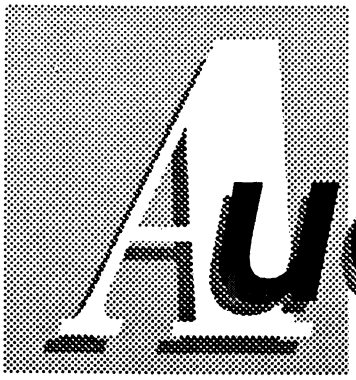

OFFICE OF THE INSPECTOR GENERAL

AEROMEDICAL EVACUATION SYSTEM

Report No. 95-225 June 9, 1995

Department of Defense

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Acronyms

AE	Aeromedical Evacuation
AFB	Air Force Base
AMC	Air Mobility Command
ASMRO	Armed Services Medical Regulating Office
CHAMPUS	Civilian Health and Medical Program of Uniformed Services
CONUS	Continental United States
FAMC	Fitzsimons Army Medical Center
FHP	Flying Hour Program
GME	Graduate Medical Education
MTF	Military Treatment Facility

INSPECTOR GENERAL
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June 9, 1995

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (COMPTROLLER)
ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)
COMMANDER IN CHIEF, U.S. TRANSPORTATION COMMAND
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE (TRANSPORTATION POLICY)

SUBJECT: Audit Report on the Aeromedical Evacuation System (Report No. 95-225)

We are providing this report for your review and comment. The report discusses a joint Inspector General, DoD, and Air Force Audit Agency audit of transportation of U.S. armed forces patients on C-9A aeromedical aircraft in the continental United States. Management comments from the Office of the Under Secretary of Defense (Comptroller) and the Assistant Deputy Under Secretary of Defense (Transportation Policy) were considered in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. The Office of the Under Secretary of Defense (Comptroller) and Office of the Assistant Deputy Under Secretary of Defense (Transportation Policy) comments were responsive. Assistant Secretary of Defense (Health Affairs) comments on a draft of this report were received too late to be considered in preparing the final report. The comments received will be considered comments on the final report unless additional comments are received by August 9, 1995. Because the Air Force did not provide comments on a draft of this report, we request that the Air Force provide comments on the final report by August 9, 1995.

The courtesies extended to the audit staff are appreciated. If you have any questions on the audit, please contact Mr. Michael A. Joseph, Audit Program Director, or Mr. Michael F. Yourey, Audit Project Manager, at (804) 766-2703. See Appendix G for the report distribution. The audit team members are listed on the inside back cover.

David K. Steensma

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Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 95-225 **June 9, 1995**
(Project No. 3LF-0065)

AEROMEDICAL EVACUATION SYSTEM

EXECUTIVE SUMMARY

Introduction. This audit was a joint effort between the Inspector General, DoD, and the Air Force Audit Agency. The Air Force Audit Agency issued one report, and is processing another report on the Aeromedical Evacuation System. The results of the Air Force Audit Agency audit are included in this report.

In 1992, the Secretary of Defense established the U.S. Transportation Command as the single manager for transportation functions. The Air Mobility Command, as the Air Force component of the U.S. Transportation Command, manages the Aeromedical Evacuation System. The 375th Airlift Wing of the Air Mobility Command, located at Scott Air Force Base, Illinois, provides aeromedical transportation for patients in the continental United States using DoD C-9A "Nightingale" aeromedical evacuation aircraft (C-9A aircraft). In FY 1993, DoD spent about $72 million ($39.1 million of Defense Health Program Operations and Maintenance Appropriations, and $32.9 million of Air Force Military Personnel and Reserve Personnel Appropriations) to transfer 23,530 patients (15,911 outpatients and 7,619 inpatients) for health care in the continental United States.

Objectives. The overall objective of the audit was to evaluate the efficiency of patient movements within the Aeromedical Evacuation System. Specific objectives were to:

o determine the cost-effectiveness of transferring patients between military medical treatment facilities using military aircraft compared to commercial transportation and to costs of providing equally suitable medical care in local area civilian hospitals and

o evaluate management controls related to the Aeromedical Evacuation System.

Audit Results. DoD performed aeromedical evacuations that were not necessary and C-9A aircraft were flown in excess of mission requirements. From January through June 1993, the Aeromedical Evacuation System cost-effectively transported 79 of the 1,177 patients in our sample. We projected, for January through June 1993, that the Aeromedical Evacuation System cost $59 million more in care and transportation costs than treating the patients locally. The Aeromedical Evacuation System was viewed as being free and thus there was no accountability over cost efficiency of a system that previously supported a mission for the European theater during the Cold War. By using local area civilian health care providers when it is cost-effective rather than referring patients to other military treatment facilities, DoD can reduce costs. Over the 6 years of the Future Years Defense Program, DoD can reduce $130.2 million of Defense health care, per diem, and lost duty time. Also, $127.8 million of Defense Health Program Appropriations and Air Force Military Personnel Appropriations can be put to better use through annual reductions of the flying hours program to 8,550 hours (see finding). A summary of potential benefits resulting from the audit is in Appendix E. An internal Air Force study in 1993 stated that the Aeromedical

Evacuation System is expensive and outdated, and is used because transportation is considered free to the military treatment facility (see Prior Audits and Other Reviews). The audit did not identify any material management control weaknesses. See Part I for a discussion of management controls reviewed.

Summary of Recommendations. We recommend that funding, flying hours, and aircrews be reduced for the C-9A Aeromedical Evacuation System and that evaluations of the cost-effectiveness of patient referrals be performed. We also recommend that policy be established to identify mission essential patients and that priority designators be developed for categories of mission essential patients.

Management Comments. The Office of the Under Secretary of Defense (Comptroller) concurred with the finding and recommendation on reducing funding for the C-9A flying hour program and will review the program as part of the FY 1997 Budget Review. The Assistant Secretary of Defense (Health Affairs) did not respond to a draft of this report in time for the comments to be included in the final report. The Assistant Secretary concurred that DoD transportation resources should be managed as efficiently as possible during peacetime operations while ensuring that readiness training requirements are met. However, the Assistant Secretary did not agree with the potential monetary benefits or the recommendation to base patient movements on cost-effectiveness calculations. The Air Force did not respond to a draft of this report. Although not required to comment, the Assistant Deputy Under Secretary of Defense (Transportation Policy) nonconcurred with establishing patient movement policy in the DoD regulation on air transportation eligibility. The Assistant Deputy Under Secretary stated that patient movement policy must be established in a separate issuance developed by the Assistant Secretary of Defense (Health Affairs). See Part II for a summary of management comments and Part IV for the complete text of management comments.

Audit Response. We consider the Under Secretary of Defense (Comptroller) comments responsive to the recommendation to reduce funds. After the Under Secretary of Defense (Comptroller) reviews the C-9A Flying Hour Program, we request that the Comptroller provide additional comments on actions taken to reduce the funding. The Assistant Secretary of Defense (Health Affairs) comments were received too late to be included in the final report, and will be considered comments on the final report unless additional comments are received by August 9, 1995. We request that the Air Force provide comments on the final report by August 9, 1995.

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Part I - Introduction

Background

Aeromedical Evacuation Mission. The mission of the Aeromedical Evacuation (AE) System is established in DoD Regulation 4515.13-R, "Air Transportation Eligibility," January 1980. The primary mission of the AE System is to provide expeditious air transportation for injured, sick, and wounded active duty members of the Armed Forces. Other patients may be transported on AE aircraft if their movement does not interfere with the timely or orderly accomplishment of the primary mission.

The AE System is a worldwide network, which provides:

- o control of patient transportation by air,
- o medical attendants and equipment for in flight medical care,
- o limited medical care of patients in the system, and
- o coordination with Military Treatment Facilities (MTFs) concerning patient requirements.

In 1992, the Secretary of Defense established the U.S. Transportation Command as the single manager for transportation functions. The Air Mobility Command (AMC) as the Air Force component of U.S. Transportation Command manages the AE System for DoD. The Aeromedical Evacuation Control Center, a subordinate element of AMC, schedules, coordinates, and monitors patients awaiting transportation. It also evaluates the medical fitness for air travel of priority and urgent patients who are identified for evacuation.

Aeromedical transportation of patients in the continental United States (CONUS) is provided by the 375th Airlift Wing of the AMC, located at Scott Air Force Base (AFB), Illinois. The 375th Air Wing has a fleet of 12 C-9A "Nightingale" aircraft (11 primary assigned aircraft and one backup) to support the AE System. The C-9A aircraft is a commercial DC-9 aircraft configured as a flying hospital ward capable of carrying 40 patients in litters (a stretcher to carry sick or wounded patients) or seats. Wounded, injured, and sick wartime casualty estimates are expected to surpass the capability of the 11 aircraft. Active duty and Reserve duty aircrews are provided by the 11th Aeromedical Airlift and the 73rd Aeromedical Airlift Squadrons, while active duty and Reserve duty medical crews are provided by the 57th and the 73rd Aeromedical Evacuation Squadrons.

In support of the AE mission, the 375th Airlift Wing established 18 routes for patient transport using the C-9A aircraft. For example, mission 621 departs Scott AFB on Sunday and is scheduled to board and exit patients at Keesler, AFB, Mississippi; Lawson Army Air Field, Georgia; Bush Field, Georgia; Charleston AFB, South Carolina; Shaw AFB, South Carolina; Pope AFB, North Carolina; and Norfolk Naval Air Station, Virginia, and remain overnight at Andrews AFB, Maryland. The aircraft departs as mission 126 on Monday from Andrews AFB and flies the same route with stops back to Scott AFB. The

mission is repeated Wednesday and Thursday. The schedules permit the boarding and exiting of U.S. Armed Forces patients, patient attendants, and space available passengers at any CONUS location along the scheduled routes.

The AE System regulates and transports patients who are eligible for health care in MTFs. Regulating is a process by which destination MTFs are selected for AE patients. DoD guidance requires that those patients be regulated to the closest MTF with the capability for providing necessary medical care. The Armed Services Medical Regulating Office (ASMRO) regulates inpatients in CONUS. Outpatients are regulated or "referred" on a physician to physician basis, regardless of whether the referred physician is located at the closest MTF with the capability to provide the necessary medical care. During 1994, ASMRO and the Aeromedical Evacuation Control Center were combined under the U.S. Transportation Command as the Global Patient Movement Requirements Center. The Global Patient Movement Requirements Center regulates inpatients and is scheduled to begin regulating outpatients during FY 1997.

In FY 1993, DoD spent about $72 million and flew 16,100 hours to transport 23,530 patients on C-9A aircraft in CONUS. Approximately, 32 percent or 7,619 were inpatients; the remaining 68 percent or 15,911 were outpatients. Patient transfers by type of beneficiary and patient category are shown in Table 1.

Table 1. Aeromedical Evacuation System FY 1993 Patient Transfers

Beneficiary	Inpatient	Outpatient	Total	Percent
Army	1,852	1,856	3,708	27.2
Navy	1,108	1,526	2,634	19.3
Marine	391	197	588	4.3
Air Force	1,143	5,505	6,648	48.8
Coast Guard	24	15	39	0.3
Total active duty	**4,518**	**9,099**	**13,617**	**99.9**
Dependent of active duty	980	2,359	3,339	33.7
Retired	1,136	2,446	3,582	36.2
Dependent of retired	880	1,792	2,672	26.9
Others	105	215	320	3.2
Total non-active duty	**3,101**	**6,812**	**9,913**	**100.0**
Total	**7,619**	**15,911**	**23,530**	

The AE System also transported 9,591 patient attendants (8,793 nonmedical attendants and 798 medical attendants). Further, an unquantified number of space available passengers were transported on the AE System.

Objectives

The overall objective of the audit was to evaluate the efficiency of patient movements within the AE System. Specific objectives were to:

o determine the cost-effectiveness of transferring patients between MTFs using military aircraft compared to commercial transportation and costs of providing suitable medical care in local civilian hospitals and

o evaluate management controls related to the AE System.

Scope and Methodology

Audit Coverage. This audit was conducted jointly with the Air Force Audit Agency. We reviewed patient medical records and AE files for patients that were transported from January 1 through June 30, 1993, on C-9A aircraft for medical care in CONUS. We did not evaluate the use of the three C-9A aircraft in the Pacific Command, the four C-9A aircraft in the European Command, and transoceanic aircraft that flew AE missions.

We compared patient mission information from the ASMRO evacuated patient listings with patient information reported on the Automated Patient Evacuation System reports prepared by AMC, and verified that sampled patients traveled on the C-9A aircraft for authorized medical care. We also reviewed Automated Patient Evacuation System statistical summary reports that identified non-medical and medical attendants moved on C-9A aircraft. During our review, we observed patients boarding and exiting the aircraft, and verified the accuracy of patient manifests.

We reviewed the C-9A aircraft FY 1993 Flying Hour Program (FHP) that was managed by AMC and funded by the Defense Health Program Appropriations ($39.1 million), and Air Force Military Personnel and Reserve Personnel ($32.9 million) Appropriations. The cost of CONUS AE operations included civilian and military personnel pay, contractor support, fuel, and miscellaneous costs. We also reviewed summary data and management reports on the cost of the AE System in FY 1993.

We reviewed the designed operational capability statements, effective June 1, and November 1, 1992, that identified the crew and C-9A aircraft mission requirements. We held discussions with cognizant officials on the operational capability and role of the C-9A aircraft because of changes in mission requirements. We evaluated the aircrew staffing levels that were needed to meet mission requirements.

We reviewed DoD policy on eligibility for transportation on DoD owned or controlled aircraft, and Office of Management and Budget policy on the use of Government aircraft. We compared those policies with DoD guidance that establishes and implements air transportation eligibility for traveling on aeromedical aircraft.

We also discussed aeromedical transportation eligibility with personnel at the offices of the Assistant Secretary of Defense (Health Affairs); Secretary of the Air Force; General Counsel, DoD; U.S. Transportation Command; Assistant Deputy Under Secretary of Defense (Transportation Policy); AMC; Air Force Surgeon General; and the Office of Management and Budget. In addition, we reviewed draft DoD Regulation 4515.13-R, "Air Transportation Eligibility," distributed for comment in March 1994.

We compared the Civilian Health and Medical Program of Uniformed Services (CHAMPUS) costs of care available locally with the DoD costs of care available when the AE System was used. To determine the cost-effectiveness of AE referrals in CONUS, we requested that the Office of the Assistant Secretary of Defense (Health Affairs) provide patient medical data associated with treatment provided to 1,177 sampled patients transported on C-9A aircraft.

The Defense Medical System Support Center, Office of the Assistant Secretary of Defense (Health Affairs) identified admission and discharge dates, and diagnosis and procedure codes for patients referred on the AE System from January 1 through June 30, 1993. That patient data were provided to the Office of CHAMPUS, which developed costs for the identified patient care. Costing was based on the procedure and diagnosis codes that would have been used had the patient received care at a civilian medical facility within the same geographical area. Using standard DoD reimbursement rates, we then calculated the costs for providing medical care at MTFs and included transportation costs. We also included per diem costs for active duty patients. Additionally, we determined the cost of lost duty time for active duty members who spent time waiting for a return AE flight. To calculate the Army and Navy per diem costs, we used the Air Force Audit Agency derived average per diem cost per patient. Details of the methodology used in calculating cost-effectiveness of referrals are in Appendix A.

We reviewed medical records and supporting information to cover the period from January 1 through June 30, 1993. The sampling design was based on FY 1993 data that we obtained from the Defense Medical Regulating Information System.

Universe and Sample. Of the 23,530 patients transported in FY 1993 on the AE System, 12,009 patients were transported from January 1 through June 30, 1993 (3,446 inpatients and 8,563 outpatients). We evaluated the 12,009 transfers using a two-stage stratified sample consisting of 1,177 transferred patients. The cost of operations for the CONUS portion of the AE System totaled about $35.9 million for January 1 through June 30, 1993. Appendix B describes the statistical sampling plan and results.

Limitation on Scope. We did not evaluate the computer procedures used to determine whether inpatients in CONUS were regulated to the closest MTFs. Inpatients are processed by ASMRO on a real time basis; therefore, historical data that were needed to verify that patients were transported to the closest MTF with the needed medical capability were not available.

We did not attempt to determine why the Air Force, which maintains only 26 percent of the total active duty military, accounted for 49 percent of the active duty patients transported on the AE System.

Use of Computer-Processed Data. We verified that patients' medical record data were generally recorded accurately for 1,177 patients identified in the evacuated patient listings and in the Defense Medical Regulating Information System. ASMRO provided patient information listings that included: the patient's name, social security number, service, status (active or non-active duty), medical reason regulated, and the medical facility providing the treatment. We compared the patient's name, social security number, date of birth, and relevant sponsor identification information with the Defense Eligibility Enrollment Report System to verify the patient's eligibility for medical care.

Audit Period, Standards, and Locations. This program audit was made from July 1993 through November 1994. The audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and included such tests of management controls as were considered necessary. Organizations visited or contacted during the audit are in Appendix F.

Management Control Program

Management Controls Reviewed. We evaluated management controls as they related to the AE System. Specifically, we evaluated procedures established for identifying, monitoring, processing, transporting, and reporting of patients through the AE System at 11 Army, 10 Navy, and 18 Air Force MTFs. We verified that patients who were regulated and moved on C-9A aircraft were U.S. Armed Forces patients and that competent medical authority attested to the medical need to move the patients.

Adequacy of Management Controls. Management controls over identifying, monitoring, processing, transporting, and reporting of patients through the AE System were generally adequate. The audit did not identify any material management control weaknesses. Reported problems related to the cost of health care and transportation alternatives, patient eligibility, and training requirements for AE are policy issues, not management control compliance issues.

Prior Audits and Other Reviews

General Accounting Office Report NSIAD-94-38 (OSD case no. 9510), "Air Force Training; Delaying Pilot Training Could Avert Unnecessary Costs," November 1993, stated that the Air Force is training more pilots than required. Pilots may be assigned to nonflying positions for up to 3 years before a flying position is available. As a result, the Air Force incurs additional costs to requalify the pilots. The General Accounting Office recommended that the Secretary of the Air Force reinstate delayed entry into the undergraduate pilot training program for pilot candidates until enough cockpit assignments become available to absorb those pilots. DoD officials emphasized that the availability of cockpit assignments was extremely fluid and, thus difficult to predict. In response, the General Accounting Office continued to recommend that the Air Force reinstate its policy of delaying pilots from the undergraduate pilot training program to the extent that the number of pilot candidates continue to exceed the flying positions available. DoD took no action.

Inspector General, DoD, Report No. 94-063, "Medical Treatment Facility Requirement-Fitzsimons Army Medical Center," March 21, 1994, recommended that the acting Assistant Secretary of Defense (Health Affairs) require that MTF commanders perform cost comparisons between MTFs and other alternatives before referring patients to MTFs outside their catchment area. The Office of the Assistant Secretary of Defense (Health Affairs) concurred that MTF commanders be required to evaluate the cost-effectiveness of all heath care delivery alternatives before referring a patient to another MTF; but nonconcurred that transportation costs associated with the use of the AE System be included in the cost-benefit comparisons. Mediation of the recommendation was deferred pending the results of this audit.

Air Force Audit Agency, Report No. 26594017, "Review of the Aeromedical Evacuation System," November 29, 1993, addressed the use of 55 C-21 Lear jets to transport urgent or priority patients, when feasible, and the accuracy of the Automated Patient Evacuation System. The report stated that the 375th Airlift Wing effectively operated the AE System. The Air Force Audit Agency reported that data reflected in the Automated Patient Evacuation System for CONUS patient movements were accurate, and management control procedures were adequate. The report contained no findings requiring corrective action.

An internal study from the Chairman of the Aeromedical Evacuation Working Group, Headquarters 375th Airlift Wing, AMC, "Aeromedical Evacuation Route Structure Working Group Findings," March 10, 1993, stated that the AE program is not an efficient means of transporting patients within DoD. The study stated that the program is expensive and outdated but is used because the transportation is considered free to the MTF. The AE System will continue to be ineffective until MTFs are required to pay for use of AE transportation. The study recommended that the 375th Airlift Wing use more efficient routing and other means of transportation when cost-effective. The 375th Airlift Wing is still considering the report recommendations.

Air Force Inspection Agency, Report PN 89-606, "Report on Patient Regulation and Movement Through the Aeromedical Evacuation System," February 1, 1990, recommended that Air Force MTF commanders conduct cost comparisons between the AE System and other sources of transportation before referring patients for care. The report was issued without Air Force comments.

Other Matters of Interest

Draft DoD Regulation 4515.13-R. On March 18, 1994, the Principal Deputy Under Secretary of Defense (Acquisition and Technology) requested comments on a draft revision of DoD Regulation 4515.13-R, "Air Transportation Eligibility." In April 1994, the Deputy Inspector General, DoD, nonconcurred with draft chapter 5, "Aeromedical Evacuation (AE)". Key reasons for the nonconcurrence were as follows.

o The regulation establishes rather than implements aeromedical transportation policy.

o The regulation did not require medical alternatives and costs to be considered before transporting patients.

o The regulation was not clear as to whether aeromedical aircraft were Defense Transportation System assets or service unique assets.

o The term "space available" was defined inconsistently throughout the regulation.

o Active duty patients were not identified as mission essential traffic to distinguish them from space available patient transfers.

o Other terms, such as federal health care and nearest medical facility, were either not defined or needed clarification, because they were subject to different interpretations.

Because the regulation is written and distributed for use at the operating level, current and accurate guidance is crucial for effective and efficient AE operation.

In October 1994, a representative from the Office of the Principal Deputy Under Secretary of Defense requested that we review an updated version of the draft regulation and reconsider the nonconcurrence. Many issues were corrected, but our concern about identifying mission essential patient movements was not corrected.

In November 1994, the Director, Logistics Support, Office of the Inspector General, DoD, met with the Assistant Deputy Under Secretary of Defense (Transportation Policy) and discussed unresolved issues relating to the draft regulation. The Assistant Deputy Under Secretary shared our concerns but was not in a position to initiate changes to chapter 5, because the Office of the

Assistant Secretary of Defense (Health Affairs) is responsible for establishing aeromedical transportation policy for patient movements. The Assistant Deputy Under Secretary advised us that chapter 5 was unrelated to other chapters in the regulation and our nonconcurrence with AE issues was delaying the passenger and cargo transportation guidance needed by the field users.

As a result of the meeting, we agreed on a "concur with comment" compromise that permitted publication of draft DoD Regulation 4515.13-R. We agreed that recommendations for corrective actions on policy for identifying categories of mission essential patients, and for developing priorities for movement on aeromedical transportation would be addressed in this report.

Part II - Finding and Recommendations

Continental United States Aeromedical Evacuation

In FY 1993, DoD performed aeromedical evacuations that were not necessary, and C-9A aircraft were flown in excess of mission requirements to transport patients to hospitals for medical care. The conditions occurred because:

o military treatment facility medical personnel did not consider health care and transportation alternatives,

o medical treatment facility personnel considered the Aeromedical Evacuation System as free and thus no accountability existed over cost-efficiency,

o DoD guidance that established eligibility for aeromedical transportation of dependent patients was not followed and needed improvement, and

o the flying hour program was based on historical peacetime performance and not on training that was necessary for mission requirements.

As a result, DoD can put to better use $21.3 million of Defense health care, per diem, and lost duty time costs annually by using civilian facilities in the catchment area of the referring military treatment facility when it is cost-effective, rather than referring patients to other medical facilities. Also, the flying hour program can be reduced to 8,550 flying hours annually and about $20.2 million of Defense Health Program and about $1.5 million of Air Force Military Personnel Appropriations can be put to better use.

Background

DoD Directive 4500.9, "Transportation and Traffic Management," January 1989, establishes DoD policies for transportation and traffic management. It states that DoD transportation resources should be organized and managed to support their mission responsively, efficiently, and economically. During peacetime, those resources should be used as efficiently as possible to provide the essential training for operational personnel. Before January 1993, the then Assistant Secretary of Defense (Production and Logistics) was responsible for policy and guidance on the efficient use of DoD transportation resources. DoD Directive 5158.4, "United States Transportation Command," January 1993, assigned the Under Secretary of Defense for Acquisition (currently the Under Secretary of Defense for Acquisition and Technology) the responsibility for establishing policies and providing guidance to DoD components for efficient use of DoD and commercial transportation resources.

DoD Regulation 4515.13-R, "Air Transportation Eligibility," January 1980, chapter 11, "Aeromedical Transportation," provides that U.S. Armed Forces patients "are authorized aeromedical transportation for inpatient/outpatient treatment or consultation which is unavailable locally, and for which transportation to obtain the needed medical treatment is necessary." U.S. Armed Forces patients include active duty service members, their dependents, and military retirees and their dependents.

DoD Directive 6010.4, "Dependents Medical Care," April 25, 1962, authorizes medical care for dependents in uniformed services facilities. Paragraph 403 provides that when a hospitalized dependent patient requires care beyond the capabilities of the medical facility, the commanding officer is authorized to procure from civilian sources the necessary services required for the proper care and treatment of the patient. The commanding officer of the facility is also authorized to transfer the patient to the nearest medical facility of the uniformed services where the required treatment is available. Government transportation for transferring dependent patients may be authorized and "is applicable after admission of the patient when the patient's condition so requires."

Public Law 103-62, "Government Performance Results Acts of 1993," August 3, 1993, provides for the establishment of strategic planning and performance measurement in the Federal Government. Program goals must be established and adequate information must be available to effectively improve program efficiency and effectiveness.

DoD Performance of Aeromedical Evacuations

DoD performed AEs that were not necessary because MTF personnel did not consider health care and transportation alternatives for treating patients who were transported on the AE System. Of the 1,177 sampled patients that were transported from January through June 1993, 983 could have been treated locally at less cost to DoD. Also, the majority of patients could have been transported commercially at less cost than the AE System. The MTF personnel used the AE System without considering its costs because the AE System was considered free. Further, the movement of dependent outpatients on the C-9A aircraft was not authorized in DoD Directive 6010.4.

Alternative Sources of Health Care and Transportation. Although DoD Regulation 4515.13-R only authorizes aeromedical transportation when treatment or consultation is unavailable locally, MTF personnel did not consider health care alternatives other than that available at the local MTF. Fully competent local civilian health care providers were available for nonactive duty patients through CHAMPUS, and active duty patients can be treated by local providers through the use of supplemental funds. Under the TRICARE Program, a recent DoD managed care initiative, local MTF commanders must evaluate the costs of local military and civilian health care alternatives in their catchment area to provide quality patient care at the least expense.

Nonactive duty patients were given the option to use the AE System to receive care at distant MTFs or obtain care from local CHAMPUS providers. The patients' decisions were based on personal considerations, including their available time to travel and their willingness to incur CHAMPUS deductibles and copayments. Transferred patients could have been treated locally by competent providers at less cost to the Government.

Cost of Treating Patients Locally. We projected that the AE System cost DoD about $59.2 million more in direct care and transportation costs, for January through June 1993, than treating the patients locally. The projection was based on a stratified sample of 1,177 (436 inpatients and 741 outpatients) of 12,009 patients and included a cost comparison between available local medical care and transporting the patients via the AE System for care at MTFs.

Of the 1,177 patients sampled, 983 could have been treated locally more cost-effectively. We were not able to determine the health care costs for 115 of the patients because they were transported to non-DoD facilities. The remaining 79 sampled patients were cost-effective referrals. None of the outpatient referrals were cost-effective. Appendix A contains details of the methodology used in calculating the cost-effectiveness of patient referrals on the AE System. Appendix B describes the statistical sampling plan and results.

We recognize that training cases and medical emergencies, for which care is not available locally, will require aeromedical transportation regardless of the cost-effectiveness. However, we believe that other patients should be transported through the DoD AE System, only if such a referral is the most cost-effective means of providing medical care.

We are not identifying potential monetary benefits for transportation costs associated with the $59.2 million because we recognize that not all referrals need to be cost-effective. The potential monetary benefits associated with transportation costs are based on the recommended reduction to the FHP as discussed later in the finding. Excluding transportation costs, we project that $21.3 million in medical care, per diem, and lost duty time costs could have been put to better use if the patients were treated locally during January through June 1993. We are identifying 50 percent ($10.65 million) of this projection for the 6-month period as potential monetary benefits because we are recommending that the FHP be reduced by about 50 percent, as discussed later in the finding. To determine the annual estimated monetary benefits of $21.3 million, we doubled the 6-month estimate of $10.65 million. Examples of noncost-effective referrals are in Appendix C.

Cost of Alternative Transportation. Transporting patients on commercial airlines would have been more cost-effective than using the AE System. Most of the patients moved on the AE System were ambulatory (walk-on patients). To compare the cost of transporting patients using the AE System with the cost of transporting patients on commercial airlines, we used a one-way transportation cost on the AE System of $1,632 and obtained the costs for commercial airfare from the Federal travel directory. Considering only transportation costs, DoD could have reduced costs approximately $3.1 million if all sampled patients had flown on commercial aircraft instead of

using the C-9A aircraft. We did not project the sample results or attempt to identify special travel arrangements and cost to accommodate medical requirements for patient transfers because most patients did not require medical care while being transported. We are not making a recommendation on this issue because generally it costs DoD less to provide medical care locally rather than pay for air transportation.

Cost Consideration of Using the AE System. MTF personnel were not required to consider the costs of using the AE System when determining whether patients needed to be transported. The AE System was viewed as being free because the MTFs were not charged to transport the patients and the AE flights would operate with or without patients. In most cases, the referring MTF was not required to reimburse the MTF that provided the care for the transported patient. Because the transportation and medical care are free to the MTF, there was an incentive for MTF personnel to use the AE System even if total DoD cost would have been less to treat a patient locally through CHAMPUS. Thus, cost accountability including costing procedures or performance measures did not exist for MTF personnel to use when determining the need to transport a patient.

Outpatient Eligibility. MTF personnel did not comply with policy in DoD Directive 6010.4 related to dependent patient eligibility for aeromedical transportation. Dependent outpatients whose medical condition did not warrant a hospital admission were not eligible for evacuation. During January through June 1993, all 2,160 dependent outpatients who traveled on the C-9A aircraft should not have been transported because they were not hospitalized before being authorized for AE transfer. As discussed earlier, none of the outpatient referrals in our sample were cost-effective. DoD Regulation 4515.13-R does not include the dependent eligibility limitation regarding hospital admission that is included in DoD Directive 6010.4. MTF personnel used DoD Regulation 4515.13-R to determine patient eligibility for aeromedical transportation and were generally unaware of the policy in DoD Directive 6010.4, which limited aeromedical transportation to hospitalized patients. The Assistant Secretary of Defense (Health Affairs), as the proponent of DoD Directive 6010.4, should ensure compliance with its policy regarding hospitalization of dependents or should revise the policy to allow outpatient dependents to be transported on the AE System.

Flying Hour Program Exceeds Training Requirements

The C-9A aircraft were being flown in excess of previous and current training requirements. The previous peacetime mission was to train for deployment in support of a European theatre mission. The current peacetime mission is to train for the movement of active duty patients throughout CONUS during a contingency. Training requirements for neither the previous nor the current mission support the FY 1993 FHP of 17,211 hours. The FHP was based on historical peacetime performance of providing a scheduled airline service, not on established training criteria to support the previous or current mission. Table 2 identifies the FHP for the C-9A aircraft as approved and as we calculated it for the previous and current mission staffing levels.

Table 2. CONUS Aeromedical Evacuation C-9A Aircraft FY 1993 Flying Hour Program

	Flying Hour Program		
		Inspector General	
	Air Force Approved	Previous Mission	Current Mission
Active Duty			
Crew hours	12,002	6,792	3,708 *
Staff pilots			
Currency	99	99	99 *
Proficiency	768	768	768 *
Formal training	900	900	491
Subtotal	**13,769**	**8,559**	**5,066**
Reserves			
Local proficiency missions	354	354	354
Flight evaluations	92	92	92 *
Continuation training	2,996	3,038	3,038 *
Subtotal	**3,442**	**3,484**	**3,484**
Total	**17,211**	**12,043**	**8,550**

*7,514 hours available to transport patients.

Training Requirements to Support the European Theatre Mission. The FHP of 17,211 that AMC approved exceeded training requirements needed for 42.5 aircrews assigned to support the previous European theatre mission. The 375th Air Wing personnel were unable to provide support for the FY 1993 approved FHP of 17,211 hours. We did not verify the need for 42.5 aircrews because the mission changed, as discussed later. However, we did verify that 12,043 hours would support 42.5 mission capable aircrews and 8 staff aircrews assigned at AMC Headquarters, the 375th Airlift Wing, and the 11th Aeromedical Airlift and the 73rd Aeromedical Airlift Squadrons. Based on the Air Force's Composite Absorption Analysis Model for operational support airlift aircrews, we calculated a FHP of 8,559 hours for active duty aircrews (22 aircrews, 6 staff aircrews, and 2 instructor aircrews). Our design model included variables of a 65 pilots to 35 co-pilots ratio, a 3-year tour of duty, and flying hours to provide pilots with experience necessary for assignment to air command and larger aircraft (C-141 and C-5 aircraft) during their Air Force career.

Based on discussions with the 73rd Aeromedical Airlift Squadron training officer, we calculated a FHP of 3,484 hours for 18.5 reserve units and 2 staff aircrews to perform continuation training, flight evaluation, and missions. The training requirements for Reserve duty aircrews are different than active duty aircrews; therefore, we did not base our calculations for Reserve training requirements on the active duty model. We based the Reserve program FHP calculation on a current pilot to co-pilot ratio of 80 to 20 and on upgrading co-pilots to pilots over a 3-year period.

Training and Staffing Requirements for the CONUS Mission. Because of changes in the AE mission, the C-9A aircraft and crews will remain in CONUS during a contingency. A FHP of 8,550 hours is needed to train 32.5 aircrews and 8 staff crews to support the capability of the 11 primary assigned aircraft in their CONUS mission. The 8,550 hours would support air and medical crew training, Graduate Medical Education (GME) training, and transportation of medical emergencies. GME training programs, civilian and military, are designed to train medical school graduates in a variety of specialties such as cardiology, urology, and radiology. GME is often received at medical centers or "teaching hospitals." Reducing the FHP would allow about $20.2 million (Air Force personnel calculated $13.5 million of contractor logistics support maintenance costs and we identified $6.7 million in fuel, travel, and miscellaneous costs) of Defense Health Program Appropriations to be put to better use.

Aircrew Training and Staffing. Aircrew training and medical crew in-flight training can be accomplished within the 8,550 hour FHP. Table 2 identifies the FHP required to train active and Reserve duty aircrews to support the CONUS mission. As a result of the change in the mission of the C-9A aircraft, the present 42.5 aircrew staffing level exceeded the capability of the 11 aircraft assigned for the CONUS mission. With 11 primary assigned aircraft, only 32.5 wartime mission capable crews are needed to maximize the aircraft flying time capability. Mission capable crews include active duty squadron and instructor crews and Reserve duty crews. Table 3 identifies the active duty and Reserve duty aircrew staffing levels needed to maximize the capability of 11 aircraft.

Table 3. Aircrew Staffing Levels

	Actual	Current Mission
Active Duty		
Squadron crew*	22.0	12.0
Staff crew	6.0	6.0
Instructor crew*	2.0	2.0
Reserve Duty		
Unit crew*	18.5	18.5
Staff crew	2.0	2.0
Total	**50.5**	**40.5**
*Mission capable crews	42.5	32.5

Our staffing level allowed for flying each of the primary assigned aircraft 9.2 hours per day, with 90-minute layovers at each stop. Calculations for staffing levels also included a factor of 14 percent for nonmission capable

aircrews that result from sickness or injury of crew members. AMC planning personnel provided those factors, which reflect anticipated aircraft usage during wartime.

Because Reserve duty aircrews are available to perform the C-9A AE mission, we are recommending that the reduction of 10 aircrews (from 42.5 to 32.5) be accomplished with active duty aircrews. We believe our conclusion is consistent with those expressed in the General Accounting Office report that the Air Force is training more pilots than required and that a 3-year backlog for cockpit assignments exists. Reducing active duty aircrews by 10 (20 officers) would allow these 20 officer billets, costing about $1.5 million of Air Force Military Personnel Appropriations, to be put to better use.

Medical Crew Training. Medical crew in-flight training can be accomplished within the 8,550 FHP. The medical crews, who provided on-board medical care to patients, required only 4 hours (less than the average length of one mission) per month to meet their training requirements. Using the 4 hours as the basis, we estimated that 40 medical crews (23 active duty and 17 Reserve duty) require less than 2,000 annual hours of training. GME and emergency transfers would provide the medical crews sufficient flying hours for training. We also noted that medical crews on board the C-9A aircraft received limited training because patients were predominantly ambulatory outpatients who did not require intensive medical care.

Clinical Training and Emergencies. The proposed 8,550 flying hours to train aircrews included 7,514 hours to transport patients (Table 2), sufficient hours to support GME program training, and transportation of medical emergencies. Of the 12,009 patients in the universe who were transported during January through June 1993, 118 were GME teaching cases and 267 were medical emergencies (priority or urgent referrals). Priority patients require prompt medical care, must be airlifted within 24 hours, and delivered with the least possible delay. Urgent patients must be airlifted immediately to save life or limb, or to prevent complications of a serious illness. We did not evaluate the availability of local care or the decision to designate emergencies as priority or urgent referrals. Based on the 6 months data, we estimated that 4,000 flight hours would be needed annually to continue transporting GME teaching cases and medical emergencies.

Determining Access to Aeromedical Transportation

If the FHP is reduced as recommended, decisions will need to be made that determine access priority to AE transportation. To ensure that space is available to transport patients most effectively, it is necessary to identify categories of patients who are eligible for mission essential aeromedical transportation. To ensure that mission essential patients are moved in accordance with the DoD urgency of need, movement priorities need to be established based on the patient

categories. Such priorities will ensure that AE resources will be available on a priority basis to injured, sick, and wounded service members during contingencies or war.

In the past, all U.S. Armed Forces patients were eligible for transportation using the AE System. Using the AE System for patient transportation was possible because the C-9A aircraft FHP was not limited to mission training requirements and the aircraft flew set schedules with more seats than patients. Most patient movements were not required for mission purposes and patients did not require medical services enroute.

Requirements for eligibility to travel on aeromedical transportation should be included in the applicable chapter of the draft of the revised DoD Regulation 4515.13-R. Charts similar to those used for space required (chapter 2) and space available (chapter 6) should also be included in the chapter on aeromedical transportation eligibility.

Appendix D shows the Inspector General, DoD, proposed eligibility and priority AE transportation chart based on mission essential requirements, the necessity for urgent medical care, and cost-effectiveness. For example, the chart recognizes a sense of urgency for moving hospitalized dependent patients, which we believe is consistent with DoD Directive 6010.4. The chart identifies dependent outpatients for movement on a space available basis because aircraft will not be scheduled for those patients. Because DoD Regulation 4515.13-R is used by medical authorities and clerks at the MTFs, including an eligibility chart would allow operational and medical personnel to quickly and accurately identify mission required patients for transportation on C-9A aircraft.

Recommendations, Management Comments, and Audit Responses

1. We recommend that the Under Secretary of Defense (Comptroller) reduce combined FY 1996 (Defense Health Program and Air Force Military Personnel Appropriation) funding from $72.0 million for the C-9A aircraft Flying Hour Program to $50.3 million for the 8,550 hours necessary to train pilots for mission requirements.

Under Secretary of Defense (Comptroller) Comments. The Comptroller concurred with the finding and recommendation but deferred taking action, pending review of the C-9A CONUS FHP as part of their FY 1997 budget review.

Audit Response. We consider the Comptroller's comments to be responsive to the recommendation. After the Comptroller reviews the Flying Hour Program, we request that the Comptroller provide additional comments as to the amount of reduction in combined funding for the C-9A FHP.

2. We recommend that the Assistant Secretary of Defense (Health Affairs):

a. Develop the methodology and performance measures for determining the total cost of health care provided to patients transported using the Aeromedical Evacuation System. The methodology should include costs of transportation, health care, per diem, and lost duty time.

b. Establish procedures in the DoD Regulation 4515.13-R, "Air Transportation Eligibility," for military treatment facility commanders who refer patients to other medical facilities to evaluate the cost of other alternatives, including the use of the Civilian Health and Medical Program of Uniformed Services for local care, and identify for movement patients when it is cost-effective, graduate medical education cases, and medical emergencies when care is not available locally. The evaluation should compare costs to the Government for local medical care with the cost methodology developed in Recommendation 2.a.

c. Revise DoD Directive 6010.4, "Dependents Medical Care," to ensure that patients are eligible for aeromedical transportation. As a minimum the policy should:

(1) Identify categories of mission essential patients (including dependent outpatients, if appropriate, and cost-effective patients).

(2) Develop urgency of need priority designators for categories of mission essential patients.

d. Revise DoD Regulation 4515.13-R, "Air Transportation Eligibility," to include charts similar to Appendix D that clearly illustrate eligibility for aeromedical transportation by categories and priorities for mission essential patients.

Assistant Secretary of Defense (Health Affairs) Comments. The Office of the Assistant Secretary of Defense (Health Affairs) did not respond to the draft of this report in time for comments to be incorporated into the final report. We will consider the comments received as comments on the final report unless additional comments are provided.

Assistant Deputy Under Secretary of Defense (Transportation Policy) Comments. The Assistant Deputy Under Secretary of Defense (Transportation Policy) provided unsolicited comments on Recommendations 2.b. and 2.d. The Assistant Deputy nonconcurred with the recommendations and stated that the establishment of additional patient movement procedures should not be included in the DoD Regulation 4515.13-R because the regulation is intended to provide guidance for passenger and cargo airlift on DoD aircraft and not for patient movement. Because patient movement eligibility is determined by competent medical authority, policy and procedures should be established by the Assistant Secretary of Defense (Health Affairs) to ensure consistent patient movement policy. The Assistant Deputy also stated that to prevent a policy void over patient movement eligibility, they agreed to include a chapter on aeromedical evacuation in the DoD Regulation 4515.13-R. The Assistant Deputy will

remove the chapter on aeromedical evacuation when the Assistant Secretary establishes policy and procedures for aeromedical evacuation eligibility in its own regulations. Further, the Assistant Deputy suggested that our recommendations addressing DoD Regulation 4515.13-R be modified to recommend that the Assistant Secretary of Defense (Health Affairs) establish eligibility policy in its own directives.

Audit Response. We agree that patient movement policy should be established by the Assistant Secretary of Defense (Health Affairs). Because DoD Regulation 4515.13-R includes the current aeromedical evacuation policy, we recommended that the Assistant Secretary of Defense (Health Affairs) revise the existing regulation. If the Assistant Secretary decides to issue aeromedical evacuation policy in a separate regulation, we would accept such an issuance as responsive to the recommendation.

3. We recommend that the Commander, Air Mobility Command:

a. Establish a Flying Hour Program of 8,550 hours for the continental United States portion of the C-9A aircraft Aeromedical Evacuation System.

b. Reduce by 10 active duty aircrews, the aeromedical evacuation staffing levels on C-9A aircraft in the continental United States.

Management Comments and Audit Response. The Air Force did not respond to a draft of this report. Therefore, we request the Air Force provide comments in response to the final report.

Part III - Additional Information

Appendix A. Referral Patient Cost Comparison Method

For each referral case selected as part of our sample from the ASMRO patient listing, we estimated the cost for providing care at MTFs. The estimated MTF costs included medical care, transportation, lost duty time and per diem (when applicable) resulting from members travel away from their duty station. We compared the referral costs to the costs of care at civilian facilities to determine which source of care was more cost effective. We estimated the cost of similar care available locally with the assistance of the Office of CHAMPUS. Costs such as transportation and per diem were not included in the civilian cost estimates, because such costs would not have been incurred by the Government if care were provided by a civilian provider in the area of the referring MTF.

MTF Cost. The cost of care provided by the MTF was estimated using the rates established by DoD for billing third party insurance companies. The Medical Expense and Performance Reporting System, the DoD medical cost accounting system, does not capture all costs associated with an episode of care on a patient level. It identifies costs by medical work center (for example, direct patient care, ancillary services, and support services). United States Code, title 10, section 1095, allows DoD to collect from health care insurance companies the hospital costs incurred on behalf of insured military retirees and military dependents. The law allows MTFs to collect the reasonable cost of inpatient and outpatient care to the extent that the insurer would pay if the medical care were provided at a civilian hospital. The inpatient rate is based on a per hospital day charge and the outpatient rate is based on a per visit charge. In FY 1993, DoD had 13 inpatient rates for hospital charges. We used the appropriate rate based on the diagnosis-related group. A diagnosis-related group classifies hospital patients based on their principal diagnosis, age, discharge status, procedures performed, and sex.

Transportation Cost. We determined that the cost of aeromedical transportation was about $1,632 per patient. The FHP cost of about $36 million for the CONUS C-9A aircraft for January through June 1993, was divided by the number of patients transported. This cost understates the actual costs to DoD because it does not include a depreciation cost for purchase of the aircraft that is allocable to each patient. Costs for commercial air fare were based on Government contract rates published by the General Services Administration in the Federal Travel Directory.

Lost Duty Time. For active duty patients, we computed the cost of lost duty time by multiplying the number of days the individual was in the AE System times the basic rate of pay (salary and allowances for quarters and subsistence) for the patient's grade. We determined the number of days each patient was away from their originating MTF from logs and flight manifests maintained at the MTFs or at the AMC. For outpatients, we subtracted 1 day required for the medical appointment. For inpatients, we subtracted the number of days admitted to the referral MTF. We did not compute the cost of lost duty time unless the patient was in a duty status at the time of travel.

Per Diem. The Air Force Audit Agency determined temporary duty per diem costs for Air Force active duty patients in our sample by obtaining and reviewing paid travel vouchers filed in the Defense Finance and Accounting Offices at the locations audited. We estimated per diem costs for Army and Navy active duty patients using the Air Force average per diem cost per patient.

CHAMPUS Cost. For sampled patients who were referred to other MTFs, we obtained inpatient data that included diagnoses, procedures, and administrative data from the Defense Medical Information System. The Office of CHAMPUS fiscal intermediaries used the data to compute what the Government would have paid had the patients been treated in a civilian facility at or near the referring MTF. CHAMPUS beneficiaries pay copayments and deductibles for care received at civilian facilities in accordance with provisions of the CHAMPUS program. We did not include the copayments or deductibles in our Government cost estimates.

Government payment amounts computed by the fiscal intermediaries did not include professional fees for medical services. To determine the fees, we applied the Retrospective Case Mix Analysis System adjustment factor used in the Defense Medical Information System to the patient's diagnosis-related group, which provided an estimate of the total cost of the episode of care. The Retrospective Case Mix Analysis System is a DoD management tool that provides historical diagnosis related group data to health care managers. Outpatient costs were provided by the Office of CHAMPUS and were based on the national average cost per outpatient visit.

Appendix B. Statistical Sampling Plan and Results

In coordination with our Quantitative Methods Division and the Air Force Audit Agency, we developed the sample to estimate the costs for transportation, lost duty time, per diem, and medical care for patients being transported on the AE System from January 1 through June 30, 1993. The total audit universe consisted of 12,009 patient referrals from 135 Army, Navy, and Air Force MTFs during the 6-month period.

We used a stratified two-stage random sampling design for this audit. For each of the three Military Departments, we grouped the MTFs into three strata based on the number of patients referred (see Table B-1). We did not sample MTFs with less than five patient referrals. In the first stage, we selected the stratified random samples of MTFs from the three strata. In the second stage, we randomly selected 1,177 patients from the MTFs selected in the first stage. The same methodology was used for each of the three Military Departments.

Table B-1. Sample Strata Criteria

Strata	Number of Patient Referrals per MTF
I	more than 199
II	50 to 199
III	5 to 49

The total number of MTFs in the universe and the number of sampled MTFs for the three Military Departments are shown in Table B-2.

Table B-2. Number of MTFs in the Sample and the Universe

	Army		Navy		Air Force	
Strata	Universe	Sample	Universe	Sample	Universe	Sample
I	8	4	1	1	9	5
II	7	2	12	4	30	8
III	16	5	15	5	22	5
Total	**31**	**11**	**28**	**10**	**61**	**18**

The number of patients sampled from each sample MTF is shown in Table B-3. Although the table shows inpatients and outpatients, the sample was selected by patient, not by category of patient.

Table B-3. Sampled Patients by Location

MTF Location	Number of Patients Sampled Inpatient	Outpatient	Total
Army			
Brooke Army Medical Center, TX	10	4	14
Fitzsimons Army Medical Center, CO	8	33	41
Fort Campbell, KY	35	5	40
Fort Carson, CO	22	2	24
Fort Drum, NY	35	3	38
Fort Leavenworth, KS	6	34	40
Fort Leonard Wood, MO	9	31	40
Fort Lewis, WA	25	5	30
Fort Monmouth, NJ	16	1	17
Fort Riley, KS	22	18	40
Redstone Arsenal, AL	25	11	36
Subtotal	**213**	**147**	**360**

MTF Location (cont'd)	Number of Patients Sampled Inpatient	Outpatient	Total
Navy			
Beaufort, SC	3	32	35
Bethesda, MD	9	5	14
Brunswick, ME	2	28	30
Groton, CT	12	18	30
Key West, FL	1	39	40
Newport, RI	10	29	39
Pensacola, FL	25	13	38
Portsmouth, VA	27	3	30
San Diego, CA	24	6	30
Twenty-Nine Palms, CA	2	6	8
Subtotal	**115**	**179**	**294**

Table B-3. Sampled Patients by Location (cont'd)

MTF Location (cont'd)	Number of Patients Sampled Inpatient	Outpatient	Total
Air Force			
Barksdale AFB, LA	8	22	30
Cannon AFB, NM	4	26	30
Edwards AFB, CA	6	5	11
Eglin AFB, FL	7	33	40
Ellsworth AFB, SD	2	28	30
Kirtland AFB, NM	16	22	38
Little Rock AFB, AR	2	28	30
Luke AFB, AZ	12	28	40
MacDill AFB, FL	4	36	40
Malmstrom AFB, MN	0	40	40
McChord AFB, WA	0	1	1
Mountain Home AFB, ID	3	37	40
Nellis AFB, NV	11	12	23
Patrick AFB, FL	2	28	30
Peterson AFB, CO	1	9	10
Plattsburg AFB, NY	9	21	30
Seymour Johnson AFB, NC	5	25	30
Sheppard AFB, TX	16	14	30
Subtotal	**108**	**415**	**523**
Total	**436**	**741**	**1,177**

We projected the sample results into the universes for the respective Military Departments and aggregated the three Military Departments to represent the DoD-wide projections. The summary of projections in Table B-4 is not directly projectable without weights, because the sample is highly stratified. The bounds on errors were calculated using 95-percent confident levels.

Table B-4. Summary of Sample Projections

Excess Cost	Point Estimates (millions)	Bounds on Estimates Lower (millions)	Upper (millions)
Direct care with AE transportation versus local care	$59.23	$52.85	$65.61
Direct care (excluding transportation) versus local care	21.29	15.34	27.24

Appendix C. Examples of Noncost-Effective Referrals

The following eight cases are provided as examples of the types of patients transported using the AE System. We selected 7 of the 8 examples from the statistical sample of 1,177 referrals.

A 35-year old active duty patient was flown from the Branch Medical Clinic, Naval Air Station Brunswick, Maine, to National Naval Medical Center Bethesda, Maryland, using the AE System and returned on a commercial flight. The patient received outpatient care for acne. If the patient had been treated at a local hospital, DoD could have reduced costs by $1,802.

A 34-year old dependent of an active duty member was flown from Naval Hospital Newport, Rhode Island, to National Naval Medical Center Bethesda. The patient was transported as an outpatient for a computerized axial tomography (CAT) scan but was admitted as an inpatient at the receiving medical center for a hysterectomy. If the patient had been treated at a local hospital, DoD could have reduced costs by $3,188.

A 54-year old dependent of a retired military member was flown from Naval Hospital Newport, to Walter Reed Army Medical Center, Washington, DC. The patient went for an outpatient consultation concerning a possible breast reduction. If the patient had been treated by a local provider, DoD could have reduced costs by $3,273.

A 32-year old dependent of an active duty member was flown from Irwin Army Community Hospital, Fort Riley, Kansas, to Fitzsimons Army Medical Center (FAMC), Colorado, and returned. The patient was admitted at FAMC for a reversal of a tubal ligation. If the patient had been treated at a local hospital, DoD could have reduced costs by $3,263.

A 53-year old dependent of a retired military member was flown from Munsen Army Community Hospital, Fort Leavenworth, Kansas, to FAMC for a yearly followup visit for a previous knee replacement. The patient did not receive inpatient care. If the patient had been seen by a local provider, DoD could have reduced costs by $3,263.

A 29-year old active duty patient was flown from Munsen Army Community Hospital, Fort Leavenworth, to FAMC on January 19, 1993, and returned 7 days later. The patient went for an outpatient evaluation of atypical cluster headaches and was not admitted. If the patient had been treated by a local provider, DoD could have reduced costs by $4,017.

A 20-year old active duty patient was flown from Naval Hospital Newport to National Naval Medical Center Bethesda for evaluation of lower back pain. The patient received outpatient care and was not admitted. If the patient had been treated by a local provider, DoD could have reduced costs by $4,962.

Appendix C. Examples of Noncost-Effective Referrals

A military dog was transported from U.S. Air Force Hospital Mountain Home Air Force Base, Idaho, to Madigan Army Medical Center, Ft. Lewis, Washington, for veterinary care. We were advised by ASMRO personnel that this occurred about once a year. This example is not part of our statistical sample.

Appendix D. Proposed Eligibility and Priority Chart for Aeromedical Transportation

A. Patient Category

	Eligibility Codes	
	Mission Essential	Space Available
CONUS Patients		
Active duty service member	a,b,c	
Dependents of active duty	a,b	c
Military retirees	a,b	c
Dependents of retirees	a,b	c
Other Government agency		c
OCONUS* Patients		
Same as CONUS, and		
DoD civilians and their dependents	a	c
Other Government agency	a	

Eligibility Codes:
a - medical emergency when care available only through AE (priorities 1, 2, and 3)
b - cost-effective patient movements (priority 4)
c - other, for example, routine medical visits, medical boards, humanitarian moves approved by MTF Commander, etc. (priorities 5 and 6)

*Outside continental United States.

Appendix D. Proposed Eligibility and Priority Chart for Aeromedical Transportation

B. Priorities for Aeromedical Transportation

1 - Medical emergency, active duty patients
2 - Medical emergency, active duty dependent patients
3 - Medical emergency, others
4 - Cost-effective patient movements
5 - Other - active duty patients on orders for medical reasons
6 - Other - non-active duty patients for medical reasons humanitarian

Explanatory Notes

o Priorities 1 through 5 are official space required patients.

o Aircraft can be scheduled within established FHP to accommodate patients in priorities 1 through 4. Aeromedical transportation aircraft will not be scheduled for patients in priorities 5 and 6 as they do not require AE transportation and can be moved more efficiently by commercial means.

o At the discretion of the medical crew, space not required for patient priorities 1 through 6 is available as provided in DoD Regulation 4515.13-R for space required and space available passengers.

Appendix E. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit[1]
1.	Economy and Efficiency. The C-9A aircraft FHP will be reduced to provide sufficient training for the revised CONUS mission.	$21.7 million of funds put to better use. ($130.2 million for FYs 1996 through 2001[2].) Under Secretary of Defense (Comptroller) will determine the allocation of funds between appropriations. Defense Health Program appropriation (97X0130) and Air Force military personnel appropriation (57X3500).
2.a.	Economy and Efficiency. Developing methodology and performance measures will assist MTF personnel in selecting the most cost-effective sources of health care.	Benefits included in 2.b.
2.b.	Economy and Efficiency. Identify only those patients whose movement will be cost-effective to the Government.	Funds put to better use. Defense Health Program (97X0130), military personnel, and travel appropriations of $21.3 million annually ($127.8 million for FYs 1996 through 2001).
2.c.(1)	Economy and Efficiency. Establishing policy for identifying mission essential and cost-effective patients will improve direct health care system efficiency.	Benefits included in 2.b.

2.c.(2)	Economy and Efficiency. Developing priority designators will ensure that mission essential patients are moved on the AE System.	Benefits included in 2.b.
2.d.	Program Results. Revising DoD Regulation 4515.13-R will illustrate mission essential movements.	Nonmonetary. Revises DoD policy identifying mission essential patients for AE.
3.a.	Economy and Efficiency. Establishing a revised FHP will improve the AE System.	Benefits included in 1.
3.b	Program Results. Active duty aircrew reduction will result in 20 officer billets and associated funds being put to better use.	Benefits included in 1.

[1]For semi-annual reporting purposes, all potential monetary benefits will be equally reported between the Office of the Inspector General and the Air Force Audit Agency.

[2]Based on discussions with Air Force personnel, we extended the potential monetary benefits associated with Recommendation 1. over the 6 years (FY 1996 through 2001) of the Future Years Defense Program.

Appendix F. Organizations Visited or Contacted

Office of the Secretary of Defense

Assistant Secretary of Defense (Health Affairs), Washington, DC
Assistant Secretary of Defense (Reserve Affairs), Washington, DC
Office of the Assistant Deputy Under Secretary of Defense (Transportation Policy), Washington, DC

Department of the Army

U.S. Army Audit Agency, Alexandria, VA
Office of the Surgeon General of the Army, Falls Church, VA
- U.S. Army Health Services Command, Fort Sam Houston, TX
  - Blanchfield Army Community Hospital, Fort Campbell, KY
  - Brooke Army Medical Center, Fort Sam Houston, TX
  - Evans Army Community Hospital, Fort Carson, CO
  - Fitzsimons Army Medical Center, Aurora, CO
  - Fox Army Community Hospital, Redstone Arsenal, AL
  - General Leonard Wood Army Hospital, Fort Leonard Wood, MO
  - Guthrie Ambulatory Health Care Clinic, Fort Drum, NY
  - Irwin Army Community Hospital, Fort Riley, KS
  - Madigan Army Medical Center, Fort Lewis, WA
  - Munson Army Community Hospital, Fort Leavenworth, KS
  - Patterson Army Community Hospital, Fort Monmouth, NJ

Department of the Navy

Office of the Chief, Bureau of Medicine and Surgery, Washington, DC
- National Naval Medical Center, Bethesda, MD
- Naval Branch Clinic, Brunswick, ME
- Naval Hospital, Beaufort, SC
- Naval Hospital, Groton, CT
- Naval Hospital, Newport, RI
- Naval Hospital, Pensacola, FL
- Naval Hospital, San Diego, CA
- Naval Hospital, Twenty-Nine Palms, CA
- Naval Medical Center, Portsmouth, VA
- Naval Medical Clinic, Key West, FL

Department of the Air Force

Office of the Surgeon General of the Air Force, Bolling Air Force Base, Washington, DC
- 2nd Medical Group, Barksdale Air Force Base, LA
- 4th Medical Group, Seymour Johnson Air Force Base, NC
- 21st Medical Group, Peterson Air Force Base, CO
- 27th Medical Group, Cannon Air Force Base, NM
- 28th Medical Group, Ellsworth Air Force Base, SD
- 43rd Medical Group, Malmstrom Air Force Base, MT
- 45th Medical Group, Patrick Air Force Base, FL
- 56th Medical Group, MacDill Air Force Base, FL
- 58th Medical Group, Luke Air Force Base, AZ
- 62nd Medical Squadron, McChord Air Force Base, WA
- 314th Medical Group, Little Rock Air Force Base, AR
- 366th Medical Group, Mountain Home Air Force Base, ID
- 380th Medical Group, Plattsburgh Air Force Base, NY
- 396th Medical Group, Sheppard Air Force Base, TX
- 542nd Medical Group, Kirtland Air Force Base, NM
- 554th Medical Group, Nellis Air Force Base, NV
- 646th Medical Group, Eglin Air Force Base, FL
- 650th Medical Group, Edwards Air Force Base, CA

Air Mobility Command, Scott Air Force Base, IL
- 375th Airlift Wing, Scott Air Force Base, IL
  - Aeromedical Evacuation Control Center, Scott Air Force Base, IL
  - 11th Aeromedical Airlift Squadron, Scott Air Force Base, IL
  - 57th Aeromedical Evacuation Squadron, Scott Air Force Base, IL

932d Aeromedical Airlift Group (Associate), Scott Air Force Base, IL
- 73d Aeromedical Airlift Squadron, Scott Air Force Base, IL

Defense Agencies

Office of the Civilian Health and Medical Program of the Uniformed Services, Aurora, CO

Other Defense Organizations

Joint Staff, Logistics Directorate, Medical Readiness Division, Washington, DC

U.S. Transportation Command, Scott AFB, IL
- Armed Services Medical Regulating Office, Scott AFB, IL

Non-Defense Federal Organizations

Office of Management and Budget, General Management Division, Washington, DC

General Services Administration, Aircraft Management Division, Arlington, VA

Appendix G. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Under Secretary of Defense (Comptroller/Management)
  Deputy Under Secretary of Defense (Comptroller/Program/Budget)
Assistant Secretary of Defense (Health Affairs)
Assistant Secretary of Defense (Reserve Affairs)
Assistant Deputy Under Secretary of Defense (Transportation Policy)
Assistant to the Secretary of Defense (Public Affairs)

Joint Staff

Director, Joint Staff

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Unified Command

Commander in Chief, U.S. Transportation Command

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Central Imagery Office
Office of the Civilian Health and Medical Program of the Uniformed Services

Non-Defense Organizations

Office of Management and Budget
National Security and International Affairs Division, General Accounting Office
  Technical Information Center
  Defense and National Aeronautics and Space Administration Management Issues
  Military Operations and Capabilities Issues

Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

  Senate Committee on Appropriations
  Senate Subcommittee on Defense, Committee on Appropriations
  Senate Committee on Armed Services
  Senate Committee on Governmental Affairs
  House Committee on Appropriations
  House Subcommittee on National Security, Committee on Appropriations
  House Committee on Government Reform and Oversight
  House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
  House Committee on National Security

Part IV - Management Comments

Under Secretary of Defense (Comptroller) Comments

UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100

COMPTROLLER

MAY 15 1995

MEMORANDUM FOR DEPARTMENT OF DEFENSE (INSPECTOR GENERAL)
ATTENTION: DIRECTOR FOR LOGISTICS SUPPORT

SUBJECT: Audit Report on the Aeromedical Evacuation System (Project No. 3LF-0065)

I have reviewed the subject draft audit report. There is one recommendation addressed to Under Secretary of Defense (Comptroller). This recommendation and my response is as follows:

Recommendation: We recommend that the Under Secretary of Defense (Comptroller) reduce combined (Defense Health Program and Air Force Military Personnel Appropriation) funding from $72.0 million for the C-9A aircraft Flying Hour Program to $50.3 million for the 8,550 hours necessary to train pilots for mission requirements.

USD(C) Response: Concur. We intend to review this program as part of the FY 1997 Budget Review with the objective of making any remaining program reductions recommended by the review.

Thank you for coordinating the draft audit report with my office. We will contact your office during the budget review to ensure that your funding recommendations are fully explored.

Alice C. Maroni
Principal Deputy Under Secretary
of Defense (Comptroller)

Assistant Deputy Under Secretary of Defense (Transportation Policy) Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

ACQUISITION AND TECHNOLOGY

(L/TP)

20 APR 1995

MEMORANDUM FOR DIRECTOR, LOGISTICS SUPPORT DIRECTORATE, DODIG

SUBJECT: Draft Audit Report on the Aeromedical Evacuation System

This is in response to your memorandum dated February 28, 1995, which requested comments on a draft audit report concerning the movement of U.S. Armed Forces patients on C-9A aeromedical aircraft in the continental United States. Although none of the recommendations for corrective actions were specifically addressed to our office for comment, it is important to reemphasize our position concerning the establishment of additional patient movement procedures in DoD 4515.13-R, "Air Transportation Eligibility."

We do not concur that additional patient movement procedures should be included in DoD 4515.13-R. The purpose of this Regulation is to provide policy guidance for transportation personnel to determine passenger and cargo eligibility for airlift on DoD aircraft. The current level of detail concerning patient movement is well beyond that which is required for transportation personnel, the intended audience of this Regulation.

Patient movement eligibility is determined by a competent medical authority, and patients are processed and handled by medical personnel in medical facilities, not by transportation personnel in passenger terminals. Therefore, all aeromedical policy and procedures must be established in a DoD issuance sponsored and approved by the Assistant Secretary of Defense for Health Affairs (ASD(HA)). This will enable ASD(HA) to fully comply with their responsibilities as stated in DoD Directive 5136.1, "Assistant Secretary of Defense for Health Affairs (ASD(HA))," and ensure consistent patient movement policy.

To prevent a policy void for the Department, we agreed to include an aeromedical movement chapter in the revised DoD 4515.13-R. However, our intent is to remove this chapter as soon as ASD(HA) establishes these policies/procedures in an appropriate medical issuance. We addressed this issue with you at a November 7, 1994 meeting, and it was our clear understanding

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that one of the recommendations of this audit would be for ASD(HA) to publish this policy.

Request Part II, Recommendations for Corrective Actions, paragraphs 2.b. and 2.d., of the draft report be modified as specified in the attachment to this memorandum. My point of contact is Maj Chris Doran, (703) 697-7287 (DSN 227-7287).

Mary Lou McHugh
Assistant Deputy Under Secretary
(Transportation Policy)

Attachment

cc: ASD(HA) Medical Planning

Suggested Modifications

Page 20, paragraph 2.b. Modify as follows:

b. Establish procedures in ~~the DoD Regulation 4515.13-R, "Air Transportation Eligibility,"~~ **an appropriate ASD(HA) issuance** for military treatment facility commanders who refer patients to other medical facilities to evaluate the cost of other alternatives, including the use of the Civilian Health and Medical Program of Uniformed Services for local care, and identify for movement patients when it is cost-effective, graduate medical education cases, and medical emergencies when care is not available locally. The evaluation should compare costs to the Government for local medical care with the cost methodology developed in Recommendation 2.a.

Page 21, paragraph 2.d. Modify as follows:

d. ~~Revise DoD Regulation 4515.13-R, "Air Transportation Eligibility," to~~ Include charts similar to Appendix D **in an appropriate ASD(HA) issuance** that clearly illustrate eligibility for aeromedical transportation by categories and priorities for mission-essential patients.

Attachment

Audit Team Members

This report was produced by the Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD

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