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BY THE COMPTROLLER GENERAL

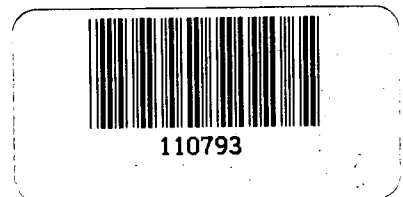
Report To The Congress

OF THE UNITED STATES

Modernizing The Air Reserve Forces -- More Emphasis On Logistics Support Needed

The Air Force needs to examine more closely the logistics support impact of modernizing its Air Reserve Forces. Substantial savings and increased effectiveness can be achieved by using alternative basing and support structure and by making the Air Reserve Forces more like the Active Air Force.

The Secretary of the Air Force should reconsider present modernization plans with emphasis on reducing support requirements. Integrated logistics support planning should be used to determine the logistical impact of transferring aircraft to the Air Reserve Forces.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

526 This report summarizes the results of our examination
of the Air Force's plans to modernize its Air Reserve Forces--
the Air National Guard and Air Force Reserve. It discusses
the logistics support problems the Air Force encountered
when it transferred aircraft from Active to Reserve units.
It also discusses opportunities to reduce support require-
ments and points out that substantial savings and increased
effectiveness can be achieved by using alternative basing
and support structures for the Air Reserve Forces.

We are sending copies of this report to the Director,
Office of Management and Budget, and the Secretaries of
Defense and the Air Force.

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Fleming A. Stead

Comptroller General
of the United States

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D I G E S T

Air Force planning for modernizing the Air National Guard and Air Force Reserve--the Air Reserve Forces--needs to match logistics support more effectively with operational needs. Decentralization of the Air Reserve Forces--144 units at 102 locations--prevents their effective and efficient support. ⑩

The Department of Defense (DOD) requires the military services to develop integrated support plans for new weapon systems to ensure that logistics support meets operational needs through the development of an efficient and effective support program. The plans serve as a basis for provisioning support resources throughout the weapon systems' life cycles. Neither DOD nor the Air Force, however, require similar plans for modernizing the Air Reserve Forces with existing weapon systems.

Although the Air Reserve Forces are supposed to be as similar as possible to the Active Air Force, they are structured, based, and supported quite differently. When aircraft are transferred from the Active Air Force to the Air Reserve Forces, these differences cause severe support problems.

Air Force planners have had to equip Air National Guard and Air Force Reserve units with fewer aircraft than normally found in comparable Active Air Force units. This thin-spreading expands logistics support requirements and often creates shortages.

When transferring A-7 aircraft from 3 Active Air Force bases to 14 Air National Guard locations, for example, the Air Force had to procure \$19.6 million in avionics test equipment and created a \$44 million requirement for flight simulators. (See pp. 14 and 16.)

The Air Force faces the same situation now as it transfers substantial numbers of F-4

aircraft to the Air Reserve Forces. The real impact of F-4 support shortages will become more severe as more aircraft are transferred. (See p. 14.)

In addition, it is more costly to operate the decentralized structure of the Air Reserve Forces. For example, if the Air National Guard units with A-7 aircraft were structured like Active Air Force units, their annual operations, maintenance, and personnel costs could be reduced by \$20.4 million. (See pp. 17 and 18.)

When mobilized, the Air Reserve Forces will be reconfigured like the Active Air Force. Therefore, their peacetime support structure should mirror their mobilization structure. That is not now the case. As a result, peacetime support exceeds wartime needs. For example, the Air Force plans to equip Air Reserve Forces A-10 units with avionics test equipment costing \$44 million, although \$11 million or more of it may not be needed for wartime. (See pp. 22 and 23.)

The Air Force could increase the effectiveness of its Air Reserve Forces and achieve significant savings if greater consideration were given to alternative ways of supporting them. These alternatives include

- colocating common aircraft,
- centralizing aircraft logistics support activities,
- using Active Air Force bases to a greater extent, and
- expanding the Air Force Associate Program to include the Air National Guard.

RECOMMENDATIONS

④ The Secretary of the Air Force should reconsider present modernization plans with emphasis on reducing support requirements. Integrated logistics support planning should be used to determine the logistics impact of transferring aircraft to the Air Reserve Forces.

The Secretary of Defense should require the Secretary of the Air Force and the Chief of the National Guard Bureau to

- operate and support the peacetime Air Reserve Forces support structure as it will be in wartime,
- colocate common type aircraft and centralize support functions to a greater extent,
- locate Air Reserve Forces on Active Air Force bases to a greater extent, and
- expand the Air Force Associate Program to other mission areas and include the Air National Guard.

AGENCY COMMENTS

DOD was requested to provide written comments on this report, but because of delays in providing them GAO obtained oral comments instead.

DOD and the Air Force agreed that improved planning could result in better logistics support of the Air Reserve Forces, but the complex issues involved require long-term study:

- Although the peacetime support structure of the Air Reserve Forces should be as similar as possible to the wartime needs, flexibility is gained from excess logistics support dictated by the peacetime structure.
- Colocation of common type aircraft, use of Active Air Force bases, and centralization of support functions could result in significant savings, but costs and other disadvantages need to be studied before such changes are made. Further, local recruiting potential is a vital consideration in collocating Reserve units, particularly those not located near major metropolitan areas.

GAO agrees that the issues involved in logistics support of the Air Reserve Forces are complex. However, flexibility gained from excess peacetime logistics support must be evaluated against the additional costs. Other costs associated with collocating Reserve units, relocating units on Active bases, or centralizing support functions must be analyzed to determine realizable long-range savings and other benefits.

While GAO recognizes that recruiting potential is an important consideration in collocating, many Reserve units are near each other and draw on the same recruiting potential but remain as separately supported units.

More detailed discussion and evaluation of the Air Force's comments are contained in chapters 4 and 5 of this report.

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
ILS	integrated logistics support

CHAPTER 1

INTRODUCTION

The Air Reserve Forces--the Air National Guard and Air Force Reserve--are the prime source of trained and ready forces that will augment and sustain the Active Air Force during an emergency. As such, their capability is an essential component of our ability to meet national security responsibilities. Under the Department of Defense's (DOD's) total force policy--which integrates Active, Guard, and Reserve Forces into a homogeneous whole--the Air Reserve Forces are more important than at any time since their inception.

The Air Force has been reasonably successful in modernizing its Air Reserve Forces, as evidenced by the increased number of Guard and Reserve units flying aircraft identical to aircraft being flown by Active Forces. Until recently, Guard and Reserve units were provided aircraft that were no longer in the Active Air Force inventory. In today's total force environment, this trend is changing.

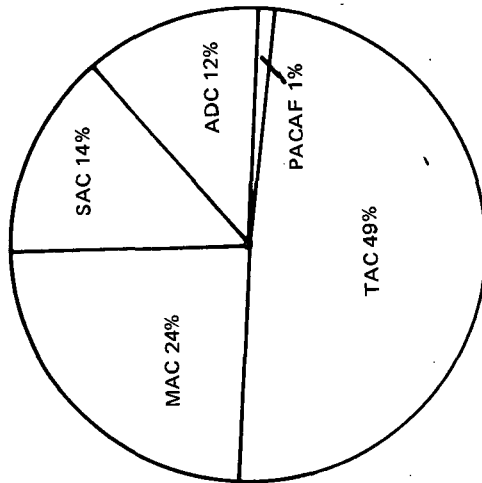
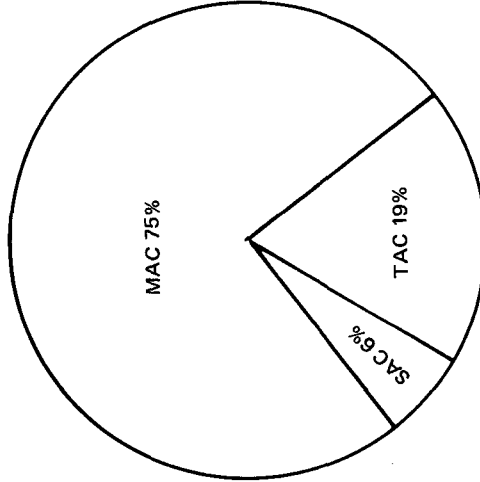
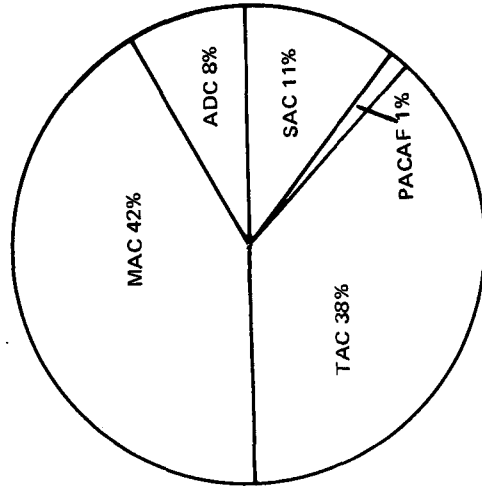
The Air Reserve Forces now possess or are being assigned aircraft comparable to those of their Active Air Force counterparts. More recently, during fiscal year 1979, Guard and Reserve Forces have been notably strengthened. The Air Force is retiring the last 11 squadrons of F-100 fighter aircraft and replacing them with F-4s, A-7s, and new A-10s. Further modernization is planned during the 1980s as more A-7s and F-4s are released from Active Air Force units and new A-10s and F-16s are delivered directly to the Air Reserve Forces.

STRUCTURE OF THE AIR RESERVE FORCES

The Air Reserve Forces, representing 14 percent of all Air Force personnel, are organized around 144 flying units, with 1,300 nonflying units supporting them. As of September 30, 1978, the Air Reserve Forces had 1,826 aircraft at 102 locations--1,377 aircraft assigned to 91 Guard flying units and 449 aircraft assigned to 53 ¹/ Air Force Reserve flying units. The distribution of the flying units among the major Air Force commands is shown on page 2 to illustrate

¹/Included in the total flying units are 18 Air Force Reserve associate units which fly Active Air Force aircraft. These aircraft are not included in the 449-total.

AIR RESERVE FORCES FLYING UNITS



TOTAL

AIR FORCE RESERVE

AIR NATIONAL GUARD

KEY	
MAC:	MILITARY AIRLIFT COMMAND
TAC:	TACTICAL AIR COMMAND
SAC:	STRATEGIC AIR COMMAND
ADC:	AIR DEFENSE COMMAND
PACAF:	PACIFIC AIR FORCE

the large number of Air Force Reserve units with airlift missions and the large number of Air National Guard units with combat missions.

In terms of aircraft, the Air Reserve Forces have a large percentage of all Air Force aircraft, as shown below.

Air Reserve Forces
Percent of total force aircraft

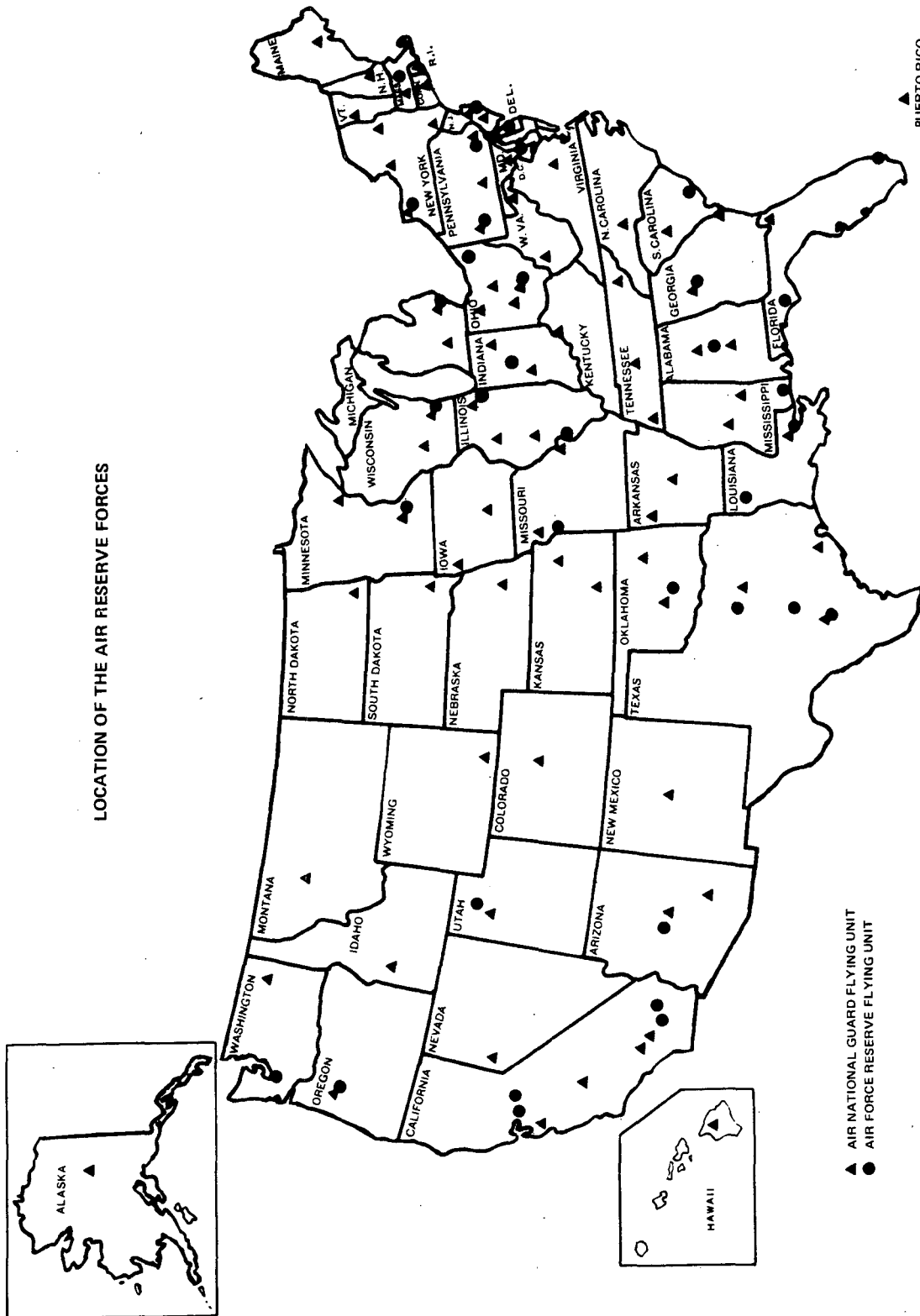
Air defense interceptors	63
Tactical airlift aircraft	61
Tactical reconnaissance aircraft	47
Tactical air control system aircraft	38
Air rescue and recovery aircraft	35
Tactical fighter aircraft	31
Strategic air refueling aircraft	21

LOCATION OF THE AIR RESERVE FORCES

The 144 Air Reserve Forces flying units are dispersed throughout the United States and Puerto Rico, as shown on page 4. Each State has at least one Guard flying unit.

The location of the 144 flying units clearly differentiates Air National Guard and Air Force Reserve basing practices. Reserve flying units are located on Active Air Force bases in about the same proportion as Guard units located at municipal airports. Air National Guard units are based at 69 municipal airports, 13 Active Air Force bases, 3 Naval Air Stations, and 4 Air National Guard bases. Air Force Reserve units are based at 24 Active Air Force bases, 7 municipal airports, 2 Air Force Reserve bases, 1 Air National Guard base, and 2 Naval Air Stations. Guard and Reserve units are colocated at 14 of these locations. Guard and Reserve units possess aircraft at all but nine of these locations--three permanent field training sites and six Air Force bases where Air Force Reserve associate units fly Active Air Force aircraft.

LOCATION OF THE AIR RESERVE FORCES



▲ AIR NATIONAL GUARD FLYING UNIT
● AIR FORCE RESERVE FLYING UNIT

ANNUAL OPERATIONS, MAINTENANCE,
AND MILITARY PERSONNEL COSTS

The annual operations, maintenance, and military personnel costs of the Air National Guard and Air Force Reserve for fiscal years 1975 through 1980 are presented below.

<u>Year</u>	<u>Air National Guard</u>		<u>Air Force Reserve</u>		<u>Total</u>
	<u>Military personnel</u>	<u>Operations & maintenance</u>	<u>Military personnel</u>	<u>Operations & maintenance</u>	
------(millions)-----					
1975	\$202.3	\$ 653.0	\$141.8	\$295.5	\$1,292.6
1976	210.3	709.5	150.3	331.6	1,401.7
Transition quarter	62.4	190.2	51.1	85.2	388.9
1977	221.8	790.3	158.2	355.1	1,525.4
1978	236.6	848.3	180.7	383.6	1,649.2
1979 (est.)	264.6	951.9	194.6	393.3	1,804.4
1980 (est.)	273.5	1,039.5	214.7	410.6	1,938.3

SCOPE OF REVIEW

This report discusses the Air Force's plans to modernize its Air Reserve Forces and problems the Air Force encountered when it transferred aircraft to Guard and Reserve units. It focuses on the logistics support requirements associated with current modernization plans and ways these requirements can be reduced. Because most of the modernization plans involve tactical fighter aircraft, we concentrated our efforts on these types of aircraft.

The information in this report is based on interviews with Air Force officials; reviews of records, regulations, and reports provided by those officials; and research of published DOD studies and reports and our previous studies.

We made our review at the following locations:

--Headquarters, U.S. Air Force, the Pentagon.

--Office of Air Force Reserve, the Pentagon.

--National Guard Bureau, the Pentagon.

--Tactical Air Command, Langley Air Force Base, Virginia.

--Air Logistics Center, Hill Air Force Base, Utah.

CHAPTER 2

INTEGRATED LOGISTICS SUPPORT PLANNING

FOR THE AIR RESERVE FORCES

The principal test of the effectiveness of a weapon system is its capability and availability to perform a specified military mission. Availability of a system, or its major components, is directly related to the reliability, maintainability, and effectiveness of the logistics support system in the operational environment. Further, a significant part of a weapon system's total cost (and sometimes the principal cost) is the cost of logistics support. In a budget constrained environment, there must be an optimum balance between system performance and support throughout the weapon's life. Too little support leads to ineffective systems; too much support leads to a waste of valuable resources.

In modernizing its Air Reserve Forces, the Air Force has encountered many support problems and, in some cases, unnecessarily increased support costs. For example, the Air Force created a \$44 million requirement for flight simulators by transferring A-7 aircraft from 3 Active Air Force bases to 14 dispersed Air National Guard bases. And, the Air Force plans to buy \$44 million in avionics shop equipment for Air Reserve Forces units receiving the A-10 aircraft to be used in peacetime, although \$11 million or more of this equipment may not be needed in wartime.

These, and other problems discussed in this report, point out a need for the Air Force to reconsider its modernization plans and to take advantage of opportunities to more effectively and efficiently support its Air Reserve Forces. Key issues that need to be addressed concern

- whether the Air Force can provide efficient and effective support of the current decentralized Air Reserve Forces and
- whether the Air Force should revise the support structure of the Air Reserve Forces to be more comparable to the Active Air Force and more in line with wartime needs.

INTEGRATED LOGISTICS SUPPORT
PLANNING IS DOD POLICY

The tool in DOD to assure efficient and effective support is the integrated logistics support (ILS) plan. DOD Directive 4100.35 establishes policy and assigns responsibility for carrying out an ILS program as an integral part of the acquisition process for the life cycle support of systems/equipments procured by DOD. It sets forth the primary objective as assuring the achievement of operational capability and availability of systems by requiring the development of an effective and efficient logistics support program. The ILS concept requires that support planning be considered at the earliest phases of overall planning for a new weapon system to ensure that support costs are minimized throughout the life cycle of the system.

The principal elements to be considered in integrated logistics planning are

- maintenance requirements and the organizational structure for meeting those requirements,
- support and test equipment,
- spare parts and munitions supply support,
- transportation and handling of material,
- personnel and training,
- logistics support resource funds, and
- logistics support management information.

Each military service is responsible for formulating ILS plans early during the development and acquisition of its new weapon systems. As changes which concern logistics elements occur, the services are to update or adjust their plans accordingly. These plans become the basis for provisioning the support resources required for effective operations.

AIR FORCE LOGISTICS SUPPORT PLANNING

The Air Force implemented the DOD policy in its Air Force Regulation 800-8 of July 27, 1972. This established Air Force policy for ILS and set forth criteria for applying ILS throughout a weapon system's life cycle. The Air Force regulation states that ILS planning will be used on (1) Air Force system and equipment acquisition programs, beginning

with the initial identification of operational needs or deficiencies, or (2) other programs or projects as directed by the Headquarters, U.S. Air Force. However, the directive does not require applying integrated logistics planning to existing weapon systems, such as the F-4 and A-7 aircraft being transferred into the Air Reserve Forces.

Since logistics support greatly influences the ultimate cost and capability of the Air Reserve Forces, it must be adequately considered in Air Force modernization decisions. Each act or decision made throughout a system's life cycle directly affects the logistics support requirements of the system. Therefore, the effect of transferring aircraft from the Active Air Force to the Air Reserve Forces must be carefully evaluated.

ILS planning can benefit Air Reserve Forces planning. For one reason, an important part of ILS planning is considering many alternatives in a number of areas, particularly in operational concepts and maintenance policies. Using appropriate analytical methods enables many solutions to be compared and less costly and/or more effective support options to be identified.

Transferring aircraft from the Active Air Force to the Air Reserve Forces is a critical decision involving changes in operational environment. Therefore, the Air Force should carefully consider the effect of such transfers in its planning. The Air Force has encountered many support problems and incurred additional costs in transferring aircraft from the Active Air Force to the Air Reserve Forces. For example:

- Support equipment shortages for F-4 aircraft were critical and, in fiscal year 1979, spending for support equipment for Reserve units was estimated to be as high as \$18 million.
- In 1974 the Air Force spent \$19.6 million for additional sets of avionics test equipment to support A-7 aircraft being transferred to Air National Guard units.
- The Air Force estimated that scaled-down versions of the A-7 simulator needed, in addition to those transferred from the Active Air Force to support Air National Guard units receiving A-7 aircraft, will cost, if funded, about \$44 million. Until these simulators are bought, Air National Guard units will send its pilots to train on centrally located simulators.

- The Air Force is providing avionics shop equipment sets costing about \$44 million to provide peacetime support for A-10 aircraft being transferred to Air Reserve Forces at eight locations. However, during wartime mobilization, \$11 million or more of this equipment may not be needed.
- Annual operations, maintenance, and personnel costs for A-7 aircraft in the Air Reserve Forces could be reduced by as much as \$20.4 million if aircraft were based differently.

LOGISTICS QUESTIONS REGARDING
THE AIR RESERVE FORCES

The five examples listed above clearly show the need for giving greater consideration to the effect of support on modernizing the Air Reserve Forces. Key questions that need to be addressed are:

- Can the Air Force continue to operate and support its Air Reserve Forces differently than Active units? If so, what is the logistics impact of doing so?
- Should the peacetime support needs of the Air Reserve Forces exceed wartime needs?
- What alternatives are available for reducing the support requirements of the Air Reserve Forces without reducing their effectiveness?

CHAPTER 3

MODERNIZATION MORE DIFFICULT

WITH AIR RESERVE FORCES DISPERSED

The decentralized structure of the Air Reserve Forces restricts Air Force modernization of Air National Guard and Air Force Reserve aircraft. The decentralized structure, coupled with limited availability of aircraft, has forced the Air Force to equip Guard and Reserve flying units with fewer aircraft than normally found in Active Air Force units. Also, transferring aircraft to numerous dispersed locations significantly expands logistics support requirements.

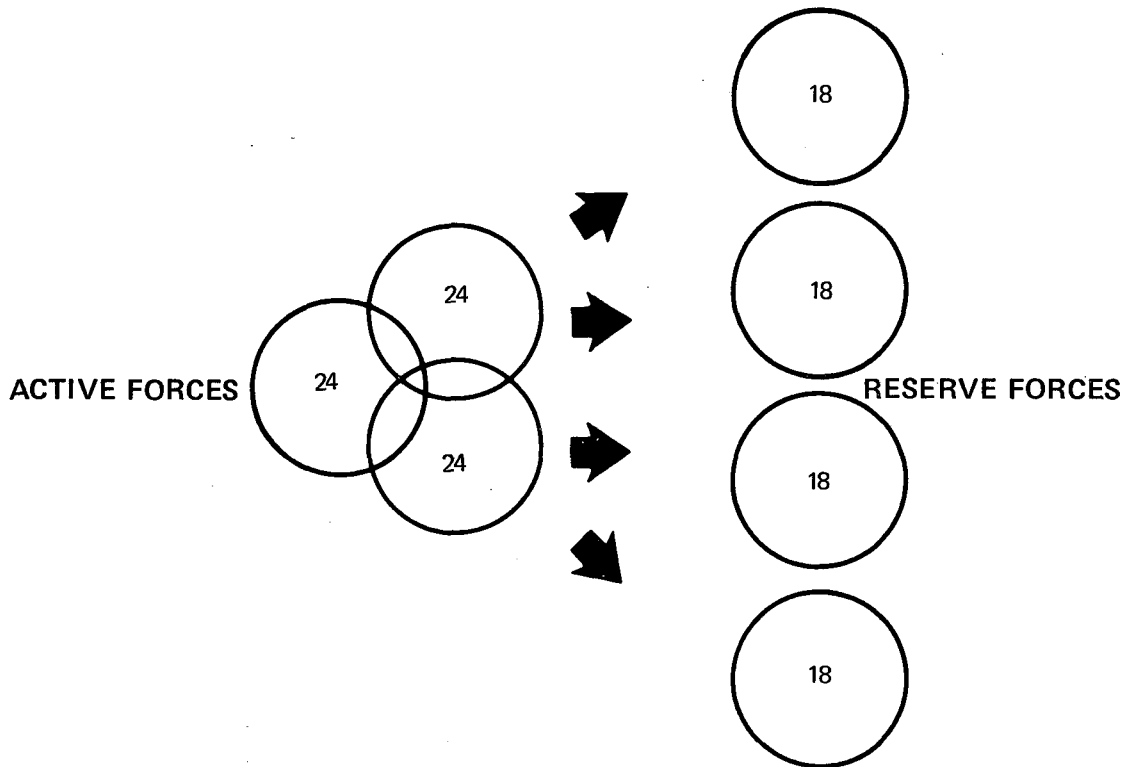
RESERVE AND ACTIVE BASING STRUCTURE DIFFER

Air Force modernization plans evolve around the traditional Reserve basing structure, even though this structure results in undersized units and requires an extensive duplication of support equipment and facilities. As discussed on pages 1 and 3, the 144 Air Reserve Forces flying units are based throughout the United States and Puerto Rico. In most cases, only a single flying squadron is based at each location. Because of the minimum amounts of specialized personnel, facilities, and equipment required at each separate operating location, this basing structure is costly.

In contrast to Air Reserve Forces basing practices, the Active Air Force colocates several squadrons at a single location. For example, the Air Force normally colocates a wing of Active tactical fighter aircraft, composed of 3 squadrons, each with 24 aircraft, at 1 base.

Colocation of aircraft offers several advantages. As the number of aircraft to be supported increases, for instance, there is often less than a proportional increase in staffing, equipment, and facilities. Thus, supporting a number of flying squadrons at a single location requires less resources than if each squadron supported itself. Colocation also results in a better matching of logistics support requirements with available resources.

This last point is especially important in Air Force plans to modernize the Air Reserve Forces. Under current plans, the same number of Active Air Force aircraft colocated at a single location is required to modernize four separately located Air Reserve Forces squadrons, as illustrated on page 11.



This method of modernizing Reserve units has caused the Air Force considerable problems. The logistics support requirements for separately located Air Reserve Forces squadrons, in total, normally exceed the resources available from Active Air Force squadrons. As a result, the Air Force has had to buy expensive support equipment and build new facilities. Further, operating and maintaining separately located squadrons is more costly than colocated squadrons.

INCREASED SUPPORT EQUIPMENT COSTS

Supporting the current dispersed Air Reserve Forces structure requires more support equipment than available from Active Air Force units. As long as the dispersed structure is maintained, the Air Force will have to continue to buy additional support equipment when aircraft are transferred from Active Air Force squadrons.

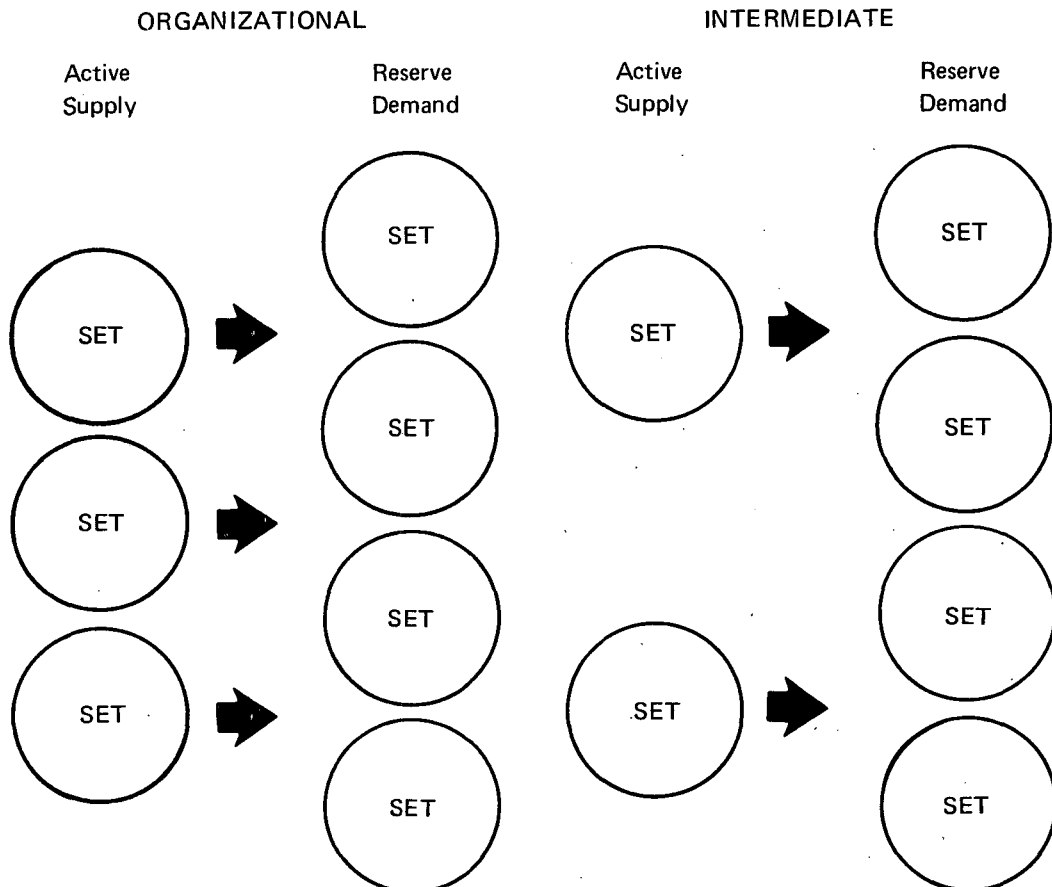
Support equipment is used to repair, maintain, overhaul, and operate aircraft and related subsystems on the ground. These ground support and overhaul operations are generally conducted at three levels in the Air Force: organizational level maintenance, normally done by units or organizations to which military equipment is assigned; intermediate level maintenance, done for several squadrons and beyond the

capability of the organization maintenance squadrons; and depot level maintenance, major repair and overhaul done at central locations for all aircraft.

An Active Air Force tactical fighter wing (three squadrons) is provided with three sets of organizational support equipment and two sets of intermediate support equipment. Since the squadrons are colocated, they can share some of the equipment that is capable of supporting more aircraft than assigned to a single squadron. This allows for better equipment utilization and, thus, reduces support equipment requirements.

In contrast, Air Reserve Forces tactical fighter squadrons are each equipped with their own organizational and intermediate sets of equipment. This allows each squadron to be completely self-supporting and supposedly capable of deploying anywhere in time of an emergency. The disparities between support equipment requirements resulting from the different basing structures of Air Reserve Forces and Active Air Force squadrons are illustrated below.

SUPPORT EQUIPMENT SHORTAGES



These disparities in requirements and resources are objectionable because much of the support equipment is very expensive. For example, the equipment for one 18-aircraft F-4 and one 18-aircraft A-7 squadron can cost as much as \$7.2 million and \$7.8 million, respectively.

Savings in equipment can generate further savings in staffing and facilities. Savings in staffing would occur because less equipment requires less maintenance and calibration and, possibly, equipment operators. Further, less equipment would require less storage space. If enough resources are not available to adequately equip Air Reserve Forces, their readiness and capability could be lower.

F-4 equipment shortages

The F-4 aircraft will be one of the predominant Air Reserve Forces aircraft transferred from Active Air Force squadrons over the next few years. Current plans provide for locating them at numerous different Guard and Reserve bases.

According to Air Force officials, the most critical problem to come out of this transfer will be the shortage of support equipment caused by splitting a wing of 72 aircraft into 4 units of 18 aircraft. For this reason, in July 1977 and June 1978, the Air Force held worldwide conferences to resolve the equipment shortages. As a result of these conferences, the Air Force initiated several actions.

In September 1977 the Air Force Logistics Command F-4 System Manager was given responsibility for centrally controlling the flow of support equipment between Active and Air Reserve Forces squadrons. This action provided a focal point for matching resources and requirements and was intended to establish and enforce priorities as a way of making the best use of available resources.

In November 1977 the Tactical Air Command, which has responsibility for ensuring the readiness of all Air Reserve Forces tactical fighter units, established a support equipment policy which stated, in part, that

- Reserve units would be given priority on support equipment available within the Tactical Air Command and
- the Tactical Air Command would not use equipment from a converting Active unit to fill shortages in another Active unit.

This policy was expanded to all major commands by a message from Air Force headquarters in October 1978 which stated that

" * * * full support equipment equipage cannot be achieved by all users in the near term. We need support from all concerned to accept a continued equitable distribution of shortages in order to ensure maximum readiness from a less than ideal support equipment posture."

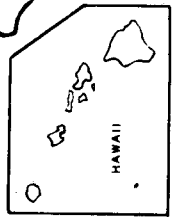
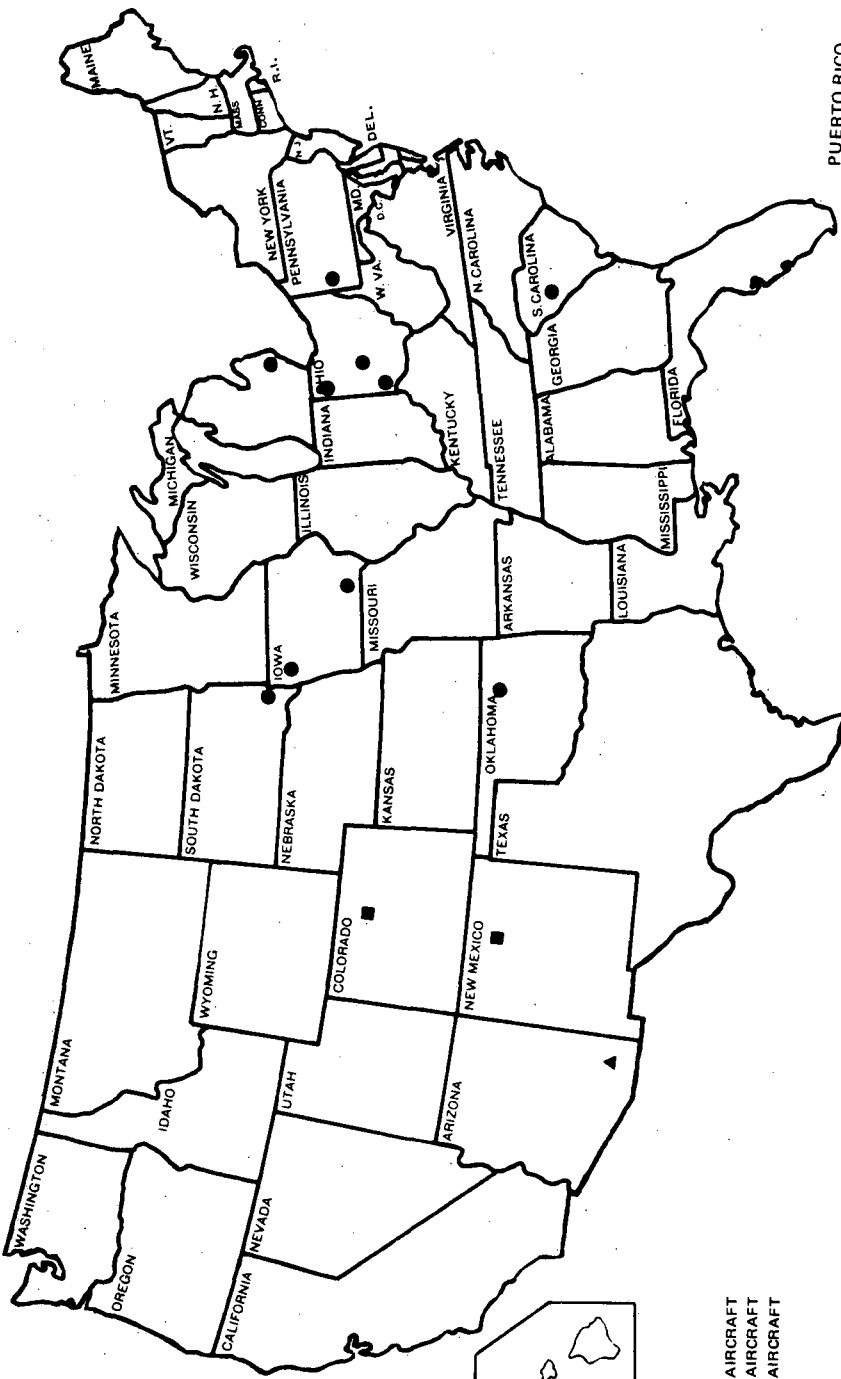
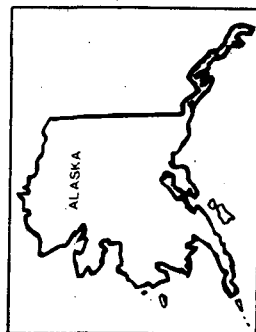
At the time of our review, the Air Force had not determined all F-4 equipment shortages. Air Force officials, however, estimated that about \$25 million had been spent to support both Active and Reserve units converting to F-4 aircraft in fiscal year 1979. (About 75 percent was for Reserve units.) The real impact of F-4 equipment shortages will become more severe as more aircraft are transferred to Air Reserve Forces squadrons.

A-7 equipment shortages

The transfer of A-7 aircraft to Air Reserve Forces squadrons also created support equipment shortages similar to those felt by the F-4 transfers. During fiscal year 1979, the last two Air Reserve Forces squadrons planned to receive A-7 aircraft will receive them. As shown on page 15, 14 squadrons with A-7 aircraft--11 of which will have 18 aircraft--will be set up. All of the A-7 aircraft are in Air National Guard squadrons.

The Air Force plans to increase several of the 18-aircraft squadrons to 24 aircraft when the last 3 Active Air Force squadrons at England Air Force Base, Louisiana, are deactivated. To equip the 14 Guard units, the Air Force, in February 1974, bought 5 additional sets of avionics test equipment for \$19.6 million. This equipment was needed, in addition to the equipment transferred from Active units, to accommodate the dispersion to 14 different locations.

Each of the three Active units at England Air Force Base has an organizational and intermediate set of support equipment. When they disband, this equipment will become surplus, because each of the 14 Guard units already has enough support equipment for its planned aircraft. Air Force officials stated that the equipment at England Air Force Base (valued at about \$18 million) probably will be used as spares. The Air Force does not plan to create any additional Air Reserve Forces A-7 squadrons.



- 18 AIRCRAFT
- 24 AIRCRAFT
- ▲ 36 AIRCRAFT

PUERTO RICO ●

Basing A-7 aircraft at 14 different Guard locations will also require the Air Force to buy additional flight simulators. Air National Guard officials feel that each unit needs a flight simulator because the A-7 aircraft is a single-seat aircraft and the Guard does not have any two-seat trainer aircraft.

The shortage of flight simulators results because the Active A-7 aircraft were based at three Air Force installations which used only five flight simulators. When the aircraft are transferred to 14 Guard units, a shortage of 9 flight simulators is created. The Air Force estimates that providing a scaled-down version of the A-7 simulator for each Guard unit without one will cost about \$44 million. Because of budget constraints, the requirement for simulators is currently unfunded, and Air Force officials believe future funding is doubtful. Air Force officials advised us that they can work around the shortages by sending pilots to train on centrally located simulators.

Air National Guard officials, however, believe that long-distance travel to simulator sites may not be practical for some pilots. Because of their part-time status, travel to other locations creates morale and operational problems. Further, additional funding is required for travel costs.

Personnel at Air Force headquarters expect to encounter the same situation as the F-4, F-16, and A-10 aircraft are phased into Reserve units. A-10 Reserve units now receiving aircraft are not expected to receive simulators until the mid-1980s.

ADDITIONAL FACILITY REQUIREMENTS

What is needed in the way of facilities depends on personnel and equipment, among other things. The Air Force's present method of transferring aircraft to numerous Air Reserve Forces locations creates the need for many more facilities than required for the same number of aircraft in Active units.

For example, to support 72 A-7 aircraft, the Active Air Force requires an avionics shop 1/ with a minimum of

1/An avionics shop is used to perform maintenance on aircraft equipment and accessories, such as airborne communications, cameras, bombing systems, enemy countermeasures, and navigation and fire control systems.

about 12,500 square feet. To support the same number of aircraft at 4 dispersed locations (18 aircraft at each location), the Air Reserve Forces require 42,720 square feet, or an additional 30,220 square feet--a 242-percent increase.

Another example involves the F-4 aircraft's general-purpose aircraft maintenance shop. To support 72 Active Air Force F-4 aircraft, this facility needs 34,000 square feet. The same number of aircraft at four dispersed Air Reserve Forces locations requires facilities with 68,204 square feet, or an additional 34,204 square feet--a 100-percent increase. Additional examples of increased facilities requirements are included as appendix I. As is apparent, space can be saved by basing larger numbers of aircraft at a site.

Air Force modernization plans, however, have not been made with this in mind. Air Reserve Forces aircraft are rarely colocated. Even when they are, the colocated squadrons usually have different type aircraft with separate support requirements. For example, in the 13 cases where Air Reserve Forces aircraft are colocated, common type aircraft are found at only two locations: Rickenbacher Air Force Base, Ohio, with two Reserve C-123 units, and Minneapolis-St. Paul International Airport, Minnesota, with both a Guard and a Reserve C-130 aircraft squadron.

At none of the other 100 locations where Air Reserve Forces aircraft are based are common aircraft found. Either single squadrons or multiple squadrons with different type aircraft are based at each location.

HIGHER OPERATIONS AND MAINTENANCE COSTS

Operating and maintaining numerous dispersed squadrons costs much more than fewer but larger flying units. In a September 1977 Project AIR FORCE Report, the Rand Corporation concluded that large savings were associated with having fewer but larger flying organizations. The report pointed out that Air Reserve Forces squadrons typically have fewer aircraft than Active Air Force squadrons. However, in total, Air Reserve Forces squadrons have the same capability (in terms of aircraft) as fewer Active Air Force squadrons but at a higher cost.

For example, the report compared the staffing and cost of a pair of 8-aircraft C-130 squadrons with those of a single squadron with 16 aircraft. (This is the typical

Active Air Force squadron strength.) Both had essentially the same wartime military utility. But, because of the additional personnel in administration, support functions necessitated by the two separate bases, and the additional flying hours of rated overhead personnel, the two half-size C-130 squadrons exceeded the annual cost of the single 16-aircraft squadron by \$2.5 million.

The same situation exists for tactical aircraft squadrons. Operating and maintaining four 18-aircraft squadrons of A-7 aircraft costs about \$43.2 million annually. However, three 24-aircraft squadrons could be operated and maintained for \$36.9 million annually, or about \$6.3 million less.

As indicated on page 15, 11 of the 14 Air Reserve Forces A-7 squadrons will be equipped with 18 instead of 24 aircraft. If these squadrons had been equipped with 24 aircraft, annual operations, maintenance, and personnel costs could have been reduced by \$20 million, as illustrated below.

A-7 Operations, Maintenance, and Personnel Costs

	<u>Number of units</u>	<u>Annual unit cost</u>	<u>Total cost</u>	<u>Total number of aircraft</u>
	------(millions)-----			
Underequipped units (18 aircraft)	11	\$10.8	\$118.8	198
Fully equipped units (24 aircraft)	8	12.3	<u>98.4</u>	<u>192</u>
Difference			<u>\$ 20.4</u>	<u>6</u>

The cost of operating and maintaining Air Reserve Forces aircraft will increase as Guard and Reserve units convert to more modern aircraft. The expanding inventories of A-7s, F-4s, and KC-135s, for example, have higher maintenance costs, greater numbers of engines, more cyclic depot maintenance requirements, and more sophisticated avionics equipment. If the Air Force hopes to hold down the cost of the Air Reserve Forces, changes will have to be made in its structure.

CONCLUSION

The dispersed Air Reserve Forces structure is a disadvantage to the Air Force in its attempts to modernize

Guard and Reserve units. As long as the current structure is maintained, shortages of support equipment will be created when aircraft are transferred from Active Air Force units. This will require the Air Force to buy expensive equipment. The dispersed structure also requires additional facility square footage and annual operations, maintenance, and personnel costs.

RECOMMENDATIONS

We recommend that the Secretary of the Air Force reconsider present modernization plans with emphasis on identifying alternatives which would reduce support requirements. We also recommend that ILS planning be used to determine the logistics impact of transferring aircraft to the Air Reserve Forces.

AGENCY COMMENTS

Air Force officials generally agreed they should do more planning for the Reserves, but added that any changes to the present basing structure would require long-term study.

CHAPTER 4

PEACETIME SUPPORT REQUIREMENTS

EXCEED WARTIME NEEDS

Air Reserve Forces tactical fighter squadrons are provisioned as self-sufficient units through a decentralized support structure. This structure differs vastly from that of Active Air Force squadrons and, in many cases, requires more logistics resources in peacetime than in wartime.

AIR RESERVE FORCES AND ACTIVE FORCES SUPPORTED DIFFERENTLY

War planning guidance contained in Air Force Regulation 28-40 specifies that

- Air Reserve Forces units are to be organized during peacetime to match Active duty counterparts, so far as practicable, and
- when mobilized, Air Reserve flying forces will, to the extent practical, be configured by type weapon system as three-squadron wing equivalents possessing a two-location capability.

Despite Air Force Regulation 28-40, Air Reserve Forces squadrons are organized quite differently than Active squadrons. Although they can be configured as three-squadron wing equivalents in two locations for mobilization purposes, they are provided enough equipment in peacetime to be located at four bases.

Each Air Reserve Forces tactical fighter squadron is equipped to be self-sufficient and capable of deploying to any location. Accordingly, each squadron is provided the organizational and intermediate support equipment this requires.

Active Air Force squadrons, on the other hand, are equipped so that some squadrons depend on each other and deploy together in colocated groups. As a result, Active squadrons share equipment and, therefore, require less.

CHANGES IN DEPLOYMENT CONCEPT REDUCE EQUIPMENT REQUIREMENTS

Before 1971 Active Air Force squadrons were equipped as Air Reserve Forces squadrons are today. The Air Force

required an Active aircraft wing to deploy its three squadrons to three different locations, requiring each to have its own support equipment. As the cost of modern weapon systems spiraled, this became too costly, and the Air Force changed its deployment concept.

Today, the Air Force requires each wing to share equipment so the three squadrons can deploy in colocated groups. This allows them to get more use out of equipment and, thus, reduce support equipment requirements. For example, an Active wing of 72 aircraft will have one set of organizational equipment for each squadron but only two sets of intermediate support equipment shared by all three squadrons.

Sharing equipment is important because much of it can support more aircraft than assigned to a single squadron. Thus, when the number of aircraft to be supported is increased, a corresponding increase in support equipment does not occur. Also, because much of the equipment is expensive, large savings result from sharing.

EQUIPMENT NEEDS FURTHER REDUCED

Recently, the Air Force changed its policies and methods for employing and supporting certain tactical aircraft. This further reduced support equipment requirements while improving combat capability. For example, the Air Force changed the A-10 support structure in Europe to provide for centralized heavy maintenance and logistics support at a main operating base located in the United Kingdom. Weapon loading, servicing, and very limited maintenance is to be done at operating bases located in the combat area. This support structure removes the intermediate maintenance burden traditionally given to combat units. It also eliminates the need for intermediate support equipment traditionally provided to aircraft squadrons.

In addition to centralizing intermediate logistics for the A-10, the Air Force uses a centralized intermediate logistics concept in the Pacific with the F-4 aircraft. This concept has produced savings in equipment and personnel and improved maintenance. In March 1979 we reported 1/ that similar benefits were possible with the F-15 and F-16 aircraft systems. A February 1979 Air Force study 2/ also

1/"Centralizing Air Force Aircraft Component Repair in the Field Can Provide Significant Savings" (LCD-79-409, Mar. 28, 1979).

2/"USAFE CILC/CIRF Study" (Feb. 23, 1979).

showed that centralizing support for the F-15 and F-16 in Europe could save money and improve aircraft performance.

COSTLY AIR RESERVE FORCES SUPPORT STRUCTURE

Despite these changes in Active Air Force support and deployment concepts, the Air Reserve Forces continue to be supported under the traditional and more costly decentralized structure. Each aircraft squadron requires its own support resources and, in effect, each base becomes a carbon copy of all the others. In the case of Air Reserve Forces squadrons, many are located near each other. The duplication is obvious and unnecessary.

In fiscal year 1979, for example, Guard units at Barnes, Massachusetts, and Bradley, Connecticut, are receiving new A-10 aircraft. These two units are only about 17 miles apart, yet they have no plans for sharing equipment. With respect to A-10 aircraft, we reported in 1979 that the Air Force could save as much as \$28.2 million in support equipment and \$75 million in annual operating costs if A-10 aircraft based in the United States during peacetime were supported like they will be in Europe during wartime.

The Air Force has emphasized the need for each A-10 squadron stationed in the United States to be capable of deploying anywhere in the world and operating self-sufficiently if need be. The applicable war scenarios, however, employ, or have the potential to employ, centralized support. Thus, the Air Force may be provisioning squadrons located in the United States with more spare parts and other support resources than needed for wartime.

A-10 aircraft will be based at 12 locations in the United States. The Air Reserve Forces will control 8 of the 12 locations, but only 36 percent of the A-10 aircraft to be based in the United States. This results because each Air Reserve Forces location has fewer aircraft than Active Air Force locations. The Air Force plans to provision A-1 avionics shop equipment sets costing about \$5.5 million at each of the 12 locations--a total of \$66 million. Because Air Reserve Forces are at 8 of the 12 locations, they require \$44 million of the total shop equipment. However, these requirements are disproportionate to the total aircraft to be supported. Air Reserve Forces squadrons require 67 percent of the shop equipment to support only 36 percent of the A-10 aircraft to be located in the United States.

Further, and more importantly, much of the shop equipment would not be needed if the Air Reserve Forces squadrons were mobilized. Air Reserve Forces A-10 squadrons generally include 18 aircraft. Therefore, 4 squadrons would be required to form a wing of 72 aircraft. During peacetime, each of these squadrons is provided a set of avionics shop equipment, or 4 sets for 72 aircraft. Since 72 A-10 aircraft can be centrally supported by 1 set of shop equipment, 3 sets of equipment--at a cost of \$16.5 million--may be unused if the aircraft were deployed to a centralized support environment. Even if the Air Reserve Forces squadrons were deployed according to Air Force regulation, two equipment sets costing \$11 million may be unused.

The Defense Resource Management Study evaluated the Air Force's A-10 support concept and concluded that the Tactical Air Command could save \$50 million annually if it applied the same concept to Active A-10 squadrons located in the United States. Air Reserve Forces, which account for 8 self-sufficient squadrons of 18 A-10s each, were not included in the study. We reported that centralizing the support of the eight Air Reserve Forces locations would very conservatively save another \$25 million annually.

Similar excesses exist or will exist for other tactical aircraft, such as the A-7, F-4, and F-16, as long as support for the Air Reserve Forces is decentralized and provided for each squadron. Peacetime logistics requirements will exceed wartime needs, and, in the current tight money situation, this will waste valuable resources. This situation cannot be tolerated, especially in light of the logistics shortages the Active Air Force squadrons are experiencing in Europe--the most demanding war scenario.

If Air Reserve Forces squadrons were supported in peacetime like they will be in wartime, savings would be possible. And, savings would not be limited to support equipment. Reducing equipment would concomitantly reduce the need for personnel, facilities, and overhead. Our March 1979 report 1/ illustrated this.

CONCLUSION

The Air Force is providing Air Reserve Forces tactical fighter squadrons support equipment beyond their apparent

1/"Centralizing Air Force Aircraft Component Repair in the Field Can Provide Significant Savings" (LCD-79-409, Mar. 28, 1979).

needs. This occurs because Air Reserve Forces support continues to be decentralized, although the support structure for Active Air Force squadrons has changed. If Air Reserve Forces squadrons were supported in peacetime as they will be in wartime, savings would be considerable.

RECOMMENDATION

We recommend that the Secretary of Defense require the Secretary of the Air Force and the Chief of the National Guard Bureau to operate and support the peacetime Air Reserve Forces support structure as it will be in wartime.

AGENCY COMMENTS

DOD and Air Force representatives agreed that peacetime Air Reserve Forces should be supported to the greatest possible extent to support wartime needs, but they commented that the excess logistics support (personnel, equipment, and facilities) dictated by the peacetime structure of the Air Reserve Forces gives an added degree of flexibility in wartime. Reserve units could deploy and operate as independent units. Excess support could also be used to fill shortages created by unanticipated losses incurred during the early days of a major conflict.

While we agree that the excess peacetime support resources could add to the flexibility of the Air Reserve Forces in wartime, we do not believe this is the most advantageous use of resources, especially in the current budget constrained environment. As indicated earlier, Active Air Force squadrons in Europe are experiencing logistics shortages. Therefore, every effort should be made to match wartime and peacetime logistics requirements.

CHAPTER 5

ALTERNATIVES TO REDUCE

LOGISTICS SUPPORT REQUIREMENTS

In today's tight money environment, we believe the Air Force cannot afford the luxury of operating and maintaining its Air Reserve Forces in the present decentralized manner. The Active Air Force recognized the need to change its deployment and support concepts and acted accordingly. Likewise, we believe changes are needed in the way the Air Reserve Forces are deployed and supported.

Large savings would result if the Air Reserve Forces were structured and supported more like their Active Air Force counterparts. Logistics support could be reduced if the Air Reserve Forces were, in fact, "mirror images" of the Active Air Force. Several alternatives are available, we believe, for making the Air Reserve Forces more like the Active Air Force and, therefore, more in line with DOD's total force policy. These include (1) colocation and centralization to reduce the need for support equipment and training simulators, (2) use of Active Air Force bases, and (3) expansion of the Air Force Associate Program.

COLOCATION AND CENTRALIZATION CAN REDUCE SUPPORT REQUIREMENTS

DOD 1/, the Air Force 2/, and our 3/ studies have considered the advantages of collocating common type aircraft and centralizing support functions. For example, as the number of aircraft to be supported increases, there is often less than a proportional increase in staffing, equipment, and facilities. We believe similar benefits are possible if these concepts are applied to the Air Reserve Forces. Because numerous Air Reserve Forces squadrons have the same type aircraft and are near each other, we believe the Air Reserve Forces should centralize support functions and collocate common type aircraft to a greater extent. For

1/"Defense Resource Management Study" (Feb. 1979).

2/"USAFE CILC/CIRF Study" (Feb. 23, 1979).

3/"Centralizing Air Force Aircraft Component Repair in the Field Can Provide Significant Savings" (LCD-79-409, Mar. 28, 1979).

example, the planned placement of A-7, F-4, and RF-4 aircraft, as of October 1, 1979, is shown on pages 27 and 28.

Greater colocation of common aircraft would also solve the Air Force's current dilemma with flight simulators. According to testimony by an Air Force official before the Subcommittee on Defense, House Committee on Appropriations:

"We are on the threshold also of a new area of concern with the Guard and Reserve units. I will cite the A-7's as an example. We had the active force of the A-7's based at three Air Force bases. We had a total of five simulators. If we should go ahead and provide an A-7 simulator for each of the 17 Air National Guard bases as scheduled for A-7 equipage, one estimate of cost is that it would be an additional \$80 million just to procure a simulator per squadron.

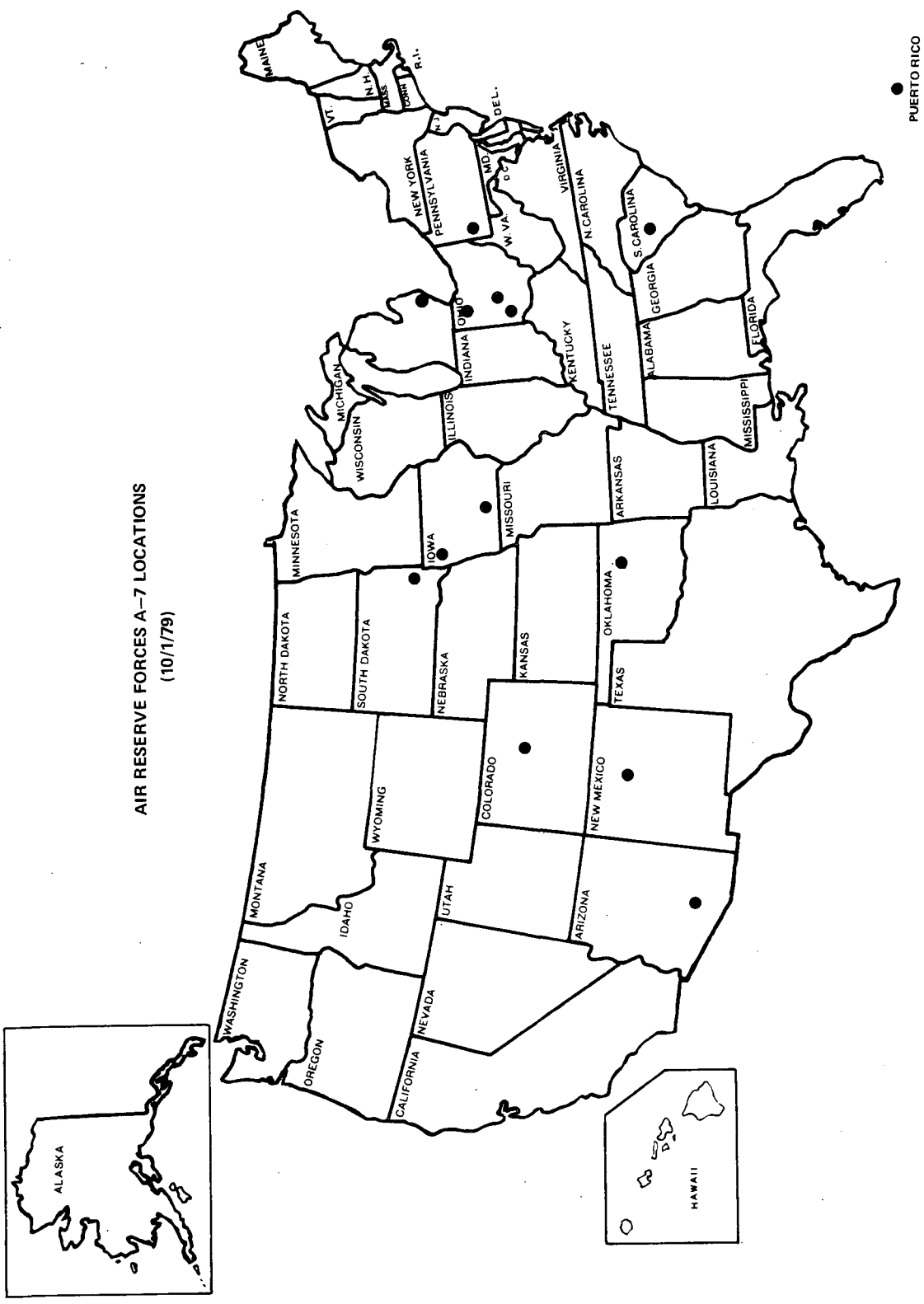
"We will have the same problem down the road when we transfer F-16 equipage to the Air Reserve forces."

The Air Force currently plans to place A-7 aircraft at 14 Air National Guard bases. Still, there is a shortage of nine simulators, and Air National Guard officials feel they need a simulator at each location. They are willing to accept a scaled-down version of the Active Air Force A-7 flight simulator, but the additional nine simulators still would cost approximately \$44 million.

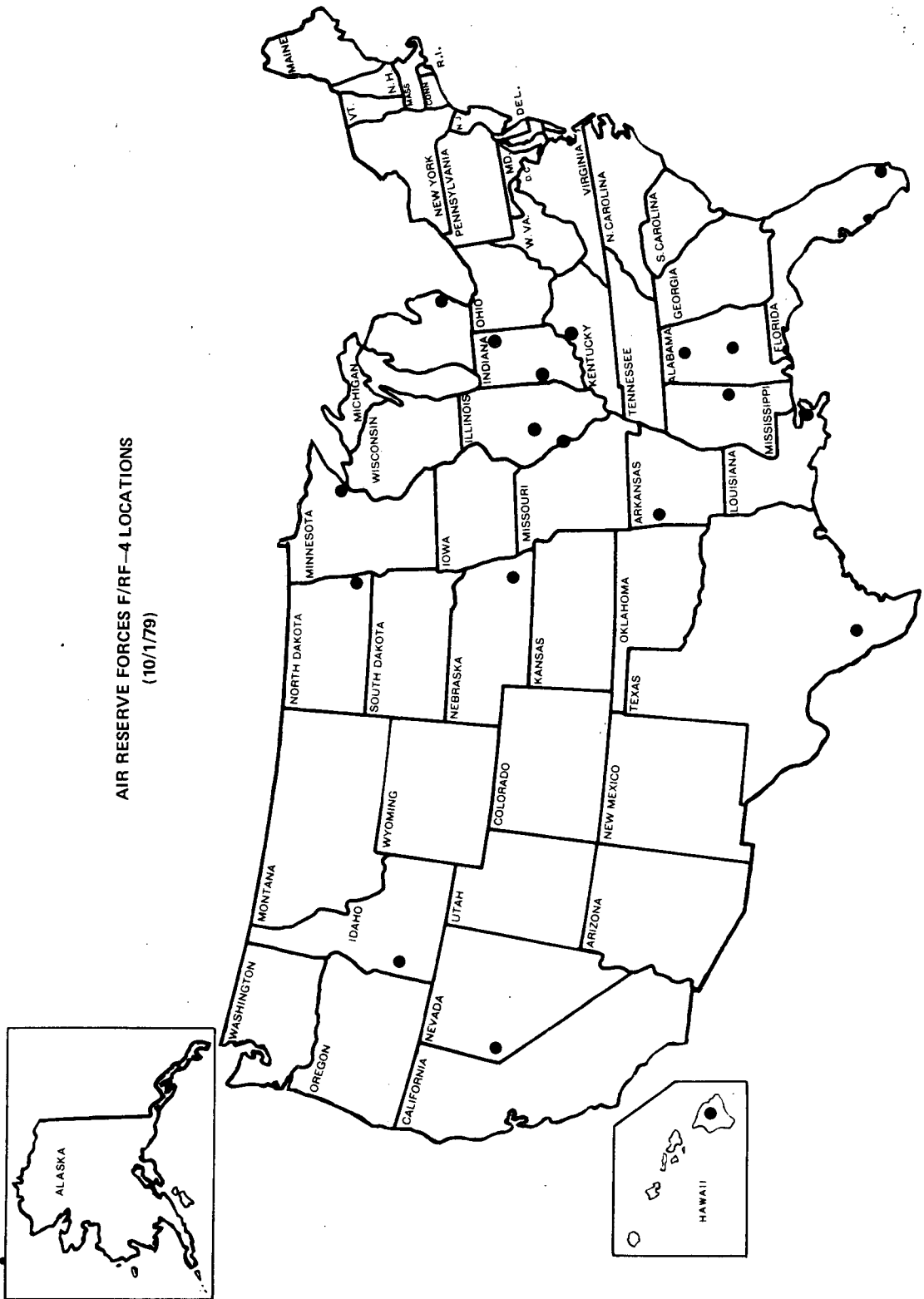
In today's environment of increasing cost and reduced fuel availability, flight simulators have assumed a major role in aircrew training. Other benefits include reduced noise and air pollution, reduced airspace congestion, less wear on aircraft, reduced maintenance costs, simplified logistics efforts, and a safer training environment.

According to a September 1977 Rand Corporation Project AIR FORCE Report, the dispersed location of Air Reserve Forces units is a distinct disadvantage in the implementation of a flight simulator training program. The study stated that a simulator on a typical Reserve base, with a single flying unit, would benefit far fewer crews than if it were on an Active base, and it would be idle much of the time. Because of the great expense of sophisticated simulators, assignment to single-unit Reserve bases may be precluded. The study concluded that if flight simulators fulfilled their expectations, Guard and Reserve units would have a powerful incentive to consolidate, in order to preserve their cost advantage over Active Forces.

AIR RESERVE FORCES A-7 LOCATIONS
(10/1/79)



AIR RESERVE FORCES F/RF-4 LOCATIONS
(10/1/79)



USE OF ACTIVE AIR FORCE BASES

Greater use of Active Air Force bases is another alternative for reducing the logistics support of Air Reserve Forces squadrons. As explained earlier, most Air National Guard squadrons are located at commercial airports, while Air Force Reserve squadrons are located on Active Air Force bases.

The idea of using Active Air Force bases, we believe, should be seriously considered, especially as more Air Reserve Forces squadrons receive new aircraft like Active Air Force aircraft. Locating new Air Reserve Forces aircraft, such as the A-10 and F-16, on Active Air Force bases with the same aircraft could minimize the support resources required and provide substantial savings in personnel, facilities, and equipment. One F-16 avionics intermediate shop, for example, costs an estimated \$10 million. Air Force officials agreed that locating Reserve squadrons on Active Air Force bases would result in substantial savings. However, they stated that it was a long-term solution and deserved further study.

The 1977 Rand report concluded that use of Active Air Force bases instead of commercial airports could save the Air Reserve Forces about \$600,000 annually in civilian personnel costs per flying unit, considering the tactical flying units alone. These savings assume the Air Reserve Forces units make full use of available host support services. The report also stated that:

"In addition to the savings in support manpower, there may also be some surplus facilities on the active Air Force bases that could be utilized by the reserve units. There are other advantages as well, such as the availability of certain amenities that are normally furnished on Air Force bases for the benefit of assigned personnel, the presence of all kinds of specialized skills and equipment in the active force units that would be located nearby, and the advantage of readily accessible LOGAIR [1/] transportation. In view of these considerations, the active Air Force base appears to be the preferred beddown for ARF [Air Reserve Forces] squadrons, limited only by the obvious prerequisite of a nearby * * * population center large enough to support a reserve operation."

1/LOGAIR is an Air Force system for regular delivery of supply and maintenance items among bases in the continental United States using commercial contract aircraft.

We agree with the conclusions of the Rand report and believe that even greater savings and benefits are available from locating the Air Reserve Forces on Active Air Force bases. Even though substantial amounts are invested in facilities at commercial airports, present and potential operational restrictions at some locations indicate that a policy to locate more Air Reserve Forces on less restricted and long-tenure Active Air Force bases would be in the best long-term interest of the Air Force.

EXPANSION OF THE ASSOCIATE PROGRAM TO OTHER MISSIONS

In April 1979 ^{1/} we reported that the Air Reserve Forces could be further integrated with the Active Air Force if the Air Force's Associate Program were expanded to other mission areas and Air National Guard units participated in the program.

After studying the Air Force's fiscal year 1975 request for additional personnel to increase the strategic airlift crew ratio, Senator Sam Nunn suggested an amendment, subsequently agreed to by both Houses, which directed the Secretary of Defense to develop a plan for using the less costly resources of the Air Force Reserve and Air National Guard to increase the crew ratios. In response, the Secretary submitted a study which showed the Air Force could recruit and train adequate Reserve personnel in associate units to increase strategic airlift crew ratios. The Air Force then increased strategic airlift crew ratios through its Associate Program.

We believe similar opportunities exist for expanding the Associate Program in the Tactical Air Command, especially because the command has both multirole and single-role aircraft. The area in which association appears most readily adaptable is in the difference between the command's "standard" aircrew ratios and its new "tailored aircrew" ratios.

In the past, the Tactical Air Command had one standard aircrew ratio 2/--1.25 per aircraft--for all of its weapon

1/"Can the Army and Air Force Reserves Support the Active Forces Effectively?" (LCD-79-404, Apr. 25, 1979).

2/Aircrew ratio expresses the aircrews needed to operate a weapon system at its wartime sustained rate. For example, a 24-aircraft squadron would need 24 x 1.25, or 30 aircrews, to maintain a wartime sustained rate.

systems. According to Tactical Air Command officials, the Vietnam conflict demonstrated the inappropriateness of having one aircrew ratio for all fighter aircraft. The Tactical Air Command found that each fighter had a different utilization rate, which allowed for different aircrew ratios. Later, the Tactical Air Command studied the utilization rate of its current and pending weapon systems to determine individual ratios for each weapon system. This new aircrew ratio became its "tailored" ratio and new wartime requirement. In all cases, except for the F-111, the tailored aircrew ratio is higher than the previous standard ratio.

The Tactical Air Command faces a dilemma. According to Tactical Air Command officials, the new aircraft are needed to upgrade the force. To fully use the capabilities of these new aircraft, the command needs increased personnel funding to staff its squadrons according to new wartime requirements. However, because of limited resources, funding appears bleak. Nevertheless, the Air Force is projecting a 1.31 aircrew ratio for the F-16 and further aircrew ratio increases later.

We believe the command could satisfy its new wartime aircrew ratios for the F-16, the A-10, and possibly other weapon systems at less cost by selectively associating with the Air Reserve Forces. When the increase in aircrew ratios is considered for each particular weapon system, the number of additional aircrews needed to satisfy the new wartime requirements are substantial.

Would the Tactical Air Command's response to a war be any less by having Air Reserve Forces affiliated units? We believe not. As pointed out earlier, the Military Airlift Command will rely on its associate units, upon mobilization, to provide the command with wartime capability. An Active Military Airlift Command wing official stated that associate Air Reserve aircrews are fully as competent to fly the command's missions as the Active Force aircrews. Further, Air Reserve Forces officials stated that Air Reserve Forces can fully deploy within 72 hours after mobilization begins. In fact, Air Force planners said some Air Reserve Forces units will be deployed before some Active Air Force units. Even greater assurance of the Reserve units' deployability could be provided by scheduling them as rapidly deploying units.

CONCLUSIONS

The decentralized structure of the Air Reserve Forces is different from the Active Air Force and requires substantial logistics support resources. We believe the logistics

support resources of the Air Reserve Forces can be reduced while maintaining or possibly adding to their capability. We believe the following alternatives deserve careful consideration:

- Increased collocation of common type aircraft.
- Greater centralization of support functions.
- More basing of Air Reserve Forces units on Active Air Force bases.
- Expansion of the Associate Program to other mission areas.

RECOMMENDATIONS

We recommend that the Secretary of Defense require the Secretary of the Air Force and the Chief of the National Guard Bureau to take steps to achieve the potential benefits from

- colocating common type aircraft and centralizing support functions to a greater extent;
- locating more Air Reserve Forces on Active Air Force bases; and
- expanding the Air Force Associate Program to other mission areas, including the Air National Guard.

AGENCY COMMENTS

DOD and Air Force representatives commented as follows:

- The Air Force recognizes there are savings and other benefits available from collocating units with common type aircraft and using Active Air Force bases to a greater extent. However, collocation and use of Active bases are complex issues. Costs and other disadvantages, as well as the potential benefits, need to be studied before implementing the recommendation in this report.
- Greater collocation has not been achieved for several reasons. The primary reason is because local recruiting potential of most Reserve units can support only a single unit. This is particularly true of Reserve units not located

near major metropolitan areas with large personnel resources from which to draw. Other reasons cited include political and legal 1/ restrictions.

--The Air Force Associate Program is not acceptable for the Tactical Air Command. The Tactical Air Command tested the associate concept in its Reserve Augmentation Test and Evaluation Program, which was a 2-year test using F-4 aircraft at Moody Air Force Base, Georgia. The test failed and, therefore, the Tactical Air Command recommended against the associate concept.

We recognize that collocation and use of Active bases involves complex issues. There are certain inherent costs associated with collocating Reserve units or relocating on Active bases. These costs, however, must be analyzed with a view toward the long-range savings and other benefits that are achievable.

We also recognize that recruiting potential is an important consideration in any decision to collocate. At the same time, however, many Reserve units are currently located near each other but remain as separately supported units. For example, two Air National Guard A-10 units are located at Barnes, Massachusetts, and Bradley, Connecticut--only about 17 miles apart. Also, in Utah, an Air National Guard unit in Salt Lake City, is located only about 30 miles from an Air Force Reserve unit at Hill Air Force Base. In cases such as these, both units are drawing personnel from the same recruiting base. We believe that greater collocation and use of Active bases should be important considerations in the Air Force's plans to modernize its Air Reserve Forces.

Regarding the Associate Program, we did not evaluate the results of the Reserve Augmentation Test and Evaluation Program because it had not been completed at the time of our review. However, the Congress, the Defense Manpower Commission, and Air Force and Air Force Reserve officials have attested to the success and value of the Air Force Associate Program. As stated earlier, we believe it can be expanded to the Tactical Air Command.

1/Since the Air National Guard is a State controlled force in peacetime, any changes, such as location, equipment, activation, and inactivation of units must be approved by the State Governor (32 U.S.C. 104).

Facility	FACILITY REQUIREMENTS (note a)				A-7 aircraft		A-10 aircraft		F-4 aircraft			
	Active (note b)	Reserve (note c)	Difference	Active (note b)	Reserve (note c)	Difference	Active (note b)	Reserve (note c)	Difference	Active (note b)	Reserve (note c)	Difference
Flight simulator facility	4,235	16,200	11,965	11,182	18,800	7,618	5,680	16,200	10,520			
General purpose aircraft maintenance shop	34,000	68,204	34,204	22,733	68,204	45,471	34,000	68,204	34,204			
Nondestructive inspection shop	4,000	6,400	2,400	4,000	6,400	2,400	4,000	6,400	2,400			
Aircraft maintenance, engine, inspection, and repair shop	21,000	32,000	11,000	21,000	32,000	11,000	21,000	32,000	11,000			
Weapons and release systems shop	11,040	38,680	27,640	12,850	44,340	31,490	11,040	43,440	32,400			
Avionics shop	12,500	42,720	30,220	17,000	30,284	13,284	17,000	30,000	13,000			
Parachute and dinghy shop	7,135	17,600	10,465	6,470	17,600	11,130	7,135	17,600	10,465			

a/Requirements expressed in square feet.

b/Three Active squadrons (72 aircraft) at one base.

c/Four dispersed self-sufficient units of 18 aircraft each. (This is the quantity for one unit x 4.)