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Set Up to Fail: Charter Passenger Airlines and the Civil Reserve Air Fleet

by

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Preface

As an Air Force airlift pilot, I had seen the aircraft of the Civil Reserve Air Fleet parked on airbases around the world but had never really given them much thought. Shortly after making the transition to flying in the Reserves, I was hired at a civilian airline and noticed that I rarely saw those same charter passenger aircraft at the airports I was transiting. After reading an article in an airline industry magazine regarding the bankruptcy of ATA Airlines, I began to see just how important these airlines were to the defense of the country, yet just how tenuous their business situation could be. Although there have been papers written and testimonies given regarding this point, no fresh attempt at protecting these airlines has been developed. The goal of my research was to highlight a looming problem that could have serious implications for the future of the Civil Reserve Air Fleet and discuss alternatives that could protect this important segment of national airlift policy.

I would like to thank my wife, son, and daughter for allowing me the time to work on this project. In addition, I would like to thank my instructor and advisor, Col Fred P. Stone, who was exceedingly helpful as well as patient while I worked through this research amidst multiple TDYs.

Abstract

The charter passenger airlines which participate in the Civil Reserve Air Fleet (CRAF) supply ninety percent of all Department of Defense (DOD) passenger airlift because the DOD has not invested in its own organic passenger aircraft. In the past decade, the charter passenger airlines have experienced an erosion of their commercial business base due to competition from low-cost carriers as well as larger airlines seeking to bolster flagging revenues by expanding into the vacation markets once dominated by the charter passenger airlines. As DOD requirements diminish with the conclusion of Operations Enduring Freedom and New Dawn, the future solvency of these airlines and their ability to support DOD CRAF commitments is in doubt.

This paper utilizes the problem/solution framework in order to examine changes in the charter passenger airline industry and what impact, if any, these changes will have on this segment of the CRAF. It finds that by extending the length of contracts offered to the charter passenger airlines from one to five years while allowing these airlines to base more of their total revenue on government contracts, the DOD can best ensure the future viability of this segment of the CRAF. While it is obviously difficult to predict future DOD airlift requirements, the stability provided by long-term contracts to the charter passenger airlines would provide the best assurance that this important airlift asset is available to support future airlift mobilization.

Introduction

In April of 2008, a unit of the United States National Guard which was scheduled for redeployment from a combat zone was forced to remain in harm's way longer while transportation was scheduled to bring them home. This unfortunate incident was caused by the charter airline that was scheduled to bring them home unexpectedly declaring bankruptcy.¹ This delay extended the time these service members were exposed to hostile fire and undoubtedly caused undue stress and strain on their families. Up to the point of bankruptcy, this airline had been a significant participant in the Civil Reserve Air Fleet (CRAF), which forms the backbone of Department of Defense (DOD) airlift strategy.² Comprising ninety percent of DOD passenger airlift requirements, the charter passenger airline component of the CRAF had experienced a sixty percent decrease in capacity since 2003 and was now less able to absorb the shock to the system that this airline's bankruptcy caused. This left open the real possibility of more combat troops being left in combat zones without transportation home.³

Established by executive order in 1951, the CRAF fulfills the airlift needs of the DOD by providing civilian aircraft to augment its organic airlift assets.⁴ This is by design, not by necessity. Akin to a contractor employing subcontractors for specific construction needs rather than paying a staff of highly-skilled laborers, military planners recognized even prior to the creation of the CRAF that it was far less expensive to contract airlift needs to civilian airlines than to maintain its own fleet of passenger aircraft.⁵ Indeed, rough estimates by Military Airlift Command (MAC) planners in the 1980s indicated that "reserve airlift capacity was about six to eight times less costly to maintain in CRAF than in the military fleet."⁶ The obvious prerequisite to these savings, however, is that the CRAF participants must be in business when DOD requires their services.

There is an obvious benefit of the CRAF, but it is not without risks to the DOD. The airline industry is as volatile as it is cyclical and is heavily affected by a myriad of factors such as the global economy, weather, terrorist acts, and oil prices.⁷ For example, the global airline industry experienced negative growth in the years following both Operation Desert Storm (ODS) and the 11 September 2001 attacks on the World Trade Center, causing numerous bankruptcies and reductions within the industry.⁸ Similarly, DOD airlift requirements follow an unpredictable, cyclical pattern. In times of contingency operations such as ODS or Operation Enduring Freedom (OEF), airlift requirements will naturally be elevated, followed by a decline to peacetime levels once the operation is concluded.

The biggest danger to the CRAF then becomes the possibility that these two patterns will coincide at the point of lowest demand. Owing to two factors, the charter passenger airlines which contribute to the CRAF are particularly significant to this study. First, charter passenger airlines transport ninety percent of DOD passengers on an annual basis.⁹ Second, the charter passenger airline market in the United States as well as the rest of the world experienced a significant loss in demand as a result of the rise of online ticket selling and low-cost carriers.¹⁰ This downswing, however, was masked by DOD airlift demands from OEF and Operation Iraqi Freedom (OIF) which ultimately resulted in a four-fold increase over the five years preceding these operations.¹¹ The transition in Iraq from OIF to Operation New Dawn (OND) with its resulting troop withdrawals, in combination with the recent announcement by President Barack Obama to begin withdrawing troops from Afghanistan, clearly signal that DOD airlift demand is moving toward a peacetime low level.¹²

When set against a backdrop of airline volatility and DOD reliance, this impending demand reduction for charter passenger airline business presents a significant question: To

ensure future passenger airlift needs will be met, how can DOD best ensure the viability of the charter passenger airline companies which participate in the CRAF following reductions in airlift needs generated by OEF/OND operations? This paper will answer this question using historical airline trends and current airline industry analysis to predict future participation. By separating the charter passenger airline component of the CRAF from the other components, this paper will show that while the overall health of the CRAF appears to be robust, the critical passenger airlift segment is in danger of failure due to lack of future requirements.

To address the question of protecting DOD passenger airlift capability through support of charter passenger airlines, this paper will utilize the problem/solution framework. Section 1 outlines the history and structure of the CRAF, highlights the steps in place currently to ensure airline participation, and addresses issues in the charter airline industry. Section 2 discusses the CRAF processes in place which are detrimental to the charter passenger carriers and how the changing airline landscape is threatening their existence, as well as criteria for successful alternatives. Section 3 will present three solutions to the problem: lengthening the contracts available, dissolution of an unwieldy rule, and status quo. Section 4 will compare the three solutions for their ability to meet criteria discussed in Section 2. Finally, Section 5 will make conclusions based upon the findings in Section 4 and make recommendations regarding the best course of action for CRAF leadership.

Background

Airlift is an exceedingly important function...it is one of those functions which is so all pervasive that people tend to forget about it

--Hans Mark
Secretary of the Air Force

History of the CRAF

In 1921, the Army Air Service (AAS) engineering department found that the best option for rapid movement of troops, ammunition, and supplies was by air.¹³ Unfortunately, aviation technology had not yet created aircraft capable of moving vast amounts of cargo and personnel over extended distances. Technological barriers notwithstanding, the Air Service began experimenting with a limited air supply system using open cockpit aircraft modified for small amounts of cargo.¹⁴ Although the results were limited, the potential for air transport was recognized in these early stages and the AAS urged the War Department to pursue air transportation by the use of civilian airlines or a fleet of military transport aircraft.¹⁵

In the next two decades, aircraft technology advanced rapidly and by the time the United States became involved in World War II (WWII), airlines were flying all-metal, low-wing aircraft such as the Douglas DC-3 which were capable of reliably crossing large distances, including the Atlantic Ocean. This capability became fortuitous for the war effort as the AAS lacked sufficient capabilities to meet its need for airlift. Throughout WWII, civilian airlines provided invaluable airlift augmentation to the war effort and proved the efficacy of the military-civilian airlift team.¹⁶ During the Korean War, the United States once again found itself short of necessary airlift and relied on civilian airlines to fulfill its requirements. While this ad-hoc arrangement between the government and civilian airlines had worked twice, there was clearly a need for a more formalized arrangement.

In 1951, seeking to standardize and cement this relationship, President Eisenhower issued an executive order, which was signed the proceeding year by President Truman, to establish what would become known as the CRAF.¹⁷ The ensuing decades saw an increasing need for the airlift capacities that the CRAF possessed with the expansion of United States' involvement overseas

and the increasing demand brought by United States commitment to NATO during the Cold War.¹⁸ In 1987, President Reagan signed National Security Decision Directive (NSDD)-280, which stated “It is therefore the policy of the United States to recognize the interdependence of military and civilian airlift capabilities in meeting wartime airlift requirements, and to protect those national security interests contained within the commercial air carrier industry.”¹⁹ This National Airlift Policy was put to the test shortly thereafter with the first activation of the CRAF in support of ODS and then again in 2003 to support OIF.²⁰ In both cases, the CRAF provided surge airlift capacity to meet national objectives and proved the worth of the work done by policy makers toward its development over the past half-decade.

Organization of the CRAF

The CRAF is a contractually-based, voluntary program wherein civilian airlines agree to transport United States Transportation Command (USTRANSCOM) personnel and cargo in exchange for access to government defense contracts.²¹ Composed of United States registered civilian transport aircraft which fill the needs of long and short-range international, aeromedical evacuation, domestic, and Alaskan airlift requirements, the CRAF aims to augment DOD airlift capabilities through a mix of aircraft type sourced from the civilian airlines.²² In exchange for this added revenue, airlines must agree to surrender predetermined numbers of their aircraft and aircrew to DOD in times of necessity as determined by the President, Secretary of Defense, or USTRANSCOM Commander.²³ The degree of necessity is broken up into three stages of activation. Stage I is for an expansion in peacetime military requirements or minor contingencies when concurrent deployment and other airlift needs cannot be met by organic DOD assets. Stage II is for a defense airlift emergency greater than Stage I and is normally used

for one major theater war (MTW). Stage III is for times of national emergencies when the entirety of the CRAF is needed to support multiple MTWs.²⁴

Airline Participation Incentives

In order for an airline to compete for the approximately \$2.1 billion annual CRAF funding they must first meet certain requirements.²⁵ They must be a United States-certificated FAA Part 121 carrier, demonstrate 12 months of operation prior to applying to the CRAF, be able to commit 15 percent of cargo fleet or 30 percent of passenger fleet, not exceed 40 percent of total flying hours from government contracts, and own or lease the aircraft being contracted.²⁶ Additionally, the aircrews cannot be part of the Armed Forces Reserves or National Guard to prevent their absence during CRAF activation and Guard/Reserve obligations. Lastly, the aircrews must be able to maintain a secret clearance.²⁷ Provided these requirements are met, Air Mobility Command (AMC) officials conduct an on-site survey to review the feasibility of the carrier's participation in the CRAF. Once approval is granted, the carrier is eligible to compete for CRAF contracts.

Fundamental to the construct of the CRAF is the relationship it creates between DOD and civilian airlines. In times of lesser demand on the airlines, DOD provides revenue to the airlines to help weather economic lulls. In exchange, the airlines agree that in times of high DOD airlift need, they will provide the required airlift to augment organic DOD capabilities, regardless of the impact on their financial operation. This relationship can obviously be risky to civilian carriers should a Stage activation occur. During ODS, the resulting Stage II activation of the CRAF caused many of the participating airlines to lose significant revenue and market share to foreign competitors. This led a few carriers to not renew their contracts with the CRAF in the following years, leaving the CRAF under committed in relation to its requirements.²⁸ In light of

this, DOD reexamined its incentive program and made modifications to the system to better incentivize participation.

The largest change came in the form of the Government Services Administration (GSA) City Pairs program (CPP). This program made CRAF-participating airlines the preferred source for all government travel during peacetime. While the CPP had been in existence for a number of years, the change following ODS was to link it to CRAF participation. In exchange for CRAF revenue, the CPP provides the government with discounted, fully-refundable airfare that is easily bookable, especially last minute, with no blackout dates.²⁹ With available revenues approaching \$3 billion annually, this incentive has succeeded in revitalizing participation in the CRAF, including those carriers which backed out following ODS.³⁰ This trend has continued up to the present. The CPP accounts for approximately sixty percent of the CRAF incentives with the remaining forty percent residing in the fixed and expansion buy programs.³¹

These fixed and expansion buy programs are the way that airlines without regularly scheduled service can bid on CRAF contracts outside the CPP. Let on a yearly basis, the fixed buy contracts provide scheduled flights across the Atlantic and Pacific, usually on a weekly basis, to move passengers and cargo. For airlift that falls outside this regularly scheduled requirement, such as exercises or contingencies, special assignments missions, the expansion buy allows for CRAF airlines to bid on additional airlift contracts.³² For the DOD, these buys ensure airlift capacity will be met for the following year and gives options for additional airlift when unforeseen requirements surface.

Charter Airline Industry

Within the passenger airline industry lie two separate business models: the scheduled airlines and the charter airlines. The scheduled passenger airlines, or “mainline” as they are

more commonly known in the industry, operate a fixed schedule between cities and sell their seats on an individual basis. Consisting of widely-recognized companies such as United, Delta, American, and Southwest, mainline carriers compete for business and leisure travel revenue by marketing seats on their flights directly to the flying public. Because part of this marketing strategy often involves costly amenities which cut into profit margins, such as in-flight food, entertainment, and points toward future free travel, mainline carriers must constantly strive to fill their aircraft to capacity to achieve profit. This requires a constantly evolving shuffle of aircraft from route to route along with increases and decreases in frequency along those routes to meet the ebbs and flows of demand. Ideally, a mainline carrier will have very little excess capacity as a result of these changes in order to maximize their profits.

The charter airlines, however, sell the use of an entire aircraft rather than individual seats. This business model has historically targeted tourism groups and government agencies as its customer base. In the case of the tourism industry, airline travel is booked through tour groups who package tours and accommodations together with the airfare. Government charter travel is similarly booked through government agencies, in the case of DOD, this agency is USTRANSCOM. The commonality in these systems is that travelers have little to no choice in the airline used for their travel. This has its advantages for the charter airlines. There are almost no advertising costs, no requirement for a first class section, distance between seats can be minimized allowing for more seats on a given aircraft, and in-flight amenities are not usually required. Additionally, larger, more economical aircraft can be used because frequency of flights is not a priority.³³ While these advantages mean that a charter airline can operate at a much lower cost per average seat mile (CASM), it effectively places them into a niche market where they are more susceptible to fluctuations in discretionary and governmental spending alike.

In the late 1990s, a change began to take place in the charter airline industry. The first change was the rise of the low-cost carrier (LCC). Airlines such as Southwest, Airtran, and Jetblue were offering the traveling public significantly lower airfares by eliminating amenities and streamlining their operations in a successful attempt to draw customers away from the mainline carriers.³⁴ The second change was that the internet had become increasingly accessible to the public and with it had come the ability for the potential traveler to purchase air travel directly rather than through a travel agent or tour group. This allowed the traveler to shop for the best prices, but, more relevant to the charter airline industry, it enabled travelers to tailor their vacations on their own timelines, rather than buying packages for set periods from tour groups.³⁵ As airfares continued to decrease in price and customers began turning away from all-inclusive tour packages, the charter airline industry began to decline.

Following the terrorist attacks on the World Trade Center on 11 September 2001, the global economy entered a downturn. Businesses were forced to seek ways to trim expenditures and business travel seemed a likely source. This, coupled with rising fuel prices and the significant decrease in travel resulting from the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, led the mainline airlines to rethink their revenue streams in the face of decreasing profits. While a large portion of their revenues had been from business travelers prior to 2000, they began to turn to leisure markets previously serviced primarily by the charter airlines as a way to increase revenue lost from business travel.³⁶ This confluence of pressures led to the charter passenger airline industry's domestic profits decreasing significantly, from \$1.5 billion to \$200 million, in a ten year period beginning in the late 1990s.³⁷ Clearly the domestic market had shifted to a point where charter passenger airline survival was uncertain.

Fortunately for the charter airlines, in strictly financial terms, DOD airlift requirements resulting from OEF and OIF quadrupled during the same time period. Between 2003 and 2008, charter airlines transported 2.8 million troops in support of OIF while simultaneously moving 735,000 troops in support of OEF between 2001 and 2008.³⁸ This represents approximately ninety percent of DOD passengers moved to support these two operations and happened against a backdrop of a fifty-five percent decrease in charter airline capacity due to the aforementioned industry decline.³⁹ Unfortunately for the charter airlines, once again in strictly financial terms, OEF and OIF/OND are now in the process of winding down. As CRAF passenger airlift requirements return to pre-conflict levels, the marked decrease in domestic revenues highlighted by Mr. Coretz, president of Omni Air International, will undoubtedly cause a further drop in passenger capacity available to the CRAF as charter airlines fail in light of diminished revenues.⁴⁰

There are two points which are important and bear emphasizing. The first is that the CRAF is a vital part of DOD mobility capabilities in support of national security objectives. The second is that the charter airline segment of the CRAF is possibly the most important because DOD lacks any significant organic passenger airlift capability. In light of these points, it is surprising that many experts indicate that the CRAF is in healthy overall shape. A report by the Congressional Budget Office (CBO) to the Senate Armed Services Subcommittee states that CRAF funding accounts for less than five percent of civilian airline revenues and repeatedly points out that the impact of the drawdown should be negligible.⁴¹ What this aggregate look at the CRAF fails to highlight, except for one brief statement, is that while the whole of the CRAF looks healthy, a small segment which carries a disproportionate amount of passengers is not nearly as robust. Supporting this, the Institute for Defense Analyses reported to Congress that

while revenue streams to the CRAF as a whole look healthy, the charter passenger segment may “become too small to meet peak demands” following drawdown.⁴² For any true examination of the CRAF to be valuable, it must break CRAF into its respective segments and analyze each one against itself only.

Analysis

Mobilization Value Points

The CRAF is structured in such a way as to encourage participation at all levels. This means that some airlines will participate nearly constantly while others will only do so in times of wartime mobilization. Inherent to this structure is the concept of Mobilization Value Points (MVP). In this system, airlines are awarded points based on their commitment to the CRAF for potential times of activation. These points can then be redeemed for peacetime business. By committing more aircraft and crews to potential CRAF activation, an airline will be rewarded with more peacetime DOD business. Airlines can also pick which stage of activation they are willing to commit to. Stage I has the highest likelihood of being activated due to its use for peacetime surges and minor contingencies while Stage III carries the least risk of activation because multiple theater wars so rarely happen. In fact, activation has occurred only twice, during ODS and OIF, and only during ODS was Stage II activated while Stage III has never been activated.

This MVP system has led to the existence of teaming arrangements within the airline industry with the bulk of the CRAF money being split between two large teams known as the Alliance Contractor Team (Alliance Team) and the Federal Express Charter Programs Team (FedEx Team). For fiscal year 2010 (FY10), both teams were awarded approximately \$3 billion

in CRAF revenues. The remaining CRAF revenues totaling approximately \$420 million were split between the UPS Team and two other individual carriers.⁴³ These teams are made up of airlines with different specialties (cargo, passenger, both) as well as varying fleet sizes by design in order to maximize revenues for all members while diminishing the risk of activation to those who do not desire it.

The FedEx Team, for example, is made up of Air Transport International (ATI), Atlas Air Incorporated, Continental Airlines, Federal Express (FedEx), Omni Air International (OAI), and Polar Air Cargo Worldwide.⁴⁴ These six airlines consist of one mainline passenger airline (Continental), four cargo airlines (ATI, Atlas, FedEx, Polar), and one charter passenger airline. By mixing the capabilities of the team, they are able to compete for the most available MVP. For the cargo carriers, more MVP equals more business, regardless of peacetime or activation status because they operate on a strictly charter basis so there is no schedule to disrupt. The passenger airlines, however, have different motivations.

Continental is a mainline airline with scheduled routes that must be maintained at all times. As previously mentioned, current economic trends in the airline industry have caused the mainline carriers to trim excess capacity, meaning any CRAF activation would remove valuable aircraft from scheduled routes thereby allowing competitors to potentially gain market share. Conversely, OAI is a smaller carrier who depends largely on government contracts. In 2001, for example, OAI received twenty four percent of its revenues from CRAF contracts while Continental received zero.⁴⁵ What this shows is that mainline carriers like Continental use CRAF commitment as a way of gaining access to CPP revenues at relatively little risk to their schedules because they commit mainly to Stage III, which is unlikely to be activated. At the same time, the team partnerships allow them to sell their MVP to airlines like Omni, who rely

much more on CRAF revenue, thereby making additional revenue with no work. The smaller charter passenger airlines are able to access these team points and significantly raise their revenues while only paying a subsidy to the larger airlines.

On the surface, this is effective organization for all parties, especially DOD. The team concept seems to provide DOD insurance for scenarios such as the bankruptcy highlighted at the beginning of this paper. The airline in question, American Trans Air (ATA) had previously been the largest contributor to the charter passenger segment of the CRAF and participated in the FedEx Team. Supporters of MVP and teaming arrangements point to the ability of the other members of the FedEx Team to cover unexpected losses in capacity within the team as a demonstration of the strength of this system. General Duncan McNabb, Commander of USTRANSCOM, testified before Congress that, regarding the bankruptcy of ATA, it was the members of the team who stepped up to fly the seventy one missions unfilled due to the bankruptcy, thereby honoring the team's contractual obligation.⁴⁶ What General McNabb left out was that it was the FedEx Team who caused the bankruptcy in the first place.

In 2010, ATA won a breach-of-contract lawsuit against FedEx over their membership and subsequent termination as part of the CRAF FedEx Team. The court found that the decision by FedEx not to honor the business promised to ATA for 2009 caused ATA's bankruptcy.⁴⁷ This business was then awarded to Northwest Airlines, another member of the FedEx team, who had successfully petitioned FedEx for ATA's share of the team business.⁴⁸ While it is impossible to know how this deal between FedEx and Northwest was reached, what is clear is that the larger airline won. ATA operated twenty nine aircraft at the time of their bankruptcy while Northwest operated three hundred and sixty six.⁴⁹ Although the relationship between ATA and FedEx in the CRAF arena had lasted in excess of twenty years, FedEx saw fit to undermine

the stability of ATA by denying them the team MVP revenue they had been promised.⁵⁰ By supporting a much larger carrier which, perhaps not coincidentally, was just emerging from bankruptcy and perhaps looking for additional revenue, FedEx exposed the vulnerability that the smaller passenger charter airlines have in the MVP team construct of the CRAF.

60/40 Rule

The so-called “60/40” rule has been a part of the CRAF for forty years and, theoretically, is in place to ensure that airlines do not rely too heavily upon government contract revenue to remain solvent. The term “60/40” comes from the requirement for airlines to obtain no more than forty percent of their revenues from CRAF contracts and, more specifically, is spelled out as “not [to] exceed 40% of total block hours from government sources (as of FY11)” by the Air Mobility Command.⁵¹ Due to historical fluctuations in CRAF revenues, the 60/40 rule has always been seen as a way of ensuring the viability of the CRAF by requiring participating airlines to have a steady stream of income from other than government sources. This does make practical sense for the DOD. Ensuring that contractors are adequately diversified to be able to absorb fluctuations in individual sectors of their market means that DOD can plan on their augmentation in times of need. Supporting this, the Congressional Budget Office released a report in which it stated the 60/40 policy not only diversifies a company’s overall business model, but also gives a sixty percent reserve of capacity from which the DOD can draw in times of surge airlift need.⁵²

Unfortunately, this view fails to take into consideration the changes in the charter passenger airline industry of the last decade. At a time when the DOD is relying on the charter passenger airlines to airlift ninety percent of its personnel, it has allowed the charter passenger airlines to gain fifty percent of their revenues from government contracts.⁵³ Clearly this is in

violation of the 60/40 rule, but what is more surprising is that the same Congressionally-sponsored report predicted that the passenger charter airlines would shrink in capacity by one-third when DOD demand drops off from current OEF/OND needs.⁵⁴ Effectively, while experts are saying that the 60/40 rule protects not only the DOD, but the airlines themselves, they are being shown data that indicates quite the opposite. If the 60/40 rule is designed with the health of the individual airlines in mind, then a decrease in profits from DOD should not result in a one-third failure rate of participating charter passenger airlines.

The Congressional Budget Office (CBO) stated that “in addition to ensuring that the military maintains airlift capacity for a surge, the 60/40 policy reduces the likelihood that individual carriers will become too reliant on business from DOD” and supported the success of the 60/40 rule by showing that of thirty three airlines participating in the program in 2007, only four fell below the sixty percent threshold.⁵⁵ While they point out that three of these four were charter passenger airlines, what is perhaps more important to note is that there were only four participating charter passenger airlines at this time.⁵⁶ This places seventy-five percent of the charter passenger airlines reliant on government contracts for a significant portion of their revenue. Once again, while the whole of the CRAF looks healthy, the charter passenger segment is in danger when DOD money diminishes.

Implications

The MVP and 60/40 systems are in place to ensure that the CRAF and the airlines which participate are healthy. These are systems that have served DOD well during the history of the CRAF yet appear to be in need of alterations given the current state of the airline industry. Due to the large passenger airlines capacity which exists in the United States, DOD has historically relied on civilian airlines to transport its passengers and focused its aircraft allocation on cargo

aircraft such as the C-5 and C-17 which have no civilian counterparts. This is a fiscally sound approach, as it is estimated that the CRAF activation during ODS cost the government approximately \$1.5 billion while replacing that capacity with government airlift would have cost between \$15 and \$50 billion.⁵⁷ Since it is obviously not feasible to replace CRAF capacity with organic DOD airlift, protecting the viability of the CRAF as a whole is of paramount importance to national security. Considering this, criteria must be established in order to evaluate alternatives to the present CRAF incentives. To establish these criteria, the objectives of each segment of the CRAF must be examined in order to evaluate the level of commitment that will ensure continued cooperation by the different organizations.

First and perhaps most importantly are the objectives of the DOD with respect to the CRAF. The first presidential policy statement on the CRAF in 1960 focused on the importance of the “utilization of the commercial fleet as the first recourse for military airlift in peace and war” thereby laying the foundation for the reliance on the CRAF by the DOD.⁵⁸ Fifty years later General McNabb, Commander, USTRANSCOM, said the DOD “simply could not accomplish our mission without the unique capabilities our commercial industry partners provide.”⁵⁹ While there are no sources directly stating how the CRAF would function should one of its segments (cargo or passenger) cease to fulfill its requirements, it is a reasonable assumption that both segments must be operational for the CRAF as a whole to be healthy. Obviously, transporting personnel without their equipment or equipment without personnel to operate cannot achieve objectives in a war or emergency. Thus the criteria for the CRAF to support DOD objectives is that all segments of the CRAF be staffed at levels which will support airlift requirements for Stage I, II, and III activations when called for.

The civilian airline segment of the CRAF has different criteria for continued participation. The two business models that make up the passenger portion of the CRAF, the mainline and charter passenger airlines, have a fundamental objective: remain solvent in order to provide a return on investment to shareholders and ensure continued future operations. How each one meets these objectives with respect to the CRAF, however, is different. The mainline airlines have trimmed excess capacity and generally displayed little interest in competing for CRAF peacetime business. For the mainline airlines, agreeing to peacetime and Stage I commitments would remove valuable aircraft from scheduled service and have the potential to cause significant disruption to their business.⁶⁰ Stage II and III commitments, however, allow mainline airlines to participate in the CPP while drastically reducing the risk of activation. Any change to the CRAF must then preserve the mainline airlines commitment to the CRAF as they provide the bulk of aircraft needed should a Stage II or III activation become necessary.⁶¹ Owing to their small fleet size and lack of regular scheduled service, the charter passenger airlines rely on the peacetime and Stage I business for a large amount of their revenue. As previously mentioned, the non-governmental charter revenues available to these carriers has dramatically decreased in the last decade, leaving DOD business as a key revenue source. Thus, ensuring access to this peacetime CRAF revenue is requisite to ensuring the viability of the charter passenger airlines.

On the whole, the passenger segment of the CRAF has two participants who depend on each other, although not directly, to maintain participation. The mainline carriers do not have the excess capacity to contribute to peacetime airlift needs and so rely on the charter airlines to fulfill this need so that they can continue to access CPP revenue with little risk of activation. As the CRAF is a voluntary program, a threat of utilizing mainline airlines for peacetime airlift needs in

the absence of charter airlines would risk a withdrawal of mainline airlines from CRAF participation.⁶² For the charter passenger airlines that depend on the peacetime CRAF revenue, the willingness of the mainline airlines to not largely participate in peacetime airlift allows them continued access to this revenue. Any alternative must meet projected future CRAF passenger demands for peacetime and Stage I airlift requirements while protecting the commitment to the significantly higher Stage II and III airlift requirements.

As with any contract-based system, incentives must be provided in such ways that are beneficial to all parties. In regards to the charter passenger airlines, the changing airline business has left these airlines more reliant on DOD business. In light of DOD reliance upon these airlines, changes to the CRAF incentives should be considered in order to guarantee their continued support of the CRAF and, ultimately, national security. Potential solutions must meet the criteria of fulfilling CRAF Stage I, II, and III activation requirements with minimal cost increases while also ensuring that charter passenger carriers are compensated in a manner that will support their continued operation.

Alternatives

Long Term Contracts

Currently, the fixed and expansion-buy contracts are let on a yearly basis.⁶³ While this is in keeping with government budgeting in which fiscal year budgets are updated on a yearly basis, it does not provide airlines that rely on this revenue the ability to accurately forecast future requirements. General McNabb, Commander of USTRANSCOM, admitted to Congress that while USTRANSCOM tended to forecast its airlift requirements four or five months in advance, the participating airlines really need to be looking five to ten years in the future.⁶⁴ Given that most businesses formulate models based on long-term forecasts, it is perhaps surprising that

DOD does not provide CRAF participants with the ability to do so. While it is true that this year-to-year contract system has worked in the past, providing adequate commitment to the CRAF from civilian airlines, there have been indications that the charter passenger segment is experiencing difficulties.

In the case of ATA's bankruptcy, for example, the removal from the FedEx Team for the upcoming fiscal year directly caused ATA to cease operations. Compounding their predicament, ATA had made a purchase of nine aircraft two years earlier in order to meet their contribution to DOD airlift requirements. This purchase, which incurred \$50 million in debt for ATA, was based on a written agreement with FedEx for fifty percent of the CRAF peacetime revenues generated by the team for the upcoming three years.⁶⁵ This situation highlights two points: the first is that airlines may be unwilling to commit to continued support of the CRAF without a guarantee of revenue to support their investment, and second that the loss of revenue for one year can bankrupt an airline that relies on DOD business for a large portion of their earnings.

The solution to this would be for DOD to guarantee CRAF business in the fixed-buy portion for longer periods, at a minimum five years. Given that the current fixed-buy uses eighty percent of the average of the previous five years to calculate the next year's fixed-buy contract, using the same calculation for the following five years would not be difficult.⁶⁶ This would allow charter passenger carriers to budget for the appropriate fleet size in order to meet DOD requirements. Airlines must commit to significant capital investments, including expensive maintenance and overhaul of aircraft, sourcing of technical support, and training of personnel that cannot be recaptured with a year-long contract.⁶⁷ By lengthening the amount of time for CRAF airlift contracts, charter passenger airlines would provide a more stable pool of CRAF participants for the DOD to utilize in times of airlift surges which fall short of stage activation.

Removal of the 60/40 Rule

The 60/40 rule was originally constructed as a way to ensure that CRAF participants were economically stable enough to provide a continuity of service to the DOD.⁶⁸ Additionally, this rule also aimed at ensuring the safe operation of the civilian airlines. It was thought that an unsafe airline would not be able to remain in business if they operated in this manner, so the 60/40 rule would ensure that only safe airlines participated.⁶⁹ The subsequent requirement for participation in the CRAF that an airline be FAA Part 121 certificated has supplanted the need for the 60/40 rule to enforce safety. In light of the dwindling commercial market for charter passenger airlines and the continued reliance by DOD on these airlines due to lack of sufficient organic passenger airlift capability, it is increasingly difficult for charter passenger airlines to abide by this rule.

Perhaps in recognition of these issues, it seems that DOD has consistently overlooked the rule in the past decade. A GAO study could find no written documentation of the rule in any CRAF regulation. They also determined through interviews with CRAF participating airlines that there was confusion among the carriers as to how exactly the rule was enforced.⁷⁰ Some carriers were even unaware that the rule existed. When added to their assessment that there is little proof that the 60/40 rule actually ensures a safer surge capability for DOD airlift, it is clear that the 60/40 rule is ineffective.⁷¹

The abolishment of the 60/40 rule would remove ambiguity regarding its enforcement and allow charter passenger airlines to know for certain whether or not to plan for its enforcement. With no way of forecasting whether or not the rule will be enforced following the drawdown from OEF and OND requirements, airlines are wary of committing money to improvements to their fleets which would only add to the future capabilities of the CRAF.

Additionally, uncertainty regarding the 60/40 rule enforcement could hinder companies from adequately sizing their fleets which could have an impact on future DOD surge airlift capability.⁷² Also, as pointed out by the president of Omni Air International, there are no other sectors of government contracting where a rule such as the 60/40 rule is enforced.⁷³ Ultimately, allowing charter passenger airlines to receive large portions of their business from government sources could strengthen the passenger segment of the CRAF by providing the contract airlines the ability to focus on the business of moving DOD personnel across the globe in fulfillment of DOD needs.

Status Quo

The last alternative is status quo. The CRAF has an enviable history as a successful civil-military partnership that has bolstered United States national security for the past 60 years.⁷⁴ Given there have only been two failings of note, the failure of the CRAF to meet commitment goals in the two years following ODS and the ATA bankruptcy, leaving the current structure of the CRAF untouched, is an alternative that warrants merit. When one considers that the CRAF as a whole has performed remarkably well considering the volatile nature of the airline industry, which has seen close to two hundred bankruptcies since the industry's deregulation in 1978, it is logical to question whether change is truly necessary.⁷⁵ Moreover, any changes designed to further incentivize the participation of charter passenger airlines could result in an increase of the cost of the CRAF program. At a time when defense expenditures are increasingly scrutinized, this would seem to be unjustifiable expense.

The strength of the status quo alternative lies in its cost-neutral approach. The CRAF has long been recognized as an inexpensive way to ensure air mobility for the DOD versus expensive organic airlift.⁷⁶ With approximately one thousand long-range international aircraft, the United

States airline industry possesses more than enough aircraft to meet all current or plausible future airlift needs making incentives designed to protect a handful of carriers seem unnecessary.⁷⁷ In 1990, there were six charter passenger carriers participating in the CRAF.⁷⁸ Almost twenty years later, in 2008, there will still six charter passenger carriers participating in the CRAF, although ATA was in its last year of existence as previously discussed.⁷⁹ Of the remaining five carriers, only one was the same as in 1990. Although few new incentives had been introduced to the CRAF in two decades, the number of airlines had remained essentially the same. Furthermore, the capacity lost due to business cessation had been replaced by new airlines thereby showing the resiliency of the CRAF in a status quo situation.

Although the status quo situation is attractive from the cost perspective, it does have flaws. First and foremost is the possibility of an airlift shortfall. Failure to make changes aimed at ensuring the viability of a segment of the CRAF for which the DOD possesses little to no organic capability poses serious risks to the nation's crisis response ability. Secondly, the use of historic commitment levels to the CRAF by charter passenger airlines to justify not changing the CRAF incentives ignores the monumental changes that have taken place to the business base of these carriers in the last decade. While status quo may have worked in the past, there are no guarantees that this method will work in the future.

Alternatives Judged Against Criteria

Long-Term Contracts

The implementation of long-term contracts of five years has the potential to greatly stabilize the commitment from charter passenger airlines to the CRAF by providing guaranteed revenue for their future business planning. For the DOD, the process is already in place to use eighty percent of the average annual expenditures on charter airline transportation to set the

fixed-buy expenditures for the upcoming year.⁸⁰ Using these numbers which are already available to commit to the following five years versus one would not increase DOD planning workloads.

The criteria to meet Stage I, II, and III commitment levels would not be adversely affected by long-term contracts. Current and future projection of the CRAF commitment rate show that there are roughly twice the number of aircraft committed to CRAF Stage I, II, and III mobilization than would be needed even in the worst case scenario.⁸¹ The use of long-term contracts would protect this capacity in two ways. First, it would aid the charter passenger airlines efforts to right size their fleets to meet future CRAF needs while still being profitable. Second, the protection of the charter passenger airlines and their commitment to DOD peacetime airlift would ensure the larger mainline airlines continued commitment to Stage I, II, and III requirements without any added risk of activation to fulfill peacetime requirements. The criteria to give charter passenger airlines a longer forecast of assured revenue from which to plan their businesses would also be satisfied by long-term contracts.

The risk associated with long-term contracts is two-fold. By letting the fixed-buy contracts on a five year basis, the DOD would be left with the expansion-buy and activation as their only means of adding capacity in times of surge requirements. As it is difficult to accurately predict future crisis events which the DOD would have to respond to, locking into five year contracts reduces their response flexibility. It must be noted, however, that during the last ten years, the fixed-buy portion of the CRAF has remained at approximately the same level while the expansion-buy portion has significantly increased due to OEF and OIF/OND requirement.⁸² This shows that flexibility in the fixed-buy portion is not necessary to the successful operation of the CRAF. It is the expansion-buy where DOD turns when surge requirements surface.

Additionally, although the long-term contract option is designed to protect Stage I, II, and III requirements, it is feasible that it may not be enough to protect the solvency of some charter passenger airlines. If one or more should fail, DOD would likely have to augment with airlift from the mainline airlines until the next contract cycle which would in turn threaten their future involvement in the CRAF. This could be alleviated by interim contracts within the five year cycle, but this would add to the cost of the operation of the CRAF by adding additional administrative expenses, thereby not meeting the criteria of minimizing additional costs for the DOD.

Removal of the 60/40 Rule

Within the DOD, there are numerous companies who derive a majority of their business revenue from DOD contracts. Bearing this in mind, the 60/40 rule is an anomaly which serves little purpose. The DOD depends on charter passenger airlines to supply ninety percent of their passenger airlift yet expects those same companies to rely on the DOD for only forty percent of their business. What the 60/40 rule does is to effectively instill uncertainty about the possibility of future CRAF revenue in the charter passenger airlines.⁸³ This uncertainty deters these airlines from making improvements to their operations such as fleet upgrades and personnel training that would aid their continued support to the CRAF. Through continued waivers to this rule granted in order to meet OEF/OIF/OND airlift needs, the DOD has essentially discouraged charter passenger airlines from pursuing other revenue streams. If enforcement of this rule were to return following the drawdown of OEF/OND requirements, it would likely have a detrimental effect on their continued operational ability, much the same as the removal from the FedEx Team had on ATA.⁸⁴ This would, in turn, negatively affect Stage I, II, and III commitment levels from the mainline airlines as they might cease their commitment to the CRAF in fear of activation.

Thus, abolishment of the 60/40 rule would meet the DOD criteria of ensuring that CRAF Stage I, II, and III commitment levels are continually met. For the charter passenger airlines, removal of the 60/40 rule would enable them to focus their resources on meeting DOD airlift needs without necessarily having to divert attention to other business avenues. As the fixed-buy has remained constant for the past decade, dismissal of the rule could give these airlines a baseline guarantee of business for planning. The 60/40 rule provides a constant threat that a company will be removed from participation in the CRAF for violation of this rule. If it were removed, charter passenger airlines could plan for the future based on fixed-buy incomes, as well as anticipation of expansion-buy revenues in order to remain a viable contributor to the CRAF. Based on this, the removal of the 60/40 rule meets the criteria of ensuring charter passenger carriers will be compensated in a manner that protects their continued operation.

The risk in the dissolution of the 60/40 rule is largely to the charter passenger airlines. Just as the past decade of markedly increased CRAF business has caused these airlines to be dependent on DOD revenues for survival, removing barriers to deriving revenue solely on government contracts may set them up for failure when CRAF revenues dip. Additionally, the threat to the DOD is that the reliance solely on the CRAF for revenues by the charter passenger airlines might lead to a situation where they have no excess capacity for the DOD to use in times of surge operations.⁸⁵ This would likely lead to a need for mainline airlines to absorb the excess requirements, once again threatening their continued participation.

Status Quo

The status quo alternative uses historic levels of CRAF participation to predict future success. A fundamental tenet of this alternative is that the combination of available CRAF contracts and a free market economy will continue to provide sufficient participation in all

segments of the CRAF. When this alternative is judged against the criteria to ensure Stage I, II, and III mobilization requirements, the results are mixed. While the successfully history of the CRAF to maintain required commitment levels is certainly an encouraging indicator of future achievement, it is also hard to ignore the numerous analysts' predictions of impending trouble within the charter passenger segment. The Industry for Defense Analyses, Congressional Budget Office, and Government Accountability Office have all voiced explicit concerns over the current CRAF structure's ability to maintain support from the charter passenger airlines following a drawdown in airlift capacity.^{86,87,88} Based upon these predictions, it seems that adopting a status quo solution may not continue to meet DOD Stage mobilization requirements.

Regarding the charter passenger airlines, the status quo would continue to provide revenue through the fixed and expansion-buy programs. This would almost certainly provide sufficient revenue to some airlines that are properly sized for a reduction in business but others might not be so fortunate. Without adjustments in incentives, it is difficult to imagine how all of the CRAF charter passenger airlines could continue to operate given the erosion of their commercial business. Therefore, the status quo alternative seems unlikely to meet the criteria to ensure that the CRAF charter passenger carriers are adequately funded to protect their continued operation.

Recommendations and Conclusion

The CRAF has long stood as a successful example of cooperation between the United States government and commercial industry. By teaming with the civilian airline industry, the DOD has been able to better allocate its resources toward aircraft with specialized capabilities while still fulfilling its requirements to provide airlift in support of national security objectives. Throughout its near sixty year history, the DOD has made adjustments to the structure of the

CRAF, including the CPP and the MVP system, to ensure its viability in relation to the changing airline industry. For the DOD and the airline industry, the challenges of the last decade have forced both to rapidly adjust to dynamic external pressures in order to remain successful. For the airline industry, increased pressure from LCCs has forced mainline airlines to trim their capacity and move into vacation markets in order to cut costs and increase profits. This has been extremely damaging to the charter passenger airline industry, which lacks the fleet size to compete with the larger mainline airlines. Offsetting the charter passenger industry's annual revenue decline of \$1.1 billion in the last decade has been the CRAF's fourfold increase in demand. While this has undoubtedly kept many of the charter passenger airlines in business, the likelihood of CRAF revenue remaining at these levels is small as DOD airlift requirements return to normal following troop drawdown in Iraq and Afghanistan.

The focus of this paper has been to highlight the problem posed to the CRAF if declining CRAF revenues force some charter passenger airlines out of business, and offer possible solutions. It has found that through modifications to existing incentives and extension of revenue guarantees, the CRAF can continue to supply the DOD with appropriate peacetime passenger airlift while protecting Stage I, II, and III mobilization requirements. The following are some recommendations based upon the criteria set to evaluate proposed alternatives. In review, these criteria are the ability of the alternative to meet the DOD's Stage I, II, and III mobilization requirements while at the same time providing sufficient revenue to support the continued profitable operation of the contributing charter passenger carriers.

First, the DOD should lengthen the contracts of the fixed-buy to five year periods. When examined for its ability to best meet the proposed criteria, this seems to be the most likely to achieve prolonged stability in the charter passenger segment of the CRAF. Charter passenger

airlines need this guaranteed business to properly size their fleets and make upgrades to equipment and training in order to safely and efficiently support the CRAF. As the DOD depends on this capacity for ninety percent of its passenger airlift, a long-term commitment would act to protect these airlines and the resources they provide to national security. At the same time, mainline airlines would place more value in the charter passenger airlines contribution to their MVP teaming arrangements because they would continue to purchase MVP from the mainline carriers. Finally, by contracting the peacetime airlift to the charter passenger airlines for extended periods, the mainline airlines would be more likely to continue their commitment to Stage I, II, and III requirements as the need to utilize them in support of peacetime requirements would be diminished for a longer period.

Second, the 60/40 rule should be abolished. While this alternative is less likely to ensure Stage I, II, and III commitments and guarantee continued revenue to the charter passenger airlines, its enforcement in the future could threaten the existence of carriers who have become reliant on CRAF revenues for a majority of their profits. As the number of charter passenger carriers in the CRAF fleet has numbered around five for the last decade, enforcement of the 60/40 rule on one carrier would mean a twenty percent drop in CRAF passenger capacity until a replacement could be found. This alternative would have a strong impact on the charter passenger airlines' confidence in their future stability in the CRAF although it was not found that it a stronger alternative than long-term contracts to meet the stated criteria.

Third, a status-quo alternative was found to be insufficient to meet either criterion. Although it has historically proven effective in meeting Stage I, II, and III commitment levels, the erosion of the business base of charter passenger airlines combined with the reduction in capacity of the mainline airlines indicates that this option will ultimately lead to the inability of

some charter passenger airlines to remain solvent. This would obviously cause the CRAF to be unable to meet passenger airlift requirements and thus is not recommended.

The CRAF is a vital element of national security and must be continually adapted to meet future airlift needs. By adopting policies designed to protect the most vulnerable segment of the CRAF, the DOD can ensure the viability of the overall program well into the future.



Endnotes

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- ¹ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 11.
- ² Owen, Lt Col Robert C. “The Airlift System: A Primer” *Airpower Journal*, Fall 1995, 6.
- ³ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 10.
- ⁴ 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.
- ⁵ Owen, Lt Col Robert C. “The Airlift System: A Primer” *Airpower Journal*, Fall 1995, 6.
- ⁶ Ibid, 6.
- ⁷ Franke, Markus, and Florian John, “What Comes Next After Recession? – Airline Industry Scenarios and Potential End Games” *Journal of Air Transport Magazine*, No. 17 (2011), 19.
- ⁸ Ibid, 19.
- ⁹ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 10.
- ¹⁰ Doganis, Rigas, *The Airline Business* (New York, NY: Routledge, 2006), Kindle e-book, location 4639.
- ¹¹ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007, 1.
- ¹² Obama, President Barack H. “Remarks by the President on the Way Forward in Afghanistan” White House Briefing Transcript, <http://www.whitehouse.gov/the-press-office/2011/06/22/remarks-president-way-forward-afghanistan>. (accessed 5 Jul 2011).
- ¹³ Crackel, Theodore Joseph. *A History of the Civil Reserve Air Fleet*, Air Force History and Museum Program: Washington D.C. 1998, 1.
- ¹⁴ Ibid, 2.
- ¹⁵ Ibid, 1.
- ¹⁶ Teagan, Shawn E. *CRAF 2002-An Analysis of CRAF Participation Since September 2001*. Graduate Research Project. AFIT/GMO/ENS/02E-12. Graduate School of Engineering and Management, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, 1 June 2002 (ADA 430872), 7.
- ¹⁷ Chenoweth, Mary. *The Civil Reserve Air Fleet: An Example of the Use of Commercial Assets to Expand Military Capabilities During Contingencies*. Report N-2838-AF, Washington, DC: RAND, 1990, 2.
- ¹⁸ Owen, Lt Col Robert C. “The Airlift System: A Primer” *Airpower Journal*, Fall 1995, 3.
- ¹⁹ National Security Decision Directive 280. National Airlift Policy. June 24, 1987, 1987. <http://www.fas.org/irp/offdocs/nsdd/23-3032a.gif> (accessed Jul 05, 2011).
- ²⁰ Knight, William and Christopher Bolkcom. *Civil Reserve Air Fleet (CRAF)*, Congressional Research Service Report for Congress. Washington D.C.: Congressional Research Service, 19 Oct 2006, 3.

-
- ²¹ Air Mobility Command Public Affairs Office. "Fact Sheet-Civil Reserve Air Fleet." 17 November 2005 <http://www.af.mil/factsheets/factsheet.asp>.
- ²² Air Mobility Command Instruction 10-402. AMCI 10-402, *Civil Reserve Air Fleet Operations*, 1 September 2004, 12.
- ²³ Ibid, 15.
- ²⁴ Ibid, 17.
- ²⁵ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007, 1.
- ²⁶ Air Mobility Command Public Affairs Office. "Fact Sheet-Civil Reserve Air Fleet." 17 November 2005 <http://www.af.mil/factsheets/factsheet.asp>.
- ²⁷ Air Mobility Command Instruction 10-402. AMCI 10-402, *Civil Reserve Air Fleet Operations*, 1 September 2004, 12.
- ²⁸ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007, 3.
- ²⁹ United States Government Services Administration. "Airfares (City Pair Program)", <http://www.gsa.gov/portal/content/104512>. (accessed 10 July 2011).
- ³⁰ Glaze, J. A. *The Mobilization Value Process: Effects on CRAF Participation*. Graduate Research Project. School of Logistics and Acquisition Management, Air Force Institute of Technology, Wright-Patterson AFB, OH, 1998 (ADA354275), 19.
- ³¹ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009, S-2.
- ³² *Military Readiness. Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Dec 2002, 15.
- ³³ Doganis, Rigas, *The Airline Business* (New York, NY: Routledge, 2006), Kindle edition, location 4604.
- ³⁴ Franke, Markus, and Florian John, "What Comes Next After Recession? – Airline Industry Scenarios and Potential End Games" *Journal of Air Transport Magazine*, No. 17 (2011), 22.
- ³⁵ Buck, Simon and Zheng Lei. "Charter Airlines: Have they a Future?" *Tourism and Hospitality Research*, Vol 5, Issue 1. (2004), 72.
- ³⁶ Coretz, Robert K. "Testimony Before the House Subcommittee on Aviation" 13 May 2009, 11.
- ³⁷ Ibid, 11.
- ³⁸ Ibid, 1.
- ³⁹ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 3.
- ⁴⁰ Coretz, Robert K. "Testimony Before the House Subcommittee on Aviation" 13 May 2009, 11
- ⁴¹ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007, 2.
- ⁴² Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373 (Alexandria, VA: IDA, 13 May 2009), 3.
- ⁴³ United States Department of Defense. *Press Release No. 725-09*, 17 September, 2009.
- ⁴⁴ Ibid

-
- ⁴⁵ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009, A-66.
- ⁴⁶ McNabb, General Duncan J. "Testimony Before the House Subcommittee on Aviation", 13 May 2009.
- ⁴⁷ *ATA Airlines v. Federal Express Corporation*, Case No. 1:08-cv-00785-RLY-WTL (Indiana, 2008), 7.
- ⁴⁸ *Ibid*, 7.
- ⁴⁹ Airsafe. "Average Fleet Age for Selected Airlines" www.airsafe.com/events/airlines/fleetage.htm. (accessed 20 Jul 2011).
- ⁵⁰ *ATA Airlines v. Federal Express Corporation*, Case No. 1:08-cv-00785-RLY-WTL (Indiana, 2008), 7.
- ⁵¹ Air Mobility Command Public Affairs Office. "Fact Sheet-How to Become a CRAF Carrier." 17 November 2005 <http://www.af.mil/factsheets/factsheet.asp>.
- ⁵² *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007, 7.
- ⁵³ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373 (Alexandria, VA: IDA, 13 May 2009),3.
- ⁵⁴ *Ibid*, 3.
- ⁵⁵ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007.
- ⁵⁶ *Sustaining the Civil Reserve Air Fleet (CRAF) Program*. Institute for Defense Analyses Paper P-3819. Alexandria, Virginia: Assistant Deputy Under Secretary of Defense (Transportation Policy), May 2003, 2.
- ⁵⁷ Bolkom, Christopher, *Civil Reserve Air Fleet (CRAF)*, Congressional Research Service Report for Congress (Washington D.C.: Congressional Research Service, 19 Oct 2006), 5.
- ⁵⁸ Owen, Lt Col Robert C. "The Airlift System: A Primer" *Airpower Journal*, Fall 1995, 6.
- ⁵⁹ McNabb, General Duncan J. "Testimony Before the House Subcommittee on Aviation", 13 May 2009.
- ⁶⁰ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 12.
- ⁶¹ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007), Table 1.
- ⁶² *Ibid*, 8.
- ⁶³ *Ibid*, 1
- ⁶⁴ Martin, Molly. "Keep CRAF Pilots Safe and Secure", *Airline Pilot*, (June 2009): 44.
- ⁶⁵ *ATA Airlines v. Federal Express Corporation*, Case No. 1:08-cv-00785-RLY-WTL (Indiana, 2008), 2.
- ⁶⁶ *Duncan Hunter National Defense Authorization Act for 2009*. Public Law 110-417. 110th Cong., 14 October 2008, Section 9515e.
- ⁶⁷ Coretz, Robert K. "Testimony Before the House Subcommittee on Aviation" 13 May 2009, 7.
- ⁶⁸ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 16.

-
- ⁶⁹ Coretz, Robert K. “Testimony Before the House Subcommittee on Aviation” 13 May 2009, 10.
- ⁷⁰ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 17.
- ⁷¹ Ibid, 17.
- ⁷² Ibid, 17.
- ⁷³ Coretz, Robert K. “Testimony Before the House Subcommittee on Aviation” 13 May 2009, 11.
- ⁷⁴ Petri, Thomas E. “Testimony Before the House Subcommittee on Aviation”, 13 May 2009.
- ⁷⁵ Air Transport Association. “U.S. Airline Bankruptcies and Service Cessations,” www.ata.org. (accessed 23 Jul, 2011).
- ⁷⁶ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009, 2.
- ⁷⁷ Ibid, 3.
- ⁷⁸ Chenoweth, Mary. *The Civil Reserve Air Fleet: An example of the Use of Commercial Assets to Expand Military Capabilities During Contingencies*. Report N-2838-AF, Washington, DC: RAND, 1990, 38.
- ⁷⁹ Coretz, Robert K. “Testimony Before the House Subcommittee on Aviation” 13 May 2009, 2.
- ⁸⁰ *Duncan Hunter National Defense Authorization Act for 2009*. Public Law 110-417. 110th Cong., 14 October 2008, Section 9515e.
- ⁸¹ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009, 7.
- ⁸² *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007), Figure 1.
- ⁸³ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 17.
- ⁸⁴ Ibid, 17.
- ⁸⁵ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007).
- ⁸⁶ Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009, 3.
- ⁸⁷ *Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet*. Congressional Budget Office. Washington D.C.: Congressional Budget Office, October 2007), 5.
- ⁸⁸ *Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program*. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009, 4.

Bibliography

- Air Mobility Command Instruction 10-402. *Civil Reserve Air Fleet Operations*, 1 September 2004.
- Air Mobility Command Public Affairs Office. "Fact Sheet-Civil Reserve Air Fleet." 17 November 2005. <http://www.af.mil/factsheets/factsheet.asp>.
- Air Mobility Command Public Affairs Office. "Fact Sheet-How to Become a CRAF Carrier." 17 November 2005. <http://www.af.mil/factsheets/factsheet.asp>.
- Air Transport Association. "U.S. Airline Bankruptcies and Service Cessations," www.ata.org. (accessed 23 July 2011).
- Airsafe. "Average Fleet Age for Selected Airlines" www.airsafe.com/events/airlines/fleetage.htm. (accessed 20 Jul 2011).
- ATA Airlines v. Federal Express Corporation*, Case No. 1:08-cv-00785-RLY-WTL (Indiana, 2008).
- Buck, Simon and Zheng Lei. "Charter Airlines: Have they a Future?" *Tourism and Hospitality Research*, Vol 5, Issue 1. (2004): 72-78.
- Bolkcom, Christopher, *Civil Reserve Air Fleet (CRAF)*, Congressional Research Service Report for Congress (Washington D.C.: Congressional Research Service, 19 Oct 2006).
- Chenoweth, Mary. *The Civil Reserve Air Fleet: An Example of the Use of Commercial Assets to Expand Military Capabilities During Contingencies*. Report N-2838-AF, Washington, DC: RAND, 1990.
- Crackel, Theodore Joseph. *A History of the Civil Reserve Air Fleet*, Air Force History and Museum Program: Washington D.C. 1998.
- Coretz, Robert K. "Testimony Before the House Subcommittee on Aviation" 13 May 2009.
- Duncan Hunter National Defense Authorization Act for 2009*. Public Law 110-417. 110th Cong., 14 October, 2008.
- Doganis, Rigas, *The Airline Business* (New York, NY: Routledge, 2006). Kindle e-book.
- Executive Order No 10219, Federal Register 16. Defining Certain Responsibilities of Federal Agencies With Respect to Transportation and Storage. March 2, 1951.
- Franke, Markus, and Florian John, "What Comes Next After Recession? – Airline Industry Scenarios and Potential End Games" *Journal of Air Transport Magazine*, No. 17 (2011): 19-26.

Glaze, J. A. *The Mobilization Value Process: Effects on CRAF Participation*. Graduate Research Project. School of Logistics and Acquisition Management, Air Force Institute of Technology, Wright-Patterson AFB, OH, 1998 (ADA354275).

Graham, David R. *Summary of: Civil Reserve Air Fleet: Economics and Strategy*, Institute for Defense Analyses Paper P-4373. Alexandria, VA: IDA, 13 May 2009.

Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet. Congressional Budget Office Report. Washington D.C.: Congressional Budget Office, October 2007.

Knight, William and Christopher Bolkcom. *Civil Reserve Air Fleet (CRAF)*, Congressional Research Service Report for Congress. Washington D.C.: Congressional Research Service, 19 Oct 2006.

Martin, Molly. "Keep CRAF Pilots Safe and Secure", *Airline Pilot*, (June 2009): 44.

McNabb, General Duncan J. "Testimony Before the House Subcommittee on Aviation", 13 May 2009.

Military Airlift. DOD Should Take Steps to Strengthen Management of the Civil Reserve Air Fleet Program. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Sep 2009.

Military Readiness. Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping. United States Government Accountability Office Report. Washington, D.C.: U.S. Government Accountability Office, Dec 2002

National Security Decision Directive 280. National Airlift Policy, June 24, 1987.

Obama, President Barack H. "Remarks by the President on the Way Forward in Afghanistan" White House Briefing Transcript, <http://www.whitehouse.gov/the-press-office/2011/06/22/remarks-president-way-forward-afghanistan> (accessed 5 Jul 2011).

Owen, Lt Col Robert C. "The Airlift System: A Primer" *Airpower Journal*, Fall 1995, 1-12.

Petri, Thomas E. "Testimony Before the House Subcommittee on Aviation", 13 May 2009.

Sustaining the Civil Reserve Air Fleet (CRAF) Program. Industry for Defense Analyses Paper P-3819. Alexandria, Virginia: Assistant Deputy Under Secretary of Defense (Transportation Policy), May 2003.

Teagan, Shawn E. *CRAF 2002-An Analysis of CRAF Participation Since September 2001*. Graduate Research Project. AFIT/GMO/ENS/02E-12. Graduate School of Engineering

and Management, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, 1 June 2002 (ADA 430872).

United States Department of Defense. *Press Release No. 725-09*, 17 September, 2009.

United States Government Services Administration. "Airfares (City Pair Program)."
<http://www.gsa.gov/portal/content/104512>.

