098140 76-0371

REPORT TO THE CONGRESS

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BY THE COMPTROLLER GENERAL OF THE UNITED STATES

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Flying-Hour Programs Of The Military Services: Opportunities For Improved Management

Department of Defense

Military flying cost about $2.7 billion in fiscal year 1975. Most of the flying was for developing and maintaining proficiency as an element of military readiness. Effective management of this flying requires a system that can relate planned and actual flying to training and readiness needs and results.

This report describes the systems the military services use in managing their flying-hour programs and identifies opportunities for improving the management of these programs.

LCD-75-451

JUNE 18, 1976

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

B-146896

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

This report describes the systems used by the military services in managing their flying-hour programs and identifies opportunities for improving the management of these programs. Flying hours are a key ingredient to maintaining a combat-ready posture. High costs and scarce fuel make it imperative that the hours flown are optimized toward training goals.

We made our review pursuant to the Budget and Accounting Act of 1921 (31 U.S.C. 53) and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

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

Comptroller General
of the United States

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
MAC	Military Airlift Command
SAC	Strategic Air Command
TAC	Tactical Air Command

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

FLYING-HOUR PROGRAMS OF THE MILITARY SERVICES: OPPORTUNITIES FOR IMPROVED MANAGEMENT
Department of Defense

D I G E S T

During fiscal year 1975, military aircraft flew about 6.4 million hours at a cost of about $2.7 billion. Some of this flying was for transporting personnel and cargo, for surveillance, and for similar operational-type flying. But most of this flying was for training to develop and maintain pilot-flying proficiency as an element of military readiness.

Flying hours are a key ingredient to maintaining a combat-ready posture. High costs and scarce fuel make it imperative that the hours flown are directed toward training and readiness goals. Accordingly, there is a clear need for an effective system for managing flying hours.

An effective management system should identify:

--The mission, what needs to be done. (See p. 4.)

--What training is needed, amount, and type for each mission. (See p. 4.)

--What controls are needed. (See p. 5.)

--What results are desired, the level of readiness needed. (See p. 5.)

The system must not only identify what the desired results are but what is the best way to get there. The system should also provide for an evaluation mechanism to be able to evaluate such factors and answer questions as:

--How much training is enough?

--Were the results reached with a minimum expenditure of hours?

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--Are squadrons and/or individuals achieving predetermined goals within prescribed limits?

--If not, what are commanding officers doing about it?

Answers to these questions depend on sound criteria, including specific goals and objectives to be met by aircrews for each type aircraft and mission.

The Air Force's system for managing flying hours seems to be the one most likely to provide effective management. The Air Force's system identifies specific missions by squadron, when the aircraft are capable of more than one. Training syllabuses have been established which identify what training elements are necessary to achieve predetermined levels of readiness, and controls have been established to give visibility over results achieved from hours flown. The Air Force also reports two types of readiness conditions: (1) mission ready--fully combat ready, (2) mission capable--combat ready with added training. (See p. 5.)

The Navy's management system does contain standards considered necessary to achieve and maintain desired combat readiness levels. However, the commander's subjective judgement is used rather than the standards to measure readiness.

The Army has not established a management system for flying hours. Standards have not been developed which dictate what is needed to obtain and sustain a combat ready posture--control over flying is left to the discretion of the Commanding Officer.

All the services have had other problems in managing their flying-hour programs. On the basis of a limited review, GAO found that some flying was not needed or was providing less than full benefit. For example:

--Air Force training flights could have substituted crew members for those needing training or could have taken along

additional crew members to fill vacant seats. (See p. 13.)

--Long Navy flights to the west Pacific were unnecessary and were not directed toward their primary mission. (See p. 26.)

--Army pilots in one unit were flying twice as much as pilots in another identical unit because of the unit commanders' personal preferences. (See p. 37.)

Indications of other flying-hour management problems suggested a need for better controls and management procedures to insure that flying is achieving its training and readiness objectives.

Flying hours consume tremendous amounts of resources, conservatively estimated at $2.7 billion. Additionally this resource needs to be applied in an efficient and effective manner to insure that our Forces are ready when needed and capable of demonstrating superiority over their foes, since the latter may outnumber them in quantities of aircraft. At the same time, the Department of Defense needs to recognize that the resources provided are limited and that every manager needs to insure maximization of the dollar.

The services do not have a system that can provide the information for proper planning, budgeting, execution, and managing these resources. The Navy and the Army have taken the position that the commanders know best. GAO does not consider this an effective system nor would this type of an approach insure proper development of resources considering economic factors.

GAO has demonstrated the wide variances in resources applied by different commanders to reach the same readiness goal. It is obvious that management needs to raise the question, "Why does it cost twice as much to train squadron B than A with both having

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the same mission?" GAO believes a better system is needed to insure adequate readiness at a reasonable price.

GAO recommends that the Secretary of Defense:

--insure that the military services adopt systems for managing flying hours that can be related to force readiness objectives and can be used by the services for planning, executing, and managing their flying-hour programs.

--direct the commanders to improve control procedures to insure more effective training by balancing flying hours allocated and used and by making greater use of crew substitutions.

--establish system changes to preclude little used or unnecessary flights. (See p. 7.)

GAO recommends also that the Secretary direct the Navy to establish control procedures to improve the accuracy of aircrew readiness reports, eleminate unnecessary flying, and increase the benefits derived from hours flown. (See p. 35.)

GAO further recommends that the Secretary direct the Army to establish specific flying-hour criteria for Army aviation units to be used in planning flying-hour programs and determining training needs, readiness objectives, and accomplishments. The criteria should help to preclude unnecessary flying as well as insure the orderly progression of pilots. (See pp. 37 and 38.)

The Department of Defense generally agreed with the report data and GAO's conclusions. Although the Department agreed that the services' flying-hour programs could be better managed by relating, whenever possible, flying hours to force readiness objectives

through clearly identified training requirements, it gave no assurance that action would be taken to develop a management system as GAO recommended. The services, however, are taking a number of specific action which, if properly implemented, should eliminate some unnecessary flying and lead to better management of the program. We will evaluate the effectiveness of these actions at a later date.

CHAPTER 1

INTRODUCTION

The military services flew about 6.4 million hours in fiscal year 1975 at a cost of about $2.7 billion. A large part of this flying was for transporting personnel and cargo, for surveillance, and for similar operational-type flying. But most of this flying was for training to develop and maintain pilot-flying proficiency as an element of military readiness.

Flying hours are a common denominator in planning many of the direct and indirect functions of military service organizations using aircraft. Supply support and maintenance experience data are frequently expressed in terms of quantities of materiel and maintenance man-hours for each flying hour. Projections of future materiel and maintenance requirements are often based on proposed flying-hour programs. The cost for each flying hour considering direct and indirect cost varies from $63 an hour for the OH-6 helicopter used primarily by the Army to $3,915 an hour for the C-5A transport aircraft used by the Air Force.

Since most military flying is a form of training, it would seem to follow that flying proficiency and expertise are directly affected by the number of hours that individuals and crews actually fly. Further, the level of flying competence should also be relatable to the actual readiness of individuals and crews to perform their assigned missions. However, the relationship between flying and training and readiness is not direct and is greatly affected by type of aircraft, unit mission, and the experience and previous training of personnel.

We reviewed the systems used by elements and commands of the Army, Navy, and Air Force to manage their flying-hour programs. We examined the procedures and methods used to relate training and readiness objectives to flying-hour programs in fiscal year 1975. We evaluated the controls established to insure that maximum benefits were being derived from the hours being flown.

Our review covered several types of aircraft ranging from helicopters to cargo aircraft. Following is a list of aircraft and locations included in our review.

Service	Aircraft	Locations visited
Army	Helicopters: OH-6, 58 (observation) UH-1 (utility) AH-1 (attack) CH-47, 54 (heavy utility)	Fort Hood, Tex.
Navy	F-4	Commander, Naval Air Force, Atlantic Fleet Naval Air Station Oceana, Virgina
	P-3	Moffett Field
Air Force	F-4	Tactical Air Command, Seymour Johnson Air Force Base
	C-5A	Military Airlift Command
	C-141	Travis Air Force Base
	B-52	Strategic Air Command, Blytheville Air Force Base

CHAPTER 2

FLYING-HOUR PROGRAMS

The military services' flying-hour programs are a multibillion-dollar operation and a key ingredient for maintaining a combat-ready defense posture. The cost of increasing or decreasing flying is fairly easy to measure; the impact on training and readiness is not. Although it is generally recognized that periodic flying enhances training and readiness, it is difficult to establish how much is enough to achieve desired levels of proficiency. Varying types of aircraft and unit missions, the experience and previous training of the pilots and crews, and locations influence the amount of flying and its relationship to training and readiness.

In recent years fuel has become scarce and expensive. Even though the military services have reduced the number of hours flown, costs have increased. The need to maintain defined levels of readiness still remains and therefore makes it imperative that maximum benefits be obtained from available flying hours. Effective development and management of the flying-hour programs thus becomes critical, if training and readiness objectives are to be met.

Accordingly, there is a clear need for a formalized system to identify training requirements that can be converted into flying-hour quantities. Further there is a need for reliable records of what has been accomplished and for periodic evaluation of the amount of flying that is taking place to find out whether it is achieving the desired results. We found varying degrees of development of such a system within the military services. The Air Force's system seemed to be the best developed, the Army's system is the least developed, and the Navy's system is somewhere in between.

DEVELOPMENT AND MANAGEMENT OF FLYING-HOUR PROGRAMS

Flying-hour programs cover each type of aircraft in the military services' inventory, all of which have one or more assigned missions. Each aircraft, along with each mission, is different and requires specialized pilot and crew training. Therefore the need for a system which identifies each mission, coupled with required training, is important.

The Department of Defense (DOD) has given the military services responsibility for managing flying-hour programs.

Therefore each service has developed some form of a flying-hour program management system. Although the final goal is combat readiness, the systems used by the services are not uniform.

An effective management system should identify:

--The mission.

--What training is needed.

--What controls are needed.

--What results are desired.

The mission

Military services' aircraft are normally capable of more than one mission. In addition, the missions of using units can be different. To get the maximum out of hours flown, it is necessary to identify the assigned missions and concentrate training toward that mission. For example, the Air Force now assigns primary and secondary missions to each squadron. The F-4 aircraft has four mission area capabilities, and an F-4 squadron is normally assigned one as primary and one as secondary. Since the training required for each mission is different, the squadrons can now become specialists in given missions rather than generalists in all missions. The Navy also has identified mission categories but does not train to any specific one. The Army has not identified separate missions and therefore trains its aircrews for proficiency in all aircraft capabilities.

What training is needed

Since each aircraft and mission is different, it seems to follow that different training is necessary to be proficient in the aircraft, as well as mission ready. The Air Force and the Navy have set up training programs identifying specific events and accomplishments by aircraft and mission which must be achieved. These are specified in terms of the number of flights or activities to be done, as well as how often they are to be done. In contrast, the Army has not identified any such criteria but allows each unit commander to decide what is needed.

In determining criteria, it is also important to set a standard for the degree of readiness desired. As in the case of the Air Force, criteria are set not only for the aircraft but also for the mission and the desired level

of readiness. The Air Force has identified two levels of readiness, as described below:

1. Mission ready--Fully combat ready for immediate introduction into combat.

2. Mission capable--Can be readily converted to full mission-ready status with some additonal training.

Normally the squadron's goal is to be mission ready in its primary mission and be mission capable in its secondary mission. The amount of training is less for a mission-capable status than for a mission-ready status.

What controls are needed

Control is an essential part of any system. Criteria for needed flying hours, no matter how sound, will not be effective unless the actual hours flown are controlled. Actual hours flown should be measured against what is required to insure that needed events and accomplishments are fulfilled and not unnecessarily exceeded. Evaluations should be made of those hours not directly satisfying training needs.

The Air Force is developing a system which will identify all hours flown and why they were flown. Data from this system will identify those hours which are not fulfilling training requirements. Also the data will be useful in evaluating the flying-hour criteria.

What results are desired

Combat readiness is the goal against which the need for flying-hour programs are measured. This is a subjective goal which can be made more objective through the use of good criteria. The success of training is measured through such things as check rides and exercises. Higher commands, particularly the Joint Chiefs of Staff, receive daily readiness reports from all combat units. We found inconsistencies in the way the services were reporting the readiness status of their aircrews. The Army does not report the readiness of its aircrews, although the Navy and the Air Force do. However, the Navy does not follow readiness hour standards; rather, the Navy uses the commanders' subjective judgment.

We found varying degrees of development of a system to manage flying hours within the military services. The Air Force's system seemed to be most developed, the Army's the least developed, and the Navy's somewhere in the middle. Accordingly, we found many examples of ineffective management of flying hours.

We found:

--Flights justified to provide training but with no clear description of what training was to be accomplished.

--A unit's flying twice as much as an identical unit because of the personal preferences of the commanders.

--Long flights to accomplish training that could have been accomplished with short flights and ground training.

--Flying to train personnel that had already received that training.

--Excessive flying by some personnel and other personnel being denied needed training.

--Flights that duplicated others and simply were not needed.

These matters and the systems used by the Air Force, Navy, and Army are discussed in detail in chapters 3, 4, and 5, respectively.

CONCLUSIONS

Flying hours are a key ingredient to maintaining a combat-ready posture. High costs and scarce fuel make it imperative that the hours flown are optimized towards training and readiness goals. An effective management system should identify the mission, what training is needed, what controls are needed and what results are desired.

The system must not only identify what the desired results are but what is the best way to get there. The system should also provide for a mechanism for evaluating such factors and answering questions as:

--How much training is enough?

--Were the results reached with a minimum expenditure of hours?

--Are squadrons and/or individuals achieving predetermined goals within prescribed limits?

--If not, what are commanders doing about it?

Answers to these questions depend on sound criteria, including specific goals and objectives to be met by aircrews for each type of aircraft and mission.

RECOMMENDATIONS

We recommend that the Secretary of Defense:

--insure that the military services adopt systems for managing flying hours that can be related to force readiness objectives and can be used by the services for planning, executing, and managing their flying-hour programs.

--direct the commanders to improve control procedures to insure more effective training by balancing flying hours allocated and used and by making greater use of crew substitutions.

--preclude the operation of little used or unnecessary flights.

DOD COMMENTS AND OUR EVALUATION

In written comments to our report, DOD agreed that the services' flying-hour programs could be better managed by relating, wherever possible, flying hours to full-readiness objectives through clearly identified training requirements. DOD said, considering the services' different missions, this was the degree of standardization DOD should attempt to achieve. Although DOD agreed in principle, it gave no assurance it would take action to develop a management system. Such a system, if properly implemented, would contain controls necessary to eliminate unnecessary flights and insure that hours are effectively used.

CHAPTER 3

AIR FORCE FLYING-HOUR PROGRAM

The Air Force flew over 3 million hours in fiscal year 1975 at a cost of about $2.1 billion. The number of hours flown by those aircraft included in our review, along with the cost per hour, follows.

Command	Type of aircraft	Fiscal year 1975 Hours flown	Fiscal year 1975 Cost per hour (note a)
Tactical Air Command	F-4	143,960	$ 885
Strategic Air Command	B-52	151,578	2,210
	KC-135	221,364	1,299
Military Airlift Command	C-141	301,963	1,265
	C-5A	50,227	3,915

a/Includes fuel, depot maintenance, base material, and replenishment spares.

Minimum requirements have been established by the Air Force, which are considered necessary to obtain and sustain mission readiness for each type of aircraft. The above commands have a framework for adequately managing their flying-hour programs. However, we did find instances where closer management would have resulted in fewer flying hours. For example the Military Airlift Command (MAC) had flights which were unnecessary, and the Strategic Air Command (SAC) was not, in all cases, optimizing its aircrew training.

DEVELOPMENT AND MANAGEMENT OF AIR FORCE FLYING-HOUR PROGRAM

The prime purpose of the Air Force flying-hour program is to provide training to maintain pilots and aircrews in a state of readiness that will enable assigned missions to be fulfilled. Headquarters, United States Air Force, issues planning factors to be used by various commands in developing their flying-hour programs. These factors are based on flying-hour standards developed for each aircraft by the various commands. Following is a recap of how the commands included in our review develop and manage their flying-hour programs.

Tactical Air Command

The basis for the Tactical Air Command (TAC) flying-hour program is the number of sorties (a single flight that may vary in length) needed to fulfill training requirements. These requirements are developed by TAC headquarters and given to the squadrons. On the basis of the sortie-training requirements, the number of aircrews and aircraft, and maintenance capabilities, sortie requests are submitted by the air wing to TAC. TAC then converts the sorties to hours and forwards them to the United States Air Force Headquarters for approval.

The Air Force instituted changes, effective July 1, 1974, which have had an impact on aircrew-training requirements for the F-4 aircraft. The two major changes were (1) emphasis on specialized Design Operation Capability (capabilities) and (2) the establishment of sortie-training standards. The F-4 has four capabilities, as follows:

1. Air-to-ground nuclear.

2. Air-to-ground conventional.

3. Air-to-air superiority.

4. Air-to-air defense.

Before July 1, 1974, F-4 aircrews were trained in all four capabilities. F-4 squadrons are now assigned two capability missions; one primary and one or more secondary. Thus F-4 aircrew training has become more specialized.

The other change was the establishment of sorties as the F-4 training requirement base. Training requirements are now stated in terms of sorties instead of hours for each month.

According to TAC officials, the sortie basis of training inherently provides an incentive to reduce sortie length because shorter sorties increase the number of aircraft that can fly second and third sorties on a daily basis. This change has resulted in effective training being accomplished in a reduced F-4 flying-hour program.

DOD pointed out that specializing in a specific mission area did provide more effective training for that mission but that aircrew performance in other missions of which the F-4 was capable would be degraded. DOD said it had chosen to trade off some of the flexibility of the Air Force F-4 force against flight hours. This type of degradation and the loss of flexibility are not necessarily counterproductive

because F-4 aircrews can now become more specialized and consequently better trained in a specialized area of performance in less flying hours. We did not, however, attempt to assess this change in terms of its effect on aircraft and aircrews against specific potential aggressor threats.

TAC's management of flying hours

TAC's new training concept has improved the management of its flying-hour program. Squadrons have been assigned primary and secondary missions, and flying requirements are now tailored to squadron location and mission. Tasks or events required to accomplish each mission capability have been identified and converted into sorties.

The new concept is built around three levels of proficiency.

1. Basic proficiency--Activities required to make the pilot safe in operating aircraft.

2. Mission capable--Activities required to make the pilot basically capable of performing the mission. The pilot can be readily converted to full mission-ready status with some additional training. Level is to be attained in the secondary mission.

3. Mission ready--Activities which the pilot must accomplish to be fully qualified and ready for immediate introduction into combat. Level is to be attained in the primary mission.

Squadron commanders now know what primary and secondary missions they are responsible for, what level of proficiency is required, and what it takes to achieve this level.

An aircrew member's sortie-training standard is computed on a 6-month basis and is the sum of the standard number of sorties for the primary and secondary DOCs added to mission support sorties. The table below shows an example of standard sorties TAC recommended.

Capability assignment	Standard sorties
Primary--air-to-air superiority	39
Secondary--air-to-ground nuclear air-to-ground conventional	32
Mission support	12
Total	83

The 83 sorties will prepare an aircrew to be mission ready in the primary capability and to be mission capable in the secondary capabilities Mission support sortie requirements are estimates based on historical requirements.

As a part of the new training concept, TAC is also developing a data system which will provide information to better manage the TAC flying program. Need for this information was emphasized in late 1973 as a result of the oil embargo. At that time TAC was forced to greatly curtail fuel use. When the fuel cutback occurred, TAC officials did not have enough data to show the impact of reduced flying and where the reductions should be made. The new system called the TAC Automated Flying Training Management Program should help to provide this type of data.

This program is designed to eventually become a data base so that management of sorties can be augmented with retrievable historical data. The system will be capable of providing summary information, will permit analysis of strengths and weaknesses of training, and will provide feedback to use in evaluating training programs.

Implementation of this program began in January 1975, and TAC officials anticipate that usable data will be available by January 1976. TAC officials plan to be able to use the program data to decide what flying hours' reductions, if necessary, can be achieved with the least impact on capability.

This program will allow Air Force managers to monitor an individual crewmember's status on a monthly basis. In addition, data from this program is anticipated to be used in developing better standards.

Strategic Air Command

SAC receives flying-hour programs from USAF Headquarters for each fiscal year. The program provides training to maintain forces in a readiness state so that SAC can carry out its primary mission. SAC's flying-hour program is based on accomplishment of specific training events.

SAC's management of flying hours

SAC has defined minimum training events in terms of sorties necessary for maintaining mission readiness, basic proficiency, and currency of aircrews and individual flight personnel. Flying-hour and sortie requirements are outlined in detail as defined in the SAC Aircrew Training Plan, which became operational in January 1975. SAC, by establishing

minimum sorties, has a basis for managing the execution of flying hours.

SAC needs to improve management of flying, however, to insure that maximum training is obtained. Our analysis of SAC's 97th Bombardment Wing shows that the following factors, aside from insufficient hours, contributed to the noncompletion of its training requirements.

--Some crewmembers received more than the minimum training requirements and others received less.

--Crewmembers were not substituted on multipurpose missions to preclude future single-purpose missions for individual training requirements.

Training status

SAC training criteria require that an aircrew complete 18 specified sorties during a training period. However, we found imbalances in the allocation of flying time to B-52 aircrews indicating overtraining of some personnel and reduced training of others. We found that one B-52 aircrew completed 33 sorties during a recent training period, although one specified sortie was not accomplished. The excess sorties amounted to about 132 hours and $292,000 in excess flying and costs. A crew and/or individual status report covering the same training period showed that 13 aircrews lacked 24 crew sorties to complete their minimum crew training; also there were 14 staff personnel and 35 pilots and copilots on crews who did not complete their minimum individual training.

A Wing official stated that the aircrew which flew the excess sorties was the Wing's select crew that participated in the National Bombing Competition conducted at Barksdale Air Force Base, Louisiana, in October 1974. The purpose of the excess sorties was to prepare the aircrew for the competition. The official said other B-52 units participated in the competition, as well as the Royal Air Force and the Canadian Air Force.

He stated also that the additional sorties could have been used by other aircrews to meet their minimum training requirements. However, the competition was directed by the 8th Air Force. We believe the flying time of the special bombing crew would have been better used by the other crews that were unable to complete their minimum training and would have contributed more to the overall readiness of the entire Wing.

Substitution of crewmembers

Single-purpose sorties are least effective, since they are normally used to complete single-individual-training requirements. According to flight management personnel of the 97th Bombardment Wing, multipurpose crew sorties (sorties designed to accomplish more than one training objective) are used to maximize the effectiveness of training missions. They said that maximum substitution of personnel should occur on these mission to preclude single-purpose sorties. However, of the 429 sorties flown during a recent training period, 106 were single-purpose sorties.

Flight management personnel explained that, in addition to containing the pilot and copilot seat, the B-52 aircraft contains a vacant seat, often referred to as a second copilot seat. The second copilot seat can be occupied by a substitute crewmember who can exchange positions with a crewmember and complete individual training requirements. For example, on a recent mission an instructor pilot replaced the crew pilot and supervised two copilots who completed proficiency sorties. Also, three staff personnel were onboard the aircraft and were substituted in the crew position to complete individual training requirements. Use of crew substitution on this mission increased the training received.

However crew substitution is not always used. Mission accomplishment reports showed that, during a recent training period, two aircrews flew eight training sorties and five training sorties, respectively, with a vacant second copilot seat. This indicates the need to further stress this option and thereby improve flying-hour management.

Military Airlift Command

MAC receives flying-hour programs from USAF Headquarters for training purposes to maintain the strategic airlift forces in a readiness state. USAF Headquarters has reduced the flying-hour programs for the C-141 and C-5 aircraft since October 1, 1973. Generally the program reductions resulted from fuel conservation measures or limited funding.

MAC used minimum peacetime use rates in developing the recommended flying-hour programs for fiscal years 1974 and 1975. These rates are the minimums intended to keep worldwide MAC forces exercised at a sufficient readiness level to attain and maintain directed wartime use rates. The initial fiscal year 1974 peacetime use rates were established by an Air Force study. The purpose of this study was to determine the minimum peacetime use rates for fiscal

years 1974-78. The rates are based on the flying hours needed for training.

The MAC flying-hour program consists of required transport hours plus required training. MAC's management of its flying-hour program was adequate. However, the need for east-west courier flights when other means are available and the need for flying aeromedical training flights to Hawaii does not appear justified in the light of budgeting and fuel constraints. In addition, we found that greater use of simulators by MAC will result in considerable savings.

East-west courier missions

The 21st and 22d Air Forces each operate two C-141 flights a week between the east and the west coasts. The purpose of these flights is to move courier material (official correspondence and documents), supply parts, and high-priority cargo between the 21st Air Force on the east coast and the 22d Air Force on the west coast. Personnel traveling on official orders, and crewmembers, may also be transported on these missions.

C-141 aircraft which fly east-west courier missions are configured to transport eight pallet positions of passengers, one of baggage, and one of cargo. Between February 1, 1974, and December 31, 1974, these flights used 1,169 flying hours at a flying-hour cost of over $1.2 million.

Our analysis of the cargo and passenger records for these flights showed poor use. A 22d Air Force Traffic Information document for September 1974 showed that only 41 percent of available pallet space was used on east-west missions originating at Travis Air Force Base. Furthermore this document shows that 44 percent of the passengers carried on east-west flights originating at Travis were carried on a space-available (not on official orders) basis. We were told that courier material was carried on two flights a month, but this could be satisfied by Logistic Air contract flights.

MAC headquarters provided us with Courier movement reports for McChord, Hill, Travis, Norton, McGuire, and Scott Air Force Bases for the second quarter of fiscal year 1975. These reports show an average passenger use rate of only 31 percent and an average cargo weight of 61.8 pounds of spare parts.

The low use of these flights, coupled with the fact that Logistic Air routes flown by commercial airlines offer daily flights to the same destinations, does not support effective use of flying hours.

Reserve Aeromedical training flights appear unnecessary

We identified certain Air Force Reserve Aeromedical training flights to Hawaii and travel expenditures which, we believe, were not necessary. About 30 C-141 flight hours costing about $38,000 and $3,000 in per diem and transportation expenses were used on these three flights each month.

Personnel from three Air Force Reserve Aeromedical Evacuation squadrons (65th, 68th and 40th) under MAC's 22d Air Force are being flown each month by reserve pilots from Travis, McChord, and Norton Air Force Bases to Hickam Air Force Base, Hawaii. The primary reason for the flight is to provide in-flight training consisting of aiding and caring for sick, injured, or disabled persons (simulated by the reserve personnel); learning the use of aircraft cargo compartment interphone; and practicing the use of aircraft auxiliary oxygen packs.

We recognize that some in-flight training may be necessary. However, the number of flights and the time and distance to destinations are questionable. The Commanding Officer of the Air Force Reserves at Travis Air Force Base, the 22d Air Force Training Office, and the Reserve Aeromedical Squadron Commander at Travis Air Force Base said that the Aeromedical Evacuation training could be performed on the ground rather than in the air. According to MAC officials, in-flight training is necessary but the trip to Hawaii is not needed. Air Force Regulation 35-41 requires Aeromedical reserve personnel to fly a specified number of hours in order to get paid.

We were told these flights contributed to high morale in the squadrons and thereby assisted in retaining personnel in the Air Force Reserve. Also we were told that, if these flights were canceled, there would be fewer flight hours available to Reserve pilots for maintaining currency in the aircraft.

Retaining personnel morale is important; however, pilot-manning data for the 22d Air Force Reserves shows seven pilots in excess of authorized manning are maintaining currency in the C-141 aircraft. In addition, the Commanding Officer of the Air Force Reserves at Travis Air force Base told us that no additional flights would be initiated for the pilots if these flights were no longer required for aeromedical training.

The need for in-flight training, as now structured, for Aeromedical Evacuation crews is questionable. This

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is particularly true in view of the current emphasis being placed on defense spending and energy conservation. The potential savings of $455,000 in flying costs and $36,000 in per diem over 1 year includes only those Reserve Aeromedical Evacuation squadrons under the 22d Air Force. These figures do not include full costs, do not show added maintenance costs, etc., nor do they represent all such flights--only selected units. As is apparent, this is a costly operation, and moneys spent on these flights could be better used elsewhere to provide the readiness required of Air Force units.

Greater simulator use can result in savings

Rising costs, coupled with potential fuel shortage, have enhanced the importance of using simulators. Our review at the 60th Military Airlift Wing showed that it was not fully using its C-141 flight simulator. As a result, the C-141 pilots flew an excess of 493 hours a year at a cost of about $624,000.

MAC regulations specify that certain precision and all nonprecision approaches be accomplished using a C-141 flight simulator. The 60th Military Airlift Wing's C-141 squadron, however, had not regularly scheduled pilots into the available simulator to complete these requirements.

One of the squadron commanders said that no effort was made to schedule pilots into the available simulator time instead of local sorties because there was no requirement to complete currency requirements in the simulator and all available time was on Saturdays and Sundays. He agreed, however, that pilots could be scheduled into the simulator on weekends without infringing on their total time off.

The 22d Air Force Director of Training agreed that the simulator was underused and told us by letter dated March 4, 1975, that corrective action had been taken. As a result, the annual savings will amount to about $624,000.

CONCLUSIONS

The Air Force has established minimum flying-hour requirements considered necessary to obtain and sustain mission readiness for each type of aircraft. The recent changes by TAC in the training concept have and should in the future have a favorable impact on the development and management of the flying-hour programs. The SAC and MAC management systems have not, in all cases, optimized the use of available flying hours.

SAC, for example, has, in some cases, allowed crews to fly over the standard number of hours, whereas others were falling short of the standard number of hours. This seems to indicate a lack of controls in the SAC management system which should insure more effective training by balancing flying hours between crews and making greater use of crew substitutions.

The MAC management system does not seem to preclude flights which have little use or are questionable in relation to their cost. There should be continuous reviews built into the system which would evaluate the need for flight as measured against the value derived. In addition, MAC has simulators which have been allowed to be underused.

RECOMMENDATIONS

We recommend that the Secretary of the Air Force adopt the new training concepts implemented by TAC for use by SAC and MAC. This should help to insure that the limited resources are used to the optimum and thereby provide the necessary training to crews to meet the readiness requirements.

We recommend also that the Secretary of the Air Force closely monitor any changes in SAC and MAC management systems to insure that:

1. SAC strengthens its controls over hours flown to:

   a. Eliminate unnecessary flights, such as preparing for bombing competition.

   b. Make better use of multiple training opportunities by using more multiple training flights and better use of the vacant seat for copilot training.

2. MAC reevaluates its criteria for flying, to:

   a. Eliminate unnecessary courier flights.

   b. Eliminate unneeded aeromedical flights to Hawaii.

   c. Make optimum use of flight-simulator capabilities as the 60th Military Airlift Wing has done.

DOD COMMENTS AND OUR EVALUATION

DOD said that, to refine the flying program, beginning with fiscal year 1975, SAC developed the Aircrew Training

Plan which condensed extensive field directives into standardized events and sorties which were correlated to flying hours. This Plan completely supports the SAC flying program and is used at all levels in developing the annual budget requests. We agree that his Plan will enhance SAC's flying-hour management. However, this is directed more at developing the flying-hour program and there still will be a need to insure that within hours allocated all crewmembers meet the minimum training requirements and to scrutinize any wide variances to determine why they exist.

DOD said that neither it nor the Air Force condoned the flying of any unnecessary flights and that excessive flying of a selected aircrew for bombing competition was not authorized at the expense of other aircrew training accomplishments. Although this reply makes it clear that this type of flying is not authorized, our review showed that this flying was taking place and therefore this fact emphasizes the need for control procedures to insure that unauthorized flying does not occur.

DOD said that MAC had already incorporated the event- and/or sortie-oriented training concept referred to by us. All MAC flying-hour requirements are computed on the basis of the minimum number of events required by crewmembers to maintain readiness. As a result, crew-training requirements have changed from a mission-oriented program requiring 180 hours per crew in fiscal year 1974 to an event-centered program which requires 143 hours per year per crew in fiscal year 1976. As mentioned previously, SAC has developed this type of a training concept. MAC's and SAC's adoption of the above type of training took place subsequent to our field work, and, although it should provide a good management basis, we have not evaluated the new concept.

DOD made the following statements about our recommendations concerning MAC.

--MAC was continuously trying to achieve improved effectiveness from its operations. A reevaluation of the need for dedicated support missions would be made on the basis of a forthcoming channel realinement.

--The Secretary of the Air Force would insure that MAC reevaluated the requirement for the aeromedical flights to Hawaii and made mission adjustments as necessary.

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--Subsequent to this review MAC's flight management policies were revised to allow crediting toward proficiency certain requirements completed in the simulator.

These actions, if properly implemented, should help in eliminating unnecessary flying. We plan to follow up on these actions in the future to evaluate their effectiveness.

CHAPTER 4

NAVY FLYING-HOUR PROGRAM

The Navy flew over 2 million hours in fiscal year 1975 at a cost of over $547 million. We reviewed the management of tactical and antisubmarine warfare flying, concentrating on use of the F-4 and P-3 aircraft. The hours flown, along with the cost per flying hour for these aircraft, follow.

	Fiscal year 1975	
Aircraft	Hours flown	Cost for each hour (note a)
F-4	55,997	$700
P-3	132,262	355

a/Includes fuel and organizational and intermediate level maintenance materials.

The Navy's flying-hour programs for tactical and antisubmarine warfare aircraft are developed by the Chief of Naval Operations. The approved programs are then given to the major commanders (Atlantic and Pacific Fleets) who are responsible for managing them.

Standards have been set for each type of aircraft. These standards dictate the average monthly flight hours per crew required to achieve and maintain standard combat readiness. In recent years the flying-hour programs have been less than standard. This has placed added emphasis on the need to obtain maximum benefit from the flying hours that have been available.

Flying-hour standards related to readiness provide the Navy with a basis against which to manage and evaluate its aircrews. However, the Navy's flying-hour management has not maximized the benefits from each hour flown and the Navy's readiness reporting system has not reflected accurate readiness conditions.

DEVELOPMENT AND MANAGEMENT OF NAVY FLYING-HOUR PROGRAM

Standard flying hours are designed to help each crew to achieve and maintain standard combat readiness. This is a degree of readiness which reflects crewmember qualification in all primary mission areas assigned to the unit. The flying-hour programs have been based on primary mission readiness hours. These hours define what crews need on a

monthly basis to achieve and maintain an acceptable proficiency to perform the basic aircraft design mission with no major deficiencies or loss of any primary mission area capability. The primary mission readiness hours per crew for the F-4 and P-3 aircraft follow.

Aircraft	Primary mission readiness hours
F-4	23
P-3	47

The primary mission readiness hours are what is needed to maintain a minimum readiness posture over the long term. The Chief of Navy Operations and the Secretary of Defense have agreed that 88 percent primary mission readiness hours is an acceptable level.

Even though hourly standards have been established to insure a minimum readiness posture, we found that units flew less than this minimum and did not report reduced readiness; at the same time there were units flying excess hours. For example, an analysis of the reported readiness of nine Commander, Naval Air Force, Atlantic Fleet Commander, Atlantic Fleet squadrons during fiscal year 1974 showed that:

--Seven of the nine squadrons flew less than the primary mission hours.

--Only two of the nine reported a not ready condition which could be related to the lack of sufficient flying hours.

--Of the 2 squadrons that flew the primary mission readiness hours, 28 of 44 pilots exceeded the minimum hours.

Navy officials said this occurred because the readiness measurement system was subjective and imprecise. Although established-hour standards are an objective, they are not used in reporting readiness conditions. The readiness status is determined by squadron commanding officers. Navy officials told us that this system was being studied to make the reported readiness conditions more objective.

Regarding the use of prescribed minimum flying hours to measure readiness, the Navy said that this was a misinterpretation of the relationship that existed between flying hours and readiness. The readiness of the

aircrews of a Navy F-4 squadron is appropriately measured not by the average flight hours flown but by a commander's analysis of the current capability of each individual crew. The amount of flying done recently is only one of a number of factors which contributes to crew readiness. Past experience and individual motor skills vary widely between crewmembers. Consequently, the flight hours required by individual crews over any certain period of time to achieve or maintain a specific level of readiness (measured by bomb scores, etc.) will also be widely varied. Flight hours are an input to the achievement of readiness but should not be considered as a yardstick for judging the state of readiness. Navy commanders are tasked with making objective observations on a squadron's level of readiness based on the training (flight and ground) completed and the exhibited expertise of the crews and are expected to assign an accurate readiness rating.

We believe that there is a relationship between flying and readiness and that this fact needs to be recognized. If there were a determination of some range of flying that the average pilot needs to obtain (then maintain) readiness, a manager would be in a position to more accurately judge how much flying is needed to be primary mission ready. Although there is more to readiness than flying, we believe that the amount of flying hours has validity as a quantifiable measure of readiness.

The Navy has already determined that primary mission readiness hours is the level of flying that a crew needs, on a monthly basis, to be mission ready. These hours should be adequate criteria for judging when there has been reduced flying that could have an impact on a unit's readiness. The use of primary mission readiness hours as an additional indicator of readiness would seem to be consistent with DOD's plan to review the procedures for measuring readiness of combat units, with a goal of expanding the criteria for determining and reporting degraded readiness.

F-4 squadrons' management of flying hours

The Commander, Atlantic Fleet, receives an annual flying-hour program authorization. These hours are then allocated quarterly to each tactical squadron, and the squadrons have the ultimate responsibility for managing them.

The Commander, Atlantic Fleet, has a readiness training manual prescribing criteria for maintaining a readiness condition. Basically this manual lists the Chief of Naval Operations standard hours and the primary mission readiness hours

into events which should be accomplished for each mission category by type of squadron. However, this manual is used only for nondeployed squadrons. Squadron commanders said the training manual did not apply during deployment because then the Task Force Commander established training requirements and priorities.

P-3 squadrons' management of flying hours

Antisubmarine warfare squadron officials develop quarterly flying-hour programs for their squadrons on the basis of past flying levels, estimates of current training requirements, and estimates of the number of operational hours which will subsequently be ordered by commanders of the 3d and 7th Fleets. The requests serve as a basis for higher headquarters to allocate flying hours budgeted by the Chief of Naval Operations.

Flying-hour requests are not based on minimum readiness hour standards relating to pilot-training requirements; they are based, instead, on very general estimates of the hours which might be required by squadron pilots to meet the various phases of their training program. The squadrons are not required to subsequently reconcile requested flying hours in terms of completed training objectives or any other criteria.

We reviewed the flying of an antisubmarine warfare squadron using the P-3 aircraft at the Moffett Naval Air Station. The P-3 is a four-engine turboprop aircraft comparable to the Electra commercial airliner. Here the flying-hour program illustrates the adverse effect which has resulted because (1) the purposes of specific elements of a flying-hour program are not identified and (2) the purposes are not subsequently evaluated in terms of actual flight accomplishment. In reviewing the flying at the Moffett Naval Air Station, we found that:

--Some operational flights might not be justified.

--Crew-training exercises where submarines were participating could be more effective and the manner in which the exercise results were recorded might be overstating the readiness conditions of P-3 squadrons.

--Crew-training flights to the west Pacific were not achieving training objectives.

--Minimum flying-hour requirements established for pilot advancement were unsupported and appeared excessive.

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--Dedicated training flights were being scheduled for pilots who had already met their currency requirements.

--Cross-country flights, and other miscellaneous pilot-training flights, were not being effectively used for training and could be eliminated.

Operational flights

Operational flights account for a large part of the Pacific P-3 flying hours and include such things as surveillance, antisubmarine warfare training, and logistics support flights. Surveillance was the major reason for cited operational flights.

Using P-3 aircraft for some types of surveillance does not seem to be an effective use of a sophisticated aircraft. For example, we received comments from squadron officials questioning the necessity for P-3s to make island surveillance flights. Surveillance flights are made to patrol U.S. Trust Territories to detect distress signals and territorial violations, such as turtle poaching. These flights were discontinued for 5 months during the fuel crisis. In the subsequent 5 months (March through July 1974), however, 115 flight hours costing about $41,000 were incurred for such flights.

A Command, Patrol Wings, Pacific, officials told us that discontinuing the island patrol flights during the energy crisis was criticized by the islanders because they felt these flights were their only contact with the outside world. One squadron training officer, however, questioned the need for P-3 aircraft to perform island patrol flights when a less costly aircraft could achieve the same purpose.

The Navy agrees that this type of surveillance flight is not a proper mission for the P-3 weapon system. These island surveillance flights have been made in compliance with an agreement between the Departments of Defense and the Interior and their necessity will be investigated.

Crew-training flights

Crew-training flights made in participation with U.S. submarines are for training the flight crew in antisubmarine warfare. This is a primary mission of P-3 aircrews and therefore vital in determining their degree of readiness. We found that about one-third of the flights for this purpose are not considered in measuring readiness.

Consequently the crews' readiness condition is not accurately depicted.

An on-station effectiveness score is assigned when contact is made with the submarine. The effectiveness score is then used in determining the readiness condition. However, if a crew cannot make contact with the submarine, the effectiveness score is waived.

Our analysis of 6,279 flying hours spent in training with U.S. submarines from December 1973 through November 1974 showed that the effectiveness score was waived 36 percent of the time for the following reasons.

Reason	Hours	Percent waived	Percent of total crew training hours
Uncontrollable	728	33	12
Prewaived	686	30	11
No contact	531	23	8
Aircraft equipment malfunction	222	10	3
Submarine equipment malfunction	110	4	2
	2,277	100	36

The uncontrollable category is used when the crew encounters adverse weather conditions, time limitations, the existence of other aircraft or ships in the area, or other limiting factors beyond their control. The effectiveness score is considered as prewaived for demonstration flights and for flights which are made to train individual or nonregular crewmembers. The remaining categories are self explanatory.

We were told that about 80 percent of the crew training with submarines involved locating the submarine. If contact was not made after about 3 hours, the crew returned home, and no effectiveness score was awarded. Finding the submarine is a necessary function in antisubmarine warfare. Therefore the readiness scores should measure failure, along with successes, in locating the submarines.

As shown above, for various reasons, the effectiveness score was waived 36 percent of the time. The waiving of these scores precludes measuring a true readiness condition as an essential element is totaly ignored.

DOD said that the Navy had implemented a more stringent effectiveness scoring criteria which would decrease the percent of waived flights and provide a more accurate measure of crew performance. DOD said also that the Commander, Patrol Wings, Pacific Commander, Pacific Patrol Wings, used other criteria for measuring readiness, including individual and crew qualifications, effectiveness grades on operational missions, and performance in fleet exercises.

We believe the effectiveness score indicates the ability of the P-3 crew to do its mission and therefore should be recognized as a means of measuring the crews' readiness condition.

West Pacific flights

West Pacific training flights are made about twice a month, averaging 35 to 45 hours each, and cost about $340,800 annually. These flights are not achieving their objectives, and therefore the cost is not commensurate with the benefits derived. These flights are made to:

1. Train P-3 flight crews in the safe and efficient execution of long-range, over-water navigation missions.

2. Familiarize flight crews with the peculiarities of air traffic control procedures, instrument approaches, and takeoff and/or landings at west Pacific P-3 deployment sites.

3. Expedite the delivery of high-priority material to deployed squadrons and the return of parts to the continental United States.

The flights normally depart Moffett Field and make stops at Hawaii, Guam, Thailand, Oakinawa, Japan, Alaska, and the Philippines. During the fuel crisis, these flights were reduced in frequency to once a month.

Concerning the first training objective listed above, most P-3 flights are operational and crew training flights (and this represents 63 percent of total flying hours); they are not special training flights, and they are made over over water. They should therefore require the use of long-range navigational aids. Consequently, the west Pacific special flights scheduled to meet this specific objective do not appear to be needed.

To acquaint crews with deployment sites, a recent west Pacific training flight by personnel from two squadrons was made to familiarize the pilots with the P-3 deployment sites. Our analysis of a 42.6-hour west Pacific training flight in December 1974 showed that:

--All three pilots were patrol plane commanders and had been to each stop on the flight during previous deployments.

--One pilot's duty tour was completed within 1 month after the flight, and he left the squadron.

--Another pilot was scheduled to leave the squadron within 2 months after the flight.

Records of another west Pacific training flight showed that all three pilots had previously been to some of the stops on the flight during previous deployments. Therefore the need to provide crew familiarization of deployment sites does not appear to be a valid justification for scheduling such flights.

The Commander, Pacific Patrol Wings, told us the west Pacific flights were no longer being flown for delivering high-priority material to deployed squadrons.

Since west Pacific flights are not achieving training objectives and some of the objectives are normally achieved during other flights, it appears the large number of hours being spent on these flights are not justified. DOD told us that the Navy had reduced the frequency of such flights to about once every 6 weeks. Such flights are now used for squadron predeployment liaison visits and inspection and assistance visits by the Commander, Patrol Wing, Pacific, and his staff.

Pilot advancement requirements

Advancing pilots from third pilot to copilot to plane commanders requires that they complete the required events as specified by the squadron, such as demonstrating navigation capability and the logging of a minimum number of flying hours set by Commander, Pacific Patrol Wings. Inconsistencies in these requirements have resulted in excessive flying.

Training event requirements are not related to the Commander, Pacific Wings, minimum flight-hour requirements. Therefore there are no flight-hour standards or other criteria for use in determining whether flight-event

accomplishments are reasonable in relation to flight hours actually expended. Squadron pilots told us that the minimum flying-hour requirement encourages pilots to log more flight hours than if they were compelled to meet only the event requirements. They cited the following examples:

1. A third pilot who was 90 hours short of the minimum required hours was told to wait until he built up more hours before performing the remaining check flights which he needed to obtain the copilot designation.

2. A pilot who was 50 hours short of the required minimum hours for both copilot and plane commander, after completing the event requirements, accumulated the needed hours by flying the west Pacific trainer and by volunteering for a large number of other flights.

3. If an instructor was not available to test the needed event requirements, pilots would "shoot landings" or would otherwise "kill time" to build up hours to meet the minimum hour requirements.

The Commander, Pacific Patrol Wings, requires that a pilot log a minimum of 550 hours to reach the copilot designation and a minimum of 800 hours to become a plane commander. A Chief Naval Operations instruction requires 500 and 700 hours for the same designations.

Command, Patrol Wing, Pacific, officials could not provide any data to justify the additional 100 hours required for PPCs nor the additional 50 hours required for copilot. We were told that neither Commander, Pacific Patrol Wings, nor the squadrons had made any studies to determine the minimum hours actually needed to train pilots. The only support we could establish for the increased minimums consisted of such general comments as:

1. A pilot was not ready to command an aircraft without at least 800 hours.

2. A pilot could accomplish the event requirements with less than the minimum flight hours but would not have that something extra which is gained through hours.

3. Pilots needed to obtain the most training possible to insure safe and effective operations.

On the basis of the number of third pilots and copilots in the Command, Patrol Wing, Pacific, during November 1974, (assuming no rotation of pilot personnel), the additional 100 hours which the Commander Pacific Patrol Wings, requires for plane commanders will cause pilots to fly an additional 22,600 hours annually at a cost of about $6,893,000. These plane commanders minimum flying-hour requirements for copilot and plane commanders are unsupported. This coupled with the absence of management criteria for measuring event accomplishments against hours flown has resulted in a substantial number of unnecessary P-3 flying hours.

The personnel qualification standards training events which are required for plane commander designation are skill requirements. DOD said that the standards were designed to insure that individuals possess a level of competency commensurate with those responsibilities to safely carry out the full spectrum of P-3 operational missions. DOD said also that there was no way to measure with precision the number of total hours a pilot needed to advance. According to DOD, the Navy believes that ultimate designation is properly a function of a unit commanding officer.

The Chief of Naval Operations flying-hour minimum requirements for plane commander designation are general guidelines developed on the basis of historical experience and judgment for all multipiloted, multiengine aircraft, including transports. Such Chief of Naval Operation guidelines are experience criteria and are not intended to relate directly to personnel qualification standards requirements. DOD said that the Commander, Patrol Wing, Pacific, was justified in applying more stringent requirements for plane commander designation and that the superb safety record of P-3 squadrons over the past reinforced the belief that qualification standards which were employed were valid.

We realize that the Chief of Naval Operations' flying-hour minimum requirements are general guidelines and agree that there is no way to measure with precision the number of total hours a pilot needs. However, the Chief of Naval Operations has set the minimums on the basis of experience and judgment. As stated earlier, we found no basis for the Commander Pacific Patrol Wings, increasing these minimums. Reasons given for the higher standard could apply equally to the lower Chief of Naval Operations standard or a higher standard. Because the Chief of Naval Operations has set the minimums, we see no reason for increasing them unless they can be demonstrated as needed.

Dedicated training flights

All pilots are required to meet certain minimum flying-hours and event requirements to maintain currency in the P-3 aircraft. These requirements can be accomplished during normal operational flights and training flights.

The following schedule shows the currency events required and performed by all plane commanders of two squadrons for 6 months.

Currency event	Minimum requirement for 6 months	Percentage by which actual flying exceeded minimum requirements	
		Squadron VP-48	Squadron VP-46
Pilot hours	45 hours	284	192
Instrument hours	10 hours	254	206
Night hours	6 hours	276	348
Landings	10 events	467	198
Approaches	12 events	118	51

As can be seen, hours flown and events completed by plane commanders greatly exceeded the minimum currency requirements.

Plane Commanders have completed all of their event requirements before they attain their rank. Further, since they perform most of the operational flying duties, it would not seem necessary for them to, in addition, fly dedicated training flights to meet currency requirements. In view of this and the significant degree to which currency requirements were being exceeded, we evaluated one squadron's recorded PPC landings for 1 month to see if this one currency requirement was being accomplished using dedicated training flights.

As shown below, plane commanders were being scheduled to perform dedicated training-flight landings in only 1 month, even though they were able to meet all or most of the 6-month minimum currency requirement on other nonscheduled flights.

PPC pilot	Minimum landing requirement for 6 months	October 1974--VP-48	
		Total for month	Scheduled as dedicated training
A	10	26	6
B	10	21	12
C	10	11	4
D	10	12	6
E	10	15	5
F	10	11	3
G	10	14	1

Requirements are set to insure that pilots receive proper training and to help prevent unnecessary flying. The above schedule shows that not only are minimum landing requirements being exceeded but also dedicated flights are being flown which increases the excessive landings. This practice clearly results in unnecessary flying.

The Navy believes reducing dedicated flying would be contrary to safe aviation practices. It said that the minimums are the absolute base requirements for currency to operate the aircraft under optimum conditions and provide for minimal mission readiness. These minimums are specified as a safety guideline for pilots undergoing extended periods of grounding for medical reasons, extensive schooling, etc. Failing to meet such minimums necessitates retraining in a readiness squadron. The Navy contends that dedicated training flights are required periodically to provide concentrated practice in fundamental flying skills, such as normal and/or engineout landings, emergency procedures, and instrument approaches.

We recognize the need for minimum flying requirements as a safety factor, particularly for pilots who may be temporarily restricted in the amount of flying they can perform. However, it appears unreasonable that the dedicated training events should be provided equally for pilots with reduced flying and pilots who are routinely flying at higher levels. It would seem that pilots on reduced flying would have a greater need for dedicated flying. We agree that all pilots can benefit from concentrated practice in fundamental flying skills, but there should be some recognition of the current level of flying to avoid an inordinate redundancy in flying that routinely accomplishes events similar to those included in dedicated flying.

Cross-country flights

Although the P-3 aircraft is an antisubmarine warfare system, we found that a large number of hours were flown each year on cross-country flights. The stated purpose of these flights is to familiarize pilots with different airport environments and to provide them with instrument training. The pilot is allowed to determine the flight's destination, and the passengers select the intermediary stops. All are within the continental United States.

According to squadron comments, many cross-country flights are unnecessary and the same amount of training can be accomplished on much shorter flights. However, cross-country flights provide a place to go and are considered a morale booster for the pilots.

Of the 26 cross-country flights made by Squadron 46 between April and December 1974, we reviewed 9 which appeared particularly questionable.

The purpose of these flights, which averaged about 15 hours each, was one or two instrumentation familiarization flights requirng various types of approaches. These types of flights should take about 2.5 hours each. Our review of the flight accomplishments disclosed cases where the purpose of the flight was either not completed or only partially completed. In other cases we found the purposes of the flights were completed at Moffett field even though the cross country flight was still made.

These flights used 135.3 P-3 flying hours valued at $41,267. The squadron training officer did not know what was accomplished for some of the flights, but he felt others were justified since some accomplishments were recorded. A squadron flight officer also confirmed that some of the reports of accomplishments had been filled out the night before they were released to us for review even though our review was made in January 1975.

Cross-country flights could be reduced or eliminated because (1) instrument training can be performed at local airports, (2) the P-3 mission is over water, yet all cross-country flying is over land, and (3) it appears that little actual training is accomplished for the hours invested.

DOD told us that the Navy concurred in the necessity to exercise close management of cross-country flights and intended to evaluate such flights with a view toward insuring optimum use of flight hours in this phase of training. Although optimizing of flight hours is a necessary goal, we believe the Navy might accomplish this by eliminating the flights. The type of training involved in these flights is important; however, the cross-country mode would not appear to be as cost effective as other multimission flights.

CONCLUSIONS

The Navy has established flying-hour standards designed to help aircrews achieve and maintain desired combat readiness levels. Recently it has not had available sufficient hours to obtain a full combat readiness state; rather, it has had to accept a lesser state of readiness. Therefore the need for effective management of flying hours has become increasingly important.

To effectively manage the flying-hour programs, it is necessary to know if the standards are being met and if the units are maintaining a desired level of readiness. The Navy's readiness reporting system does not use flying-hour standards in reporting readiness levels and therefore is inaccurate. As discussed earlier, the Navy does not believe flying hours should be used to measure readiness, but, for the reasons we cited, we believe their use is essential. Reported readiness levels were also misrepresented because of the way deployed F-4 aircraft were used and because readiness for the P-3 was measured only when a submarine was located. Those flights which do not locate the submarine are not included in measuring readiness.

The management system for P-3 flying hours has not been effective as evidenced by nonessential flights, such a cross-country and west Pacific flights, and also hours are being flown which do not meet needs such as dedicating hours when requirements have been met or exceed needs, such as pilot advancement requirements.

RECOMMENDATIONS

We recommend that the Secretary of the Navy take action to improve the accuracy of reports on aircrew readiness, to eliminate unnecessary flying, and to increase the benefits derived from hours flown. Specifically, we recommend that he:

1. Eliminate unproductive operational flights by P-3 aircraft.

2. Reevaluate the need for west Pacific flights.

3. Reinforce minimum flying-hour requirements for pilot advancement to insure that they are not exceeded.

4. Eliminate dedicated training flights by pilots who have already met their currency requirements.

5. Eliminate the ineffective cross-country flights.

DOD COMMENTS AND OUR EVALUATION

DOD said the Navy had reduced the number of west Pacific flights, was studying the need for island surveillance, and

was trying to insure optimum use of cross-country flights. We believe the Navy should reevaluate the need for cross-country flying. DOD does not favor reducing flying-hour requirements for pilot avancement or eliminating dedicated flights. As discussed on pages 29 and 31, we believe these potentials still exist.

CHAPTER 5

ARMY FLYING-HOUR PROGRAM

The Army flew over 1.1 million hours in fiscal year 1975 at a cost of over 122 million. Of this total, over 0.9 million hours were flown in rotary wing aircraft. The following schedule shows the total hours flown and the cost for each hour for rotary wing aircraft.

Aircraft type	Hours flown	Cost for each hour (note a)
AH-1 Cobra	74,766	$140.00
CH-47 Chinook	43,258	493.00
CH-54 Tarhe	6,504	797.00
CH-6 Cayuse	3,500	63.00
OH-58 Kiowa	233,807	65.00
UH-1 Iroquois	536,904	125.00
TH-55 Osage	98,805	66.00

a/Includes costs of fuel and maintenance parts.

Criteria have not been developed which dictate how many flying hours are needed to obtain and sustain a combat-ready posture. Flying hours are developed and programed primarily on previous years' actuals and cannot be related to combat readiness. The Army needs criteria which will identify mission areas, along with what is needed in terms of training to be combat ready in these mission areas. The Navy and the Air Force have developed criteria of this type as discussed earlier in this report. As a result of not having criteria, the Army's flying-hour program is not developed and controlled in a manner which insures an acceptable level of combat readiness and precludes unnecessary flying.

FLYING-HOUR PROGRAM DEVELOPMENT

The Army flying-hour program is developed and controlled at the major command level (e.g., Forces Command) with guidance from Headquarters, Department of the Army. Total flying-hour estimates are given to the major commands each year as preliminary guidance for planning purposes. These totals are determined by multiplying a command's anticipated aircraft inventory by flying-hour factors. These factors (hours per aircraft per month) are developed for each command primarily on the basis of past performance, as adjusted for anticipated changes in requirements. For example, the Fort

Hood fiscal year 1975 flying-hour program was originally formulated by adding 20,000 hours for an anticipated requirement to support special test programs to the previous years' actual of about 75,000 hours. These hours were subsequently reduced by 20 percent to show changes due to an anticipated fuel shortage, a reduction in the total number of aircraft, and underflying of programed hours.

Combat readiness data on units is not used in programing flying hours. However, at times additional hours are provided to a unit which has failed a readiness test. Flying hours cannot be programed on the basis of a needed number of hours for aviators to maintain mission readiness because no criteria have been established which correlates flying hours to mission readiness.

The only flying-hour criterion established by the Army is stated annual minimums (80 hours a year) for maintenance of basic pilot skills. This criterion does not apply to readiness needs. Instead, unit commanders are responsible for establishing a training program appropriate for their units' missions and aircraft to insure combat readiness. Unit commanders and aviation officials we interviewed agreed that flying-hour criteria in terms of hours per crew per month, with event identified, could be established for each type of combat mission and would be beneficial in programing and controlling flying.

CONTROLS OVER EXECUTION OF FLYING-HOUR PROGRAM

The primary purpose of training is to maintain a combat-ready status. An aviator is considered to be combat ready if he is qualified in his assigned aircraft and has passed the required check rides. Although the number of hours flown would affect an aviator's ability, they are not considered in determining his combat-ready status. The lack of criteria has resulted in inadequate controls over the flying-hour programs.

Control over flying hours generally is limited to the judgment of unit commanding officers. They are responsible for establishing a training program appropriate for their units' missions and aircraft. With the control over flying hours limited to a commanding officer's judgment, opinions as to the number of flying hours needed to be combat ready varied. For example, two commanders of units with similar missions at Fort Hood estimated 120 and 300 flying hours, respectively, as the annual flying hours needed by a pilot to maintain combat flight proficiency. Aviators from these units flew an average of 117 and 212 hours in fiscal year 1975.

The lack of control also resulted in a disparity in the flight hours by aviators which did not vary directly with the combat mission difficulty. For example, in the troops surveyed aviators were flying at the following rates in fiscal year 1975.

Aircraft	Annual hours for each aviator
AH-1	142
OH-58	189
UH-1	186

Even though we were told that the AH-1 and OH-58 combat missions are the most difficult to be proficient at, UH-1 aviators were logging more flying hours than AH-1 pilots and only slightly less than OH-58 pilots.

We also found that flying by individual aviators with the same or similar missions varied significantly within three troops at Fort Hood as illustrated by the following table.

Unit	Aircraft and hours flown annually					
	AH-1		OH-58		UH-1	
	Low	High	Low	High	Low	High
Troop A	24	108	31	175	(a)	(a)
Troop B	71	251	94	142	68	180
Troop D	37	130	90	148	46	128

a/Not applicable.

CONCLUSIONS

The Army has not formulated standardized criteria to determine how much and what type of flying an aviator needs to be combat ready. Each commander is permitted to determine the flying requirements of his own unit. Consequently there is considerable variation in flying hours and the absence of any effective correlation to training and readiness. Both the Air Force and the Navy have developed standards which depict what events and how many hours are needed for an aviator to be combat ready. The Army began a study in September 1975 concerning these problems.

RECOMMENDATIONS

We recommend that the Secretary of the Army issue instructions calling for the development of flying-hour

criteria. We recommend also that this criteria emphasize the adequate management of the system to insure the best use of the hours flown with intent to insure readiness of the aircrews at a reasonable price.

DOD COMMENTS AND OUR EVALUATION

DOD told us that both the Office of the Secretary of Defense and the Department of the Army recognized a lack of standardized criteria with which to develop the Army's flying-hour program. Two ongoing actions have already been initiated toward developing a more standardized flying-hour program. One is a revision of Army Regulation 310-34 (Equipment Authorization Policies and Criteria and Common Tables of Allowances) to standardize utilization criteria for administrative support aircraft. The other is the "Army Aviation Training Study" begun in September 1975, and completed in May 1976. These two actions have been designed to provide the basis for standardizing future Army flying-hour programs. We believe that these actions being taken by the Army will aid in giving it a basis for improved management of the flying-hour programs. We intend to follow up on this action at a future date.

APPENDIX I

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

PROGRAM ANALYSIS
AND EVALUATION

28 APR 1976

Mr. F. J. Shafer
Director
Logistics and Communications Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Shafer:

This is in response to your letter of December 15, 1975 to the Secretary of Defense which forwarded for DoD review and comment your draft report entitled, "Military Services' Flying Programs," (OSD Case #4245). We appreciate the opportunity to comment on the report prior to its being issued in final form.

In general, except as noted in our attached detailed comments, we agree with the data and conclusions of your report. We agree that the Services' flying hour programs can be better managed by relating wherever possible flying hours to force readiness objectives through clearly identified training requirements. With due consideration for the differences in service missions, this is the degree of standardization we believe DoD should attempt to achieve. Our specific comments are attached.

In answer to your specific requests, we do not see any reason to classify Chapter 4. We also have no objection to your office transmitting your final report to appropriate agencies and individuals.

Sincerely,

E. C. Aldridge, Jr.
Acting Assistant Secretary of Defense

3 Enclosures
1. Air Force
2. Navy
3. Army

APPENDIX I

AIR FORCE

Page iv, Para 1. The GAO recommends that the Secretary of the Air Force direct the Strategic Air Command to implement improved control procedures to assure more effective training by balancing flying hours allocated and used by crew members. DoD Comments: To refine the flying program, beginning with FY 75, SAC developed an Air Staff approved Aircrew Training Plan which condenses extensive field directives into standardized events and sorties which are correlated to flying hours. This document completely supports the SAC flying program. The plan is used by SAC, Hq USAF, OSD and OMB to develop the annual budget request. Variances exist between crews of like ability in different units only because hours are allocated based on unit location relative to low level training route structures, aerial refueling areas and FAA traffic control procedures. Each unit commander has flexibility to train out weaknesses observed as a result of aircrew evaluations and training deficiencies.

(See GAO note 2, p. 47.)

Page 12, line 4. The GAO comments that recent changes to the Air Force F-4 training requirements, i.e., training for only one primary mission and one or more secondary missions, has resulted in effective training being accomplished in a reduced flying hour program. DoD Comment: While specializing in a specific mission area does provide more effective training for that mission, it should be made very clear that aircrew performance in the other missions of which the F-4 is capable will be degraded. During these times of fiscal constraint, DoD has chosen to trade off some of the flexibility of the Air Force F-4 force against flight hours.

(See GAO note 2, p. 47.)

(See GAO note 2, p. 47.)

Page 24, Para 4. The GAO report recommends that MAC and SAC model their readiness requirements around the "new" training concepts implemented by TAC. DoD Comment: MAC has already incorporated the event/sortie oriented training concept referred to by the GAO. All MAC flying hour requirements are computed based on the minimum number of events required by crew members to maintain readiness. As a result, crew training requirements have changed from a mission oriented program requiring 180 hours per year per crew in FY74 to an event-centered program which requires 143 hours per year per crew in FY76. As mentioned previously, SAC has developed this type of a training concept.

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Page 25. The GAO recommends that the Secretary of the Air Force closely monitor any changes in SAC's management systems to assure that SAC strengthens their controls over hours flown to eliminate unnecessary flights such as preparing for bombing competition. DoD Comments: Neither DoD nor the Air Force condones the flying of any unnecessary flights. The excessive flying of a selected aircrew for bombing competition is not authorized at the expense of other crew training accomplishments. The SAC Aircrew Training Plan does not include provision for additional training for crews engaged in bombing competitions.

Page 25. The GAO recommends that MAC eliminate unnecessary courier flights between the East and West coasts. DoD Comment: MAC is continuously trying to achieve improved effectiveness from its operation. Since January 1975 MAC has revised the schedules, eliminated low utilization locations, and established a single point reservation system in order to better utilize the aircraft. In addition, there is a possibility of a channel realignment which may provide opportune space for coast-to-coast movement. MAC is to reevaluate the need for the dedicated support mission based on this forthcoming channel realignment.

Page 25. GAO recommends elimination of unnecessary aeromedical flights to Hawaii. DoD Comment: The Secretary of the Air Force will assure that MAC reevaluates the requirement for these missions and makes mission readjustments as necessary.

Page 25. The GAO report recommends that MAC make optimum use of flight simulators, by crediting events accomplished in the simulator toward proficiency and by using the simulators seven days a week. DoD Comment: Subsequent to the GAO review, MAC flight management policies were revised to allow crediting toward proficiency certain currency maneuvers and copilot experience requirements completed in the simulator. In addition, the Air Force is procuring visual systems for the C-5 and C-141 simulators and procedural trainers which will allow more currency events to be accomplished and credited toward training requirements. Furthermore, simulator usage is now being maximized at about 16 hours per day, seven days a week.

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NAVY

(See GAO note 2, p. 47.)

Page ii and Page 7, Para 3. The GAO found a need for the Navy F-4 reported readiness status to more accurately reflect compliance of aircrews with prescribed minimum flying hours. DoD Comment: Navy states that this is a misinterpretation of the relationship that exists between flying hours and readiness. The readiness of the aircrews of a Navy F-4 squadron is appropriately measured not by the average flight hours flown, but by a commander's analysis of the current capability of each individual crew. The amount of flying done recently is only one of a number of factors which contribute to the readiness of a crew. Past experience and individual motor skills vary widely between crewmembers. Consequently, the flight hours required by individual crews over any certain period of time to achieve or maintain a specific level of readiness (measured by bomb scores, etc.) will also be widely varied. Flight hours are indeed an input to the achievement of readiness, but should not be considered as a yardstick for judging the state of readiness. Navy commanders are tasked with making objective observations on a squadron's level of readiness based upon the training (flight and ground) completed and the exhibited expertise of the crews, and are expected to assign an accurate readiness rating.

(See GAO note 2, p. 47.)

Page 26, Para 4. The paragraph implies that the FORSTAT readiness reporting system can adequately reflect Navy flying program management. DoD Comment: The FORSTAT reporting system does not now use flying hour standards in reporting readiness levels and is not capable of providing fully objective criteria for degrading reported readiness levels consistent with reduced flight activity. The FORSTAT system is currently being reviewed with a goal of expanding the criteria for determining and reporting degraded readiness.

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(See GAO note 2, p. 47.)

Page 31, Para 2. The GAO report states that surveillance flights to patrol the U.S. Trust Territories do not seem to be an effective use of the P-3. DoD Comment: The Navy agrees that this type of surveillance flight (more appropriately termed "island surveillance") is not a proper mission for the P-3 weapon system. These flights have been conducted in compliance with an agreement between the Departments of Defense and Interior and their necessity will be investigated.

Page 33, Para 2. The GAO report states that waiving of the OSE scores precludes measuring true readiness. DoD Comment: The Navy has implemented a more stringent OSE scoring criteria which will decrease the percent of waived flights and provide a more accurate measure of crew performance. Commander, Patrol Wings, Pacific (CPWP) uses other criteria for measuring readiness, including individual and crew qualifications, OSE grades on operational missions, and performance in fleet exercises.

Page 35, Para 1. The GAO report indicates that West Pacific flights do not appear justified because they are not achieving training objectives or the objectives are achievable during other flights. DoD Comment: The Navy has reduced the frequency of such flights to about one every six weeks. Such flights are now used for squadron pre-deployment liaison visits and inspection/assistance visits by CPWP and staff.

Page 37, Para 1. The GAO report concludes that inconsistencies in pilot advancement qualification requirements have resulted in excessive flying. DoD Comment: The Personnel Qualification Standards (PQS) training events which are required for Patrol Plane Commander (PPC) designation are skill requirements. They are designed to ensure that individuals

possess a level of competency commensurate with those responsibilities to safely carry out the full spectrum of P-3 operational missions. There is no way to measure with precision the number of total hours a pilot needs to advance. In the final analysis, the Navy believes that ultimate designation is properly a function of a unit commanding officer. CNO flying hour minimum requirements for Patrol Plane Commander designation are general guidelines developed on the basis of historical experience and judgement for all multi-piloted, multi-engine aircraft, including transports. Such CNO guidelines are experience criteria and are not intended to relate directly to PQS requirements. CPWP is justified in applying more stringent requirements for PPC designation. The superb safety record of P-3 squadrons over the past reinforce the belief that qualification standards which are employed are valid.

Page 39, Para 1. The GAO report indicates that dedicated training flights appear to be unnecessary because currency requirements are exceeded by patrol plane commanders. They conclude that exceeding minimum currency requirements generates excessive flying and recommend elimination of dedicated training flights for pilots who have already met their currency requirements. DoD Comment: The Navy believes that implementation of such a recommendation would be contrary to safe aviation practices. The minima referred to by GAO are the absolute base requirements for currency to operate the aircraft under optimum conditions and provide for minimal mission readiness. These minima are specified as a safety guideline for pilots who may undergo extended periods of grounding for medical reasons, extensive schooling, etc. Failure to meet such minima necessitates retraining in a readiness squadron. Dedicated training flights are required periodically to provide a period in which concentrated practice is exercised in fundamental flying skills such as normal/engine-out landings, emergency procedures, and instrument approaches. Currency refers to an absolute minimum (similar to those achieved while assigned to duties involving proficiency flying) and has no relation to the criteria by which flying hour program performance should be measured - Primary Mission Readiness.

Page 41, Para 2. The GAO report concludes that cross country flights could be reduced or eliminated because training could be accomplished in other ways. DoD Comment: The Navy concurs with the necessity to exercise close management cross country flights and intends to evaluate such flights with a view toward insuring optimum utilization of flight hours in this phase of training.

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APPENDIX I

ARMY

Page V and 48. GAO recommends that the Secretary of the Army direct the establishment of specific flying hour criteria in order that flying hours can be related to training and readiness objectives and accomplishments. DoD Comment: Both OSD and the Department of the Army recognize a lack of standardized criteria with which to develop the Army's flying hour program. Two on-going actions have already been initiated toward development of a more standardized flying hour program. One is a revision of Army Regulation 310-34 (Equipment Authorization Policies and Criteria and Common Tables of Allowances) to standardize utilization criteria for administrative support aircraft. The other is a study entitled "Army Aviation Training Study" due to be completed in May 1976. These two actions have been directed not just to "analyze the possibility of" (page 46) but are actually designed to provide the basis for standardizing future Army flying hour programs.

GAO Notes:

1. Page number referencing may not correspond to the pages of this final report.

2. Deleted matter has been revised in or omitted from this report.

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PRINCIPAL OFFICIALS RESPONSIBLE FOR ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
DEPARTMENT OF DEFENSE		
SECRETARY OF DEFENSE:		
Donald H. Rumsfeld	Nov. 1975	Present
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	Apr. 1973	July 1973
Elliot L. Richardson	Jan. 1973	Apr. 1973
DEPARTMENT OF THE ARMY		
SECRETARY OF THE ARMY:		
Martin R. Hoffmann	Aug. 1975	Present
Howard H. Callaway	July 1973	Aug. 1975
Robert F. Froehlke	Jan. 1971	Apr. 1973
DEPARTMENT OF THE NAVY		
SECRETARY OF THE NAVY:		
J. William Middendorf	Apr. 1974	Present
John W. Warner	May 1972	Apr. 1974
CHIEF OF NAVAL OPERATIONS:		
Adm. James L. Holloway	June 1974	Present
Adm. Elmo R. Zumwalt, Jr.	July 1970	June 1974
COMMANDER-IN-CHIEF, ATLANTIC FLEET:		
Adm. Isaac C. Kidd, Jr.	June 1975	Present
COMMANDER-IN-CHIEF, PACIFIC FLEET:		
Adm. Maurice F. Weisner	Sept. 1973	Present
DEPARTMENT OF THE AIR FORCE		
SECRETARY OF THE AIR FORCE:		
Thomas C. Reed	Jan. 1976	Present
James W. Plumner (acting)	Nov. 1975	Jan. 1976
Dr. John L. McLucas	June 1973	Nov. 1975
Dr. Robert C. Seamans, Jr.	Jan. 1969	May 1973

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APPENDIX II

	Tenure of office	
	From	To
DEPARTMENT OF THE AIR FORCE (continued)		
COMMANDER, MILITARY AIRLIFT COMMAND:		
Gen. Paul K. Carlton	Sept. 1972	Present
COMMANDER, STRATEGIC AIR COMMAND:		
Gen. Russell E. Dougherty	Aug. 1974	Present
Gen. John C. Meyer	May 1972	Aug. 1974
COMMANDER, TACTICAL AIR COMMAND:		
Gen. Robert J. Dixon	Oct. 1973	Present
Gen. William W. Momyer	Aug. 1968	Oct. 1973

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