Audit Report

OFFICE OF THE INSPECTOR GENERAL

CONTROLS AND UTILIZATION OF INVESTMENT AND EXPENSE EQUIPMENT AT THE DEFENSE MAPPING AGENCY

Report Number 92-061 March 11, 1992

Department of Defense

The following acronyms are used in this report.

DMA.....Defense Mapping Agency
GSA.....General Services Administration
MC&G.....Mapping, Charting, and Geodesy

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

March 11, 1992

MEMORANDUM FOR DIRECTOR, DEFENSE MAPPING AGENCY

SUBJECT: Report on the Audit of Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency (Report No. 92-061)

This is our final audit report on controls over and utilization of equipment and property at the Defense Mapping Agency (the Agency). It addresses matters concerning the accuracy of accountable property records, controls over equipment loaned to outside activities, and the disposition of excess and unneeded equipment.

A draft of this report was provided to the Agency for comment on July 5, 1991. Comments were provided by the Agency on September 5, 1991 and supplementary comments were provided on November 4, 1991. Based on the comments, three recommendations in the draft report have been excluded from this final report. The recomomendation to bill the United States Geological Survey for missing property was excluded because the equipment has been located since the draft report was issued. Also, the recommendations to report procedural weaknesses in the areas of equipment loans and excess property administration in the annual assurance statement prescribed by the Internal Management Control Program were excluded because the monetary thresholds of the Program were not breached.

On all other findings and recommendations the comments from the Agency were responsive and conformed to the requirements of DoD Directive 7650.3. There are no unresolved issues. Therefore written comments on this final report are not required.

The courtesies and cooperation extended to the audit staff during this project are appreciated. If you have any questions on this audit, please contact Mr. John A. Gannon at (703) 693-0113 (DSN 223-0113). Copies of this report are being provided to the activities listed in Appendix G.

Robert J. Lieberman

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Office of the Inspector General

AUDIT REPORT NO. 92-061 March 11, 1992
(Project No. 0RD-0044)

CONTROLS AND UTILIZATION OF INVESTMENT AND EXPENSE EQUIPMENT AT THE DEFENSE MAPPING AGENCY

EXECUTIVE SUMMARY

Introduction. Equipment accountability and control provide the basis for achieving effective and efficient management of assets. Accountability and controls are required from the time of receipt to final disposal of the equipment. As of October 1990, the accountable records at the Defense Mapping Agency (the Agency) showed over 44,900 line items of equipment valued at about $239 million.

Objectives. The audit evaluated the effectiveness of the procedures established to maintain control over investment and expense equipment at the Agency, the utilization of available equipment in lieu of new acquisitions, and whether adequate internal controls were in place to ensure that equipment was effectively managed, controlled, and utilized.

Audit Results. Controls over equipment in use and on loan were not effective. Additionally, the Agency did not dispose of excess equipment in a timely manner. Equipment utilization could not be evaluated because the Agency could not furnish equipment utilization data for analysis.

- Controls and accountability over Agency equipment were not adequate. Using statistical sampling techniques, we determined that about $61 million of equipment either was not at reported locations or was missing. Also, over $4.7 million of equipment on hand could not be traced to the accountable property records. As a result, Agency equipment was exposed to risks of loss and misappropriation, established safeguards were degraded, staff time was diverted to locate equipment, and property records were inaccurate (Finding A).

- Controls over Agency equipment loaned to outside activities were not effective. A $287,000 loaned gravity meter could not be located but was subsequently found by the Agency after the draft of this report was issued. There were no reporting and management procedures to ensure that geodetic data collected by activities using borrowed equipment were provided to the Agency. Consequently, unnecessary costs could have been incurred to collect gravity data in locations where data had already been collected using borrowed equipment (Finding B).

- The Agency did not comply with established procedures for ensuring proper screening and prompt disposal of excess and unneeded equipment. More than $916,000 of unneeded equipment was not properly processed for disposal. In addition, more than $21 million of excess data processing equipment was not processed for redistribution to other activities in a timely manner (Finding C).

Internal Controls. Sufficient policy guidance and adequate procedures had been established by the Agency to ensure that equipment was properly controlled and used. However, failure to effectively utilize existing controls governing equipment accountability constitutes a material internal control weakness. Substantive internal control weaknesses also existed in the areas of loan equipment and excess equipment. See the Internal Controls section in Part I and Findings A, B, and C for details.

Potential Benefits of Audit. Implementation of our recommendations will help to improve controls over Agency equipment. Although there are no monetary benefits associated with most of the recommendations in this report, implementation of all recommendations will substantially improve equipment management procedures and internal controls. Detailed descriptions of the potential benefits of the audit are in Appendix E.

Summary of Recommendations. We recommended that the Agency's equipment managers comply with established DoD and Agency procedures governing equipment accountability, loaned equipment, and excess equipment. Also, we recommended that Agency Equipment Loan Program Administrators authorize, negotiate, and administer all aspects of the Agency's loan program and that the Agency establish procedures and guidelines requiring that geodetic data produced by borrowers of loaned equipment be reported to the DoD Gravity Library.

Management Comments. The Agency initially replied to the draft report on September 5, 1991, and provided supplementary comments on November 4, 1991. The Agency either concurred with the recommendations or proposed alternative corrective actions that met the intent of the recommendations. Based on the Agency's comments, Recommendations B.2.c., B.4., and C.3. in the draft report have been excluded from this final report. Management's comments on the draft report are summarized in Part II of this report, and the complete text of the response is in Part IV. Written comments on this final report are not required since there are no unresolved issues.

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This report was prepared by the Readiness and Operational Support Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the Information Officer, Audit Planning and Technical Support Directorate (703) 693-0340.

PART I - INTRODUCTION

Background

The Defense Mapping Agency (the Agency) supports the Office of the Secretary of Defense, Joint Chiefs of Staff, Military Departments, and other DoD Components on matters concerning mapping, charting, and geodesy (MC&G). The Agency is required to account for and control all equipment used in the accomplishment of its MC&G mission. The Agency classifies accountable equipment into two categories: investment equipment, with a unit cost of $15,000 or more; and expense equipment, costing less than $15,000 per item. The investment and expense equipment is located at each of the eight Agency components and various worldwide subordinate activities. Policies and procedures used to control and account for equipment apply to both investment and expense equipment. For the purposes of this report, both categories are referred to as equipment.

Proper accountability and control procedures are required over Agency equipment from receipt until disposal in order to establish the basis for maintaining effective and efficient management of the assets. Policy and procedures for proper accountability and control are contained in various directives and regulations issued by the DoD and the Agency. Defense Mapping Agency Instruction 4140.2, "Responsibility for Management of and Accountability for Property in Possession of the Defense Mapping Agency," dated November 15, 1988, provides policy to manage and account for Agency equipment. Air Force Manual 67-1, "U.S. Air Force Supply Manual," dated November 1987, details procedures to implement this policy. Both publications prescribe that the responsibility for managing equipment is an obligation shared by all levels of supervision or command; however, it is the accountable officers and the individual property custodians who exercise the principal control over Agency equipment.

The accountable officers are responsible for maintaining accounting records, timely and accurate recordings of property transactions, and providing safeguards and protections of property.[1/] The property custodians are responsible for the receipt of equipment, conduct of inventories, initiation of documentation to change in-use equipment quantities, and the reporting of changes to the accountable records. As of October 1990, the Agency's accountable records showed over 44,900 items of equipment valued at about $239 million.

1/ In this report, the terms property and equipment are synonymous and interchangeable.

Objectives

The objectives of the audit were to evaluate the effectiveness of procedures established to maintain control over equipment at the Agency and to evaluate the utilization of available equipment in lieu of new acquisitions. Additionally, the audit evaluated whether adequate internal controls were in place to ensure that equipment was effectively managed, controlled, and utilized. To accomplish the audit objective on utilization of available equipment in lieu of new acquisitions, we requested that Agency officials provide us utilization data for equipment used in the development, production, and distribution of MC&G products. Agency officials did not provide the utilization data. Details on this issue are discussed below in Other Matters of Interest.

Scope

To evaluate the procedures used to maintain controls over equipment, we took two samples of the Agency's equipment. Details of the sampling plans and methodologies are listed in Appendix A. Using statistical sampling methods, we selected 589 equipment items, valued at about $19.2 million, from the accountable records to verify that the equipment was properly accounted for, in place, and controlled. This sample was clustered by three geographical areas and included numerous equipment accounts. We stratified the accounts by reported book value of equipment into high, medium, and low strata. Random samples of equipment were then drawn from those strata. Another random sample of 542 items, valued at about $7.8 million, was also selected from equipment in service and verified to the accountable records. The detailed results of the two samples are in Appendixes B and C. We randomly selected equipment at the sites specified by the first sample. We also examined accountable equipment records; issue, transfer, and disposal documents; control registers; and internal and external management reports prepared from 1986 through 1990. Additionally, we reviewed the Agency's equipment management policies and procedures for compliance with DoD and Agency instructions.

This economy and efficiency audit was made from February through December 1990. The audit was made in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD, and accordingly, included such tests of internal controls as were considered necessary. Activities visited or contacted during the audit are listed in Appendix F.

Internal Controls

The audit identified internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Established internal controls were not effective to ensure that equipment accountability was maintained, controls over loaned equipment were inadequate, and the disposal of excess equipment was not done in a timely manner. All the recommendations in this report, if implemented, will correct the weaknesses. Details on the weaknesses are discussed in each of the findings in Part II of the report.

Prior Audits and Other Reviews

The Office of the Assistant Inspector General for Inspections performed a comprehensive inspection of the Agency in 1988. The results of the inspection contained in Inspector General, DoD, Report No. 89-INS-02, "Defense Mapping Agency," dated February 7, 1989, disclosed that the Agency had not implemented procedures to maintain an accurate inventory of property or to ensure adequate accountability. The report recommended that the Agency develop procedures to provide requisite management controls. The Agency provided details on the existing control and accountability procedures which satisfied the intent of the recommendation. Our current audit shows that inaccurate accountable records and problems in accountability over Agency equipment persist.

Other Matters of Interest

The audit objective to evaluate the utilization of available equipment in lieu of new acquisitions could not be satisfied. During the audit, we requested utilization data on all equipment used in the development, production, and distribution of MC&G products. Defense Mapping Agency Instruction 4151.20, "Equipment Utilization Reporting," dated May 20, 1987, requires that the data be collected, reported, and used as a valuable management tool: to analyze and design production systems, to provide justification for new or additional equipment, to perform long-range planning, to determine maintenance schedules, or to identify unused or little used equipment as possible candidates for turn-in. The Director, Defense Mapping Agency, furnished us a letter of assurance, which contained a written acknowledgment of equipment underutilization. The letter stated that the Agency had repeatedly advised OSD that production related equipment was underutilized. A copy of the Director's letter is in Appendix D. We confirmed that the Agency had informed OSD management of problems associated with equipment utilization.

The Agency is modernizing the method used to produce MC&G products. This modernization effort, the Exploitation Modernization Program, will require massive quantities of new equipment and is expected to take 10 years to implement. We found that as the Exploitation Modernization Program was being brought on-line, many managers were reluctant to dispose of old production equipment until the modernized production system has been proven. Consequently, parallel production operations and dual production equipment were being maintained, resulting in low equipment utilization. Given these factors, we agree with the Director's conclusion that collection and analyses of utilization data to prove equipment was underutilized had no merit. Therefore, we did not pursue this audit objective. However, the lack of equipment utilization data poses management challenges to DoD and the Agency, especially during a period of drastic reductions in the Defense budget. The luxury of maintaining old and new production equipment will shortly be unaffordable.

PART II - FINDINGS AND RECOMMENDATIONS

A. EQUIPMENT ACCOUNTABILITY

Controls over and the management of equipment at the Agency were inadequate. This condition occurred because equipment managers and custodians did not follow established procedures to control equipment and because required physical inventories either were not performed or were not performed in a timely manner. Also, internal Agency initiatives to improve equipment accountability were not fully implemented. As a result, using statistical sampling techniques, we estimated 10,653 items of equipment, valued at about $61 million, that were recorded on property records, either were not found at recorded locations or were missing. In addition, 274 items, valued at $4.7 million, could not be traced to the accountable records. This level of inaccuracy in accountable property records exposes the Agency to unacceptable risks of equipment loss or misappropriation and is not considered sufficient protection of the interests of the Government. DoD Directive 5010.38 categorizes these procedural weaknesses in the accounting for and reporting of equipment as a material internal control weakness reportable to the Secretary of Defense.

DISCUSSION OF DETAILS

Background

Policies and procedures. The Agency is responsible for managing and establishing control over assets provided to carry out its mission. In performing its assigned missions, the Agency uses equipment ranging from personal computers to highly sophisticated expensive digital map-making machines. Policies and procedures for property accountability and control are contained in various directives, regulations, and instructions issued by the DoD, the Air Force, and the Agency. The Agency supply system utilizes the Air Force Standard Base Supply System and takes optimum advantage of existing Air Force support systems. Policy for the management of Agency property, except real property, is outlined in Agency Instruction 4140.1, "DMA Supply/Equipment Management Policy," dated April 27, 1984, and Agency Instruction 4140.2, "Responsibility for Management of and Accountability for Property in Possession of the Defense Mapping Agency (DMA)," dated November 15, 1988.

Property accountability and control, from time of receipt to final disposition, provide the basis for achieving effective and efficient management of assets and for ensuring the validity of related financial records. Upon receipt of an item, the Agency property custodians sign accompanying delivery documents, prepare

an Air Force Form 601, "Equipment Action Request," and forward both documents to the appropriate finance center for recordation. Agency Instruction 4140.2 requires that physical inventories be performed at least once every year or when account custodians are changed or reassigned. The Instruction requires that applicable transactions, such as receipts, transfers, disposals, and adjustments be promptly posted to the property records. Additionally, the Instruction directs that the Directors of the various Agency components establish procedures that will assure compliance with the provisions of the Instruction.

Sample results. To evaluate the effectiveness of procedures used to maintain control over Agency equipment, we performed two statistical samples. In the first sample, stratified by equipment value within geographic locations, we compared custodian property records to equipment in service at various activities. In the second sample, we randomly chose equipment items in service and verified that those items were entered on the records. We separated the sampled universe into property accounts serviced by finance centers at the Agency's Hydrographic/Topographic Center and Aerospace Center. The accounts serviced by the Hydrographic/Topographic Center were further separated into accounts located in the Washington, D.C., metropolitan area and at other locations in the United States. In addition, the sampled accounts were separated into high-, medium-, and low-dollar strata; and random samples were chosen from each. In total, we sampled 1,131 items, valued at about $27 million.

In the first record-to-floor sample, we selected 589 equipment items, valued at $19.2 million, from the Agency's accountable records to verify that those items were properly accounted for, in place, and controlled. Working with the responsible property custodians, we were unable to locate 212 of 589 items valued at $3 million. Based on our samples, we estimated that of the 44,911 equipment items in the universe, about 10,653, valued at about $61 million, could not be found in designated locations; the Agency's Aerospace Center was responsible for $52.7 million of the $61 million of unlocated equipment.

Using a random sample of 542 items, valued at about $7.8 million, physically in service, we traced the items back to the property records. This sample showed that 274 items (50.6 percent of the items checked), valued at about $4.7 million, either were not entered on property custodians' records or the total number of items found were less than the quantity shown on the custodians' records. We did not make statistical projections for the second sample because the sampling variability was too large to meet established statistical standards for precise projections. However, the high percentage of unrecorded equipment items that

was found during the sample, coupled with the dollar value of equipment that could not be located, are strong indicators of weak controls and equipment management problems.

Property Accountability

Controls over Agency property. Agency-wide conditions noted during our audit were in contravention with specific standards for adequate internal controls as established by the Comptroller General under the Federal Managers' Financial Integrity Act of 1982. The requirement to establish property accountability was not fully implemented or enforced. The control processes involve documentation that evidences a financial or property transaction. When processed, these documents result in a Custodian Authorization/Custody Receipt Listing (the Listing). The Listing serves as the Agency's official receipt, signifying the custodian's acceptance of the responsibility for the equipment listed. Generally, we found that property transactions were not documented, and transactions were not promptly executed or recorded or properly classified.

Property records. Financial records at the Agency's Hydrographic/Topographic and Aerospace Centers did not document all property transactions from receipt through disposal. Accountable officers and property custodians frequently did not maintain adequate property records. Accountable officers did not maintain an accurate file that listed all property custodians. In accordance with policy established in Agency Instruction 4140.2, Agency accountable officers are responsible for maintaining financial records pertaining to property, and property custodians are responsible for maintaining records for each equipment account. For property subject to financial control, each property record must be reconciled with the financial records, and timely adjustments of records must be made; however, these steps were not taken.

Equipment classification. Equipment items were improperly classified in different records, and the errors went undetected by Agency managers. For instance, at one Hydrographic/Topographic Center location, records indicated an on-hand and in-service quantity of 14 items, valued at $93,786. Equipment records maintained at and quantities reported by Luke Air Force Base, the servicing center, indicated there were 56 items, valued at $57,913, on hand and in service. We found that both sets of records were incorrect. If prescribed Agency instructions had been followed, the equipment records would have shown at least 52 items, valued at $147,893, for that supported location. The discrepancy between the records at the Agency and the records at Luke Air Force Base occurred because certain equipment items were incorrectly classified as real

property by Luke Air Force Base, the proper documentation was not forwarded to the Hydrographic/Topographic Center, and the discrepancy went uncorrected by Agency accountable officers.

Unexplained variances. At the Aerospace Center, the dollar value assigned to Agency equipment fluctuated widely, and recorded values in the accountable records could not be supported or tracked. We found that in January 1990, an intelligence microprocessor, valued at $305,437, was recorded on a custodian's account. Six months later, the custodian's account showed the item valued at $614,678. There was no explanation for the increase in value. The same item was posted to another equipment account with an assigned value of $135,000. In another instance, an intelligence microprocessor was recorded as a complete system valued at $614,678. Six months later, the same equipment item was shown in the same account and was no longer listed as a single item, but rather as six individual components, with a total value of $217,860. The accountable officer, who was responsible for the Agency financial records, and the two property custodians involved were unaware of the accounting irregularities and could not explain the variances in quantities and prices. Agency managers need to be more aware of unexplained variances that could result in undetected loss or theft of equipment.

Missing property. Agency accountable officers did not properly research reports of missing equipment in a timely manner before approving adjustments to accountable records. Adjustment actions were not processed in accordance with Agency guidance or within time frames required by the DoD Manual. For lost items, DoD Manual 7200.10, "DoD Accounting and Reporting of Government Property Lost, Damaged or Destroyed," dated May 1977, requires that the Agency appoint a surveying officer, who has 45 days to determine the circumstances of the incident and the extent of individual responsibility. At the Aerospace Center, a property accounting adjustment was not made for a stereo comparator, valued at $615,000, which had been reported missing and was initially surveyed and properly reported in 1987. The property record showed 17 of those items were in service; however, only 16 items had been purchased due to available space. Agency officials could explain neither why the property record was inaccurate nor why it remained uncorrected for almost 4 years.

In another instance, a custodian's records contained three extended instruction sets, valued at $22,720 each, that were thought to be embedded in computer systems. Although the property custodian had not been able to identify or locate the items or the computer systems, a required report of survey was neither requested nor performed. Instead, adjustments to the accountable records were requested by the property custodians.

Without performing the prescribed survey procedures, these items might be dropped from the property records and another unsupported change to Agency records might be made.

Physical inventories. Conducting physical inventories and reconciling discrepancies are essential control features in the management of accountable property and are designed to ensure that all property items are properly accounted for, controlled, and accurately recorded. We reviewed records of physical inventories performed by property custodians and Equipment Management Teams at the Hydrographic/Topographic and Aerospace Centers. We determined that the inventories were not done in accordance with established Agency procedures. For example, at the Aerospace Center, one property custodian's records showed that numerous items could not be located and that items were on hand but were not entered on the property records. Our review of this custodian's records showed that a physical inventory was not performed when the custodian was appointed and that required annual inventories had not been performed for property totaling $4 million.

At the Hydrographic/Topographic Center, our review of a custodian's records, which listed mostly motor vehicles, showed that the account was overstated by about $700,000. In 1989, the Agency transferred ownership of about 80 vehicles to the General Services Administration (GSA). Those vehicles were subsequently leased from GSA. Documentation was prepared by the property custodian to transfer accountability to the GSA; however, the documentation was not properly processed. As a result, accountability was not transferred, and the Center's accountable records showed that the vehicles still belonged to the Agency. Had the required physical inventory and reconciliation of this property account been performed, the accountable officer and property custodian would have recognized that the transfer had not been recorded and that the property records were overstated.

Another review of a property custodian's accountable records at the San Antonio Field Office disclosed that required physical inventories were not performed, which seriously eroded controls over the Agency's equipment at that activity.

When properly and promptly performed, physical inventories serve to identify breakdowns in internal controls and readily identify differences between equipment on hand and the quantities and values recorded in accountable records. With proper reconciliation of the differences, appropriate adjustments can be made so that accountable records accurately reflect equipment assets.

Management controls. Agency Instruction 4140.2 states that the Directors of Agency components will ensure that property management responsibilities of managers, supervisors, and equipment custodians are appropriately reflected in their performance standards. Accountable officers are responsible for recording property transactions promptly and accurately and for maintaining all appropriate financial records. Property custodians must initiate actions prescribed in applicable directives and instructions to reconcile and correct property records. Our review of records and interviews with custodians indicated that, generally, the higher the grade of the custodian, the more accurate the property records were. Further, Agency Instruction 4140.2 states that custodians should not be tasked with additional duties that would interfere with their property custodial responsibilities. We found that Agency management viewed custodial responsibilities as an additional duty to the normal duties of secretaries, topographers, systems analysts, etc. This management approach, without accountability through the performance plan and appraisal system, contributed to problems identified in property controls, record keeping, physical inventories, and efforts to locate lost property.

Internal Management Control Program. The Federal Managers' Financial Integrity Act of 1982, implemented by DoD Directive 5010.38, "Internal Management Control Program," dated April 14, 1987, requires that Federal agencies provide reasonable assurance that property and other assets are safeguarded against waste, loss, unauthorized use, or misappropriation. This Act is the basis of the DoD and the Agency Internal Management Control Program. A thorough assessment of the Internal Management Control Program would have alerted Agency managers of breakdowns in the internal controls over accountable property, alerted Agency component Directors to problems, and provided management with the information necessary to correct the situation. Property control weaknesses identified during the audit, specifically, inadequate property accounting, invalid inventories, and discrepancies between property accountable records and property on hand, either were not detected or were not corrected in the appropriate manner when detected.

Agency Equipment Management Teams repeatedly reported conditions similar to those found during our audit. For example, an Equipment Management Team reported approximately 1,145 items of automatic data processing equipment, valued at over $1.4 million, as unaccounted for in the Agency's finance center records. Those items were purchased in bulk by the Aerospace Center and were delivered directly to the using activity. Transactions should

have been entered on the custodians' property records upon receipt of equipment items. Finance centers may not be aware of a transaction until an Equipment Management Team survey is completed. Recommendations made by the team should have eliminated many of the discrepancies noted during our audit. However, the conditions continued to exist. The Agency's internal controls over property accountability do not fully comply with the Federal Managers' Financial Integrity Act and DoD Directive 5010.38 and should be reported in the annual assessment to the Secretary of Defense as a material internal control weakness.

Conclusion. Regarding property accountability, the Agency generally has the necessary policies and procedures governing documentation, recording and executing property transactions, and supervision of personnel. However, management and accountable officers are not complying with established policies and procedures. The noncompliance with these policies and procedures, as evidenced by this finding and the other findings in this report, is one of the underlying causes for the problems in equipment management. This condition necessitates the establishment of a strong oversight function to monitor compliance with Agency instructions. The oversight function could be comprised of Agency officials or senior equipment managers, and possibly the Agency's Inspector General, and be tasked to report instances of noncompliance to top-level management. Subjecting the implementation of recommendations made by Equipment Management Teams to Agency oversight should ensure that actions designed to correct property inventory discrepancies are taken. Finally, as a result of our sample projection, a full physical inventory at the Aerospace Center is necessary to determine the correct equipment baseline. Considering Agency resource constraints, this 100-percent inventory should be time-phased to minimize its impact on the accomplishment of mission operations.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Director, Defense Mapping Agency:

1. Require Directors of Agency components to enforce the Defense Mapping Agency Instruction 4140.2, "Responsibility for Management of and Accountability for Property in Possession of the Defense Mapping Agency." Specifically:

a. Direct accountable officers and property custodians to record equipment transactions promptly and accurately and to maintain all records of equipment transactions.

b. Direct property custodians to perform required physical inventories.

c. Direct that appropriate performance standards be included as critical job elements in accountable officers' and property custodians' performance plans, and direct supervisors to evaluate their performance in annual appraisals.

2. Require the Director, Defense Mapping Agency Aerospace Center:

a. To plan and perform a one-time, 100-percent physical inventory to establish an accurate equipment baseline.

b. To reconcile the one-time inventory results with the current records, and initiate corrective actions needed as a result of the reconciliation.

3. Establish an oversight function consisting of Agency logistics officials or other designated senior managers, and possibly the Agency's Inspector General, to ensure compliance with established equipment management policies and procedures. As part of the oversight function, review the adequacy of the implementation of the survey recommendations made by the Agency's Equipment Management Teams.

4. Report procedural weaknesses governing property accountability and control over investment and expense equipment as a material internal control weakness in the annual assessment to the Secretary of Defense in accordance with DoD Directive 5010.38, "Internal Management Control Program," and track the status of corrective actions.

MANAGEMENT COMMENTS

The Agency concurred with Recommendation A.1. and stated that the Agency planned to issue a memorandum to all Agency managers emphasizing proper equipment accountability responsibilities.

The Agency concurred with Recommendation A.2. and stated that a 100-percent physical inventory and reconciliation of variances was performed on all equipment accounts at the Agency's Aerospace Center from March 1990 through December 1990. Another 100-percent inventory and reconciliation of variances is scheduled to be conducted from October 1991 through April 1992.

The Agency concurred with Recommendation A.3. Agency Instruction 4141.1 will be revised to require that the Office of Acquisition, Installations and Logistics, Supply Branch, provide equipment accountability oversight for the Agency. Branch personnel will

assess the adequacy of implementation of survey recommendations made by the Agency's Equipment Management Teams. Additionally, Equipment Management Teams' results will be periodically briefed to senior Agency staff.

The Agency concurred with Recommendation A.4. and stated that equipment accountability issues will be reported as a material internal control weakness in the FY 1991 Annual Statement of Assurance and that corrective actions will be tracked.

B. CONTROLS OVER LOANED EQUIPMENT

The Agency's administration of the Equipment Loan/Lease Program was cumbersome and ineffective in controlling equipment on loan and in obtaining mutually agreed to benefits from loan arrangements. This condition is primarily attributable to a lack of specifically defined responsibilities in Agency Instruction 4004.1 for the management of equipment loans. There were no procedures to ensure that geodetic data were reported to or collected by the Agency from activities using borrowed equipment. We also found that foreign equipment loans were made that did not comply with Agency Instruction 4004.2. Deficiencies in the equipment loan program resulted in a loss of control over equipment valued at $287,000; the continuation of loans to activities that no longer used the equipment; the expiration of active loan agreements; and the execution of unauthorized loan agreements. In addition, the Agency had not realized the full potential for cost avoidance from gravity data readings produced by borrowing activities. Although the equipment loan program was reported by the Agency in FY 1987 as a material internal control weakness and corrective actions were reported as taken, some of the deficiencies persist and, in our opinion, constitute a substantive internal control weakness.

DISCUSSION OF DETAILS

Background

The Loan Program. The Agency's Equipment Loan/Lease Program (Loan Program), which consists of a Domestic Loan Program and a Foreign Loan Program, is an effective tool for providing MC&G equipment to foreign and domestic borrowing activities and for advancing the Agency's mission as a low-cost alternative for procuring MC&G data and materials. Domestic borrowing activities include Federal, State, and local government agencies; and American colleges and universities. Foreign borrowing activities include international organizations, foreign government agencies and foreign colleges and universities. In FY 1990, the Agency's Loan Program provided equipment loans valued at $7.8 million consisting of $4.5 million in domestic equipment loans and $3.3 million in foreign equipment loans. At the start of our audit, policy oversight for the Loan Program was provided by the Agency's headquarters, specifically, the Facilities Engineering and Logistics Office. However, in FY 1991, the Agency underwent a reorganization, and responsibility for the Loan Program was assigned to the Deputy Director for Acquisition, Installations, and Logistics.

Policies and procedures. Policies and procedures governing the operation of the Domestic Loan Program are contained in

Agency Instruction 4004.1, "Loan of Defense Mapping Agency (DMA) Property to Other U.S. Government Agencies, State and Local Governments, and Universities," dated July 21, 1988. Foreign Loan Program guidelines are contained in Agency Instruction 4004.2, "Leases and Loans to Foreign Governments and International Organizations," dated February 19, 1988. Both instructions require the appointment of an Equipment Loan Program Administrator (Program Administrator), who is responsible for monitoring and controlling his respective loan program. According to the Instructions, the Logistics Division of the Hydrographic/Topographic Center has oversight of the administration of the Domestic and Foreign Loan Programs.

Each Program Administrator is required to review and coordinate proposed loans with Agency loan approval authorities, property custodians, and borrowing activities; to maintain a centralized file of outstanding loans; to provide assistance to Agency Components as needed; and to perform site visits to Agency Components once every 2 years, or more frequently if needed. Also, the instructions require each Program Administrator to annually validate the continuing need of equipment loans to borrowers and to annually verify the address and telephone number of the individual or activity responsible for the borrowed equipment. The instructions authorize each Component Director and the Deputy Directors for Programs, Production, and Operations at the Agency's Hydrographic/Topographic and Aerospace Centers to approve equipment loans. The Domestic and Foreign Loan Program Administrators do not have equipment loan approval authority.

In its report "Internal Management Control Review of the DMA Loan/Lease Program," dated September 30, 1986, the Agency identified loan program weaknesses and made 15 recommendations for corrective actions. The weaknesses identified in the internal review were collectively categorized in the Agency's FY 1987 Statement of Assurance Letter to the Secretary of Defense as a material internal control weakness. Although corrective actions were reported as taken, our audit showed that substantive internal control weaknesses still exist.

Management of the Loan Program

Loan Program administration. Agency Instruction 4004.1 does not adequately define the responsibilities of either the Domestic Loan Program Administrator or the property custodian. Program Administrators relied completely on property custodians to maintain contact with borrowers and to process equipment loans. Because the Program Administrators had almost no direct contact with borrowers, in practice, the responsibility for executing equipment loans has been deferred to the Agency's property custodians.

The administrative responsibilities stemming from the Agency's Loan Program have created additional duties for property custodians. Considerable time and effort are expended to secure the approval of equipment loans. Processing forms, making telephone contacts, arranging shipping, inspecting equipment, and coordinating information between the Program Administrators and the borrowers are some examples of duties performed by property custodians for the Loan Program. Efforts associated with property custodian involvement in the Loan Program were documented by the Agency's Geodetic Survey Group at the F. E. Warren Air Force Base in Cheyenne, Wyoming, and were reported to the Agency's Hydrographic/Topographic Center in October 1990.

In contrast, the two Program Administrators were performing basic administrative duties such as maintaining loan files, sending annual letters to equipment borrowers to determine if borrowed equipment is still needed, and identifying borrowers responsible for accepting the loaned equipment. Program Administrators were not required to perform physical inspections of loaned equipment.

Domestic Loan Program activities. During our audit work at the United States Geological Survey activity in Menlo Park, California, we found that loaned equipment, costing $287,000 and consisting of one sea gravity meter and attachments, could not be located by the borrowing activity, and control over the equipment was lost. On two occasions, the Agency had sent an employee to help the borrower locate the equipment with no success. No other action had been taken by the Agency concerning this potentially lost equipment until our draft report was issued. Upon receipt of the draft report, Agency management, assisted by the auditors, took more vigorous steps to locate the missing sea gravity meter and succeeded in returning this equipment to Agency control on October 22, 1991. In this instance, we found that for over 3 years, Agency controls over the equipment were weak or nonexistent. This condition could have been precluded had Agency Instruction 4004.1 been enforced and stronger measures taken to locate or investigate instances surrounding lost equipment.

At the same activity, other loaned gravity equipment that was received 2 years earlier had never been used and was still in original shipping containers at the time of our review. The Loan Program does not require the collection of information concerning the number of requests for Agency equipment that cannot be satisfied due to equipment nonavailability. However, we found that Oregon State University had requested the loan of sea gravity meters, but the request was denied due to equipment nonavailability. The equipment that we found unopened in the original shipping containers, 2 years after receipt at the Menlo Park activity, could have satisfied Oregon State University's equipment request.

During the audit, we used questionnaires and site visits to determine whether a valid need existed for Agency equipment loaned to borrowing activities. For example, we sent questionnaires to 24 activities that borrowed equipment from the Agency. Of the 16 responses received, 2 indicated that equipment on hand was no longer needed. Also, audit work performed at Washington University, St. Louis, Missouri, showed that 58 items of equipment had not been used in 2 years, and only 4 items of equipment were still needed. Since the equipment is still in the borrower's possession, it is unavailable for loan to and use by other activities.

Our analysis of the Domestic Loan Program files showed that the Agency was aware of expired loan agreements on equipment still in the possession of borrowers. The loan files showed 8 of 46 loans to domestic activities were expired as of April 26, 1990. The age of these expired loans ranged from 1 to 11 months. Equipment on loan to borrowing activities that is no longer needed and expired loan agreements were previously identified by the Agency in its FY 1987 Statement of Assurance Letter to the Secretary of Defense as a material internal control weakness. Despite corrective actions reported by Agency management, these conditions continued to exist at the time of our audit.

The Domestic loan Program Administrator has not made visits since July 21, 1988, to Agency components involved in the Loan Program as required by Agency Instruction 4004.1. Furthermore, the Instruction does not require the Administrator to travel to borrower locations. However, without periodic on-site visits to borrowing activities, no verification of the continued need, actual use, or working condition of the loaned equipment can be made with any reasonable degree of assurance. Additionally, the effectiveness of the Loan Program cannot be determined.

Foreign loan activities. We performed a limited review of the Agency's management of foreign equipment loans to certain South American countries administered by the Agency's San Antonio Field Office in San Antonio, Texas, and identified areas needing improvement.

Foreign Loan Program exclusion. Equipment authorized for loan by the San Antonio Field Office is not managed as part of the Agency's Foreign Loan Program. As in the Domestic Loan Program, several equipment loan agreements had expired. Expired equipment loan agreements should have been renewed, or the loaned equipment should have been returned to the Agency. During our audit work at the Field Office, we found that equipment loan approval and control was conducted by one nonmanagement employee. In accordance with Agency Instruction 4004.2, foreign equipment loans must be processed by the Foreign Loan Program Administrator

for finalization. However, coordination with the Agency's Program Administrator on loans made by this Field Office was not accomplished or required by Agency management. In our opinion, equipment loans by this Field Office were unauthorized and should be formally controlled as part of the Foreign Loan Program. Additionally, inclusion of this equipment loan activity in the Foreign Loan Program would provide the necessary resources and level of management review needed to enhance the Agency's goals in loaning equipment to South American nations, governments, and educational institutions.

Oversight and administration. Since February 19, 1988, the Foreign Loan Program Administrator has not visited Agency components involved in the Foreign Loan Program as required by Agency Instruction 4004.2. Our analysis showed that 11 loan agreements for 9 of 36 foreign countries formally included in the Loan Program were expired as of April 25, 1990. The 11 loans had been expired from 4 to 28 months. To preclude a reoccurrence of these problems, the Program Administrator should increase program oversight and administration. We fully recognize that overseas travel to foreign borrower locations is costly and may not be practical in many instances. However, without greater supervision and more intensive management, the Foreign Loan Program could expose the Agency to unnecessary risks in accounting for and controlling loaned equipment in the hands of foreign activities.

Gravity data. Most loaned equipment is obsolete compared with the Agency's current MC&G production systems. However, one type of loaned equipment, gravity meters, is state-of-the-art, and its use is an integral part of the Agency's geodetic data (e.g., gravity) production systems. Gravity meter measurements provide gravity data, an essential information ingredient used in the research, development, and operational planning of many sophisticated weapon systems, such as intercontinential ballistic missile systems. To be useful in weapon systems, gravity data must be precisely measured and acquired at predetermined points on the earth's surface. The Agency has assigned the Aerospace Center's Geosciences Division the responsibility to manage the DoD Gravity Library. The Librarians at the Geosciences Division maintain the data base of gravity information, direct the acquisition of gravity data readings, collect gravity data from foreign and domestic sources, and measure costs avoided by the Agency from the gravity data received from independent sources.

Gravity data are collected on Agency equipment loaned to colleges, universities, and non-DoD Government activities. The reporting of that data to the Agency represents a viable low-cost or no-cost data collection alternative to the DoD.

Gravity data benefits. Under the Agency's Loan Program, gravity meter equipment is loaned to both domestic and foreign users. The Loan Program does not require borrowers using the gravity equipment to submit gravity data to the Agency. At the Northern Arizona University, gravity data representing 1,361 gravity station readings had been generated by university students using the loaned gravity equipment. At our request, and with no cost to the Agency, Northern Arizona University forwarded its gravity station readings to the Agency's DoD Gravity Library. From that data, the librarians determined that a cost avoidance of $3,600 to $9,000 was realized, because nine gravity station readings were used to satisfy validated gravity data requirements for DoD weapon systems. Several offices of the United States Geological Survey and the University of Hawaii use loaned equipment to gather gravity station readings worldwide. However, we could not determine with any reasonable degree of assurance the potential cost avoidance attributable to those production efforts. Because borrowing activities do not report gravity station readings to the Agency, we could not determine how many gravity readings could satisfy Agency needs.

Gravity data collection. Program Administrators were not required to review loan agreements to ensure that MC&G data produced by foreign or domestic users of borrowed equipment are reported to and collected by the DoD Gravity Librarians. Agency documents pertaining to loans of gravity meters typically contain written justifications stating that gravity data will be acquired by users and submitted to the Agency's DoD Gravity Library. However, the data were not submitted to the DoD Gravity Library. In addition, Agency Instructions 4004.1 and 4004.2 do not include policy statements or procedural requirements that would provide for gravity data produced by borrowers to be submitted to the Gravity Library. In our opinion, the Agency should revise the instructions to definitize the Gravity Library's involvement in the approval process for gravity equipment loans. This change would allow the Library to match Agency needs for gravity data to borrowers' requests for gravity equipment loans.

The bulk of the Agency's gravity meter equipment is owned by the Geodetic Survey Group, a subelement of the Hydrographic/Topographic Center. The Geodetic Survey Group participates in the approval process for gravity equipment loans. Additionally, the Geodetic Survey Group is responsible for directly acquiring gravity data readings that are identified for collection by the DoD Gravity Librarians. Since gravity data collection requirements are established by the Librarians, they appear to be in the best position to determine which gravity equipment loans have the greatest potential to benefit the Agency. Gravity data produced by borrowers help the Agency to avoid costs because the Geodetic Survey Group must otherwise use

Agency personnel, contractors, travel funds, and Agency equipment resources to directly acquire gravity data. According to the Librarians, the reporting of gravity data by users of loaned equipment could avoid costs of $400 to $1,000 per gravity station reading depending on the terrain conditions where the readings are taken.

Gravity data provided by borrowing activities have the potential to reduce the cost of geodetic data collections and methodologies. In FY 1989, the Agency reported a cost avoidance of $3.2 million, and in FY 1990, the Agency reported a cost avoidance of $406,000 from low-cost or no-cost gravity data collections and methodologies that satisfied validated DoD weapon system data requirements. If the DoD Gravity Librarians were to become involved in the process of approving loans of gravity equipment, the Agency would have the potential to realize even greater benefits.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Director, Defense Mapping Agency:

1. Establish procedures to definitize responsibilities for and streamline the administration of the Agency Equipment Loan/Lease Program by revising Agency Instructions 4004.1 and 4004.2 to:

a. Require Domestic and Foreign Loan Program Administrators, in conjunction with responsible Agency operating officials, to validate borrower needs for Agency equipment, to directly negotiate equipment loans, and to coordinate and serve as the offices of record for approvals of equipment loans.

b. Require the Domestic and the Foreign Loan Program Administrators to:

(1) Prepare and retain all documentation pertaining to loans of Agency equipment.

(2) Act as Agency points of contact for loan matters.

(3) Monitor the status of loaned equipment by performing biennial visits to borrowing activities and recording the results thereof.

(4) Develop a format for and schedule of periodic reports to the Deputy Director, Acquisition, Installations, and Logistics, that detail the status of the Domestic and Foreign Loan Programs.

c. Require borrowers to periodically certify the purpose, frequency of use, and continuing need for loaned Agency equipment.

d. Add a provision in Agency loan agreements to require the borrower to report gravity data collections to the Agency's DoD Gravity Library.

e. Require the Chief of Geosciences Division, Aerospace Center to:

(1) Approve loans of Agency gravity metering equipment.

(2) Develop a format to be used by borrowers of Agency gravity metering equipment for reporting collections of gravity data to the DoD Gravity Library.

(3) Review reports of collected gravity data from borrowers of loaned gravity metering equipment to determine if the data satisfy valid DoD gravity data requirements for inclusion in the DoD Gravity Library.

2. Enforce the provisions of Agency Instruction 4004.1 by:

a. Directing borrowers to return equipment no longer needed.

b. Initiating actions to locate and/or investigate the circumstances concerning missing equipment.

3. Enforce the provisions of Agency Instruction 4004.2 by bringing active equipment loans made by the San Antonio Field Office under the auspices of the Foreign Equipment Loan Program.

MANAGEMENT COMMENTS

The Agency concurred with all but Recommendations B.2.c. and B.4. in the draft report. In response to Recommendations B.1.b.(2), B.1.b.(3), and B.1.e.(1), the Agency concurred in the need to have an Agency point of contact for loan matters (B.1.b.[2]) and stated that the Deputy Director for Programs, Production, and Operations would be designated to be the point of contact, to monitor the status of loaned equipment (B.1.b.[3]), and to approve loans of Agency gravity metering equipment (B.1.2[1]) in coordination with the Chief of the Geodesy and Geophysics Departments. The Agency stated Recommendation B.2.b. was no longer appropriate because a certified equipment record was prepared February 8, 1991, showing that the missing equipment was located. The Agency nonconcurred in Recommendation B.2.c. in the draft report to bill the U.S. Geologic Survey

organization in Menlo Park, California, for lost gravity metering equipment, maintaining that the equipment was recovered. In response to Recommendation B.4., the Agency nonconcurred and stated that substantive not material internal control weaknesses existed. Therefore, these weaknesses did not merit the attention of OSD, Congress or the Executive Office of the President. The Agency based its nonconcurrence on definitional and dollar threshold guidance established by the Office of the Comptroller of the Department of Defense.

AUDIT RESPONSE

Recommendations B.2.c and B.4. were deleted from this final report because Agency actions obviated the need to bill borrowing activities for lost equipment and because we agreed with management that the dollar thresholds prescribed in DoD Directive 5010.38 have not been breached. The proposed alternative methods provided in response to Recommendations B.1.b.(2), B.1.b.(3), and B.1.e.(1) fully satisfy the intent of our recommendations and demonstrates a commitment by top Agency managers to bring about significant improvements in the operation of the equipment loan programs. Although the Agency stated that Recommendation B.2.b. was inappropriate, in its supplemental response to the draft report, the Agency conducted a thorough investigation and initiated action to return loaned equipment to Agency control. The Agency's corrective action satisfies the intent of the recommendation.

C. CONTROLS OVER EXCESS EQUIPMENT

Equipment determined to be excess to the needs of the Agency was not screened for redistribution or disposed of as required by DoD and Agency procedures. These conditions occurred because Agency managers did not comply with controls designed to properly and promptly reutilize excess equipment within the Agency, did not screen or report excess items for redistribution elsewhere in DoD or the Federal Government, and did not promptly dispose of excess assets that had no utility or residual value. As a result, over $21.9 million of excess equipment, predominantly data processing items, was not made available to other DoD and non-DoD activities and became subject to obsolescence before it was processed for disposal. Procedural weaknesses governing excess equipment practices constitute a substantive internal control weakness.

DISCUSSION OF DETAILS

Background

Policies and procedures. DoD Directive 4100.37, "Retention and Transfer of Materiel Assets," dated May 24, 1988, defines excess materiel as materiel determined to be unnecessary for the discharge of DoD responsibilities after completion of redistribution screening among DoD Components. Agency Instruction 4160.21, "Personal Property Utilization, Disposal, and Excess Program," dated November 16, 1988, provides policies and procedures governing the management of the excess program within the Agency. Defense Mapping Agency Guide 4140.1, "Supply Customer's Guide," dated February 2, 1987, directs all Agency levels to be concerned with eliminating excess equipment and to screen and clear excess items from equipment accounts. If after screening, an item is to be retained, property custodians must submit an equipment action request to the Logistics Division to authorize retention of unneeded items. If authorization is not obtained, the item must be turned in to supply for disposition.

The Supply Divisions of the Aerospace and the Hydrographic/Topographic Centers are tasked by Agency Instruction 4160.21 with exchanging information on equipment availability among Agency components by preparing and distributing listings of unneeded equipment. The Instruction stipulates that unneeded equipment be screened within the Agency to determine the needs of other Agency elements. If a need does not exist within the Agency, the item is designated as excess and reported to the Agency's Defense Reutilization and Marketing Office. The procedures governing the turn-in of excess equipment are contained in Agency Guide 4140.1.

DoD Manual 7950.1-M, "Defense Automation Resources Management Manual," dated September 1988, and Agency Instruction 7950.1, "Automated Data Processing Resources Management," dated April 18, 1986, prescribe guidance on the management and reporting of data processing equipment, including the reutilization and sharing of such equipment by DoD Components. The Agency further supplemented this guidance with a memorandum dated January 16, 1990, which provides procedures to be used in the reutilization of data processing equipment. The guidance requires that data processing equipment scheduled for replacement or no longer required be reported to the Defense Automation Resources Information Center. The reported equipment will be made available for reutilization, which helps to reduce Federal Government expenditures. DoD Manual 7950.1-M further requires that the equipment be reported 141 days in advance of the availability date to permit complete redistribution screening while the equipment is still in use. The 141 days consist of a 60-day DoD screening period, a 60-day GSA screening period, followed by a 21-day donation program screening period.

Untimely equipment disposal

Excess used equipment. The Agency did not screen and dispose of over $851,000 of used excess equipment. In conjunction with Agency personnel, we performed a physical inventory of equipment on hand, identified as excess by the Center's personnel, at the Aerospace Center warehouse to determine whether equipment listed as excess on the Center's listings was in storage and the timeliness of disposal actions. The inventory showed that there were 507 excess equipment items on hand, valued at over $1,265,000. We compared the results of this physical inventory to the excess listings prepared by the Aerospace Center and found that 297 items inventoried were not included on the Center's excess lists and that none of the 297 items were screened within the Center or the Agency.

Transaction histories. We performed transaction history analyses on 136 of the 297 equipment items to determine why they were not included on the Center's most current excess listing. Our analyses showed that of the 136 items, documentation required to transfer accountability from property custodians to the Supply Division warehouse had not been processed for 116 items, valued at $504,600. Of the 116 items, 28 items of undeterminable costs were deleted from the Aerospace Center's equipment data base.

Because proper procedures were not used to transfer the 116 equipment items, neither we nor Agency personnel could determine how long the 116 items had been held in the warehouse. However, discussions with Supply Division personnel indicated that some of the equipment had been in the warehouse for over

2 years. Proper procedures were used to transfer accountability from the equipment custodians to the warehouse for only 20 of the 136 items. We analyzed transaction histories for the 20 items and determined that 5 items, valued at $78,000, had been in storage for periods ranging from 6 to 20 months. For example, two of these five items were stereoplotters valued at $36,000 each. These stereoplotters were turned into the warehouse on October 19, 1988, but were not reported as excess to the Defense Reutilization and Marketing Office until June 25, 1990, or 613 days later. Because of the lack of controls over accountability and disposal of excess equipment, this equipment was not made available for possible redistribution to other DoD or Federal organizations.

Excess new equipment. Over $65,000 of new equipment, which was screened by the Agency and determined to be excess to its needs, was not processed for disposal. By means of an equipment inventory at the Hydrographic/Topographic Center's warehouse, we found new equipment items that had been retained in storage for periods ranging from 4 to 50 months. When we questioned Agency personnel on why the new equipment had not been processed for disposal, we were told that the new items did not meet users' needs and had been retained in the hope that a future need would arise. Agency personnel further explained that no attempts were made to return these items to the suppliers because, in many cases, high fees were charged by the vendors when items were returned. Also, vendors were usually reluctant to accept returns because of the uniqueness of the equipment involved and because items were not returned promptly by the Agency, making resales difficult. Agency personnel were unable to provide documentation in support of these stated conditions.

The excess equipment coordinator stated that the excess items were screened and that their availability was broadcast throughout the Agency. The coordinator further stated that items not selected by Agency Components were scheduled for disposal through appropriate DoD channels. However, the Supply Division was directed to retain these new items for additional future screening. There was no documented evidence to support further retention. As a result, the equipment remained stored in the warehouse, unavailable to other DoD Components, and subject to misuse, damage, theft, and obsolescence.

Unreported data processing equipment. Data processing equipment determined to be excess to the Agency's needs was not reported to the Defense Automation Resources Information Center sufficiently in advance of the anticipated availability date to permit redistribution screening by DoD and the GSA as required by DoD Manual 7950.1-M. Our audit disclosed that this problem occurred repeatedly during the last 3 fiscal years and resulted

in over $21 million of excess data processing equipment not being reported within prescribed time frames. Specifically, we found that the Agency initiated 175 actions to dispose of unneeded data processing equipment from fiscal years 1988 through 1990. The unneeded equipment varied from computer card punch machines to entire computer systems. Agency personnel indicated that none of these 175 actions, totaling over $21 million (acquisition value), was reported within prescribed time frames to the Defense Automation Resources Information Center. Below is a summary, by fiscal year, of the aggregate amount of data processing equipment reported late.

Excess Data Processing Equipment Reported Late

Fiscal Year	Value of Excess
1988	$6,498,317
1989	6,473,679
1990	8,050,209
Total	$21,022,205

The equipment was frequently not reported for reutilization and was eventually disposed of because it became obsolete for potential users.

During the inventory of excess equipment in the Aerospace Center's warehouse, 112 data processing equipment items valued at $293,444, were identified. We found that these data processing equipment items were stored for more than a year in the warehouse that was not environmentally controlled, and the equipment was unnecessarily exposed to the damaging effects of dust and humidity. After extended storage under these conditions, it is doubtful whether data processing equipment could be made operational without incurring considerable expense. Also, since these items were not reported as excess to the Defense Automation Resources Information Center in a timely manner, they would eventually have to be disposed of as scrap instead of being potentially reutilized by other DoD Components.

Management actions. Throughout the audit, we alerted Agency managers to the deficiencies as they were uncovered, and corrective actions were initiated. For example, subsequent audit checks made at both of the Agency's warehouses showed that most of the excess equipment identified, both new and used, had been disposed of or reutilized within the Agency. Warehouse managers have reorganized the warehouses to ensure that equipment is properly transferred to the Agency warehouses and that controls over movement of equipment are enforced. Also, equipment

managers and warehouse personnel have improved control measures over the receipt of property transfer documents to ensure that items are properly controlled when custody is transferred.

The lack of compliance with the established controls and procedures governing the prompt screening and disposition of the Agency's excess equipment, including data processing equipment; the absence of records of excess equipment placed in storage; and the absence of specific milestones for timely redistribution screening of data processing equipment resulted in weakened safeguards designed to prevent undetected loss, misappropriation, or obsolescence. These factors constituted a substantive internal control weakness.

We were generally satisfied with the adequacy of policies, procedures, and control mechanisms used to control excess equipment. However, compliance with these procedures by Agency managers and operating personnel, coupled with more aggressive monitoring and management oversight, is necessary. Therefore, no recommendations are being made regarding the adequacy of established procedures.

Summary. Although procedures and controls over excess equipment were published and in force at the time of our audit, we found several instances of noncompliance. Several factors were evident that contributed to the conditions noted. When senior Agency management placed special emphasis on this area in the past, deficiencies were eliminated; however, problems or deficiencies resurfaced. In addition, the Agency's internal control program lacked an effective followup or feedback mechanism that would have detected instances of breakdowns in control mechanisms, noncompliance with established procedures, and associated problems in the flow of information to top Agency management. Although the Agency has good written controls and procedures for managing equipment valued at almost $239 million, the Agency needs to provide more intensive oversight of excess equipment management to ensure compliance with established controls and procedures.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Director, Defense Mapping Agency:

1. Enforce provisions of the Defense Mapping Agency Guide 4140.1, "Supply Customer's Guide," by requiring that Supply Division officials identify excess equipment in the Agency's inventory system, promptly screen equipment identified as unneeded, and transfer equipment for reutilization within the Agency or to the Defense Logistics Agency in a timely manner.

2. Report anticipated availability of excess automated data processing equipment in accordance with milestones established in DoD Manual 7950.1, "Defense Automation Resources Management Manual," and in the Agency memorandum on reutilization of data processing equipment dated January 16, 1990.

MANAGEMENT COMMENTS

The Agency concurred with Recommendations C.1. and C.2. and nonconcurred with Recommendation C.3. in the draft report. In responding to Recommendations C.1. and C.2., the Agency stated that all Agency managers would be formally advised of the responsibilities regarding equipment accountability excess reporting and the disposition of excess equipment by September 30, 1991. In replying to Recommendation C.3. in the draft report, the Agency contended a substantive internal control weakness existed, not a material internal control weakness. As the basis for its position, the Agency cited the dollar threshold criteria provided by the Comptroller of the Department of Defense in his definition of a material internal control weakness.

AUDIT RESPONSE

The Agency's corrective actions described in response to Recommendations C.1. and C.2. satisfy the intent of our recommendations. Recommendation C.3. was deleted from this final report because we agree with Agency management that the weakness identified is not material enough to require reporting to OSD. Further, the Agency's recognition that substantive weaknesses exist and its willingness to track the status of corrective actions is noteworthy.

PART III - ADDITIONAL INFORMATION

Appendix A - Sample Plan and Methodology

Appendix B - Statistical Sample Results

Appendix C - Floor-to-Record Sample Results

Appendix D - Equipment Utilization Memorandum from Director, Defense Mapping Agency

Appendix E - Summary of Potential Benefits Resulting from Audit

Appendix F - Activities Visited or Contacted

Appendix G - Report Distribution

APPENDIX A: SAMPLE PLAN AND METHODOLOGY

Our record-to-floor sample plan was designed as follows. The universe of property was divided into two clusters or subpopulations. The first cluster had equipment administered by the Agency's Hydrographic/Topographic Center, and the second had equipment administered by the Agency's Aerospace Center. The Hydrographic/Topographic Center cluster was further separated into locations in the Washington, D.C., metropolitan area and at other locations in the United States. Then, all equipment accounts were separated into high, medium, and low strata as shown in the table below. The high stratum consisted of equipment accounts valued in excess of $10 million, medium stratum contained accounts ranging from $1 million to $10 million each, and the low stratum were accounts amounting to less than $1 million each. When there were multiple equipment accounts among the various stratum, one or more accounts were sampled. Actual samples were randomly selected within each stratum.

Hydrographic/Topographic Center Accounts						Aerospace Center Accounts		
Washington, DC Area			Other U.S. Locations					
High	Medium	Low	High	Medium	Low	High	Medium	Low
0	6	4	3	3	2	3	6	1
0	752	498	1,821	689	97	694	850	51
0	130	31	52	45	19	60	245	7

We began with a universe of 44,911 equipment items, valued at $239 million, located at the eight Agency components. From that universe, we performed a two-stage sampling process by first selecting 28 equipment accounts containing 5,452 equipment items, valued at $70 million. We then used a stratified random sample from within these 28 equipment accounts. The resulting sample contained 589 equipment items valued at $19.2 million. It should be noted that the cluster and stratification structure and the hierarchical method used in the design allowed us to project to the total universe of 44,911 equipment items.

Neither we nor the responsible property custodians were able to locate 212 equipment items, valued at $3.0 million, from the 589 items sampled. Using a two-stage calculation formula with

appropriate weights, we estimated that of the 44,911 equipment items, 10,653 items, valued at $61 million, could not be located. With a confidence level of 95 percent, we estimated the following.

Number of items not found.	10,653 items
Precision with 95-percent confidence.	± 2,246 items
95-percent confidence interval.	8,407 to 12,899 items
Dollar value of items not found.	$60.9 million
Precision with 95-percent confidence.	± $9.1 million
95-percent confidence interval.	$51.8 million to $70.0 million

Concurrent with the sample taken above, we did a random floor-to-record sample of 542 equipment items. This floor-to-record sample was obtained by selecting an item to the immediate left of the item identified in the first sample and then verifying the number of items for the floor-to-record sample shown in the property records. This random sample could not be projected with reasonable precision and confidence, since we did not know the number of items or value of equipment on the floor or on the accountable record. We selected 542 items and verified them to the accountable records. In this sample, 274 (50.6 percent) of the 542 items either were not entered on the custodians' property records or the total number of items found were less than the quantity shown on the custodians' records. The value not found on the records was about $4.7 million (59.0 percent) of $7.8 million of equipment. Although this shows a substantial sample number and value of equipment items not recorded by the property custodians, the variability in property values not recorded was so large that we could not project the effects within reasonable precision bounds, according to our internal statistical standards. However, the high percentage of unrecorded equipment items found coupled with the dollar value of equipment that could not be located are strong indicators of weak controls and equipment management problems.

APPENDIX B: STATISTICAL SAMPLE RESULTS

Washington, D.C., Area*

Strata	Universe		Sample Universe		Sample Results		Projection	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
High	0	$ 0	0	$ 0	0	$ 0	0	$ 0
Medium	7,359	52,978,136	752	8,005,839	137	391,854	1,341	2,593,069
Low	16,252	31,842,131	498	323,262	43	13,299	1,403	1,309,986
Totals	23,611	$84,820,267	1,250	$8,329,101	180	$405,153	2,744	$3,903,055

Other U.S. Locations

Strata	Universe		Sample Universe		Sample Results		Projection	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
High	2,760	$14,060,476	1,821	$12,100,208	324	$2,203,894	491	$2,560,931
Medium	999	3,495,032	689	2,336,654	298	1,187,961	432	1,776,883
Low	746	1,310,598	97	177,654	17	0	131	0
Totals	4,505	$18,866,106	2,607	$14,614,516	639	$3,391,855	1,054	$4,337,814

St. Louis, MO, Area

Strata	Universe		Sample Universe		Sample Results		Projection	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
High	1,714	$53,726,784	694	$30,846,106	186	$8,003,424	459	$13,940,114
Medium	10,610	71,172,735	850	16,089,243	407	6,794,778	5,081	30,057,532
Low	4,471	10,407,226	51	112,230	15	94,214	1,315	8,736,580
Totals	16,795	$135,306,745	1,595	47,047,579	608	14,892,416	6,855	$52,734,226
Grand Total	44,911	238,993,118	5,452	$69,991,196	1,427	$18,689,424	10,653	$60,975,095

*The Hydrographic/Topographic Center's accounts were separated into accounts in the Washington, D.C., area and in all other U.S. locations.

APPENDIX C: FLOOR-TO-RECORD SAMPLE RESULTS

		Equipment Items			Equipment Values		
Locations	Accounts Reviewed	Per Accountable Records	Items Located	Difference	Per Accountable Records	Value of Items Located	Difference
Washington, D.C.	12	127	106	21	$1,967,419	$1,710,461	$256,958
Other U.S. Locations	6	50	40	10	502,986	205,348	297,638
Aerospace Center	10	365	122	243	5,360,540	1,242,740	4,117,800
Totals	28	542	268	274	$7,830,945	$3,158,549	$4,672,396

Appendix D: Memorandum from Defense Mapping Agency

DEFENSE MAPPING AGENCY

[illegible] LEE HIGHWAY

FAIRFAX VIRGINIA 22031-2137

U-4775/CMM

19 JUN 1990

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING

SUBJECT: Equipment Utilization at the Defense Mapping Agency (DMA)

Reference: Project Manager, Office of the Assistant Inspector General for Auditing, memorandum, 5 June 1990, subject: Request for Equipment Utilization Data, enclosed.

1. This memorandum responds to a 6 June 1990 verbal request by Mr. William F. Thomas, Director, Readiness and Operations Support Directorate, DoD IG, for a statement regarding equipment utilization at DMA This statement is made in the context of the Audit of Controls and Utilization of Investment and Expense Equipment at DMA (Project No. ORD-0044).

2 DMA's production equipment is not used to maximum capacity. This is a result of the lack of funding needed to provide personnel to produce mapping, charting, and geodetic products. The FY 1986 Five Year Defense Program projected total FY 1990 military and civilian personnel at 9,694. Current financing will provide 8,420. With OSD approval, we have continued to maintain the development of the Digital Production System (DPS) on schedule and in conformance with original sizing. This has required end-strength cuts from current production and associated variable support costs. DMA could, with existing equipment, increase production by 20 to 25 percent if additional funds were provided This has been documented in Program Objective Memoranda and budget submissions of the past four years OSD has found lower levels of support to the CINCs and Services to be acceptable in view of the Department's overall priorities and funding constraints.

3. DMA production equipment is unique to DMA's production process. Much of the equipment is aged beyond the point of any significant reclamation value. DMA has an excessing plan for this equipment which is keyed to our production program needs and linked to the phase-in of DPS. The primary impact of reduced personnel has been to reduce from two shifts to a single-shift operation.

4. In conclusion, DMA has repeatedly acknowledged its underutilization of production-related equipment. OSD has been advised of this situation and has found it acceptable. Further

collection of equipment utilization data to prove this point seems an ineffective use of DoD IG and DMA resources. For this reason, I see no merit in pursuing the data collection effort described in the reference. DMA will yield greater benefits from continued DoD IG analysis of accountable property systems and control mechanisms.

Enclosure a/s

ROBERT F. DURKIN
Major General, USAF
Director

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APPENDIX E: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.1.a	Compliance with regulations. Provides better assurance of the accuracy of the accountable records by requiring timely and accurate submission of equipment transactions.	Nonmonetary
A.1.b	Compliance with regulations. Performing physical inventories will improve accountability and identify inaccuracies in accountable records.	Nonmonetary
A.1.c.	Compliance with regulations. More attention provided to equipment custodial duties by having supervisors annually rate accountable officers' and custodians' performances.	Nonmonetary
A.2.a	Internal control. Establishes an accurate equipment baseline submission of equipment transactions.	Nonmonetary
A.2.b.	Internal control. Identifies inaccurate accountable records by reconciling accountable records to inventory results, and brings accountable records into agreement with on-hand balances.	Nonmonetary

APPENDIX E: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (Continued)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.3.	Internal control. Establishes an oversight function to ensure compliance with Agency equipment policies and procedures.	Nonmonetary
A.4.	Internal control. Ensures aggressive management actions are initiated by reporting equipment accountability as a material internal control weakness to OSD.	Nonmonetary
B.1.a.	Internal control. Provides greater control by requiring administrators to validate need, negotiate loans, and coordinate in loan approvals.	Nonmonetary
B.1.b.(1)	Internal control. Establishes centralized administrative control over Loan Program documentation.	Nonmonetary
B.1.b.(2)	Internal control. Provides centralized control by making the administrators the liaison with borrowers.	Nonmonetary

APPENDIX E: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (Continued)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
B.1.b.(3)	Internal control. Assures management that loaned equipment is needed and used by borrowing activities and requires administrators to perform biennial visits.	Nonmonetary
B.1.b.(4)	Internal control. Establishes additional control and visibility over the Loan Program by providing specific information on program status.	Nonmonetary
B.1.c.	Internal control. Provides a means to periodically certify need and use of equipment and to determine whether a continued need exists by borrowers.	Nonmonetary
B.1.d.	Internal Control. Ensures that borrowers report collected gravity data to the DoD Gravity Library.	Undeterminable. Funds will not be misused to collect gravity data already obtained with loaned equipment.
B.1.e.(1)	Internal control. Establishes a centralized control over loans of gravity meter equipment by requiring the Geosciences Division to approve all loans.	Nonmonetary

APPENDIX E: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (Continued)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
B.1.e.(2)	Internal control. Establishes control over reporting of gravity data by requiring borrowers to submit data using a standard format.	Nonmonetary
B.1.e.(3)	Internal control. Ensures that needed gravity data is included in the DoD Gravity Library	Nonmonetary
B.2.a.	Compliance with regulations. Requires that actions be taken to return unneeded loaned equipment.	Nonmonetary
B.2.b.	Compliance with regulations. Requires management to locate any missing equipment.	Nonmonetary
B.3.	Internal control. Greater control of and visibility over loaned equipment by requiring that loans made by the San Antonio Field Office be part of the formal Foreign Loan Program.	Nonmonetary

APPENDIX E: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (Continued)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
C.1.	Internal control. Requires that excess equipment be identified, screened, and transferred to the Defense Logistics Agency.	Nonmonetary
C.2.	Compliance with regulations. Allows for timely screening of automated data processing equipment by reporting the equipment when it is no longer needed.	Nonmonetary

APPENDIX F: ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), Washington, DC
Joint Staff, Washington, DC

Department of the Navy

Naval Surface Warfare Center, White Oak, MD

Defense Agencies

Headquarters, Defense Mapping Agency, Fairfax, VA
- Aerospace Center, St. Louis, MO
- Combat Support Center, Brookmont, MD
- Defense Mapping School, Fort Belvoir, VA
- Hydrographic/Topographic Center, Brookmont, MD
- Reston Center, Reston, VA
- Systems Center, Reston, VA
- Telecommunications Service Center, Fairfax, VA

Headquarters, Defense Logistics Agency, Cameron Station, Alexandria, VA
- Defense Automation Resources Information Center, Alexandria, VA
- Defense Reutilization and Marketing Office, Alexandria, VA

Non-DoD

Department of the Interior, Headquarters, U.S. Geological Survey, Geologic Division, Office of the Chief Geologist, Reston, VA
- Office of Energy and Marine Geology, Branch of Atlantic Marine Geology, Woods Hole, MA
- Office of Energy and Marine Geology, Branch of Pacific Marine Geology, Menlo Park, CA
- Office of Mineral Resources, Branch of Geophysics, Menlo Park, CA
- Office of Mineral Resources, Branch of Western Mineral Resources, Field Office Center, Flagstaff, AZ

Non-Government

Boston University, Boston, MA
California State University, Northridge, CA
East Tennessee State University, Johnson City, TN

APPENDIX F: ACTIVITIES VISITED OR CONTACTED (Continued)

Non-Government (Continued)

Elizabeth City State University, Elizabeth City, NC
Ferris State University, Big Rapids, MI
Glenville State College, Glenville, WV
Montana State University, Bozeman, MT
New Mexico State University, Las Cruces, NM
Southwest Missouri State University, Springfield, MO
Texas A&M University, College Station, TX
University of Florida, Gainesville, FL
University of Hawaii, Honolulu, HI
University of Maine, Orono, ME
University of New Orleans, New Orleans, LA
Virginia Polytechnic Institute and State University, Blacksburg, VA

APPENDIX G: REPORT DISTRIBUTION

Office of the Department of Defense

Under Secretary of Defense for Acquisition
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
Assistant Secretary of Defense (Production and Logistics)
Assistant Secretary of Defense (Public Affairs)
Comptroller of the Department of Defense
Assistant to the Secretary of Defense (Intelligence Oversight)
Assistant to the Secretary of Defense (Intelligence Policy)
Director, Joint Staff

Department of the Army

Assistant Secretary of the Army (Financial Management)
Army Audit Agency

Department of the Navy

Assistant Secretary of the Navy (Financial Management)
Naval Audit Service
Naval Surface Warfare Center

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Air Force Audit Agency

Defense Agency

Director, Defense Advanced Research Projects Agency
Director, Defense Information Systems Agency
Director, Defense Intelligence Agency
Director, Defense Logistics Agency
Director, National Security Agency/Chief, Central Security Service
Director, Defense Nuclear Agency

Non-DoD Activities

Office of Management and Budget
U.S. General Accounting Office, NSIAD Technical Information Center
U.S. Department of the Interior
Inspector General, Department of the Interior

APPENDIX G: REPORT DISTRIBUTION (Continued)

Congressional Committees

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Ranking Minority Member, Senate Committee on Armed Services
Senate Select Committee on Intelligence
Senate Subcommittee on Oversight of Government Management, Committee on Government Affairs
Senate Subcommittee on Interior, Committee on Appropriations
House Committee on Appropriations
House Subcommittee on Interior, Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
House Subcommittee on Legislation and National Security, Committee on Government Operations
House Committee on Interior and Insular Affairs
House Subcommittee on General Oversight and Investigation, Committee on Interior and Insular Affairs
House Committee on Science, Space, and Technology
House Subcommittee on Investigation and Oversight, Committee on Science, Space, and Technology
House Permanent Select Committee on Intelligence
House Subcommittee on Oversight and Evaluation, Permanent Select Committee on Intelligence

PART IV - MANAGEMENT COMMENTS

Defense Mapping Agency Comments

Comments from Defense Mapping Agency

DEFENSE MAPPING AGENCY

8613 LEE HIGHWAY
FAIRFAX, VIRGINIA 22031-2137

5 SEP 1991

CMMA

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE
ATTN: Assistant Inspector General for Auditing

SUBJECT: Audit of Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency (DMA) (Project No. ORD-0044)

Reference: Department of Defense Inspector General (DoDIG) Draft Audit Report, 5 July 1991, subject: Draft Audit Report on Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency Project No. ORD-0044).

1. Referenced draft audit report requests DMA's comments. Since the audit began, DMA has initiated many corrective actions to improve the management of equipment accountability, the lease/loan program, and the disposal of excess equipment. DMA's comments are provided below and are keyed to each DoDIG recommendation:

a. Finding A. - Property Accountability.

(1) Audit Recommendation: "Require Directors of Agency components to enforce DMA Instruction 4140.2, 'Responsibility for Management of and Accountability for Property in Possession of the Defense Mapping Agency.' Specifically:"

(a) "Direct accountable officers and property custodians to record equipment transactions promptly and accurately and to maintain all records of equipment transactions."

(b) "Direct property custodians to perform required physical inventories."

(c) "Direct that appropriate performance standards be included as critical job elements in accountable officers' and property custodians' performance plans, and direct supervisors to evaluate their performance in annual appraisals."

DMA Comments: DMA concurs with the above recommendations. By 30 September 1991, I plan to send a memorandum to all DMA managers emphasizing their responsibilities to ensure proper equipment accountability, to promptly and accurately document equipment transactions, to perform required physical inventories, and to document equipment accountability standards in annual performance plans of accountable officers and property custodians.

(2) Audit Recommendation: "Require the Director, Defense Mapping Agency Aerospace Center [DMAAC]:"

(a) "To plan and perform a one-time, 100-percent physical inventory to establish an accurate equipment baseline."

DMA Comments: DMA concurs with this recommendation. A 100 percent Equipment Management Team (EMT) physical inventory of all DMAAC-managed equipment accounts was performed during the period of March 1990 through December 1990. You will be pleased to note that the latter inventory revealed only $312 thousand in inventory which could not be located initially, rather than $52.7 million as you extrapolated based on your statistical sample. Variances were reconciled, and less than $1 thousand of equipment had to be dropped from accountable records. DMAAC will conduct another 100 percent physical inventory during the period 1 October 1991 through 30 April 1992. Estimated completion date is 30 April 1992.

(b) "To reconcile the one-time inventory results with the current records, and initiate corrective actions needed as a result of the reconciliation."

DMA Comments: DMA concurs with this recommendation. Variances from the 100 percent physical inventory have been reconciled. Any possible variances from the upcoming physical inventory will be reconciled at that time. Estimated completion date is 30 April 1992.

(3) Audit Recommendation: "Establish an oversight function consisting of Agency logistics officials or other designated senior managers, and possibly the Agency's Inspector General, to ensure compliance with established equipment management policies and procedures. As part of the oversight function, review the adequacy of the implementation of the survey recommendations made by the Agency's Equipment Management Teams."

DMA Comments: DMA concurs with this recommendation. Oversight of DMA equipment accountability will be accomplished by the DMA Office of Acquisition, Installations and Logistics, Supply Branch (DMA(AQLS)). AQLS will review EMT reports and responses to assess the adequacy of implementation of survey recommendations. EMT results will be briefed periodically to the DMA senior staff and Component Directors. DMA Instruction 4141.1, "Equipment Management Team," will be updated to reflect this responsibility. Estimated completion date is 30 November 1991.

(4) Audit Recommendation: "Report procedural weaknesses governing property accountability and control over investment and expense equipment as a material internal control weakness in the annual assessment to the Secretary of Defense in accordance with DoD Directive 5010.38, 'Internal Management Control Program,' and track the status of corrective actions."

DMA Comments: DMA concurs with this recommendation. We will report this finding as a material internal control weakness in the FY 1991 Annual Statement of Assurance and track the status of corrective actions in accordance with DoD Directive 5010.38, "Internal Management Control Program."

b. Finding B. - Loaned Equipment.

(1) Audit Recommendation: "Establish procedures to definitize responsibilities for and streamline the administration of the Agency Equipment Lease/Loan Program by revising Agency Instructions 4004.1 and 4004.2 to:"

(a) "Require Domestic and Foreign Loan Program Administrators in conjunction with responsible Agency operating officials to validate borrower needs for Agency equipment loans, to directly negotiate equipment loans, and to coordinate and serve as the offices of record for approvals of equipment loans."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to require Domestic and Foreign Loan Program Administrators, in conjunction with responsible DMA operating officials, to validate borrower needs for DMA equipment loans, and to coordinate and serve as the offices of record for approvals of equipment loans. Estimated completion date is 31 December 1991.

(b) "Require Domestic and Foreign Loan Program Administrators to:"

1. "Prepare and retain all documentation pertaining to loans of Agency equipment."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to require domestic and foreign loan program administrators to prepare and retain all documentation pertaining to loans of DMA equipment. Estimated completion date is 31 December 1991.

2. "Act as Agency points of contact for loan matters."

DMA Comments: DMA concurs that an Agency point of contact for loan matters must be clearly designated. However, we believe that a more effective solution is to designate the Deputy Director for Programs, Production and Operations (HQ DMA(PP)) as the Agency point of contact. HQ DMA(PP) will ensure that multiple interests in the loan of gravity meter equipment are appropriately considered. These include not just the satisfaction of geodetic data requirements, but the provisions of mapping, charting and geodetic international exchange agreements, and the needs of the academic community for training individuals in geodetic skills

required by DoD. DMA Instructions 4004.1 and 4004.2 will be revised accordingly. Estimated completion date is 31 December 1991.

3. "Monitor the status of loaned equipment by performing biennial visits to borrowing activities and recording the results thereof."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to clarify this responsibility. As the Agency point of contact, HQ DMA(PP) will designate organizational elements to monitor the status of loaned equipment and, if necessary, visit borrowing activities, reporting the results to the Loan Administrator. This procedure will ensure that the reviewing individual possesses the technical expertise necessary to ensure the effective usage of loaned equipment. Estimated completion date is 31 December 1991.

4. "Develop a format for and schedule of periodic reports to the Deputy Director, Acquisition, Installations, and Logistics, that detail the status of the Domestic and Foreign Loan Programs."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to include a format and schedule for periodic reports to DMA(AQ). Estimated completion date is 31 December 1991.

(c) "Require borrowers to periodically certify the purpose, frequency of use, and continuing need for loaned Agency equipment."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to require borrowers to periodically certify the purpose, frequency of use, and continuing need for loaned DMA equipment. Estimated completion date is 31 December 1991.

(d) "Add a provision in Agency loan agreements to require borrowers to report gravity data collections to the Agency's DoD Gravity Library."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to require DMA loan agreements to include a provision that requires borrowers to report gravity data collections to DMA's DoD Gravity Library. Estimated completion date is 31 December 1991.

(e) "Require the Chief of Geosciences Division, Aerospace Center to:"

1. "Approve loans of Agency gravity metering equipment."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to require that gravity meter loans will be coordinated with the Chief of the Geodesy and Geophysics Department (DMAAC(GG), formerly the Geosciences Division). However, as currently stated in DMA Instructions 4004.1 and 4004.2, HQ DMA(PP) will remain the approving authority for loans of DMA gravity metering equipment, as discussed in paragraph 1.b.(1)(b)2. above. Estimated completion date is 31 December 1991.

2. "Develop a report format to be used by borrowers of Agency gravity metering equipment for reporting collections of gravity data to the DoD Gravity Library."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to include the format to be used by borrowers to report collections of gravity data to DMA. Estimated completion date is 31 December 1991.

3. "Review reports of collected gravity data from borrowers of loaned gravity metering equipment to determine if the data satisfies valid DoD gravity data requirements for inclusion in the DoD Gravity Library."

DMA Comments: DMA concurs with this recommendation. DMA Instructions 4004.1 and 4004.2 will be revised to mandate that reports of collected gravity data from borrowers of gravity metering equipment be reviewed to determine their applicability for inclusion in the DoD Gravity Library. Estimated completion date is 31 December 1991.

(2) Audit Recommendation: "Enforce the provisions of Agency Instruction 4004.1 by:"

(a) "Directing borrowers to return equipment no longer needed."

DMA Comments: DMA concurs with this recommendation. Loan/Lease Administrators have been directed to more aggressively coordinate the return of equipment no longer required by borrowers. A memorandum, sent to loan administrators on 2 July 1991, requires all signatories to loans to identify the prime point of contact for the borrowed equipment. Each year the loanee will provide DMAAC(GG) with its plans for use of the equipment. Recommendation was implemented on 2 July 1991.

(b) "Initiating actions to locate and/or investigate the circumstances concerning missing equipment."

DMA Comments: This recommendation is no longer appropriate. DMA Form 4140-3-R, DMA Equipment Record, dated

8 February 1991, certifies that the missing gravity meter was located.

(c) "Billing the United States Geologic Survey organization in Menlo Park, California for lost gravity metering equipment."

DMA Comments: This recommendation is no longer appropriate. Subsequent to the DoDIG visit to Menlo Park, the U.S. Geological Survey has acknowledged that the gravity meter has been located.

(3) Audit Recommendation: "Enforce the provisions of Agency Instruction 4004.2 by bringing active equipment loans made by the San Antonio Field Office under the auspices of the Foreign Equipment Loan Program."

DMA Comments: DMA concurs with this recommendation. DMA will enforce the provisions of DMA Instruction 4004.2 by bringing active equipment loans made by the San Antonio Field Office under the auspices of the foreign loan program. Estimated completion date is 31 December 1991.

(4) Audit Recommendation: "Report procedural weaknesses governing controls over loaned equipment as a material internal weakness in the annual assessment to the Secretary of Defense in accordance with DoD Directive 5010.38, 'Internal Management Control Program,' and track the status of corrective actions."

DMA Comments: DMA agrees that this finding is a substantive weakness and will track the status of corrective actions. DMA does not agree that it meets the definition of a "material" weakness as defined by the DoD Comptroller. Material weaknesses generally must merit the attention of the Secretary of Defense, relevant Congressional Oversight Committees, or the Executive Office of the President; result in the loss of $10 million or 5 percent of a budgeted line item; exist in a major program activity; or reflect adversely on the management integrity of the Agency.

c. Finding C. - Excess Equipment.

(1) Audit Recommendation: "Enforce provisions of the Defense Mapping Agency Guide 4140.1, 'Supply Customer's Guide,' by requiring that Supply Division officials identify excess equipment in the Agency's inventory system, promptly screen equipment identified as unneeded, and transfer equipment for reutilization within the Agency or to the Defense Logistics Agency in a timely manner."

(2) Audit Recommendation: "Report anticipated availability of excess automated data processing equipment in accordance with milestones established in DoD Manual 7950.1,

'Defense Automation Resources Management Manual,' and in the Agency memorandum on reutilization of data processing equipment dated January 16, 1990."

DMA Comments: DMA concurs with the above recommendations. I shortly will send a letter to all DMA managers emphasizing their responsibilities relative to equipment accountability and excess reporting/disposition. Estimated completion date is 30 September 1991.

(3) Audit Recommendation: "Report procedural weaknesses governing excess equipment as a material weakness in the annual assessment to the Secretary of Defense in accordance with DoD Directive 5010.38, 'Internal Management Control Program,' and track the status of corrective actions."

DMA Comments: DMA agrees that this finding is a substantive weakness and will track the status of corrective actions. DMA does not agree that it meets the definition of a "material" weakness as defined by the DoD Comptroller. Material weaknesses generally must merit the attention of the Secretary of Defense, relevant Congressional Oversight Committees, or the Executive Office of the President; result in loss of $10 million or 5 percent of a budgeted line item; exist in a major program activity; or reflect adversely on the management integrity of the Agency.

2. DMA appreciates the opportunity to comment on this draft audit report. If you have any questions, your staff may contact Mr. Michael Caronna, (301) 227-2247.

FOR THE DIRECTOR:

JOHN R. VAUGHN
Comptroller

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Comments from Defense Mapping Agency

DEFENSE MAPPING AGENCY
8613 LEE HIGHWAY
FAIRFAX, VIRGINIA 22031-2137

CMMA

4 NOV 1991

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE
ATTN: Assistant Inspector General for Auditing

SUBJECT: Audit of Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency (Project No. ORD-0044)

References:
a. Department of Defense Inspector General (DoDIG) Draft Audit Report, 5 July 1991, subject: Draft Audit Report on Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency (Project No. ORD-0044).

b. HQ DMA(AQLL) memorandum, 31 October 1991, Inventory of Gravity Meter Equipment on Loan to U.S. Geological Survey (USGS) (enclosed).

1. In reply to your request for additional information on DMA's response to Recommendation 2.c. of the subject audit (reference a.), the enclosed memorandum (reference b.) summarizes an on-site inventory of DMA gravity meters and associated equipment loaned to USGS. The inventory was performed by Mr. George Emerson of the DMA Aerospace Center from 24 September 1991 through 30 September 1991.- Mr. Emerson's trip report (enclosure to reference b.) confirms the location of the equipment in question.

2. If you have any questions, your staff may contact Mr. Michael Caronna or Ms. Elizabeth Beavers, (301) 227-2247.

FOR THE DIRECTOR:

W. Douglas Smith
for JOHN R. VAUGHN
Comptroller

Enclosure a/s

UNITED STATES GOVERNMENT

memorandum

DATE: 31 OCT 1991

REPLY TO ATTN OF: AQLL (R. Tanzillo/59184/A-3)

SUBJECT: Inventory of Gravity Meter Equipment on Loan to U.S. Geological Survey (USGS)

TO: CMMA

1. References:

a. DoD Inspector General Draft Report, Audit of Controls and Utilization of Investment and Expense Equipment at the Defense Mapping Agency (DMA) (Project Number ORD-0044), 5 September 1991.

b. AC(GGBF) trip report, 22 October 1991 (enclosed).

2. In response to Recommendation 2.c., resulting from the subject audit, AC(GGBF) was requested to visit USGS to determine the location of and personally inventory three gravity meters on loan by DMA to USGS. The following summarizes the results of the inventory. It is recommended this information be forwarded by CMMA to the DoDIG Audit Team (Mr. Alvin Edwards) in response to his request.

3. During the period 24-30 September 1991, Mr. George Emerson, AC(GGBF) visited USGS, Menlo Park, CA, and the Scripps Institute of Oceanography, University of California at San Diego, CA, to personally inventory equipment on loan to USGS. In his trip report, dated 22 October 1991, Mr. Emerson confirmed he had inventoried gravity meters and associated equipment for Unit Serial Numbers S-25, S-36, and S-38. All items were personally inspected with the exception of the gravity sensor unit for Serial Number S-36. Mr. Emerson confirmed it had been shipped to LaCoste-Romberg for repair prior to being placed aboard ship departing for a project in Antarctica. It is recommended that this finding be closed.

Enclosure a/s

M. Z. LABOVITZ
Deputy Director for Acquisition,
Installations and Logistics

ENCLOSURE

UNITED STATES GOVERNMENT

memorandum

DATE: 22 OCT 1991

REPLY TO ATTN OF: GGBF(Mr. Emerson,jm,2337)

SUBJECT: Trip Report

THRU: GGBF
GGB
TO: GGW

1. AUTHORITY: DMA Travel Order TA-GG-91-469, 23 September 1991.

2. DATES AND PLACES VISITED:

a. 24-25 September 1991, U. S. Geological Survey (USGS), Menlo Park, California, and Redwood City, California.

b. 27-30 September 1991, Scripps Institute of Oceanography, University of California at San Diego (UCSD), and LaJolla, California; and Scripps Dock, Catalina Blvd., San Diego, California.

3. COMPOSITION OF PARTY: Mr. George Emerson.

4. PURPOSE OF TRIP: To personally inventory equipment on loan to USGS in response to the DoD IG finding dealing with a missing Air/Sea Gravity meter.

5. PERSONS CONTACTED: Mr. Steve Wallace, U. S. Geological Survey; Dr. Mark Zumberg, Scripps Institute of Oceanography; and Mr. Hildabrand's Office, Scripps Dock.

6. FACTS AND DISCUSSION:

a. I met with Mr. Wallace and explained the purpose of my visit and asked if he would assist me in the inventory of the equipment that DMA had loaned USGS. He was very cooperative. He pulled the equipment out of the bins so I could see all the items and could verify by serial number. Air/Sea Meter S-25 was complete with the exception of the gravity meter rack which had serial number S-70 stamped on it. The Audio Graphics Recorder had been switched to Serial Number S-36. The meter is in need of repair. The bungy cords which stabilize the meter in the stabilizer platform (rack) were busted. The equipment was identified both by LaCoste and Romberg Serial Number S-25 and the manufacturer serial number when available. Below is a list of the items seen on Air/Sea Gravity Meter S-25.

OPTIONAL FORM NO. 19
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

22 OCT 1991

ITEM	MODEL #	L&R SERIAL #	MFR SER #
AC Gravity Meter	S	S-25	L30843
General Radio Regulator	1591AR	S-25	744
Control Box	----	S-25	----
Console Junction Box	----	S-25	----
Navigation Control Box	----	S-25	----
Audio Reader	----	S-25	----
Inland Amplifier	----	S-25	22036-2
Audio Graphics Recorder	3314	S-36	3569651
Stabilizer Platform	----	S-25	----
Gravity Sensor Unit	----	S-25	----
Equipment Rack (Frame)	----	S-70	----

The associated equipment for meter S-36 was inventoried. The meter itself had been shipped to LaCoste and Romberg for repair prior to putting it aboard the ship for the Antarctic project. The Audio Graphics Recorder had been replaced with a Recti Graphics Recorder which belonged to S-25; the Audio Reader which belonged to S-38; the Inland Amplifier which belonged to S-32; and the Equipment Rack which belonged to S-41. The rack was complete. Below is a list of items seen and cross-referenced to the manufacturer serial number when available.

ITEM	MODEL #	L&R SERIAL #	MFR SER #
Gravity Sensor Unit		S-36	(L&R for Repair)
AC Power Source Regulator	153T	S-36	
General Radio Regulator	1591AR	S-36	
Control Box	----	S-36	
Console Junction Box	----	S-36	----
Navigation control Box	----	A-36	----
Audio Reader	----	S-38	----
Inland Amplifier	----	S-32	01415-2
Recti Graphics Recorder	----	S-25	801661
Equipment Rack (Frame)	----	S-41	----

b. Since there was some confusion as to what possibly was missing, an Air/Sea Meter or Underwater Benthic Meter, I had Mr. Wallace show me the Benthic Meters, H-6-G or H-10-G. The first two things I saw were the Benthic Sensors sitting on top of the accessories/equipment that make up the underwater meters. All items were accounted for. Since the transfer to the Scripps Institute took place prior to the new equipment man coming to USGS, he had no knowledge of the transfer.
Mr. Wallace said he was pretty sure that Mr. Hildabrand had the meter, because Dr. Zumberg was working under the Scripps

2

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Project, and had no use for the meter, under the Scripps program.

c. The S-38 Air/Sea Gravity meter was not at the shipping/receiving warehouse at Redwood City, California. Mr. Wallace gave me the name and phone numbers for Mr. John Hildabrand and Dr. Mark Zumberg, the individuals that he thought might have the meter. I called Mr. Hildabrand on Wednesday afternoon. His secretary explained that Mr. Hildabrand was at sea, but was expected back in port on the first of the week. Thursday morning I flew to San Diego and called Mr. Hildabrand's office to see if he had called in. His secretary had not heard from him, but was sure he would be back in port during the weekend. I later located the seaport dock office so I would know where to go on Friday or Monday to inventory the equipment. I then drove up to the University of California, San Diego, to locate the Scripps Institute of Oceanography office. I did not see Mr. Hildabrand as he was at sea during my visit, but left messages with both secretaries that they (Mr. Hildabrand and Dr. Zumberg) were to call me if they had Air/Sea Meter S-38. I explained that I needed a complete inventory of the console rack plus the gravity sensor unit. Thursday afternoon Dr. Zumberg called to let me know he would be in on Friday. On Friday I arrived at Scripps Institute and talked with Dr. Zumberg. He told me that the meter is regularly used aboard research vessels, but the meter was currently in the laboratory. He assisted me in the inventory. Items seen are listed below:

ITEM	MODEL #	L&R SERIAL #	MFR SER #
AC Pwr. Sup.	153T	S-38	23485
Power Controller	1591AR	S-38	682
Amplifier	301CM100	S-38	12024-3
Amplifier	301CGM100	S-38	01415-8
Soltek Chart Recorder	4202	S-38	59172
Gravity sensor	----	S-38	----
Stabilizer Platform	----	S-36	----
Console Junction Box	----	S-36	----
Audio reader	----	S-38	----
Control Box	----	S-38	----
Bird Dog	----	S-38	3

7. ACTIONS AND RECOMMENDATIONS: At the time of my visit Mr. Wallace, USGS was not sure as to who had the Air/Sea Meter S-38. He did have a good idea as to who might have it. I'm sure that employees of USGS are not knowledgeable of DMAINST 4004.1. If they were they probably would not have loaned the meter to the University of California at San Diego (UCSD).

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USGS would probably have directed UCSD to the proper channels so that the meter would have been loaned to the University by DMA direct. Existing options are: (1) continue the loan to USGS as is and let them be responsible for letting UCSD borrow the equipment, or (2) pull back this meter and let DMA loan it directly to the University, or (3) declare the meters excess through AC-LOA. If no one in DMA has a requirement for these items within a given time frame transfer the items, to USGS. All equipment items on loan to USGS have been verified, there is nothing missing.

George Emerson
GEORGE EMERSON
Inventory Management
Specialist

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