
January 1998

AIR FORCE AIRCRAFT

Reorganizing Mobility Aircraft Units Could Reduce Costs



**National Security and
International Affairs Division**

B-276447

January 21, 1998

The Honorable William Cohen
The Secretary of Defense

Dear Mr. Secretary:

Over the past few years, the Department of Defense (DOD) has been interested in modernizing its forces with new weapons and equipment. For a variety of reasons, these efforts have been stymied, and funds that DOD expected to have available to modernize the force have been needed instead for current operational activities. Therefore, you have expressed an interest in reducing operating costs.

We have been assessing various Air Force activities to determine the feasibility of reducing operating costs. A few years ago, we evaluated whether the Air Force could operate its fighter forces more cost-effectively. In May 1996, we reported that the Air Force's fighter force was not organized economically and recommended that the Air Force develop an implementation plan for operating its fighter force in larger, more cost-effective squadrons.¹ DOD concurred with that recommendation.

For this follow-on effort, we assessed the cost-effectiveness of organizing the Air Force's airlift and refueling force into fewer, larger-sized squadrons and wings. In making this assessment, we (1) evaluated the effect that reorganization may have on mission accomplishment, (2) determined whether costs could be reduced through redistributing aircraft among fewer wings, and (3) developed five possible options for redistributing C-130 and KC-135 aircraft among fewer wings at lower operating costs. This report focuses on the reserve component² combat C-130 and KC-135 aircraft.

Background

The C-130 and KC-135 aircraft are important parts of DOD's air mobility force. The C-130's primary role is to provide airlift for theater cargo and personnel. The KC-135 aircraft is the Air Force's core refueler. The majority of these aircraft are in the reserve component, as shown in table 1.

¹Air Force Aircraft: Consolidating Fighter Squadrons Could Reduce Costs ([GAO/NSIAD-96-82](#), May 6, 1996).

²In this report, the term reserve component refers to the Air Force Reserve (Reserve) and the Air National Guard (Guard) collectively.

Table 1: C-130 and KC-135 Force Structure

Type of aircraft	Number of aircraft	Number of locations	Percent of Air Force aircraft
C-130			
Active Air Force	148	7	33
Air National Guard	196	23	44
Air Force Reserve	104	10	23
Total	448	40	100
KC-135			
Active Air Force	204	7	43
Air National Guard	204	19	43
Air Force Reserve	64	6	14
Total	472	32	100

Source: Air Force, Air Force Reserve, and Air National Guard data.

Reserve component C-130 flying squadrons generally have 8 aircraft, and KC-135 squadrons generally have 10. Active force C-130 squadrons typically have 14 aircraft, while active KC-135 squadrons have 12. A reserve component wing comprises flying squadrons and other nonflying squadrons. Generally, reserve component wings have one flying squadron, unlike active wings, which generally have two to three flying squadrons. Some of the nonflying squadrons, such as maintenance, military police, and logistics squadrons, are directly related to the flying squadron, while others, such as medical, civil engineering, and communications squadrons, are not directly related.

Reserve component C-130 and KC-135 aircraft are dispersed throughout the continental United States and Hawaii and Alaska. There are 22 states whose National Guard wings have C-130 aircraft, and 19 states whose National Guard wings have KC-135 aircraft. Seven states have both. There are nine states that have Air Force Reserve wings with C-130 aircraft and five states that have Air Force Reserve wings with KC-135 aircraft. Seven of the Guard wings with KC-135 aircraft are located on military bases and 12 are located with civilian airports. All six Reserve wings with KC-135 aircraft are located on military bases. Most Guard wings with C-130 aircraft, 20 of 23, are located with civilian airports. Half of the 10 Reserve wings with C-130 aircraft are located on military bases, and the other half are with civilian airports. Several locations maintain both Guard and Reserve wings.

Though reserve component members are sometimes thought of as weekend warriors, about one quarter to one third of wing personnel are full-time military or civilian employees. These personnel are concentrated in areas such as maintenance, logistics, and security squadrons and the wing staff. The balance of wing personnel are part-time military personnel and are likely to have full-time employment in addition to their military responsibilities.

Results in Brief

The Air Force could reduce costs and meet peacetime and wartime commitments if it reorganized its C-130 and KC-135 aircraft into larger-sized squadrons and wings at fewer locations. These savings would primarily result from fewer people being needed to operate these aircraft. For the reorganization options we developed, up to \$209 million dollars could be saved annually.

Creating larger-sized squadrons and wings would still allow the Air Force to accomplish its peacetime and wartime missions with the existing number of aircraft. In peacetime deployments, reserve component C-130 and KC-135 personnel do not participate as part of entire squadrons or wings but rather as individual volunteers. Thus, creating larger-sized squadrons and wings should not compromise these missions. For wartime deployments, requirements for C-130 and KC-135 aircraft are typically stated by the number of aircraft rather than by squadrons or wings. Moreover, war plans where existing flying squadrons are assigned can be changed to accommodate larger-sized squadrons. Finally, specific reserve component wings are not usually assigned in existing war plans; thus, the impact of reducing them would be minimal.

Redistributing the reserve component's C-130 and KC-135 existing aircraft into fewer, larger-sized squadrons and wings would reduce operating costs. For example, redistributing 16 C-130 aircraft from two 8-aircraft wings to one 16-aircraft wing would save about \$11 million annually, primarily from personnel savings.

We developed five options to illustrate the kind of savings that can be achieved by creating larger-sized squadrons. These savings range from about \$51 million to \$209 million annually. We found that sufficient personnel could be recruited and most locations' facilities could be inexpensively expanded to accommodate the unit sizes in our options.

Missions Can Be Fulfilled With Larger-Sized Reserve Component Units

Larger-sized reserve component units would still be able to perform peacetime missions. When reserve component C-130 and KC-135 units have participated in peacetime deployments in Bosnia, Saudi Arabia, and Panama they have done so on a rotational basis. However, unlike the active Air Force, Reserve and Guard rotations are not assigned completely to a single flying squadron or wing, which makes the squadron size less important. In a typical reserve component rotation, while one wing is designated to lead the mission, it depends on many other wings to provide aircraft and personnel. For example, the reserve component was assigned to support operations in Saudi Arabia for a 3-month period. Personnel and aircraft from 19 Guard wings were typically rotated for 15 to 30 days to staff a flying squadron of 8 aircraft. A similar practice was used in Bosnia and Panama. Rotations are done in this manner because participation by reserve component members without a presidential call-up is voluntary. To obtain the complement of personnel needed, individual volunteers from many units are necessary. Thus, the number or size of units is not as important as the number of people that volunteer. Unit officials from several wings cited advantages in increasing the number of aircraft in a flying squadron. These included increased training opportunities and improved scheduling flexibility.

Creating fewer larger-sized flying squadrons should have little impact on wartime missions as well. Wartime requirements for C-130 and KC-135 aircraft are not typically defined by the number of squadrons or wings but by the number of aircraft. For example, the July 1996 Joint Chief of Staff's Intratheater Lift Analysis expresses C-130 requirements in terms of aircraft, not wings or squadrons. The recent C-130 Airlift Master Stationing Plan also expresses requirements in terms of the number of C-130 aircraft. Moreover, the study also states that the current C-130 inventory exceeds requirements, which we believe further lessens the impact of eliminating squadrons.³

The manner in which the Air Force plans to use reserve component units in wartime also minimizes the impact of reducing the number of flying squadrons. According to planning officials from the Air Combat Command and the Air Mobility Command, because active Air Force units are available immediately, they are typically tasked as lead units to provide the command and control in theater for wartime deployments. Reserve component flying squadrons generally follow active Air Force units and

³This report was submitted to congressional defense committees in 1997. The Air Force planned to reduce the number of C-130 aircraft in its active and reserve component inventories to reflect requirements. However, the Conference Report on the 1998 Department of Defense Appropriations Act recommended that reserve component squadrons remain at current levels.

are placed under their command structure. These officials stated that planners partly assign existing reserve component flying squadrons in war plans by matching the capacity at likely deployment locations with the squadrons available in the reserve component inventory. They said that as long as the total number of aircraft available to perform missions remained the same, they could change assignments based on larger-sized squadrons. Further, an Air Force official stated that while the Air Force prefers to assign aircraft by squadrons for planning purposes, flying squadrons' aircraft can be split, provided a command structure is in place. Unit officials stated that during Operation Desert Shield, reserve component aircraft and personnel were used in this manner. Moreover, in current deployment plans we viewed, one KC-135 flying squadron was split between two locations.

Although squadrons are assigned to wings in peacetime, war plans described to us did not call for these wings to deploy or operate together. For example, civil engineer, medical, and security police squadrons may operate separately from the flying squadron. Wing officials stated that the Air Force has moved away from activating entire reserve component units; instead, war-fighting commanders choose packages of equipment and personnel that will meet their requirements for the mission at hand. At several wings we visited, officials stated that they had not deployed as a wing and were unaware of any plan to deploy as a wing. Further, many wing staff, including the wing commander, are not tasked in war plans and do not have a specific supporting mission.

Reorganizing C-130 and KC-135 Squadrons at Fewer Locations Could Reduce Costs

Redistributing the reserve's component C-130 and KC-135 existing aircraft into fewer, larger squadrons and wings would reduce operating costs. For example, redistributing 16 C-130 aircraft from two 8-aircraft wings to one 16-aircraft wing would save about \$11 million dollars annually, primarily from personnel savings.⁴ This reorganization could eliminate about 155 full-time positions and 245 part-time positions. The decrease in full-time positions is especially significant, since the savings associated with these positions represents about \$8 million, or 75 percent, of the total savings. Fewer people would be needed in areas such as wing headquarters, logistics, operations, and support group staffs as well as maintenance, support, and military police squadrons. Appendix II describes the organization of a typical wing and how redistributing aircraft would affect the wing.

⁴Savings were calculated using the Air Force's Systemic Approach to Better Long-Range Estimating (SABLE) model. For a more complete description of SABLE, see appendix III.

In many cases eliminating the aircraft from a wing could also generate savings additional to operating savings. For example, civil engineering and medical squadrons, which help to support the wing and base in peacetime, are not directly related to the aircraft. If the wing is inactivated, these units' worldwide requirements would have to be reexamined to determine whether they were still needed in the force structure. When the Reserve inactivated a C-130 wing in 1997, all eight of the nonflying squadrons not directly related to the aircraft were eliminated from the force structure, which involved about 140 full-time and about 625 part-time drill positions. Using average Air Force Reserve full- and part-time pay rates, these eliminations represent about \$12 million in annual salaries.

Options for Reorganizing Aircraft and Achieving Savings

We developed five options for redistributing the existing reserve component C-130 and KC-135 aircraft into larger-sized squadrons that show a gradual increase in savings in operating costs—from \$51 million to \$209 million annually.⁵ Our options are not the only ones possible, but they do illustrate the significance of the savings that can be achieved through a redistribution of the aircraft. The options base like model aircraft together and involve the same number of aircraft as are now planned for the reserve component. In developing our options, we considered the two factors that reserve component officials cited as most important to successful reorganization: adequate recruiting potential and facility capacity.

We also evaluated how three other issues could affect our options: one-time costs of redistributing the aircraft, the significance of the geographical location of the aircraft, and the effect that eliminating squadrons would have on states' abilities to respond to domestic crises.

Options Redistributed Aircraft From Existing Squadrons to Create Larger Squadrons

We developed five options that redistributed aircraft from existing C-130 and KC-135 flying squadrons to other squadrons. The first option required the least reorganizing, increasing the number of squadrons with fewer than 10 aircraft to that level. This reorganization would be achieved by redistributing aircraft from three C-130 squadrons and one KC-135 squadron to other squadrons. Our fifth option increased the squadron size to 16 aircraft for the C-130 and 12 for the KC-135 by redistributing aircraft from 13 C-130 squadrons and 5 KC-135 squadrons to other squadrons. A detailed discussion of each option is in appendix I.

⁵To the extent that options are selected that would cause civilian personnel reductions that exceed the thresholds established in 10 U.S.C. 2687, the Secretary would have to follow the procedures provided for in that section.

Populations Surrounding Gaining Bases Could Support Increased Recruitment

Our analysis of data provided by Guard and Reserve recruiting officials demonstrates that a sufficient number of personnel could likely be recruited to meet increased requirements of larger squadrons in most locations. Air Reserve headquarters recruiters estimated that they could recruit enough personnel to support 16 C-130 aircraft at 8 of their current 10 locations. Guard headquarters recruiters estimated it could recruit an adequate number of personnel to support 16 aircraft at 9 of 23 C-130 locations. For KC-135 aircraft locations, Air Reserve officials estimated it could recruit enough personnel to support a 12-aircraft squadron at five of its six locations, with two locations capable of adding an entire 10-aircraft squadron. Guard recruiting estimates for the KC-135 indicate that 12-aircraft squadrons could be supported at 15 of 19 locations. Headquarters officials stated that for some options that double the sizes of existing flying squadrons, additional recruiters would be required for at least 6 years at affected locations.

Reserve component officials at units we visited were more optimistic about their ability to recruit additional personnel than were headquarters officials. The four C-130 wings we visited estimated that they could add four additional aircraft with little or no problem. While headquarters recruiters estimated adding four C-130 aircraft at some locations could take several years to fully staff, unit officials estimated that recruiting additional personnel for the same number of aircraft would usually take no longer than 18 to 24 months. Recruiters also indicated that recruiting additional personnel for more than four aircraft at a given location would be more challenging but possible, if additional experienced recruiters were added to the wing receiving the aircraft and if spaces were available at schools to train new recruits.

According to reserve component recruiters, the outlook for recruiting could improve if full- and part-time personnel moved with the aircraft. In the recent move of four C-130 aircraft from Chicago, Illinois, to Milwaukee, Wisconsin, about 200 part-time personnel relocated to Milwaukee. Reserve component officials believe it is probable that many personnel from wings clustered closely would move with the aircraft if the aircraft were moved to a nearby location.

The outlook for recruiting could improve further if personnel from the C-141 fleet, which is being phased out of the inventory, could be used to support C-130 and KC-135 aircraft. The reserve component provides

personnel to support most of the C-141 fleet of about 160 aircraft.⁶ Only about three-quarters of the C-141 aircraft will be replaced with C-17 aircraft. Some current Reserve units are not scheduled to become C-17 or any other Reserve units. Thus, this trained pool of personnel could be available for C-130 or KC-135 aircraft. Reserve officials have been actively seeking a role for these personnel.

Facilities Have Sufficient Capacity to Expand With Little Investment

Our analysis of facility data provided by reserve component civil engineering officials shows that many bases could absorb additional aircraft at little or no cost. According to these officials, 38 locations could increase the number of assigned aircraft with no military construction costs.⁷ In other cases, ramp and hangar space would need to be increased slightly. Also, some locations may require increased administrative and supply space. Only in very few instances would locations require completely new facilities, such as additional hangars. All of the National Guard KC-135 wings could expand to at least 12 aircraft (3 already have more than 12 aircraft) with one-time construction costs of no more than \$6 million. For most Guard C-130 wings, the military construction costs would be no more than a \$1 million for increasing from 8 to 12 aircraft. Also, 17 of 23 locations could accommodate 16 aircraft at a cost ranging from \$1 million to about \$10 million.

Expansion is possible at only three of six Air Force Reserve wings where KC-135 aircraft are located. The Reserve estimates it could add up to 10 additional aircraft at two of the three locations at a one-time cost of \$1 million per squadron. The Reserve has two locations with 16 C-130 aircraft. With an investment of \$1.5 million to \$5.5 million per location, the Reserve could accommodate 16 aircraft at five of its other eight C-130 locations.

Geographic Location of C-130 and KC-135 Aircraft a Consideration

Before developing our options, we considered whether any mission requirements would preclude C-130 and KC-135 aircraft moving from their current locations. We were told that only four had unique missions. Other than those locations, Guard and Reserve officials stated that airlift and refueling missions could be accomplished from a number of locations as long as some general geographical requirements were met. For instance,

⁶Only 56 C-141 aircraft are owned by the reserve component. The Air Force Reserve provides crews and maintenance personnel for approximately 100 additional C-141 aircraft owned by the active force.

⁷For most of these locations, funds would be needed for real property maintenance to existing facilities. For the majority of those locations needing this maintenance, the costs would be \$75,000 or less.

tankers meet their customers off the east and west coasts in a high concentration of areas to facilitate the movement of aircraft over the Atlantic and Pacific Oceans. Thus, some refueling aircraft should be located in proximity to these areas. These officials also believe that it is important to maintain reserve component KC-135 aircraft in the northeast because active duty KC-135 aircraft are no longer based in this region. Some officials told us that KC-135 and C-130 aircraft should be based close to the units they train with, whether with other aircraft units—as in the case of KC-135 aircraft—or Army units for the C-130 aircraft.

Long-Term Savings Would Exceed One-Time Costs of Consolidations

Although we could not determine one-time costs of consolidating C-130 and KC-135 aircraft in larger squadrons, we do not believe these costs to be significant relative to expected savings. Our options would result in some initial costs for such things as training for additional people hired at a location gaining aircraft and for transferring some personnel from one location to another. In some cases, personnel could be eligible for severance pay if their position was eliminated. Reserve component officials could not provide estimates of these costs, which would vary depending on how many trained personnel might relocate with the aircraft and how much of the relocation expenses the Air Force would pay. Because we did not identify specific bases in our options, it is difficult to determine these costs. However, during the 1995 base realignment and closure process, initial implementation costs to move C-130 aircraft from three locations were estimated to be offset in 1 year for two of the three locations and 3 years for the third. According to reserve component officials, these implementation costs could be minimized in several ways, for example, by moving aircraft to nearby bases and allowing recruiters sufficient time to phase in additional personnel.

Eliminating Wings in Some States Should Not Prevent Emergency Assistance

National Guard units are unique in that they are under state control when not federalized. These assets are available to governors during emergencies and disasters. For this reason, inactivating Guard units has historically caused concern. However, not all states have C-130 or KC-135 aircraft in their Guard units. In 16 states, no Guard units are equipped with C-130 or KC-135 aircraft. We recognize that some of our options would likely eliminate National Guard wings in some states, but these states could still receive assistance during disasters and emergencies.⁸ States can receive assistance from other states' National Guard units in several ways,

⁸With the approval of a state governor, National Guard units located entirely within one state may make certain organizational changes.

for example, through state compacts, federal laws, DOD regulations, and informal agreements.

Compacts, which are agreements between states to support one another in times of need, are one way that assistance can be provided. One of the most inclusive compacts is the Emergency Management Assistance Compact, which was originally sponsored and established by the Southern Governors' Association in 1992. Under this compact, member states agree to provide for mutual assistance in managing any declared emergency or disaster as well as mutual cooperation in exercises and training. Through this compact, members agree on issues such as terms of liability, compensation, and reimbursement when emergency assistance is provided to member states. The compact was endorsed by the National Governors' Association and other regional and national organizations, and any state can now become a member. Currently, 20 states have joined the compact. While a National Guard official stated that no C-130 or KC-135 aircraft have yet been used under this compact, other assets such as helicopters have been shared. For example, Virginia, Florida, and Kentucky have provided helicopters to other states.

States can also receive assistance during a natural disaster or emergency through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which authorizes the Federal Emergency Management Agency to assign missions to any federal agency if the President declares a federal emergency or disaster. Under the act, the agency can provide federal assets, including National Guard and active duty personnel and equipment, to states that are experiencing the emergency or disaster. For example, C-130 aircraft from a National Guard unit in Maryland assisted Florida, which has no C-130 aircraft in its National Guard, in its efforts to reduce the effects of Hurricane Andrew.

Another way states can receive assistance is under a recently implemented Defense Department directive referred to as "innovative readiness training." Under this directive, Defense assets can be used to assist states and communities if the assistance provides a training opportunity related to units' wartime missions. In this case, the Guard can authorize units to participate even if a federal disaster is not declared. For example, we were told by Guard officials that Guard units from outside Iowa received training in water purification during floods in Iowa.

Beyond these provisions, National Guard officials stated that assistance can be coordinated through the National Guard Bureau, even without an

agreement among the states. To reduce response time, Guard officials sometimes develop preliminary plans for providing assistance when a major disaster is pending. For example, before Hurricane Iniki struck Hawaii, California National Guard, National Guard Bureau, and Hawaii National Guard officials coordinated relief efforts to allow California Guard units' C-130 aircraft to be prepared to provide assistance there, even though no formal agreement existed between the two states.

Recommendation

The reserve components' C-130 and KC-135 aircraft can be redistributed into larger-sized squadrons and still accomplish their peacetime and wartime missions. Such a reorganization would result in significant savings that could be used to partially fund the modernization of the Defense Department's force. Therefore, we recommend that you direct the Secretary of the Air Force to develop a plan to organize the C-130 and KC-135 aircraft in the Air National Guard and Air Force Reserve into larger wings at fewer locations and seek congressional support for the plan.

As you know, 31 U.S.C. 720 requires you to submit a written statement on actions taken on this recommendation to the Senate Committee on Governmental Affairs and the House Committee on Government Reform and Oversight not later than 60 days after the date of the report and to the Senate and House Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

Agency Comments

DOD generally concurred with our findings but non-concurred with our recommendation. The Department agrees that reorganizing aircraft at fewer locations could reduce costs while still allowing the Air Force to meet its commitments but it pointed out that other factors must also be weighed in any reorganization plan.

DOD disagreed that it should develop a specific plan to consolidate at this time. The Department observed that some options could involve base closures and/or realignment of military installations and the Department intends to seek legislative authority to close and realign installations in conjunction with its fiscal year 1999 budget. DOD believes that it would be premature to develop a plan until Congress acts on the Department's proposal.

We recognize that many factors are involved in reorganizing aircraft locations and we assume that the Air Force would take these factors into account in developing a reorganization plan. We also recognize that some options could have base closure and realignment implications, and that DOD's authority in this area is subject to the requirements of 10 U.S.C. 2687. However, the range of options available to the Secretary is broad, and many options would entail reductions that would not be subject to these requirements. Because DOD agrees that there are cost reductions associated with reorganizing C-130 and KC-135 aircraft into larger-sized squadrons and wings, we believe that the Air Force should not delay in developing a reorganization plan and seek congressional support for that plan.

A detailed explanation of our scope and methodology appears in appendix III, and DOD's comments are reproduced in appendix IV.

We are sending copies of this report to the Secretary of the Air Force and interested congressional committees. We will also make copies available to others upon request.

Please contact me at 512-3504 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in cursive script that reads "Richard Davis".

Richard Davis
Director, National Security
Analysis

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Abbreviations

DOD	Department of Defense
SABLE	Systematic Approach to Better Long-Range Estimating

Options for Reorganizing Reserve Component C-130 and KC-135 Aircraft

We developed five options for organizing reserve component C-130 and KC-135 aircraft more cost-effectively into fewer, larger-sized squadrons. In developing these options, we incrementally increased the number of aircraft per squadron for each succeeding option with 16 aircraft as the limit for C-130 squadrons and 12 aircraft as the limit for KC-135 squadrons. For each option we developed, we assessed whether (1) the Guard and Reserve could recruit sufficient personnel to support additional aircraft and (2) sufficient existing locations had facilities that could be expanded to accommodate additional aircraft. We also varied the mix of Guard and Reserve aircraft slightly and limited consideration of units outside the continental United States in some options because these issues have been identified as sensitive.

We based our recruiting assessments on data provided by Guard and Reserve officials. They rated their likely ability to increase personnel at all existing C-130 and KC-135 locations as (1) fully able to meet additional personnel requirements, (2) could meet personnel requirements with some difficulties, and (3) unlikely to meet additional requirements. We based our facility expansion assessments on civil engineering estimates provided by Guard and Reserve officials. We rated locations as low cost if expansion could be accommodated for \$3 million or less, medium cost if expansion could be accommodated for \$3 million to \$10 million, high cost if expansion could be accommodated for over \$10 million.

To calculate savings, we determined the total operating costs for larger-sized units in our options and compared them to the baseline costs for the smaller-sized units. We did not determine option-specific one-time implementation costs for military construction or other costs. Our options show possible annual savings from \$51 million to \$209 million, as shown in table I.1.

Table I.1: Total Annual Savings From Reorganization of C-130 and KC-135 Squadrons

Option	Annual recurring savings		
	C-130	KC-135	Total
	One	\$35	\$16
Two	\$66	\$32	\$98
Three	\$110	\$66	\$176
Four	\$130	\$77	\$207
Five	\$130	\$79	\$209

Source: Developed by GAO using Guard and Reserve data.

C-130 Options

In our five options, we eliminated from 3 to 13 C-130 flying squadrons from the reserve components' current number of 34 squadrons. We did not reduce the number of C-130 aircraft already in the reserve component inventory.

Option one increased almost half of the flying squadrons with less than 10 aircraft to that level. Aircraft located outside the continental United States were not considered in the analysis for this option. There were sufficient locations with the capability to recruit personnel to fully meet personnel requirements in most cases and to expand facilities at low cost. Six aircraft shifted from the Guard to the Reserve. Three squadrons were eliminated, and a net of 12 squadrons would increase in size. This option would save about \$35 million annually.

Option two increased some squadrons with less than 12 aircraft to that level. There were sufficient locations with capabilities to recruit personnel to fully meet personnel requirements in most cases and to expand facilities at low cost. Four aircraft moved to the Guard from the Reserve, 6 squadrons were eliminated, and a net of 12 squadrons would increase in size. This alternative would save about \$66 million annually.

Option three increased many squadrons with less than 14 aircraft to that level. Most locations would be able to recruit personnel to fully meet personnel requirements, but recruiting would be challenging at some locations. Most facility needs could be met at low cost, but a few locations could expand only at medium cost. Eight aircraft moved from the Guard to the Reserve, 10 squadrons were eliminated, and a net of 14 squadrons would increase in size. This option would save about \$110 million annually.

Option four increased some of the squadrons to a maximum of 16 aircraft. Recruiting would be challenging at more locations than in option three, but most facility needs could be met at low cost, with some locations able to expand at medium cost. Two aircraft moved from the Guard to the Reserve, 12 squadrons were eliminated, and a net of 15 squadrons would increase in size. This option would save slightly more than \$130 million annually.

Option five maximized the number of flying squadrons with 16 aircraft. The recruiting and facility situations were about the same as in option four, with some recruiting challenges and facility expansion possible at medium cost in some areas. Eight aircraft moved from the Guard to the

Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft

Reserve, 13 squadrons were eliminated, and a net of 14 squadrons would increase in size. This option saved about the same amount as option four, \$130 million annually.

Table I.2 shows the Air Force's current basing plan for its squadrons of C-130 aircraft and the reorganization of the aircraft in our five options.

Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft

**Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft**

Table I.2: Comparison of Air Force's Planned C-130 Basing With Our Five Options

Squadron size	Current basing		One			Two			
	Squadrons	Aircraft	Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons	
Guard									
4	2	8	2	8	0	1	4	-1	
8	16	128	4	32	-12	4	32	-12	
10	0	0	9	90	9	2	20	2	
12	5	60	5	60	0	12	144	7	
14	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	
Subtotal	23	196	20	190	-3	19	200	-4	
Reserve									
8	8	64	5	40	-3	3	24	-5	
10	0	0	3	30	3	0	0	0	
12	2	24	2	24	0	5	60	3	
14	0	0	0	0	0	0	0	0	
16	1	16	1	16	0	1	16	0	
Subtotal	11	104	11	110	0	9	100	-2	
Total	34	300	31	300	-3	28	300	-6	

**Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft**

Option								
Three			Four			Five		
Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons
0	0	-2	0	0	-2	0	0	-2
2	16	-14	1	8	-15	1	8	-15
1	10	1	0	0	0	1	10	1
3	36	-2	2	24	-3	5	60	0
9	126	9	7	98	7	1	14	1
0	0	0	4	64	4	6	96	6
15	188	-8	14	194	-9	14	188	-9
2	16	-6	2	16	-6	0	0	-8
0	0	0	0	0	0	0	0	0
2	24	0	1	12	-1	0	0	-2
4	56	4	1	14	1	0	0	0
1	16	0	4	64	3	7	112	6
9	112	-2	8	106	-3	7	112	-4
24	300	-10	22	300	-12	21	300	-13

Source: Developed by GAO using Guard and Reserve data.

KC-135 Options

In our five options, we eliminated from 1 to 5 KC-135 flying squadrons from the reserve components' current number of 29 squadrons but did not reduce the number of KC-135 aircraft already in the reserve components' inventories. We did not reduce the number of aircraft from the four locations that the Air National Guard considered mission unique in any of our options.

For option one, we increased most squadrons with less than 10 aircraft to that level. There were sufficient locations with adequate capabilities to recruit personnel to fully meet requirements with one exception, where recruiting would be challenging. Facilities could be expanded at low cost at every location. One squadron was eliminated, and a net of seven squadrons would increase in size. This option would save about \$16 million annually.

Option two increased all squadrons but one to a minimum of 10 aircraft. There were sufficient locations with adequate capabilities to recruit personnel to fully meet requirements with one exception, where recruiting would be challenging. Facilities could be expanded at low cost at every location. Four aircraft were shifted from the Guard to the Reserve, two squadrons were eliminated, and a net of 10 squadrons would increase in size. This option would save about \$32 million annually.

Option three increased most squadrons to 11 aircraft. For a few locations, recruitment would be challenging, but for all others there was adequate capability to recruit personnel to fully meet requirements. Facilities could be expanded at low cost at all but two locations, where expansion was possible at medium cost at one and at high cost at the other. Six aircraft were shifted from the Guard to the Reserve, 4 squadrons were eliminated, and a net of 20 squadrons would increase in size. This option would save about \$66 million annually.

Option four increased many squadrons to 12 aircraft. There was adequate capability to recruit personnel to fully meet requirements at most locations, and facilities could be expanded at low cost. Five squadrons were eliminated, and a net of 16 squadrons would increase in size. This option would save about \$77 million annually.

Option five maximized the number of squadrons with 12 aircraft and minimized the number of locations. Most locations were capable of fully meeting personnel requirements, with recruiting more challenging, but possible, at several locations. Most locations could expand facilities at low cost, with expansion at one location possible at medium cost and at another location at high cost. Ten aircraft were shifted from the Guard to the Reserve, 5 squadrons were eliminated, and a net of 16 squadrons would increase in size. This option would save about \$79 million annually.

Table I.3 shows the Air Force's current basing plan for its squadrons of KC-135 aircraft and the reorganization of the aircraft in our five options.

Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft

**Appendix I
Options for Reorganizing Reserve
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Table I.3: Comparison of Air Force's Planned KC-135 Basing With Our Five Options

Squadron size	Current basing		One			Two		
	Squadrons	Aircraft	Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons
Guard								
8	5	40	3	24	-2	0	0	-5
9	6	54	0	0	-6	0	0	-6
10	11	110	18	180	7	20	200	9
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
Subtotal	22	204	21	204	-1	20	200	-2
Reserve								
6	1	6	1	6	0	0	0	-1
8	1	8	1	8	0	1	8	0
10	5	50	5	50	0	6	60	1
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
Subtotal	7	64	7	64	0	7	68	0
Total	29	268	28	268	-1	27	268	-2

**Appendix I
Options for Reorganizing Reserve
Component C-130 and KC-135 Aircraft**

Option								
Three			Four			Five		
Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons	Squadrons	Aircraft	Change in squadrons
0	0	-5	0	0	-5	2	16	-3
0	0	-6	0	0	-6	0	0	-6
0	0	-11	5	50	-6	1	10	-10
18	198	18	2	22	2	0	0	0
0	0	0	11	132	11	14	168	14
18	198	-4	18	204	-4	17	194	-5
0	0	-1	0	0	-1	0	0	-1
1	8	0	1	8	0	0	0	-1
4	40	-1	2	20	-3	5	50	0
2	22	2	0	0	0	0	0	0
0	0	0	3	36	3	2	24	2
7	70	0	6	64	-1	7	74	0
25	268	-4	24	268	-5	24	268	-5

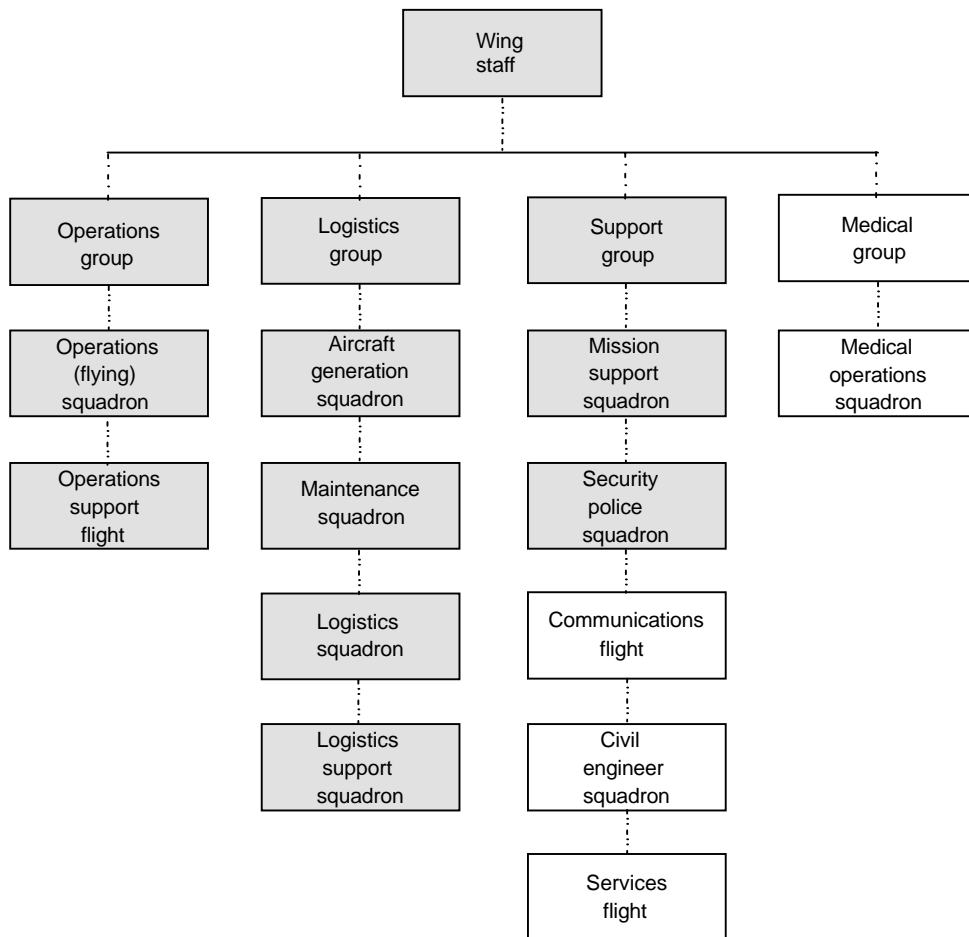
Source: Developed by GAO using Guard and Reserve data.

Consolidation of Aircraft Could Result in Reduction in Personnel Positions

Organizing existing C-130 and KC-135 aircraft into fewer wings could result in significant savings due to reductions in personnel positions. These reductions would primarily be in squadrons directly related to each aircraft, since much of the overhead at locations losing aircraft would no longer be needed; the Air Force would have to determine the disposition of squadrons not directly related to the flying squadrons. Also, squadrons with duplicative functions could be eliminated. According to data provided by Guard and Reserve program officials, only small increases in positions would be necessary at existing locations receiving additional aircraft. Figure II.1 shows the major elements of a typical wing structure.

**Appendix II
Consolidation of Aircraft Could Result in
Reduction in Personnel Positions**

**Figure II.1: Typical Reserve
Component Wing Organization**



Note: Shaded organizations are typically directly related to aircraft and personnel savings in these areas make up the cost savings in this report.

Source: Developed by GAO using Guard and Reserve data.

The following sections describe each main organization typically in a wing and the effect that consolidation is likely to have on its personnel requirements. Actual locations may have additional squadrons in the wing that are not directly related to the aircraft.

Wing Headquarters

The wing headquarters includes the wing commander and staff that develop operational plans; evaluate exercises; and provide financial, legal,

safety, public affairs, historical, and other services. If a wing loses its only flying squadron, the wing headquarters would likely be eliminated. The wing headquarter's staff would not need to increase if the squadrons' aircraft increase from 8 to 12. The number of full-time staff would increase slightly.

Operations Group

The operations group comprises a commander and a small staff that supervise the flying squadron and the operations support flight. The flying squadron is staffed with pilots and a crew that operate the aircraft and are in a fixed ratio to the number of aircraft. The operations support flight provides intelligence, scheduling, combat tactics, training, air crew life support, airfield and air traffic operations, and weather support to the flying squadron. If a wing loses its flying squadron, the operations group would be eliminated. As shown in table II.1, the wing that receives a 50-percent increase in aircraft would need to increase its flying squadron personnel by 42 percent. Full-time staff would increase about the same percentage. The other squadrons would increase minimally.

Logistics Group

The logistics group commander and staff oversee the aircraft generation squadron, maintenance squadron, logistics squadron, and the logistics support squadron. The aircraft generation squadron handles flight line maintenance and related tasks, and the maintenance squadron handles more substantial repairs. The logistics squadron manages transportation vehicles and other base-owned equipment. The logistics support squadron manages engines and training. All of these squadrons are directly related to the performance of the aircraft. If a wing loses its flying squadron, the logistics group would be eliminated. The wing that receives a 50-percent increase in aircraft, from 8 to 12, would have to increase its aircraft generation squadron and maintenance squadron personnel by about 25 percent. Full-time staff would increase by a slightly greater percentage. Other organizations would be affected only slightly.

Support Group

The support group includes the mission support squadron and the security police squadron, which are directly related to the aircraft, and elements that provide base and other support services, such as the communications flight, civil engineer, and services flight squadrons. If a wing loses its flying squadron, the support group would be eliminated. The mission support squadron and security police at the receiving wing would not increase if the number of aircraft increased from 8 to 12. The civil engineering

**Appendix II
Consolidation of Aircraft Could Result in
Reduction in Personnel Positions**

squadron and the communication and services flights are not directly tied to the aircraft, and their disposition would have to be determined by the Air Force.

Medical Group

The medical squadron provides family practice, inpatient, and medical nursing and emergency room, mental health, pharmaceutical, and dental services. In the reserve component, one squadron may be the only organization in the group. This squadron is not directly related to the aircraft and would be unaffected at a receiving unit if additional aircraft were assigned. The disposition of the medical squadron losing aircraft would have to be determined by the Air Force.

Table II.1 shows the impact of adding four additional aircraft to an eight-aircraft reserve component C-130 wing.

Table II.1: Comparison of Squadron Staffing for an 8- and 12-Aircraft Unit

Wing organization	Military personnel		Personnel increase (percent)	Full-time personnel		Personnel increase (percent)
	8 aircraft	12 aircraft	50	8 aircraft	12 aircraft	50
Wing headquarters staff	56	56	0	20	21	5
Operations group staff	6	6	0	1	1	0
Operations squadron	95	135	42	19	28	47
Operations support squadron	20	21	5	7	8	14
Operations subtotal	121	162	34	27	37	37
Logistics group staff	10	11	10	6	7	17
Logistics support flight	13	13	0	9	9	0
Logistics squadron	112	112	0	41	44	7
Aircraft generation squadron	63	79	25	29	36	24
Maintenance squadron	138	175	27	52	71	37
Logistics subtotal	336	390	16	137	167	22
Support group staff	5	5	0	2	2	0
Mission support flight	26	26	0	12	13	8
Security police squadron	58	58	0	12	12	0
Support subtotal	89	89	0	26	27	4
Wing total	602	697	16	210	252	20

Source: Developed by GAO using Guard and Reserve data.

Objective, Scope, and Methodology

We assessed whether the Air Force's reserve component combat C-130 and KC-135 aircraft could feasibly be reorganized into fewer, larger-sized squadrons and wings. In making this assessment, we (1) determined the effect of a reorganization of the C-130 and KC-135 aircraft on mission accomplishment, (2) determined whether costs could be reduced through a restructuring of the aircraft squadrons, and (3) developed five possible options for increasing the number of aircraft in C-130 and KC-135 squadrons and analyzed their effect on operations and costs. We focused on combat-coded reserve component C-135 and C-130 aircraft. We did not include locations that had only special-mission versions of these aircraft, especially the C-130.

To determine the effect of a reorganization of C-130 and KC-135 aircraft on mission accomplishment, we interviewed officials and obtained data from the Headquarters, Air National Guard, and the Office of the Air Force Reserve, in Washington, D.C.; the Air National Guard Readiness Center at Andrews Air Force Base, Maryland; and the Air Force Reserve Command, Robins Air Force Base, Georgia, in the following functional areas: recruiting, civil engineering, manpower, financial management, planning and programming, and training. We discussed legal provisions that would affect the relocation of existing reserve component flying squadrons with the Air National Guard General Counsel staff and Air Force Reserve planning staff.

We also interviewed wing and squadron officials at the 135th Airlift Squadron at Martin State Airport, Maryland; the 133rd and 934th Airlift Wings at Minneapolis-St. Paul International Airport, Minnesota; the 302nd Airlift Wing, Peterson Air Force Base, Colorado; and the 163rd Air Refueling and 452nd Mobility Wings, March Air Force Reserve Base, California, to discuss the same functional areas listed above. These flying squadrons represent a cross section of reserve component basing arrangements. We examined a variety of Air Force and reserve component regulations, including those regarding facility requirements and staffing procedures. We interviewed officials at the Air Mobility Command, Scott Air Force Base, Illinois, and the Air Combat Command, Langley Air Force Base, Virginia, to understand how reserve component assets would fit into the gaining command's war plans and to obtain their perspectives on the effect of consolidations.

Estimating Cost Implications

To determine whether costs could be reduced through a restructuring of the aircraft squadrons, we developed staffing estimates from data provided

by reserve component officials that develop personnel requirements. In developing our estimates, we interviewed staffing and budget officials at the services' headquarters, readiness centers, and the squadrons we visited. We also obtained wing staffing and budget reports for all squadrons and analyzed specific squadron staffing authorization documents for 12 squadrons of various sizes. At the squadrons we visited, we reviewed and discussed the number of assigned personnel and the squadron's budgets and discussed their estimates of the personnel increases and facility additions that might be needed to accommodate additional aircraft. Since over 70 percent of the operating costs and almost all of the estimated savings are associated with military and civilian personnel, we primarily analyzed the reasonableness of the services' personnel and salary planning factors. We found their estimates to be reasonable. We provided these staffing estimates to Air Force officials to use in its SABLE model.¹ Our savings estimates include only the savings from reduced operating costs that are directly related to each aircraft and do not include any military construction, base closure, and other fixed or indirect costs and savings that may be associated with transferring aircraft from one location to another.

Developing Options

To determine the feasibility of increasing the number of aircraft in C-130 and KC-135 squadrons at various locations, we examined the reserve component's submissions on capacity to the 1995 Base Realignment and Closure Commission. The reserve component's headquarters civil engineering branches provided more current estimates of the estimated capacity of each squadron and the cost to increase the capacity. During visits to C-130 and KC-135 wings, we obtained civil engineering estimates on each location's ability to expand, the facilities needed, and the accompanying cost to ensure that data provided from headquarters was reliable.

To determine the reserve component's capability to recruit additional personnel needed to organize wings with additional aircraft, we obtained assessments from the Air National Guard's and the Air Force Reserve's headquarters recruitment staff. These personnel provided estimates for each location's ability to support additional personnel for incremental

¹The Air Force's Systematic Approach to Better Long Range Estimating (SABLE) automated model uses various cost and planning factors to estimate the peacetime operating and support costs of flying units. Operating costs include cost elements in the operation and maintenance, military personnel, and other procurement appropriations. Within these appropriations, the major cost categories directly related to each aircraft include military and civilian pay, aviation fuel, depot maintenance, and depot level repairables. These costs are estimated for each type and model of aircraft within each reserve component. This model is not considered budget quality.

aircraft increases. We also factored in personnel readiness standards used by the Department of Defense. A more complete discussion of the methodology used in developing options is included in appendix I.

For the four C-130 and two KC-135 squadrons we visited, we used the squadron's recruiting potential according to headquarter's estimates and assessed its consistency with the local recruiting office's estimate of its ability to recruit an adequate number of people for an increase in aircraft at its location.

To estimate one-time costs for facility improvements, we obtained cost estimates from the reserve component's civil engineering headquarters for each location. We checked these estimates against those made by local civil engineering personnel at the squadrons we visited. To estimate relocation and separation expenses, we examined 1995 base closure estimates on permanent change of station and separation costs for civilians and military personnel. We also interviewed reserve component training personnel to gain an understanding of the expected changes in training demand due to consolidation.

We conducted our review from July 1996 to September 1997 in accordance with generally accepted government auditing standards.

Comments From the Department of Defense



PROGRAM ANALYSIS
AND EVALUATION

OFFICE OF THE SECRETARY OF DEFENSE
1800 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-1800



December 29, 1997

Mr. Richard Davis
Director, National Security Analysis
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Davis:

This is the Department of Defense's (DoD's) response to the General Accounting Office's (GAO's) draft report, "AIR FORCE AIRCRAFT: Reorganizing Mobility Aircraft Units Could Reduce Costs" dated November 21, 1997 (GAO Code 701089) OSD Case 1498. The Department generally concurs with the report's finding that the Air Force could reduce costs while still meeting commitments if it reorganized its C-130 and KC-135 aircraft in the Reserve components into larger squadrons and wings at fewer locations. However, the DoD believes that other factors should weigh in any plan to proceed with consolidations. In particular, DoD would want to consider the impact of consolidations on support for maintaining the Active component's peacetime tempo of operations (OPTEMPO), statewide presence, and the active duty/Reserve component force mix. Also, our general concurrence with this finding does not imply endorsement of any particular option examined in the study nor the specific savings associated with those options. The report does not include the analytic details necessary to evaluate these options and the savings associated with them.

Despite this general concurrence with the report's central finding, the Department does not concur with its recommendation that the Secretary of the Air Force develop a plan for consolidating C-130 and KC-135 aircraft in the Air National Guard and Air Force Reserve. Such a plan almost certainly holds implications involving the closure and/or realignment of military installations. The Defense Reform Initiative, announced by Secretary Cohen in November of this year, indicated the Department's intention to make a legislative proposal for authority to close and realign military installations in conjunction with its fiscal year 1999 budget. Until Congress acts on that proposal, it would be premature for the Air Force to develop a specific plan to consolidate the aircraft addressed in this report.

Sincerely,

Michael L. Joffredo
for Robert R. Soule
Acting Director



Major Contributors to This Report

**National Security and
International Affairs
Division, Washington,
D.C.**

Fred Dziadek, Assistant Director
Rodell Anderson, Evaluator-in-Charge
Anthony DeFrank, Senior Evaluator

Norfolk Field Office

Dan Omahen, Senior Evaluator
Mary Jo LaCasse, Evaluator

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