



# Civil Reserve Air Fleet (CRAF)

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## Summary

The Civil Reserve Air Fleet (CRAF) was created by executive order in 1951. As a result, the Departments of Commerce (DOC) and Defense (DOD) formulated a contingency plan to meet the nation's airlift needs in times of crisis. When the Department of Transportation (DOT) was created, it assumed DOC's role in the CRAF program, and today, DOD and DOT work together to manage the CRAF program.

The CRAF supports DOD airlift requirements in emergencies when the need for airlift exceeds the capability of the military aircraft fleet. All CRAF participants must be U.S. carriers fully certified by the Federal Aviation Administration, and meet the stringent standards of Federal Aviation Regulations pertaining to commercial airlines.

The CRAF has three main segments: international, national, and aeromedical evacuation. The international segment is further divided into the long-range and short-range sections and the national segment into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed.

The commercial airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the United States of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that obligate aircraft to the CRAF. DOD offers business through the International Airlift Services.

CRAF presents benefits and opportunities for both DOD and U.S. airlines. By all accounts it appears to be a symbiotic relationship. Yet, as circumstances change, pressures and diverging interests may emerge that could bring changes to CRAF. A number of factors may be considered when examining the future size, character and role of CRAF. These factors include cost, other potential government / commercial arrangements, potential change in DOD requirement for CRAF, and industrial base or financial assistance to U.S. air carriers.

This report will be updated as events warrant.

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## Introduction

The Civil Reserve Air Fleet (CRAF) was created by President Truman in 1951.<sup>1</sup> As a result, the Departments of Commerce (DOC) and Defense (DOD) formulated a contingency plan to meet the nation's airlift needs in times of crisis. When the Department of Transportation (DOT) was created, it assumed DOC's role in the CRAF program, and today, DOD and DOT work together to manage the CRAF program.<sup>2</sup> This report provides background, analyzes current issues, and summarizes recent legislation for the CRAF.

## Background

The CRAF supports DOD airlift requirements in emergencies when the need for airlift exceeds the capacity of DOD's organic airlift fleet. While DOD strategic airlift aircraft are designed to carry outsized and oversized cargo,<sup>3</sup> CRAF air carriers are primarily expected to transport passengers and cargo pallets. All CRAF participants must be U.S. carriers fully certified by the Federal Aviation Administration (FAA), and meet the stringent standards of the Federal Aviation Regulations pertaining to commercial airlines (Part 121). To join CRAF, a carrier must commit at least 30% of its CRAF-capable passenger fleet, and 15% of its CRAF-capable cargo fleet. Aircraft committed must be U.S. registered and air carriers must also commit and maintain at least four complete crews for each aircraft in CRAF.<sup>4</sup>

Air Mobility Command (AMC) analysts implement a number of surveillance initiatives to monitor the carrier's safety record, operations and maintenance status, contract performance, financial condition and management initiatives, summarizing significant trends in a comprehensive review every six months. These initiatives are supplemented by an open flow of information on all contract carriers between AMC and the FAA through established liaison officers.<sup>5</sup>

## CRAF Structure

The CRAF has three main segments: international, national, and aeromedical evacuation. The international segment is further divided into the long-range and short-range sections, while the national segment is divided into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the aircraft performance characteristics needed.<sup>6</sup>

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<sup>1</sup> Executive Order No 10219, Federal Register 16, "Defining Certain Responsibilities of Federal Agencies With Respect to Transportation and Storage." March 2, 1951, p. 1004-1005.

<sup>2</sup> Mary E. Chenoweth, "The Civil Reserve Air Fleet and Operation Desert Shield/Desert Storm: Issues for the Future," RAND, Santa Monica, CA, 1993, pp. 4-5.

<sup>3</sup> "Outsized cargo" exceeds the dimensions of oversized cargo and requires the use of a C-5 or C-17 aircraft or surface transportation. "Oversized cargo" exceeds the dimensions of a standard (463L) pallet, but is air transportable on the C-5, C-17, C-130, KC-10, and most civilian contract cargo carriers. (Joint Publication 1-02, *DOD Dictionary of Military and Associated Terms*, amended through October 17, 2007, pp. 401-402).

<sup>4</sup> *Civil Reserve Air Fleet* (Fact Sheet), U.S. Air Force, July 2007, at <http://www.af.mil/factsheets/factsheet.asp?id=173>

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

## **International Segment**

The long-range international section consists commercial airliners capable of transoceanic operations. Medium-sized passenger and cargo aircraft make up the short-range international section supporting near offshore airlift requirements.

## **National Segment**

The aircraft in the Alaskan section provide airlift within U.S. Pacific Command's area of responsibility, specific to Alaska needs. The domestic section is designed to satisfy increased DOD airlift requirements in the United States during an emergency.

## **Aeromedical Evacuation Segment**

The aeromedical evacuation segment assists in the evacuation of casualties from operational theaters to hospitals in the continental United States. Kits containing litter stanchions, litters, and other aeromedical equipment are used to convert civil Boeing 767 passenger aircraft into air ambulances.

## **Contractual Relationship**

The airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the United States of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that obligate aircraft to the CRAF through the International Airlift Services.<sup>7</sup>

For FY2007, the guaranteed portion of DOD's CRAF contract was \$379 million, while AMC expected to award \$2.1 billion in additional business that were not guaranteed.<sup>8</sup> The Air Force announced \$2.2 billion in CRAF contracts had been let in FY2005.<sup>9</sup> DOD let contracts worth \$3.8 billion between FY1998 and FY2002:<sup>10</sup> 1998, \$646 million; 1999, \$710 million; 2000, \$629 million; 2001, \$572 million; and 2002, \$1,280 million.

## **Activation**

Three stages of incremental activation allow for tailoring an airlift force suitable for the contingency at hand.<sup>11</sup> The stages of activation are as follows:

- **Stage I**—minor regional crises.

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<sup>7</sup> *Civil Reserve Air Fleet* (Fact Sheet), U.S. Air Force, July 2007.

<sup>8</sup> *Ibid.*

<sup>9</sup> "Air Force announces CRAF contracts valued at \$2.2 billion." (Release Number: 570905) *Air Force Print News Today*. September 13, 2005.

<sup>10</sup> *Military Readiness. Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping*. General Accounting Office (GAO-03-278) December 2002. p.15.

<sup>11</sup> *Civil Reserve Air Fleet* (Fact Sheet), U.S. Air Force, July 2007.

- **Stage II**—major theater war.
- **Stage III**—periods of national mobilization.

The commander, U.S. Transportation Command (TRANSCOM), with approval of the Secretary of Defense, is the activation authority for all three stages of CRAF. During a crisis, if the Air Force Air Mobility Command (AMC) has a need for additional aircraft, it would request the TRANSCOM commander to take steps to activate the appropriate CRAF stage. Each stage of the CRAF activation is only used to the extent necessary to provide the amount of civil augmentation airlift needed by DOD. When notified of call-up, the carrier response time to have its aircraft ready for a CRAF mission is 24 to 48 hours after the mission is assigned by AMC. The air carriers continue to operate and maintain the aircraft with their resources; however, AMC controls the aircraft missions.<sup>12</sup>

CRAF has been formally activated on two separate occasions over the program's 57-year history. The first instance occurred for Operations Desert Shield/Storm from August 18, 1990, through May 24, 1991, and included long-range international passenger and cargo segments up to Stage II. During Operation Desert Storm, CRAF airlines executed 5,460 missions transporting 726,000 passengers and 230,000 tons of cargo at a cost of \$1.4 billion. The second activation, during Operation Iraqi Freedom, lasted from February 8, 2003 through June 18, 2003, and included the long-range international passenger segment up to Stage 1—long-range cargo requirements were met organically or with voluntary commercial contracts.<sup>13</sup>

## **CRAF Membership**

As of March 2008, 35 carriers with 1,262 aircraft were enrolled in the CRAF. This includes 1,172 aircraft in the international segment (905 long-range and 267 short-range), 40 aircraft in the national segment, and 50 aircraft in the aeromedical evacuation segments.<sup>14</sup> **Table 1** summarizes current CRAF members:

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<sup>12</sup> Ibid.

<sup>13</sup> Chuck Roberts, Master Sergeant, USAF, "Civil Reserve Air Fleet Stage I Activates for Only the Second Time in History," *Airman*, April 2003, at <http://www.af.mil/news/airman/0403/world7.html>.

<sup>14</sup> Michael Lowder, Letter to CRAF Program Participants, Enclosure 1, March 11, 2008, at <http://www.dot.gov/ost/oet/craf/CR0308.xls>.

**Table 1. Airlines Participating in the Civil Reserve Air Fleet**

<b>International Segment</b>		
<b>Long Range Section</b>		<b>Short Range Section</b>
ABX Air	Kalitta Air	Alaska Airlines
Air Transport Intl.	Murray Air	American Airlines
American Airlines	North American Airlines	ATA Airlines <sup>a</sup>
ATA Airlines <sup>a</sup>	Northwest Airlines	Champion Air <sup>b</sup>
Arrow Air	Omni International	Delta Airlines
Atlas Air	Polar Air Cargo	DHL Airways
Continental Airlines	Ryan Intl. Airlines	Jet Blue Airways
Delta Air Lines	Southern Air	Lynden Air Cargo
DHL Airways	United Airlines	Miami Air International
Evergreen International	United Parcel Service	Northern Air Cargo
FEDEX Airlines	US Airways	Northwest Airlines
Gemini Air Cargo	World Airways	Sun Country
<b>National Segment</b>		
<b>Domestic Section</b>		<b>Alaska Section</b>
Air Trans Airways	Midwest Airlines	Lynden Air Cargo
Frontier Airlines	Southwest Airlines	Northern Air Cargo
<b>Aeromedical Evacuation Segment</b>		
Delta Air Lines	United Airlines	US Airways

**Source:** Department of Transportation which issues updates monthly.

- a. ATA Airlines discontinued operations and file for bankruptcy protection under Chapter 11 on April 2, 2008, resulting in the loss of 31 aircraft to CRAF. See online at [http://www.ata.com/about\\_ata/news/0080403.pdf](http://www.ata.com/about_ata/news/0080403.pdf).
- b. Champion Air plans to discontinue flight operations on May 31, 2008 resulting in the loss of 6 aircraft to CRAF. See online at <http://www.championair.com/PressRoom.asp?PressReleaseID=21>.

## Analysis: Potential Future of CRAF

CRAF presents benefits and opportunities for both the DOD and the U.S. airline industry—by all accounts it appears to be a symbiotic relationship. Yet, as circumstances change, pressures and diverging interests may emerge that could bring changes to CRAF.

## Cost Factors

The primary benefit that CRAF imparts to DOD is its relatively low cost when compared to procuring and maintaining a larger organic fleet. For example, a 1996 Government Accountability Office (GAO) report noted that CRAF “provides up to half of the nation’s strategic airlift



capability without the government having to buy additional aircraft, pay personnel costs, or maintain the aircraft during peacetime”<sup>15</sup>—all factors that remain relevant today.

While CRAF is relatively inexpensive, some may point out that commercial aircraft have operational limitations when compared to DOD’s organic airlift fleet. For example, commercial aircraft cannot carry outsized cargo, conduct special missions such as airdrop, or support special operations forces. Also, commercial aircraft tend to congest airfields because of longer ground times resulting from a lack of roll on/roll off capability and reduced ramp maneuverability. Further, potential hostile fire effectively deters civilian crews from entering combat zones. However, commercial aircraft typically have longer range, and are optimized to efficiently transport passengers and cargo pallets.<sup>16</sup> GAO references the use of CRAF during Operation Desert Storm to illustrate CRAF’s cost advantages:

The use of CRAF aircraft during an activation is not free—DOD pays rates based on weighted average carrier costs—but the cost is minimal in comparison to the costs of acquiring and supporting aircraft, paying and training aircrew, and other expenses of maintaining standby military airlift capability. AMC paid the carriers about \$1.5 billion for using their aircraft during the operation. Purchasing additional military aircraft to provide similar capability would cost from \$15 to \$50 billion, according to Air Force officials, depending on assumptions used for aircraft replacement cost.<sup>17</sup>

A RAND study (*Finding the Right Mix of Military and Civil Airlift, Issues and Implications*) also includes a discussion of the cost-effectiveness of CRAF:

For a very small cost, the DOD has had on call a very substantial airlift capacity. Replacing CRAF’s 1992 Stage II capability with military-style transports would have cost the DOD about \$1 billion annually (1992 dollars) over the past several decades. Replacing the Stage III capability would have cost about \$3 billion annually.<sup>18</sup>

The RAND analysis points out that to have adequate airlift for a major crisis, DOD maintains a military airlift fleet with a total capacity four to five times greater than the average daily use. Costs associated with acquiring and maintaining this excess airlift capability must be routinely incurred, even if the full capacity is rarely used.

As DOD’s procurement and operations and maintenance accounts come under increasing pressure, it may appear attractive to increase the size of CRAF in lieu of procuring and operating a certain fraction of the Air Force strategic airlift fleet. Recent events may suggest that a growing use of commercial aircraft for every-day DOD needs is already in evidence. In January 2005, for example, it was reported that commercial airlines moved twice as many U.S. troops overseas as they moved in January 2004.<sup>19</sup>

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<sup>15</sup> GAO/NSIAD-96-125, “Military Airlift: Observations on the Civil Reserve Air Fleet Program,” March 1996, p. 2, at <http://www.gao.gov/archive/1996/ns96125.pdf>.

<sup>16</sup> Robert C. Owen, Professor, Embry-Riddle Aeronautical University-Daytona Beach, FL, “Transport Trade-offs,” written in response to a previous letter to the editor in “Correspondence,” *Aviation Week and Space Technology*, October 8, 2007, p. 8.

<sup>17</sup> *Ibid.*, p. 7.

<sup>18</sup> Jean Gebman, et al. *Finding the Right Mix of Military and Civil Airlift, Issues and Implications*. Volume 1. Executive Summary. RAND. Santa Monica, CA.1994. p. 21.

<sup>19</sup> Micheline Maynard. “Airlines Moving More Troops This Month.” *New York Times*. January 25, 2005.

Contracting with air carriers to commit their aircraft to wartime needs is cheaper, in a sense, than purchasing and operating additional Air Force cargo aircraft. However, CRAF is not free, and it costs more once activated. RAND points out that:

Although holding reserve capacity in the CRAF is far more cost effective than holding the reserve in the military airlift fleet, the government has a financial incentive to use its own resources (for which it has already committed funds) in a crisis to the extent that they are conveniently available, rather than give additional business to CRAF carriers.<sup>20</sup>

## **Other Government / Commercial Arrangements**

CRAF is not the only means by which DOD transports troops by civil aircraft. Through the General Services Administration (GSA), the U.S. government negotiates and lets contracts to commercial airlines to fly government employees on official U.S. government business. Federal employees, including DOD civilian and military personnel, traveling on government business are obliged to fly with these contracted airlines at the official government rate. DOD also charters commercial aircraft to satisfy peacetime mobility needs.

In July 2006 the U.S. Central Command had initiated a pilot program—“Commercial and Government Air Program”—to enlist commercial air cargo carriers to deliver military supplies into Afghanistan and Iraq. The pilot program is hoped to deliver up to 20% of DOD cargo to the region and to save DOD approximately \$9 million per month.<sup>21</sup> DOD hopes to dramatically reduce its flight costs by creating competition among carriers for the work, and by leveraging excess cargo capacity on regularly scheduled commercial flights. This trial program could be viewed as something of an alternative to CRAF, or an indication that more CRAF would be welcome.

## **Potential Changes in DOD’s Airlift Requirements and Force Structure**

The increased scope and pace of military operations following the terrorist attacks of September 11, 2001, have increased the Air Force’s mobility needs and made commercial air carriers a more prominent component of this capability.<sup>22</sup> Potential changes in DOD’s strategic airlift requirements and air mobility force structure may affect the CRAF program.<sup>23</sup>

### **DOD Airlift Requirements**

DOD periodically examines the state of its current air mobility fleet and quantifies future airlift requirements to determine whether current force structure is sufficient to meet the President’s national security strategy. DOD’s most recent air mobility requirements study, *Mobility*

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<sup>20</sup> RAND op cit. p. 22.

<sup>21</sup> Jason Sherman. “CENTCOM Taps Commercial Air Carriers to Cut Iraq Cargo Costs.” *Inside the Air Force*. July 21, 2006.

<sup>22</sup> See for example, Cynthia Di Pasquale. “Pentagon Studies CRAF Sustainability and Incentives to Industry.” *Inside the Air Force*. October 8, 2004.

<sup>23</sup> See CRS Report RL34264, *Strategic Airlift Modernization: Analysis of C-5 Modernization and C-17 Acquisition Issues*, by (name redacted), for more information.

Capability Study (MCS), was completed in December 2005. However, during congressional testimony, General Arthur L. Lichte, Commander of the Air Force's Air Mobility Command, pointed to changes that have occurred since the MCS was completed that include the increase of 92,000 ground forces, the repositioning of DOD force structure overseas, and the growth of the Army's Future Combat System.<sup>24</sup> Further, DOD has reduced the number of C-5 *Galaxies* planned for upgrade with new engines and other enhancements that were expected to bolster capability of the C-5 fleet to levels required by MCS-2005. As a result, General Lichte stated that the current program of record for the Air Force's strategic airlift fleet of C-5s and C-17s falls short of the organic strategic airlift capability of 33.95 million ton miles day (MTM/D) requirement.<sup>25</sup>

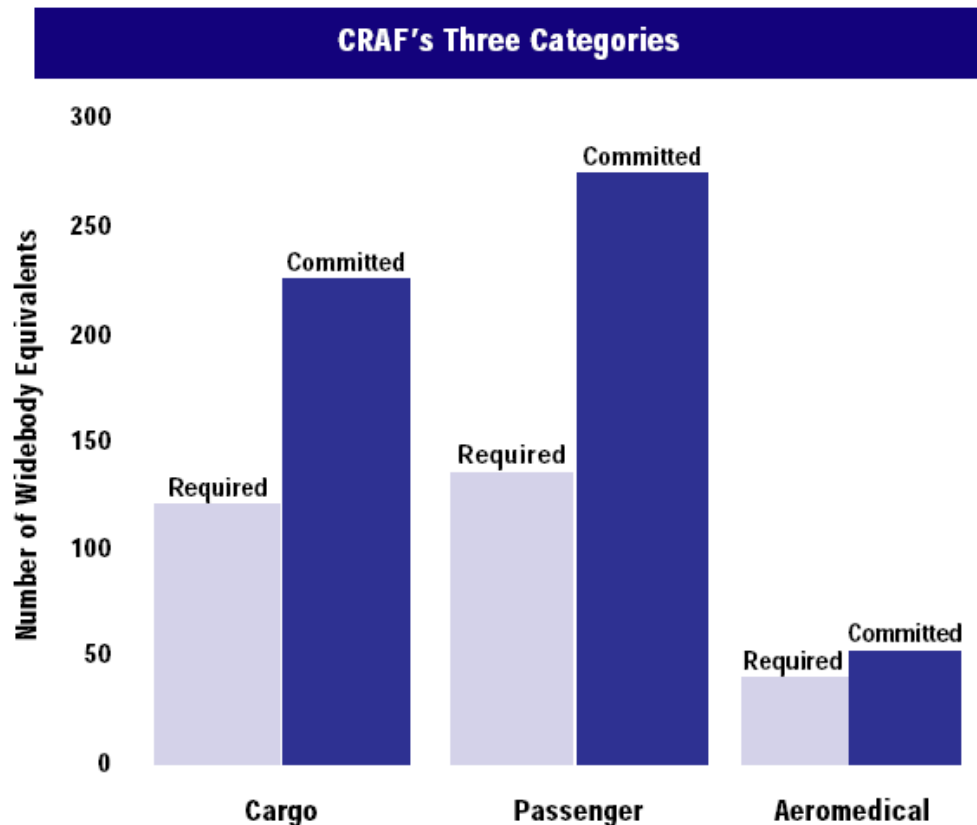
The MCS called for the same level of CRAF contribution to total airlift capabilities (20.5 million ton miles per day of the overall 54.5 million ton miles per day objective) as required in the prior study.<sup>26</sup> However, DOD's projected use of CRAF to fulfill total airlift needs has increased from roughly 12 MTM/D in the late 1980s to roughly 20 MTM/D in 2005. Further, this increase in capacity has occurred gradually, and many view DOD's requirement for CRAF as being stable over this 19-year span. As **Figure 1** indicates, commercial aircraft committed to CRAF exceed DOD requirements. Thus, any foreseeable increases in CRAF requirements are unlikely to result in shortfalls of commercial aircraft committed to CRAF.

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<sup>24</sup> Gen. Arthur L. Lichte (USAF), Written Statement, Hearing on United States Transportation Command Posture and Air Force Mobility Aircraft Programs, Subcommittee on Air and Land Forces, House Armed Services Committee, April 1, 2008, p. 8.

<sup>25</sup> Ibid, p.4.

<sup>26</sup> Unlike previous mobility studies, DOD's *Mobility Capabilities Study 2005* did not provide a specific quantitative estimate of airlift requirements. Some have asserted that this omission reduces the value of the MCS and have called for another, requirements-driven study.

**Figure I. CRAF Requirements and Commitments**

*Currently, the Air Force has more commercial aircraft committed to its Civil Reserve Air Fleet than it needs to meet wartime demand, but the number required could be going up just as some carriers are considering leaving the CRAF program. Due out by 2004 is a new mobility requirements study that may call for increased CRAF use for cargo, passengers, and medical evacuation.*

**Source:** Air Force Magazine, February 2003, p. 28.

## Potential C-17 Acquisition

Some favor acquisition of additional C-17s<sup>27</sup> to meet potential current and future strategic airlift requirement shortfalls. For example, in March 2008, General Norton A. Schwartz, Commander of U.S. Transportation Command, stated that based on the C-5 Reliability Enhancement and Re-engining Program being reduced and recertified by DOD, he believes DOD needs a fleet of 111 C-5s and 205 C-17s.<sup>28</sup> Further, the Air Force's FY2009 Unfunded Priority List contained a

<sup>27</sup> See CRS Report RS22763, *Military Airlift: C-17 Program Background*, by (name redacted), for more information about the C-17.

<sup>28</sup> Transcript from the Hearing of the Senate Armed Services Subcommittee on Seapower on Fiscal Year 2009 Budget for the Department of Defense Strategic Lift Programs, March 12, 2008 obtained through <http://www.cq.com>.

request for 15 additional C-17s.<sup>29</sup> In contrast, the Administration's FY2009 budget request did not contain funding for new C-17s, nor did it request funding to close the C-17 production line.<sup>30</sup> However, during congressional testimony, Gen. Schwartz cautioned that too large of an organic airlift fleet could potentially hurt the CRAF program in the future when he stated,

One of the things that you hold me accountable for is sort of maintaining the balance between the organic fleet and the commercial capability. And as I mentioned in my opening remarks, I caution about overbuilding the organic fleet; because if that occurs, it can competes in peace time with that preference cargo, the incentives that we offer our commercial partners. And so that's one of the reasons that I believe 205 is the right number of C-17s.<sup>31</sup>

## **BC-17**

Because Air Force budget limitations make additional large-scale procurement of C-17s difficult to fund, some have suggested the design of a commercial version of the C-17 aircraft (BC-17) that might become part of the CRAF fleet. However, is there sufficient market for these aircraft to be commercially viable? In May of 2007, Boeing's C-17 Program Manager, Dave Bowman, stated, "we have several customers with money that have given us requests for proposals."<sup>32</sup> Some industry studies suggest that a commercial market for up to 10 C-17s may exist for use in heavy industry, mining, or similar endeavors, while Boeing believes there is market potential of "upwards of 100 aircraft."<sup>33</sup> On the other hand, at present, there are no orders for a commercial variant of the C-17.

## **KC-X Acquisition**

Acquisition decisions regarding KC-X, the Air Force's next generation tanker program, may also affect future DOD CRAF needs and use.<sup>34</sup> Both competitors for the KC-X program, the Northrop Grumman KC-30 based on the Airbus 330-200 and the KC-767 based on Boeing's 767-200, could add airlift capability compared to the KC-135s they are envisioned to replace. **Table 2** summarizes the airlift capabilities of the KC-135 and potential KC-X replacements.

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<sup>29</sup> "FY2009 Unfunded Requirements List," U.S. Air Force, SAF/FMB, Budget and Appropriations Liaison Office, February 2008, p. 2, at <http://dailyreport.afa.org/NR/rdonlyres/BAD928B9-0927-4628-BE43-14992CB464C1/0/FY09URL.pdf>.

<sup>30</sup> Marc V. Schanz, "The C-17 and the Airlift Question," *Daily Report, Air Force Magazine*, February 6, 2008, at <http://dailyreport.afa.org/AFA/Features/modernization/box020608airlift.htm>.

<sup>31</sup> Transcript from the Hearing of the Senate Armed Services Subcommittee on Seapower on Fiscal Year 2009 Budget for the Department of Defense Strategic Lift Programs, March 12, 2008 obtained through <http://www.cq.com>.

<sup>32</sup> Guy Norris, online at [Flightglobal.com](http://Flightglobal.com), May 23, 2007.

<sup>33</sup> Ibid.

<sup>34</sup> See CRS Report RL34398, *Air Force Air Refueling: The KC-X Aircraft Acquisition Program*, by (name redacted).

**Table 2. KC-135 and Potential KC-X Airlift Capabilities**

	KC-135	KC-30	KC-767
Passengers	54	226	200
Pallets	6	32	19
Defensive Systems	No	Planned	Planned

**Source:** USAF, Northrop Grumman and Boeing. KC-135 information derived from KC-135 Stratotanker Fact Sheet, <http://www.af.mil/factsheets/factsheet.asp?id=110>, and the Air Force Handbook 2007.

Like their commercial counterparts, potential KC-X tankers will have limited oversized cargo capability, but a significant capability to transport passengers and cargo pallets. Thus, as the Air Force's KC-X tanker fleet potentially grows, DOD's day-to-day need for commercial airlift that participants in the CRAF program provide could potentially be reduced. However, because most tankers could be needed to perform air refueling during a potential crisis, DOD would likely still rely on the CRAF program to meet surges in airlift demand.

On February 29, 2008, the Air Force awarded the KC-X contract to Northrop Grumman. The initial \$12.1 billion KC-X contract provides for the purchase the first 68 KC-45s<sup>35</sup> of the anticipated 179 aircraft.<sup>36</sup> On March 11, 2008, Boeing protested the Air Force's decision to the Government Accountability Office (GAO).<sup>37</sup> GAO has 100 days to evaluate the protest.<sup>38</sup>

## Industrial Base/Financial Assistance to Air Carriers

All major passenger and cargo carriers participate in CRAF.<sup>39</sup> This strong participation can be inferred to reflect broad support for CRAF. The program is voluntary, and it appears logical that if the airlines didn't find participation to be in their interest, they would not participate. Every indication suggests that U.S. air carriers value CRAF and want to participate. **Table 3** illustrates the growth in CRAF participation over the last 10 years.

**Table 3. Recent CRAF Participation**

	1998	2002	2005	2007	2008
Carriers	35	33	40	37	35
Aircraft	657	927	1,126	1,360	1,262

**Source:** Departments of Defense and Transportation.

Following the terrorist attacks of September 11, 2001, many U.S. commercial air carriers struggled because of a lack of business and other factors. Today, rising fuel prices continue to

<sup>35</sup> The Air Force plans to designate its KC-X tanker as the KC-45A.

<sup>36</sup> "Tanker Contract Award Announced," Air Force Print News, February 29, 2008, online at <http://www.af.mil/news/story.asp?id=123088392>.

<sup>37</sup> Boeing News Release, "Boeing Protests U.S. Air Force Tanker Contract Award," March 11, 2008, at [http://www.boeing.com/ids/globaltanker/news/2008/q1/080311b\\_nr.html](http://www.boeing.com/ids/globaltanker/news/2008/q1/080311b_nr.html).

<sup>38</sup> GAO Press Statement, "GAO Statement Regarding Protest Filed by Boeing Company with the Government Accountability Office," March 11, 2008, at <http://www.gao.gov/press/pressstmt-boeing0311.pdf>.

<sup>39</sup> United, American, Delta, Northwest, US Airways, Southwest, UPS, and FEDEX respectively.

pose a threat to the commercial airline industry.<sup>40</sup> As economic and financial conditions for commercial air carriers potentially worsen, the benefit of CRAF for the commercial sector has been increasingly discussed. It may be that if economic conditions remain difficult, pressure may build on DOD to use more commercial airlift, not necessarily to satisfy DOD needs, but to support the private sector.<sup>41</sup> Also, some, including the DOT, have proposed changes to Federal Aviation Administration (FAA) regulations that might potentially lead to increased foreign investment in U.S. airlines, including those that participate in CRAF.<sup>42</sup> While some support the additional capital that foreign investment could bring to the airline industry, others oppose the concept of allowing foreign corporations to yield increased influence over a sector of the U.S. economy that makes a significant contribution to our nation's defense.

## Summary of Recent Legislative Activity

This section provides a summary of recent legislation regarding the Department of Defense's (DOD's) Civil Reserve Air Fleet (CRAF) program.

### FY2008

The FY2008 National Defense Authorization Act (NDAA) contained three provisions that affected the CRAF (P.L. 110-181). First, Section 356 called for a comprehensive and independent assessment of CRAF. This assessment is designed to examine current and long-range issues associated with CRAF and make specific recommendations for preserving and improving the program. The FY2008 NDAA required a report to be delivered to congressional defense committee no later than April 2008. An excerpt of Section 356 is provided at **Appendix A**.

Second, Section 378 of the FY2008 NDAA extended authorization of the Aviation Insurance Program (AIP) from March 30, 2008, to December 30, 2103. As part of the AIP, the FAA offers a non-premium insurance program to air carriers that participate in the CRAF. The Congressional Budget Office estimated "that extending the CRAF program through 2013 would have no significant budgetary impact."<sup>43</sup>

Third, Section 1046 called for a DOD study on the size and mix of the airlift force to specifically include how the CRAF could potentially affect DOD's airlift fleet requirements. This report is expected to be completed by January 2009. An excerpt of Section 1046 is provided at **Appendix B**. Many expect this study to inform force structure decisions regarding the optimal mix of DOD's organic air mobility fleets and the CRAF.

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<sup>40</sup> Graham Bowley, "Frontier Airlines Files for Bankruptcy," *The New York Times*, April 12, 2008, at <http://www.nytimes.com/2008/04/12/business/11cnd-frontier.html?ex=1208577600&en=f41b5269883e5591&ei=5123&partner=BREITBART>.

<sup>41</sup> See for example Scott McCartney, "Flying Troops for the Pentagon Gives Airlines a Financial Boost," *Wall Street Journal*, May 14, 2003. Micheline Maynard, "Pentagon's War Needs Are a Lifeline for Airlines," *New York Times*, December 26, 2003. Micheline Maynard, "Pentagon's Needs Offer Airlines a Lift," *New York Times*, January 22, 2005.

<sup>42</sup> See for example 70 Fed. Reg. 67,389 (November 7, 2005), a Notice of Proposed Rulemaking (NPRM) seeking comments on a proposal to clarify the policy of requiring "actual control" of a U.S. air carrier to be by a citizen of the United States.

<sup>43</sup> Congressional Budget Office Cost Estimate, "H.R. 4986: National Defense Authorization Act for Fiscal Year 2008," January 25, 2008, p. 12.

## **FY2007**

In FY2007, the Senate version of the FY2007 NDAA contained a provision (sec. 1052) that would allow the Department of Defense to guarantee higher minimum levels of business to U.S. Civil Reserve Air Fleet carriers than are currently authorized by law. However, the provision was not adopted in the final legislation (P.L. 109-364).

## **FY2006**

Section 131 of the FY2006 NDAA contained a provision that required DOD to conduct an analysis of inter-theater airlift capabilities to include the impact of the CRAF on DOD's inter-theater airlift force structure requirements (P.L. 109-163).



## **Appendix A. FY2008 National Defense Authorization Act (P.L. 110-181), Section 356**

Section 356 of the Conference Report (H.Rept. 110-477, December 6, 2007) to H.R. 1585 stated the following:

**SEC. 356. INDEPENDENT ASSESSMENT OF CIVIL RESERVE AIR FLEET VIABILITY**

(a) Independent Assessment Required- The Secretary of Defense shall provide for an independent assessment of the viability of the Civil Reserve Air Fleet to be conducted by a federally-funded research and development center selected by the Secretary.

(b) Contents of Assessment- The assessment required by subsection (a) shall include each of the following:

(1) An assessment of the Civil Reserve Air Fleet as of the date of the enactment of this Act, including an assessment of—

(A) the level of increased use of commercial assets to fulfill Department of Defense transportation requirements as a result of the increased global mobility requirements in response to the terrorist attacks of September 11, 2001;

(B) the extent of charter air carrier participation in fulfilling increased Department of Defense transportation requirements as a result of the increased global mobility requirements in response to the terrorist attacks of September 11, 2001;

(C) any policy of the Secretary of Defense to limit the percentage of income a single air carrier participating in the Civil Reserve Air Fleet may earn under contracts with the Secretary during any calendar year and the effects of such policy on the air carrier industry in peacetime and during periods during which the Armed Forces are deployed in support of a contingency operation for which the Civil Reserve Air Fleet is not activated; and

(D) any risks to the charter air carrier industry as a result of the expansion of the industry in response to contingency operations resulting in increased demand by the Department of Defense.

(2) A strategic assessment of the viability of the Civil Reserve Air Fleet that compares such viability as of the date of the enactment of this Act with the projected viability of the Civil Reserve Air Fleet 5, 10, and 15 years after the date of the enactment of this Act, including for activations at each of stages 1, 2, and 3—

(A) an examination of the requirements of the Department of Defense for the Civil Reserve Air Fleet for the support of operational and contingency plans, including any anticipated changes in the Department's organic airlift capacity, logistics concepts, and personnel and training requirements;

(B) an assessment of air carrier participation in the Civil Reserve Air Fleet; and

(C) a comparison between the requirements of the Department described in subparagraph (A) and air carrier participation described in subparagraph (B).

(3) An examination of any perceived barriers to Civil Reserve Air Fleet viability, including—

(A) the operational planning system of the Civil Reserve Air Fleet;

(B) the reward system of the Civil Reserve Air Fleet;

(C) the long-term affordability of the Aviation War Risk Insurance Program;

(D) the effect on United States air carriers operating overseas routes during periods of Civil Reserve Air Fleet activation;

(E) increased foreign ownership of United States air carriers;

(F) increased operational costs during activation as a result of hazardous duty pay, routing delays, and inefficiencies in cargo handling by the Department of Defense;

(G) the effect of policy initiatives by the Secretary of Transportation to encourage international code sharing and alliances; and

(H) the effect of limitations imposed by the Secretary of Defense to limit commercial shipping options for certain routes and package sizes.

(4) Recommendations for improving the Civil Reserve Air Fleet program, including an assessment of potential incentives for increasing participation in the Civil Reserve Air Fleet program, including establishing a minimum annual purchase amount during peacetime.

(c) Submission to Congress- Upon the completion of the assessment required under subsection (a) and by not later than April 1, 2008, the Secretary shall submit to the congressional defense committees a report on the assessment.

(d) Comptroller General Report- Not later than 90 days after the report is submitted under subsection (c), the Comptroller General shall conduct a review of the assessment required under subsection (a).

## **Appendix B. FY2008 National Defense Authorization Act (P.L. 110-181), Section 1046**

Section 1046 of the Conference Report (H.Rept. 110-477, December 6, 2007) to H.R. 1585 stated the following:

**SEC. 1046. STUDY ON SIZE AND MIX OF AIRLIFT FORCE.**

(a) Study Required- The Secretary of Defense shall conduct a requirements-based study on alternatives for the proper size and mix of fixed-wing intratheater and intertheater airlift assets to meet the National Military Strategy for each of the following timeframes: fiscal year 2012, 2018, and 2024. The study shall—

- (1) focus on organic and commercially programmed airlift capabilities;
- (2) analyze the full-spectrum lifecycle costs of the various alternatives for organic models of each of the following aircraft: C-5A/B/C/M, C-17A, KC-X, KC-10, KC-135R, C-130E/H/J, Joint Cargo Aircraft; and
- (3) incorporate the augmentation capability, viability, and feasibility of the Civil Reserve Air Fleet during activation stages I, II, and III.

(b) Use of FFRDC- The Secretary shall select, to carry out the study required by subsection (a), a federally funded research and development center that has experience and expertise in conducting similar studies.

(c) Study Plan- The study required by subsection (a) shall be carried out under a study plan. The study plan shall be developed as follows:

- (1) The center selected under subsection (b) shall develop the study plan and shall, not later than 60 days after the date of enactment of this Act, submit the study plan to the congressional defense committees, the Secretary, and the Comptroller General of the United States.
- (2) The Comptroller General shall review the study plan to determine whether it is complete and objective, and whether it has any flaws or weaknesses in scope or methodology, and shall, not later than 30 days after receiving the study plan, submit to the Secretary and the center a report that contains the results of that review and provides any recommendations that the Comptroller General considers appropriate for improvements to the study plan.
- (3) The center shall modify the study plan to incorporate the recommendations under paragraph (2) and shall, not later than 45 days after receiving that report, submit to the Secretary and the congressional defense committees a report on those modifications. The report shall describe each modification and, if the modifications do not incorporate one or more of the recommendations, shall explain the reasons for not doing so.

(d) Elements of Study Plan- The study plan required by subsection (c) shall address, at minimum, the following:

- (1) A description of lift requirements and operating profiles for airlift aircraft required to meet the National Military Strategy, including assumptions regarding the following:

- (A) Current and future military combat and support missions.
  - (B) The planned force structure growth of the military services.
  - (C) Potential changes in lift requirements, including the deployment of the Future Combat Systems by the Army.
  - (D) New capability in airlift to be provided by the KC(X) aircraft and the expected utilization of such capability, including its use in intratheater lift.
  - (E) The utilization of intertheater lift aircraft in intratheater combat mission support roles.
  - (F) The availability and application of Civil Reserve Air Fleet assets in future military scenarios.
  - (G) Air mobility requirements associated with the Global Rebasing Initiative of the Department of Defense.
  - (H) Air mobility requirements in support of worldwide peacekeeping and humanitarian missions.
  - (I) Air mobility requirements in support of homeland defense and national emergencies.
  - (J) The viability and capability of the Civil Reserve Air Fleet to augment organic forces in both friendly and hostile environments.
  - (K) An assessment of the Civil Reserve Air Fleet to adequately augment the organic fleet as it relates to commercial inventory management restructuring in response to future commercial markets, streamlining of operations, efficiency measures, or downsizing of the participant.
- (2) An evaluation of the state of the current airlift fleet of the Air Force, including assessments of the following:
- (A) The extent to which the increased use of airlift aircraft in on-going operations is affecting the programmed service life of the aircraft of that fleet.
  - (B) The adequacy of the current airlift force, including whether or not a minimum of 299 strategic airlift aircraft for the Air Force is sufficient to support future expeditionary combat and non-combat missions, as well as domestic and training mission demands consistent with the requirements of meeting the National Military Strategy.
  - (C) The optimal mix of C-5 and C-17 aircraft for the strategic airlift fleet of the Air Force, to include the following:
    - (i) The cost-effectiveness of modernizing various iterations of the C-5A and C-5B/C aircraft fleet versus procuring additional C-17 aircraft.
    - (ii) The military capability, operational availability, usefulness, and service life of the C-5A/B/C/M aircraft and the C-17 aircraft. Such an assessment shall

examine appropriate metrics, such as aircraft availability rates, departure rates, and mission capable rates, in each of the following cases:

(I) Completion of the Avionics Modernization Program and the Reliability Enhancement and Re-engining Program.

(II) Partial completion of the Avionics Modernization Program and the Reliability Enhancement and Re-engining Program, with partial completion of either such program being considered the point at which the continued execution of each program is no longer supported by the cost-effectiveness analysis.

(iii) At what specific fleet inventory for each organic aircraft, to include air refueling aircraft used in the airlift role, would it impede the ability of Civil Reserve Air Fleet participants to remain a viable augmentation option.

(D) An analysis and assessment of the lessons that may be learned from the experience of the Air Force in restarting the production line for the C-5 aircraft after having closed the line for several years, and recommendations for the actions that the Department of Defense should take to ensure that the production line for the C-17 aircraft could be restarted if necessary, including—

(i) an analysis of the methods that were used and costs that were incurred in closing and re-opening the production line for the C-5 aircraft;

(ii) an assessment of the methods and actions that should be employed and the expected costs and risks of closing and re-opening the production line for the C-17 aircraft in view of that experience.

Such analysis and assessment should deal with issues such as production work force, production facilities, tooling, industrial base suppliers, contractor logistics support versus organic maintenance, and diminished manufacturing sources.

(E) Assessing the military capability, operational availability, usefulness, service life and optimal mix of intra-theater airlift aircraft, to include—

(i) the cost-effectiveness of procuring the Joint Cargo Aircraft versus procuring additional C-130J or refurbishing C-130E/H platforms to meet intra-theater airlift requirements of the combatant commander and component commands; and

(ii) the cost-effectiveness of procuring additional C-17 aircraft versus procuring additional C-130J platforms or refurbishing C-130E/H platforms to meet intra-theater airlift requirements of the combatant commander and component commands.

(3) Each analysis required by paragraph (2) shall include—

(A) a description of the assumptions and sensitivity analysis utilized in the study regarding aircraft performances and cargo loading factors; and

(B) a comprehensive statement of the data and assumptions utilized in making the program life cycle cost estimates and a comparison of cost and risk associated with

the optimally mixed fleet of airlift aircraft versus the program of record airlift aircraft fleet.

(e) Utilization of Other Studies- The study required by subsection (a) shall build upon the results of the 2005 Mobility Capabilities Studies, the on-going Intra-theater Airlift Fleet Mix Analysis, the Intra-theater Lift Capabilities Study, the Joint Future Theater Airlift Capabilities Analysis, and other appropriate studies and analyses, such as Fleet Viability Board Reports or special aircraft assessments. The study shall also include any testing data collected on modernization, recapitalization, and upgrade efforts of current organic aircraft.

(f) Collaboration With United States Transportation Command- In conducting the study required by subsection (a) and preparing the report required by subsection (c)(3), the center shall collaborate with the commander of the United States Transportation Command.

(g) Collaboration With Cost Analysis Improvement Group- In conducting the study required by subsection (a) and constructing the analysis required by subsection (a)(2), the center shall collaborate with the Cost Analysis Improvement Group of the Department of Defense.

(h) Report- Not later than January 10, 2009, the center selected under subsection (b) shall submit to the Secretary and the congressional defense committees a report on the study required by subsection (a). The report shall be submitted in unclassified form, but shall include a classified annex.

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