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THE CIVIL RESERVE AIR FLEET  
THE PAST, FIRST USE, AND THE FUTURE

by

Carl R. Behrens  
Lieutenant Colonel, USAFR

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## **ABSTRACT**

**TITLE:** The Civil Reserve Air Fleet:

The Past, First Use, and the Future

**AUTHOR:** Carl R. Behrens, Lieutenant Colonel, USAFR

The Civil Reserve Air Fleet (CRAF) proved itself to be a viable entity in the Gulf War. After years of being a "plan on the shelf" or, in some cases, a structure for voluntary participation, the CRAF was used to augment what has become acknowledged as an inadequate lift capacity in the U.S. Air Force. Desert Shield/Desert Storm served as a test bed for the CRAF and, while it worked as advertised, the employment of this national asset revealed problems with insurance, carrier participation if the system had made greater demands and flight crew union demands among several other concerns. The CRAF worked, but changes will have to be made if it is to work again.

## **BIOGRAPHICAL SKETCH**

Lieutenant Colonel Carl R. Behrens (J.D., Creighton University) is a reservist assigned as the Individual Mobilization Augmentee (IMA) to the Staff Judge Advocate (SJA), 89th Airlift Wing, Andrews Air Force Base, Maryland. He served on Minuteman ICBM crews at Whiteman Air Force Base (AFB) and the Joint Strategic Target Planning Staff (JSTPS) at Offutt AFB under the Strategic Air Command (SAC) Spotlight Program. He served as a Judge Advocate at MacDill AFB, Florida and Hahn Air Base (AB), Germany before being assigned as the Deputy Chief of the Preventive Law and Legal Assistance Division at Headquarters Air Force.

Lieutenant Colonel Behrens left active duty in 1985, to begin a private law practice. He wears the Meritorious Service Medal, Air Force Commendation Medal with three oak leaf clusters and the Combat Readiness Medal. Lieutenant Colonel Behrens is a graduate of the Air War College, class of 1994.

**THE CIVIL RESERVE AIR FLEET**  
**THE PAST, FIRST USE, AND THE FUTURE**

**INTRODUCTION**

"...we discovered a new equation:

Total Force = Total Victory."

CMSgt Vickie M. Graham, Airman, Aug, 1991

The mist hung heavily in the pine forests when a thrumming sound, more felt than heard, intruded on the first hint of daybreak. Turning to the rising whisper, the eye caught a speck on the horizon formed by the brightening sky and the ragged tops of the tall pines. Slowly, deliberately, the speck grew to form the outline of an aircraft. Not an unusual sight at Pope Air Force Base, North Carolina, except that this flight, in the fall of 1990, marked the culmination of nearly four decades of planning. An aircraft from the Civil Reserve Air Fleet (CRAF) was landing to load elements of the Army's 82nd Airborne and their gear for the long haul to Saudi Arabia.

The CRAF was activated in support of Desert Shield and flew more than 5,300 missions during the Persian Gulf war, airlifting more than 705,000 passengers and 230,000 tons of cargo. (3:19) Put in a different perspective, CRAF aircraft flew about 20% of the total missions, but carried 25% of the cargo and 64% of the passengers. (4:58) Twenty-eight

different carriers, of twenty-nine available, ranging from American Airlines and Connie Kalitta to United Parcel Service and Zantop International participated in the two stages of activation called for by, then Secretary of Defense, Richard B. Cheney. The first stage activated 38 aircraft on 17 August 1990, transporting mainly passengers. The second stage kicked off on 16 January - the day Desert Shield became Desert Storm - and mandated that within 24 hours the number of available aircraft must increase to 181. Only 117 were called for from that pool and stage three would only have been used if Boeing 767's had been required for aeromedical evacuation. (1:56-57)

This paper discusses the history of the CRAF program to include the Persian Gulf War and goes further to address the problems and potential solutions to its future employment. On the most basic level this discussion is vital to national defense because the CRAF stands alone as the most crucial crutch for an airlift capability in times of crisis.

"Airlift in this country is broken right now," Marine Corps General Joseph Hoar, commander-in-chief of the U.S. Central Command told the Senate Armed Services Committee in March of 1994. Loren B. Thompson, deputy director of Georgetown University's National Security Studies Program has said, "It is widely recognized that the U.S., at present, does not possess the airlift required in order to quickly respond to a range of potential regional conflicts." These are not the idle comments of the



uninformed. Unfortunately, they represent a commonality of opinion that has even been expressed by the Secretary of Defense.

CRAF activity was quantified earlier, but how much is airlift depended upon outside the borders of the United States? The Persian Gulf War presented relatively ideal circumstances logistically in that, although the theatre was not prepped with large stockpiles, it did have good facilities and inclement weather was not a seriously negative factor. Additionally, the Iraqis remained in place after their initial move into Kuwait and the coalition forces had sufficient time to build up their forces. And we did that with airlift. The airlift carried 500,720 troops, or 99.45 percent of the personnel, and 543,548 tons of equipment, or 14.78 percent of all non-petroleum cargo. These are impressive figures, made more so by the fact that Air Force C-141's carried 19 percent of the passengers and 1.6 percent of the cargo, reflecting a capability the U.S. might not be able to duplicate today. There are 223 C-141's in inventory and, at an operational low point in November 1993, 173 were grounded for repairs to correct a wing fault. The C-17 program is still beset with political problems and to fill the gap Air Mobility Command (AMC) is converting KC-135's and KC-10's into cargo carriers and leases aircraft from 14 civilian carriers. Depending upon the scenario, U.S airlift may be inadequate to meet the need.

**CHAPTER II**  
**GENESIS OF THE CIVIL RESERVE AIR FLEET**

Executive Order 10219

President Harry S Truman created the CRAF program when he issued Executive Order 10219, entitled "Defining Certain Responsibilities of Federal Agencies with respect to Transportation and Storage," in March of 1951. The Department of Defense (DOD) and Department of Commerce (DOC) were directed to work together and establish a plan which would best utilize civil aircraft in times of national emergency.

In December 1951, the DOD and DOC agreed to and signed a Memorandum of Understanding (MOU) which established the Defense Air Transportation Administration (DATA) as the action agency to allocate civil aircraft to the CRAF and to coordinate overall CRAF program activities with the Air Force. The office of the Secretary of the Air Force was the DOD agency responsible for planning the use of civil airlines, for advising DATA of the military needs for civil aircraft and for getting civilian airlines on CRAF contracts. Fortunately, the CRAF concept, as outlined in "The Department of Defense Plan for the Civil Reserve Air Fleet," dated 20 March 1952, provided for the "militarization" of carrier aircraft since no CRAF contracts

were signed until 1959. The events that led to the creation of the CRAF are instructive in their own right as a perspective on the development of airpower in the United States.

#### Prior to World War II

Military strategists discovered the importance of aviation in deciding battles in World War I. Because the U.S. joined the war late, U.S. military aviation and manufacturing was slow to catch up with the Europeans. Even though thousands of aircraft were ordered, only a handful were delivered, but a new manufacturing industry had been established and a commercial aviation industry was born.

The war prevented the Army from serving domestic mail routes and so the Post Office won permission in 1918, to begin its own flying service solely for mail carrying purposes. By 1920, the Post Office was well-established with routes all the way to San Francisco.

The Army Reorganization Act of 1920 created the Army Air Service as a separate combatant arm. Brigadier General Billy Mitchell fought for all U.S. commercial and military aviation to come under the Army Air Service for policy purposes, but it did not despite his strenuous efforts. European countries did develop their aviation under government control and ownership and that policy has led to economic friction even today.

The Kelly Act was passed in the mid-1920's giving

commercial contracts for small connecting routes to supplement the Post Office's own transcontinental service. This was the first national policy to promote commercial aviation and can truly be called the legal basis for the modern airline system. The carriers that were awarded those initial contracts eventually became parts of United, American and TWA.

1926 saw the establishment of a Bureau of Aeronautics within the Department of Commerce to supervise air safety and the licensing of crews and aircraft. The industry was growing rapidly and several study groups were set up to make recommendations on the relationship between the aviation industry and the government. Secretary of War Newton Baker headed one of these groups and, as the Baker Board, they recommended that civil and military aviation remain separate, but also that civilian aircraft be used as a transportation reserve for national defense purposes. This appears to be the first time this concept surfaced officially.

The Civil Aeronautics Act of 1938, not only created the Civil Aeronautics Board (CAB) which would exercise broad regulatory authority, but also exempted certain charter carriers and air-taxi operations from the actions of the CAB. This marked the beginning of the split between regulated and unregulated air commerce. Economic competition was the hallmark of this effort and, indeed, Congress had appointed the Federal Aviation Commission with

the specific hope that it would find a way to reduce airline subsidies. The commission's recommendations gave birth to the Civil Aeronautics Act and the stage was set for the development of the role of commercial airlines as an airlift partner with the military. This concept was soon to be tested on a grand scale.

### World War II

When the United States declared war against Japan and Germany on 8 December 1941, the requirements for expanded air transportation could not be met by the military. The two organizations associated with air transport were the Army Air Corps Ferrying Command and the Air Force Combat Command. The Ferrying Command had a fleet of its own, but was in no position to expand beyond its primary mission of ferrying airplanes to England under the terms of the Lend-Lease Act. In fact, its aircraft were subject to requisition by the Air Force Combat Command which had lent the planes initially. Consequently, the only viable alternative was the airlines. The airlines had the knowledge and experience in air transport operations and the available flying personnel and the required aircraft.

Thus, on 13 December 1941, President Roosevelt signed an Executive Order, citing his powers under the constitution and the formal declaration of war, directing the Secretary of War to take possession of any part of the airlines required for the war effort. Interestingly, the Air Staff

believed that the commercial airlines should be allowed to continue normal operations. The apparent reason for that opinion was that it would be more advantageous to the country to retain a smoothly operating organization than to place it under military control as had been done with the railroads.

In 1942, in response to conflict between the Ferrying Command and the Army Air Corps Maintenance Command over air operations outside the continental United States, General H. H. Arnold published General Order Number Eight combining the two commands as Air Transport Command. The contract airlines were successfully integrated into this new command and flew, literally, billions of cargo miles. (10:6)

#### The Berlin Airlift

Operation Vittles, the air supply of Berlin during the Berlin Crisis of 1948, also tested commercial airline cooperation. Again, the response was impressive. Although they did not fly the final segment into Berlin, the airlines provided logistical support in transporting engines and other critical parts from the United States to Europe to keep the Berlin Airlift going. They also assisted in contract overhaul, feeding reconditioned aircraft from contractor plants to the Berlin Airlift. This operation certainly tested the augmentation of strategic airlift by the commercial airlines and even more challenges lay in the near future.

### The Korean Conflict

Korea involved the operation of civilian aircraft under charter and, amazingly, those charters produced 50 percent of the airlift with 25 percent of the transport fleet. More specifically, civil carriers flew more than 10,700 missions. They airlifted 49,000 tons of passengers and cargo, which constituted 67 percent of the passengers, 56 percent of the cargo, and 70 percent of the mail.

It was during this period when Congress passed the Defense Production Act which gave the President broad authorities dealing with the allocation of "materials and facilities in such a manner, upon such conditions and to such extent as he shall deem necessary or appropriate to promote the national defense." This was to become important later in the allocation of civil aircraft for use in national security contingencies.

Also in 1950, Congress passed an amendment to the Civil Aviation Act of 1938 that directly impacted CRAF and U.S. carrier international operations. Congress provided a new Title XIII to the Act authorizing the Secretary of Commerce , with approval of the President, to provide Federal aviation insurance when commercial aviation underwriters would not provide it at a reasonable price.

### The Cuban Crisis and Vietnam

Only two situations, before the Persian Gulf War created scenarios which tempted formal employment of the

CRAF. The first situation was the buildup for the Cuban Crisis in 1962. Had the U.S. actually invaded Cuba the strategic thinking was that more troops would have been needed in the Berlin corridor. The entire CRAF program, had it been activated, would have provided considerably more airlift than what was required. Consequently, the U.S. civilian carriers were asked to volunteer enough airlift to transport two divisions. Enough equipment was volunteered at the DOD request to meet the demand.

The second situation arose in Vietnam, following the Tet offensive, when additional air transportation requirements for troops and materiel required civil air transport. Consideration was again given to activating the CRAF. However, the civilian carriers met the call for voluntary contribution and obviated the need to activate the CRAF. To insure there is no misunderstanding, the civilian carriers have always been compensated for their services and the term "contribution" refers only to their willingness to participate in providing contracted airlift

Clearly, the history of the CRAF has been one of cooperation between the civilian carriers and the federal government. That cooperation continued in the Persian Gulf War.



**CHAPTER III**  
**THE PERSIAN GULF WAR AND CRAF**

CRAF at Work

In the Persian Gulf War the first civil carriers dispatched to Saudi Arabia were World Airways, carrying troops and Southern Air Transport, carrying cargo. (4:58) They, as are all CRAF participants, are volunteers. These volunteers racked up an impressive record substantiated in a data system that has become extremely sophisticated over time. American Trans Air flew the highest number of missions in passenger operations. Evergreen International Airlines flew the largest number of cargo operations. World Airways, however, flew both passengers and cargo for a total of 276. These carriers are members of the National Air Carrier Association (NACA) and total NACA participation reflects only 34 percent of the 4,648 missions flown by civilian carriers. Well-known names in the industry such as United, Federal Express, UPS and Northwest have large number of aircraft identified as assets of the CRAF and were deeply involved in the war.

Although the equipment was available there were occasional problems with the crews. After the first airlift recall on 17 January, a Hawaiian Airlines crew refused to go back to the theatre. They maintained that their contract

didn't require them to fly into a war zone. Federal Express decided shortly thereafter that it would only fly missions into theatre that arrived during daylight hours. Military Airlift Command (MAC) was sensitive to these issues and, although it explored a variety of options, it essentially worked with the airlines to accommodate their concerns.

### Fiscal Reality and CRAF

As previously mentioned, CRAF participants are allowed to bid on peacetime DOD transport contracts in a formula based on their willingness to participate in the CRAF.

(1:57) In real terms fiscal year 1989, is a good example of the incentives the airlines are working for. In that year DOD paid carriers \$618 million for contract services. That airlift represented 80 percent of the passengers and 30 percent of the cargo moved by DOD that year. Of course, as the military draws down to Base Force 2, or whatever the new standard will be, the contractual "carrot" shrinks. Other disincentives and this type of problem will be explored more fully in the next section.

Another aspect of The CRAF program that needs to be addressed is the CRAF Enhancement Program. This program modifies civilian carrier aircraft, at government expense, to meet the airlift needs of CRAF employment. The first CRAF enhancement contract was awarded in 1979, and it was designed to increase the cargo carrying capacity of the wide-bodied passenger aircraft. The condition for the

government's willingness to add value to these aircraft is that they remain committed to the CRAF for 12 to 16 years. Additionally, DOD pays the carrier an annual subsidy to offset the cost of carrying the additional weight of the modifications. (10:19)

### CRAF in the Desert

After the Iraqi invasion of Kuwait and the order to deploy forces the civilian carriers, operating with what was then MAC, volunteered additional airlift to assist in deploying forces. This worked well for the first two weeks until it became obvious the operation had built up to the point where additional transport aircraft were needed in order to satisfy the required deployment of forces. The scheduled airlines were carrying their peak traffic between the U.S. and Europe and no other additional volunteer aircraft were available. With no other choice, on 17 August 1990, the order was signed activating stage one of the CRAF which included 38 aircraft. Actually, only 10 wide-bodied passenger aircraft were required but under the CRAF program there is no choice but to call up the entire stage which, at that time, consisted of 38 cargo and passenger aircraft. It took several days for all the airplanes to be worked into the system. After the activation of stage one, both the CRAF and the volunteers worked to meet mission requirements. By December 1990, the backlog at ports of embarkation had built up to the point that it was necessary

to implement stage two of the CRAF in January 1991. All of the aircraft were utilized and it actually proved easier to get some of the narrow-bodied cargo aircraft in and out of certain locations that the stage one wide-bodied aircraft could not operate out of. As experience accumulated and the proper equipment for loading and off-loading was positioned the entire operation functioned with relative smoothness. The umbrella organization for the civilian air carriers, the NACA, continues to work closely with AMC, as it did with AMC's predecessor MAC. (10:58)

#### Redeployment

The CRAF continued to perform after the war by returning cargo and passengers to the U.S. Federal Express, for instance, flew 106 missions in March 1991, and 107 missions in April. That represented 27 and 35 percent of the cargo missions flown in those months. In May they flew 50 percent of all CRAF cargo missions. By late May it was time to deactivate the CRAF, but only after CRAF carriers had moved more than 350,000 passengers halfway around the world during the months of March, April and May 1991.

## CHAPTER IV

### PROBLEMS AND SOLUTIONS

The focus of this chapter will be on the questions associated with operating the CRAF more efficiently, effectively and fairly. The success of Desert Shield/Desert Storm led to June 1993, when General Ronald R. Fogleman, commander-in-chief, USTRANSCOM, and commander, AMC, presented awards to crews of Federal Express, one of the high volume and well-known carriers in the war. In fact, over 12,000 civilian airline employees received awards for assisting in the war effort. Recognition ranged from certificates of appreciation to CRAF employees who supported the effort, but never entered the theatre, to 600 Air Medals awarded to CRAF aircrews that flew seven or more missions in theatre during the conflict.

Does this degree of recognition mark the success of the CRAF program? Of course, it does. Tons of cargo and thousands of passengers were hauled millions of miles faster than any other form of transportation. The fact is though that this "first use" of the program caused it to be "rubbed thin" enough to see beneath the gloss.

#### RAND and Project AIR FORCE

In 1993, RAND Corporation published a study which has,

for better or worse, become a benchmark to judge the operational efficiency of strategic airlift operations in the Persian Gulf War. The study entitled, "An Assessment of Strategic Airlift Operational Efficiency", was written by John Lund, Ruth Berg and Corinne Replogle as part of Project AIR FORCE, a research project sponsored by the U.S. Air Force. The difficulty with the RAND study is that, try as they might, researchers will never be able to duplicate the field experience that the system operators dealt with. As a consequence some very valid problems are being addressed by the attention paid to this study, but other areas are still being worked, but don't garner the attention they should, such as the carrier compensation question and insurance matters.

#### The Operational Environment

Human life is the most critical asset in the CRAF program. The potential for SCUD attacks bringing chemical or biological warfare to the battlefield prompted greater concern than ever about protecting aircrews. To that end chemical gear is now being stockpiled and training videos developed with the intention of providing refresher training at the point of issue. Flak vests and other protective gear may also become issuable items depending upon the circumstances of the CRAF employment.

Radio communications between the military and CRAF participants is, of course, adequate for air safety

purposes. The difficulty encountered in this first use of the CRAF is that the communications were not secure.

Acquiring a secure capability and providing the necessary training are RAND recommendations which the Air Force will undoubtedly adopt and enhance with the latest technology.

Cargo operations comprise a major part of the CRAF's utility and there were valuable lessons learned in the desert here as well. First, ground time was too long because the type of equipment needed to load and unload different types of aircraft simply wasn't available. Procuring that equipment, to include 60,000 pound loaders is the "fix". Second, time was lost and congestion on ramps heightened because cargo was concentrated in certain staging areas. Dispersing that cargo in prepositioned packages would reduce the congestion and the stops CRAF aircraft would have to make in order to meet mission requirements.

Handling hazardous materials is a serious problem for civilian carriers and it dovetails with insurance issues to be discussed next. A much higher percentage of military cargo is usually "hazardous" than the percentage encountered in the civilian community and protocols must be developed for certifying aircraft and crews for handling what must be transported.

### Insurance

Title XIII of the Civil Aviation Act of 1938, is not the complete answer to providing coverage to civilian

carriers when their insurers cancel coverage as aircraft are called into the CRAF. Unfortunately, there are gaps and exclusions in coverage not to mention Warsaw Convention liability limits and potential delays in claim payment by the bureaucracy. AMC is addressing these issues and legislation may very well be required to fully rectify the situation.

#### Aeromedical Evacuation

Stage three of the CRAF was not implemented in the Persian Gulf War. That was fortunate because this is the stage which is the most in flux at the present time. 767's are the aircraft sought after as the players in aeromedical evacuation and they are coveted by the airlines that fly them. There is a significant shortfall in the aircraft available for stage three and even if they were available, the "conversion kits" for those aircraft require further refinement before they can be brought on line.

#### Incentives

United Airlines and American Airlines dropped out of the CRAF program this year and that is just as serious a problem as it sounds. These two major carriers cannot be followed by many more or the CRAF capability will be severely damaged. Encouraging commercial operations at military airfields, maximizing the use of existing commercial hubs and awarding all government contracts, not



just those of a downsizing military, based on CRAF participation, are some of the solutions which may stop critical losses in participation.

## **CHAPTER V**

### **CONCLUSIONS**

The Persian Gulf War marked the first, formal implementation of the CRAF. Civilian carriers had played major roles in World War II, the Berlin Airlift, the Korean War, and the Vietnam War, but the buildups were spread over longer periods of time and civil carriers were able, voluntarily, to work out schedules that met their needs and those of the government. Even in the Persian Gulf War CRAF carriers volunteered as soon as MAC defined its needs. Unfortunately, given the nature of probable future regional conflicts the next call may be on much shorter notice.

As the airlines downsize and consolidate and strive for the greatest efficiencies in an economically competitive environment, it will become increasingly difficult for the government to be assured of unqualified participation. Freight carriers are particularly vulnerable because they may have only one stop per day in a particular market, but the passenger carrier with five stops per day will be equally loathe to lose market share when he has to pull a high capacity flight off the line and a competitor doesn't. No one flies even close to empty in the deregulated skies. A corollary to the loss of market share is dealing with the reduced traffic generated by the military as it withdraws

from overseas locations. New ways of calculating carrier compensation will constantly need to be fine-tuned to maintain equity among the CRAF participants.

Other issues, such as the transport of hazardous materials, lengthy loading times and secure communications between CRAF carriers and the military are typical of the types of problems now being addressed in ever greater detail by AMC. Enormous strides have been made in resolving the most difficult issues in this arena. Chemical gear, for instance, will be made available for crews dispatching into threat areas and videotapes for training is one option being studied to assure proper use. The insurance issue is being handled, but political issues such as the participation of partially foreign-owned carriers may take longer to decide as well the question of whether the military can extend its capabilities through the employment of foreign carriers.

These concerns in no way negate or diminish the success of the CRAF implementation in the Persian Gulf war, but they are areas of concern which must be addressed now. The U.S. cannot afford to rely on the inertia of a wartime environment to overcome these problems just identified. True, some of them have been with the program from its inception, but others are driven by economies of scale that have surfaced in a new environment for the military and the CRAF. Actual implementation has removed the veil from the plan and has defined clearly the imperfections, considerations and overwhelming success of the Civil Reserve

Air Fleet. Only time will test how well the warnings of inadequate capacity in airlift are dealt with. In the interim the civilian carriers of the U.S. constitute an extraordinary national defense asset and the CRAF is a program which must be defended.

## **NOTES**

Oral interviews with Mr. Ted Weisse, Senior Vice President for Air Operations for Federal Express and Colonel Murrell Porter of Air Mobility Command were invaluable sources of information.

Briefing slides provided by Lieutenant Colonel Nels Wilt of Air Mobility Command clearly described AMC's response to the RAND studies.

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## **GLOSSARY**

AB	Air Base
AFB	Air Force Base
ALCC	Airlift Control Center
ANG	Air National Guard
ATC	Air Transport Command
ATS	Air Transport Service
CAT	Crisis Action Team
CEO	Chief Executive Officer
CINC	Commander-in-Chief
CINCMAC	Commander-in-Chief, Military Airlift Command
CJCS	Chairman, Joint Chiefs of Staff
CONUS	Continental United States
CRAF	Civil Reserve Air Fleet
DATA	Defense Air Transportation Administration
DOD	Department of Defense
DOT	Department of Transportation
FAA	Federal Aviation Administration
MAC	Military Airlift Command
MATS	Military Air Transport Service
MTMC	Military Traffic Management Command
NATO	North Atlantic Treaty Organization
NDRF	National Defense Reserve Fleet
OSD	Office of the Secretary of Defense

**GLOSSARY (Continued)**

RRF	Ready Reserve Force
SAC	Strategic Air Command
SITREP	Situation Report
TAC	Tactical Air Command
TPFDD	Time-Phased Force Deployment Data
TRANSCOM	(U.S.) Transportation Command
U.S.	United States