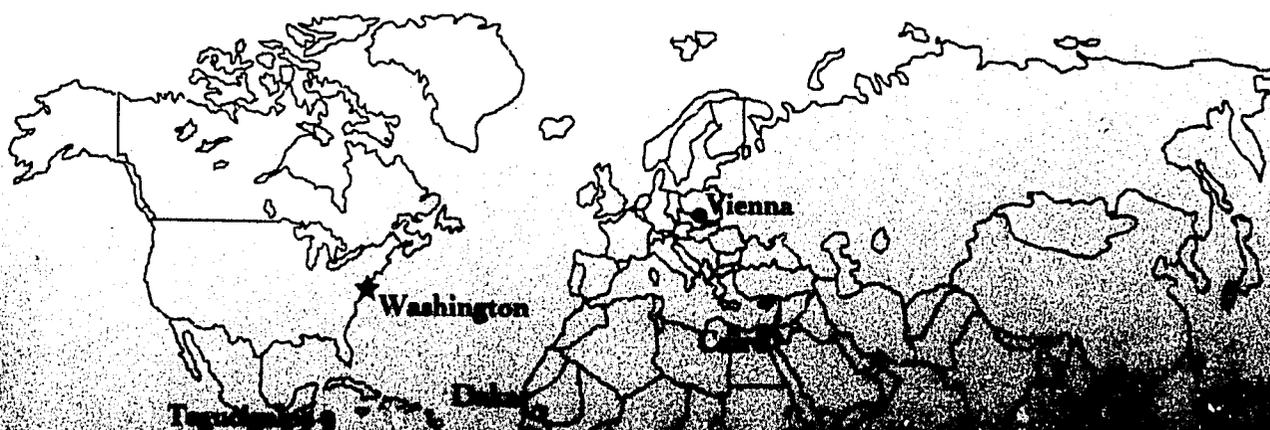


Regional Inspector General for Audit
Cairo, Egypt

PD-ABK-497
93233

**Audit of the Quality of MACS Data at
USAID/Egypt**

**Report No. 6-263-95-004
February 9, 1995**



**INSPECTOR
GENERAL**

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT



**UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF THE REGIONAL INSPECTOR GENERAL/AUDIT**

CAIRO, EGYPT

February 9, 1995

MEMORANDUM FOR USAID/Egypt Director, John R. Westley

FROM:

RIG/A/C, *Philippe L. Darcy*

SUBJECT:

Audit of the Quality of MACS Data at USAID/Egypt
(Audit Report No. 6-263-95-004)

This memorandum is our report on the audit of the quality of Mission Accounting and Control System (MACS) data at USAID/Egypt. We considered your comments on the draft report and have included them as an appendix to this report (see Appendix II). Based on your comments, all three of the recommendations are considered closed 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 reliable information system is no longer a luxury—it is a necessity.

To ensure that the data in the entire USAID system is of high quality—and therefore useful to managers concerned about project status and pipeline reports—the Office of Information Resource Management (IRM) is undertaking a major initiative. They are centralizing data collection and improving the management of information by creating a data warehouse, a repository for data from all Agency systems. One of the first steps in bringing data to this warehouse is the PIPE (Project Information and Pipeline Evaluation) initiative. The PIPE initiative is a joint IRM and Financial Management project that 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 a more complete description of IRM's efforts, see Appendix VI.

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.

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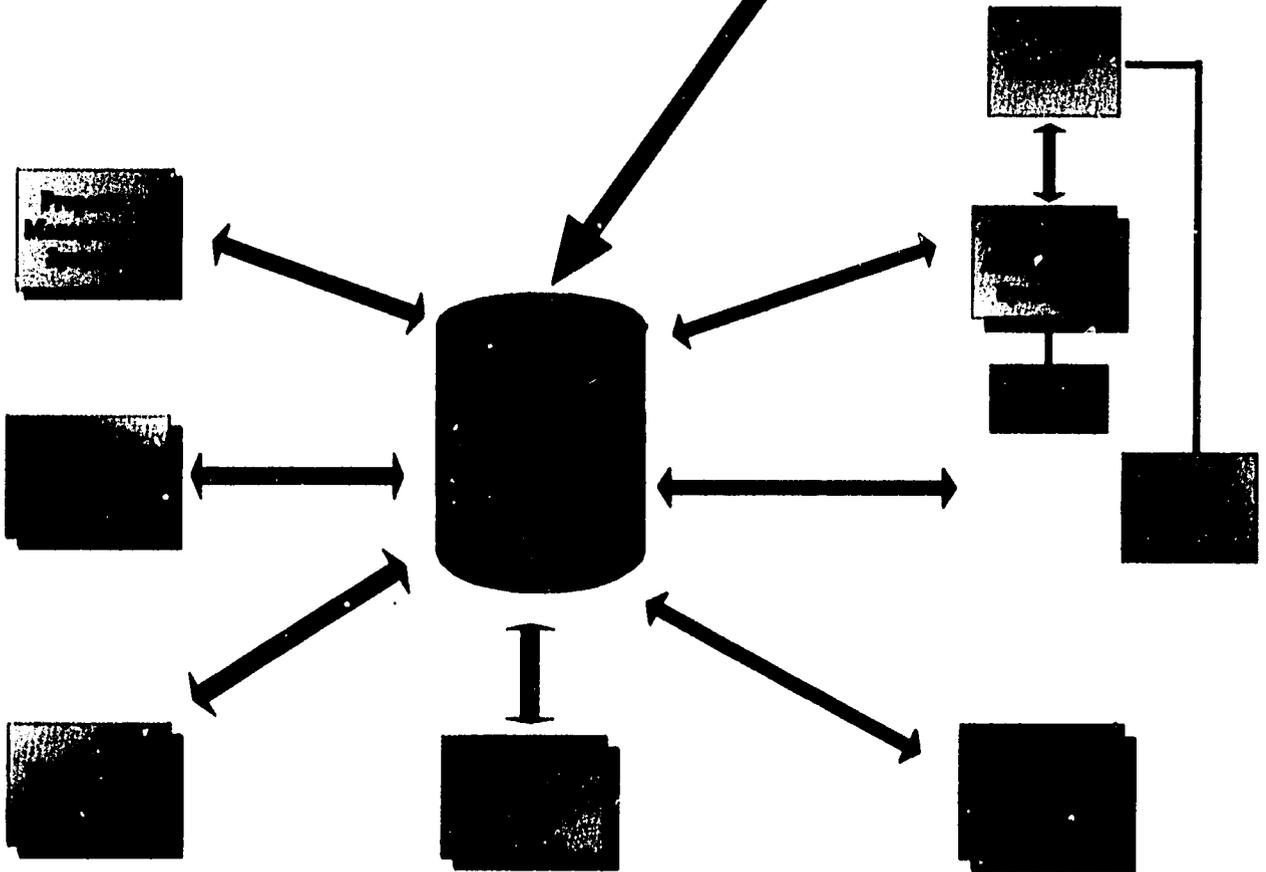
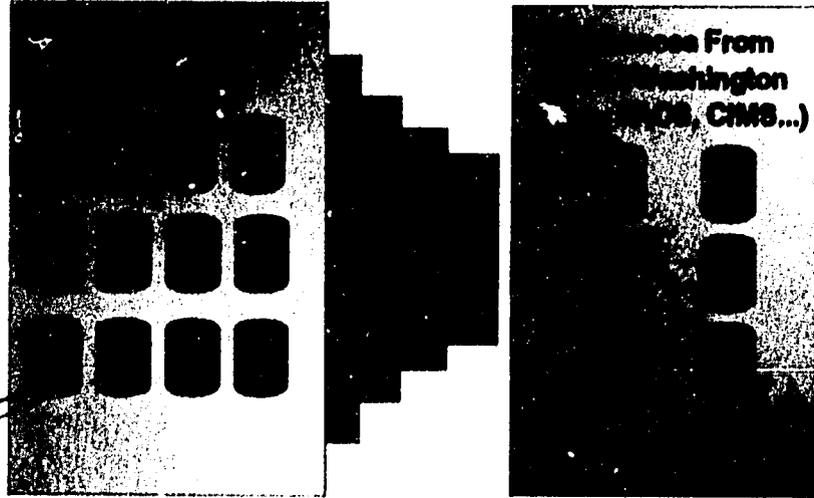
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Populating the Data Warehouse



USAID/Egypt



Data From USAID's Legacy Systems

Audit Objective

The audit was designed to answer the following question:

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

The audit scope and methodology are described in Appendix I.

Audit Findings

USAID/Egypt's MACS data was accurate in 24 of the 37 data elements reviewed; however, the other 13 data elements, which consisted mostly of non-financial data, had error rates that we considered significant.

RESULTS OF OUR REVIEW

MACS Files	Data Elements Reviewed	Elements With Error Rates of 5% or More	Elements With Error Rates Below 5%
Budget Allowance Transaction File	3	3	0
Reservation/Obligation Transaction File	4	4	0
Commitment Transaction File	8	1	7
Disbursement Transaction File	8	0	8
Advance Transaction File	7	1	6
Project Information Master File	7	4	3
Total	37	13	24

It should be noted that many of the errors found pertained to informational items (e.g. dates and planned host country contributions) rather than accounting information (e.g. obligations and disbursements). Where the errors did affect accounting information, the magnitude of the errors was often relatively small. Nonetheless, for the purposes of our audit, we considered error rates of 5 percent or more of our sample—whatever the nature of the

error—to be significant.

Significant error rates in the 13 data elements were caused by three different problems.

1. Files were not updated correctly.
2. Documentation was not maintained to support entries in several files.
3. Required Host Country Contributions were entered using the local currency amount rather than the U.S. dollar equivalent.

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

An analysis of each problem area and recommendations to correct the problems are discussed below.

**1. Files Were Not
Updated Correctly**

Information in the Project Information Master file was not fully accurate because the information was not entered and maintained according to procedures established by the MACS User's Guide (Release 19). These procedures detail the need to:

- check the accuracy of information in the source documents before entering data;
- verify existing data when entering new information into the system; and
- periodically review data in the Project Information Master File and adjust the data as required.

We reviewed all 101 of the records in the Mission's Project Information Master File and tested seven data elements in each record. Four of the seven data elements had error rates from 6 to 56 percent (see Appendix V).

The Mission's procedures did not ensure that all data elements were updated when changes were made to a project. Further, information contained in the Project Information Master File was not periodically reviewed for accuracy. If the project information files had been periodically reviewed, it is likely that the errors described above would have been detected and corrected.

We also reviewed a sample of advance transactions and tested seven data elements in each transaction. One of these data elements had an error rate of 11 percent due to incorrect entries; however, we are not making a recommendation regarding entries to this data element because we did not identify any systemic problem causing the errors.

During the audit field work, the Director of the Financial Management Office and the chief accountant jointly issued a memorandum to the project accountants reinforcing the need to periodically review the project information files for accuracy during file updates and requesting correction of errors found during the audit field work.

Recommendation No. 1: We recommend that USAID/Egypt:

- 1.1 correct the errors found in Project Information Master file data elements identified in this report to ensure the information is accurate; and**
 - 1.2 issue instructions to periodically review the data entered into the Project Information Master file to ensure the data is accurate.**
- 2. Documentation Was Not Maintained to Support Entries**

General Accounting Office Internal Control Standards require that all transactions be documented by written evidence. The Standards also require that documentation be available and easily accessible for examination. USAID Handbooks provide additional guidance on documentation requirements for specific types of transactions.

Source documentation to support various data elements could not easily be located and provided for our review. Since documentation was not available to support the entries, we could not verify the records in the MACS and considered these unsupported entries to be errors. The documents were not maintained because the mission's procedures did not ensure that files for source documents were created, maintained, and easily accessible. We could not review supporting documentation for data elements in the files shown in Appendix V.

The documents were unavailable for various reasons:

- Entries were made without supporting documentation. In the Reservations/Obligations Transaction File, for example, entries for upward adjustments to estimated obligations were not recorded on the obligation document as required in Handbook 19.
- In a number of files, the journal vouchers supporting transactions could not be located or were missing the attached detail which was the source of the transaction.

In some instances the transaction descriptions entered in MACS were not sufficiently detailed enough to permit the source documents to be identified.

Recommendation No. 2: We recommend that USAID/Egypt implement procedures to provide reasonable assurance that:

- 2.1 upward adjustments to obligations are recorded on journal vouchers or the obligation documents themselves in accordance with USAID Handbook 19;**
- 2.2 journal vouchers and supporting detailed information are filed to support entries made to MACS; and**
- 2.3 transaction descriptions in MACS are sufficiently detailed to permit identification of supporting documents.**

3. Host Country Contributions Entered in Local Currency Rather Than U.S. Dollars

MACS data on Host Country Contributions was also not fully accurate because the information was not entered according to procedures established by MACS User's Guide (Release 19). The MACS User's Guide requires that Host Country Contributions be the U.S. dollar equivalent of the amount required from the Host Country. However, 27 of 101 Host Country Contribution amounts were entered as the Egyptian Pound amount rather than the U.S. dollar equivalent. This occurred because accounting personnel did not know that Host Country Contributions were supposed to be in U.S. dollars. By using dollars, the mission could ensure that the data transferred from MACS to the Agency Data Warehouse will provide consistent information to users at the Agency level.

Recommendation No. 3: We recommend that USAID/Egypt (1) instruct Controller's Office personnel to enter host country contributions using U.S. dollar equivalents, or (2) obtain approval from the Office of Financial Management (FA/FM) to enter these contributions in local currency.

MANAGEMENT COMMENTS AND OUR EVALUATION

USAID/Egypt agreed with the report's findings and recommendations. Based on their comments and actions taken during and subsequent to the audit, we consider all three recommendations closed upon issuance of this report. Their response to the draft report is included (without attachments) in Appendix II of this report.

SCOPE AND METHODOLOGY

Scope

The Office of the Regional Inspector General for Audit/Cairo audited the quality of data maintained in MACS files of USAID/Egypt in accordance with generally accepted government auditing standards. Performed during the period from August 2, 1994 through November 13, 1994 at USAID/Egypt, the audit reviewed six files and 37 data elements (21 and 5 percent respectively) from a universe of 28 MACS Transaction/Master files and 757 data elements. If the error rate was significant for any of the data elements, we also evaluated the cause and made recommendations.

Methodology

After consulting with Financial Management officials in Washington, D.C., we identified the MACS files and key data elements that we would review for each file. We analyzed fiscal year 1992, 1993, and 1994 data from 6 of the 28 MACS files¹:

- Budget Allowance Transaction File
- Reservation/Obligation Transaction File
- Commitment Transaction File
- Disbursement Transaction File
- Advance Transaction File
- Project Information Master File

We selected a statistical sample for five of the data files that would provide a confidence level of 90% and a precision level of plus or minus 8.5 percent or better.² We reviewed

¹ A complete listing of MACS Transaction/Master files can be found in Appendix IV.

² Precision limits for the five files were as follows:
Budget Allowance Transaction File $\pm 6.7\%$; Reservation/Obligation Transaction File $\pm 8.5\%$;
Commitment Transaction File $\pm 4.4\%$; Disbursement Transaction File $\pm 4.0\%$; and Advance
Transaction File $\pm 5.8\%$.

APPENDIX I

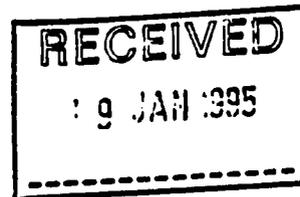
100% of the records in the Project Information Master file.

For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from a source document(s). Data which could not be supported by a source document was considered an error. Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was significant. An error rate of five percent or greater was considered significant. Data elements with an error rate of less than five percent were considered accurate for reporting purposes. We statistically projected the number of errors in the MACS file (see Appendix III). These projections indicate the total number of errors estimated for each data element based on the errors found in the statistical sample.



CAIRO EGYPT

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT



January 18, 1995

MEMORANDUM

TO: Philippe L. Darcy, RIG/A/C

FROM: Douglas S. Franklin, A/D/DIR *DF SF*SUBJECT: Audit of the Quality of MACS Data at USAID/Egypt -
Draft Report dated January 4, 1995

As stated in the subject audit, many of the errors found during the audit, pertained to informational items, and those that affected the accounting information were relatively small in magnitude. This is attested to by the fact that the major accounting errors highlighted in this report are for the reservation/obligation transaction file, with error rates between 20 to 21 percent. OE upward adjustments are high volume transactions with small amounts representing less than \$800 thousand per year or one-tenth of one percent of the Mission's yearly obligations. Given the immateriality of these transactions, the Mission previously concentrated its efforts in fully complying with documentation requirements for project and OE reservations/obligations. However, USAID/Egypt agrees with the audit recommendations in this report and has taken necessary corrective actions. Accordingly, the Mission requests that all Recommendations be closed upon issuance of the final report.

Recommendation No. 1: We recommend that USAID/Egypt:

- 1.1 correct the errors found in Project Information Master file data elements identified in this report to ensure the information is accurate.

USAID/Egypt has corrected all the errors found in the Project Information Master (PIM) file data elements identified in this audit report. A copy of the report has been forwarded earlier to RIG/A/C.

Based on the above, Mission requests the closure of the Recommendation No. 1.1

Recommendation No. 2: We recommend that USAID/Egypt implement procedures to provide reasonable assurance that:

- 2.1 upward adjustments to obligations are recorded on journal vouchers or the obligation documents themselves in accordance with USAID Handbook 19;**

Effective October 1, 1994, the Mission has implemented revised procedures to require the OE Accountants to prepare monthly journal vouchers for upward adjustments of OE and Trust Fund Accounts. Attached are the journal vouchers for upward adjustments of the OE and Trust Fund Accounts for October 1994 (Attachment I).

Based on the above, Mission requests the closure of this part of the Recommendation.

- 2.2 journal vouchers and supporting detailed information are filed to support entries made to MACS, and**

The Mission has issued guidance requiring all Accountants to attach supporting documents to each journal voucher (Attachment II).

Based on the above, Mission requests the closure of this part of the Recommendation.

- 2.3 transaction descriptions in MACS are sufficiently detailed to permit identification of supporting documents.**

The Mission has issued guidance to all Accountants requiring them to provide adequate and detailed transaction description in MACS in order to facilitate identification of supporting documents (Attachment III).

Based on the above, Mission requests the closure of this part of the Recommendation.

Recommendation No. 3: We recommend that USAID/Egypt (1) instruct Controller's Office personnel to enter host country contributions using U.S. dollar equivalents or (2) obtain approval from the Office of Financial Management (FA/FM) to enter these contributions in local currency.

On December 20, 1994, the Acting Associate Director for Financial Management has issued detailed instructions to all FM staff requiring them to enter host country contributions in U.S. dollar equivalents, using the USDO exchange rate as of the effective date of the agreement or amendments (Attachment IV).

Based on the above, Mission requests the closure of this Recommendation.

Att: a/s

APPENDIX III

USAID/EGYPT
MACS FILES AND ELEMENTS REVIEWED

<u>MACS FILES/ELEMENT</u>	<u>UNIVERSE</u>	<u>NUMBER IN SAMPLE</u>	<u>ERRORS IN SAMPLE</u>	<u>ERROR RATE</u>	<u>PROJECTED ERRORS IN UNIVERSE</u>
BUDGET ALLOWANCE TRANSACTION					
Budget Plan Code	834	74	12	16.22%	136
Transaction Amount	834	74	10	13.51%	113
Project Number	834	74	8	10.81%	91
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Number	17,155	80	16	20.00%	3,431
Reservation Control Number	17,155	80	17	21.25%	3,646
Budget Plan Code	17,155	80	17	21.25%	3,646
Transaction Amount	17,155	80	25	31.25%	5,361
COMMITMENT TRANSACTION FILE					
Commitment Number	8,439	80	0	0.00%	None
Earmark Control Number	8,439	80	0	0.00%	None
Call Forward Date	8,439	80	1	1.25%	*
Training Months	8,439	80	1	1.25%	*
Budget Plan Code	8,439	80	0	0.00%	None
Transaction Amount (AID/W)	8,439	80	1	1.25%	*
Transaction Amount (Mission)	8,439	80	2	2.50%	*
Commitment End Date	8,439	80	5	6.25%	528
DISBURSEMENT TRANSACTION FILE					
Obligation/Commitment Number	60,499	81	0	0.00%	None
Reservation/Earmark Control Number	60,499	81	1	1.23%	*
Budget Plan Code	60,499	81	1	1.23%	*
Disbursing Office Code	60,499	81	0	0.00%	None
Federal Outlay Code	60,499	81	0	0.00%	None
Local Currency Disbursement	60,499	81	2	2.47%	*
Budget Allowance Disbursement	60,499	81	4	4.94%	*
Transaction Type	60,499	81	0	0.00%	None
ADVANCE TRANSACTION FILE					
Advance Number	6,141	80	2	2.50%	*
Obligation/Commitment Document Number	6,141	80	0	0.00%	None
Project Number	6,141	80	0	0.00%	None
Advance Type	6,141	80	0	0.00%	None
Accountability Date	6,141	80	9	11.25%	69 i
Advance Transaction Amount	6,141	80	0	0.00%	None
Local Currency Amount	6,141	80	0	0.00%	None
PROJECT INFORMATION MASTER FILE					
PACD	101	101	4	3.96%	*
Authorized Amount	101	101	6	5.94%	6
Agreement Date	101	101	6	5.94%	6
Terminal Disb. Date	101	101	4	3.96%	*
Host Country Contribution	101	101	57	56.44%	57
Project Number	101	101	2	1.98%	*
Life of Project (In Years)	101	101	25	24.75%	25

* Error rates less than five percent were not considered significant

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

Data Elements With Error Rates Over 5 Percent

<i>File</i>	<i>Data Element</i>	<i>Records Sampled</i>	<i>Not Updated</i>	<i>No Support</i>	<i>Incorrect Entry</i>	<i>Total Errors</i>	<i>Error Rate</i>
Project Information Master File	Host Country Contribution ¹	101	30	0	27	57	56%
Project Information Master File	Life of Project ²	101	25	0	0	25	25%
Project Information Master File	Project Authorized Amount ³	101	1	5	0	6	6%
Project Information Master File	Agreement Date	101	5	1	0	6	6%
Advance Transaction File	Accountability Date	80	0	0	9	9	11%
Commitment Transaction File	Commitment End Date	80	1	1	3	5	6%
Reservations/Obligations Transaction File	Transaction Amount	80	0	25	0	25	31%

¹ This data element should show the required host country contribution, as specified in the project agreement, and be denominated in U.S. dollars.

² This data element should show the duration of the project, in years, as specified in the project agreement.

³ The project authorized amount is a ceiling amount which obligations cannot exceed. In reality, the authorized amount is a total amount for an entire project. USAID/Egypt enters authorized amounts for subprojects by allocating the total authorized amount to the subprojects. We did not find any cases where the authorized amount for a project was not recorded correctly. However, we did find six cases where the obligations for a subproject exceeded the authorized amount allocated by USAID/Egypt to the subproject. We considered these to be errors because the Office of Financial Management's policy is that all data entered in the MACS system, even if not required, must be accurate.

Data Elements With Error Rates Over 5 Percent

<i>File</i>	<i>Data Element</i>	<i>Records Sampled</i>	<i>Not Updated</i>	<i>No Support</i>	<i>Incorrect Entry</i>	<i>Total Errors</i>	<i>Error Rate</i>
Reservations/ Obligations Transaction File	Reservation Control Number	80	0	17	0	17	21%
Reservations/ Obligations Transaction File	Budget Plan Code	80	0	16	1	17	21%
Reservations/ Obligations Transaction File	Obligation Document Number	80	0	14	2	16	20%
Budget Allowance Transaction File	Budget Plan Code	74	0	10	2	12	16%
Budget Allowance Transaction File	Budget Allowance Amount	74	0	9	1	10	14%
Budget Allowance Transaction File	Project Number	74	0	7	1	8	11%

USAID'S INFORMATION MANAGEMENT

This new USAID effort to establish a quality information system is described in the Agency's Information Systems Plan (ISP).¹ 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 Business Area Analysis (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 Agency².

Smaller initiatives are under way to begin the transition to a corporate database. PIPE (Project Information and Pipeline Evaluation) 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.

¹ Information Systems Plan, Volume I: Report To Management, February 1993.

² AWACS Design and Implementation Plan, Draft November 1993