Audit Report

OFFICE OF THE INSPECTOR GENERAL

INVENTORY AT DEFENSE MAPPING AGENCY

Report No. 96-088 March 26, 1996

Department of Defense

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Acronyms

DADMS	Defense Mapping Agency Automated Distribution Management System
DMA	Defense Mapping Agency
JOCAS	Job Order Cost Accounting System

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

March 26, 1996

MEMORANDUM FOR DIRECTOR, DEFENSE MAPPING AGENCY

SUBJECT: Audit Report on Inventory at the Defense Mapping Agency (Report No. 96-088)

We are providing this audit report for information and use. Management comments on a draft of this report were considered in preparing the final report.

Comments on the draft of this report left no significant unresolved issues. Therefore, no additional comments are required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Robert M. Murrell, Audit Program Director, at (703) 604-9507 (DSN 664-9507) or Mr. Marvin L. Peek, Audit Project Manager, at (703) 604-9587 (DSN 664-9587). See Appendix E for the report distribution. The audit team members are listed inside the back cover.

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Assistant Inspector General
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Office of the Inspector General, DoD

Report No. 96-088 **March 26, 1996**
Project No. 5RF-6010.06

Inventory at the Defense Mapping Agency

Executive Summary

Introduction. Public Law 103-356 requires DoD and other Government agencies to prepare consolidated financial statements for FY 1996 and each succeeding year. The Defense Mapping Agency (DMA) financial statements will be included in the consolidated financial statements for DoD for FY 1996. The DMA reported inventory valued at $1.1 billion, which represented 25 percent of DMA total reported assets of $4.4 billion for FY 1994.

Audit Objectives. The overall audit objective was to determine whether inventory is properly valued and reported in the financial accounting records. Specific audit objectives were to evaluate the physical inventory controls, valuation, stocking criteria, and reporting. The audit also evaluated management controls germane to the audit objective.

Audit Results. The physical count of DMA inventory differed from the quantities in accountable records, unit costs of DMA products were incorrect and lacked supporting documentation, and inventory on hand exceeded inventory usage history. As a result, we projected that about 83 percent of reported inventory balances at DMA Philadelphia was incorrect, accounting records could not be relied on to produce accurate financial statements, and DMA records showed that about 30 percent of the recorded inventory was excess to inventory stock level objectives. The DMA plans to reduce stock levels when it moves products held in DMA Philadelphia to Arnold, Missouri, upon completion of a new storage facility.

The management control program could be improved by correcting a material weakness in management controls related to the accuracy of reported inventory. Recommendations in the report, if implemented, will assist DMA in preparing accurate financial statements to be included in the consolidated DoD financial statements required by Public Law 103-356. See Part I for a discussion of the audit results and Appendix C for a summary of the potential benefits resulting from the audit.

Summary of Recommendations. We recommend that DMA perform a wall-to-wall inventory of DMA products and make appropriate adjustments to accountable records. We also recommend that DMA value and report inventory based on historical costs, establish controls to assure that unit costs are supported and accurate, and identify excess inventory in financial reports.

Management Comments. The Comptroller, Defense Mapping Agency, concurred with recommendations and stated that controls and procedures have been or will be established to correct the identified deficiencies. Although DMA recognized that existing controls needed to be more effective, the Comptroller disagreed with the audit assessment that the lack of adequate controls was a material management control weakness. See Part I for a discussion of management comments and Part III for the complete text of management comments.

Audit Response. The DMA comments were responsive, except it is clear that the inventory inaccuracies would prevent a favorable audit opinion on DMA financial statements and the related management control weakness identified by the audit is material.

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Part I - Audit Results

Audit Background

The Defense Mapping Agency (DMA) supports the Secretary of Defense, the Military Departments, the Joint Chiefs of Staff, and other DoD Components in matters concerning mapping, charting, and geodesy. The support includes the production and worldwide distribution of maps, charts, precise positioning data, and digital data for strategic and tactical military operations and weapon systems. The DMA is required by United States Code, title 10, chapter 167, to produce nautical charts and marine navigational data to merchant marine operators worldwide and to act as a liaison with other Federal agencies, civilian organizations, and national and international scientific and operational organizations involved in mapping, charting, and geodetic activities. The Director, DMA, is the program manager and coordinator for all DoD mapping, charting, and geodetic resources and activities.

The Defense Finance and Accounting Service provides financial accounting and reporting services for DMA through the Defense Accounting Office-Denver, DMA/Finance and Accounting, St. Louis, Missouri. The DMA FY 1994 Report on Financial Position showed $1.1 billion in product inventory--25 percent of the total $4.4 billion in reported assets. The FY 1994 inventory included 132.3 million copies of more than 65,000 products. About 88 percent of the inventory was stored at DMA Philadelphia. The DMA issues its products to DoD customers without charge. During FY 1994, about 1.5 percent of DMA products was sold to customers outside DoD.

Public Law 101-576, the Chief Financial Officers Act of 1990, requires Federal organizations to submit audited financial statements to the Director, Office of Management and Budget. Public Law 103-356, the Federal Financial Management Act of 1994, requires DoD and other Government agencies to prepare consolidated financial statements for FY 1996 and each succeeding year. The consolidated DoD financial statements for FY 1996 will include DMA financial statements.

Audit Objectives

The primary audit objective was to determine whether DMA properly valued and reported its inventory in financial accounting records. Specific audit objectives were to evaluate the physical inventory controls, valuation, stocking criteria, and reporting. The audit also evaluated management controls germane to the audit objectives. Appendix A discusses the audit scope, methodology, and management control program.

Accuracy, Valuation, and Stock Levels of DMA Inventory

The physical count of DMA inventory differed from the quantities in accountable records, unit costs of DMA products were incorrect and lacked supporting documentation, and inventory on hand exceeded usage history and war reserve requirements. These conditions occurred because DMA inventory accounting procedures were not effective, DMA did not perform required periodic inventories, did not have a functioning cost accounting system, and had not adjusted stock levels to agree with stock level objectives or usage history. As a result, we projected that about 83 percent of the recorded inventory balances at DMA Philadelphia was incorrect, accountable records could not be relied on to produce accurate financial statements, and DMA records showed that about 30 percent of the recorded inventory was excess to stock level objectives.

Accounting Systems for DMA

The Defense Finance and Accounting Service uses the Air Force Base Level General Accounting and Finance System (the System) to provide financial accounting services to DMA. The System is not in compliance with General Accounting Office standards because it lacks a transaction-driven general ledger.

Inventory accountable records for DMA mapping, charting, and geodesy products (hereafter referred to as DMA products) are in the DMA Automated Distribution Management System (DADMS). The Customer Service Division at DMA Bethesda operates and inputs all information into DADMS. The DADMS electronically transmits quantities of products to be issued to the issuing location. Inventory quantities in DADMS are decreased automatically when DMA Bethesda personnel enter issue information into DADMS. The DMA has used DADMS for more than 20 years.

The System does not have an electronic interface with DADMS. Therefore, DMA annually sends its accounting office the manually calculated dollar value of DMA inventory. That manually calculated inventory value is reported on the DMA annual Report on Financial Position.

The DMA is working with the Defense Logistics Agency Systems Design Center to replace DADMS with the Depot Standard System. The Depot Standard System meets the requirements of DoD 4140.1-R, "DoD Materiel Management Regulation," January 1993, for warehousing and managing materiel.

Accuracy of Accountable Records at DMA Philadelphia

Results of Sampled Inventory. Significant variances existed between the quantities of DMA products shown in DADMS and the quantities verified during our physical inventory. We inventoried a stratified random sample of 300 of the 62,989 DMA products in the DADMS for DMA Philadelphia as of July 28, 1995. Based on sample results, we projected that for 83 percent of the DMA products, the recorded balances in DADMS differed from the physical counts. Further, we projected that of the 59,144 DMA products in DADMS for which unit costs had been assigned,[1] 27,987 DMA products had quantities in excess of DADMS, causing a total overage of $105.9 million; 23,125 DMA products had quantities below the amounts in DADMS, causing a shortage of $49.1 million. Details on the statistical methodology and projections are in Appendix A.

Significance of Inventory Discrepancies. For 109 of the 300 products sampled (36 percent), the variance between the physical count and the quantities recorded in DADMS was 5 percent or greater. For unclassified DMA products, the DMA considers an inventory discrepancy as "major" if the difference between the physical count and the amount recorded in DADMS is the lesser of 250 copies or 5 percent of the inventory stocking objective. Any difference between the physical inventory and the amount recorded in DADMS is considered a major discrepancy for classified products. (Appendix B discusses inventory discrepancies we identified for classified products). Using the DMA criteria for major discrepancies, we determined that a major discrepancy existed for 115 (38 percent) of the 300 DMA products we sampled in DMA Philadelphia. During FY 1995, DMA found major discrepancies for 4,275 (55 percent) of the 7,719 products inventoried.

DoD 4140.1-R requires DoD organizations to perform investigations to resolve discrepancies and to take appropriate actions, as necessary, to ensure that the on-hand quantity agrees with property records. DMA Instruction 4140.35, "Physical Inventory Control for DMA Supply System Material," April 9, 1991, requires inventory discrepancies to be resolved, but rather than performing an investigation to determine the causes of the discrepancies, DMA recounted the discrepant line items and adjusted the DADMS to reflect the actual count.

Factors Contributing to Discrepancies. Three factors may have contributed to discrepancies. The bulk locator system DMA Philadelphia used was not reliable, DMA may have shipped products without adjusting DADMS when requests for products were made by facsimile or telephone, and DADMS recorded issues of DMA products before shipment.

Bulk Locator System. The DMA Philadelphia uses a bulk locator system, which is independent of DADMS, to record the storage location of bulk quantities of DMA products. Bulk stock for a single product was stored in as

[1]An additional 3,845 DMA products had quantities on hand, but no unit costs assigned. The audit included a separate sample of those products.

many as five locations. Also, about 13 percent of the locations recorded in the bulk locator system for the 300 sampled DMA products was incorrect. Warehouse personnel at DMA Philadelphia stated that although they frequently move products within the warehouse, the bulk locator system was not always updated to reflect new storage locations.

Product Requests. The DMA Philadelphia depot receives requests for DMA products from DMA Bethesda through DADMS. DMA Philadelphia also receives requests outside of DADMS by facsimile or telephone. When requests are received by facsimile or telephone, the quantity to be shipped is not automatically deducted from the recorded balance in DADMS, and DADMS must be manually adjusted. Thus, errors can occur in DADMS recorded balances when DMA personnel do not manually record issued products as a result of requests received by facsimile or telephone at the issuing location. Although, requests received outside DADMS are infrequent, DMA officials stated that during Operations Desert Shield and Desert Storm, DMA issued a significant number of DMA products requested by facsimile or telephone.

Posting Issues of DMA Product to DADMS. When DMA Bethesda receives requests for DMA products and posts the products to be issued to DADMS, the DADMS decreases the recorded quantity before the date of actual shipment. This procedure causes the quantity recorded in DADMS to be less than the actual quantity on hand. We tried to account for shipments in process in our audit sample by reducing any overages by the recorded issues during the previous 2 days. Although DMA Philadelphia ships most products within 24 hours after receipt of request, DMA Philadelphia personnel stated that sometimes requests are received a few months in advance of actual shipment. The Depot Standard System that will replace DADMS has the capability to track shipments in process.

Physical Inventories. The DMA had not performed a wall-to-wall inventory since 1988 and did not perform annual random inventories as required by DoD 4000.25-2-M, "Military Standard Requisitioning and Issue Procedures," May 1, 1987. Before 1988, DMA performed wall-to-wall inventories every 4 years for unclassified DMA products and every year for classified products. However, DMA revised its policy to more closely mirror DoD guidance and published DMA Instruction 4140.35, which requires a "random statistical sample inventory" annually.

Officials at DMA Bethesda stated that they did not implement the revised inventory policy because DADMS does not have the capability to generate a random sample of products for counting. Instead, DMA used alternative methods that suggest inventories of products as a result of specific circumstances, such as receipt of new editions, lack of stock, quantity reaches reorder level, and other special situations determined by inventory product managers. During FY 1995, warehouse personnel in DMA Philadelphia physically inventoried about 7,700 of about 66,000 DMA products that had been recorded in DADMS.

Costing and Pricing DMA Products in Inventory

Determining the Cost of DMA Products. Determining the cost of DMA products in inventory is difficult because DMA produces rather than purchases the majority of DMA products, and DMA did not have a cost accounting system for its products. The "DMA Product Cost and Pricing Manual," (the Manual) June 1987, provides detailed instructions on manually pricing DMA products. However, DMA did not use the procedures in the Manual because extensive information was needed for determining the cost of each item, and DMA did not consider the effort worth expending the necessary resources.

In August 1995, DMA decided to install an automated cost accounting system--the Job Order Cost Accounting System II (JOCAS-II), an updated version of the JOCAS. The Defense Finance and Accounting Service selected the JOCAS as a standard cost system. Certain Air Force organizations also use the JOCAS. The JOCAS-II was being installed at selected DoD organizations, with installation scheduled for DMA in the summer of 1996. The JOCAS-II project officer at DMA expected the JOCAS-II to be fully operational about 1 year after installation at DMA. Once DMA has the JOCAS-II fully operational, DMA will have the capability to track and compute direct and indirect costs for DMA products.

Inventory Cost Versus Sales Price. The DMA did not differentiate between the sales price to be charged to Federal agencies and the unit cost of each DMA product. Therefore, the cost per product recorded in DADMS was identical to the sales price. A separate unit cost for each DMA product was not maintained because the Director, DMA, directed that sales prices be the same as product costs. Although the production or procurement cost of a product normally would comprise most of the sales price, the cost is not always necessarily the same as the sales price. For example, DMA developed a new pricing formula on September 29, 1995, that would increase the unit price of products to be costed by 3.5 percent for packing, crating, and handling and by 3.75 percent for shipping the products to destinations within the continental United States. These rates are shown in DoD 7220.9-M, the "DoD Accounting Manual," and may be used when determining the price to charge customers in the absence of specific costs. However, DoD 7000.14-R, "Financial Management Regulation," volume 1, May 1993, states that for nonstock fund items, the inventory price is the acquisition cost. Therefore, inventory reported on financial statements should be valued at its acquisition cost rather than the price to be charged to customers, which may include packing, transportation, and other added costs.

Supporting Documentation. The DMA did not have supporting documentation for most unit costs and had not completed the revision of overhead rates used to compute unit costs. As of July 28, 1995, the DADMS included 66,161 products[2] at DMA Philadelphia with 125 unit prices.

[2]The data base of 66,161 DMA products included 3,845 DMA products with no unit price. An additional 3,172 products showed no unit price and no quantities on hand.

However, DMA had supporting documentation for only 15 unit prices (for 25 products in DADMS) that a DMA cost analyst had calculated during September 1994 through July 1995. The DMA cost analyst stated that only minimal supporting documentation on previous price computations was on hand when she was assigned in February 1994, because supporting documents had been destroyed in a flood. The lack of supporting documentation precluded us from opining on the accuracy of unit price computations for the majority of DMA products. However, the procedures the cost analyst used for including direct and overhead costs were reasonable. When JOCAS-II is installed and becomes fully operational, documentation for JOCAS-II should provide an adequate audit trail.

Posting Unit Costs to DADMS. The DMA costs for 18 of the 25 DMA products for which supporting documentation was available were not correctly entered into DADMS. For example, the DMA calculated the unit cost of a South American river map (Stock No. RRM SANMIGUEL) at $578.00. However, DADMS showed the map price at $5.78. This error understated the value of the inventory by $161,938 for the 283 copies recorded in DADMS. Improved management controls are needed to ensure that DMA Bethesda personnel enter the unit costs correctly into DADMS.

Overhead Rates. All the unit costs with supporting documentation included an overhead rate of 210.5 percent of direct labor costs. The DMA established the rate during FY 1988 based on personnel staffing levels for FYs 1985 through 1987. Supporting documentation was not available to show the basis for determining direct and indirect work years. However, the Chief, Finance, Cost, and Economic Analysis Division at DMA issued guidance in September 1995 that overhead rates would be updated annually.

In September 1995, DMA recalculated the overhead rate based on FY 1995 Operation and Maintenance costs obligated through July 31, 1995. At the time of our review in October 1995, DMA had not used the revised production overhead rate of 180.5 percent and the general and administrative overhead rate of 56.3 percent of direct labor costs. After we found computational errors in the new rates, DMA personnel stated that the rates were only interim rates based on partial year data and would be adjusted after information for the complete fiscal year was available. Therefore, we discontinued further reviews.

The DMA considered all costs incurred within DMA as either directly or indirectly related to the cost of producing DMA products. However, only 66 percent of the total obligations DMA incurred as of July 31, 1995, was included in the calculations for direct and indirect (overhead) costs. When JOCAS-II is installed in late FY 1996, DMA should ensure that all costs are properly categorized as direct, indirect, or not applicable.

Price Escalation. At the beginning of each fiscal year, DMA increased the unit prices in DADMS by the percentage shown in annual inflation guidance from the Under Secretary of Defense (Comptroller). For example, the unit cost of each product in inventory was increased by 2.8 and 3.0 percent for FYs 1995 and 1996, respectively. The DoD requires such inflation factors to be used when calculating budgets, while Federal Accounting Standards require inventory

to be valued at historical or latest acquisition cost. Therefore, increasing inventory value by the annual DoD inflation factor is not in compliance with Federal Accounting Standards.

Adjustments in Price for Items Reproduced. Each year, the DMA Comptroller requests that DMA organizations identify new DMA products that need to be priced or to incorporate any product changes into the new annual price list. However, DMA did not recalculate unit costs in DADMS for products reproduced. Therefore, DMA overstated the value of the reported inventory, because the cost to reproduce a product is often only a fraction of the original cost to produce a product. The DMA issued contracts totaling $584,000 to reproduce 2.9 million copies (average cost of $.20 per copy) of 585 products in FY 1995. As shown in the table below, the cost was significantly lower than the unit cost recorded in DADMS, which DMA personnel used to value the inventory.

Comparison of Cost for Selected Reproduced Products to Unit Cost Recorded in DADMS

DMA Product Description	No. of Line Items	Quantity Reprinted	Unit Cost per Contract	Unit Cost per DADMS
Aero, Series A	170	1,161,250	$.182	$4.75
Topo, Series 50	86	771,662	.123	4.75
Topo, Series G	88	89,836	.458	8.50
Hydro, small scale	49	46,950	.640	14.50

The DMA also reproduced 19.7 million copies of 4,633 products on DMA-owned production equipment in FY 1995. Although DMA did not calculate the cost to reproduce those products, the cost to reproduce products would be only a fraction of the cost to initially develop and print the items. The unit cost for a DMA product in inventory should be recalculated when the cost of the DMA product changes, such as when a product is reproduced without changes.

Inventory Stock Levels

Inventory Stock Objectives. The DMA established a stock level objective of 3 years' supply (based on historical or projected usage factors) plus any war

reserve requirement.[3] About 30 percent ($343 million) of the inventory shown in DADMS at DMA Philadelphia as of July 28, 1995, was in excess of DMA stock level objectives. However, stock level objectives were often in excess of historical use, because DADMS does not automatically adjust stock level objectives based on historical use. For example, DADMS records for 15,749 products valued at $99 million showed average use of less than one per month during the 36 months ended July 1995 and showed no war reserve requirement. Although DADMS showed some demand for the majority of line items stocked as of July 28, 1995, DMA inventory in excess of reported 3-year usage data and war reserve requirements totaled $733 million, about 65 percent of the total inventory.

Requirements Determination is Difficult. The stocking levels established for new or modified DMA products is essentially an estimate of future usage. It is difficult to prevent the production and stocking of excess quantities of DMA products because actual usage cannot be forecast when demands fluctuate significantly as a result of unpredictable, changing worldwide conditions. Further, economic order quantities and economic production quantities may dictate the acquisition of quantities that exceed desired stocking levels. Stocking of products for which there is no demand data must occur if DMA is to satisfy its mission to support military operations wherever and whenever they occur. However, the large percentage of inventory in excess of usage statistics and war reserve requirements indicate that excess quantities were on hand.

The DMA plans to reduce the stock level objectives to 18 months' use when the functions of the DMA Philadelphia depot are transferred to a planned facility in Arnold, Missouri. Regardless of how DMA decides to determine the amount of excess products, DMA should appropriately footnote future financial statements, required by the Chief Financial Officers Act, to identify excess inventory.

Inventory Not Included in DADMS. Inventory in the DADMS included only DMA products held in DMA Philadelphia and the combat support elements--Europe and Pacific. In addition to those three locations, DMA owned war reserve and operational products in eight DMA combat support elements throughout the world. The DMA also maintained small quantities of other products that were not recorded in DADMS and that had not been priced. The DMA did not report in its Report on Financial Position for FY 1994 the inventory at the combat support elements and the other products that were not recorded in DADMS. After we brought those omissions to the attention of DMA officials, DMA included those products when reporting the amount of FY 1995 inventory to the Defense Finance and Accounting Service.

[3]Of the $1.2 billion in DMA products reported as of September 30, 1995, DMA products valued at only $16.5 million were held as war reserves.

Conclusion

As a result of the number and extent of discrepancies between the accountable records in DADMS and physical inventory counts, DMA should perform a complete wall-to-wall inventory of DMA products and make necessary adjustments to DADMS. DoD 4000.25-2-M requires a total item inventory if the results of random samples do not meet the DoD acceptable accuracy level of 85 percent.[4] After, the accountable records are corrected, DMA should perform random sample inventories in accordance with DoD 4000.25-2-M.

Although the DMA lacked supporting documentation for most unit costs recorded in DADMS and used incorrect costing procedures to value DMA products, it would not be cost-effective for DMA to recalculate on a one-time basis the historical costs of more than 66,000 products in the DMA inventory. Therefore, DMA should appropriately footnote future financial statements to indicate the lack of support for the unit costs until new costs are calculated for new products or for the reproduction of existing products. When the JOCAS-II is fully operational at DMA, documentation and computation of unit costs will be much easier.

Recommendations for Corrective Action

We recommend that the Director, Defense Mapping Agency:

1. Perform a wall-to-wall inventory of all products at Defense Mapping Agency Philadelphia, and adjust, as necessary, the Defense Mapping Agency Automated Distribution Management System data base with the appropriate amount.

2. Perform annual random sample inventories of Defense Mapping Agency products after the wall-to-wall inventory has been completed and appropriate adjustments have been made to the Defense Mapping Agency Automated Distribution Management System.

3. Establish controls that will ensure that Defense Mapping Agency Philadelphia personnel enter all bulk storage locations into the bulk locator system.

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[4]DoD 4000.25-2-M allows random sampling of inventories rather than a complete wall-to-wall physical inventory if the accuracy of sampled inventories meets the DoD acceptable accuracy level of at least 85 percent (with a 95-percent confidence level). If the acceptable accuracy level is not met, a complete inventory of all items is required within 90 days.

4. Establish controls to ensure requests for products submitted outside the Defense Mapping Agency Automated Distribution Management System are properly recorded in accountable records.

5. Base inventory valuation on historical costs as information becomes available, and appropriately footnote financial statements to indicate the lack of historical cost data, until the cost of each product is available.

6. Establish controls to assure that Defense Mapping Agency Bethesda personnel enter the correct computed unit costs in the Defense Mapping Agency Automated Distribution Management System data base.

7. Review and adjust overhead rate calculations to ensure that Defense Mapping Agency cost analysts include all costs and properly classify them as direct, indirect, or not applicable.

8. Adjust unit costs in the Defense Mapping Agency Automated Distribution Management System for products when reproductions are made that change the unit costs.

9. Include a footnote to future financial statements to identify the estimated amount of inventory in excess of expected requirements and required war reserves.

Management Comments

Management Comments. The Comptroller, Defense Mapping Agency, concurred with all recommendations and stated that controls and procedures have been or will be established to correct each problem we identified. However, audit recommendations to perform inventories and revise costing procedures will be deferred until the inventory at DMA Philadelphia is moved to Arnold, Missouri, and new inventory management and cost accounting systems are implemented. The Comptroller partially concurred with the audit assessment that the discrepancies and lack of controls constituted a material management control weakness. The discrepancies did not constitute waste, fraud, abuse, or mismanagement, but indicated that the computer system used by DMA was "out of sync with the requirements placed upon it." For a complete text of comments see Part III.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

The audit included the inventories of DMA products stored at DMA Philadelphia, where DMA stored about 88 percent of its reported inventory for FY 1994. We reviewed policies and procedures for receiving, storing, and shipping DMA products. During our sample physical inventory at DMA Philadelphia on August 24 through September 8, 1995, we also observed procedures for receiving, storing, and shipping DMA products.

To determine the accuracy of the DMA Philadelphia inventory, we used a stratified random sample of DMA products included in DADMS as of July 28, 1995. The Quantitative Methods Division of the Office of the Inspector General, DoD, provided technical assistance on sample selection and projection of sample results. Details on the sampling plan and methodology are discussed later in this appendix. In addition to the selected sample, we selected a judgmental sample of 100 product line items from the warehouse floor to determine whether those items were recorded in the DADMS data base. All those sample items were recorded in DADMS.

To evaluate the recorded costs of DMA products, we reviewed all available supporting documentation for unit prices shown in DADMS, and we compared unit prices with prices recorded in DADMS. We also reviewed supporting summaries for the overhead rates DMA planned to use for FY 1995. We performed only a limited review of the revised overhead rates, because the DMA cost analyst informed us that the rates were not finalized. In addition, we reviewed unit price escalation procedures and the reported cost to reprint DMA products in FY 1995. We accepted information recorded in DADMS regarding issued products and quantities of DMA products stored in the DMA European and Pacific offices. We also accepted data DMA gave us regarding war reserve requirements and stock level objectives, small quantities of products stored at DMA combat support elements, and other products not recorded in DADMS.

Reliability of Computer-Processed Data. Our tests of issued DMA products showed the issue function within DADMS was functioning properly. Also, our tests of product line items at DMA Philadelphia showed all sampled products were recorded in DADMS. However, the significant differences between our physical counts of DMA products and the amounts shown in DADMS indicated that DADMS does not contain reliable information on the quantities of DMA products on hand. The lack of supporting documentation and other problems

identified in recording the cost of DMA products in DADMS also led us to conclude that the information in DADMS does not provide an accurate value of the DMA inventory for use in financial statements required by the Chief Financial Officers Act of 1990.

Audit Period, Standards, and Locations. We performed this financial-related audit from August through November 1995, in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. Accordingly, we included such tests of management controls considered necessary. Appendix D lists the organizations we visited or contacted.

Management Control Program

DoD Directive 6010.38, "Internal Management Control Program," April 14, 1987 requires DoD organizations to implement a comprehensive system of management controls that provide reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of Management Control Program. We reviewed the adequacy of DMA management controls for valuing and reporting DMA product inventory and management's self evaluation of those controls. Specifically, we reviewed the policies and procedures and administrative controls pertaining to the accuracy of the DMA Philadelphia product inventory and valuation recorded in DADMS.

Adequacy of Management Controls. We identified a material management control weakness as defined by DoD Directive 5010.38. Controls over the accuracy of product inventory were not sufficient to ensure the fair presentation of DMA inventory in the financial statements required by the Chief Financial Officers Act. Specifically, DMA did not perform required inventories, and accountable records were inaccurate. Also, DMA performed only limited research on major inventory discrepancies. Because DMA is planning to replace DADMS with the Depot Standard System, we are not making recommendations to upgrade DADMS. However, Recommendations 1., 2., 3., 4., and 6., if implemented, will improve controls over the accuracy of product inventory. The DMA should reconsider its comments on the draft report concerning the materiality of the control weakness, which clearly would prevent a favorable audit opinion on DMA financial statements.

Adequacy of Management's Self-Evaluation. The DMA self-evaluations of internal controls over product inventory were not sufficient to ensure that inventory was correctly recorded in accounting records. Although DMA officials identified inventory management and product cost and pricing as assessable units, management's self-assessments did not identify the material weakness we identified in the audit. Details are in Part I of this report.

Statistical Sampling Plan and Results

Sampling Plan. One objective of the audit was to determine the accuracy of inventory records. We selected inventory records at DMA Philadelphia, which maintained 88 percent of the reported inventory as of September 30, 1994. We designed a stratified random sampling plan based on the extended values of the products shown in DADMS for DMA Philadelphia.

The universe of DMA products maintained at DMA Philadelphia and recorded in DADMS as of July 28, 1995, included 66,161 products with an aggregated extended value of $1.1 billion. We dropped 3,172 unpriced products with zero quantities from the universe. We split the remaining products into two separate universes: 59,144 products with unit costs stratified into 4 strata and the remaining 3,845 products with quantities on hand and zero unit costs (an extended value of zero).

We physically counted quantities on hand for the 300 products sampled, and we compared the results with the quantities recorded in DADMS. Because DADMS reduced the recorded quantity on hand when inventory managers at DMA Bethesda requested an issue to a customer, we adjusted DADMS balances to compensate for such transactions within 48 hours of our physical inventory. Warehouse personnel at DMA Philadelphia observed and assisted in our physical count of DMA sampled products, and those personnel agreed with the results of each count. Table A-1 provides the specific criteria for the sample.

Table A-1. Total DMA Products and Audit Sample

Strata	Criteria	No. of products	Sample Size
I	$1 million or greater	123	50
II	$100,000 to $1 million	962	50
III	$10,000 to $100,000	18,861	100
IV	less than $10,000	39,198	50
Universe with non-zero extended values		**59,144**	**250**
Universe with zero extended values		**3,845**	**50**
Total sample size			**300**
Unpriced products with no quantity excluded from the sampling plan		3,172	
Total line items in DADMS		**66,161**	

Sample Results. We estimated, with 95-percent confidence, the overages and shortages in dollar values of inventories. We projected the number of errors in the products to the universe of 59,144 products. The 3,875 products with zero costs were projected separately. The proportions of line items with errors (overages and shortages) were fairly consistent across the priced strata as shown in Table A-2.

Table A-2. Proportionate Error Rate for Products Sampled

Strata	Products	Proportionate Error
I	123	.960
II	962	.940
III	18,861	.910
IV	39,198	.840
Universe of priced items	**59,144**	.864
Universe of unpriced items	3,845	.300
Total projected error rate		**.830**

Statistical projections are shown in Table A-3.

Table A-3. Statistical Projections

	Dollar Values (in millions)		
	Lower Bound	Point Estimate	Upper Bound
Inventories more than recorded quantities	$23.73	$105.87	$188.01
Inventories less than recorded quantities	$32.49	$ 49.08	$ 65.67
	Products with Incorrect Quantities		
With non-zero extended values (Universe=59,144)	46,953	51,112	55,271
With zero extended values (Universe=3,845)	630	1,154	1,678

We are 95-percent confident that inventory in excess of recorded quantities was from $23.7 million to $188.0 million with the point estimate of $105.9 million in the population with a total extended value of $1,136.9 million. Also, we are 95-percent confident that the shortage in inventory was from $32.5 million to $65.7 million with the point estimate of $49.1 million in the total population.

In projecting the quantities of products, we are 95-percent confident that from 46,953 to 55,271 recorded quantities of products did not agree with the actual quantities on hand, with the point estimate of 51,112 in the total population of 59,144 products. For products with zero extended values, we are 95-percent confident that from 630 to 1,678 recorded quantities of products did not agree with the actual quantities on hand, with the point estimate of 1,154 in the population of 3,845 products.

Prior Audits and Other Reviews

No prior financial-related audits of DMA inventory have been performed in the last 5 years.

Appendix B. Other Matters of Interest

DMA Control Over Classified Products

The random sample of 300 DMA products included 64 products that were classified as secret or confidential. The audit found discrepancies between the quantities shown in DADMS and the physical count for 29 of the 64 classified products. In September 1995, we gave officials at DMA Bethesda the classification of each sampled item and the results of our sample.

According to cognizant inventory management personnel at DMA Bethesda, investigations are normally not done for inventory discrepancies of classified items. Security personnel do not research discrepancies because they considered it too burdensome. When a discrepancy in the quantity of a classified product recorded in DADMS is found during a physical count, DMA accepts the count from the warehouse stock record card, which is maintained manually, as the official count, and the DADMS is adjusted accordingly.

The discrepancies of classified products did not materially affect the dollar value of the total recorded inventory. However, investigations of discrepancies of classified material should be done in accordance with procedures specified in DoD 5200.1-R, "Information Security Program Regulations," June 1986.

Appendix C. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Type of Benefit
1. and 2.	Management Control and Compliance with Regulations. Requires total item inventory when samples do not meet the DoD acceptable accuracy level of 85 percent.	Nonmonetary.
3.	Management Control. Establishes controls that require accountability of stock in bulk storage.	Nonmonetary.
4.	Management Control. Establishes controls that require accountability of product issues that affect the stock record accuracy.	Nonmonetary.
5.	Compliance with Regulations. Establishes historical cost as the basis for inventory valuation.	Nonmonetary.
6.	Management Control. Establishes controls to assure that calculated costs are correctly entered into accountable records.	Nonmonetary.
7.	Program Results. Establishes correct overhead rates.	Nonmonetary.
8.	Compliance with Regulations. Provides a more accurate inventory valuation.	Nonmonetary.
9.	Compliance with Regulations and Program Results. Requires full disclosure of the type of the DMA inventory.	Nonmonetary.

Appendix D. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller), Washington, DC

Defense Agencies

Defense Finance and Accounting Service, Defense Accounting Office, St. Louis, MO
Defense Mapping Agency, Merrifield, VA
- Defense Mapping Agency Bethesda, Bethesda, MD
- Defense Mapping Agency Philadelphia, Philadelphia, PA

Appendix E. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Logistics)
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program and Budget)
Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

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

Department of the Air Force

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

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Finance and Accounting Service
Director, Defense Logistics Agency
Director, Defense Mapping Agency
Director, National Security Agency
  Inspector General, National Security Agency

Non-Defense Federal Organizations

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

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

Part III - Management Comments

Defense Mapping Agency Comments

DEFENSE MAPPING AGENCY

0 1 MAR 1996

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

SUBJECT: Audit Report on Inventory at the Defense Mapping Agency (Project No. 5RF-6010.06)

Reference: DoD(IG) memorandum, 26 December 1995, subject as above.

1. In general, the Defense Mapping Agency (DMA) agrees with the overall draft audit conclusion and recommendations. However, we do not agree with the timeframes of implementation associated with two of the recommendations. Also, we do not agree with the designation of the deficiencies as a "material management control weakness", and the inference of a security problem associated with the classified product inventory as discussed in Appendices A and B of Part II of the report.

2. DMA's comments pertaining to the report recommendations in Part I under Recommendations for Corrective Action, and Part II under Additional Information are:

a. Recommendation 1. Perform a wall-to-wall inventory of all products at Defense Mapping Agency Philadelphia, and adjust, as necessary, the Defense Mapping Agency Automated Distribution Management System data base with the appropriate amount from the physical counts.

DMA Comment. Concur, with implementation deferred. Performing a wall-to-wall inventory at this time will not provide a long-term remedy for our inventory accountability issues. The advent of the Depot Standard System (DSS), which will replace DMA Automated Distribution Management System (DADMS), provides a credible tool that, coupled with appropriate procedures, will allow DMA to properly initialize our inventory at the time of the cut-over from DADMS to DSS and the movement of inventory from Philadelphia, PA, to Arnold, MO,. The audit team acknowledged the wisdom in the decision to defer the wall-to-wall inventory until the relocation and installation of DSS.

b. Recommendation 2. Perform annual random sample inventories of Defense Mapping Agency products after the wall-to-wall inventory has been completed and appropriate adjustments have been made to the Defense Mapping Agency Automated Distribution Management System.

DMA Comment. Concur, with implementation deferred. We concur with the need to have adequate random sample inventory controls that comply with appropriate DoD regulations and

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guidelines. Appropriate implementation of procedures will be accomplished when we initialize our inventory at the Arnold, MO. facility.

c. Recommendation 3. Establish controls that will ensure that Defense Mapping Agency Philadelphia personnel enter all bulk storage locations into the bulk locator system.

DMA Comment. Concur. The proper procedures for locating and controlling the stock will be reinforced and refresher training will be provided to personnel. Cognizant supervisors of the processes will be held accountable for ensuring procedures are known and followed.

d. Recommendation 4. Establish controls to ensure requests for products submitted outside the Defense Mapping Agency Automated Management Distribution System are properly recorded in accounting records.

DMA Comments. Concur. The procedures for confirming ad hoc shipments and reporting them to DADMS have been reviewed since the on-site audit visit. Emergency and crisis operations will continue to require processing ad hoc requests outside of the system; however, we are currently formalizing procedures to ensure timely and accurate recording in DADMS.

e. Recommendation 5. Base inventory valuation on historical costs as information becomes available and appropriately footnote financial statements to indicate the lack of historical cost data, until the cost of each product is available.

DMA Comments. Concur. Using historical costs to value inventory will become an automatic process with the installation and operation of JOCAS II, currently scheduled for August 1996. Prior to JOCAS II, this would be an intense manpower effort; therefore, the concurrence is for DMA financial statements prepared after JOCAS II is operational.

f. Recommendation 6. Establish controls to assure that Defense Mapping Agency Bethesda personnel enter the computed unit costs in the Defense Mapping Agency Automated Management Distribution System data base.

DMA Comment. Concur. We recommend that the word "correct" be inserted in the recommendation before "computed". Procedures for entering correct cost information are currently in place, however a double check will be added to the process to identify erroneous data entry.

g. Recommendation 7. Review and adjust overhead rate calculations to ensure that Defense Mapping Agency cost analysts include all costs and properly classify them as direct, indirect, or not applicable.

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DMA Comment. Concur. Overhead rates have been re-calculated using information contained in the Base Level General Accounting and Finance System for FY 1995. All Responsibility Centers/Cost Centers (RC/CC) were categorized as direct, production support, or general and administrative according to accounting guidance and textbooks. Total obligations for the fiscal year were obtained by the Element of Expense Information Code (EEIC) for each RC/CC. These values were then used for calculating the overhead rates.

h. Recommendation 8. Adjust unit costs in the Defense Mapping Agency Automated Distribution Management System for products when reproductions are made that change the unit costs.

DMA Comment. Concur. Reproduction cost for the process and products will be automatically separated from initial cost of products with the installation and operation of JOCAS II, currently scheduled for August 1996. Prior to JOCAS II this would be an intensive manpower effort; therefore, the concurrence is for application at DMA after JOCAS II is operational.

i. Recommendation 9. Include a footnote to the financial statements to identify the estimated amount of inventory in excess of expected requirements and required war reserves.

DMA Comment. Concur.

j. Appendix A. Management Control Program, Adequacy of Management Controls. The report identifies a material management control weakness: "Internal controls over accuracy of product inventory were not sufficient to ensure the fair presentation of DMA inventory in the financial statements required by the Chief Financial Officers Act. Specifically, DMA did not perform required inventories, and accounting records were inaccurate. Also, DMA performed only limited research on major inventory discrepancies."

DMA Comment. Partial Concur. Although there are some discrepancies between the physical MC&G printed product inventory count and what is actually indicated in the inventory database, the designation of this situation as a material management control weakness is overstated. The discrepancies do not constitute waste, fraud, abuse, nor mismanagement. Rather the discrepancies indicate a computer system out of sync with the requirements placed upon it. Given the combined pace of the DMA mission and our commitment to customer service, the Agency must do whatever is necessary to get products out of the door while still working with the tools we presently have. DMA places a great deal of trust in our employees and depend upon their expertise, commitment and involvement to maintain accurate accounting. Management recognizes that current controls need to be more effective and with the advent of the move to the new facility, the installation of DSS, and the installation of JOCAS II more controls will be implemented. The cost to implement these controls prior to the move and the installation of the new systems would out-weigh the benefits to be derived from the

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risk. Therefore, the existing controls will be strengthened by management and refresher training.

k. Appendix B. DMA Control Over Classified Products. The audit found discrepancies between the quantities shown in DADMS and the physical count for 29 of the 64 classified products included in the random sample of 300 DMA products. Investigations of discrepancies of classified material should be done in accordance with procedures specified in DoD 5200.1-R, "Information Security Program Regulations," June 1986.

DMA Comment. Partial Concur. DMA does not believe that there is a security problem with the classified inventory because of discrepancies found in the physical count and DADMS. Instead we believe the discrepancies parallel the problems identified involving DADMS and the unclassified inventory. DMA is convinced that through the use of a stringent double-check system, no unaccounted classified products are leaving the depot. The depot uses a 100% double check system to count both incoming and outgoing classified products. Should a discrepancy be found during these checks the proper accounting or order adjustments are made and a follow up check is performed. Following normal manifest confirmation processes DADMS is notified of the actual quantity issued. We believe our security check processes are stringent and our people trustworthy, but our computer system is simply unable to support immediate and accurate inventory accounting given its programming limitations and our dynamic pace of order fulfillment.

3. The following identifies our concerns and suggestions regarding several areas in the report that are not specifically tied to a recommendation:

a. Throughout the draft audit report, the terms "accounting records" or "accountable records" are used interchangeably to refer to inventory records in the DADMS. To avoid potential confusion with the term accounting records as it relates to records maintained in the finance and accounting system, recommend the term "accountable records" be used exclusively in the audit report when referring to the DADMS inventory records.

b. The report states "The Defense Finance and Accounting Service expects to replace the System with a standard DoD accounting system by about FY 2000." DMA has not been officially notified of any change from the current Air Force Base Level General Accounting and Finance System.

c. On page 8, paragraph 3, second to the last sentence, recommend the sentence be changed to read: Computational errors were found in the overhead rates; however, DMA explained that the rates are only interim rates based on partial year data and will be finalized when complete data is available.

d. In the conclusions (pages 10-11), there is a statement that "...DMA should ensure that unit costs and sales prices are

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separately maintained once JOCAS II is installed." The following section in the report, Recommendations for Corrective Actions, does not address product prices. Costs and unit costs are discussed. The report should clearly identify whether this is a recommendation or a suggestion.

4. If further information is required, please contact Jo Ann Holston, DMACM, (703) 275-8487.

FOR THE DIRECTOR:

for CYNTHIA K. BOGNER
Comptroller

cc:
ASD C3I
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DD
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