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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Potential Joint Civil And Military Use Of Military Airfields

GAO's evaluation of joint civilian and military use of military airfields shows the concept to be feasible. Currently, 23 military airfields are operating under joint use agreements. Whether joint use can be expanded to other military airfields depends on overcoming problems unique to each airfield and on the full cooperation of the military and civilian parties involved.

Some of the problems are

- military concerns about impacts on mission, operations, and/or security;
- lack of available land to house civilian operations; and
- lack of support by a civilian sponsor resulting from community opposition or the lack of a real need for joint use of the airfield.

The Congress directed the Secretaries of Defense and Transportation to submit a plan by September 1983 for making domestic military airfields available for joint military and civilian use.

GAO recommends action the Secretaries should take in developing this plan.



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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

In September 1982 the Congress directed the General Accounting Office to evaluate the feasibility of making domestic military airports and airport facilities available for joint civilian and military use to the maximum extent compatible with national defense requirements. This report is in response to that directive.

Copies of the report are being sent to the Director, Office of Management and Budget; the Secretaries of Transportation and Defense; the Administrator, National Aeronautics and Space Administration; interested congressional committees; Members of Congress; and other interested parties.

Charles A. Bowsher
Comptroller General
of the United States



D I G E S T

In September 1982 the Congress directed the Comptroller General to evaluate the feasibility of making domestic military airports and airport facilities available for joint civil and military use to the maximum extent compatible with national defense requirements. The Congress also required, for those military airfields determined to be most feasible for joint use, an estimate of the cost and development requirements involved in making them available for joint use.

GAO selected 18 of the Nation's 233 domestic military airfields--8 Air Force, 8 Navy/Marine Corps, and 2 Army--for detailed review. Six of the 18 airfields were classified by the Department of Defense as joint use facilities while the remaining 12 were considered by the Federal Aviation Administration (FAA) as potential joint use locations. (See p. 4.)

GAO determined that the concept of joint use is feasible. GAO found, however, that the extent to which joint use is working and the extent to which it can be expanded to other airfields depends largely on (1) the circumstances surrounding the civilian use of the military airfield, as each is unique, and (2) the willingness of the parties involved--military and civilian--to cooperate.

CURRENT JOINT USE

Twenty-three domestic military airfields now operate under the joint use concept. Seven of the 23 airfields authorize virtually unrestricted use by all civilian aircraft, while the remaining 16 facilities restrict use to either selected types of aircraft or operations or place limits on the gross weight of aircraft authorized to use the airfield. (See p. 7.)

Joint use at military airfields has been accomplished under a variety of different circumstances, ranging from locations with extensive military air operations to locations with virtually no active military air involvement. Military aircraft operating from the airfields varied from large cargo carrying aircraft, to attack aircraft, to fighter aircraft. The mix of civilian and military aircraft operating from joint use airfields ranged from those with very similar characteristics (for example, similar takeoff and landing speeds) to those with widely differing characteristics (for example, small single-engine propeller aircraft operating together with multi-engine jet aircraft).

PROBLEMS WITH EXPANDING
THE JOINT USE CONCEPT

GAO found that problems exist--from both the military and civilian perspective--that can hinder expanding the joint use concept. These problems include

- military concerns that civilian use of the airfield will interfere with the military mission, operations, and/or security;
- lack of available land on or adjacent to the military airfield to house civilian operations; and
- lack of civilian sponsors resulting from either community opposition due to concerns over potential increases in noise, safety risks, and other environmental factors or the lack of a real need for joint use of the airfield. (See p. 21.)

When these problems can be overcome, as they have at the 23 military airfields where the concept is working, joint use can be viewed as a feasible option. GAO believes that the Departments of Defense and Transportation must address these issues when they are considering military facilities for potential joint use.

COST AND DEVELOPMENT REQUIREMENTS
FOR MAKING MILITARY AIRFIELDS
AVAILABLE FOR JOINT USE

GAO was unable to determine the cost and development requirements for making military airfields available for future joint use because the data needed to perform the analysis was either not available or was not current. However, GAO identified factors that must be included in making such an assessment. (See p. 29.)

Advocates of joint use have pointed out that the concept has the potential of saving millions of dollars in Federal, State, and local funds by reducing airport development costs. In 1979 FAA estimated that implementing joint use at 43 military airfields could save in excess of \$1.5 billion. While GAO concurs that the potential exists for considerable savings, it questions the reliability of FAA's \$1.5 billion figure. GAO believes that determining whether or not joint use should or could be implemented at a particular airfield involves not only identifying and overcoming the barriers--both military and civilian--but also ensuring that joint use will be cost effective.

RECOMMENDATIONS

The Congress directed the Departments of Defense and Transportation to submit a plan by September 1983 for making domestic military airfields available for joint military and civilian use. GAO recommends that the Secretaries of Defense and Transportation, in performing the required study of military airfields for potential joint use:

- Establish that a need exists for civilian use of a military airfield.
- Identify and assess any adverse impact on military mission, operations, and/or security.
- Determine if land is available to house civilian operations.

For cases where these issues have been dealt with and joint use is considered operationally feasible, GAO recommends that the Secretaries, in cooperation

with the civilian sponsor, determine whether community opposition exists and, if so, attempt to resolve it. Since the Congress has already directed the Secretaries of Defense and Transportation to recommend a public sector civilian sponsor for each airfield proposed for joint use, GAO is not making a recommendation concerning civilian sponsors. (See p. 27.)

GAO also recommends that the Secretaries estimate cost and development requirements of joint use by, as a minimum, identifying, developing, and analyzing a number of factors, including operating and personnel costs, the structures to be built, land to be acquired, and security measures needed. For those military airfields identified as being operationally feasible for joint use, GAO recommends that the Secretaries prepare a detailed cost-benefit analysis to determine whether developing each airfield for joint use would be cost effective. (See p. 31.)

AGENCY COMMENTS

The Departments of Transportation and Defense concurred with GAO's recommendations and said that they would attempt to implement the recommendations in conjunction with their ongoing study. In addition, both Departments said that a cost-benefit analysis would be performed after potential joint use sites were identified and before any Federal grant funds associated with implementing a joint use agreement were spent. (See pp. 28 and 32.)

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ABBREVIATIONS

DOD	Department of Defense
FAA	Federal Aviation Administration
GAO	General Accounting Office
NASA	National Aeronautics and Space Administration

CHAPTER 1

INTRODUCTION

In September 1982 the President signed into law the Airport and Airway Improvement Act of 1982 (Public Law 97-248, Title V), which directed that not later than 180 days after the date of enactment, the Comptroller General shall submit to the Congress an evaluation of the feasibility of making domestic military airports and airport facilities available for joint civil and military use to the maximum extent compatible with national defense requirements. The evaluation was to include an estimate of the costs and development requirements involved in making those military airfields determined to be most feasible for joint civil and military use available for joint use.

The act further directed the Secretaries of Defense and Transportation to submit to the Congress, not later than 1 year after the date of enactment, a plan for making domestic military airports and facilities available for joint civil and military use to the maximum extent compatible with national defense requirements. That plan is to recommend public sector civilian sponsors for each joint use airport proposed.

DEMAND ON THE NATION'S AIRPORTS PROJECTED TO INCREASE BEYOND WHAT CAN BE ACCOMMODATED

Billions of dollars of Federal, State, and local funds have been spent to develop the Nation's system of civilian airports. Severe congestion and capacity constraints, however, either exist or are projected to occur at many of these airports by the year 2000. Airport expansion opportunities, especially in the major metropolitan areas where the greatest need exists, are becoming increasingly limited.

By any measure, the Nation's system of airports is the busiest in the world, and the Federal Aviation Administration (FAA) forecasts that demand for aviation services will more than double in the next two decades. Aircraft operations, including takeoffs and landings at all airports in the system, are anticipated to grow by 116 percent between 1980 and 2000 (134 million in 1980 to 290 million in the year 2000). The number of civilian aircraft--including air carrier, commuter, and general aviation--is expected to increase by 94 percent during the same 20-year period from 214,000 in 1980 to over 416,000 in the year 2000. Finally, the number of pilots in the United States is expected to grow from about 815,000 to 1.3 million--a 63-percent increase--during the two-decade period.

The projected growth in aviation activities will significantly outpace the projected growth of available airports. Currently, there are about 3,170 airports in the National Airport System

Plan. 1/ In addition over 12,500 landing areas in the Nation are not considered essential to national air transportation by FAA and are not included in the plan. Over the next 10 years, the number of airports in the plan is expected to increase by about 15 percent to 3,650 locations. FAA estimates the 10-year costs of developing the system at \$14.8 billion, \$2 billion of which is for new airports.

It is the anticipated growth in the Nation's major metropolitan areas that causes special concern. These metropolitan areas have the largest concentration of aviation industry consumers, representing about 90 percent of the scheduled air carrier passenger service and 40 percent of all aircraft operations. They also represent areas in which growth is most difficult. Because of their high population density, increasing resistance to the environmental impacts of airport growth, and the expensive and difficult task of acquiring land to enlarge existing facilities or construct new ones, expansion in these metropolitan areas is nearly impossible. In addition, citizens in these metropolitan areas are usually pressing to limit, not expand, aircraft operations. The need for additional airport capacity is, according to users of the system, reaching the critical stage.

While long-term solutions to this problem are still a matter of debate, several alternatives have been proposed to offer temporary relief, principally joint use of military airfields. In this report joint use is defined as a negotiated agreement whereby a military-owned airfield is used by civilians.

JOINT USE OF MILITARY AIRFIELDS

The concept of joint use of military airfields is not new. Since 1946 joint use has been consistently advocated by the Congress in legislation concerning airport development. For example, in the 1946 Federal Airport Act (Public Law 79-377), the Congress provided that:

"The War and Navy Departments shall consider the views and recommendations of the Administrator [of Civil Aeronautics] to the end that military and naval airports and airport facilities may be made available for civil use to such extent as is feasible."

Similar language was carried forward in the Airport and Airway Development Act of 1970 (Public Law 91-258, Title I):

1/The plan identifies, for the Congress and the public, the composition of a national system of airports together with the airport development necessary to anticipate and meet the present and future needs of civil aeronautics, to meet requirements in support of the national defense, and to meet the special needs of the Postal Service.

"The Department of Defense shall make military airports and airport facilities available for civil use to the extent feasible."

The views on joint use of military airfields have differed considerably among the potential civilian aviation users; the Department of Defense (DOD) and its military services (Army, Navy, Marines, Air Force); and FAA. Potential civilian aviation users contend that military airfields, which were constructed with Federal funds, should be made available for civilian use unless the military can demonstrate that its airfields are at or near operational capacity, that the influx of civilian aircraft would jeopardize the military's mission, or that air space safety would be significantly compromised with the introduction of civilian aircraft into the fields' air space.

On the other hand, DOD and the military services have taken the position that while military airfields were constructed for national defense, civilian use would be considered on a case-by-case basis when (1) a valid need has been established (that is, no other reasonable alternative exists, such as an existing or planned civilian airport in the area, and constructing a new or expanding an existing airport is not practical), (2) an authorized State or local governmental agency (civilian sponsor), who can be held legally accountable, has formally requested the use of the airfield, (3) the security of military operations, facilities, or equipment will not be compromised, (4) military operations will not be impaired, and (5) air safety will not be degraded. In addition, the Air Force requires that sufficient land for civilian facilities be available in an area separate from the military facilities. If the proposed sponsor does not already own the land needed, then the land must be acquired either by purchase or from surplus Government land.

FAA, while strongly advocating joint use, states that it is only an intermediary between the potential civilian users and the military services. In its intermediary role, FAA has submitted to DOD several lists containing the names of specific military installations that in FAA's opinion have potential for joint use. FAA's purpose for submitting the lists is to obtain from DOD an indication of whether or not joint use would be a possibility. If DOD agrees on joint use for a given installation, then FAA would actively encourage and, if requested, assist a civilian sponsor in filing a formal application for joint use.

HOW EXTENSIVELY HAS THE JOINT USE CONCEPT BEEN IMPLEMENTED?

Almost 40 years have passed since the Congress established the joint use concept. DOD information shows that during the 20-year period--1961-81--40 military airfields have been declared surplus and turned over to the civilian community. In addition, 23 formal joint use agreements have been negotiated between a branch of the military service and a civilian sponsor agency

for the use of a military airfield. Of these 23 airfields, 7 are open to virtually unrestricted use by all types of civilian aircraft while the remaining 16 are subject to restrictions such as selected types of aircraft (multi-engine propeller, multi-engine jets, single-engine propeller); selected types of operations (scheduled air carrier service, commuter service); limitations on the number of takeoffs and landings; or limitations on the gross weight of the aircraft authorized to use the airfield. Finally, 43 military airfields are open for scheduled air carrier use as weather alternate fields; that is, under adverse weather conditions, air carriers can land until weather conditions become favorable at the primary landing location.

The joint use program has not been a one-way street. As of December 1982, approximately 140 civilian airports have military tenants. Generally, Reserve or National Guard units operate from these civilian airports.

OBJECTIVE, SCOPE, AND METHODOLOGY

To evaluate the feasibility of making domestic military airports and airport facilities available for joint civilian and military use, we selected 18 military airfields for detailed review-- 8 Air Force, 8 Navy/Marine Corps, and 2 Army. Twelve of the 18 airfields were included in listings of facilities identified by FAA as potential joint use locations. The remaining 6 sites were selected from a list of 23 airfields identified by DOD as existing joint use facilities. The selections were not made on either a statistically projectable or a random sample basis. Rather we identified known geographical areas of the Nation which were, according to FAA statistics, either experiencing or projected to experience capacity and/or congestion constraint problems and selected military airfields in those areas. We also wanted to ensure that each branch of the military services would be represented in the airfields selected for review. (App. I lists the names and locations of the military facilities we visited.)

At each of the military airfields selected, we met with the commanding officer and his immediate staff to discuss the feasibility of civilian aircraft using the field and the pros and cons of joint use operations. Data obtained at each military airfield included mission of the installation, length and width of the runway(s), instrumentation available, number and types of aircraft based at the installation, annual capacity of the runway(s), and total number of annual flight operations (generally for the last 5-year period) conducted at the airfield.

At the DOD headquarters we met with the Executive Secretary, DOD Advisory Committee on Federal Aviation, and the member representatives from the military services.

We met with State, region, and local government officials (generally the directors of aviation and their immediate staffs) to discuss the need for additional airport capacity in their

respective areas as well as the feasibility of joint use of military airfields located within their geographical area. The States included in our review were Arizona, California, Delaware, Georgia, Hawaii, Pennsylvania, South Carolina, Tennessee, and Virginia.

At the local level we met with the mayors, city managers, and other interested parties of the communities adjacent to the military airfields to discuss the concept, feasibility, and potential benefits and problems associated with joint use of the military airfields. We reviewed available consultant studies and reports prepared for the various governmental entities on airport needs and problems associated with airport development within their respective areas.

We also met with managers/owners of municipal, public, and private airports in the areas surrounding the military airfields to discuss the feasibility of joint use and the impact it would have on their particular operations. We obtained, where available, the annual capacity figures for these nonmilitary airports and the annual flight operations (for the latest 12-month period).

We visited FAA headquarters, Washington, D.C., and FAA's southern and western regional offices and either obtained or reviewed the following documents when appropriate:

- The National Airport System Plan.
- Applicable State and regional airport system plans.
- Airport master plans (where available).
- Studies prepared for applicable airports by various organizations.
- Joint use agreements.
- Correspondence files concerning joint use.
- Financial data and reports on applicable airports.

Finally, we met with representatives from various national aviation associations, including the Aircraft Owners and Pilots Association, National Business Aircraft Association, Air Transport Association, General Aviation Manufacturers Association, Airport Operators Council International, American Association of State Aviation Officials, and American Association of Airport Executives, to discuss our review and to obtain their views and comments on the joint use of military airfields.

Because of interest expressed by the Administrator, National Aeronautics and Space Administration (NASA), regarding potential joint use at Moffett Naval Air Station, California, where NASA has a major facility, we submitted the draft report to NASA for comment.

On February 7, 1983, we met with NASA headquarters officials to obtain their oral comments and were advised that they had no objections to the report.

Our review was performed in accordance with generally accepted government auditing standards.

CHAPTER 2

FEASIBILITY OF THE JOINT USE CONCEPT

HAS BEEN DEMONSTRATED

Is joint use of military airfields feasible? The answer is yes because 23 military airfields are currently operating as joint use facilities. However, in each case a great deal of cooperation was necessary on the part of both the military service and the civilian community before joint use became a reality. Nonetheless, the existence of these joint use facilities demonstrates the feasibility of the concept.

Answering the next question--How many additional joint use airfields can be established?--will depend largely on (1) the circumstances surrounding the use of each potential facility, as each is unique, and (2) the willingness of the parties involved to cooperate. Cooperation is essential if joint use is to be successful.

MILITARY AIRFIELDS WITH UNRESTRICTED JOINT USE AGREEMENTS

Of the 233 domestic military airfields (including auxiliary fields ^{1/}), 23, or 10 percent, are classified by DOD as joint use facilities. Seven of the 23 airfields allow virtually unrestricted use by civilian aircraft. To find out what makes these seven airfields unique and why joint use has been so successful we selected two--Charleston Air Force Base/International Airport, Charleston, South Carolina, and Yuma Marine Corps Air Station/International Airport, Yuma, Arizona--for detailed review.

Several factors stood out as essential to the successful joint use of these two airfields:

- Joint use operations evolved over many years.
- Adequate land was available to completely separate the civilian and military facilities.
- Both airfields have adequate runway capacity to accommodate civilian and military flight operations.
- Both the civilian and military components have adopted a willingness to cooperate to make the operation a success.

Information on Charleston is presented in the following section to demonstrate why joint use is successful at this location.

^{1/}An airfield with limited facilities generally located separate from, but near, a parent installation.

Charleston Air Force Base/International Airport

Commercial and general aviation, which constitute about 50 percent of the air traffic, are authorized to use the runways and certain taxiways under a joint use agreement between the Air Force and the Charleston County Aviation Authority. The Air Force owns and maintains all airfield property except the taxiways and parking aprons at the Charleston International Airport, which is located across the field from the Air Force complex. While civilian and military ground facilities are the responsibility of the respective entities, FAA operates the air traffic control tower, provides navigation aids, and maintains the approach lighting system.

Charleston Airport serves southeastern South Carolina and primarily the Charleston metropolitan area composed of Berkeley, Charleston, and Dorchester Counties (population 430,000). Approximately 66 general aviation aircraft are based at the airport in addition to transient airline traffic. The Air Force has 58 C-141 aircraft based there to carry out its mission of transporting cargo, as well as military personnel and their dependents, to and from Europe.

Three general aviation airports are also located within the Charleston metropolitan area. While the Charleston airport is currently operating at about 74 percent of capacity, the four airports taken as a whole are operating at about 50 percent of capacity. If traffic builds up at the Charleston airport, officials expect that general aviation will opt to use the other airports to avoid overcrowding.

Joint use evolved over many years

In 1929 the Charleston Airport was opened as a commercial aviation facility and operated as such until 1942 when it was leased to the U.S. Government. Following World War II the lease terminated and the city resumed operation of the airfield. In 1952, during the Korean War, the city again leased the airfield to the U.S. Government until 1955. In 1955 the city deeded the entire airfield (1,600 acres), except for 42 acres upon which the civilian terminal and related facilities were located, to the U.S. Government to establish a permanent Air Force base. At the same time, the city and the Government entered into a joint use agreement. From 1955 until 1981, several short-term agreements were in effect. Finally, in 1981 a new 15-year agreement was signed between the Charleston County Aviation Authority (created in 1970) and the Air Force.

Under the current agreement, the Authority retains the right to set landing fee rates for civilian aircraft that use the airport but is required, no later than 30 days after the end of each calendar year, to pay into the United States Treasury 50 percent of all landing fees collected. Military and civilian operations related to military business are not required to pay landing fees.

In exchange, the Air Force provides crash, rescue, and fire protection for all aircraft operations and maintains all joint use areas. The Authority is responsible for areas designated exclusively for civilian use. In times of war, national emergency, or upon adequate notice to the Authority, FAA, and the civilian aviation users, the Air Force has the right to restrict civilian traffic at the airfield to avoid interference with military operations.

Military and civilian facilities
are separate

Military and civilian facilities (parking aprons, hangars, and administrative offices) are physically separated by the main runway, which allows for a separation of responsibility and costs. Charleston Air Force officials consider these conditions to be mandatory for a successful joint use agreement.

The Authority is building a new terminal, scheduled for completion in 1984, at an estimated cost of over \$40 million. The project is being financed with \$12.5 million in Federal grants-in-aid and the remainder from sale of revenue bonds. The new terminal will be located on land previously owned and used by the Air Force for handling hazardous cargo. The Authority recently constructed a new hazardous cargo handling building that has been turned over to the Air Force in exchange for the land for the new terminal.

Runway capacity is sufficient to accommodate
military and civilian flight operations

Charleston has a main runway 9,000 feet by 200 feet and a crosswind runway 7,000 feet by 150 feet. Each runway is equipped with high-intensity runway lights, and the main runway has an instrument landing system to permit all-weather operations. Having the use of more than one operational runway enables the Air Force to close down the main runway to conduct training exercises without completely stopping all operations. The Authority is planning a new general aviation runway for the future, to be built parallel to the existing 7,000-foot runway, which will increase airfield capacity considerably and further separate general aviation from air carrier and military traffic.

Vastly different types of aircraft landing at the field could be a potential problem. Larger military aircraft land at faster speeds and fly different approach patterns. In addition, larger aircraft create air turbulence during takeoffs and landings, so it is often necessary to provide greater separation of aircraft. Because airfield operations are currently running at about 74 percent of capacity, there is no problem in maintaining separation at this time.

Military and civilian officials have
cooperated to make joint use succeed

According to the base commander and the Authority's director, joint use works well because all parties involved (the Air Force, the Authority, and FAA) cooperate and work hard to make it succeed. Various conditions have enhanced cooperation. For example, the military and civilian organizations are primarily in the same business--transporting people and cargo. There has been an open line of communication between the Authority and the Air Force; if problems arise, the parties talk and resolve them immediately. Air Force officials are invited to attend Authority meetings so that they can participate and understand what the Authority is trying to accomplish.

The Authority's director stated that there have been no lasting problems with joint use. He added that the Authority continually strives to keep abreast of any potential problems that could arise. The greatest benefit to the Authority has been the use of runways and taxiways owned and maintained by the Air Force.

Air Force officials at Charleston could think of no additional costs or disadvantages related to joint use. Crash and fire protection provided to civilian operations is the same as provided to military operations. In fact, an Air Force official said that providing crash and fire protection to civilian operations supplies additional training or on-the-job experience to Air Force crash crews.

Air Force officials at Charleston also told us of several additional benefits from joint use:

- FAA operates the air traffic control tower, provides navigation aids, and operates and maintains all approach lights. If not for FAA, the Air Force would have to provide the air traffic controllers.
- The Authority maintains a large portion of the grass areas and fences around the field.
- Charleston has about 10,000 military passengers monthly traveling to or from overseas assignments. The adjacent civilian air terminal makes the arrival from and departure to stateside locations very convenient. Even more military passengers will be able to use the new terminal when it is constructed.
- The civilian air terminal and aircraft parking facilities could be used to process passengers and park and maintain aircraft in the event of a military emergency.

MOST JOINT USE AGREEMENTS
RESTRICT CIVILIAN OPERATIONS

The majority of existing joint use agreements restrict civilian aircraft operations considerably. Of the 23 military airfields with joint use agreements, 16 are restricted to selected types of aircraft (multi-engine jets, multi-engine propeller, single-engine propeller) or selected types of operations (air carrier service, commuter service) or have limits on the gross weight of the aircraft authorized to use the airfield.

Of the 16 restricted joint use airfields, the following 4 were selected for review:

<u>Military airfield/ joint use airport</u>	<u>Civilian aviation restrictions</u>
Myrtle Beach Air Force Base, South Carolina	Limited to 60 operations <u>a/</u> per day by air carriers and selected charter flights
Dover Air Force Base, Delaware	Limited to 20 operations per day by commuter airlines
Dillingham Military Reservation, Oahu, Hawaii	Limited to civilian aircraft up to 12,500 pounds gross weight for day light operations under the rules for conducting flight under visual conditions
Ford Island Auxiliary Landing Field, Oahu, Hawaii	Primarily limited to touch-and-go operations <u>b/</u> by general aviation aircraft

a/An operation is defined as a takeoff or a landing.
b/Practice approaches or low passes at the runway.

For each of these military airfields we tried to answer the following questions:

- Did the civilian aviation community have a valid need for joint use and how was it justified?
- Did joint use meet the stated need?
- What was the dollar cost associated with implementing joint use?
- How is joint use working and why?

Because the circumstances surrounding each case were unique, the factors we considered in answering the questions applied only to

that airfield. The following discussion of three of the four restricted joint use airfields we reviewed will show that joint use is feasible, even with restrictions on civilian operations, but that each airfield with potential for joint use must be evaluated according to its unique set of circumstances.

Myrtle Beach Air Force Base

The Myrtle Beach Air Force Base was originally constructed in 1939 as a civilian airport under a program administered by the Civil Aeronautics Administration (predecessor to FAA). Soon after World War II began, the city of Myrtle Beach deeded the airfield to the U.S. Army. Following the war, title to the airport reverted to the city and it was operated as a civilian airport until the Korean War when the Air Force selected the field for military use.

In March 1955 the city of Myrtle Beach transferred the major portion of the airport to the Air Force to establish a permanent base. The Air Force agreed to allow civilian aircraft to use the base until civilian operations could be accommodated at the new Myrtle Beach Airport (also known as Grand Strand Airport), which was being renovated. The Air Force also paid the city \$326,000 for the land occupied by the base. Civilian aircraft used the air base until 1962 at which time all civilian operations were transferred to the renovated Myrtle Beach Airport.

Covering approximately 3,800 acres, the air base lies 5 miles south of the city. It consists of one operational runway 9,500 feet by 150 feet, which has a load limit of 110,000 pounds for dual-gear aircraft and 220,000 pounds for dual-tandem gear aircraft; one closed runway; and parallel and connecting taxiways. Myrtle Beach Air Force Base has an annual capacity of 190,000 operations. The number of actual operations during fiscal year 1982 was about 35,000. Other facilities include

- an air traffic control tower operated by Air Force personnel from 6 a.m. to midnight;
- aircraft and airfield maintenance facilities;
- crash, fire, and rescue facilities; and
- military police and hospital facilities.

The air base's mission is to support worldwide rapid deployment operations. It has 75 based aircraft consisting of 72 A-10 attack aircraft and 3 HH-3 helicopters.

In addition to the Air Force base and Myrtle Beach airport, two other civilian airports are located in the area. All four airports combined have a total annual capacity of 505,000 flight operations.

What was the need for joint use?

In the 10-year period 1962-72, the Myrtle Beach area experienced significant growth in both industry and tourism. As a result of this growth, the demand for air services, especially scheduled air carrier service, also increased. While the existing civilian airports in the area had sufficient capacity to meet general aviation demands, none were capable of accommodating commercial jet traffic. A master planning study (completed in 1974) concluded that extensive renovation and capital improvements would be required at the Myrtle Beach Airport and as an alternative recommended joint use at the air base. The city of Myrtle Beach estimated it could avoid construction costs of about \$2.3 million by negotiating for joint use at the base.

On August 9, 1973, the city of Myrtle Beach formally requested joint use. The base commanding officer opposed the request for a myriad of reasons, including adverse impact on mission, operations, safety, and security and incompatibility of military and civilian aircraft. He recommended that the request be denied. Nevertheless, Air Force headquarters approved the request and negotiated with the city a 25-year joint use agreement, which was signed on June 5, 1975. Air carrier operations began at the base on July 9, 1975.

Provisions of the joint use agreement

The Air Force limited civilian operations at the base to 60 operations per day, and then only to scheduled air carrier aircraft and certain charter flights.

The Horry County Airport Commission, ^{1/} the civilian sponsor, agreed to construct a civilian terminal and parallel taxiway and to collect and pay to the Federal Treasury that portion of the landing fees established by the Air Force. Regarding civilian operations, the Commission also agreed to assume all risks of loss or damage to life and property and to carry insurance to protect the Government against losses or liabilities. Finally, the Commission assumed responsibility for maintenance of paved areas that only it uses.

The Air Force agreed to provide emergency fire fighting and crash rescue services to civilian aircraft, although the Commission must pay for these services if rendered. (No such services have yet been required.) The Air Force also agreed to maintain and repair jointly used facilities.

^{1/}In Apr. 1974, at the request of the city of Myrtle Beach, the Horry County Airport Commission agreed to be the civilian sponsor for joint use at the Myrtle Beach Air Force Base.

The agreement states that civilian aircraft shall not interfere with military operations and military aircraft and that civilian aircraft on military business have priority over other civilian aircraft for takeoffs and landings. Civilian aircraft are controlled by the Air Force control tower and radar.

What were the dollar costs associated with implementing joint use?

The costs to develop the civilian facilities since joint use began in 1975 are as follows:

<u>Item</u>	<u>Cost</u>
Apron and taxiways	\$2,428,438
Terminal (land, building, and furnishings)	1,794,971
Rental car parking	11,317
Access road	966
Irrigation and landscaping	<u>2,935</u>
Total	<u>\$4,238,627</u>

The only cost to the Air Force that may result from the civilian operation is the additional wear and tear on the runway, but this cost has not been quantified.

The Air Force receives no payments from the civilian operation except the landing fees paid to the U.S. Treasury and a lease payment of \$1 per year. However, the military does use the taxiway built by the Commission and may receive some funding from the Commission in rebuilding the runway within the next few years. According to the base commander, another benefit to the military from joint use is an improved relationship with the surrounding community.

Has joint use succeeded at Myrtle Beach Air Force Base and why?

Both the military and civilian parties involved believe that the joint use operation works well, due largely to their excellent working relationship.

The executive secretary of the Commission stated that he understands the needs and desires of the military. He makes no unreasonable demands on Air Force personnel and accommodates their requests to the maximum extent. For example, the Air Force was concerned about a particular commercial flight which repeatedly

arrived after midnight when the control tower was scheduled to close. After a meeting with the Air Force, the Commission discussed the problem with the air carrier and the carrier agreed to reschedule the flight. The Air Force was satisfied with the resolution and the problem has not recurred.

The executive secretary also stated that joint use works well because the base operates under controlled conditions. For example, the introduction of general aviation aircraft at a joint use airport could cause severe problems due to the possible differences in the speeds of civilian and military aircraft. However, the types of aircraft using the Air Force base (primarily the civilian Boeing 737 and the military A-10) have similar operating characteristics, which makes the traffic mix nearly ideal.

Air Force base officials noted similar factors as contributing to the success of joint use operations, including the willingness of the parties involved to cooperate.

Dover Air Force Base

Dover Air Force Base was activated in 1941, inactivated in 1946, and reactivated in 1951. The base's primary mission is to airlift cargo and military personnel to various locations throughout the world. In addition to the 36 C-5A's currently based at Dover, the base handles a large volume of transient air traffic, including C-141's and C-130's.

The air base covers an area of approximately 3,600 acres and lies 4 miles southeast of the city of Dover. It has a fully instrumented main runway measuring 9,600 by 200 feet and a crosswind runway measuring 7,000 by 150 feet. Dover has an annual capacity of about 200,000 operations. In 1981 the base handled about 68,000 operations, or 34 percent of its capacity. Other facilities at the installation include

- an air traffic control tower operated by Air Force personnel 24 hours a day;
- military police and hospital facilities; and
- crash, fire, and rescue equipment.

In addition to Dover Air Force Base, three civilian airfields--Delaware Airpark, Chandelle Estates Airport, and Jenkins Airport--are located near the city of Dover. Of these three airfields, Delaware Airpark is the largest facility, having a runway of about 3,500 feet. No navigational aids are available at this location. The annual capacity of Delaware Airpark is about 195,000 operations. During a recent 12-month period Delaware Airpark handled about 50,000 operations--about 25 percent of its capacity.

What was the need for joint use?

In 1970 Kent County and the State of Delaware initiated an effort to establish joint use at Dover. Following 3 years of negotiations, the Air Force, on March 20, 1973, signed a 25-year agreement for joint use with Kent County. The agreement authorized 20 operations per day, or a total of 7,300 operations a year. Commencement of joint use was contingent on the county's construction of a civilian terminal and related facilities. However, due to lack of funds the terminal was never constructed and the joint use agreement was terminated in April 1977 for nonuse.

According to the Director, Delaware Transportation Authority, the metropolitan area of Dover was still in need of a convenient air transportation facility containing adequate navigational aids that would assure the highest level of flight safety. Upgrading the Delaware Airpark (the only one of the three privately owned airports located in the Dover metropolitan area that had the physical characteristics to accommodate expansion) to meet these types of service would cost the State an estimated \$2 to \$3 million. This level of funding was not available.

As an alternative to meet the growing needs of the area, the State in August 1981 resubmitted its request for joint use of Dover Air Force Base. Vacant land adjacent to the airfield was purchased and the necessary funding to construct a civilian terminal was obtained by the Delaware Department of Transportation. Following a series of negotiations, the Air Force in December 1981 agreed to joint use.

Provisions of joint use agreement

In June 1982 the State of Delaware and the Air Force signed a formal joint use agreement subject to conditions including

- construction by the State of a terminal on the west side of the main north-south runway,
- limitation on the civilian operations to 20 operations per day with no more than 7,300 operations per year, and
- reimbursement to the Air Force in services in lieu of fees.

The State also agreed to assume all risk of loss or damage to property or injury/death of persons caused by civilian aviation activities and to carry liability and indemnity insurance satisfactory to the Federal Government. The Air Force agreed to provide emergency fire fighting and crash rescue service, subject to reimbursement by the State. Maintenance of joint use areas will be at Government expense while separate facilities will be the responsibility of the respective parties.

The agreement further stated that landings and takeoffs will be on a first-come, first-served basis except when military exercises, contingency operations, and/or military emergencies dictate military priority. Such determinations will be made by the commanding officer of Dover. Finally, civilian aircraft will be controlled by the Air Force control tower and radar.

What were the dollar costs associated with implementing joint use?

In addition to purchasing land at a cost of about \$46,000, the State, since signing the agreement, has constructed a small terminal, automobile parking area, airplane ramp, and fencing at a cost of about \$300,000. Air Force officials stated that joint use of Dover was implemented at no additional cost to the Government.

Has joint use succeeded at Dover Air Force Base and why?

In December 1982 air commuter operations began at Dover. Currently, the commuter airline operates eight roundtrip flights daily. In late January 1983 the wing commander told us there had been no problems involving the joint use operations.

Dillingham Military Reservation

Dillingham Military Reservation, an Army installation, is located on the north coast of Oahu, Hawaii, approximately 50 miles from Honolulu. The airfield and a portion of the reservation are leased to the State of Hawaii by the Army for use as a public general aviation airport.

Military activity is limited to ground training involving air mobile/aviation missions. The Army maintains the right to use Dillingham for both flight operations and military ground maneuvers and may reclaim the entire reservation in the event of a national emergency or if any condition of the lease is violated.

Dillingham airfield has a single paved runway 9,000 feet long by 100 feet wide. In the center of this runway a 5,000-foot by 60-foot runway has been painted for light powered aircraft operations. The first 1,500 feet of the full runway is used for sailplane landings.

The airfield is open to civilian aircraft up to 12,500 pounds gross weight for visual flight rule day operations only. Ground facilities include 20 hangars for powered aircraft and 15 for sailplanes, a ramp area, and an operations building. The State operates the control tower, which is manned by two air traffic controllers during operating hours. Crash and fire rescue services are provided by the State.

No military aircraft are based at Dillingham, and the Army has no plans to base aircraft there. A few civilian aircraft are based at the airfield and more may be based there in the future.

What was the need for joint use at Dillingham?

Dillingham was selected for joint use to provide some relief to the overcrowded conditions at Honolulu International Airport. While FAA and the State recognize that Dillingham does not have the capability to totally relieve Honolulu International, they consider it to be an integral part of the Oahu airport system.

Provisions of the joint use agreement

In 1976 the Army agreed to a 25-year lease, granting the State full authority to operate Dillingham airfield as a public airport, including the right to construct and operate all facilities normally associated with a public airport. The lease requires that the airfield be operated as a joint use facility subject to the following priorities: (1) military flight operations, (2) military ground maneuvers, and (3) civilian aviation activities. The State does not pay for use of Dillingham, but it does maintain the water supply system and the airfield and related facilities.

The State foresees no problem in continuing joint use at Dillingham and expects the airfield to remain available for civilian aviation use for at least the next 25 years. Likewise, the Army has no plans that would hinder use at Dillingham.

What was the dollar cost associated with implementing joint use?

Because the State expects Dillingham airfield to remain a part of the Oahu civil airport system for the long term, it recently invested approximately \$3.5 million in improving the airfield and related facilities. Improvements include

- a parallel taxiway and ramp area for parking aircraft,
- new fencing and perimeter road,
- hangars for 20 powered aircraft and 15 sailplanes,
- a new operations building, and
- new parking areas for automobiles and sailplanes.

Has joint use succeeded at Dillingham and why?

No problems were associated with establishing joint use and

only minor inconveniences have occurred since it became operational. Joint use has succeeded in accommodating light aviation operations, which otherwise may have contributed to already crowded conditions at Honolulu International, without interfering with military activities at Dillingham.

However, according to FAA criteria, a reliever airport should be within 30 minutes surface travel time for a majority of potential users if it is to be effective. Dillingham does not meet this criterion; therefore, FAA has not officially designated the airfield as a general aviation reliever airport. Furthermore, neither the State nor FAA believe that Dillingham has the operational capabilities necessary to fully relieve Honolulu International Airport. As a result, the State has no plans to increase the capacity of the airfield.

In discussions with the State Director of Aviation, we were advised that a new general aviation airport was being actively considered. Location, costs, and time frames for establishing the new airport have not yet been determined. Therefore, according to FAA's Honolulu Airports' District Office Manager, while joint use is meeting a need for additional airfield capacity for certain types of civilian operations, it is at best an interim solution.

CONCLUSIONS

Joint use of military airfields is feasible and has been accomplished under a variety of different circumstances ranging from virtually unrestricted use by all types of civilian aircraft to highly restricted use by either selected types of aircraft and/or selected types of operations.

Where joint use is in effect, the military activities range from extensive active air operations (Charleston, Yuma, Myrtle Beach) to virtually no military air operations (Dillingham, Ford Island). Military aircraft based at the active airfields varied from large cargo-carrying aircraft (Dover), to attack aircraft (Myrtle Beach), to fighter aircraft (Yuma). The mix of military and civilian aircraft varied widely; aircraft at some airfields had very similar takeoff and landing characteristics (Myrtle Beach) while aircraft at other airfields differed considerably, mixing small single-engine propeller aircraft with multi-engine jets (Charleston, Yuma).

This is not to say, however, that joint use should or could be accomplished at all military airfields. Each airfield is unique, and individual circumstances must be evaluated for each airfield where joint use is contemplated.

Cooperation between the military and civilian users is the key factor surrounding each successful joint use agreement. Potential adverse impacts envisioned by the military services

on mission, operations, safety, and security and incompatibility of aircraft have, for the most part, been worked out to the mutual satisfaction of all parties. Valid needs of civilian aviation have apparently been met, at least temporarily, and additional airport and runway construction costs have been avoided.

CHAPTER 3

PROBLEMS WITH ESTABLISHING ADDITIONAL

JOINT USE AIRFIELDS

While military airfields generally have the physical capacity to accommodate additional flight operations ^{1/}--landings and takeoffs--opening them to civilian use can be hindered by the

- military concern that civilian use of the airfield may interfere with military mission, operations, and/or security;
- lack of available land to accommodate civilian operations; and
- lack of support by civilian sponsors resulting from community opposition or the lack of a real need for joint use of the airfield.

If these barriers can be overcome, as they have in the cases where joint use is working well, joint use can be expanded to additional military airfields. As we pointed out in chapter 2, each airfield considered for joint use has unique circumstances that must be evaluated individually. If joint use is to succeed at a given field the problems unique to that particular location must be solved.

MILITARY CONCERNS ABOUT ADVERSE IMPACTS ON MISSION, OPERATIONS, AND/OR SECURITY

Base commanders at 10 of the 12 potential joint use airfields we visited consistently cited adverse impact on mission, operations, and/or security as reasons for rejecting civilian use of their airfields. Civilian officials have generally accepted these reasons for rejecting joint use, even though military airfields appear to offer a solution to their capacity problems.

Moffett Naval Air Station, located in the San Francisco Bay area, is one military airfield operating significantly below capacity where base officials stated that civilian use would adversely affect their mission, operations, and/or security. Moffett Field, home base for seven squadrons of "P3 Orions" that patrol ocean areas extending from Alaska to Hawaii to the Western Pacific, is the hub of antisubmarine warfare operations in the Pacific. The airfield had about 68,000 aircraft operations in 1981, considerably under its estimated capacity of 200,000.

^{1/}Information available on 8 of the 12 proposed joint use military airfields we visited showed that they were operating at an average of 42 percent of capacity, ranging from 18 percent at Memphis Naval Air Station to 60 percent at Miramar Naval Air Station.

The Moffett base commander stated that civilian use of the airfield would interfere with the Navy's operations and impair its mission. He told us that Moffett has a number of alert aircraft which require priority access to the airspace and their mission cannot be subject to delays caused by civilian traffic at the airfield.

The base commander also told us that introducing general aviation aircraft into Moffett's traffic pattern would interfere with operations because it would necessitate greater separations between aircraft than currently required. Navy officials stated that mixing smaller general aviation aircraft, which travel at about 80 knots, in air traffic patterns with the larger Navy P3 Orions, which travel at about 160 knots, would require increased separation and would slow traffic, particularly since the wake turbulence of the P3's can affect smaller aircraft. Furthermore, Navy officials stated that:

--The greater aircraft separation distances would extend the traffic pattern southward over the nearby cities of Mountain View and Sunnyvale because the traffic patterns of other nearby airports--San Francisco International and San Jose International--restricted other available airspace.

--Increased traffic would result in more aborted landing approaches and would increase unproductive flying time for both military and civilian pilots.

The Moffett base commander also cited security as a drawback to any type of joint use. He stated that, even in touch-and-go training with no based aircraft, allowing civilian aviation onto the airfield bypasses the base's perimeter security system and threatens the integrity of its antisubmarine avionics and associated technology, weapons storage, maintenance areas, and communications facilities.

Military objections to joint use based on general adverse impacts on military mission, operations, and/or security have been satisfactorily addressed in other cases. For example, the former commanding officer of Myrtle Beach Air Force Base opposed joint use for these reasons. Nevertheless, the Air Force eventually negotiated an acceptable joint use agreement whereby military aircraft and civilian aircraft on military business have priority use of the airfield, civilian aircraft are prohibited from using certain Air Force facilities, and the civilian sponsor agreed to build facilities to secure access to the field. The current Myrtle Beach Air Force Base commander considers the base's joint use operation to be a success. (See pp. 12 to 15.)

We believe that restrictions similar to those contained in the Myrtle Beach Air Force base joint use agreement could be considered at Moffett to address the base commander's concerns

regarding the military mission and operations. For example, one way of addressing Moffett's concern with the impact on Navy operations would be to restrict the number and type of civilian aircraft authorized to use the field. In that way Moffett could limit joint use to aircraft compatible with the P3 Orion.

Regarding mission impairment the joint use agreement could include a provision that military aircraft have priority in all takeoffs and landings. This provision, along with the military's authority to clear the airways when necessary, should address the military's need for priority access to the airspace. Similar provisions are included in several of the joint use agreements currently in effect.

However, other problems identified at Moffett could, in our opinion, present difficulties in establishing joint use at that base. These include concerns over (1) strong opposition by the nearby civilian communities of Mountain View and Sunnyvale to joint use because of their concerns over increased noise and safety associated with increased air traffic ^{1/} and (2) the lack of available land to house a civilian operation at Moffett Field. (See pp. 24 and 25.)

LACK OF AVAILABLE LAND

A serious problem with civilian use of many military airfields is the lack of land to accommodate civilian ground facilities. At 8 of the 12 potential joint use airfields we visited, we were told that lack of available land would be a problem. Two of these airfields--Barbers Point Naval Air Station, Hawaii, and Moffett Naval Air Station, California--are discussed below.

Barbers Point Naval Air Station

Land limitations at Barbers Point on the island of Oahu, Hawaii, were typical. The base, which serves as a support and training station for naval operations in the Pacific, occupies about 3,600 acres and has a population of over 4,000 military and civilian personnel.

According to a Navy study completed in January 1978, not enough unencumbered land is available on Barbers Point to build general aviation facilities. This study concluded that the station has only three areas where general aviation facilities

^{1/}The Moffett base commander advised that in an effort to remain a good neighbor to the communities of Sunnyvale and Mountain View, between 30,000 and 40,000 military touch-and-go operations were moved out of Moffett to the Crows Landing Auxiliary Field, located about 60 miles east of the base.

could be sited and all three are within the explosive safety zones surrounding ammunition storage facilities and combat aircraft weapons handling areas. In order to make space available for general aviation at Barbers Point, the Navy would have to consolidate and relocate its ammunition storage facilities.

In July 1978 the Chief of Naval Operations directed the Commander, Pacific Fleet, to complete a cost analysis study for relocating ammunition magazines on Barbers Point. The study concluded that the ordnances could be consolidated only through the construction of several new facilities that would cost approximately \$10 million. The Director of Hawaii's Department of Transportation told us that the State would consider paying for relocating the ammunition magazines. However, no final decisions have been made regarding this issue and the lack of unencumbered land remains a problem.

Moffett Naval Air Station

While a recent consultant study discussed two potential land areas on which to base civilian aircraft at Moffett, Navy and National Aeronautics and Space Administration ^{1/} officials told us that neither of these two areas could be made available for civilian use.

The northeastern section of the base identified in the study as a potential site for civilian operations currently contains the Navy's weapons storage area--ammunition magazines--and golf course (which also provides an explosives safety zone). Moffett's facilities planner told us that for safety reasons this area cannot be developed for any other use and no other space is available on the base to store the weapons. The base commander stated that without the munitions and weapons stored where they are, the base could not effectively program its antisubmarine warfare mission.

The other land identified in the study as a potential site for civilian operations is northwest of the runway and is owned by NASA. The NASA facility consists of about 55 major buildings and wind tunnels and a large parcel (160 acres) used as a "static test area." The Chief of Facilities Planning told us that the property is used for testing essential to NASA's primary mission of developing rotary-type aircraft. He stated that NASA's "static test area" for testing new aircraft configurations is located in the center of the parcel to provide a required safety clearance zone for objects that might come loose if, during a test, there is an equipment failure. In addition, the test area also provides a quiet zone to obtain acoustic measurements that cannot be made in

^{1/}The NASA facility is located directly adjacent to Moffett Field and uses the airfield.

the wind tunnels. Aircraft systems and monitoring devices are also prepared and checked out in this area before they are tested in the wind tunnels.

The Chief of Facilities Planning also told us that rotary wing research would be severely curtailed and wind tunnel productivity would be reduced if the land were lost. He said that if that were the case, NASA's only option would be to request the Navy to close the airfield so that tests could be conducted on the runway area.

LACK OF SUPPORT BY CIVILIAN SPONSOR

The lack of support by a civilian sponsor may hinder establishing joint use. In several cases, potential civilian sponsors were unwilling to seek joint use because the communities adjacent to the military airfield opposed the increased noise, reduced safety, and environmental problems associated with an increase in aircraft operations. In other cases there is no civilian sponsor because of the lack of a real need for joint use of the airfield.

Bellows Air Force Station, Oahu, Hawaii, and McEntire Air National Guard Base, South Carolina, are examples where there is a lack of support by a civilian sponsor.

Bellows Air Force Station

Bellows is an inactive airfield located on the coast near the southeastern corner of Oahu, Hawaii. Although the airfield is not used, the Air Force maintains a communications facility there, the Marine Corps uses it as a major training facility, and an area adjacent to the shoreline serves as a military rest and recuperation area.

Between 1960-70 the State of Hawaii made several requests to the military for joint use of Bellows. Typically, those proposals explained the State's need for a general aviation reliever airport for Honolulu International and inquired about the possibility of establishing such an airport at Bellows. The proposals were general, however, and did not specify the types of facilities needed, the number of aircraft that would be based there, or the number of civilian operations that would be flown out of the installation. All of the requests were denied.

However, in October 1968 the Department of Defense sent a team to Hawaii to study joint use at Bellows. This team met with local military, FAA, and State officials to study the feasibility of reopening Bellows and allowing civilian use. On December 24, 1968, the Assistant Secretary of Defense for Installations and Logistics proposed that the Secretary of the Air Force arrange to lease a 135-acre section of Bellows to the State of Hawaii for development as a general aviation airport.

After lengthy negotiations, a lease was finalized and forwarded to the State for execution in May 1970. However, during public hearings local citizens groups strongly opposed a general aviation airport at Bellows. According to the Airports Division Chief of the Hawaii Department of Transportation, because of the local opposition, the State took no further action on the lease. The present Governor of Hawaii, who was recently reelected, indicated in a 1977 letter to a local community group opposed to joint use that he has no intention of developing Bellows as a general aviation field. In 1978 (approximately 8 years after finalizing its lease) the Air Force withdrew its offer of joint use at Bellows, citing increased Marine Corps training requirements at the installation.

McEntire Air National Guard Base

McEntire, the home of the South Carolina Air National Guard's 169th Fighter Group, which operates on full-time alert status as a part of the U.S. Air Force Tactical Air Command, is located 14 miles southeast of Columbia, South Carolina. FAA has indicated that significant costs could be saved through joint use of McEntire because it would eliminate the need to construct a new general aviation reliever airport. Our review of South Carolina's 1980 State airport system plan, however, does not project the need for a new airport in the Columbia metropolitan area within the next 20 years, and the three existing civilian airports in the McEntire vicinity were operating considerably under capacity, as shown below.

<u>Area airports</u>	<u>Aircraft operations</u>				<u>Operational capacity</u>	<u>Operations compared to capacity</u> (percent)
	<u>Air carrier</u>	<u>General aviation</u>	<u>Military</u>	<u>Total</u>		
Columbia Metropolitan	28,791	98,190	10,324	137,305	205,000	67
Owens Field	2,100	85,615	475	88,190	190,000	46
Corporate	-	8,300	500	8,800	70,000	13
Total	<u>30,891</u>	<u>192,105</u>	<u>11,299</u>	<u>234,295</u>	<u>465,000</u>	50

Nonetheless, in 1980 FAA included McEntire in a list of 50 installations submitted to DOD and requested that DOD indicate the feasibility of establishing joint use at each location. In February 1981 DOD responded that the Air Force would be willing to consider joint use at McEntire.

In March 1981 the Richard-Lexington Airport Commission submitted a letter to the Commander, McEntire Air National Guard

Base, requesting that negotiations begin that would lead toward a joint use agreement. However, due to declining operations at Columbia Metropolitan Airport, the Commission's executive director told us that negotiations on the joint use agreement were not followed through. Because of the current lack of need, the Commission is at this time taking no further action on joint use at McEntire.

CONCLUSIONS

The attempt to open additional military airfields to civilian use presents a host of problems that must be recognized, dealt with, and overcome if joint use is to be successfully implemented. These problems include

- military opposition because of concern over adverse impacts on mission, operations, and/or security;
- opposition by civilian communities near the airfield because of potential increases in noise, safety risks, and other adverse environmental factors;
- lack of a civilian sponsor;
- lack of available land on or adjacent to the airfield to house civilian operations; and
- lack of a real need for joint use of the airfield.

We believe that the Departments of Defense and Transportation must deal with these issues if joint use is to be more widely implemented.

RECOMMENDATIONS

The Congress directed the Secretaries of Defense and Transportation to submit a plan not later than September 2, 1983, for making domestic military airfields and facilities available for joint civilian and military use to the maximum extent compatible with national defense requirements.

We recommend that the Secretaries, in performing the required study to evaluate military airfields for potential joint use:

- Establish that a valid need exists for civilian use of a military airfield, taking into account such matters as capacity constraints, airspace congestion, and/or safety in the area where joint use is proposed.
- Identify and assess any adverse impact on military mission, operations, and/or security.

--Determine if land is available to house civilian operations.

For cases where these issues have been dealt with and joint use is considered operationally feasible, we recommend that the Secretaries, in cooperation with the civilian sponsor, determine whether community opposition exists and, if so, attempt to resolve it. Since the Congress has already directed the Secretaries of Defense and Transportation to recommend a public sector civilian sponsor for each airfield proposed for joint use, we are not making a recommendation concerning civilian sponsors.

AGENCY COMMENTS

On February 4 and February 7, 1983, we obtained oral comments from the Departments of Transportation and Defense, respectively, on our proposed report. Both Departments concurred with our recommendations and advised that they would attempt to implement the recommendations in conjunction with their ongoing study for making domestic military airfields available for joint use.

CHAPTER 4

COST AND DEVELOPMENT REQUIREMENTS IN MAKING MILITARY AIRFIELDS AVAILABLE FOR JOINT USE

The Congress directed that we provide, for those military airfields determined to be most feasible for joint civil and military use, an estimate of the costs and development requirements involved in preparing these airfields for joint use.

Before realistic estimates can be made, however, specific data is needed and a detailed analysis must be performed on each of the data elements identified. These elements, as a minimum, include (1) number and type of civilian aircraft proposed to use the field, (2) number of operations--takeoffs and landings--proposed, (3) services to be provided (maintenance, fuel), (4) structures to be built (hangars, canopies, terminals), (5) land to be acquired, (6) parking area required (aircraft, automobile), (7) access roads to be constructed, (8) ramps, taxiways, and aprons required, and (9) security needed (fencing, guards). At the airfields we visited, data on these elements either had not been identified or was not current. Therefore, we were unable to develop the cost and development information requested by the Congress.

Nevertheless, advocates of joint use--both the national aviation associations and FAA--have pointed out that in addition to meeting civilian aviation needs, the joint use of military airfields has the potential for saving millions of dollars in Federal, State, and local funds by reducing airport development costs. In 1979 FAA projected a potential savings in excess of \$1.5 billion in civilian airport development requirements over the next 10 years by implementing joint use at 43 military airfields throughout the country. The FAA Chief, National Planning Division, Office of Airport Planning and Programming, advised that the \$1.5 billion figure was a net potential savings--cost of airport development less the estimated developmental costs of implementing joint use at each of the identified military airfields. Total estimated development cost at the 43 airfields amounted to about \$160 million. The National Planning Division Chief further advised that this figure was a rough estimate based on data provided by the FAA regional offices.

FAA SAVINGS ESTIMATES ARE QUESTIONABLE

While we concur that potential civilian airport development costs could be saved through joint use, our analysis has shown that FAA's \$1.5 billion savings is questionable. For example, according to FAA, implementing joint use at Dobbins Air Force Base, Georgia, would potentially save \$719 million in civilian airport construction cost, or 48 percent of the estimated \$1.5 billion savings, by eliminating the need to build a new air-

port to serve the greater Atlanta, Georgia, area. The facts surrounding this case do not support FAA's position.

Atlanta's Hartsfield International Airport, considered one of the busiest airports in the world, has an annual capacity of 525,000 operations. In fiscal year 1981, according to FAA air traffic activity reports (latest figures available), 614,641 operations were conducted at the airport--570,752 air carrier, 40,421 general aviation, and 3,468 other--an excess of 89,641 operations.

The FAA proposal was to implement joint use at Dobbins Air Force Base, which would provide relief to the Atlanta airport and, according to FAA, preclude the immediate need to construct a new civilian facility, estimated to cost \$739 million. The plan, as proposed, would move 75,000 air carrier operations from Atlanta to Dobbins. The cost to develop Dobbins to accommodate 75,000 operations was estimated to be \$20 million--leaving a net savings of \$719 million.

Our analysis at Dobbins showed the annual capacity of the airfield to be 165,000 operations. Actual operations for fiscal year 1982 amounted to about 88,000, leaving an excess capacity of 77,000 operations--2,000 more than required to accommodate the operations to be shifted from Atlanta. However, the Dobbins base commander advised that military operations are expected to increase by about 25 percent over 1982--from 88,000 to 110,000 operations--upon completion of new facilities that were under construction at the time of our visit and upon assignment of additional based aircraft. (Based aircraft are expected to increase from 118 to 146.) Excess capacity at the airfield would therefore decrease from 77,000 to 55,000 operations--20,000 fewer operations than FAA considered in its estimate.

In addition to lack of physical capacity, other problems were identified with attempting to implement joint use at Dobbins, including (1) lack of a local sponsor, (2) strong local community opposition, (3) lack of available land for civilian facilities at the installation, and (4) military opposition to joint use.

Even if these problems were overcome and joint use was successfully implemented, the Atlanta airport would still be operating in excess of its capacity. FAA was proposing that 75,000 operations be moved to Dobbins. However, Atlanta was experiencing in excess of 614,000 operations when it was designed to accommodate 525,000 operations. Reducing the number of operations by 75,000 would still leave approximately 540,000 annual operations--15,000 more than the airport was designed to accommodate. Finally, FAA was forecasting that the Atlanta airport would have to accommodate as many as 700,000 operations by the year 1990. Therefore, implementing joint use at Dobbins would do little to reduce the need for another civilian airport in the Atlanta area and would not yield the \$719 million savings estimated by FAA.

CONCLUSIONS

Because data was either not available or was not current, we were unable to estimate the cost and development requirements involved in making military airfields available for joint use. However, we did identify factors that we believe must be included, as a minimum, in a realistic estimation of requirements.

FAA prepared rough estimates on 43 potential joint use military airfields that identified developmental costs of about \$160 million and showed a potential cost savings of \$1.5 billion by implementing joint use. We question the reliability of the dollar savings.

As we have pointed out throughout this report, each potential joint use airfield and the circumstances surrounding its proposed use are unique. Determining whether or not joint use should or could be implemented involves not only identifying and overcoming numerous problems but, in our opinion, determining if joint use is cost effective.

RECOMMENDATIONS

We recommend that the Secretaries of Defense and Transportation, in evaluating military airfields for potential joint use, estimate cost and development requirements by, as a minimum, identifying, developing, and analyzing the following factors:

- Number and type of civilian and military aircraft proposed to use the airfield.
- Number of operations proposed.
- Services to be provided (maintenance, fuel).
- Structures to be built (hangars, canopies, terminals).
- Land to be acquired.
- Parking area needed (aircraft, automobile).
- Access roads to be constructed.
- Ramps, taxiways, and aprons required.
- Security measures required (fences, guards).

We further recommend that the Secretaries, after analyzing the above factors and identifying military airfields that are operationally feasible for joint use, prepare a detailed cost-benefit analysis to determine whether developing each airfield for joint use would be cost effective.

AGENCY COMMENTS

On February 4 and February 7, 1983, we obtained oral comments from the Departments of Transportation and Defense, respectively, on our proposed report. Both Departments concurred with our recommendation for identifying, developing, and analyzing requirements for joint use and advised that they would attempt to implement the recommendation in conjunction with their ongoing study for making domestic military airfields available for joint use.

In addition, both Departments advised that a cost-benefit analysis would be performed after potential joint use sites were identified and before any Federal grant funds associated with implementing a joint use agreement were spent.

MILITARY AIRFIELDS VISITEDBY GAO

Barbers Point Naval Air Station, Hawaii
Bellows Air Force Station, Hawaii
*Charleston Air Force Base, South Carolina
Davison Army Air Field, Virginia
*Dillingham Military Reservation, Hawaii
Dobbins Air Force Base, Georgia
*Dover Air Force Base, Delaware
*Ford Island Auxiliary Landing Field, Hawaii
Kaneohe Bay Marine Corps Air Station, Hawaii
March Air Force Base, California
McEntire Air National Guard Base, South Carolina
Memphis Naval Air Station, Tennessee
Miramar Naval Air Station, California
Moffett Naval Air Station, California
*Myrtle Beach Air Force Base, South Carolina
Willow Grove Naval Air Station, Pennsylvania
Wheeler Air Force Base, Hawaii
*Yuma Marine Corps Air Station, Arizona

*Airfields with existing joint use agreements.

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