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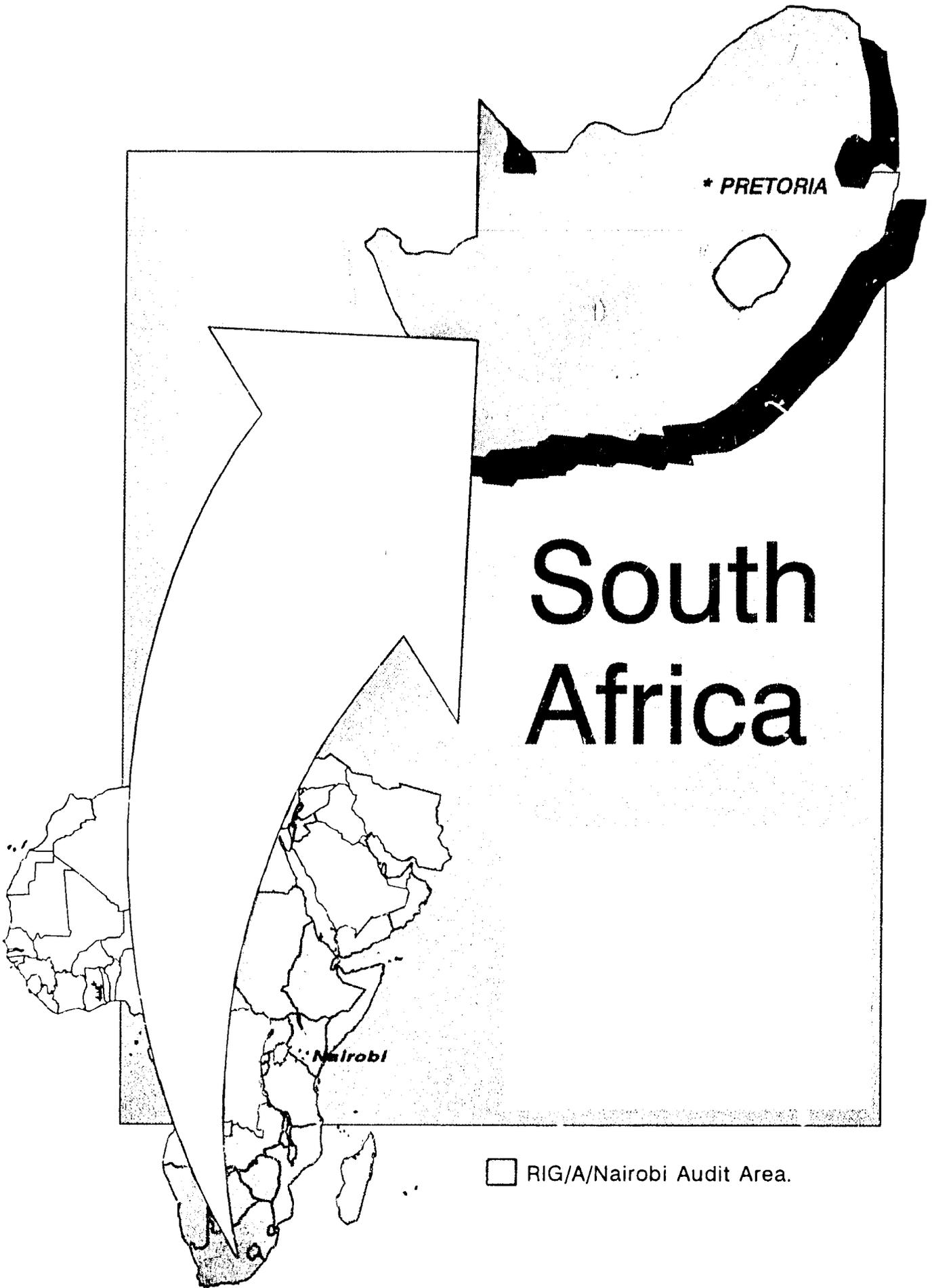
Audit of the
Quality of MACS Data at USAID/South Africa

Report No. 3-674-95-016
August 18, 1995



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* PRETORIA

South Africa

Nairobi

□ RIG/A/Nairobi Audit Area.



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

August 18, 1995

*Regional
Inspector General
for Audit/Nairobi*

MEMORANDUM

FOR: Director, USAID/South Africa, Leslie A. Dean

FROM: RIG/A/N, *John J. Buyer*
Everette B. Orr *EO*

SUBJECT: Audit of the Quality of MACS Data at USAID/South Africa (Audit Report No. 3-674-95-016)

This memorandum is our report on the Audit of the Quality of Mission Accounting and Control System (MACS) Data at USAID/South Africa. We considered your comments on the draft report and have included them in their entirety as Appendix II to this report. Based on your comments, the report's recommendations are considered resolved upon issuance of this report.

I appreciate the cooperation and courtesy extended to my staff during the audit.

Introduction

Realizing that USAID must operate with increasingly scarce funds, the Agency is undertaking a new and aggressive effort to change the way data and information are managed. Such an effort is critical to our future. In the modern workplace, be it business or government, a high-quality, reliable information system is no longer a luxury—it is a necessity.

To ensure the data in the entire USAID system is of high quality and useful to managers concerned about project status and pipeline reports, the Office of Information Resource Management (IRM) is

undertaking a major initiative. It is centralizing data collection and improving the management of information by creating a data warehouse (see Appendix V) as a repository for data from all Agency systems. One of the first steps in bringing data to this warehouse is the Project Information and Pipeline Evaluation (PIPE) initiative. A joint IRM and Financial Management project, PIPE will combine MACS data from the missions and financial data from USAID/Washington, allowing all Agency managers timely and comprehensive information on USAID projects worldwide.

For this system to succeed, the MACS data from all of the missions must be of the highest quality. Therefore, in support of IRM's work, the Office of Audit is conducting a series of audits designed to evaluate the quality of data in the MACS files, which is central to the Agency's work. An important part of the effort is this audit of USAID/South Africa.

Audit Objective

The audit was designed to answer the following question:

Is the data in USAID/South Africa's Mission Accounting and Control System (MACS) accurate?

Audit Findings

USAID/South Africa's MACS data was accurate in only 1 of the 39 data elements reviewed. Significant error rates in 38 data elements were primarily caused by 3 different problems:

- Project information files were not maintained accurately;
- Documentation was not maintained to support posted transactions; and
- Data was entered erroneously and/or not updated as required.

For the purposes of this audit, and in accordance with a request from the USAID Office of Financial Management, the term "error" not only includes transactions which were entered incorrectly but also transactions for which the

Mission could not provide supporting documentation. Error rates of less than 5 percent were not considered significant for reporting purposes.

The following table illustrates the results of our review of selected data elements at USAID/South Africa.

MACS Files	Data Elements Reviewed	Elements With Significant Errors	Elements With No Significant Errors
Budget Allowance Transaction	3	3	0
Reservation/Obligation Transaction	4	4	0
Commitment Transaction	7	7	0
Disbursement Transaction	10	10	0
Advance Transaction	8	7	1
Project Information Master	7	7	0
Total	39	38	1

*Error rates for each of these elements can be found in Appendix III.

Because USAID managers worldwide will rely on information in the Agency's data warehouse for making decisions on where and how to allocate scarce resources, it is critical that the data coming from each mission's MACS be accurate and complete. Therefore, the efforts of USAID/South Africa to ensure the integrity of data in MACS will contribute to the Agency's overall goal of providing accurate and timely information on all project activity worldwide.

Analyses of each problem area identified during the audit and recommendations to correct the problems noted are discussed in detail on the following pages.

Project Information Files Were Not Maintained Accurately

Project information in USAID/South Africa's MACS is considered inaccurate because (1) many entries were unsupported by documentation and (2) some entries were input erroneously and/or not updated as required. Overall, the project information was not entered and maintained according to procedures established by the MACS User Guide (Release 19). The User Guide details the need to:

- Verify 17 data elements¹, including the Project Number, Agreement Date, Authorization Date, and Project Assistance Completion Date, when entering information into the system; and
- Periodically review the data elements and adjust them as required.

We reviewed all 26 of the Mission's Project Information Master (MXPIM) records for projects active during the period October 1, 1991, through March 31, 1995, and tested 7 data elements in each record reviewed. All seven elements had significant error rates, ranging from 42.30 percent to 80.76 percent, as illustrated in the following table.

PROJECT INFORMATION MASTER FILE			
MACS DATA ELEMENT	NUMBER OF RECORDS SAMPLED	NUMBER IN SAMPLE WITH ERRORS	ERROR RATE IN SAMPLE
Project Assistance Completion Date	26	14	53.84%
Authorized Amount	26	14	53.84%
Agreement Date	26	20	76.92%
Terminal Disbursement Date	26	14	53.84%
Project Number	26	11	42.30%
Life of Project (In years)	26	21	80.76%
Host Country Contribution	26	11	42.30%

¹We reviewed 7 of these 17 elements.

Generally the high error rates were attributable to USAID/South Africa's inability to locate documentation supporting 11 of the 26 records in our sample. Mission officials suggested two possible reasons for missing documentation: (1) records were lost when the Mission office moved and (2) records from the previous accounting station were discarded, lost, or never received when USAID/South Africa assumed accounting responsibility. In addition, we determined that USAID/South Africa did not have uniform procedures for documenting and entering MXPIM information for central and regional projects. Although we were not always able to determine exactly why documentation was not available, Mission officials agreed that (1) procedures should be established to ensure that documentation supporting MACS information is received and maintained properly and (2) the data should be reviewed periodically for accuracy.

In addition to errors caused by missing source documentation, we found a limited number of input errors among the 182 data entries that we tested². Those input errors consisted of 4 errors in the Project Agreement Date data element and 6 errors in the Life of Project data element.

Recommendation No. 1: We recommend USAID/South Africa:

- 1.1 Correct data in the Project Information Master file;**
- 1.2 Ensure that Project Information Master file data is updated according to FM Policy Directive FS/95/01, issued November 15, 1994; and**
- 1.3 Periodically review data entered into the Project Information Master file to ensure the data is correct.**

Documentation Supporting Entries in MACS Was Not Maintained

The U.S. General Accounting Office's Internal Control Standards require all transactions be supported by documentation. In addition, the standards require documentation to be available and easily accessible for examination.

Our review of the Budget Allowance Transaction (MXBAT) File revealed that 22 out of 63 items selected for review had no supporting documentation. According to USAID/South Africa officials, prior to the new Controller's arrival at post in

²We reviewed 7 MACS data elements in each of 26 records, for a total of 182 data entries.

1994, source documentation (such as work sheets generated as source documents for the Blanket Purchase Agreement, the Blanket Travel Authorization recurring obligations, and Section 1311 reviews) was retained for only about two months and then destroyed. As a result, documentation was not available to support many MACS entries.

To avoid recurrence of these types of errors, the current Controller implemented a system whereby an obligation document will be issued under Blanket Purchase Agreements and Blanket Travel Authorizations. A work order will be used as an obligating document for a Blanket Purchase Agreement and a travel request will be used as an obligating document for a Blanket Travel Authorization. These documents will be retained as support for the related transactions.

For other MXBAT transactions, the Section 1311 Review work sheets will be retained in the files as supporting documentation for deobligations (where applicable). Posting spreadsheets will be retained in the files as support for upward/downward adjustments to recurring obligations.

The following table illustrates the extent of missing documentation for the six MACS files reviewed.

MACS FILE REVIEWED	NUMBER OF TRANSACTIONS IN SAMPLE	NUMBER OF UNSUPPORTED TRANSACTIONS	PERCENT UNSUPPORTED
MXPIM	26	11	42.30%
MXBAT	63	22	34.92%
MXROT	80	31	38.75%
MXCOT	79	21	26.58%
MXDIT	80	7	8.75%
MXADT	79	3	3.80%

Because the Mission has already taken action to correct this problem, we are not making specific recommendations for this area.

Accountability Dates Were Not Entered Accurately

The Accountability Date data element of the Advance Transaction File (MXADT) contained inaccuracies. We selected a sample of 79 MACS advance transactions

and found that 39 transactions contained incorrect or unsupported accountability dates. These errors occurred because there was no established policy or procedure to guide project accountants/voucher examiners in determining the Accountability Date. Consequently, the particular circumstances of the grantee's advance or the travel advance were reviewed and the accountant/examiner had the discretion to independently determine the Accountability Date to be recorded. As a result, we were unable to match dates entered in the MACS system with supporting documentation or to determine the basis of establishing the dates recorded.

Recommendation No. 2 : We recommend USAID/South Africa establish and document a consistent set of policies and procedures to be followed in all advance transactions regarding the Accountability Date.

Local Currency Transaction Amounts Not Entered in MACS

The Local Currency Transaction Amounts of the Advance Transaction File (MXADT) were entered as zero, even though advances in local currency had been made. We selected a sample of 79 MACS advance transactions. However, no documentation could be found for 3 of them, 32 incorrectly reflected zero local currency amounts, and 2 reflected incorrect local currency amounts (for a total of 37 errors).

In addition, we reviewed the Actual Disbursed Amounts of the Disbursement Transaction File (MXDIT). We selected a sample of 80 transactions. However, no documentation could be found for 7 of them, 30 incorrectly reflected zero local currency amounts, and 2 reflected incorrect local currency amounts (for a total of 39 errors).

According to the USAID/South Africa Controller, the Mission did not record the advances because it believed that USAID/Washington considered the use of the Actual Disbursed Amount field in MACS to be optional. As support of this understanding, the Controller noted that the MACS User Guide actually states that the use of this field is optional. Subsequent to the period of our audit, USAID/Washington advised the Controller to record Local Currency Transaction Amounts in the MXADT file and record Actual Disbursed Amounts in the MXDIT file. Because the Mission has taken action to implement this directive, we are not making a recommendation.

Budget Plan Code Field Missing from Supporting Documents

The Budget Plan Code data element of the Disbursement Transaction File (MXDIT) was not recorded on supporting documentation. We selected a sample of 80 MACS disbursement transactions. However, no documentation could be found for 7 of them and 19 transactions contained unsupported Budget Plan Codes (for a total of 26 errors.) The errors were caused by the field not being included on the supporting documentation because it was initially entered into the MACS system at the commencement of the fiscal year in question, based on the Budget Allowance cable received from USAID/Washington and Advice of Budget Allowance memo. The Budget Plan Code is, therefore, automatically activated once the Earmark Control Number and the Reservation Control Number have been captured.

Because the Budget Plan Code was correctly captured at the commencement of the fiscal year, and because the MACS system appears to be correctly attaching the Budget Plan Code to the Earmark Control Number and Reservation Control Number, we are not making any recommendations for this area.

Management Comments and Our Evaluation

The Mission generally supported the audit's findings and recommendations. However, it took exception to the decision to record the absence of supporting documentation as an error in all cases. The Mission believed that this decision resulted in an unwarranted finding with respect to the Budget Plan Code (BPC) in the MACS Disbursement Transaction (MXDIT) file. The Mission stated that the BPC is manually entered into MACS when an obligation transaction is posted and is not reentered when the disbursement transaction is entered. (Presumably, supporting documentation for the BPC would be maintained for obligation transaction.) The Mission argues that it is impossible to inaccurately post the BPC at the time a disbursement transaction is entered. Accordingly, the presence or absence of supporting documentation for the BPC at the time the disbursement transaction is entered should be irrelevant in determining whether the entry is accurate.

We agree, if the Mission consistently followed the practice described above, the BPC in the disbursement transaction file could not be entered incorrectly, even though it might not be supported by source documentation. However, for the purposes of this audit, and at the request of USAID/ FM, we defined an error as both "unsupported entries" and "incorrectly posted entries." Our review showed

that USAID/South Africa was inconsistent in maintaining source documentation for the BPC at the time of disbursement. For example, we found that the BPC was recorded on some disbursement vouchers but not in others. When vouchers did not record the BPC, we looked for source documentation supporting the BPC when the obligation transaction was posted. If such supplemental documentation could not be provided, we recorded an error.

The Mission's response to the draft audit report is included in its entirety in Appendix II of this report.

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APPENDICES

**SCOPE AND
METHODOLOGY**

Scope

The Office of the Regional Inspector General for Audit, Nairobi, audited the quality of data maintained in MACS files of USAID/South Africa in accordance with generally accepted government auditing standards. The audit was performed from April 24 to May 19, 1995, at USAID/South Africa in Pretoria. We reviewed 6 files and 39 data elements from a universe of 28 MACS Transaction/Master files and 757 data elements (21.4 percent and 5.2 percent respectively). If the error rate was significant (5 percent or more) on any of the data elements, we determined the cause and made appropriate recommendations.

Methodology

The Office of Audit consulted with Financial Management (FM) officials in Washington, D.C., and identified the MACS files and key data elements that would be reviewed for each file. At FM's request, we agreed to report any unsupported MACS transactions as errors in computing the error rates.

We analyzed USAID/South Africa MACS transactions for the period October 1, 1991, to September 30, 1994, from 6 of the 28 MACS Transaction/Master files³:

- Budget Allowance Transaction;
- Reservation/Obligation Transaction;

³ A complete listing of MACS Transaction/Master files can be found in Appendix IV.

- Commitment Transaction;
- Disbursement Transaction;
- Project Information Master; and
- Advance Transaction.

We selected a statistical sample for five of the six data files that would provide a confidence level of 90 percent and a precision level of plus or minus 4 percent. We reviewed the entire universe of records in the Project Information Master file.

For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from source documents. Our determinations included identifying transactions with unsupported documentation as errors. Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was significant. Error rates of less than 5 percent were not considered significant. Error rates equal to or greater than 5 percent were considered significant for reporting purposes. We statistically projected the number of errors in the MACS file. These projections indicate the total number of errors estimated for each data element based on the errors found in the statistical sample.

USAID/South Africa's management response was transmitted to RIG/A/Nairobi as an e-mail attachment from Controller Robert P. Jacobs to John J. Burns, financial audit manager, and David Conner, the MACS audit manager, on August 8, 1995. The full text of that attachment follows on the next two pages.

Management Comments

On the part of Mission management, this audit has been both a cause for concern and relief: concern for the way in which supporting documentation has been retained (or not retained) and relief because, in most cases where supporting documentation differed from MACS data, the MACS data were found to be accurate. This audit has also underlined the necessity and importance of the Agency's current movement towards minimizing the paper audit trail and maximizing the electronic data audit trail, which will be evident when the new management system (NMS) becomes a reality this October.

The MACS Data Integrity Audit has also shown MACS to be an important preliminary step towards virtual automation of the Agency's activities, which we expect NMS to accomplish. From a financial management standpoint, and to the extent possible, MACS was designed so as not to allow the posting of inaccurate data.

This design aim reveals several significant disconnects between the intended objective of the audit and the audit program's identification of what constitutes an error in tracing MACS data to supporting documentation. For instance, if the Budget Plan Code (BPC) recorded in the MACS Disbursement Transaction (DIT) file was not found on the voucher (supporting documentation for a disbursement transaction), the audit program required the auditors to record an error. However, what the audit program did not take into account was that the BPC is not manually entered into MACS at the time a disbursement transaction is posted; the BPC is manually entered into MACS when an obligation transaction is posted. Consequently, it is not possible to inaccurately post the BPC at the time a disbursement transaction is posted. So, if the point of the audit was to determine the integrity (accurateness) of MACS data, the audit program should have reflected the fact that a missing or inaccurate BPC on a voucher could not have caused an inaccurate BPC to be posted into the DIT file.

Mission management regrets that many of the supporting documents requested by the auditors were not found, which resulted in a large number of the errors identified in this report. There are several reasons for this, including the fact that, for most of the period under the scope of the audit, the official accounting station for USAID/South Africa was not in South Africa, and thus accounting records were maintained elsewhere. In addition, some of the records requested by the auditors were in storage and difficult to find. Given several months, the records could have been located; however, it did not seem to be an efficient use of the auditors' time to wait that long.

Mission management would like to thank the Regional Inspector General's Office for the cooperative and helpful approach demonstrated by its auditors in conducting the MACS Data

Integrity Audit. Despite Mission management reservations about the accuracy of assumptions inherent in the audit program, the auditors did identify significant changes needed in Mission procedures, some of which had already been instituted, and others which still need to be. Accordingly, Mission management agrees with the auditors' recommendations and will implement them fully.

**USAID/SOUTH AFRICA
MACS FILES AND ELEMENTS REVIEWED**

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
BUDGET ALLOWANCE TRANSACTION					
Budget Plan Code	287	63	22	34.92%	100
Transaction Amount	287	63	22	34.92%	100
Project Number	287	63	22	34.92%	100
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Number	7,141	80	43	53.75%	3,838
Reservation Control Number	7,141	80	32	40.00%	2,856
Budget Plan Code	7,141	80	32	40.00%	2,856
Transaction Amount	7,141	80	47	58.75%	4,195
COMMITMENT TRANSACTION FILE					
Commitment Number	3,503	79	21	26.58%	931
Earmark Control Number	3,503	79	25	31.65%	1,109
Call Forward Date	3,503	79	21	26.58%	931
Budget Plan Code	3,503	79	23	29.11%	1,020
Transaction Amount (AID/W)	3,503	79	21	26.58%	931
Transaction Amount(Mission)	3,503	79	25	31.65%	1,109
Commitment End Date	3,503	79	25	31.65%	1,109
DISBURSEMENT TRANSACTION FILE					
Obligation Document No.	14,661	80	10	11.25%	1,833
Reservation Control Number	14,661	80	10	12.50%	1,283
Commitment Document No.	14,661	80	10	12.50%	4,765
Earmark Control Number	14,661	80	7	12.50%	1,283
Transaction Type	14,661	80	26	8.75%	7,147
Budget Plan Code	14,661	80	7	32.50%	2,749
Disbursement Office Code	14,661	80	39	8.75%	1,833
Actual Disbursed Amount	14,661	80	15	48.75%	1,649
Budget Allowance Currency	14,661	80	10	18.75%	1,833
Federal Outlay Code	14,661	80	9	12.50%	1,833

USAID/SOUTH AFRICA
MACS FILES AND ELEMENTS REVIEWED
 (continued)

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
PROJECT INFORMATION MASTER					
Project Number	26	26	11	42.30%	11
Agreement Date	26	26	20	76.92%	20
Terminal Disb Date	26	26	14	53.84%	14
PACD	26	26	14	53.84%	14
Life Of Project	26	26	21	80.76%	21
Project Amount Authorized	26	26	14	53.84%	14
Host Country Amount	26	26	11	42.30%	11
ADVANCE TRANSACTION					
Advance Number	3,694	79	12	15.19%	561
Obligation Document No.	3,694	79	5	6.33%	234
Commitment Document No.	3,694	79	3	3.80%	140
Project Number	3,694	79	11	13.92%	514
Advance Type	3,694	79	7	8.86%	327
Accountability Date	3,694	79	31	39.24%	1,450
Advance Trans Amount	3,694	79	7	8.86%	327
Local Currency Amount	3,694	79	37	46.84%	1,730

*Error rates of less than 5 percent were not considered significant for reporting purposes

MACS TRANSACTION AND MASTER FILES NUMBER OF DATA ELEMENTS	
MACS FILE NAME	# OF ELEMENTS PER RECORD
Operating Expense Budget Master	10
Operating Expense Budget Transaction	12
Budget Allowance Master File	13
Budget Allowance Transaction File	12
Reservation Master File	17
Obligation Master File	37
Reservation/Obligation Transaction File	20
Project Information Master File	115
Project Information Transaction File	25
Condition Precedent Transaction File	96
Project Element Master File	13
Project Element Transaction File	12
Direct Reimbursement Authorization (DRA) Master File	16
Direct Reimbursement Authorization (DRA) Transaction File	17
Earmark Master File	20
Earmark Transaction File	19
Commitment Master File	41
Commitment Transaction File	25
Advance Master File	22
Advance Transaction File	30
Planned Expenditures Master File	13
Planned Expenditures Transaction File	15
Accrual Transaction File	18
Prepayment Amortization Transaction File	23
Disbursement Transaction File	28
Interface Disbursement/Advance File	36
Interface Disbursement/Advance Reject File	35
Prepayment Amortization File	17
Totals 28 MACS FILES	757

USAID'S INFORMATION MANAGEMENT

This new USAID effort to establish a quality information system is described in the Agency's Information Systems Plan (ISP Volume I: Report to Management, February 1993). A primary goal of this plan is to have corporate data managed at the Agency level rather than "owned" by each individual office.

Using an information engineering methodology, models of the Agency's business processes and data requirements were created. These models were then broken into eight logical Business Areas. Each Business Area represents related functions within the Agency that share similar business processes and data needs. Each of these eight areas will be studied in depth, in a process called Business Area Analysis (BAA).

The BAA provides a greater level of detail on the functions in each area and provides a basis for designing system requirements. Each BAA 1) continues to model the data requirements and business functions, 2) includes this information in the Agency's electronic repository, and 3) reconciles the new models back to the Agency-wide models. This results in a high degree of standardization, stability, and reusability.

Currently three BAA's are being conducted—Core Accounting, Procurement, and Budgeting. The inter-dependencies of these three business areas are high and will require significant sharing of data. Therefore, to facilitate the systems development work, IRM is planning a data warehouse that will allow movement to a data sharing environment.

Populating this data warehouse will begin with transferring MACS transaction level data into the warehouse. The Core Accounting BAA, which includes the AWACS project, needs a functioning warehouse to provide the most benefit to the Agency.

Smaller initiatives are under way to begin the transition to a corporate database. Project Information and Pipeline Evaluation (PIPE) currently brings in summary MACS and FACS data, to provide project status and pipeline information to Agency managers. In order to make sound decisions, it is important that managers using such information know the quality of the data being used.

Regional Inspector General
for Audit, Nairobi, Kenya

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