Audit Report

OFFICE OF THE INSPECTOR GENERAL

CONTROL OF DATABASE APPLICATIONS AT THE DEFENSE FINANCE AND ACCOUNTING SERVICE INDIANAPOLIS CENTER

Report No. 98-038 December 12, 1997

Department of Defense

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Acronyms

CFO	Chief Financial Officers
DBARS	Departmental Budgetary Accounting and Reporting System
DFAS	Defense Finance and Accounting Service
FFS	Federal Financial System
FSDB	Financial Statement Data Base
FSO	Financial Systems Organization
GLAC	General Ledger Account
GLTB	General Ledger Trial Balance
HQARS	Headquarters Accounting and Reporting System
OMB	Office of Management and Budget
SOP	Standing Operating Procedure

INSPECTOR GENERAL
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December 12, 1997

MEMORANDUM FOR DIRECTOR, DEFENSE FINANCE AND ACCOUNTING SERVICE
DIRECTOR, DEFENSE FINANCE AND ACCOUNTING SERVICE INDIANAPOLIS CENTER

SUBJECT: Audit Report on the Control of Database Applications at the Defense Finance and Accounting Service Indianapolis Center (Report No. 98-038)

We are providing this audit report for information and use. This audit was performed in response to the requirements of the Chief Financial Officers Act of 1990, as amended by the Federal Financial Management Act of 1994. We considered management comments on a draft of this report in preparing the final report.

As a result of management comments, we revised the report to state that the Deputy Director for Information Management, Defense Finance and Accounting Service, is responsible for issuing policy regarding information management efforts. In addition, we clarified that the database applications referred to in the report are personal computer-based, end-user developed automated products.

Comments on the draft of this report conformed to the requirements of DoD Directive 7650.3 and left no 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. Richard B. Bird, Audit Program Director, at (703) 604-9175 (DSN 664-9175; e-mail: rbird@dodig.osd.mil) or Mr. John J. Vietor, Audit Project Manager, at (317) 542-3855 (DSN 699-3855; e-mail: jvietor@dodig.osd.mil). See Appendix C for the report distribution. The audit team members are listed inside the back cover.

Robert J. Lieberman

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Office of the Inspector General, DoD

Report No. 98-038 **December 12, 1997**
(Project No. 5FI-2012.02)

Control of Database Applications at the Defense Finance and Accounting Service Indianapolis Center

Executive Summary

Introduction. The Defense Finance and Accounting Service Financial Systems Organization, under the control of the Deputy Director for Information Management, Defense Finance and Accounting Service, is responsible for financial management systems operations and policy at the Defense Finance and Accounting Service centers. The Defense Finance and Accounting Service Indianapolis Center is responsible for compiling the Army general fund financial statements. To accomplish this responsibility, database applications are used for processing the financial data received from DoD field accounting entities and for compiling the financial statements. During FY 1996, database applications processed general ledger data totaling about $1.7 trillion and generated Army general fund financial statements with assets totaling about $201 billion and expenses totaling about $64.7 billion.

Audit Objective. The audit objective was to determine whether the database applications used by the Defense Finance and Accounting Service Indianapolis Center to compile the Army general fund financial statements were subject to adequate development and maintenance management control procedures. We also reviewed the adequacy of the overall management control program as it related to the audit objective.

Audit Results. The Defense Finance and Accounting Service did not establish policy and management control procedures for database applications used for compiling the Army general fund financial statements. As a result, until database applications are replaced by long-term financial reporting solutions, database applications are subject to inefficient use and increase the risk of misstatements being introduced into the financial statements. Also, adjustments totaling about $2.1 billion had to be made to Army general fund financial data. Similar database problems affect the compilation of other Defense agency financial statements by the Defense Finance and Accounting Service Indianapolis Center. See Appendix A for details on the management control program.

Summary of Recommendations. We recommend that the Deputy Director for Information Management, Defense Finance and Accounting Service, and the Director, Financial Systems Organization, establish policy requiring the implementation of management control procedures for the development and maintenance of database applications at the Defense Finance and Accounting Service centers. We also recommend that the Director, Defense Finance and Accounting Service Indianapolis

Center, implement policy requiring management control procedures for database application development and maintenance at the Defense Finance and Accounting Service Indianapolis Center. Management control procedures should include:

- o training personnel on the development of database applications;
- o testing database applications prior to use;
- o requiring management authorization of changes to database applications before changes are made; and
- o implementing a change control program for database application maintenance.

Management Comments. The Acting Director, Defense Finance and Accounting Service, concurred with the audit recommendations. He agreed that policies governing the management of information systems should be strengthened to better publicize that the existing policies also cover applications used on a personal computer-based platform. He also agreed to implement policy that requires management control procedures for developing and maintaining database applications. See Part I for a summary of management comments and Part III for the complete text of the management comments.

Audit Response. In response to management comments, we revised the report to state that the Deputy Director for Information Management, Defense Finance and Accounting Service, was responsible for issuing information system policy, not the Defense Finance and Accounting Service Financial Systems Organization. We also clarified that the database applications referred to in the report are personal computer-based, end-user developed, automated products. We consider the comments and proposed corrective actions from the Acting Director, Defense Finance and Accounting Service, to be fully responsive to the audit recommendations. Therefore, no additional comments are required.

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Part I - Audit Results

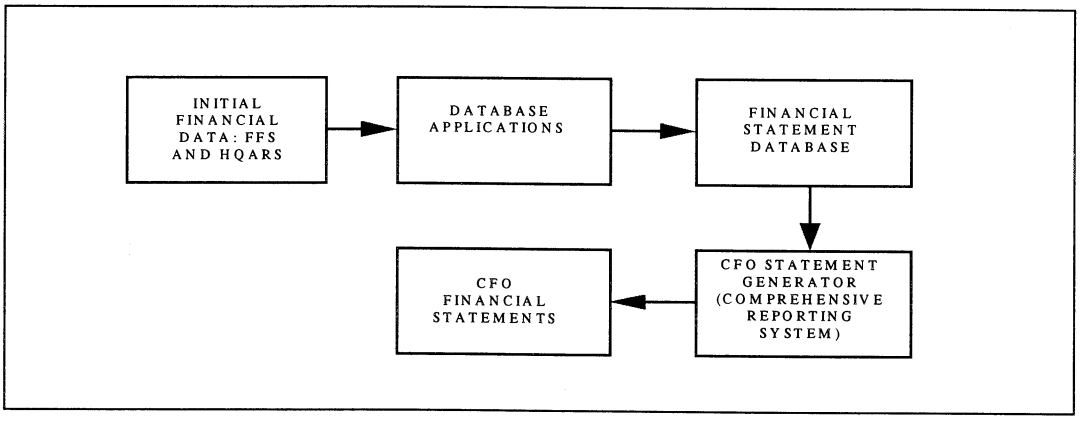
Audit Background

Chief Financial Officers Act. Public Law 101-576, the Chief Financial Officers (CFO) Act of 1990, as amended by Public Law 103-365, the Federal Financial Management Act of 1994, requires the annual preparation and audit of financial statements for 23 executive departments and agencies, as well as Government corporations. The CFO Act requires the Inspectors General, or appointed external auditors, to audit financial statements in accordance with generally accepted Government auditing standards and other standards established by the Office of Management and Budget (OMB).

Role of the Defense Finance and Accounting Service Indianapolis Center. Under the direction of the CFO Act and the Federal Financial Management Act, the Defense Finance and Accounting Service (DFAS) Indianapolis Center compiles the financial statements for the Army general fund. The DFAS Indianapolis Center uses financial data from DoD field accounting entities and other sources to accomplish this responsibility. DFAS Indianapolis Center personnel then selectively query data from the initial financial databases used for financial statement reporting. Query results are used as input for database applications.

Database Applications. The DFAS Indianapolis Center uses database applications to perform its financial reporting responsibilities. The development and use of database applications by the DFAS Indianapolis Center are an interim solution to facilitate timely CFO reporting. Ease of development, fast turnaround time, the ability to meet specific end-user requirements, and ease of use make the applications valuable analytical tools. Database applications will continue to be used only until long-term CFO reporting solutions are implemented. Database applications, as used by the DFAS Indianapolis Center, are personal computer-based, end-user developed automated products created by using advanced programming capabilities inherent in commercial database software programs, through processing and output specifications provided by the software.

DFAS Indianapolis Center personnel applied database applications to selective queries from the Federal Financial System (FFS, the general ledger) and the Headquarters Accounting and Reporting System (HQARS). Internal query applications performed those selective queries. DFAS Indianapolis Center personnel used database application output as the basis for adjustments to the Financial Statement Data Base (FSDB). Database applications can also be applied to financial data submitted by other Defense agencies. The following figure shows where the DFAS Indianapolis Center used database applications in the financial reporting process.



Flow of Information Through Database Applications

See Appendix B for a more detailed discussion of database applications and the financial statement reporting process at the DFAS Indianapolis Center.

Audit Objectives

The overall audit objective was to determine whether the database applications the DFAS Indianapolis Center used for compiling the Army financial statements were subject to adequate development and maintenance management control procedures. We also reviewed the adequacy of the management control program, as it applied to the overall audit objective. See Appendix A for a discussion of the audit process.

Database Application Development and Maintenance Controls

Policy and management control procedures were not established for database applications critical to compiling the Army general fund financial statements (the Army financial statements) at the DFAS Indianapolis Center.

o The DFAS Financial Systems Organization (FSO) did not establish policies on the development and maintenance of database applications used to compile the Army financial statements at the DFAS Indianapolis Center.

o The DFAS Indianapolis Center did not implement management control procedures for the development and maintenance of database applications used to compile the Army financial statements.

As a result, at least 16 database applications critical to compiling the financial statements for the Army general fund were subject to inefficient use or failure, thereby increasing the risk of introducing misstatements into the Army financial statements. Also, about $2.1 billion in adjustments to the FY 1996 accounts payable balance were needed. Similar management control weaknesses also exist for the compilation of Defense agency financial data at the DFAS Indianapolis Center.

Criteria Requiring Management Controls

OMB Circular No. A-130, "Management of Federal Information Resources," June 25, 1993, requires that agencies establish management control procedures to assure that appropriate administrative, physical, and technical safeguards are incorporated into all new applications and into significant modifications to existing applications. OMB Circular No. A-127, "Financial Management Systems," July 23, 1993, states that automated processes using an integrated data base, such as the general ledger-based FSDB used by database applications, are considered part of a financial management system, which in turn are covered by OMB Circular No. A-130. Circular No. A-127 also requires that financial management systems comply with requirements related to internal controls, maintenance, and training and user support. The link to a financial management system subjects database applications to the same management controls required by OMB Circular No. A-127.

DFAS Responsibilities

DFAS Office Responsibilities. The DFAS-FSO, under the control of the DFAS Deputy Director for Information Management, is responsible for financial management systems operations and policy and for the development and maintenance of financial management systems at the DFAS Centers. The DFAS-FSO is also responsible for standardizing the policies, procedures, and practices used by application developers within DFAS. The DFAS-FSO also oversees the Financial Systems Activities located at the DFAS Centers, including the DFAS Indianapolis Center.

The DFAS Financial Systems Activities do not have policy-making responsibilities. Instead, they are responsible for implementing the policies set forth by the DFAS-FSO. The DFAS Financial Systems Activity, Indianapolis Center, is also responsible for developing applications for the DFAS Indianapolis Center.

DFAS Indianapolis Center Offices. Three DFAS Indianapolis Center offices are involved with the implementation of database applications in the financial reporting process, the:

- Deputy Director for Accounting Operations;
- Directorate for Departmental Accounting (the Directorate); and
- Data Control and Operational Support Team (the Support Team).

Deputy Director for Accounting Operations. The Deputy Director for Accounting Operations has the overall responsibility for compiling the Army financial statements and for other Defense agencies' financial statements, in accordance with the CFO Act.

Directorate for Departmental Accounting. The Directorate is under the Deputy Director for Accounting Operations and is responsible for accurately compiling the financial data necessary to prepare the Army financial statements in a timely manner. The Directorate is also responsible for preparing the footnotes and management data that make up the annual financial report sent to the Under Secretary of Defense (Comptroller).

Data Control and Operational Support Team. The Support Team is a Directorate for Departmental Accounting team, acting as a liaison to system or application personnel. The Support Team is also responsible for developing and testing applications prior to passing them on to users. The Support Team

already has copies of some applications used for financial reporting and has basic information about those applications. The Support Team also has responsibilities not related to the use of database applications.

Attempts at Drafting Management Control Policies and Procedures

The DFAS Deputy Director for Information Management and the DFAS-FSO had not established policies subjecting database applications to effective development and maintenance of management control procedures. In June 1995, the DFAS Indianapolis Center developed a draft Standing Operating Procedure (SOP), subjecting database applications to development and maintenance management controls, but did not implement the draft SOP. The DFAS Indianapolis Center did not follow through with the draft SOP because recent reorganizations from a function-oriented structure into a team-oriented structure made it impractical to implement. By not implementing management controls for database applications, the DFAS-FSO and the DFAS Indianapolis Center increased the risk of introducing misstatements to the Army financial statements. The DFAS Deputy Director for Information Management and the DFAS-FSO needs to develop management control policies over database application development and maintenance, and the DFAS Indianapolis Center needs to implement the necessary management control procedures.

Development and Maintenance Controls

The DFAS Indianapolis Center did not establish management control procedures for the development and maintenance of database applications critical to compiling the Army financial statements. The DFAS Indianapolis Center extensively used database applications for compiling the financial statements, processing about $1.7 trillion of FY 1996 general ledger accounts affecting 197 appropriations. However, the DFAS Indianapolis Center did not take the steps necessary to reduce the risk that database applications could introduce misstatements into the financial statements. The use of database applications in the compilation of the FY 1996 Army financial statements resulted in the need for an additional 44 adjustments, totaling about $2.1 billion, to the accounts payable balance on the Statement of Financial Position. Effective management control procedures for database application development and maintenance reduce the risk introducing misstatements to the Army financial statements.

Development Controls. The DFAS Indianapolis Center did not implement management control procedures for database application development. Management control procedures addressing personnel training and output testing were not applied to database applications. The implementation of effective management control procedures, such as developer training and output testing are necessary to ensure that database applications do not introduce misstatements into the Army financial statements.

Developer Training. Database application developers were not trained in developing applications that would effectively produce the desired output. Without this training, developers relied only on their ability to code a database application in a manner that would produce the desired results. The lack of trained developers increases the risk of introducing incorrect financial data into financial statements. Training developers at the DFAS Indianapolis Center in the proper design of database applications will provide assurance that they will operate effectively.

Output Testing. The DFAS Indianapolis Center has performed only limited testing of the database applications used to compile the Army financial statements. Database applications should be tested before being used to ensure that application output will not introduce misstatements into the FSDB and subsequently into the financial statements. There was no evidence of any comprehensive test plans. For output testing to be an effective control technique, the test plan and output should be sufficiently documented and approved by management. Also, approved testing documentation and conclusions should be retained in a secure central location.

Management Controls Over Development. While database application control weaknesses are by no means the only control weaknesses preventing the rendering of a favorable audit opinion on the Army general fund financial statements, the controls are crucial and necessary to allow the auditors to place reliance on the financial statement compilation process. The implementation of adequate management control procedures over database application development will also assist in the implementation of adequate management control procedures over database application maintenance.

Maintenance Controls. The DFAS Indianapolis Center did not implement management control procedures for database application maintenance. The DFAS Indianapolis Center needs management control procedures to ensure that existing applications remain effective when changed. For management control procedures to be effectively applied to database application maintenance, the universe of the applications needs to be known.

Change Controls. The DFAS Indianapolis Center did not implement management control procedures for changes to database applications. When a change is made to database applications, output testing is necessary to ensure

that the application will produce the intended results. For data output testing purposes, a changed database application is the same as a new database application. The rationale for changes should be documented and approved at the supervisory level. Output testing should also be completed, documented, and approved before the application is applied to live data. Without proper control procedures for changed applications and subsequent testing, there is no assurance that database applications will continue to operate effectively.

Catalog of Database Applications. The DFAS Indianapolis Center did not prepare a catalog of database applications. The DFAS Indianapolis Center catalogued only database applications defined as "mission-critical" and did not make a distinction as to their criticality to the financial reporting process. The DFAS Indianapolis Center cannot perform proper management control techniques until all database applications used for compiling the Army financial statements have been identified and catalogued. A catalog must be complete and regularly updated to remain effective.

Management Controls Over Maintenance. The DFAS Indianapolis Center did not establish adequate management control procedures over the maintenance of database applications. Effective management control procedures are necessary to ensure that application output does not subject the Army financial statements to an increased risk of misstatements. With the significant role that database applications play in the CFO financial reporting process, management controls over maintenance of database applications must be implemented and must be operating effectively.

Conclusion

Management controls over database application development require output testing prior to use and developer training. Without these management controls, the DFAS Indianapolis Center has no assurance that the use of database applications will not introduce additional misstatements into the Army financial statements. Likewise, the absence of management controls over database application maintenance, such as change authorization, output testing, and cataloging, does not ensure that properly developed database applications will continue to prevent the introduction of errors into the Army financial statements. Effective and efficient development and maintenance management controls and the implementation of policies and procedures for the use of database applications at the DFAS Indianapolis Center will minimize the risk of introducing misstatements into the Army financial statements. Management control weaknesses are not the only problem preventing auditors from rendering a favorable opinion on the financial statements. Management controls are necessary in order for managers and auditors to place reliance on the financial

statement compilation process. Effective management controls will also help preserve the integrity of general ledger accounts in excess of $1.7 trillion, affecting 197 Army general fund appropriations. Effective controls will help minimize the need for additional adjustments to financial data prior to compiling the financial statements. Similar management control weaknesses also exist in the compilation processes for other Defense agency financial statements prepared by the DFAS Indianapolis Center because the compilation processes use some of the same database applications as are used for the Army general fund compilation process.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Deputy Director for Information Management, Defense Finance and Accounting Service, and the Director, Financial Systems Organization, develop policy that requires management control procedures for database applications at the Defense Finance and Accounting Service centers.

Management Comments. The Defense Finance and Accounting Service concurred, stating that information management policies are contained in DFAS Regulation 8000.1-R, "Information Management Policy and Instructional Guidance," July 24, 1997, and that the Regulation applies to all systems without regard to the hardware platform on which they operate. The Defense Finance and Accounting Service concluded that the Regulation should be strengthened to publicize that it does cover all information system efforts, including personal computer-based, end-user developed automated products. DFAS 8000.1-R was updated as of October 15, 1997. The Defense Finance and Accounting Service also stated that the Deputy Director for Information Management is responsible for information management policy, not the Financial Systems Organization, and clarified that the database applications referred to in the report are personal computer-based, end-user developed, automated products.

Audit Response. As a result of management comments, we restated the recommendation to direct it toward both the Deputy Director for Information Management and the Financial Systems Organization. We also more clearly described the nature of database applications. Because DFAS concurred with the recommendation, no further comments are required.

2. We recommend that the Director, Defense Finance and Accounting Service Indianapolis Center, implement policy that requires management control procedures for the development and maintenance of database applications. At a minimum, the policy should include:

a. Training personnel on the development of database applications.

b. Testing output data from new database applications and retaining management approved test plans, documentation, and conclusions in a secure central location.

c. Requiring management approval of changes to database applications and output testing of changed applications before they are used.

d. Implementing a change control program for database applications, including preparing and updating a catalog of database applications used to compile the Army financial statements.

Management Comments. The Defense Finance and Accounting Service concurred, stating that policy requiring management control procedures for developing and maintaining database applications was implemented as of October 15, 1997. In addition, management stated that the 16 database applications that were the focus of the audit had already been brought into compliance with required management control procedures by the time our draft audit report had been issued.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

Audit Work Performed. We limited our financial-related audit to the 16 database applications the DFAS Indianapolis Center used to compile the Army financial statements. Our examination included a review of:

o DFAS policies and procedures addressing the development of database applications;

o management control techniques used by the DFAS Indianapolis Center to maintain oversight control of database applications; and

o efforts taken to catalog database applications used by the DFAS Indianapolis Center.

Limitations to Audit Scope. We did not attempt to identify or analyze database applications used by field accounting entities before data submission to the DFAS Indianapolis Center. Also, we did not attempt to identify or analyze spreadsheet or word processing applications used by the DFAS Indianapolis Center or field accounting entities. We did not use computer-processed data to perform this audit. Further, we did not examine the accuracy of the data analyzed by the database applications or the ability of each database application to manipulate financial data in the intended manner.

Audit Period and Standards. We performed this audit as a part of our annual audit of the compilation process for the Army financial statements at the Defense Finance and Accounting Service Indianapolis Center. The audit was performed at the DFAS Indianapolis Center from September 1996 through May 1997. The audit was performed in accordance with auditing standards established by the Comptroller General, as implemented by the Inspector General, DoD, and with OMB guidance; however, we limited our scope as noted above. The audit included tests of management controls considered necessary.

Contacts During the Audit. We visited or contacted individuals and organizations within the DoD. Further details are available upon request.

Management Control Program

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of the Management Control Program. We evaluated management controls over the process that the DFAS Indianapolis Center used to control the development and maintenance of database applications in the financial reporting process. Specifically, we reviewed the management control techniques used by the DFAS Indianapolis Center to manage the 16 database applications that analyzed financial data and compiled the Army financial statements. We did not assess the adequacy of management's self-evaluation of these controls, because the review of the DFAS Indianapolis Center management control program, as it relates to the compilation of the Army financial statements, will be covered in a later audit report, "Compilation of Army Financial Statements at the Defense Finance and Accounting Service Indianapolis Center," Project No. 6FI-2023. We did not examine the management control program for the DFAS-FSO because we did not review DFAS-FSO operations, only its policy statements.

Adequacy of Management Controls. We identified material management control weaknesses, as defined by DoD Directive 5010.38, for the DFAS-FSO and the DFAS Indianapolis Center. DFAS-FSO had not implemented policies for the development and maintenance of database applications. In addition, the DFAS Indianapolis Center did not establish management control procedures for documenting and testing database applications. These weaknesses were not identified by the DFAS Indianapolis Center during its annual internal control review. Recommendations 1. and 2., if implemented, will correct the deficiencies. A copy of the report will be provided to the senior official responsible for management controls in DFAS.

Prior Audits and Other Reviews

There were no prior reports or other reviews performed during the last 5 years at the DFAS Indianapolis Center that related directly to the audit objective.

Appendix B. Database Applications and the CFO Financial Statement Reporting Process

Database applications, as used by the DFAS Indianapolis Center, are personal computer-based and end-user developed automated products. The DFAS Indianapolis Center creates a database application through the use of advanced database software program capabilities. Advanced capabilities are those inherent in commercial, off-the-shelf, database software that allow for the coding of database applications solely by providing specifications to the software's programming element. A database application is the result of the software's coding of specifications provided by the developer of the application. The database software program sets the application code, using the coding language inherent within the software program.

The DFAS Indianapolis Center uses database applications as analytical tools applied to financial data submitted by field accounting entities. The analyses might not otherwise be performed without the existence of database applications. Database applications check for conditions, such as abnormal general ledger account (GLAC) balances and variances between beginning and ending balances during the fiscal year. Database applications also assist in financial data reconciliations performed by the DFAS Indianapolis Center. Database applications are applied to GLACs valued in the billions of dollars. The data are formed into a primary source database inserted into the Comprehensive Reporting System. The Comprehensive Reporting System then formats and prints the financial statements. The analyses and subsequent actions resulting from database application output are intended to provide a measure of assurance that financial values presented in the financial statements do not reflect incorrect GLAC balances.

At least 16 database applications were used by the DFAS Indianapolis Center during the compilation of the Army financial statements. All were used to process data submitted by field accounting entities through their monthly general ledger trial balance (GLTB) submissions and from other sources. The 16 database applications are discussed below.

o **Reconciliation of the Yearend Closing Statement to Status of Appropriations Data**. A reconciliation is performed of the Yearend Closing Statement (Financial Management Service Form 2108) to Army status of appropriations data, stored in the Departmental Budgetary Accounting and Reporting System (DBARS), a segment of HQARS. The application is run just before the beginning of the CFO reporting process. The application is run to guarantee that the status data being extracted from DBARS for reconciliations

between the submitted GLTBs and status data accurately reflect what was reported in the Yearend Closing Statement. If differences are identified, DBARS data are adjusted to agree with the certified Yearend Closing Statement.

o **Reconciliation of the Balance Forward to the Treasury Trial Balance.** This application allows for the reconciliation of net expenditures recorded by the DFAS Indianapolis Center to net expenditures recorded by the U.S. Treasury. The reconciliation is performed monthly, at the appropriation level, for Treasury Index 21 appropriations. On-line output from the Treasury is compared to a DBARS query. The value of the FY 1996 DBARS net expenditures subjected to the application was about $62.3 billion, covering 214 appropriations. Reconciling adjustments, when needed, are made to GLACs maintained by the DFAS Indianapolis Center, in order to match the appropriation-level balances with the balances reported by the Treasury.

o **Reconciliation of Transaction Report Code to General Ledger Account-Fiscal Station Level.** This application allows for the reconciliation of GLTB data to selected values from status system reports at the fiscal station level. The output is used to adjust GLTB data to the data in DBARS. This application is performed as part of the yearend closing of fiscal station books against what is contained in DBARS. The yearend absolute value of FY 1996 GLTB data subjected to the application was about $1.7 trillion.

o **Reconciliation of Transaction Report Code to General Ledger Account-Operating Agency Level.** This application allows for the reconciliation of GLTB data to selected values from selected status system reports at the Operating Agency level. The output is used to adjust GLTB data to what is contained in DBARS. This reconciliation is performed as part of the fiscal yearend closing of Operating Agency books against data contained in DBARS. The yearend absolute value of FY 1996 GLTB data subjected to the application was about $1.7 trillion.

o **Transaction Report Code Extract From Status.** This application allows for a reconciliation of Yearend Closing Statement data against status data, using an associated Transaction Report Code to financial statement line item matrix, applied to the Financial Resources line items from the Statement of Financial Position. The reconciliation resulted in about $127.8 billion in adjustments to the SOURCE21 database for FY 1996.

o **More Than $250 Million Variance Check.** This application identifies selected asset, equity, and budgetary GLACs exceeding a selected dollar threshold, which may be less than $250 million, depending on the GLAC being examined. DFAS Indianapolis Center personnel and personnel from the appropriate field accounting office research the identified GLACs. Adjustments are made to the SOURCE21 database on an as-needed basis.

o **Abnormal Balance Check for Inventory and Fixed Assets.** This application determines the fixed asset and inventory GLACs having an ending balance either above what was expected or that was not considered normal. The affected GLACs are the 1500, 1700, 1800, and 1900 series. DFAS Indianapolis Center personnel and personnel from the appropriate field accounting office research the identified GLACs. Adjustments are made to the SOURCE21 database on an as-needed basis. The value of FY 1996 transactions subjected to the application was about $165.1 billion, covering 31 GLACs.

o **Variance Check for Inventory, Fixed Assets, and Accrued Leave.** This application compares prior fiscal year ending balances for the GLAC series with the current fiscal year ending balances and identifies the differences. GLACs with variances of exactly 100 percent or that exceed 150 percent of the prior year's balances are identified. Variations are researched and adjustments are made to the SOURCE21 database on an as-needed basis. The value of FY 1996 transactions subjected to the application was about $160.6 billion, covering 39 GLACs.

o **Reconciliation of Status to SOURCE21**. This application allows for the reconciliation of selected GLTB data and certified status data. Output is used to prepare standard pro-forma adjustments to GLTB data to match the certified status data. This application assures that the SOURCE21 database accurately reflects what was reported in the Army's certified yearend reports.

o **Status to SOURCE21 Adjustments**. This application allows for a review of the pro-forma adjustments created by the Reconciliation of Status to SOURCE21 application and revises the adjustments to meet unique reporting requirements. DFAS Indianapolis Center personnel edit and balance the adjustments before updating the SOURCE21 database.

o **Canceled Year Adjustments**. This application computes canceled year adjustments for specific GLACs. DFAS Indianapolis Center personnel review the adjustments before they are entered into the FFS.

o **GLAC 5700 Adjustments**. This application computes the GLAC 5700 (Appropriated Capital Used) adjustments. DFAS Indianapolis Center personnel review the adjustments before updating the SOURCE21 database. Adjustments post to the Appropriated Capital Used account in accordance with DoD and U.S. Treasury guidance.

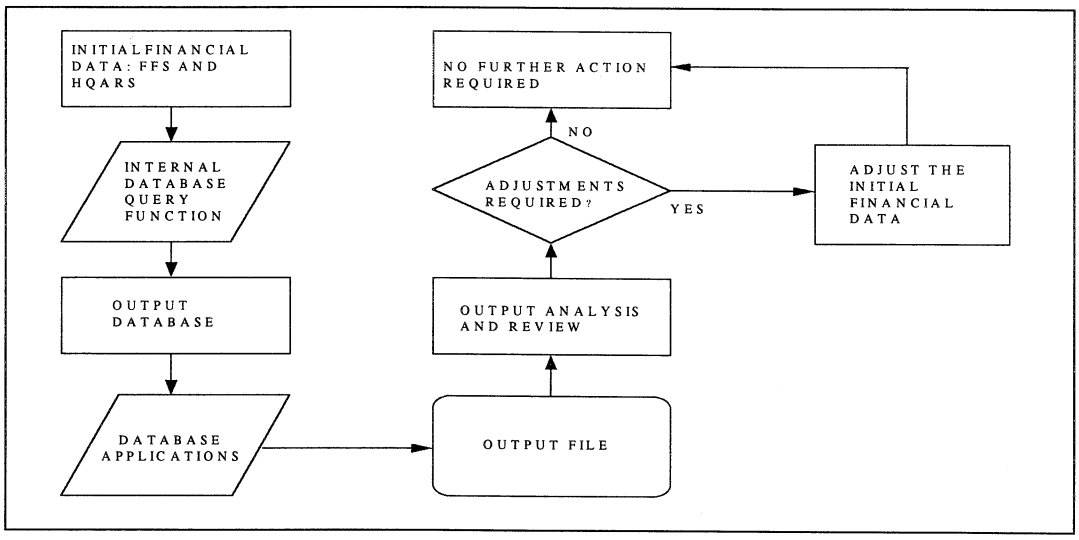
o **Cumulative Results Adjustments**. This application computes the adjustments for Cumulative Results of Operations. DFAS Indianapolis Center personnel review the adjustments before updating the SOURCE21 database. Adjustments eliminate cumulative results from general fund trial balances in accordance with DoD guidance.

o **Elimination Adjustments**. This application computes the Intra-Army Elimination adjustments. DFAS Indianapolis Center personnel review the adjustments before updating the SOURCE21 database.

o **General Adjustments—SOURCE21**. This application provides the capability to input nonautomated adjustments and manual trial balance data into the SOURCE21 database. DFAS Indianapolis Center personnel edit and balance the data before updating the SOURCE21 database.

o **Comprehensive Reporting System.** The Comprehensive Reporting System is a Windows-driven application capable of performing DoD financial reporting at the consolidating level. This application generates a variety of CFO and DoD-level reports. For FY 1996, the Comprehensive Reporting System generated Army financial statements with total assets of about $201 billion and total expenses of about $64.7 billion. The Comprehensive Reporting System uses the SOURCE21 database as the primary data source, in conjunction with three subsidiary tables, to generate the financial statements.

Initial financial data are contained in two accounting systems, the HQARS and the FFS. Internal queries are applied to select account balances, either at the field accounting office level or as an overall balance, for further examination. Query output is saved as separate database files. Database applications are applied to the output database files. Those files are printed and analyzed by DFAS Indianapolis Center personnel or other field accounting entity personnel, based on the intent of the application. Once analyses have been completed, adjustments are made to the initial financial data on an as-needed basis. The figure below shows the flow of financial data through database applications.



Flow of Information Through Database Applications

Appendix B. Database Applications and the CFO Financial Statement Reporting Process

The primary reasons for the increased use of database applications since the beginning of CFO financial reporting include ease of use, relative ease of development, the ability to tailor queries to specific end-user needs, and quick turnaround time for obtaining results. The use of database applications gives the DFAS Indianapolis Center the ability to perform financial data analyses that might not otherwise have been performed. When properly controlled, database application output will detect abnormal and incorrect financial values and will allow the DFAS Indianapolis Center to correct errors before they appear on the Army financial statements.

Appendix C. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
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Director, Defense Finance and Accounting Service
  Director, Defense Finance and Accounting Service Indianapolis Center
Director, Defense Logistics Agency
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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 Government Management, Information, and Technology, 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 Finance and Accounting Service Comments

DEFENSE FINANCE AND ACCOUNTING SERVICE

1931 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22240-5291

SEP 12 1997

MEMORANDUM FOR DIRECTOR, FINANCE AND ACCOUNTING DIRECTORATE, OFFICE OF THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Response to Department of Defense, Inspector General Draft Report, "Control of Database Applications at the Defense Finance and Accounting Service, Indianapolis Center," dated July 3, 1997 (Project No. 5FI-2012.02)

The attachment outlines Defense Finance and Accounting Service's (DFAS) response to the Department of Defense, Inspector General Draft Report on DFAS Indianapolis Center's management and maintenance of database applications.

Any further issues or questions regarding this matter can be directed to my point of contact, Mr. Richard Farrow, DFAS-HQ/SC, 703-607-3967.

Gary W. Amlin
Acting Director

Attachment
as stated

Final Report Reference

Response to DoD IG Draft Report, Project No. 5FI-2012.02

DFAS concurs with the overall intent of the findings and recommendations. However, there are several technically inaccurate statements and representations in the report. First, when the report refers to database applications, we believe it is referring to PC based end user developed small database applications and not database applications that are developed within our software development community and part of our formal system structure. Second, the report's findings do not apply to the audit's 16 database applications, but rather to other PC based end user developed database applications not involved with the compilation of the Army general fund financial statements. Third, while the report refers to the Financial System Organization as being responsible for establishing policies governing the DFAS-IN Center, this is not correct. Policies governing the Centers efforts with information management are the responsibility of the Information Management Deputate at DFAS-HQ.

Revised Page 2

Revised Page 5

Recommendation 1: Director, Financial System Organization (FSO) develop policy that requires management control procedures for database applications at the Defense Finance and Accounting Service (DFAS) Centers.

Comment: Concur in principle, but not as stated. First, DFAS has policies governing the Management controls over all information management systems. These policies are published in the DFAS 8000.1-R regulation. Our policy applies to all systems, without regard to which hardware platform a system operates on. Second, these policies are the responsibility of DFAS-HQ Information Management Deputate and not the Financial Systems Organization. And finally, we concur in principle in as much as auditors did not recognize that these policies covered all systems efforts, and we need to strengthen these policies and publicize the fact that these policies do in fact cover all systems efforts. To accomplish this, we will update our policies and issue a notification from DFAS-HQ.

Recommendation 2: Director, Defense Finance and Accounting Service, Indianapolis Center (DFAS-IN) implement policy that requires management control procedures for the development and maintenance of database applications.

a. Training personnel on the development of database applications.

Attachment

b. Testing output data from new database applications and retaining management approved test plans, documentation, and conclusions in a secure central location.

c. Requiring management approval of changes to database applications and output testing of changed applications before they are used.

d. Implement a change control program for database applications, including preparing and updating a catalog of database applications used to compile the Army financial statements.

Comment: Concur. We will ensure DFAS personnel implement the DFAS policy which in fact covers items b, c and d of this recommendation. As for item a, we will train our personnel on the proper controls of all systems and applications and require that the development of any application or system that supports the DFAS mission be performed by the trained staff that has the responsibility within DFAS for system development.

DEFENSE FINANCE AND ACCOUNTING SERVICE

1931 JEFFERSON DAVIS HIGHWAY

ARLINGTON, VA 22240-5291

OCT 22 1997

DFAS-HQ/S

MEMORANDUM FOR DIRECTOR, FINANCE AND ACCOUNTING DIRECTORATE, OFFICE OF THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Response to Department of Defense, Inspector General Draft Report, "Control of Database Applications at the Defense Finance and Accounting Service, Indianapolis Center," dated July 3, 1997 (Project No. 5FI-2012.02)

In regard to our September 12, 1997, memorandum same subject, the following clarification is provided per your request.

- At the time of publication of the audit report, the 16 applications which were the focus of the audit had been brought into compliance with required management control procedures.

- The written policy to be prepared by DFAS-HQ in conjunction with this finding has been included in DFAS 8000.1-R, Chapter 2, as of October 15, 1997.

DFAS point of contact for this action is Mr. Richard Farrow, DFAS-HQ/SC, 703-607-3967.

for Robert E. Burke
Deputy Director for
Information Management

Audit Team Members

The Finance and Accounting Directorate, Office of the Assistant Inspector General for Auditing, DoD, produced this report.

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