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Report to Sen. William Proxmire; by Robert F. Keller, Acting Comptroller General.

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Congressional Relevance: Sen. William Proxmire.
Authority: A.S.P.R. 10-501.4.

Logistical support at the Kwajalein Missile Range in the Marshall Islands is provided through the services of a contractor, Global Associates, under the terms of a cost-plus-award-fee incentive contract awarded by the Army's Ballistic Missile Defense Systems Command in Huntsville, Alabama. The contractor provides a myriad of services to range users, tenant agencies, and about 3,300 resident employees and dependents. The current 3-year contract is expected to cost about $81 million. Findings/Conclusions: Although management has improved in response to recommendations resulting from an earlier review of logistical support, contractor-operated logistical activities in supply, vehicle maintenance and use, and the Army's surveillance of contract operations and control over labor can still be improved. Despite a labor cost of over $46 million in 26 months, monitoring the contractor's use of employees was not being emphasized. Recommendations: The Secretary of the Army, through the Ballistic Missile Defense Systems Command, should provide guidelines to Army range officials and evaluators emphasizing economy and efficiency of operation as well as performance. The guidelines should identify aspects of contractor operations that should be emphasized and analyzed more closely. The guidelines should be studied and be made detailed enough to guarantee that persons designated to evaluate contractor performance develop the data and information to support their ratings of contractor performance and that fees awarded are commensurate with performance. (Author/SC)

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REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

Improving Logistical Support At Kwajalein Missile Range

Logistical support at the Kwajalein Missile Range in the Marshall Islands is provided by a private contractor through a cost-plus-award-fee incentive arrangement. Awarded by the Army's Ballistic Missile Defense Systems Command, the contract is estimated to cost $81 million over 3 years.

The Government can spend less money on logistical support by better managing and monitoring contract operations.

LCD-77-438

NOVEMBER 7, 1977

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

B-152598

The Honorable William Proxmire
United States Senate

Dear Senator Proxmire:

In your September 9, 1976, letter you asked that we review a series of allegations made by an Army equipment specialist concerning mismanagement and waste in the logistics support provided by a private contractor at Kwajalein Missile Range in the Marshall Islands. We agreed with your office to review the allegations in connection with other work our Far East Branch might be planning for Kwajalein. In assessing contractor performance, we found that improvements had been made based on our prior work and recommendations made in a report to the Secretary of Defense (B-152598, Jan. 12, 1973).

There are, however, opportunities for further improvements in the contractor's logistics support operations. In addition, the process of evaluating the contractor's operations needs to be improved to assure that the contractor is rewarded for optimal performance and that the Government is not reimbursing the contractor for unnecessary costs. Of the 10 allegations, 4 involved questionable management and 6 were not substantiated.

Your office requested that we provide the Department of Defense with a copy of the report for 2 weeks for its comments. We met with Department of Defense and Ballistic Missile Defense Systems Command officials to discuss their comments. They gave us additional information, which has been incorporated in the report.

This report contains recommendations to the Secretary of the Army on pages 31 and 42 for improving operations and the Army's surveillance of contractor activities.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

ACTING Comptroller General
of the United States

REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES

IMPROVING LOGISTICAL SUPPORT AT KWAJALEIN MISSILE RANGE

D I G E S T

Logistical support at the Kwajalein Missile Range in the Marshall Islands is provided through the services of a contractor, Global Associates, under the terms of a cost-plus-award-fee incentive contract awarded by the Army's Ballistic Missile Defense Systems Command in Huntsville, Alabama.

The contractor employs about 1,800 people to provide a myriad of services to range users, tenant agencies, and about 3,300 resident employees and dependents. The current 3-year contract is expected to cost $81 million. Additionally, other Government agencies, the military services, and the Pacific Trust Territories Government pay for various reimbursable support services. (See p. 2.)

In reviewing a series of allegations of misuse or wasteful use of Federal funds, GAO found that some of the activities described involved questionable management while others did not appear improper. Management has improved in response to recommendations resulting from a 1972 GAO review of logistical support.

However, contractor-operated logistical activities in supply (see p. 22), vehicle maintenance and use (see pp. 23 to 26), and the Army's surveillance of contract operations and control over labor can still be improved. Despite a labor cost of over $46 million in 26 months, monitoring the contractor's use of employees was not being emphasized. (See p. 27.) Also, more effective review and coordination of equipment requirements are needed. (See p. 29.)

Army personnel at Kwajalein monitor and evaluate the contractor. Their evaluations are the basis for determining contractor

performance award fees and are essential for minimizing contract costs.

If all available information were furnished to the contracting officer to make the award fee/incentive fee determinations, his evaluations of the contractor's work could be more effective. Despite the recognized importance of onsite evaluations, sufficient guidelines and criteria for evaluating the contractor have not been given to evaluators. As a result:

--Evaluators may not have covered all areas of the contractor's work, established evaluation priorities, or reported in the most useful manner.

--The evaluation process was unnecessarily subjective and could be improved by developing objective criteria and adequately documented evaluations.

--The analysis of contractor operations was less than effective, because available data was not used by evaluators.

High-quality evaluations must be made of the contractor to reasonably assure that the contractor is rewarded for optimal performance and that the Government is not paying for unnecessary costs. During 26 months the contractor was awarded fees totaling $1.4 million.

In several cases, performance scores for above-average performance used in determining the $1.4 million fee appeared questionable.

RECOMMENDATIONS

The Secretary of the Army, through the Ballistic Missile Defense Systems Command, should provide guidelines to Army range officials and evaluators emphasizing economy and efficiency of operation as well as performance. The guidelines

should identify aspects of contractor operations that should be emphasized and analyzed more closely.

The guidelines should be studied and be made detailed enough to guarantee that persons designated to evaluate contractor performance develop the data and information to support their ratings of contractor performance and that fees awarded are commensurate with performance.

AGENCY COMMENTS

Department of Defense and Command officials generally agreed with our assessments of the allegations. They agreed that some of the procurement activities involve questionable management.

They emphasized that the range has a unique mission and location and that, because contractor personnel are intensely involved in the technical aspects of missile systems development and support, administrative procedures and coordination are not always as effective at Kwajalein as at other overseas installations.

Overall, in the opinion of Command officials, contractor performance has been good, considering the need for flexibility and ingenuity on the part of the contractor to support the highly technical and ever-changing operating requirements. The use of a cost-plus-award-fee contract recognizes this need, since the specific performance criteria for a more definitive contract cannot be clearly delineated. Therefore, any assessment of the quality of contractor performance must necessarily be subjective.

Command officials feel that the guidelines given range officials and evaluators in the contract are adequate. They agreed that there are advantages in maintaining close control and independent review but said that the administration staff of 68 Army personnel

provides them with only a limited capability. This is why there is the control of labor feature in the contract, which represents 40 percent of the contractor's potential fee and is intended to encourage the contractor to hold down labor costs.

GAO points out that, even under a cost-plus-award-fee incentive contract, a contractor must meet agreed upon goals and performance standards. The elements of the performance to be measured must be the most significant to the Government's interest.

GAO does not believe that the contractor's logistical operations are so unique that methods for testing and measuring its effectiveness cannot be developed. The Army has 13 years of experience with this contractor. With adequate guidelines the staff at Kwajalein, limited as it is, could test contractor performance. Specifically identified procedures are needed to systematically review, test, measure, and record those aspects of the contractor's work that offer the potential for the greatest savings.

Contents

ABBREVIATIONS

FAA	Federal Aviation Administration
GAO	General Accounting Office

CHAPTER 1

INTRODUCTION

HISTORICAL BACKGROUND

The Marshall Islands, along with the Caroline and Marianas Islands, make up the Trust Territory of the Pacific. The Trust Territory was established in 1947 and placed under the United States trusteeship by the United Nations. Kwajalein Atoll is one of the many Marshall Islands scattered in the central Pacific. It is located about 2,100 miles southwest of Hawaii, 2,000 miles northeast of Australia, and 2,100 miles southeast of Tokyo.

Kwajalein was used as a U.S. naval base from 1946 to 1959. The Navy surplused the base in 1959, and the Army selected it as the test site for an antimissile program. That same year the Navy awarded a contract to a private firm to operate and maintain base logistical support activities, replacing the military personnel who had previously performed the logistics functions. In 1964 Kwajalein was transferred to the Army and named the Kwajalein Test Site. In 1968 it was renamed the Kwajalein Missile Range.

KWAJALEIN MISSIONS, FUNCTIONS, AND RELATIONSHIPS (RESPONSIBILITIES)

The Department of the Army, which is responsible for managing the range, has designated the Commanding General, Ballistic Missile Defense Systems Command, at Huntsville, Alabama, as the National Range Commander of Kwajalein. The military commander onsite at Kwajalein is delegated the responsibility for managing and operating the range.

Kwajalein's mission is to (1) give technical support to missile and space projects, (2) furnish logistical support and services to range users and tenants, and (3) coordinate U.S. Government requirements involving activities concerning the Trust Territory of the Pacific Islands.

In the area of technical support, Kwajalein develops plans and coordinates technical range assets to meet the requirements of the various range users; provides range services in the form of reentry data collection and validation, impact, scoring, telemetry, missile recovery, and communications and meteorological support; coordinates and monitors activities of the technical range support

contractors; and insures compliance with missile safety procedures, supervises and monitors industrial and community safety programs, and provides explosive ordnance disposal support for the range.

Logistics services include maintaining and operating the interisland land-sea-air transportation system to meet the requirements of both the technical and administrative community and supervising and maintaining those operations associated with running a small city. These services include providing water, electricity, sewage, housing, medical, education, retail facilities, recreation, performing many other routine functions, and monitoring all onsite construction, maintenance operations, and the activities of the logistics support contractors.

LOGISTICS SUPPORT BY CONTRACT

In October 1974 the Ballistic Missile Defense Systems Command awarded a 3-year cost-plus-award-fee incentive contract to a civilian contractor to provide logistical support. In July 1959, when Kwajalein was a Navy base, a contract to operate and maintain the base's logistical support facilities had been awarded to the Transport Company of Texas. A small staff of naval personnel was retained to supervise the execution of the contract. Transport Company of Texas continued to provide the support until March 1964, when the contract was awarded to Global Associates, headquartered at Oakland, California. Global Associates continues to provide the support under later contracts.

The contractor is responsible for supplying and maintaining the Kwajalein community facilities. Under the direction of the Kwajalein commanding officer, the contractor operates utilities, such as power, light, water, and transportation; supplies and operates all shopping facilities, clubs, restaurants, theaters, schools, dependent housing and bachelor quarters, barber shops and hospital, dental clinic, post office, laundry, and beauty salon and provides law enforcement and fire protection. Recreational facilities are also operated by the contractor.

The estimated amount of the contract for the 3-year period is about $81 million. In addition to operating costs reimbursed by the Command, the contractor also receives fund from the military services and other Federal

agencies, including the Pacific Trust Territories Government, for various reimbursable support services. From October 1974 through December 1976, such services had cost the Government over $12 million. For the same period the Army provided the contractor with operating supplies and equipment valued at about $3.7 million.

Kwajalein's Logistics Support Office is responsible for monitoring and coordinating all activities of the logistical support contractor to insure that performance is within the scope of work of the contract.

The contract provides that

> "the contractor shall * * * furnish: necessary personnel * * *; facilities; materials; supplies; equipment; and all other necessary resources, except as may be furnished by the Government; and do all things necessary for the accomplishment of satisfactory and timely performance of the requirements outlined in the contract Scope of Work."

Services provided by the contractor include:

--Maintaining and operating a land, sea, and air transportation system, including responsibility for about 700 automotive vehicles, trailers, and special equipment; about 20 marine vessels; and 11 aircraft.

--Supervising and maintaining community services, fire prevention and protection, and security functions for over 3,300 resident employees and dependents of the Army, Global Associates, and various tenant organizations who use or provide support to range users.

--Managing and operating facilities engineering and supply services. Facilities engineering services include overseeing contractor resources; maintaining equipment, buildings, and grounds; and providing pest control. Supply services include inventory, stock, and property control and storage; provision of petroleum, oil, and lubricants; and special data requirements.

To provide these services, the contractor employed, as of December 1976, over 1,800 U.S. citizens and Marshallese.

SCOPE OF REVIEW

The information in this report was obtained through a review of documents, reports, and files and through discussions with Army military and civilian personnel at Kwajalein. Information was also obtained from the Logistic Support Contractor at Kwajalein and Oakland, California; the Federal Aviation Administration (FAA), the Army Corps of Engineers, and the Air Force in Washington, D.C.; and the Ballistic Missile Defense Systems Command in Huntsville, Alabama.

CHAPTER 2

THE ALLEGATIONS:

MISUSE OR WASTEFUL USE OF FEDERAL FUNDS

We examined a series of allegations regarding misuse or wasteful use of Federal funds at the Kwajalein Missile Range. We looked into each allegation, and our analysis of the specific allegations follows.

1. "A new non-directional air navigational beacon was procured more than five years ago. The additional beacon was not needed then, nor is it needed now, and it is still stored in the war house. It now appears that a third may be procured."

The nondirectional beacon at Kwajalein is a navigational device that helps ships and aircraft with appropriate receivers to fix their location with respect to the range. It is a long-range beacon that emits a signal throughout a 360-degree pattern, identifying the beacon station, and is used by both military and commercial aircraft and ships. The beacon in operation at the range was installed in 1953, is serviceable, and has not required excessive maintenance.

A second beacon, procured in April 1970 at a cost of about $14,000, has been in storage since delivery in February 1971. It was acquired to replace the existing beacon, which was considered to be obsolete and to have excessive service age. The procurement justification described the equipment as having questionable reliability and excessive maintenance costs and referred to increasing problems of spare parts procurement.

The Ballistic Missile Defense Systems Command said that about 70 percent of the repair parts necessary to support the existing beacon were unavailable from Military Standard Requisitioning and Issue Procedure sources and that Department of the Army policy concerning replacement due to obsolescence dictated replacing it.

A third beacon, estimated to cost $7,000, was scheduled for installation in fiscal year 1980 as part of an Army program to standardize nondirectional beacons at all Army airfields. The installation date has been postponed to fiscal year 1982.

The unit in storage was retained as a nonoperational spare. Command officials said that, since the planned installation has been delayed, the beacon in storage is being installed as an interim measure. The Command justified this action on the basis of the excessive age of the existing beacon. This action was recommended by the Army Communications Command due to the problem of continued support of the obsolete system.

Documentation supporting the Command's claim that the original system was unreliable and that obtaining spare parts is a problem was not available. Information on the cost to maintain the system was also unavailable. A review of FAA log records showed that, for the 27-month period ended November 30, 1976, the beacon was nonoperational for only 7 hours due to unscheduled maintenance. FAA and range personnel said that this amount was not excessive and that FAA requirements are being met by the equipment.

2. A new replacement Tactical Air Navigation system was procured and installed at Bucholz Army Airfield, Kwajalein. The old system was in good condition and did not need replacement. The Navy picked up the old system and will install it instead of purchasing a new one.

The Tactical Air Navigation system is a navigational aid essential for both day-to-day air traffic control and for range missions operations. It emits an audio signal that helps aircraft to establish their position, in terms of distance and bearing, from Kwajalein. It is also used to maintain safe aircraft separation during range operations.

The former equipment was received at Kwajalein in 1968 as a reconditioned unit. It was a second-generation, tube-type unit which had accumulated over 40,000 hours while at Kwajalein. The replacement equipment was procured in June 1974, at a cost of about $474,000, and was certified as operational by FAA on March 4, 1975.

According to Army officials, the original system was obsolete, unreliable, logistically unsupportable, and a potential liability to achieving mission objectives. FAA and range operations officials also said the former system was unreliable. Although maintenance records were not available, the Ballistic Missile Defense Systems Command provided enough examples to substantiate the claims that the system was unreliable, was logistically unsupportable, and had maintenance problems. Command officials said

that Navy sources told them that all tactical air navigational systems of the type formerly installed at Kwajalein will be replaced within 2 years because of the reliability problem.

Command and range officials have translated a potential system failure into dollar costs, aircraft safety, and failure to achieve mission data-gathering requirements. Cost estimates--which we could not verify--for a possible mission failure due to a tactical air navagational system malfunction ranged from $100,000 to about $500,000. FAA said that the air traffic control tower would not operate during a mission without the system because safe aircraft separation could not be maintained. Also, the system was required for precise positioning for data acquisition.

Range officials transferred the original system to the Naval Electronic Systems Engineering Center, Mare Island Naval Shipyard, Vallejo, California. FAA records and comments from range personnel indicate that the system was serviceable when it was replaced.

3. An ASR8 airport surveillance radar unit has been procured for use at Bucholz Army Airfield. Cost of the unit, plus installation and training of tower operators, will be about $1 million. Also, this unit will require additional operators in the tower. Past experience indicates that the range can continue to operate without this expensive piece of equipment.

The ASR8 unit was procured in February 1974 at a total cost of $410,000 to provide air tower control personnel with precise aircraft separation capabilities during mission operations. Normally, two to eight aircraft are in the missile impact area during missions and precise positioning is essential for safety and reentry data-gathering purposes.

Before this unit was procured, aircraft separation was achieved by other means; however, more advanced mission requirements and range user concern over aircraft safety resulted in a requirement for greater separation capabilities. The unit was never installed at Kwajalein because the range's mission requirements changed after procurement.

An FAA air tower control specialist suggested using an existing secondary radar unit at the range. He considered the secondary radar unit a less costly, more easily justifiable alternative to the ASR8. The primary reason given for rejecting this suggestion was that the ASR8 unit had

already been purchased. However, the suggestion was made in January 1974, the unit was procured in February 1974, and the response rejecting the suggestion was not made until June 1974. This suggestion, for an undeterminable reason, was never forwarded to the Command.

We questioned why the ASR8 was considered the best equipment to satisfy range needs. Command officials responded that the ASR8 was the latest configuration of airport surveillance radar available. They also furnished us documentation showing that they had contacted the Air Force and were told that no surplus airport surveillance radar units were available.

According to an FAA official, an ASR8 unit has never been needed at Kwajalein. The official said that the effective range of the ASR8 was about 60 miles. In 1975, after the unit was procured, new target areas more than 60 miles from Kwajalein were established. Because the ASR8 could not meet the range requirements, the Command obtained a secondary radar unit from Air Force excess inventories on a nonreimbursable basis. The ASR8 unit was excessed and acquired by the Army Communications Command.

4. Thirteen nonaircraft commerical radios were procured in lieu of aircraft radios to be installed in range aircraft. These radios were not designed for aircraft and cannot be used.

In July 1972 the Ballistic Missile Defense Systems Command procured 12 General Electric mobile industrial radios at a total cost of about $10,000 for installation in Kwajalein aircraft. These radios were delivered in December 1972, but because of compatibility problems between the radios and the aircraft, they were never installed.

The radios were procured to satisfy a need for a communications network between aircraft, surface vessels, and ground stations to support mission objectives. Officials were aware that the radios procured were not designed for avionics use. The Command said that, since avionics equipment was expensive, the apparent aim was to minimize costs while satisfying range requirements. Because of electronic problems and aircraft noise, the radios could neither be used as manufactured nor be modified to suit the purpose for which they were procured. They were never installed and have been in storage since early 1974.

Officials admitted that the radios' compatibility had not been fully determined before purchase. They said that avionics personnel at the range were consulted before the radios were acquired.

When it became evident to range officials that the radios were not suitable, they were retained in storage on the premise that this type of radio is relied on to support range communications requirements. These radios are now scheduled to be used as replacements to existing radios supporting ground communications requirements.

5. The staff here at the range and at the Command appear to have little interest in saving the taxpayers' money. During a recent briefing by a range officer, a slide projector malfunctioned. The officer directed that two new projectors be purchased. He was informed that the two on hand were in good condition and that one needed only a new bulb and an adjustment. With total disregard for the taxpayers' money, two additional projectors were purchased.

In 1976 two slide projectors plus accessories were procured at a cost of about $390. We determined that (1) the two replaced projectors were serviceable, (2) no survey was made to determine if a repair or replacement was appropriate, and (3) the new projectors and accessories were purchased at a local retail store rather than through a Government supply source, as required by contract provisions.

The official receiving the replacement instructions said he was told to purchase two new projectors immediately. The officer giving the instructions recalls giving instructions to the effect that "something must be done about these machines even if you have to replace them." The instructions were oral and there was no corroborating evidence to support the statement of either official. After our inquiry, Command officials advised us that new procedures have been instituted to insure timely preventive maintenance, record maintenance accomplished, and provide adequate documentation for future procurement and replacement transactions.

6. "Cost of Liability Insurance for C-54s is approximately four times ($16,125 per year) the amount that the U.S. Army Missile Command was paying ($4,400 per year) at Redstone Arsenal, Alabama, for a similar, but more hazardous contractor operation. There are local conditions

and operating hours that can contribute to some additional costs, however, there are also some local conditions that should subtract from the cost."

The logistics support contractor flies and maintains two C-54 aircraft at the range. The C-54s are used primarily to transport about 150 contractor personnel daily between Kwajalein and Roi-Namur Islands. Other uses include off-atoll flights and search and rescue operations.

Armed Services Procurement Regulation 10-501.4 states that:

"Where aircraft are used in connection with the performance of the contract, such insurance [aircraft public and passenger liability insurance] ordinarily will be considered required coverage."

The contractor has procured insurance for the two C-54 aircraft. The extent of insurance coverage is consistent with the requirements of the regulation.

The current annual premium for each C-54 at the range is $9,275. The aircraft are configured for 71 seats and are used primarily for passenger transportation. We were advised that the insurance for the Kwajalein aircraft was competitively procured and that the underwriter took into consideration the high number of takeoffs and landings, the short duration of flights, and the climatic conditions to which the aircraft would be exposed.

The latest premium for one C-54 aircraft at the Army Missile Command, Redstone Arsenal, was about $4,800 annually. This aircraft was used primarily to transport cargo between locations within the United States, although periodically up to 41 seats were installed for passenger transportation.

We did not make a detailed comparison of costs of insurance premiums because of the different operating conditions of the aircraft.

7. "Ballistic Missile Defense Systems Command is presently trying to lease or purchase two commerical Electra aircraft. This would be a great expense to the taxpayer when there are plenty of aircraft already in the Department of Defense inventory that can do the job and also the aircraft presently being used (C-54s) are adequate and their use should

be continued until they become unsafe or uneconomical to operate."

The decision to replace the C-54s was based on concern for the aircraft's age, obsolescence, logistical unsupportability, and structural corrosion problems. The serviceability and reliability of the C-54 has been questioned since about 1972; both the Command and the Army have urged replacement.

Although age and obsolescence increase chances of deterioration, increase maintenance expense, and detract from logistical supportability (further complicated since the Air Force removed the C-54 from its inventory), the major concern is suspected structural corrosion. Because of corrosion problems, two C-54s previously assigned to the range have been retired. Although the extent of the corrosion is speculative, we found no reaons to dispute the decision to replace the C-54s.

Command officials said that, after considering various alternative aircraft, they decided to lease two Electra-118 aircraft from Eastern Airlines. We believe that some alternatives previously considered should be reconsidered. For example:

--The C-130A, previously determined infeasible because of propeller problems, can be modified to overcome objectionable noise and deterioration problems.

--Two C-7A Caribou aircraft at Kwajalein, seemingly excess to range needs, might be used to satisfy some of the requirements. The Command has previously considered this alternative infeasible since the C-7A, a two-engine aircraft, is prohibited by FAA regulations from making flights over water extending beyond a specified range. Such flights appear to be on an exception basis and do not preclude the possibility that by using the two C-7As only one four-engine replacement aircraft is necessary. Also, the Command can request an exception from this constraint from the FAA Administrator.

--Questions have been raised about the compatability of the Electra's avionics to military navigational systems at Kwajalein; the Electra's cargo-loading capabilities; and the need for auxiliary power units for aircraft support. Resolving these matters could require additional expense.

--Attempts have been made to obtain from the Department of Defense inventories aircraft suitable for the range's requirements. The latest known inquiry to the Air Force was made in October 1975.

The Army had also asked whether the Military Airlift Command could provide services to Kwajalein now performed by the C-54s. That Command advised that providing daily service to the range using C-130 aircraft would be too expensive.

8. The logistics support contractor has been given a blank check to operate the aircraft here and is taking full advantage of the situation. The cost of operating two C-54s and six C-7As in support of the range more than doubles the cost per flying hour for the same type aircraft in the Air Force. Based on the Air Force (AFR 76-11) Airlift Service Industrial Fund rate table, the difference is as follows:

	Air Force cost per flying hour	Range cost per flying hour
C-7A	$178.00	$442.00
C-54	241.00	683.00

The contractor provides aviation services that include maintaining and operating two C-54 and six C-7A aircraft, daily transportation of contractor personnel to islands within the Kwajalein Atoll, flights to islands away from the atoll, and search and rescue operations. Below depot level maintenance is accomplished by the contractor onsite.

The Air Force, flying the C-7A for its own purposes, ascribes a cost of $295 per flying hour but charges different rates to other agencies. In computing cost per flying hour, the Air Force excludes crew salaries, certain other labor costs, liability insurance, air traffic control, and administrative costs. The Air Force removed the C-54 from its inventory in 1973, and it no longer has current flying hour costs for this aircraft.

The cost per flying hour cited in the allegation represented 1974 Military Airlift Command flying hour charges. In this regard, the Army was advised by the Military Airlift Command that services now performed by C-54s would be too costly for that Command to provide daily service at the range.

Based on information available to us, we compared the contractor and Air Force costs for operating C-7A aircraft to determine whether significant savings would result if the Air Force provided the service to the range. As shown in the table below, the aggregate cost elements considered by both the contractor and the Air Force differed by about $44. We were unable to obtain Air Force cost information for cost elements excluded from the Air Force cost per flying hour and thus could not make a comparison. Also, we could not compare costs for C-54 aircraft because current cost data was not available.

	Contractor costs	Air Force costs
Cost elements included in contractor and Air Force computations:		
Maintenance labor	$ 79.58	$150.00
Quality assurance labor	9.83	(a)
Overhead	38.35	28.00
Maintenance materials	87.39	63.00
Petroleum, oil, and lubricants	37.86	48.00
Depot maintenance	97.95	118.00
Fringe benefits	100.13	(b)
	451.09	407.00
Cost elements included in contractor but not in Air Force computations:		
Pilot labor	82.70	(c)
Insurance	6.52	"
Air traffic labor	38.43	"
Administrative labor	13.62	"
FAA/Weather Bureau labor	3.00	"
	144.27	0
Total	$595.39	$407.00

a/Cost for quality assurance personnel, since these employees are part of aviation maintenance operations, would be included in the $150 Air Force maintenance labor cost component.

b/Although this is not an identifiable amount, fringe benefit costs are included in the overall Air Force cost per flying hour computations but not separately identified.

c/Not included in the Air Force cost per flying hour computations.

9. The runway at Bucholz Airfield has been resurfaced, 200 feet wide. This is 25 percent wider than is needed. Had this project been staffed through aviation personnel, it would have been determined that a runway 150 feet wide is adequate and that only a few runways in the world are more than 150 feet wide. No runway at Honolulu International is more than 150 feet wide.

   The runway at Meck Island in the Kwajalein Atoll was resurfaced although it would have lasted another 15 years.

   Present plans are to resurface the runway at Roi-Namur Island although only a few patches and sealing are needed since the base is natural coral and will last forever.

The runway at Bucholz Army Airfield was 200 feet wide before it was resurfaced in 1975 at a cost of $1,389,297. The work was ordered by the Ballistic Missile Defense Systems Command on the basis of Corps of Engineers studies which verified that the runway surfaced was deteriorating. The runway was resurfaced to a width of 200 feet to meet Air Force and FAA criteria for minimum runway widths appropriate for the aircraft using the airfield.

The Meck Island runway was repaired in 1975 at a cost of $92,989. A May 1975 Corps of Engineers study noted that, altnough there was no visible evidence of base and subgrade distress and the pavement was fair to good, restoration was necessary to prevent further damage. The Command considered the repairs critical to the safety of personnel and equipment. According to the study, the life expectancy of the runway, without repairs, was 1 to 2 years, and the Command said that the runway will probably be needed through 1981. The study provided three alternatives for repairs.

Repairs to the runway had been considered since 1970 but were deferred because of its low priority. The Corps found that the runway base course and subgrade at Roi-Namur were in excellent condition but that the asphaltic surface course had experienced complete design failure. (Our staff inspecting the runway were able to peal off the runway surface with their fingers.) The recommendation to resurface the runway with an asphaltic overlay was accepted by the Command. The project has been approved and funded.

10. "During the past thirty-four months, continuous pressure has been exerted by supervisors to inflate the evaluated grades given the Logistic Support Contractor by the aviation evaluator. This is an Incentive Award Contract (approximately $28,000,000 per year) which means that the fee paid to the contractor is based partly on grades given by the evaluator. During the past thirty-four months, with the exception of three months, and at a salary expense of $30,000 per annum to the taxpayer, the evaluator's recommended grades have been raised by supervisors who have no experience in aviation. The supervisors who raise the grades are apparently doing so because of pressure from above."

As described in chapter 4, the logistics support contract has both an award-fee feature (quality of performance) and an incentive-fee feature (control of labor costs). The evaluations of contractor performance by the Army's onsite personnel are a prime consideration in the award fee determination.

The performance evaluation is results oriented. The standard used by evaluators is the contract's scope of work, which defines the tasks for which the contractor is responsible. Evaluators monitor the contractor's performance, including the efficiency, economy, and effectiveness of operations, and note performance above and below that expected from an "average contractor." The concept of average contractor performance is undefined and may contribute to the subjective nature of the evaluation process.

Evaluations are reviewed by supervisors and the range commanding officer and are discussed with contractor personnel. The commanding officer then recommends a score and submits it, along with the performance narratives prepared by the evaluators, to the Ballistic Missile Defense Systems Command in Huntsville, Alabama. The contract evaluation board uses this information to prepare a recommendation to the contracting officer. The contracting officer in Huntsville can revise the recommended performance score.

Before the quarter ended September 30, 1976, evaluators recommended a score regarding the contractor's performance to the range commander. Evaluators are no longer requested to submit recommended scores.

We reviewed the aviation evaluator's submission for the quarter ended June 30, 1976--the last quarter in which

scores were solicited. The evaluator recommended a score of 81 for contractor performance during this period. To support his recommendation, the evaluator noted such items as special transport services provided, rapid turnaround time for aircraft in transit at Kwajalein, and cooperative contractor attitudes as examples of above-average performance. He also noted fuel leaks, mail and cargo being run over by a forklift, pressure gauges on a fuel truck indicating pressure exceeding allowable limits, and fire hazards as examples of below-average performance.

The evaluator's supervisor raised the score from 81 to 86. The supervisor told us that he raised the score by 5 points because he believed the evaluator had not sufficiently recognized contractor achievements. The supervisor cited essentially the same examples of above-average performance included in the evaluator's quarterly report and, in essence, felt that they outweighed the instances of below-average performance. At Command headquarters the score was raised 1 more point to an 87. The effect of the revision from 81 to 87 was about a $3,100 increase in fees paid to the contractor.

In August 1976 the aviation evaluator advised the Command that he had been pressured by supervisors to write above-average performance comments and that scores he recommended were being raised by personnel without aviation experience. A range official, in a memo accompanying this information to the Command, said that the comments regarding above-average evaluations were essentially correct and that there had been:

> "* * * on occasion, a need to encourage recognition of particular contractor efforts which are considered better than the minimal requirement in the Scope of Work.
>
> "It is also important to recognize the morale factor involved in writing an above-average comment. These comments tend to encourage better performance and improve management cooperation and communications."

The official noted that, although individual evaluations are important factors in determining a recommended grade, he also considers the "overall operation and responsiveness to mission support" which may preclude a direct correlation between grades and specific evaluation comments. He did not define what factors are considered in evaluating overall operation and responsiveness.

The range commanding officer, in a memo that also accompanied the evaluator's comment to the Command, advised that the contract does not require the evaluator to assign a numerical score. This is the responsibility of the contracting officer's representative (the range commanding officer), who said that he did not have to accept such recommendations.

The Commanding General of the Command advised the aviation evaluator that determining the appropriate amount of an award fee is a subjective matter and that opinions often vary. He recommended that the evaluator review his work responsibilities, noting that the contract required only the range commander, and not the evaluator, to recommend performance scores.

None of the range evaluators or supervisors we spoke with could substantiate the claim of alleged pressure to write above-average comments. The aviation evaluator making the claim could not provide documentation to support his assertion.

Command officials have since told us that the requirement for evaluators to recommend scores was eliminated in late 1974. Although evaluators continued to provide scores to the contracting officer's representative at the range, the scores were merely indicators. The final responsibility for recommending scores rests with the representative, who at Kwajalein is the commanding officer.

CONCLUSIONS

Having reviewed the logistical support activities at Kwajalein Missile Range in terms of alleged misuse and waste of Federal resources, we believe that the allegations were made in good faith with a genuine interest in improving range and contractor operations.

Based on our review and analysis we have reached the following conclusions:

1. The second nondirectional beacon was not needed. Because the existing equipment was still reliable, there was no need to replace it with another unit as an interim measure. We did not examine the Army's decision to standardize beacons at all its airfields.

2. Replacement of the original Tactical Air Navigation system was warranted in view of the evidence

provided on its unreliability and the potential negative effect on the range mission.

3. The need for the ASR8 airport surveillance radar unit is questionable. The need was questioned by FAA officials at Kwajalein, who indicated that the requirement could be met by available secondary radar. Nevertheless, the Command did attempt to obtain a radar set from surplus Air Force inventory before purchasing the ASR8 and eventually did so when the revised requirements exceeded ASR8 capabilities.

4. The radios were not avionics radios and should not have been procured. Command officials admitted that there was a failure to examine all aspects of radio compatibility. Had avionics personnel at the range adequately reviewed and examined the radio's specifications before acquisition, the problem might have been avoided.

5. Because of contradictory statements concerning the instructions given and because of the absence of a written record or corroborating witnesses, we could not establish whether the projectors were procured with intentional disregard for the taxpayers' money. We did, however, determine that the existing slide projectors were serviceable and apparently did not warrant replacement.

6. Because the insurance for range C-54 aircraft was procured competitively and the extent of coverage was consistent with requirements of the Armed Services Procurement Regulation, we believe there is no basis to question the costs for aircraft liability insurance. Further, any comparison of insurance rates for aircraft assigned to Kwajalein with rates for aircraft at other locations should take into account individual flying operations.

7. The consideration to replace the C-54 aircraft is valid. Waiting until the aircraft cannot be flown before planning for their replacement would not be prudent. However, we believe that alternatives previously considered for using existing military aircraft should be reconsidered.

8. Because the Air Force and contractor used different methods in computing flying hour costs and complete information was not available for a valid comparison, we could not fully evaluate the validity of this allegation. However, the contractor apparently is not charging the Army excessive rates for those cost elements which were considered by both in computing flying hour costs.

9. Airfield runway repair decisions have been made based on recommendations by Corps of Engineers studies. In our opinion, the decisions reached by the Command were appropriate and complied with existing regulations.

10. The evaluator's recommended scores were changed by his supervisors. Although these changes may be objectionable to the evaluator, they are allowed within the evaluation process. We could not determine whether pressure had been applied to evaluators to write above-average comments. Because score changes made at Kwajalein were not supported by documentation, we could not evaluate whether they were improper. Command officials told us that the only scores from the range recognized by the Command are those of the contracting officer's representative.

    The significant issue raised by the allegation, however, is the highly subjective nature of the evaluation process, which leads to varying opinions on the appropriate performance score to be applied. As we indicated in chapter 4, we believe that this system can be improved.

AGENCY COMMENTS

We met with Department of Defense and Ballistic Missile Defense Systems Command officials to informally discuss their comments on the report. They gave us additional information, which has been incorporated in the report.

They agreed that some of the activities referred to in the allegations involve questionable management. They feel, however, that such incidents will occur occasionally with an operation like the Kwajalein project. Not only is the Kwajalein mission a highly technical and complex operation for missile research, development, and testing, but logistics problems that would be considered routine at other bases are difficult at Kwajalein. The project is isolated in the Pacific

Ocean, over 2,000 miles from any land mass and is monitored by a small Department of the Army staff of 28 military and 40 civilian personnel. It is difficult for a staff of this size to control the activities of 3,000 contractor personnel and dependents. Because the contractor personnel are so involved in supporting the technical aspects of missile systems development and their operations are monitored by such a small Army staff, the coordination and administrative procedures are not always as effective at Kwajalein as they would be at a well-staffed military installation in the United States or at other overseas locations.

CHAPTER 3

OPPORTUNITIES TO IMPROVE LOGISTICS SUPPORT OPERATIONS

In 1972 we reviewed the administration of the contract for logistics support of Kwajalein Missile Range and made several recommendations to the Secretary of Defense. 1/ Since then, improvements have been made in supply management, vehicle use, and food service operations. For example, as of January 1977 the contractor had:

--Reduced inventories from 57,000 to about 44,000 line items.

--Reduced the inventory operating and safety levels from 180 to about 100 days of supply.

--Reduced the number of administrative use vehicles from 420 to 307.

--Terminated use of vehicles for unauthorized purposes.

--Placed the dining hall operations on a self-sustaining basis, thereby eliminating Government subsidies.

Opportunities exist for further improvements in contractor operations, as described in this chapter. In addition, there is a greater need for more effective evaluations of the overall contractor performance in determining reasonable fees, as described in chapter 4. Evaluators' ratings were raised by supervisors and headquarters officials without, in our opinion, sufficient documentation.

IMPROVING LOGISTICS SUPPORT AT KWAJALEIN

Despite improvements made since our 1973 report, opportunities exist for further improvement in supply, maintenance management, equipment utilization, and other contractor-operated activities.

1/B-152598, Jan. 12, 1973.

Supply operations

The contractor is required to minimize inventory to levels necessary for effective and efficient mission operations. Although Army policy is that stockage will be based upon demand criteria and/or item essentiality, as of February 1977 the contractor was determining inventory levels and requisitioning objectives using criteria based on units of inventory issued. Also, the Kwajalein supply evaluator was not adequately reviewing the appropriateness of inventory stock levels.

The supply department maintains an inventory of about 44,000 line items, of which 6,800 are stocked on the basis of the number of items issued for the most recent 6-month period. The remaining stockage includes:

--Items that were not supported based on issues but were required to safeguard health or insure safety and continued operation of an essential end item, system, or facility, the failure of which would seriously disrupt operations or create severe morale problems.

--Merchandising items procured for resale.

--Other items that had not been on the stockage list for 360 days or were already identified as not to be reordered.

We tested the 6,800 line items and found stocks valued at over $839,000 in excess of needs. We also examined the same line items on the basis of the number of requests for them, a criterion the contractor planned to implement in July 1977. Using this criterion, we found that about 2,500 line items valued at more than $260,000 should not have been in the inventory. About 1,800 of these items had not had an issue during the preceding 6 months.

The supply manager and evaluator agreed with our findings and said the problem resulted from population changes, erratic demand, and uncommunicated changes in user demand due to changes in program operations. Ballistic Missile Defense Command officials said that the supply department is notified of major program changes, such as phasein or phaseout of entire programs, facilities, and equipment. However, as of February 1977 the contractor had no systematic means for soliciting users' anticipated future demands.

The contract provides that the Army's appointed supply evaluator is responsible for monitoring performance of all

tasks of the supply statement of work. These tasks include not only results evaluation, based upon responsiveness of the contractor's supply systems to user needs, but also appropriateness of stock levels and stock lists, use of and request for minimum items required to accomplish tasks, ability to meet rapidly changing requirements, and other appropriate considerations. The evaluator understood that his principal function was to monitor the contractor's performance in meeting user demand. He said that by reviewing the contractor's monthly supply activity reports and by walking through supply warehouses and administrative offices, he could determine whether the contractor's inventory levels and requisitioning processing are appropriate.

The evaluator was not making a formal analysis of supply and demand, which considers (1) inventory onhand, (2) future demand, (3) percent of fill, (4) backorder volume, and (5) resulting appropriate amounts to order and maintain, considering supply sources, costs, and order-ship times. The information used for our analysis was available from the contractor, but the evaluator was not obtaining it for his evaluations.

In addition, the contractor's inventory supply levels may be in excess of levels necessary to support mission operations. While the Army Support Command, Hawaii, has a policy of maintaining a 60-day onhand supply of inventory, the contractor maintains a 100-day supply.

Most supplies are transported to the range once a month by barge. The contractor and the supply evaluator claimed that the 100-day supply level was necessary, but neither had made an analysis to determine the reasonableness of the level. We feel that since a shipment is received monthly at the range, reducing the operating and safety level should be considered.

The Ballistic Missile Defense Systems Command agreed that there may be opportunities for further reductions in these levels and said that it would continue to review and reduce supply levels when considered prudent.

Maintenance management

Kwajalein uses about 700 automotive vehicles and pieces of special-purpose equipment. The contractor is required to maintain vehicles at reasonable cost to assure maximum readiness, safety, and efficiency and to use vehicles to meet the range mission in the most cost-effective and practical manner. To achieve these goals the contractor must do only

essential maintenance on vehicles scheduled for replacement and rotate all vehicles to assure equal use over their service lives.

Range officials could reduce maintenance costs on some vehicles by servicing them less frequently and assuring that maintenance on vehicles scheduled for replacement is limited to minimum servicing necessary to maintain safety and serviceability. Also, range officials could reduce vehicle requirements by (1) providing more comprehensive information on vehicle use, (2) more carefully rotating vehicles from high-to-low mileage users to accumulate mileage more uniformly, and (3) using smaller capacity vehicles when appropriate.

Need to reevaluate maintenance schedules

The contract requires that the contractor continually reevaluate preventive maintenance intervals. The contractor had established periodic preventive maintenance schedules for vehicles and had implemented controls adequate to assure adherance to the schedules. The schedules, however, were based on time intervals recommended by the manufacturers. Climatic conditions at Kwajalein are conducive to corrosion, particularly where ventilation allows moisture to accumulate.

Many vehicles accumulated such small mileages that servicing them at fixed time intervals, rather than at fixed mileages, may have led to overmaintenance. We reviewed maintenance records for 3 of 4 ambulances, 9 of 14 buses, and 35 of 100 carryalls on the range for 12- to 15-month periods ended January 31, 1977. (Carryalls are vehicles used at the range for transporting passengers and small equipment.) We found that:

--The average mileages between scheduled preventive maintenance for three ambulances were 351, 34, and 33 miles (maintenance records for the fourth ambulance were not readily available). The manufacturer's recommended interval between servicings is 2,000 miles.

--Only one of the nine buses averaged over 500 miles between servicings (maintenance records for the 10th bus were not readily available). Four buses averaged only 14, 24, 27, and 75 miles between servicings. The manufacturer's recommended interval between servicings is 3,000 miles.

--The average mileage between preventive maintenance servicings for the 35 carryalls reviewed was 954 miles. Twenty-one had been driven less than 1,000 miles between servicings, and some averaged less than 600 miles between servicings. The manufacturer's recommended interval between servicings is 2,000 miles.

We believe that maintenance schedules based on accumulated mileage might be more cost-effective for low-usage vehicles.

Nonessential repairs

The contractor is required to limit maintenance on vehicles scheduled for replacement to the minimum necessary to maintain safety and serviceability. For example, corrosion prevention and other noncritical vehicle repairs are unnecessary. The contractor's maintenance superintendent attempted to implement this requirement by oral instructions. But this informal system did not prevent unnecessary repairs.

Our analysis of the maintenance records of 16 vehicles replaced during December 1976 revealed that 7 had received nonessential repairs, such as painting, corrosion proofing, grill repair, and body patching. The maintenance superintendent agreed that clear, written instructions to maintenance personnel identifying vehicles scheduled for replacement were necessary to prevent such occurrences.

Range officials later told us that the contractor had initiated a new procedure to improve maintenance control for vehicles in a limited repair status.

Vehicle use

Range officials monitor vehicle use by reviewing the contractor's monthly reports on vehicle mileage rates and the number of passengers conveyed. However, adequate standards against which to compare this data had not been established. The range automotive manager uses an informal standard of 200 miles per month or at least two trips per day for passenger-carrying vehicles as minimum acceptable use.

Our review of records of bus use disclosed that 8 of the 14 buses averaged less than 200 miles per month during 1976. Six of the eight buses had been driven an average of between 40 and 100 miles per month. Thirteen vehicles (five pickup trucks and eight carryalls) are assigned to range staff offices. Only four of these averaged more than two trips per workday in 1976. The annual mileage records for 10 of these

13 vehicles showed that 3 did not satisfy the informal use level standard of 200 miles per month.

According to the Army's automotive evaluator, data used to monitor vehicle use is sometimes inaccurate and incomplete. Because records were not maintained to show the number of passengers or the equipment carried, we could not determine whether the contractor was using vehicles suitable for the tasks to be performed. In many cases carryalls were dispatched for tasks that did not require such seating and loading capacities.

The use of compact sedans instead of carryalls could reduce capital expenditures in passenger vehicles. Based on fiscal year 1976 contract costs for commercial vehicles, the Army could save $2,169 per vehicle by procuring sedans, at $2,879 each, instead of carryalls.

Command and range officials said they were considering replacing some pickups and carryalls with motorized carts for a similar reason. Range officials also said they would review their transportation requirements to determine the feasibility of using sedans instead of carryalls for some functions. Command and range officials said they will develop vehicle use standards.

Rotation of vehicles

The contractor is responsible for rotating vehicles to equalize their use. This is to be done by rotating vehicles between low-mileage and high-mileage users, allowing the vehicles to accumulate uniform mileage over their lives. Although the contractor has tried to implement this program, further improvements can be made.

We examined the accumulated mileage records for 10 buses assigned to Kwajalein that had been procured in 1970. The individual mileages ranged from about 11,000 to over 51,000. The service life of these vehicles is established in terms of accumulated mileage or age. An effective rotation program would produce more even use of these vehicles.

Officials at the missile range agreed, stating that the condition existed partly because there were too many buses on hand. We were told that three buses will be excessed from the range's vehicle inventory.

NEED FOR CLOSER SURVEILLANCE AND CONTROL OF CONTRACTOR OPERATIONS

The Armed Services Procurement Regulation requires that Government personnel conduct appropriate surveillance to reasonably assure that inefficient and wasteful contract performance is avoided. In implementing this policy, the Ballistic Missile Defense Systems Command's standard operating procedure directs that all its personnel institute and perpetuate a program designed to identify and eliminate inefficient methods, procedures, and practices employed by any and all contractors.

At Kwajalein, personnel have been appointed to monitor and evaluate contractor performance. However, the persons designated to monitor contractor operations had no written plans to provide a means for assuring themselves and their supervisors that their responsibilities were fully discharged. None had (1) a plan which listed the elements of the scope of work involved or (2) procedures to effectively monitor contractor operations in their areas and working papers to indicate that the procedures had been followed or the results of following them. Nonetheless, the monitors are required to conduct daily surveillance and prepare written narratives identifying contractor performance as better than, worse than, or equal to that expected from the average contractor. To be effective, the surveillance process should include adequate guidance on aspects of contractor operations that should receive greatest emphasis and scrutiny.

Control over labor costs

Little emphasis has been given to the contractor's work methods in terms of their economy and efficiency of operations. For example, despite contract labor costs of over $46 million for October 1, 1974, through November 30, 1976, monitoring manpower use has not been a priority. Range officials believed that the contractor used labor efficiently, but they generally had not made analyses of labor use.

Persons appointed to monitor contractor performance said they review contractor operations primarily for results of performance, equipment use, and safety. One reason manpower use was not emphasized was a belief that the labor cost incentive feature in the contract, which rewards the contractor for using less labor than the contract target, was sufficient to assure efficient manpower use.

This belief is inconsistent with the position of the Ballistic Missile Defense Systems Command that effective control of labor costs requires onsite review and that range officials are to include evaluations of contractor manpower use in their reports.

There are, however, no effective procedures for reviewing labor efficiency. For example, Army evaluators did not regularly follow such procedures as selecting a sample of employees' overtime and reviewing it for reasonableness or do other work directed specifically toward determining the efficiency of the contractor's manpower use.

The logistics support contract specifies that the contractor will obtain advance approval for overtime. Evaluators are required to carefully monitor whether use of overtime for routine tasks is the most cost-effective approach. Despite this requirement and the fact that the average contractor quarterly overtime request for the six quarters ended March 31, 1977, was about 136,000 hours, contractor requests for overtime were only superficially reviewed. Consistent with procedures in effect in February 1977, range officials receive their requests and recommend approval in whole or in part, and the Command gives final approval or disapproval.

Of the four Army evaluators of transportation and supply activities, only two were receiving a copy of the overtime requests. The chief of the Range Logistics Support Office and the chief of the Transportation Division said they generally do not analyze contractor requests other than to compare them with previous requests for consistency. However, such comparisons would not usually be meaningful because the contractor determines his quarterly overtime requests primarily by dividing the total number of maximum approved overtime hours accepted as reasonable by the Government by the number of quarters covered by the contract, adjusting the figures for any anticipated major changes in workload. As a result, the contractor's method of computation generally guarantees consistency from quarter to quarter.

Incentive and award provisions do not reasonably insure that the contractor does not unknowingly use labor inefficiently. One of the more valuable functions Government surveillance can serve is to provide an outside view of contractor operations to discover undesirable situations of which contractors may not be aware. The contractor might have inefficient labor practices and still benefit from a tradeoff between the labor costs and performance incentives of the contract.

Other contractor activities needing closer scrutiny

The range's recreational fund--about $400,000 as of January 1977, generated mainly by profits from contractor-operated merchandising activities--could be more effectively managed. The fund was maintained in a non-interest-bearing account. In response to our suggestion, the Army authorized the transfer of $300,000 to an interest-bearing account. In addition, the logistics support contractor was instructed to maintain the fund balance at a level sufficient to meet current cash flow needs. This action should increase the recreation fund by the amount of interest earned and provide additional funds for recreation facilities and retail services at a lower cost to range employees.

NEED FOR MORE EFFECTIVE REVIEW AND COORDINATION OF EQUIPMENT REQUIREMENTS

In reviewing the allegations concerning the purchases of unneeded equipment, we verified three cases in which the Army purchased unneeded equipment--a navigational aid, slide projectors, and radios for aircraft. (See pp. 5, 8, and 9.) The purchase of the navigational aid illustrates the need for better range procedures for reviewing equipment needs and more effective coordination.

The nondirectional beacon at Kwajalein is used to help ships and aircraft fix their location in relation to the range. It is a long-range beacon (its signal is usually picked up at about 200 miles) which emits radio signals throughout a 360-degree pattern identifying the beacon station. It is used by both military and commercial aircraft and ships. The system is used primarily by commercial airlines serving Kwajalein and as a backup for military navigational aid systems.

At the time of our review, Kwajalein had the following three nondirectional beacons--one in operation, one in storage, and one on procurement.

--An AN/URN-5 nondirectional beacon, currently located and operating on Kwajalein Island. This beacon, purchased in 1951 for $11,300, was installed at the range around 1953.

--A Model 1000L Dual Automatic nondirectional beacon Transmitter procured at a cost of $14,351.55 in April 1970, delivered to the range February 1971, and placed in storage.

--An AN/TRN-30(V)2 nondirectional beacon being purchased at a cost of about $7,000 (excluding installation and life cycle support costs) intended for installation in fiscal year 1980.

We questioned the need for and the way in which the requirement for the additional backup systems were determined, particularly since the range uses the Tactical Air Navigational system to keep military aircraft separated while collecting data in the range impact area. We were told that commercial aircraft that frequent the range are not equipped with the Tactical Air Navigation system and must use the nondirectional beacon for landing. From a range operation standpoint, the nondirectional beacon serves primarily as a backup unit should the Tactical Air Navigational system fail.

The nondirectional beacon in operation is serviceable and has not required excessive maintenance. The nondirectional beacon procured in April 1970 has been in storage since delivery in February 1971. It was acquired to replace the beacon in operation, which was considered to be obsolete and to have excessive service age. The procurement justification provided by a technical support contractor described the reliability of the present equipment as questionable and maintenance costs as excessive and referred to increasing problems of spare parts procurement. Nevertheless, the second beacon was never installed and has been in storage for about 6 years. In response to our query, the Ballistic Missile Defense Systems Command stated that the equipment was stored pending procurement of the antenna system and funding for installation. Technical support contractor officials commented that the antenna already installed was compatible with both beacons. Three and a half years after receiving the second beacon, the Command was notified that the Army had developed a standard beacon for all Army airfields and that replacement of the beacon at Kwajalein could be expected in fiscal year 1977. At this point the Command decided to retain the second beacon as a nonoperational spare.

The third beacon was scheduled for installation at the range in fiscal year 1980 as part of the Department of the Army program to standardize nondirectional beacons at all Army airfields. The scheduled installation has been postponed to fiscal year 1982.

The operating beacon is being replaced with the one in storage as an interim measure until the new equipment is installed. This action was justified by the Command on the basis of the existing beacon's excessive age and was recommended

by the Army Communications Command because of the problem of continued support of the obsolete beacon now in use. Command officials said that about 70 percent of the repair parts necessary to support the beacon are not available from military supply sources and that Department of the Army policy dictated replacing the equipment because of obsolescence. Documentation supporting the claim that the operating beacon is unreliable and that obtaining spare parts is a problem was not available. FAA log records showed that for a 27-month period ended November 30, 1976, the beacon was nonoperational for only 7 hours due to unscheduled maintenance. FAA and range officials said that this amount was not excessive and that FAA requirements were being met.

We believe that the third nondirectional beacon may be justified based on the need to standardize systems at Army airfields worldwide. Procurement of the second system, however, might have been avoided had the requirement been properly coordinated with range, FAA, logistic and technical support contractor, and Command officials.

Since the system in operation at the range continued to provide reliable service, the necessity for interim installation of the model 1000L system is questionable.

CONCLUSIONS

Although improvements have been made in contractor operations at Kwajalein, further improvements can be made to reduce operating costs. Command and range officials should emphasize economy and efficiency of contractor operations, as well as performance, through closer surveillance and control of contractor operations. The guidance to range officials and Army evaluators is not adequate to identify inefficient contractor performance.

RECOMMENDATION

We recommend that the Secretary of the Army, through the Ballistic Missile Defense Systems Command, provide guidance to range officials and evaluators emphasizing economy and efficiency of operation as well as performance. Such guidance should identify aspects of contractor performance that should receive the greatest emphasis and scrutiny. Although the incentive fee is an integral part of the contract, the guidance should specify procedures for reviewing manpower use.

AGENCY COMMENTS AND OUR EVALUATION

Command officials believe that the guidance provided to Kwajalein officials and evaluators is adequate to identify inefficient contractor performance. The guidance referred to is a contractual document "Incentive Provisions of The Cost Plus Award Fee/Incentive Fee Contract For Kwajalein Logistical Support," which outlines general areas to be considered in evaluating contractor performance. As indicated on page 34, these include such items as proper use of personnel, material, tools, equipment, and facilities and the attitude and capability of contractor personnel.

In our view, these descriptions of areas to be monitored represent management considerations that are standard and appropriate to any effectively run organization. What we believe to be necessary are specifically identified procedures suitable for the unique logistical operation at Kwajalein. Procedures are needed for systematically and continuously reviewing contractor operations. Such guidance should provide for testing and measuring specific facets of the contractor's operations and identifying aspects needing improvement and future monitoring. The purpose is to identify areas with the greatest potential for realizing cost savings.

The Army has 13 years of experience with this contractor. Had the Command initially developed comprehensive guidance for range officials and evaluators, by now they would have gained considerable experience in the areas of contractor operations having the most potential for cost savings.

CHAPTER 4

EFFECTIVELY EVALUATING CONTRACTOR PERFORMANCE

Because the contractor's performance directly affects the Government's costs, that performance must be evaluated as effectively as possible. Ballistic Missile Defense Systems Command officials state that onsite evaluations are essential to insure minimum contract costs and to determine the amount of incentive fees paid to the contractor. Better information should be furnished to the contracting officer for his final rating. Evaluators can better structure their work in some areas to make their evaluations more effective. We found that:

--Adequate planning had not been done to assure that all contract cost elements are evaluated.

--Specific and objective criteria had not been established to help evaluators determine the effectiveness of contractor performance.

--Evaluations were not adequately documented.

--Available information was not always used in determining the reasonableness of contract incentive fees.

THE LOGISTICS SUPPORT CONTRACT AND ITS INCENTIVE PARAMETERS

The logistics support contract has two features through which the contractor earns profits--quality of performance (award fee) and control of labor cost (incentive fee). These features are designed to encourage optimal contractor performance at minimal labor costs by rewarding quality performance and penalizing excessive labor costs. Sixty percent of the total potential fee paid to the contractor is based on the quality of performance feature.

According to the contractor's November 1976 financial management reports, total fees awarded for October 1, 1974, through November 30, 1976, were about $1.4 million.

The contract specifies that evaluators will monitor the contractor's operations and evaluate actual performance against performance expected of an average contractor. Range evaluators are required to monitor contractor performance on

a day-to-day basis and prepare narratives of performance identified as better than or worse than that expected from an average contractor. These narratives are reviewed at several management levels at the range. Comments are accepted or rejected by the various persons reviewing them. The contractor is also given an opportunity to review and respond to them. Those successfully rebutted are withdrawn.

The remaining comments are included in a quarterly evaluation report prepared by the commanding officer, who assigns both an adjective and numerical performance score and submits the report to the Command, where the report with the recommended performance score is reviewed by the Performance Evaluation Review Board and the contracting officer. The contracting officer awards the final score, which determines the fees awarded the contractor. The effectiveness of the award feature depends upon how accurately performance evaluations reflect actual performance levels.

The scope of work portion of the contract serves as a checklist and standard for performance evaluation. The evaluators are required to monitor performance of all tasks outlined in the scope of work. Emphasis is to be placed upon evaluation of task results. The contract also specifies that the following will be monitored and considered by the evaluators in assessing contractor performance:

--Proper use of personnel, material, tools and equipment, facilities, and grounds.

--Ability to meet rapidly changing requirements.

--Attitude and capability of personnel, effectiveness of organizational structure, and use of personnel and overtime.

--Other considerations deemed appropriate.

EVALUATION PLANNING CAN BE IMPROVED

To be effective the evaluation process should include adequate planning to assure management that evaluators review all elements in the contract scope of work. The planning should also provide guidance to evaluators on which aspects of contractor operations they should focus on. It should prescribe minimal standards for documenting the results of

evaluations to facilitate determination of the fee for quality performance.

The transportation and supply evaluators did not nave written plans to assure themselves that they cover all contract cost elements in their appraisals. None had a plan listing (1) the key elements in the scope of work, (2) guidance and criteria for determining below or above standard performance levels, and (3) standard documentation to show that comprehensive evaluations had been made and the results thereof.

Command and range officials have not provided adequate guidance to evaluators to emphasize aspects of contractor operations that could reduce contract costs by improving performance.

Our review of evaluator comments for the four quarters from October 1, 1975, through September 30, 1976, shows that in many instances little emphasis has been placed on evaluating whether the contractor's work methods assure economy and efficiency of operations.

This is particularly true regarding the effective use of contractor personnel. As we indicated earlier, range officials relied on the contract's labor cost incentive feature to reasonably assure efficient manpower use. But as Command officials have indicated, this feature will not be effective without onsite evaluations. To be effective, in our opinion, evaluators need to test and analyze current operations and prepare comprehensive and supportable evaluations of the contractor's performance.

NEED FOR OBJECTIVE CRITERIA AND SUPPORTING DOCUMENTATION

The process of evaluating the contractor's performance cannot be effective without established standards for measuring average performance. Criteria must be specific and objective to assure uniform identification of above- and below-average performance and assure that operations are performed at minimal cost to the Government. After 13 years of experience with the same contractor, important objective criteria are still unavailable to help contract evaluators monitor operations. Our review did not include an assessment of the Army's surveillance of contractor performance before the current contract.

Command guidance to evaluators on judging contractor performance directs the evaluator to comment on performance that is above or below performance expected of an average contractor. However, what constitutes an average contractor's performance has not been defined. Also, many segments of the scope of work describe contract work responsibilities in qualitative instead of quantitative terms.

In the evaluators' comments for the four quarters from October 1, 1975, through September 30, 1976, in many instances the comments did not appear to provide adequate information to serve as a basis for determining the size of incentive fee. For example:

--Many comments did not address efficiency and economy of contractor methods.

--Some comments depicting above-average performance appeared to describe the scope of work requirements without justifying how the performance exceeded such requirements.

--Some comments did not describe the impact or significance of the contractor's performance.

Subjectivity in the evaluation process may be demonstrated by changes in evaluator-recommended performance scores without sufficient justifying documentation. We reviewed scores of six departments for three quarters in 1976. Of the 18 departmental performance scores recommended by range evaluators during January through September 1976, 8 were raised at a higher level. Two scores were raised 2 points, five were raised from 4 to 8 points, and one was raised 11 points.

Although successive levels of management have the prerogative to revise performance scores, some of the final scores awarded were challenged by onsite evaluators. We were unable to obtain a reasonable explanation of the score revisions. For example, the marine services evaluator's quarterly score of 72 for the quarter ended March 31, 1976, had been raised to 80 by the head of his office and to an 83 by the Command. The quarterly report's marine section contained 2 comments describing above-average performance and 15 comments describing below-average performance, many that seemed serious. For instance, among other items, the evaluator noted missing vessel safety equipment; inoperable ramp-closing equipment that

allowed a deck to flood to a depth of 4 feet, caused equipment to be lost, and jeopardized passenger safety; and drydocking efforts that were 6 months behind schedule. The supervisor raised the score to an 80 because he believed the performance was no worse than in the previous quarter, in which the evaluator had recommended a score of 72 to the range commander. The supervisor told us that the commander had raised the score for the previous quarter to 80, stating that scheduled marine transport services were still being provided despite problems in the department. The supervisor believed that the score for the quarter in question should again be 80, reflecting about equal performance. The evaluator told us that scheduled services are required to be performed by the contract scope of work and that he believed this and other scores recommended to the Command's contracting officer by range officials to be higher than justified by contractor performance. After reviewing documentation provided by the Command, we found no apparent justification for raising the score to an 83.

Information used in determining the quality of contractor performance is not always available to all parties involved in the determination process. For example, information considered in determining contractor performance levels by the range commander was not documented and discussed with evaluators or their supervisors to ascertain its reasonableness. Also, in one instance an evaluator's comments were censored. The evaluator told us that he had identified about 10 cases of below-average performance but was told by a supervisor not to include them in his comments because the supervisor had enough evaluations or because he had seen enough evaluations on a specific problem.

In addition, evaluators sometimes discuss inadequate performance with contractor officials, obtain correction, and do not prepare performance evaluations. Some of these incidents may seem minor, even too minor to document. However, failure to make these incidents known to higher management officials denies them information pertinent to evaluating performance scores. For example, in one case an evaluator pointed out to the contractor an inefficiency, the elimination of which saved the Government an estimated $6,000 to $7,000 per year in overtime costs, but the evaluator did not document the circumstances. These informal means of improving contractor operations are reasonable, but the actions should be documented or management may not become aware of the level and quality of contractor performance.

ENHANCING EVALUATIONS BY USING AVAILABLE MANAGEMENT INFORMATION

The importance of onsite evaluations has been well established. In the process of evaluating the contractor's operations, all available or appropriate analytical information must be used in addition to work site observations. In some instances, evaluators at the range make little use of available information in determining the contractor's effectiveness. Since Command instructions to evaluators do not describe the methodology for analyzing contractor operations, evaluators are free to use their own methods.

Occasionally, they overlook available analytical data and do not use indicators that could make evaluations of contractor performance more effective. For example, the aviation evaluator assessed the availability of aircraft but did not analyze aviation management. Available techniques to evaluate management, such as comparing the contractor's maintenance performance with Air Force flat-rate standards (the average time for a mechanic with average experience to complete a task, monitoring trends in maintenance costs per flying hour, and reviewing labor productivity, were not used. Similarly, the automotive evaluator did not use such data as vehicle maintenance flat-rate standards and maintenance cost per mile in assessing contractor performance. Instead, the evaluator used arbitrary vehicle use standards that were inadequate for this purpose. As mentioned previously the supply evaluator was not making an analysis of inventory supply and demand.

Regarding manpower use, evaluators apparently were not aware of certain contractor-provided manpower cost and usage reports that showed either biweekly or monthly, for each of the contractor's departments, (1) direct labor costs and (2) regular and overtime hours incurred. In addition, they were unaware that records on budgeted and actual overtime hours were compiled by the range contract office personnel.

Also, data which could be used to evaluate manpower efficiency could be made available but is not compiled. For example, time used by the automotive and aviation departments to repair and maintain vehicles is not compared with available flat rates for the work, and information on nonproductive time other than leave, such as idle time of a marine service crew waiting to service an incoming vessel that has fallen behind schedule, is not maintained.

IMPACT OF SCORING ON AWARD FEES

In chapter 3 we pointed out the need for Army officials on Kwajalein to closely review contractor operations to identify ways to reduce costs without reducing essential services. The biggest payoff for the Government is not in reducing contract fees but in reducing operating costs. However, since the Army also attempts to encourage efficient contractor performance through the contract incentive awards provisions, it is also important that the fees awarded reasonably reflect performance. Establishing scores without adequate support can substantially affect fees and, as a result, give the contractor the impression that mediocre performance is acceptable. This practice weakens the effect intended by the contract provisions.

Scoring provisions

The award-fee/incentive-fee provision in the support contract permits the contractor to earn additional income based on quality of performance (award fee) and control of labor cost (incentive fee). Performance is rated from "marginal" (a grade range of 60-69) to "superior" (a grade range of 91-100). A score of 80 indicates that the contractor has met contract requirements at performance levels expected of an average contractor. The score is translated into a fee by formulas established in the contract. The incentive fee is determined by comparing actual labor costs with predetermined target labor costs for the period. The contractor receives the maximum allowable fee when actual labor cost is 15 percent less than target labor cost; 50 percent of the maximum fee when the actual cost equals the target cost; one-third of the maximum fee when the actual cost is 5 percent greater than the target cost; and no fee when the actual cost is 7-1/2 percent greater than the target cost. If the contractor incurs labor costs 10 percent above target, he must pay the Government 25 percent of the target fee. Payment of award and incentive fees for a 1-year period, October 1, 1975, through September 30, 1976, totaled about $645,000.

To arrive at an overall performance rating, individual scores are awarded to the various contractor-operated logistic functions (aviation, supply, marine, automotive, etc.) Weighting factors are also assigned to each functional area in the scoring process. These factors are assigned to more nearly reflect the overall relative importance of the area. Marine services and aviation, for example, are applied weighting

factors of 10 percent and 15 percent with a computed dollar value of $341.36 and $512.04, respectively, per point over the minimum acceptable score of 60. The composite weights assigned to all functions to be evaluated constitute a weighted factor of 100 percent or a computed dollar value of $3,413.60 for each overall point over 60. For the quarters ended March and June 1976, the contractor was awarded the following scores and fees for performances:

Quarter	Overall score	Fee
January - March	88.90	$94,969.14
April - June	88.70	93,478.05

We question, however, the appropriateness of some of the scores awarded in light of information made available.

Marine services

For the quarter ended March 31, 1976, the marine services evaluator's recommended score of 72 was raised 11 points and the contractor awarded a rating of "good," even though the performance report contained 15 below-average comments and 2 above-average comments. We question the appropriateness of the award, costing the Government about $7,851 (23 points x $341.36), for what may be termed substandard performance.

Aviation service

In August 1976 the aviation evaluator informed top Command officials that pressure was being applied to write above-average performance scores and that his recommendations were being raised without justification. For the quarter ended June 1976 his recommended score of 81 was raised 5 points. A supervisory official said that he believed that the evaluator had not sufficiently recognized contractor achievement. The quarterly evaluation report, however, does cite above-average accomplishments--special transport service, rapid turnaround time for aircraft, and cooperative attitude. In addition, it cites several below-average comments dealing with fuel leaks, mail and cargo handling, fire hazards, and unsafe equipment operations. Responding to the evaluator, range officials cite the need to occasionally recognize particular contractor efforts and to realize the morale factor involved in an above-average comment in an attempt to encourage better performance, cooperation, and communication. We question whether the

change in score was warranted and whether it adequately reflects the contractor's performance in light of the fact that the Government is paying $512.04 per point for each point above the minimum of 60 for aviation services (in this case about $13,313).

Supply management

As indicated earlier, of the 6,800 line items subject to inventory control criteria:

--About 5,200 items consisting of 583,000 units valued at over $839,000 were maintained in stock in excess of needs.

--Based on sampling techniques, about 1,800 of the 6,800 items had not had an issue during the preceding 6 months.

The evaluator recommended superior performance ratings, which were reviewed and approved through the successive levels of management, for the four quarters of 1976. We question the superior scores in view of the overstockage position which ties up Government funds unnecessarily. Awarding superior scores for what appears to be less than average performance has the appearance of inefficient use of resources.

Although a score of 80 indicates that the contractor has met requirements at performance levels expected of an average contractor, he is still rewarded on the basis of points awarded above 60. Therefore, we feel that the evaluation process does not adequately insure that reward is commensurate with performance. Since the contractor is already getting paid for less than optimal performance, scores should not be further inflated; otherwise, the award fee provision of the contract will not encourage effective performance.

CONCLUSIONS

Despite the recognized importance of onsite evaluations, the Ballistic Missile Defense Systems Command has not provided sufficient guidance and criteria for evaluating contractor operations. We believe that:

--Evaluation planning and guidance are inadequate to assure that all areas of contractor performance are covered, evaluation priorities have been established, and evaluation reporting is made in the most useful manner.

--The evaluation process could be improved upon by developing objective criteria.

--The analysis and evaluation of contractor operations could be more effective by using available analytical data and documenting the changes in the review process.

Because of these conditions, the Command lacks adequate assurances that the contractor is providing optimal services at minimal costs and that fees awarded the contractor are commensurate with performance.

RECOMMENDATION

We recommend that the Secretary of the Army, through the Ballistic Missile Defense Systems Command, review and assess the effectiveness of the evaluation process and establish guidelines, standards, and methodology sufficiently detailed to insure that the onsite contractor evaluators develop the data and information necessary to support their initial evaluations and that supervisors and reviewers at all levels are required to document revisions to these evaluations.

AGENCY COMMENTS AND OUR EVALUATION

Command officials believe that the overall performance of the contractor has been good. They again called attention to the unique mission at Kwajalein and the need for contractor flexibility and ingenuity to support the ever-changing operating requirements. The use of a cost-plus-award-fee contract recognizes that the specific performance criteria of the contract cannot be clearly delineated and that quality of performance is subjective. Thus, the labor control incentive feature is used to encourage the contractor to increase his fee by holding down labor costs. The labor control feature represents 40 percent of the potential fee. (See p. 33.)

They recognize the advantages of maintaining close control and independent review of contractor operations. However, the small staff at the range limits their capability to effectively evaluate contractor performance and to develop adequate supporting documentation for assessing a score. This explains the elimination of the requirement for evaluators to recommend ratings. (See p. 17.)

As we understand the award fee provision of a cost-plus-award-fee/incentive-fee contract, the parties agree

upon a set of criteria by which the contractor's performance is to be judged. These criteria generally measure the elements of performance most significant to the Government; for example, quality, accuracy, and completeness of work; timeliness of delivery; and control of overhead and direct costs. Using these criteria, the contractor's performance is to be evaluated and the award fee determined for the period under review.

To reasonably assure that the contractor is being appropriately evaluated and that the Government is rewarding the contractor based on reasonably established levels of performance, evaluators onsite should be given a set of guidelines outlining, where possible, the documentation to be reviewed or prepared, the operations and functions to be observed, the criteria against which to compare performance, and other considerations deemed appropriate to measure contractor performance. We do not believe that the contractor's logistical operations are so unique that methods for testing and measuring his effectiveness cannot be developed. Data can be developed to more adequately support the commanding officer's recommended scores.

APPENDIX I

COPY

United States Senate

Committee on Appropriations

Washington, D.C. 20510

September 9, 1976

Mr. Elmer B. Staats
Comptroller General of the U.S.
441 G. Street, NW
Washington, D.C. 20548

Dear Mr. Staats:

Attached to this letter is one written to me by an equipment specialist stationed at Kwajalein Missile Range in the Marshall Islands. He makes a series of allegations regarding misuse or waseful use of Federal funds at his facility.

Would you be kind enough to have your staff review these allegations and consult with my staff as to whether or not this would be an appropriate area for a General Accounting Office inquiry. I would appreciate any advice you may have on this matter.

Warm regards.

Sincerely,

signed
William Proxmire, U.S.S.

COPY

PRINCIPAL OFFICIALS RESPONSIBLE FOR ADMINISTERING ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
DEPARTMENT OF DEFENSE		
SECRETARY OF DEFENSE:		
Dr. Harold Brown	Jan. 1977	Present
Donald H. Rumsfeld	Nov. 1975	Jan. 1977
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	Apr. 1973	July 1973
DEPUTY SECRETARY OF DEFENSE:		
Charles W. Duncan, Jr.	Jan. 1977	Present
William P. Clements, Jr.	Jan. 1973	Jan. 1977
SECRETARY OF THE ARMY:		
Clifford Alexander	Feb. 1977	Present
Martin R. Hoffman	Aug. 1975	Jan. 1977
Howard H. Callaway	July 1973	July 1975
UNDER SECRETARY OF THE ARMY:		
Vacant	Jan. 1977	Present
Norman R. Augustine	May 1975	Jan. 1977
Vacant	Apr. 1975	May 1975
Herman R. Staudt	Oct. 1973	Apr. 1975

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