 12% of all of DOD's organic airlift capability. Current plans call for the KC-10 to remain in the active inventory through 2040.

A brief review of recent conflicts underscores the importance of tanker aircraft. In both Iraq and Afghanistan, U.S. military aircraft were forced to project power over long distances, and in theaters with less than desirable access to forward bases or neighboring airspace. Thus, combat and support aircraft had to fly great distances to the theater and when in theater as well, increasing aerial refueling demands. A good proportion of the Air Force's aerial refueling fleet (149 KC-135s, and 33 KC-10s) participated in Operation Iraqi Freedom, flying over 6,000 sorties and offloading over 300 million pounds of fuel.

A recent Air Force study (Tanker Requirements Study -05) estimates that it will need up to 600 KC-135-like aircraft through 2005. Yet the need for aerial refueling could grow in the future. Over the past 10 years, the United States has steadily reduced the total number of forward bases from which it can operate by two thirds. Major overseas en route air bases have declined 69 percent.³ Thus, to maintain the same level of engagement, U.S. forces must deploy more frequently and over greater distances than before.

Most agree that the Air Force's ability to provide aerial refueling is strained. Because of their age, Air Force tanker aircraft must visit maintenance depots frequently and often for longer periods of time. The Air Force projects that operations and support costs for the KC-135 fleet will grow from \$2.26 billion in 2000 to \$3.4 billion by 2040. However, despite these costs, the Air Force has recently improved the tanker fleet's availability. Recent mission capable rates for the KC-135 and KC-10 have averaged 85% and 81%, respectively.⁴

The FY2004 legislative cycle saw considerable debate over a proposal that the Air Force lease 100 Boeing KC-767A aircraft to replace its oldest KC-135Es. The issue was debated in four congressional hearings, culminating with a pair of Senate hearings in September 2003.⁵

³ *Basic Air Force Structure and Expeditionary Aerospace Force (EAF) Operations*, Maj. Gen. Howie Chandler, Director of Operational Plans, Presentation to U.S. Air Force Caucus, Bolling AFB, Mar. 23, 2001.

⁴ *Operation Iraqi Freedom — By the Numbers*, USCENTAF, Assessment and Analysis Division, Apr. 30, 2003; U.S. General Accounting Office, *Military Aircraft: Information on Air Force Aerial Refueling Tankers*, GAO-03-938T, June 24, 2003.

⁵ For a more complete discussion of the details of this proposal and the ensuing debate, see CRS Report RL32056, *The Air Force KC-767 Tanker Lease Proposal: Key Issues For Congress*.

Current Situation

The FY2004 Defense Authorization Conference Report (H.R. 1588, H.Rept. 108-354) gave the Air Force permission to lease 20 tanker aircraft and purchase no more than 80 aircraft to begin replacing the oldest KC-135E models.⁶ This section of the report (Section 134) also prohibits the Air Force from retiring in FY2004 more than 12 KC-135Es. (The Air Force wants to retire 68 E-models). Conferees also mandated that the Air Force conduct an analysis of alternatives (AOA) for aerial refueling (Section 134), and that an independent assessment be conducted of the material condition of the KC-135E fleet. (Section 345). On February 1, 2004, Deputy Secretary of Defense Paul Wolfowitz requested that the Defense Science Board (DSB) conduct the independent analysis of the condition of the KC-135E fleet, and on February 24, 2004, acting Undersecretary of Defense for Acquisition Michael Wynne directed the Air Force to conduct an aerial refueling AOA. The DSB report is due to be completed in early May 2004, and the AOA is due August 2005.

Although it has the statutory authority to proceed, DOD did not request any funds for FY2005 to initiate leasing 20 aircraft or procuring 80 aircraft. Defense Department leaders instead deferred executing either action until the completion of the DSB report, and an internal investigation by the DOD Inspector General (IG) on potential improprieties by Boeing Company executives and whether these activities negatively effected the Tanker Lease Program.

DOD IG Report. On March 29, 2004, the DOD Inspector General (IG) released report number D-2004-064 “Acquisition of the Boeing KC-767A Tanker Aircraft.” This report was hailed both by parties on both sides of the KC-767 issue. Supporters of acquiring the KC-767 focused their attention on the IG’s finding that there was no compelling reason why the Air Force should not proceed with the tanker lease program. Opponents to the tanker lease program argued that this finding was far outweighed by the IG’s other findings. The IG called into question the procurement strategy, and identified five statutory provisions that had not been satisfied by the lease arrangement. The IG also found that the Air Force didn’t demonstrate best business practices, or provide sufficient accountability to justify the lease. The IG also found that the first spiral of KC-767As acquired would not meet stated warfighter requirements and that it would not be subject to adequate operational testing.

In a 42-page response, Air Force officials “The Air Force non-concurs emphatically with nearly all the recommendations within the DOD/IG report.”⁷ Lease supporters argued that many of the IG’s criticisms of the tanker acquisition process were unfounded because the IG assumed a traditional acquisition process. Instead, the KC-767A would be acquired under a congressionally-initiated lease pilot program. The Air Force said that it complied with the law and sought oversight from the DOD and the Office of Management and Budget. Also, the Air Force challenged assertions that the KC-767 would not be

⁶ Sec. 134, p. 23.

⁷ *Acquisition of the Boeing KC-767A Tanker Aircraft*, Department of Defense, Office of the Inspector General, Mar. 29, 2004, p. i.

adequately tested or meet operational requirements. The IG and the Air Force did appear to agree, however, on problems with the KC-767 logistics support contract.⁸

Potential Ethical and Criminal Obstacles to the Lease. On April 20, 2004, Darleen A. Druyan, the former lead Air Force negotiator on the tanker lease program, pleaded guilty to one charge of criminal conspiracy. Ms. Druyan admitted secretly negotiating an executive job with the Boeing company while still overseeing the \$23 billion deal between the Air Force and Boeing.⁹

Federal prosecutors, the FBI and DOD are investigating whether Boeing inappropriately and illegally influenced the Air Force's aerial refueling requirements process to make the KC-767 appear an attractive solution to the Air Force's aerial refueling needs. Air Force and Boeing officials deny that any inappropriate activities took place in the tanker requirements process. If investigators find evidence of inappropriate activity (e.g. "tailoring" the tanker requirements to fit the KC-767A's attributes), it appears unlikely that the lease or procurement proposals could go forward.

Some speculate that part of Ms. Druyan's plea agreement requires her to cooperate with prosecutors in that investigation.¹⁰ Boeing company officials voiced their disapproval and disappointment with Ms. Druyan's and fired Boeing Chief Financial Officer Michael Sears' actions. According to Boeing CEO Harry Stonecipher, "We do not have a 767 Tanker contract with the U.S. government today in large part because of Druyan's and Sears' actions."¹¹

Industry Competition. On January 26, 2004, the United Kingdom's Ministry of Defense (MOD) announced that it had awarded a 27-year, \$24 billion contract to the European Aeronautic Defense and Space Company (EADS) to provide British armed forces with aerial refueling services. This award was noteworthy for at least two reasons. First, EADS was awarded the contract over Boeing, essentially breaking Boeing's near monopoly on large tanker aircraft. Second, the contract is for leasing services.¹² The UK MOD will not purchase, lease or maintain the aircraft. The U.S. Navy also leases aerial refueling services, and the UK contract suggests that this type of arrangement may prove increasingly attractive in a budget constrained environment.

In April 2004 it was announced that the Australian Department of Defense had awarded a \$1.5 billion contract to EADS to procure five Airbus A330-200 aerial refueling aircraft. EADS second aerial refueling aircraft victory over Boeing in three months was significant because it suggests that Airbus aircraft are viable alternatives to the KC-767,

⁸ Sharon Weinberger, "Air Force, IG Find Some Agreement on Overpriced Tanker Support Contract," *Defense Daily*, Apr. 13, 2004; Robert Wall, "USAF, Boeing Fight Back on Tanker Controversy," *Aviation Week & Space Technology*, Apr. 19, 2004.

⁹ Renae Merle, "Ex-Pentagon Official Admits Job Deal," *Washington Post*, Apr. 21, 2004.

¹⁰ J.Lynn Lunsford, "Former Air Force Official to Enter Guilty Plea in Boeing Tanker Case," *Wall Street Journal*, Apr. 14, 2004.

¹¹ Renae Merle, "Ex-Pentagon Official Admits Job Deal," *Washington Post*, Apr. 21, 2004.

¹² David Mulholland, "UK Choice Breaks Boeing Tanker Monopoly," *Jane's Defence Weekly*, Feb. 4, 2004.

at least for two countries. Also, the Australian aircraft will employ both the hose-and-drogue and the flying boom refueling systems. Heretofore, only Boeing aircraft had fielded the flying boom.¹³

Questions

The issues and options regarding the proposed KC-767 tanker lease and the Air Force aerial refueling needs are discussed in great detail in CRS Report RL32056, *The Air Force KC-767 Tanker Lease Proposal: Key Issues For Congress*. The following questions have gained prominence following the publication of that report.

How Significant Is the DOD IG Report? The weight and implications of the IG report is a matter of debate. On the one hand, DOD is under no statutory obligation to heed the IG's recommendation. However, the IG is the institution's ombudsman, and failure to consider seriously the IG's recommendations can hurt DOD's longstanding relations with industry and other government agencies. Some argue that attempting to implement many of the IG's recommendations would make the KC-767 tanker lease program as currently structured untenable. For example, the IG found that the KC-767 did not meet the statutory definition of a commercial item. Thus, the IG argues, the lease contract should be renegotiated to comply with the terms set forth in OMB circular No. A-11 on operating leases.

How Significant Is the DSB Report? The DSB report is required by statute. Furthermore, Secretary of Defense Rumsfeld has announced on several occasions that no action will be taken on the tanker lease program until after the DSB report is complete.¹⁴ This suggests that the report will be influential with DOD's top leaders. The DSB is viewed by many as DOD's premier group of scientific and technical advisors. Although largely populated with retired senior military officers, defense industry CEOs, and civilian defense acquisition officials, the DSB is also considered by many to provide objective, and independent analysis. These factors also suggest that the DSB findings and recommendations may be highly influential. However, as is the case with the IG report, DOD leaders are not bound to implement the DSB's recommendations.

How Significant Is the Analysis of Alternatives (AOA)? The Air Force's Analysis of Alternatives shall assess the critical technologies associated with potential aerial refueling concepts, including technology maturity, technical risk, and, if necessary, technology maturation and demonstration needs. The AOA is a key facet of a structured acquisition strategy. DOD Instruction No. 5000.2, *Operation of the Defense Acquisition System*, describes how an AOA "guides the concept refinement stage" and is the basis for the program entering into the technology development stage.¹⁵ Due to its expected August

¹³ Ian Bostock, "Australia Opts for A330-200 Tanker Transport," *Jane's Defence Weekly*, Apr. 21, 2004.

¹⁴ Sharon Weinberger, "Rumsfeld Promises No Action On Tankers Until After Independent Study," *Defense Daily*, Apr. 2, 2004.

¹⁵ Many KC-767 lease opponents argue that DOD "placed the cart before the horse" by initiating the lease program prior to conducting an AOA. Lease supporters counter that Congress gave (continued...)

2005 publication date, It is unlikely that this AOA will influence near-term tanker lease program decisions.

How Significant Are Investigations Into Potential Improper Influence on the Tanker Requirements Process? A requirements document that does not accurately reflect user requirements could result in the acquisition of a fleet of aircraft that exhibit unforeseen operational shortcomings. If a requirements document was “tailored” toward a particular platform solution, it might also unnecessarily preclude the consideration of other platforms that might also be considered, or to artificially make other options appear less attractive to the user community.

For example, unforeseen operational shortcomings might include sub-optimal performance in aircraft range, cargo payload, fuel offload capacity, the type and number of fuel dispensers (e.g. flying boom, or probe and drogue), the aircraft’s runway and ground handling requirements, or crew size. Potential future solutions or “work arounds” that might have to be implemented to address or ameliorate these kinds of shortcomings may include modifying tanker aircraft at additional cost, purchasing additional tanker aircraft that can better meet user requirements, developing new or different concepts of operations or tactics, techniques and procedures, changes to future aircraft that are to be refueled (e.g. increase range, increased hard-points to accommodate external fuel tanks), changes to basing plans or procedures, or modifications to, or the acquisition of new ground handling equipment.

¹⁵ (...continued)

DOD permission to initiate the lease program, so an AOA was not required.