AD-A070 448 GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS GROUP F/G 5/1
ANALYSIS TO DETERMINE FUNCTIONAL AND SYSTEMS REQIREMENTS FOR AN--ETC(U)
JAN 79 F O DEPPNER, J ANDERSON, J I POSNER MDA903-78-C-445
UNCLASSIFIED 1070-01-79-CR NL

1 OF 2
AD A070448



AD A070448

DDC FILE COPY

LEVEL II

Report 1070-01-79-CR

Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition System (SACS)

Report of Task B

Systems and Procedures Documentation

By:

Jack I. Posner
Francis O. Deppner
James Winters
John Anderson

Contract No. MDA903-78-C-0445

DDC
RECEIVED
JUN 27 1979
C

This document has been approved for public release and sale; its distribution is unlimited.

15 January 1979

OPERATIONS ANALYSIS GROUP

GENERAL RESEARCH CORPORATION

A SUBSIDIARY OF FLOW GENERAL INC.
7655 Old Springhouse Road, McLean, Virginia 22102

Submitted To:

Mr. Gene P. Hill
Force Accounting and Systems Division
Office of the Deputy Chief of Staff for Operations
Washington, D.C. 20310

79 06 26 007

Report 1070-01-79-CR

Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition System (SACS)

Report of Task B

Systems and Procedures Documentation

By:

Jack I. Posner
Francis O. Deppner
James Winters
John Anderson

Contract No. MDA903-78-C-0445

15 January 1979

OPERATIONS ANALYSIS GROUP

GENERAL RESEARCH CORPORATION

A SUBSIDIARY OF FLOW GENERAL INC.

7655 Old Springhouse Road, McLean, Virginia 22102

Submitted To:

Mr. Gene P. Hill

Force Accounting and Systems Division
Office of the Deputy Chief of Staff for Operations
Washington, D.C. 20310

Document has been approved
public release and sale; its
tion is unlimited.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER: 1070-01-79-CR	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle): ANALYSIS TO DETERMINE FUNCTIONAL AND SYSTEMS REQUIREMENTS FOR AN ON-LINE STRUCTURE AND COMPOSITION SYSTEM (SACS), Report of Task B, Systems and Procedures Documentation.	5. TYPE OF REPORT & PERIOD COVERED: Final Report, Oct 1978 - Dec 1978
7. AUTHOR(S): Francis O. Deppner, James Winters, John Anderson, Jack L. Posner	8. CONTRACT OR GRANT NUMBER(S): MDA 903-78-C-445
9. PERFORMING ORGANIZATION NAME AND ADDRESS: General Research Corporation, Resource Management Operations, 7655 Old Springhouse Rd., McLean, Virginia 22102	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: HQDA (DAMO-FDA) The Pentagon, Washington, D.C. 20310	12. REPORT DATE: 15 Jan 1979 / 13. NUMBER OF PAGES: 159 (167 p.)
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report): UNCLASSIFIED / 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report): Approved for open literature	This document has been approved for public release and sale; its distribution is unlimited.
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)	
18. SUPPLEMENTARY NOTES	
19. KEY WORDS (Continue on reverse side if necessary and identify by block number): Manpower Management; Logistic Management; Structure and Composition System (SACS); Force Accounting System (FAS)	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The SACS Systems and Procedures Documentation conducted for the Department of the Army by the General Research Corporation during the period of October 1978 had an overall objective of identifying and documenting the HQDA SACS and SACS-related systems and procedures. This final report identifies and describes SACS in three parts: Basic SACS, Personnel SACS (PERSACS), and

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

411050

Block 4.

REPORT OF TASK B - SYSTEMS AND PROCEDURES DOCUMENTATION

Block 19.

The Army Authorization Document System (TAADS)
Basis of Issue Plan (BOIP)
Table of Organization and Equipment (TOE)
Automated Unit Reference Sheet (AURS)
Automated Update Transaction System (AUTS)
Shorthand Note System (SHN)
Structure and Composition System Information
Gathering and Management Analysis System (SIGMA)

Block 20.

Equipment SACS (LOGSACS). It identifies SACS-related systems and the data which these systems contribute to establish the SACS Data Base. The principal data bases that SACS draws upon are the FAS, TAADS, and TOE. These are supplemented by automated and manual inputs from associated systems. In aggregate, they provide SACS personnel and equipment requirements and authorizations at the unit identification level of detail for all units regardless of component.

Accession For
NTIS GRA&I
DDC TAB
Unannounced
Justification
By
Distribution/
Availability Codes
Dist | Avail and/or special

CONTENTS

SECTION			PAGE
1	INTRODUCTION		1
	1.1	Background	1
	1.2	Research Methodology	1
	1.3	Documentation Methodology	2
2	SYSTEMS OVERVIEW		3
	2.1	SACS and Its Peripheral Systems	3
	2.2	Other Systems	6
3	SACS PROCEDURES		9
	3.1	Overview of SACS Procedures	9
	3.2	Preparing the Force	9
	3.3	Initiating SACS	13
	3.4	Basic SACS	14
	3.5	PERSACS	17
	3.6	LOGSACS	18
4	THE SACS DATA BASES		27
	4.1	General	27
	4.2	PERSACS	27
	4.3	LOGSACS	29
5	SACS DATA SOURCES		
	5.1	Use of FAS Data	31
	5.2	Use of TAADS Data	31
	5.3	Use of TOE Data	31
	5.4	Personnel Factoring	32
	5.5	Application of BOIP Data	32
	5.6	Application of SHN Data	33
	5.7	PERSACS Data Validation	33
	5.8	LOGSACS Data Validation	34

6	SACS SYSTEM SUPPORT	35
	6.1 Manual Procedures	35
	6.2 Automated System Support	36

APPENDIX

A	AUTOMATED UNIT REFERENCE SHEET (AURS)	A-1
B	AUTOMATED UPDATE TRANSACTION SYSTEM (AUTS)	B-1
C	BASIC STRUCTURE AND COMPOSITION SYSTEM (BASIC SACS)	C-1
D	BASIS OF ISSUE PLAN (BOIP)	D-1
E	EQUIPMENT STRUCTURE AND COMPOSITION SYSTEM (LOGSACS)	E-1
F	FORCE ACCOUNTING SYSTEM (FAS)	F-1
G	PERSONNEL STRUCTURE AND COMPOSITION SYSTEM (PERSACS)	G-1
H	SHORTHAND NOTE (SHN) SYSTEM	H-1
I	SACS INFORMATION GATHERING AND MANAGEMENT ANALYSIS (SIGMA) SYSTEM	I-1
J	THE ARMY AUTHORIZATION DOCUMENTS SYSTEM (TAADS)	J-1
K	THE TABLES OF ORGANIZATION AND EQUIPMENT (TOE) SYSTEM	K-1

SECTION 1
INTRODUCTION

1.1 BACKGROUND

This report covers Task B, "Identify the ADP Systems and the Functional Procedures Required to Produce and Validate Logistical SACS (LOGSACS) and Personnel SACS (PERSACS) Outputs," of an ODCSOPS project entitled "Analysis to Determine Functional and System Requirements for an On-Line Structure and Composition System (SACS)," Contract Number MDA903-78-C-0445, 26 September 1978.

1.1.1 The Task

Task B required that the manual procedures and automated systems currently used to produce the LOGSACS and PERSACS products periodically provided to the Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA); the Deputy Chief of Staff for Logistics (DCSLOG); and the Deputy Chief of Staff for Personnel (DCSPER) be identified and documented.

1.1.2 The Objective

The objective of this task was to identify and document SACS data sources in order to establish the baseline for subsequent definition of feasible and cost-effective changes to improve the SACS process.

1.2 RESEARCH METHODOLOGY

Research methodology utilized during this task consisted of:

- Gathering and examining existing documentation on manual procedures and automated systems.
- Interviewing functional and systems personnel.
- Observing actual SACS operations during various stages of preparation of PERSACS and LOGSACS products.
- Reviewing and analyzing listings produced at various stages of SACS processing.

1.3 DOCUMENTATION METHODOLOGY

The principal documentation methodology used in performing this task consisted of developing narrative system descriptions, supplemented by flowcharts to reflect data flow between systems, subsystems, and various processes important to SACS. System descriptions, attached as appendixes, are in alphabetical order.

SECTION 2
SYSTEMS OVERVIEW

2.1 SACS AND ITS PERIPHERAL SYSTEMS

SACS is a network of interrelated computer programs which constitute the Basic SACS, LOGSACS, and PERSACS as described in Appendixes C, E, and G, respectively. SACS provides vital planning and management information to the Army Staff (ARSTAF) and field activities on personnel and equipment requirements and authorizations. This information is developed by drawing upon and synthesizing the information contained in the data files of the systems identified below and described in the appendixes. The principal SACS end products are the LOGSACS and PERSACS magnetic tapes which contain, respectively, information concerning equipment and manpower for the particular force selected for input to the SACS computation. These products are complete statements of requirements at the unit identification code (UIC) level of detail. An average SACS computation requires the running of approximately 80 functional computer programs, 235 utilities (routines or programs that serve common purpose), 45 sort programs, and from 125 to 380 reels of magnetic tape.

2.1.1 Systems Important to SACS

The SACS peripheral systems that provide data to SACS are:

- The Force Accounting System (FAS) which provides aggregated unit data to SACS on military personnel requirements and authorizations. Personnel requirements and authorizations from FAS by military personnel identity (officer, warrant officer, and enlisted) by command and unit are the basic control totals that SACS utilizes to ensure that PERSACS products do not overstate approved Army personnel end-strengths. FAS does not provide unit equipment information. FAS will be replaced in the near future by the Force Structure Subsystem of the Force Development Integrated Management System (FORDIMS). FAS is described in Appendix F.

SECTION 3
SACS PROCEDURES

3.1 OVERVIEW OF SACS PROCEDURES

As previously indicated, SACS is composed of three parts: Basic SACS, PERSACS, and LOGSACS. SACS utilizes the M Force from FAS, MTOE and TDA documented units from TAADS and, where necessary, TOE to establish the SACS detail file. The BOIP and SHN are applied to SACS detail data for LOGSACS purposes only.

3.2 PREPARING THE FORCE

Preparing the M Force is a continuing responsibility of ARSTAF Force Managers which entails extensive coordination with the ARSTAF and the MACOMs involved. Since the M Force is the basis for the SACS force, it is extremely important that it be as accurate as possible at the time it is frozen as the Q Force for a SACS computation.

All actions that affect the M Force are input to the FAS by the FAS Branch in DAMO-FDA. These actions include:

- Program assumptions
- Approved Command Plans
- Approved TAADS documents
- Approved SIGMA transactions
- Approved unit activations, deactivations, and changes thereto
- Other actions approved by Force Managers

In addition to maintaining the M Force, when requested, the FAS Branch is responsible to the SACS Branch to establish the P and L Forces for the PERSACS and LOGSACS, respectively. This latter responsibility is accomplished through SIGMA (described in Appendix I), an interactive mini-Basic SACS process, which is run separately for each of the two aforementioned forces. Through SIGMA, which loads the selected force and matches it to both TAADS and TOE, in that order, discrepancies between corresponding unit records in FAS, TAADS, and TOE files are identified and the FAS Branch terminal operator can initiate immediate

action to correct the discrepant conditions. FAS Branch terminal operator must research data and consult with Force Managers to determine the proper corrective action. Once the required corrective action is input, it processes against either the P or L Force, whichever is applicable. In order for these SIGMA-generated corrective transactions to process against the M Force, the Force Manager must review and approve them and then have the FAS Branch process them against the M Force.

M Force maintenance, which revolves around Force Managers, requires their attention be given to many details to assure accuracy. Force Managers have many actions in process simultaneously and sometimes their in-process actions are overtaken by events. As a result, some error conditions which otherwise would be resolved are not corrected and are carried forward into the SACS force. In some instances, error conditions that are not corrected can detrimentally impact the SACS data base, especially PERSACS, by dropping units (such as unmatched TDA units) that should not be dropped.

3.2.1 The SACS Force

Figure 3.1 is an overview of the Force Development/Maintenance Flow. This schematic depicts the macro flow of the data maintained in FAS. FAS provides the most important data to SACS, since these data provide control totals and the troop list. The FAS contains the M Force and other forces. Forces other than the M Force are established for specific purposes. This report addresses only those forces identified in Figure 3.1, which are:

Force	Title
M	Master Force
T	Developmental Force
Q	Copy of M Force
P	Copy of Q Force for Personnel
L	Copy of Q Force for Logistics

The T Force is developed by the USACAA from a copy of the M Force using various criteria established by DCSOPS in conjunction with the Chief of Staff, Army Staff, and Major Commanders. The T Force is forward looking

- The Authorization Subsystem (AS) of FORDIMS, formerly the detail portion of The Army Authorization Document System (TAADS) at HQDA provides unit detail data for personnel by grade, military occupation specialty (MOS), and branch and for equipment by line item number (LIN). AS data provided to SACS reflect the documentation of DA guidance by field commands through the Vertical TAADS (or VTAADS). AS data are the field commanders' basis for requisitioning of personnel and equipment. AS data are processed through the Summary TAADS prior to SACS processing. Therefore, for brevity throughout the remainder of this report the term "TAADS" will be used in place of "Summary TAADS." TAADS is described in Appendix J.

- The Table of Organization and Equipment (TOE) system provides unit detail data for both personnel and equipment at the same level as TAADS. TOE data are prepared for model "type" military units that may or may not be documented in TAADS. TOE is described in Appendix K.

- The Basis of Issue Plan (BOIP) system provides data, currently used in LOGSACS computations only, on doctrinal changes and equipment modernization programs, addressing specific pieces of equipment and affiliated personnel requirements. BOIP data modify the equipment authorizations provided by TAADS or TOE by LIN. BOIP is described in Appendix D.

- The Shorthand Note (SHN) system provides HQDA action officers a capability to add, change, or delete equipment and/or quantities by LIN during the SACS process for correction and fine-tuning purposes. SHN is described in Appendix H.

- The Automated Unit Reference Sheet (AURS) provides unit detail data covering personnel and equipment for planned units that have not yet been incorporated into TOE, Modified Table of Organization and Equipment (MTOE), or documented in TAADS. AURS usually incorporates BOIP data, as applicable. AURS is described in Appendix A.

The following peripheral systems are important to SACS but do not provide any new data directly to SACS:

- The SACS Information Gathering and Management Analysis (SIGMA) system provides the capability to select a force comprising specific units by matching data stored in FAS with detail data stored in TAADS [MTOE and Table of Distribution and Allowances (TDA)] and TOE. SIGMA identifies units whose data are unmatched for immediate corrective action and units whose personnel data will be factored in PERSACS. The factoring process is explained in the description of PERSACS in Appendix G. SIGMA is explained in Appendix I.
- The Automated Update Transaction System (AUTS) provides a capability to update the FAS data base with data pertaining to Major Commands (MACOM) and HQDA-approved TAADS documents. The AUTS transactions must be approved by Force Managers before input to FAS for updating the M-Force files. AUTS is described in Appendix B.

2.1.2 SACS Data Analysis Systems

Analytic tools are available to enable SACS personnel and equipment analysts to identify variations in authorizations and determine the percentage-of-change when current SACS data are compared to earlier versions of similar SACS data. Separate analytic systems have been developed for SACS personnel and logistical products. They are:

- The Personnel Authorization Analysis System (PAAS). PAAS can compare the current PERSACS product to the previous two PERSACS products and develop manpower authorization variation and percentage-of-change information.
- The Basis of Issue Monitoring and Recording System (BOIMARS). BOIMARS can compare the current LOGSACS product to a previous LOGSACS product. The comparison, to be meaningful, must utilize similar outputs. For example, the 1981-1985 LOGSACS product to support the Program Objective Memorandum

(POM) should be compared to the 1980-1984 POM LOGSACS product, etc. BOIMARS identifies the input sources and the differing items and quantities contributed by each source.

2.2 OTHER SYSTEMS

There are a number of other systems on the SACS periphery that are utilized for various force, manpower, or equipment management purposes but which do not directly contribute data to SACS. Some of these encompass multiple systems/subsystems, or models, or a file or files. These systems are components of the overall Force Development Management Information System (FDMIS). They are:

- The Total Army Analysis (TAA). This is an annual process performed for DCSOPS by the US Army Concepts Analysis Agency (USACAA). It involves taking a copy of the Master (M) Force and using it as a basis for the development of an objective force. While USACAA is modelling this force, it is identified as the "T" force. USACAA analysts apply DA-approved threats, concepts, constraints, doctrine, and techniques in performing the TAA.

- The Unit Identification System (UIS) maintains the registry of Army units world-wide at the separate unit and subunit level of detail. All major commands and other activities, agencies, and units must register each unit with the UIS prior to any other action that requires use of the six-position UIC.

- FORDIMS is currently under development. When completed, FORDIMS will integrate the files of the Army Force Program (AFP), Civilian Budget System (CBS), FAS, and TAADS systems using the TOTAL data base management system. AS of FORDIMS has been implemented to replace the detail portion of HQDA TAADS. The Vertical Force Development Management Information System (VFDMIS) is also under development and, eventually, will replace FORDIMS.

- REPORTER is a SACS utility program for retrieving data from LOGSACS or PERSACS.

- Basis of Change (BOC) and Standard Study Number Cross-Reference (SSN X-REF) are files. The BOC file contains current and historical LIN data on equipment additions, deletions, and changes. The SSN X-REF file contains cross-reference data used to group equipment in families in order to compute requirements for component major items.

- The Installation Manpower Requirements (IMR) model estimates manpower requirements by Army Management Structure Code (AMSCO) for approximately 45 functions for CONUS Class I installations.

- The Manpower Staffing Factors (MSF) Model provides a method for estimating manpower requirements on the basis of workload and military strength supported.

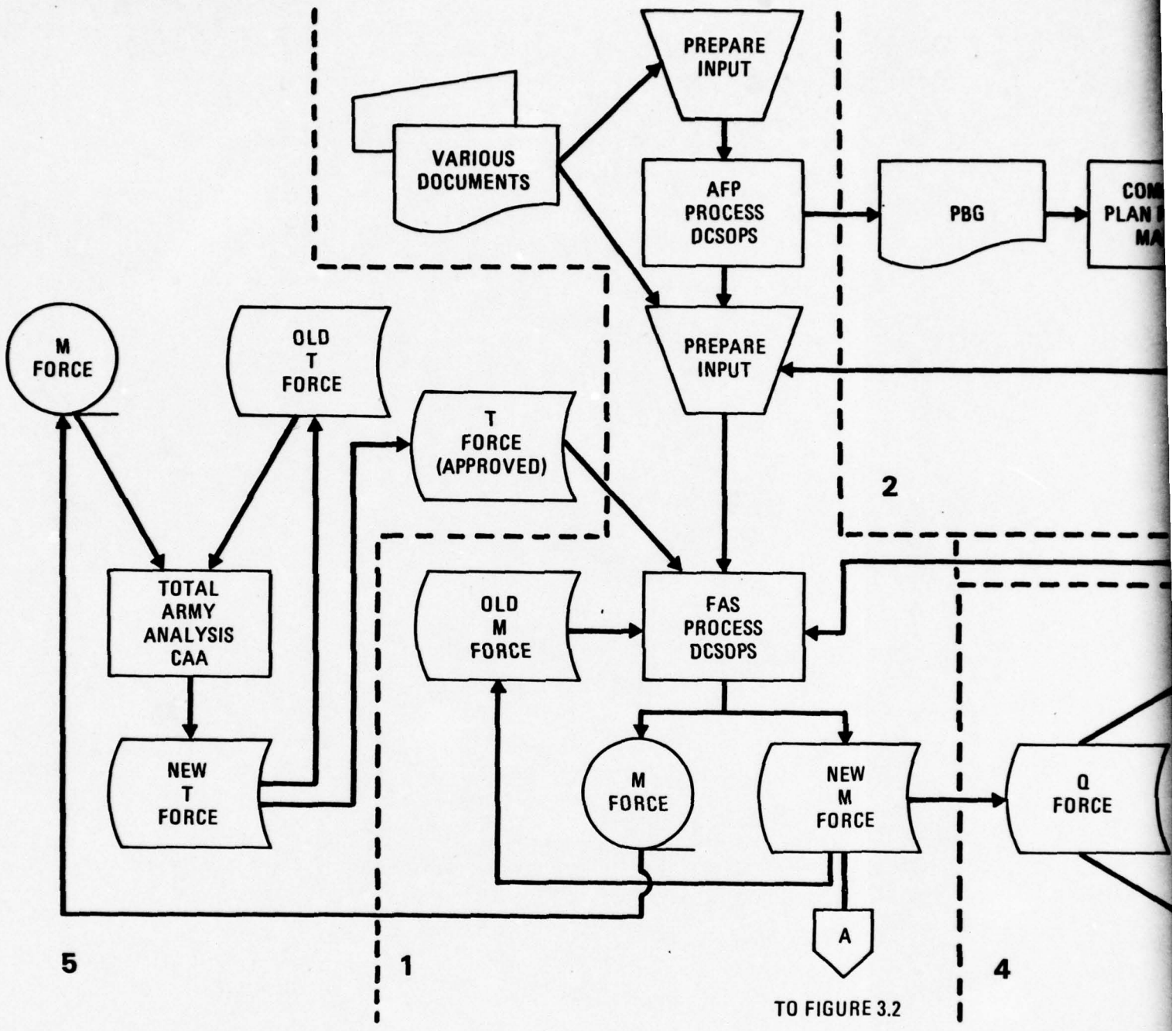
- The Organization and Equipment List (OEL) is a microfilm/magnetic tape of basic equipment data that are contained in TOE, BOIP, and the AS.

- Rapid Authorization Data Retrieval (RADAR) provides an on-line capability to retrieve data on personnel and equipment required and authorized for MTOE and TDA units which are documented in TAADS.

- The Force Accounting Terminal System (FACTS) provides a flexible retrieval capability for users of the FAS. This retrieval system can key on any data item or discrete character using Boolean search strategy for information retrieval.

- The Army-Wide Requirements for Manpower Support (ARMS) Model will compute the total manpower required to support a given command or total Army military end strengths. ARMS will compute support manpower, both military and civilian, utilizing the latest CSGPO-78 manpower utilization data.

- The Modular Force Planning System (MFPS) (formerly known as the Battalion Slice Planning Model) is a model utilized by force programers and planners to determine the total composition of a particular force when the major combat units are changed.



1. DAILY OR AS OFTEN AS REQUIRED.
2. AT LEAST THREE TIMES ANNUALLY OR MORE OFTEN AS REQUIRED.
3. SEMI-ANNUAL OR AS EXCEPTIONS ARE APPROVED (MOC).
4. EACH SACS RUN – QUARTERLY OR MORE OFTEN.
5. ANNUALLY.

Figure 3.1. Overview of the Force Development/Mainten

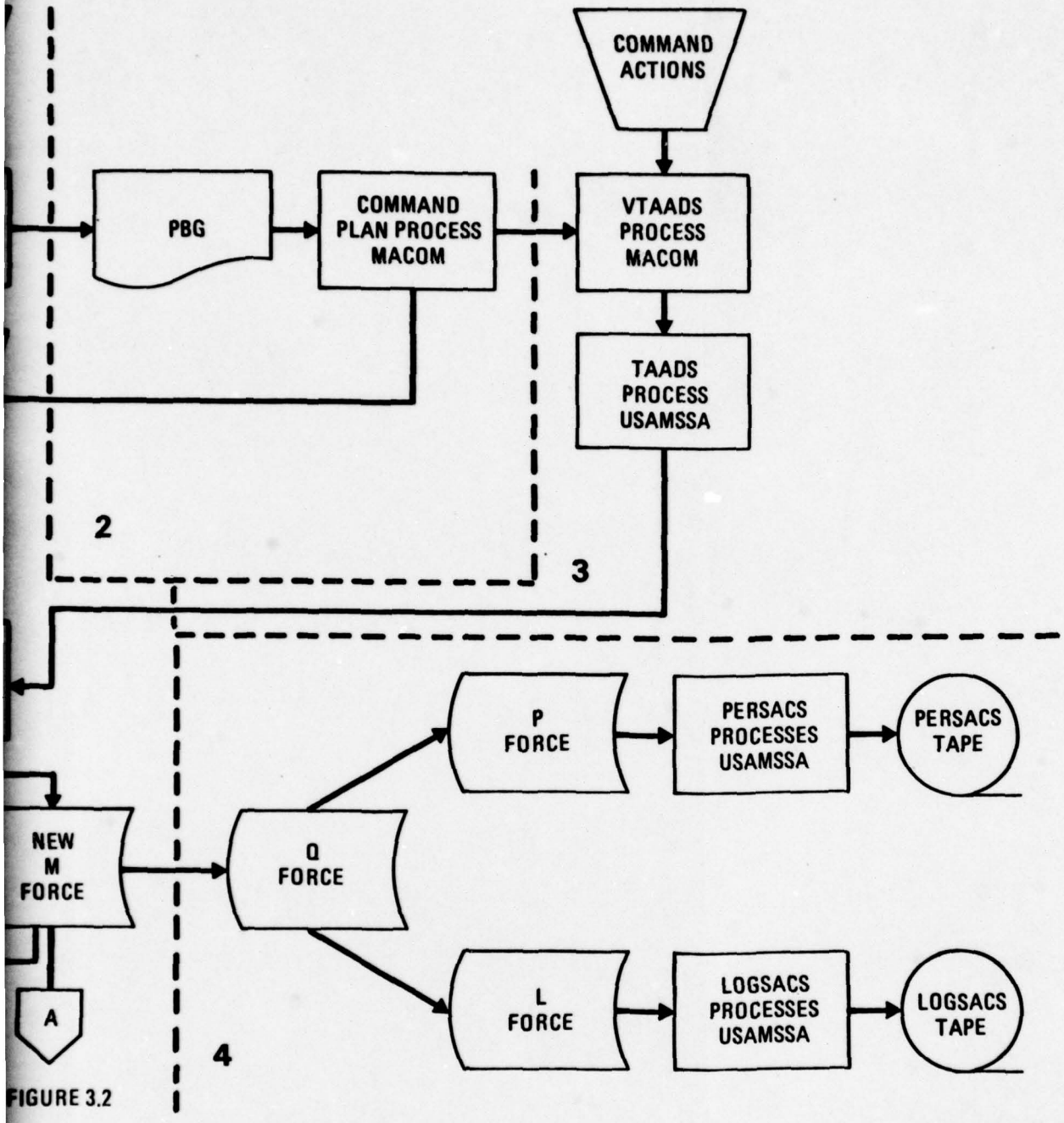


FIGURE 3.2

e Force Development/Maintenance Flow

2

and each year one additional year is added. The USACAA derives the T Force through multiple iterations of various model with appropriate criteria applied; thus the T Force is a new force that meets said criteria and, after further modification by the ARSTAF if required, it is accepted by the Army. The program year of the T Force is then reconciled to the proper year of the M Force. When this reconciliation is satisfactorily completed, the T Force becomes the new M Force. This newly established M Force extends through the POM years. The M Force is maintained on a continuing daily basis and the current M Force is copied as required for various purposes. This report concerns itself with the copy identified as the Q Force. Each time a SACS is run, the M Force is frozen by taking a copy and naming it the Q Force. The Q Force is further copied for personnel and logistic computations and identified as the P and L Forces, respectively. The P and L Forces become the basic force inputs to the PERSACS and LOGSACS processes, respectively.

3.2.2 The AUTS Review

Periodically, AUTS is used to provide update transaction lists to Force Managers. These are important transactions that are originated based on the identification of FAS (M Force) units that have no matching TAADS documentation. It is important to SACS processes to have the FAS (M Force) units annotated with the TAADS documented unit data so that the latest TAADS requirements and authorizations for personnel and equipment are used in the SACS process. For those FAS (M Force) units not documented, SACS force selection criteria cause the FAS (M Force) data to be matched to TOE data, which may be outdated when compared with documented MTOE data. When the Managers review the AUTS-created transactions, they may decide not to process them because of a variance in the manpower totals (by military identity) between the FAS and TAADS units or for other reasons. If AUTS transactions are not accepted to update the M Force, SACS will match an undocumented unit to TOE, which may present acceptable MILID numbers but outdated MOS and LIN data. For example, such a situation involving aviation units in Europe occurred within the past year.

3.2.3 The FAS Branch

The Chief of the FAS Branch in DAMO-FDA is the ODCSOPS System Manager of the FAS. The FAS Branch is the focal point through which all ARSTAF actions impacting all forces must funnel. This funnel gets "stopped up" from time to time by the great volume of actions that must be processed. Many M Force maintenance transactions are so vital that the initiation of some processes like SIGMA and, hence SACS, must be dealyed until they are processed. Delays that impact upon the SACS production schedule place a burden upon the SACS analysts to attempt to make up lost time. This leads to additional pressure and long hours for the SACS analysts to complete their reviews so that the PERSACS and LOGSACS products can be produced on schedule.

3.2.4 The Force Managers

The Force Managers in DAMO-FD are the focal point for actions affecting the Command(s) for which they are responsible. For example, they are responsible for reviewing and approving Command Plans (or troop lists) and for accepting or rejecting TAADS data to be entered into the M Force. The Force Managers are provided computer printouts of SACS-initiated corrective transactions. For the most part, these lists present data in a raw form. Force Managers must analyze the raw data by comparing multiple lists to determine if the printouts accurately reflect the personnel requirements and authorizations by UIC. In other instances, voluminous listings are provided which Force Managers must review page-by-page to determine whether the data reflected therein by UIC portray the correct manpower requirements and authorizations. Despite the automated systems that prepare listings for Force Managers, each Force Manager must manually review and analyze each listing to determine whether corrective actions are necessary to maintain his/her portion of the M Force.

3.3 INITIATING SACS

Each SACS computation, whether for personnel or logistics purposes, is initiated by the ODCSOPS SACS Branch in DAMO-FDA by submitting a data

processing request (DPR) to USAMSSA. This DPR is the basis for starting a SACS cycle, which may be initiated to generate both PERSACS and LOGSACS products, or just one of the two products. An AUTS run may be required prior to taking a copy of the M Force for SACS. Figure 3.2 shows these steps in schematic form. Running of the AUTS is an important initial step to generate FAS change transactions by comparing FAS/TAADS/TOE. These transactions are candidate FAS update transactions. They provide data by UIC to FAS for updating of the M Force to reflect a unit's authorizations are properly documented in TAADS. These data are intended to close the loop between the Program Budget Guidance (PBG) provided to MACOM by HQDA (see Figure 3.1) and approval of the MACOM's documentation of that guidance (through TAADS) by HQDA.

Current practices are to process SACS five times for PERSACS and four times for LOGSACS each year. Each SACS run is initiated by the SACS Branch in DAMO-FDA via a DPR forwarded to USAMSSA which provides the force selection criteria. Selection criteria are: the as of date, force identification code (FICOD); component code (COMPO); type unit code (TYPCO); force code (FORCO); display/compute indicator (DCSMP); effective date (EDATE); and termination date (TDATE). The DPR is the notification for USAMSSA to copy the files reflected in Figure 3.2. This action is the freezing of the input files for a SACS computation. Copies of the various source files make up the SACS data base for both the PERSACS and LOGSACS processes. Upon notification that the SACS files are available, the SACS Branch coordinates with the FAS Branch for the run of SIGMA. SIGMA is described in Appendix I.

3.4 BASIC SACS

SIGMA and Basic SACS are run separately for both PERSACS and LOGSACS computations. Each SIGMA run starts by loading a force which is designated either P or L depending on whether it is to be used for PERSACS or LOGSACS purposes. Both these forces have their origins in the M Force via the Q Force. The force developed through the use of SIGMA, whether P or L, is the force that is used in the computations to develop the PERSACS or LOGSACS, respectively.

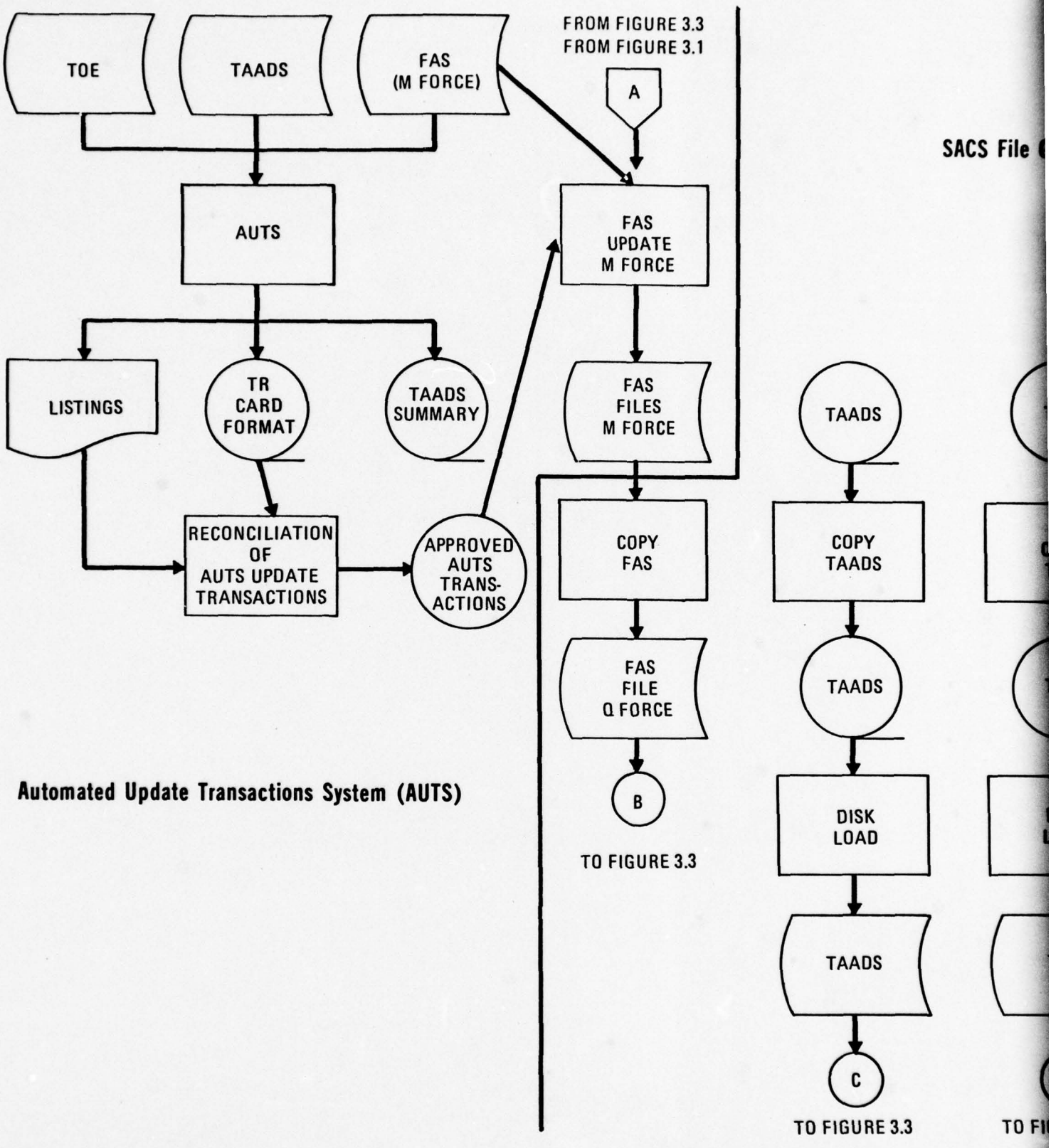


Figure 3.2. SACS Processing Preparatory Steps

URE 3.3
URE 3.1

S
ATE
RCE

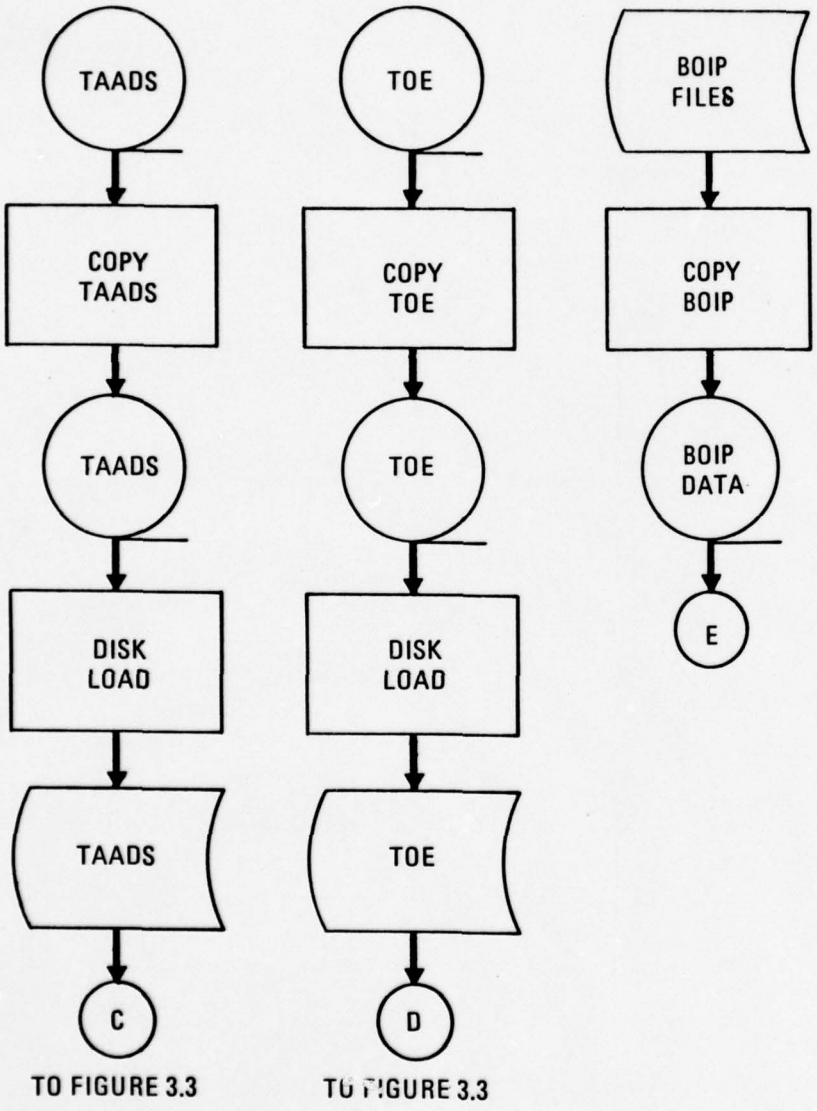
S
ES
RCE

PY
S

S
LE
RCE

RE 3.3

SACS File Gathering Process



TO FIGURE 3.3

TO FIGURE 3.3

sing Preparatory Steps

2

SIGMA loads the P or L Force, overlays it with TAADS data, and matches it with TOE, if required, using control data of UIC, command control number (CCNUM), and EDATE. SIGMA "preprocesses" the force using documented unit data from the TAADS and the TOE file, as required. SIGMA's objective is to obtain the best possible match between FAS units and TAADS or TOE units. The SIGMA process utilizes the Q Force (which is now designated either the P or L Force)[1] as the base file. The SIGMA process continues by matching the TAADS records to the base file. In case of no TAADS match, the base file records are matched to TOE. The matching process is on UIC, EDATE, and CCNUM. During this process, the FAS Branch terminal operator reads the cathode ray tube (CRT) data displays of unmatched conditions and either:

- Initiates corrective transactions (in instances where possible and desirable) so that a match can take place, or
- Researches the mismatch condition to determine whether the standard requirements code (SRC) of the selected unit matches on UIC and EDATE. The SRC is used to force the CCNUM.

The utilization of SIGMA is an iterative corrective process, since at each SIGMA termination USAMSSA provides the following listings to the FAS Branch:

- FAS units with a blank CCNUM.
- FAS units with a blank modified table of organization and equipment code (MTOEC).

These listings are the basis for continuing the iterative SIGMA correction processing. This process may require from one to two weeks to correct the appropriate force file so that it is acceptable to continue through the SACS processes. Once the force is accepted, if SIGMA is on the P Force, the final SIGMA process is to invoke a routine that is

---

[1]The Q Force is loaded to disk from magnetic tape, at which time it is designated either P or L for PERSACS or LOGSACS purposes, whichever is appropriate. Corrective transactions are processed against either the P or L Force. The Q Force is maintained unchanged to reflect the "as of" M Force in the event SACS reruns are required.

identified as "target totals." (Target totals is not used with the L Force.) This routine generates a printout of MACOM totals by MILID. The totals on this printout are then manually compared to a similar printout obtained from AFP. If the P-Force totals by MACOM are equal to or less than the AFP totals by MACOM, then the P Force is accepted to continue through the automated Basic SACS and PERSACS or LOGSACS processes, whichever is applicable, to produce tape and printed output products, as appropriate. Listings of the SIGMA CRT displays, error messages, and corrective actions are provided to DAMO-FD Force Managers for review and to determine whether the P or L Force corrections should be made to the M Force. If so, the Force Managers must code the input transactions to update the FAS.

Basic SACS processing utilizes either the P or L Force file and matches it to TAADS. The TAADS match is followed by the "SRC assembly" which selects the detailed requirements and authorizations for those MTOE units that are composed of multiple SRC. The SACS detailed records from SRC assembly are then matched to TOE records. The files from the TAADS match and TOE match processes are merged into the TAADS/TOE SACS detail file. At this point, the Basic SACS process is complete. The identification of this point is the "first stop." Reports are produced for SACS Branch personnel so that they may assess the quality of SACS data up to this point. These reports are the:

- TAADS Match Reports
- TOE Match Reports

3.5 PERSACS

The PERSACS programs used to process the TAADS/TOE SACS detail file through logic that adjusts the unit detail are listed below.

- The Remarks Adjustment utilizes the TAADS remarks code to adjust personnel strengths obtained from TOE. The adjustment ensures that remarks apply to TOE detail in the same proportion as they applied in the TAADS.

- Interface deletes from the TAADS/TOE SACS detail file those selected force units that remain unmatched to TAADS and TOE. Units in this category are usually TDA type units.

- Factoring balances TAADS documented or TOE "type" detail strengths to the FAS aggregate strengths on a unit-by-unit basis. This is explained in detail in Appendix G. Factoring ensures that the PERSACS statement of personnel authorizations by grade, branch, and MOS (extracted from TAADS or TOE) does not exceed aggregate authorizations by MILID as reflected in the M Force. The factoring process works from the lowest to highest grades and, concurrently, from the highest to lowest strengths. For example: grade E3 with a strength of 42 would be factored before grade E3 with a strength of 18, and all grade E3 entries would be factored before grade E4 would be factored. Factoring does not function on strengths of one (such as General Officer, Sergeant Major, and single MOS positions).

Figure 3.3 is a schematic overview of the data flow and "SACS Processing to Generate PERSACS."

3.6 LOGSACS

The LOGSACS processes originate with SIGMA and Basic SACS processing the selected force file identified as the L Force. L Force processing is principally concerned with items of equipment identified by LIN. Since the FAS does not maintain LIN data, the detailed LIN information required must be obtained from TAADS, TOE, AURS, BOIP, or SHN. LIN information must, of course, be related to UIC, CCNUM, and command code data.

Figure 3.4 is a schematic overview of the LOGSACS processes. The first LOGSACS process that differs from the PERSACS processes is called "negative suppression." This process is essential to bring all negative LIN quantities to zero. Negative LIN quantities can be generated during

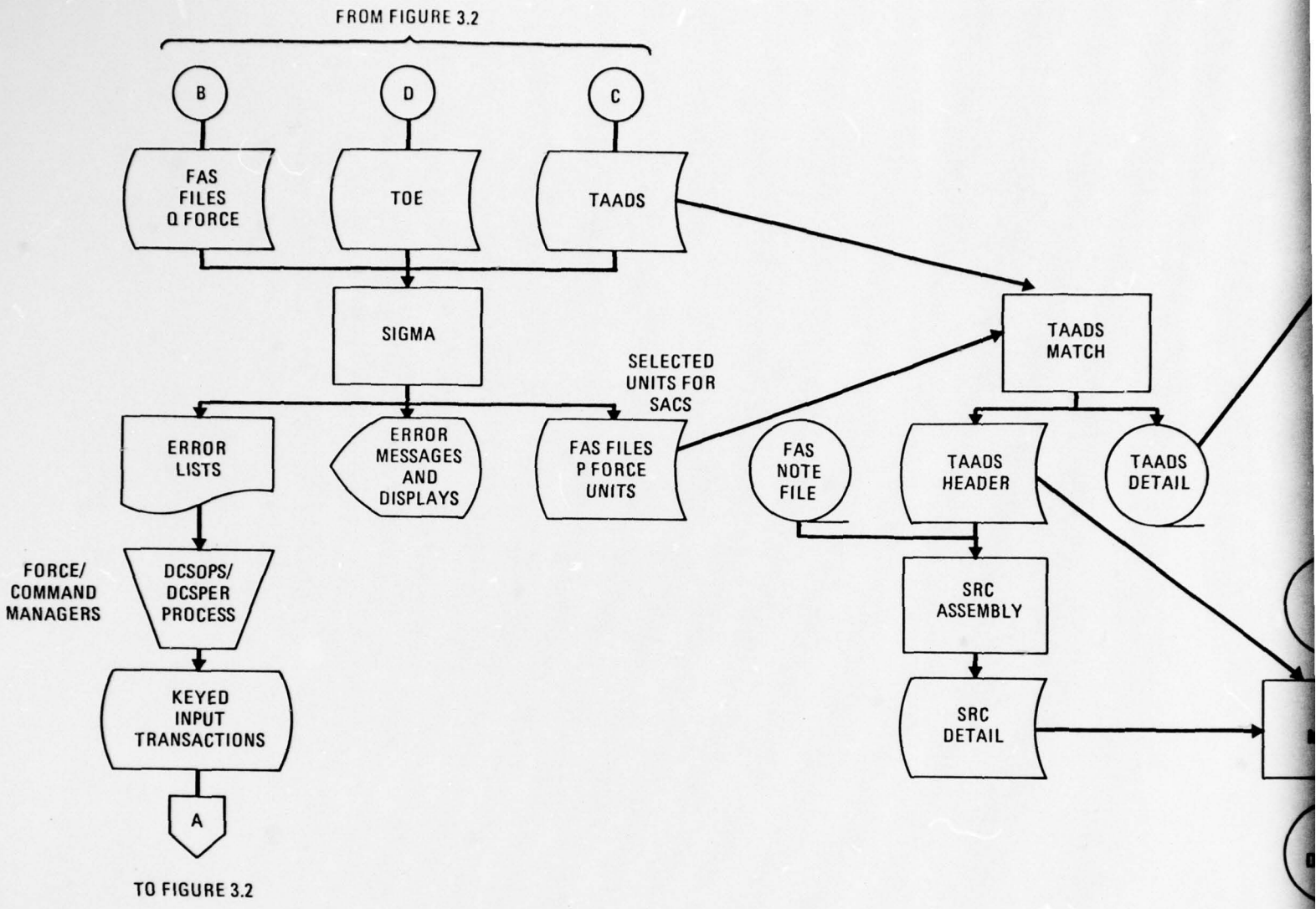
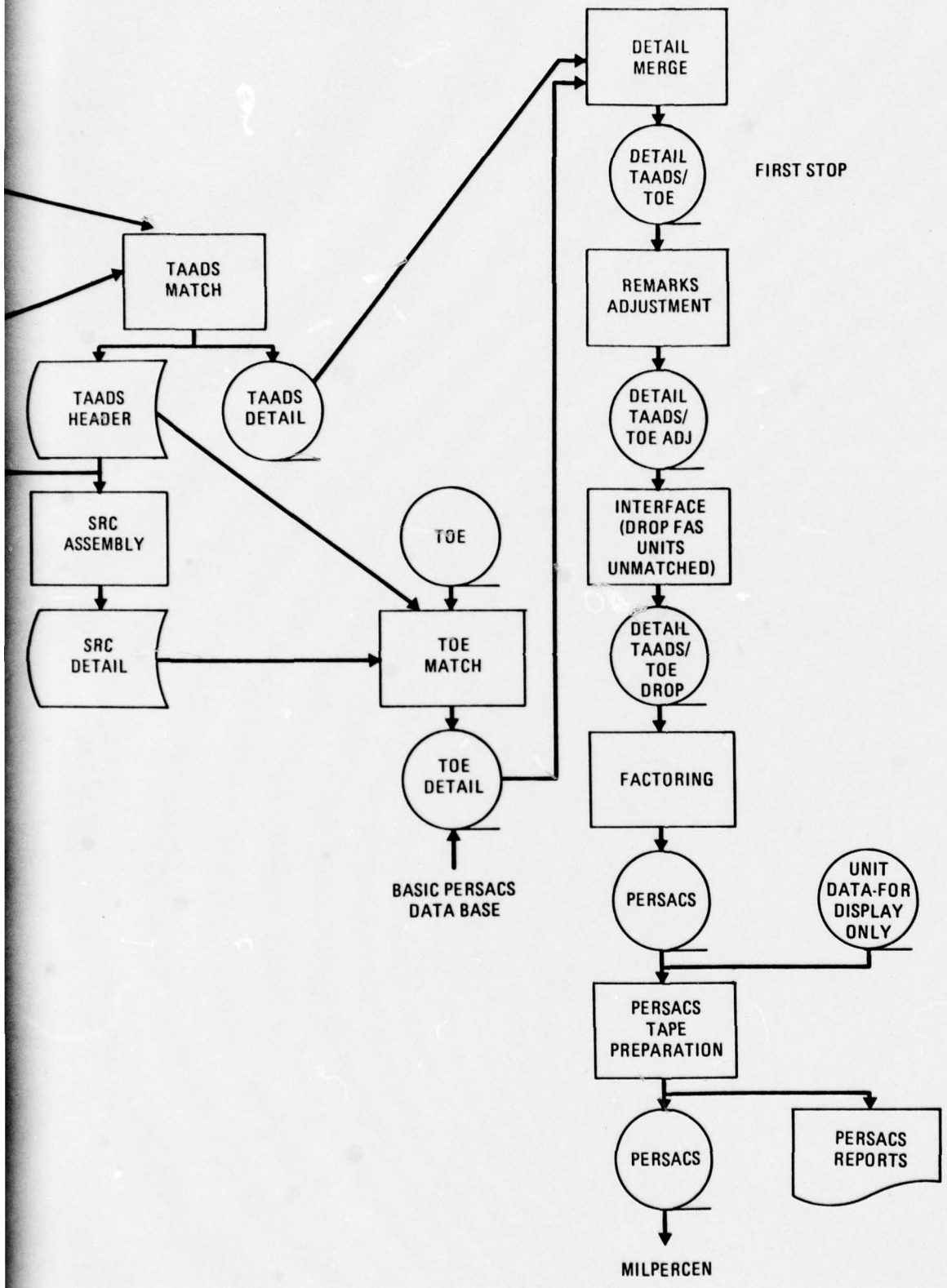
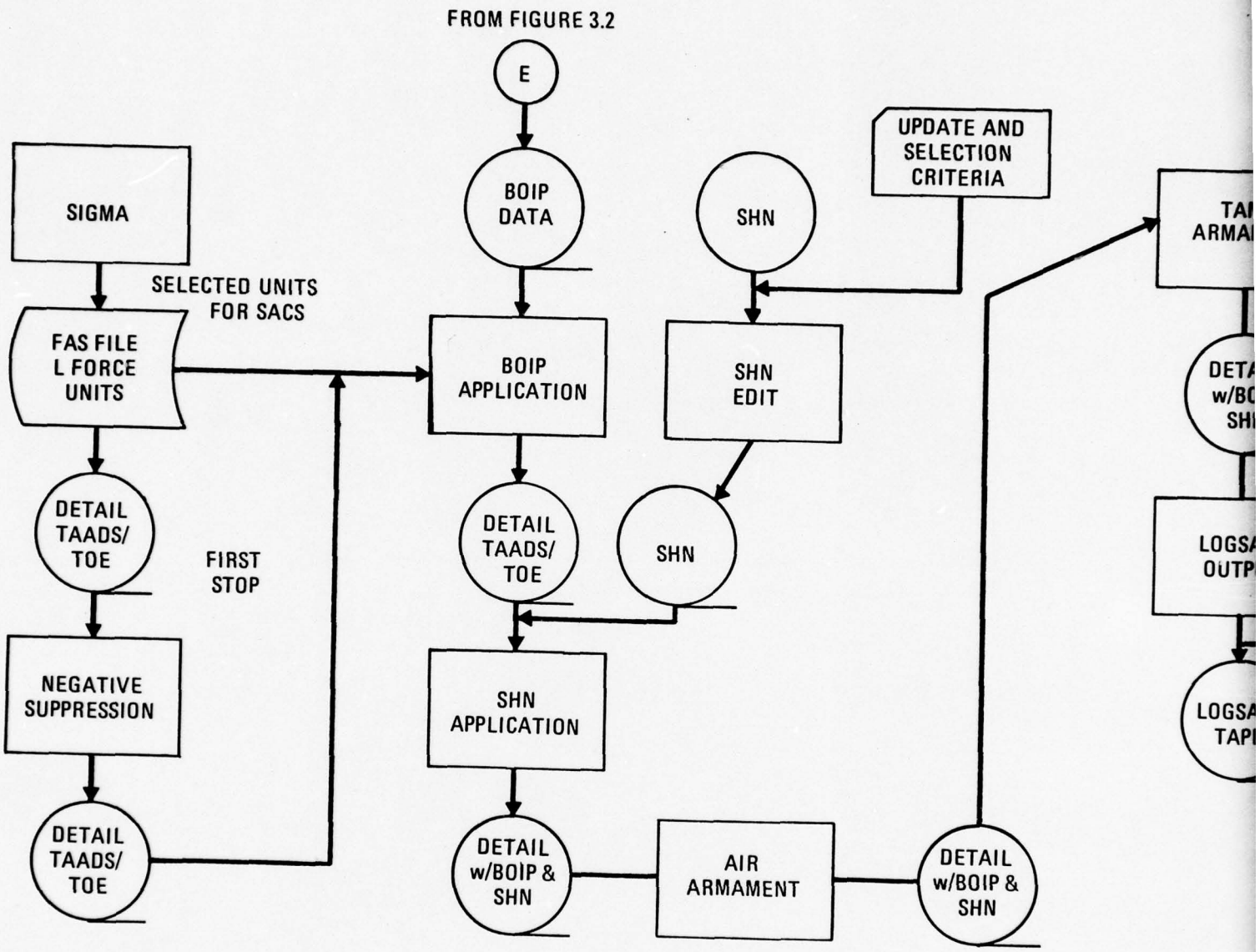


Figure 3.3. SACS Processing to Generate PERSACS

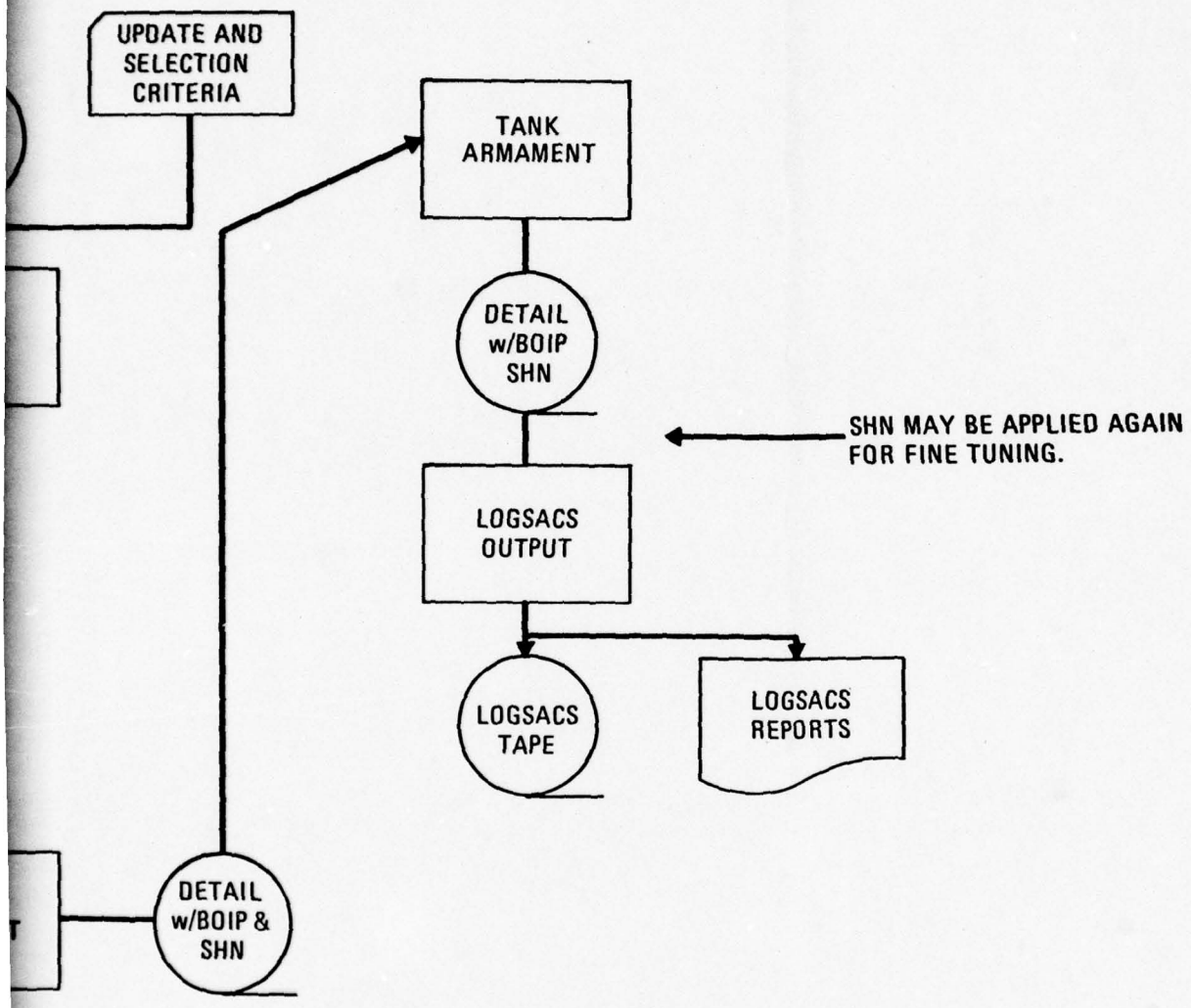


cessing to Generate PERSACS



NOTE: THE LOGSACS PROCESSES UP TO FIRST STOP ARE IDENTICAL TO PERSACS BUT SEPARATE.

Figure 3.4. SACS Processing to Generate LOGSACS



SACS BUT SEPARATE.

ng to Generate LOGSACS

the SRC assembly process by subtracting quantities greater than are available. Negative suppression may be run several times during each LOGSACS.

The BOIP application is the next process and this is the point where significant changes can take place. BOIP data apply to specific LIN in all units or to specific LIN in particular units identified by UIC. The BOIP can cause deletions or additions of LINs and quantities, or changes in quantities associated with a LIN. BOIP data are applied in LOGSACS only. The automated application of BOIP to the SACS detail data is a time consuming, complicated process. For illustrative purposes, Figure 3.5, "BOIP Update and Application to SACS Detail Records," depicts the many files and programs that are required in BOIP applications.

BOIP data are developed by the US Army Training and Doctrine Command (TRADOC) and provided to HQDA (DAMO-RQR). BOIP data are maintained by USAMSSA and must be updated before each LOGSACS run. The Force Integration Staff Officers (FISOs), DAMO-RQ, are responsible, in conjunction with SACS Branch Equipment Analysts for the actual BOIP data used in LOGSACS. The proper application of BOIP data is a responsibility of SACS Branch Equipment Analysts. The initial step in updating the BOIP for each LOGSACS run is the manual determination of which BOIP data must be applied and the provision of a list of BOIP serial numbers to USAMSSA for updating the BOIP file prior to its input to LOGSACS. This must be done because the BOIP is a multiple file system and in some instances historical BOIP data are extracted for use in the current LOGSACS. Once this process is complete, the BOIP data are run to change the detail TAADS/TOE file and reports are produced that reflect the results of applying the BOIP data. SACS Branch Equipment Analysts perform a thorough review and analysis of the unit and LIN data as affected by BOIP to determine whether the results are acceptable. If the results are acceptable, the LOGSACS processing continues; however, if the results are <u>not</u> acceptable, the BOIP data are reviewed and analyzed and the SACS Branch Equipment Analysts, in conjunction with the FISOs, determine what

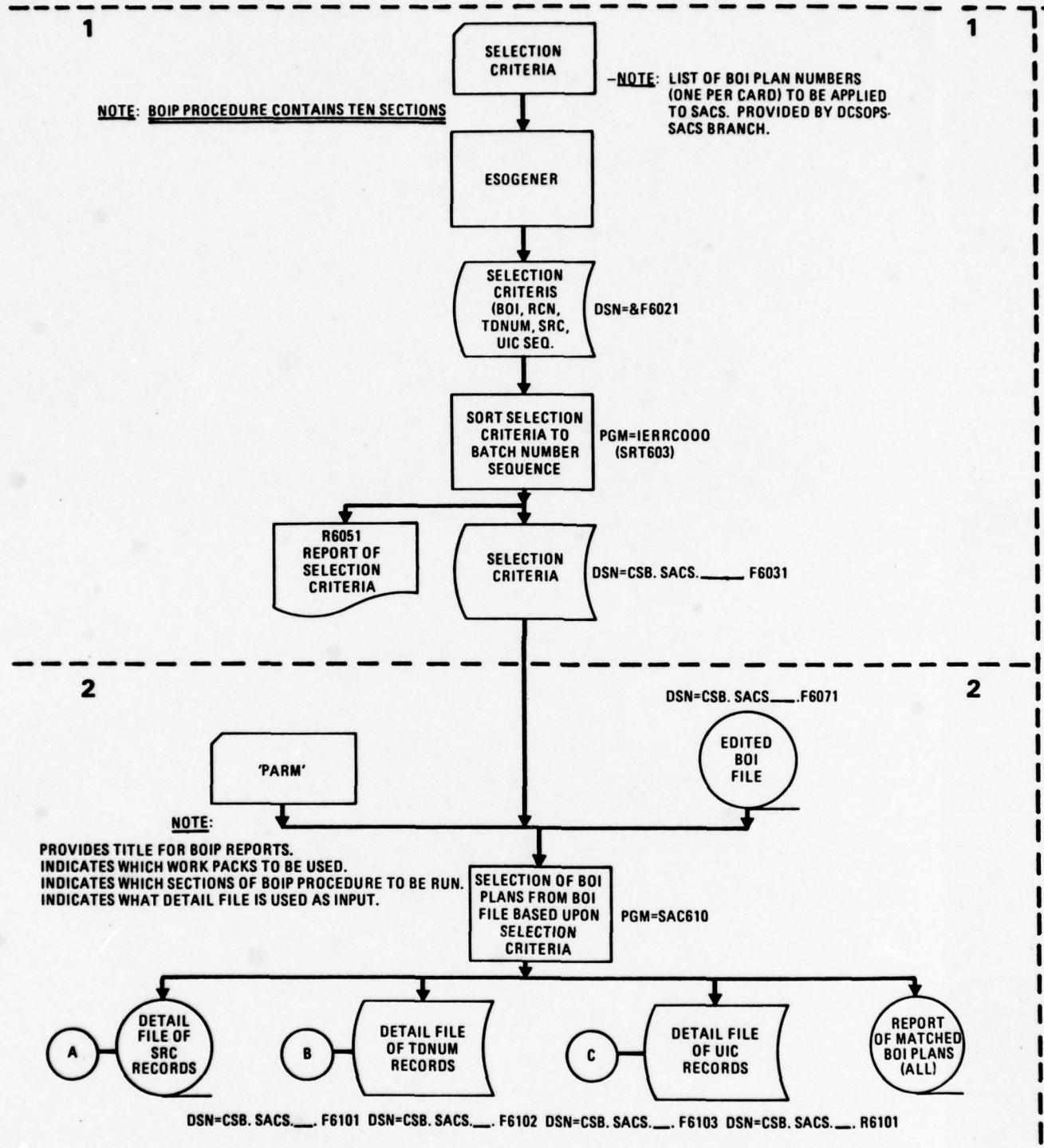
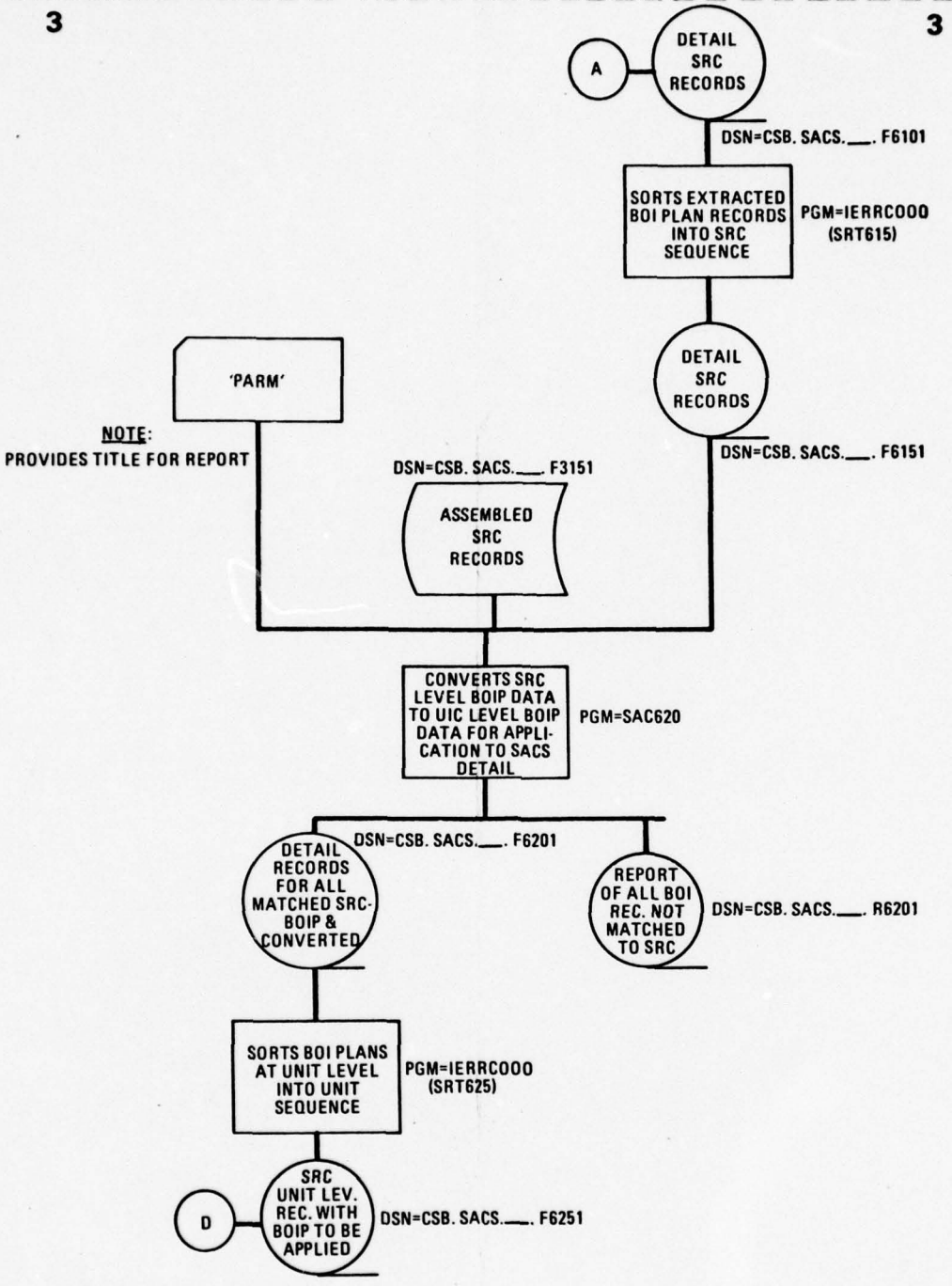


Figure 3.5. BOIP Update and Application to SACS D
(1 of 3)



d Application to SACS Detail Records
(1 of 3)

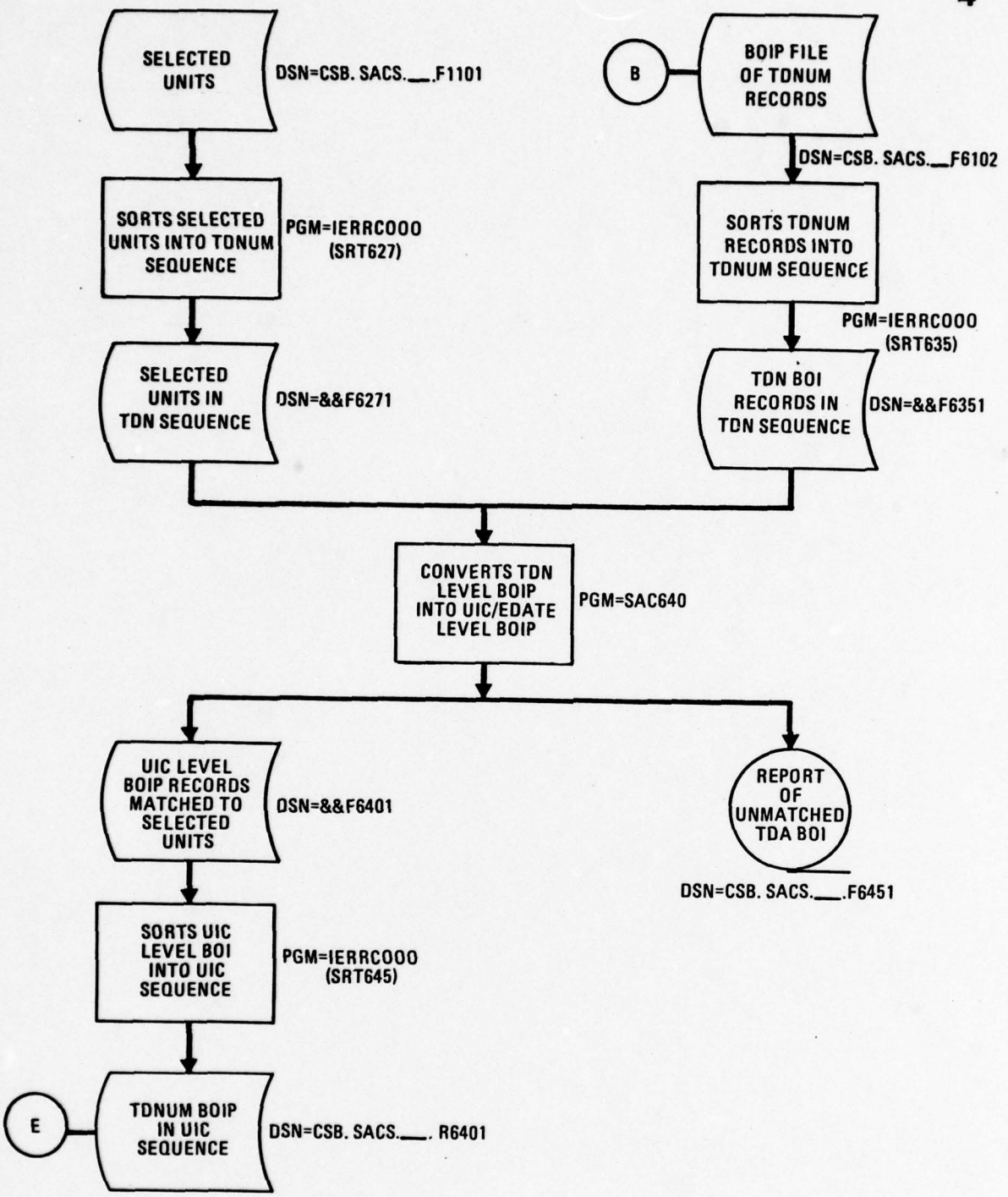
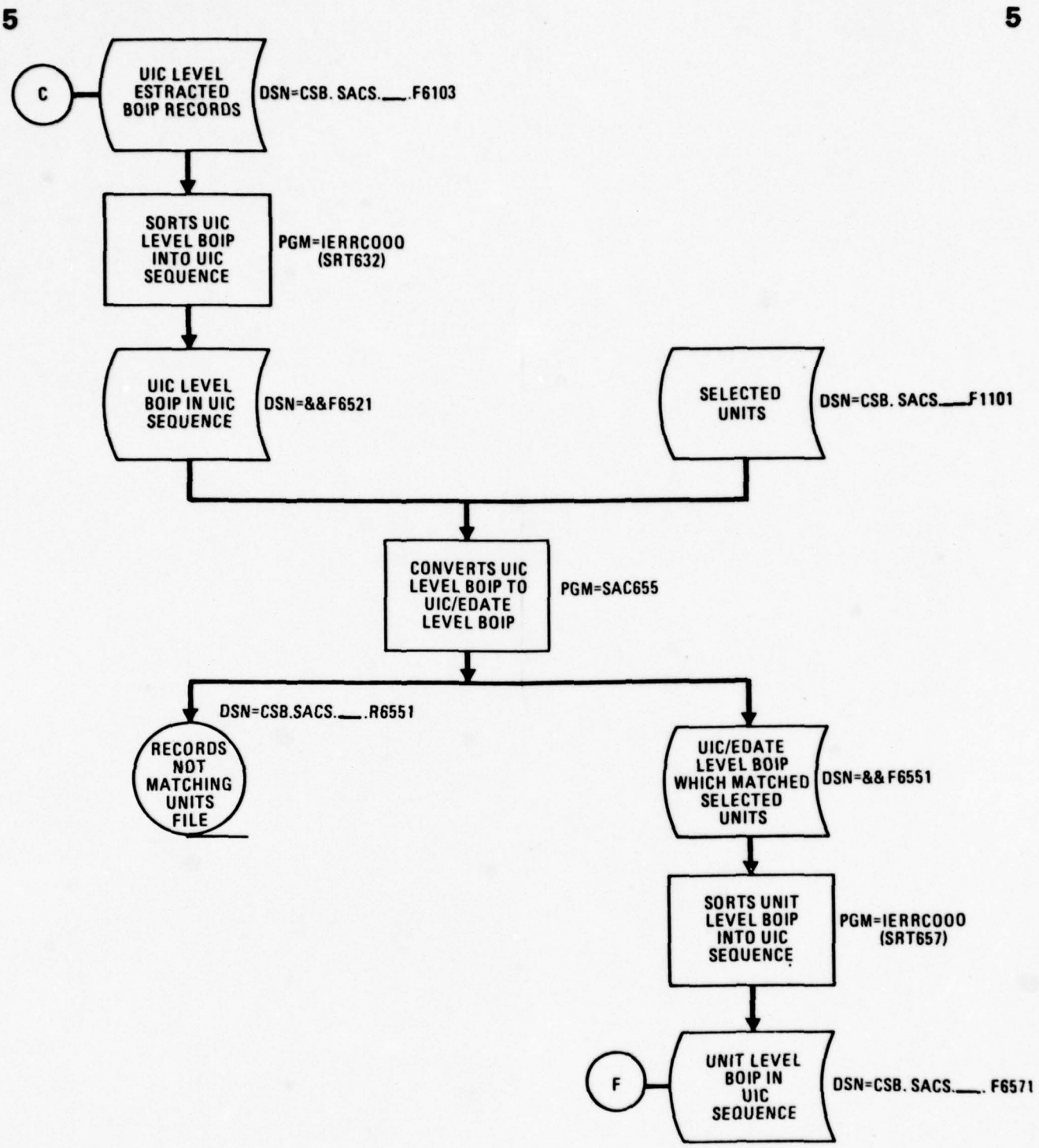


Figure 3.5. BOIP Update and Application to S
(2 of 3)



Application to SACS Detail Records

(2 of 3)

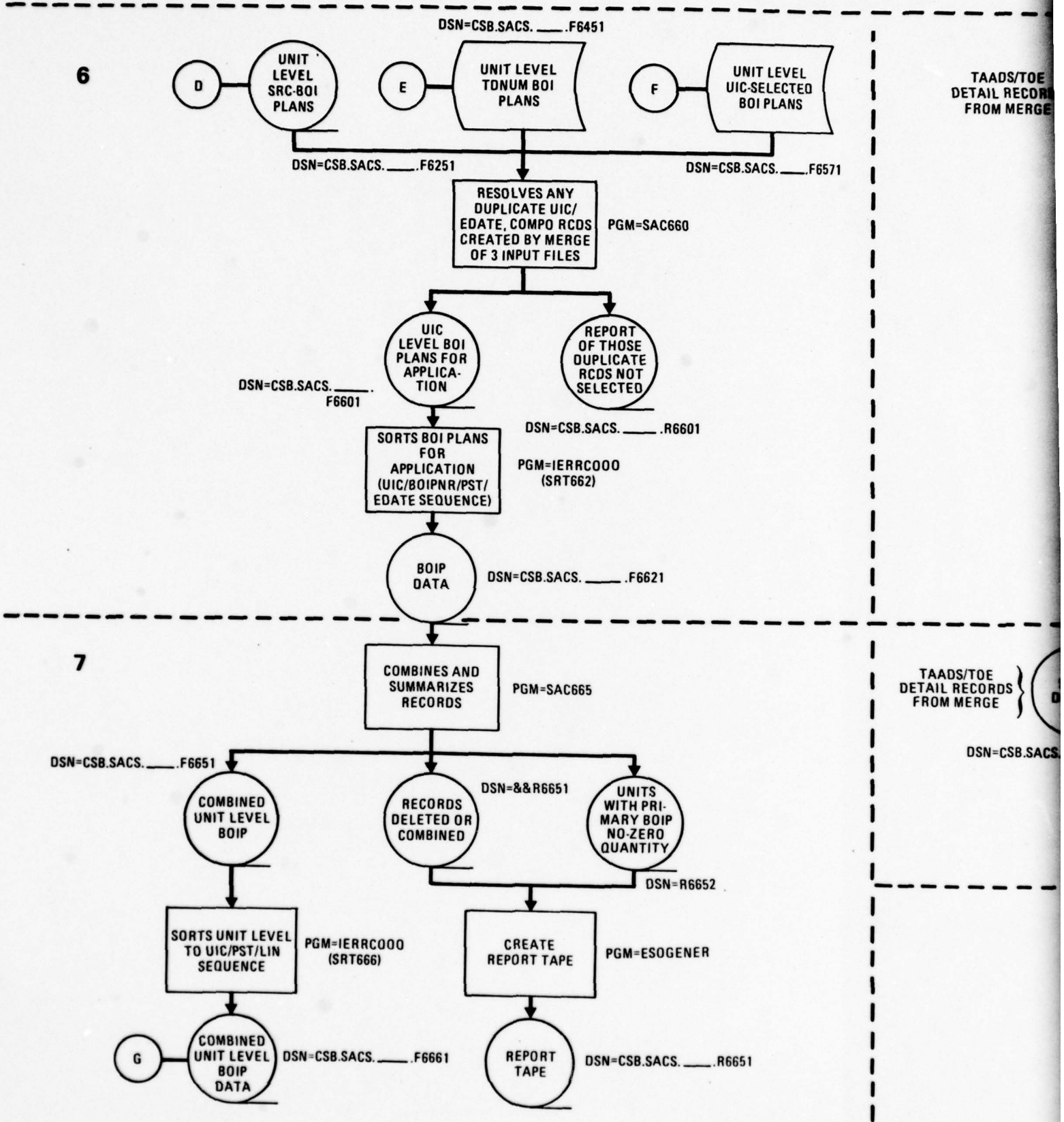
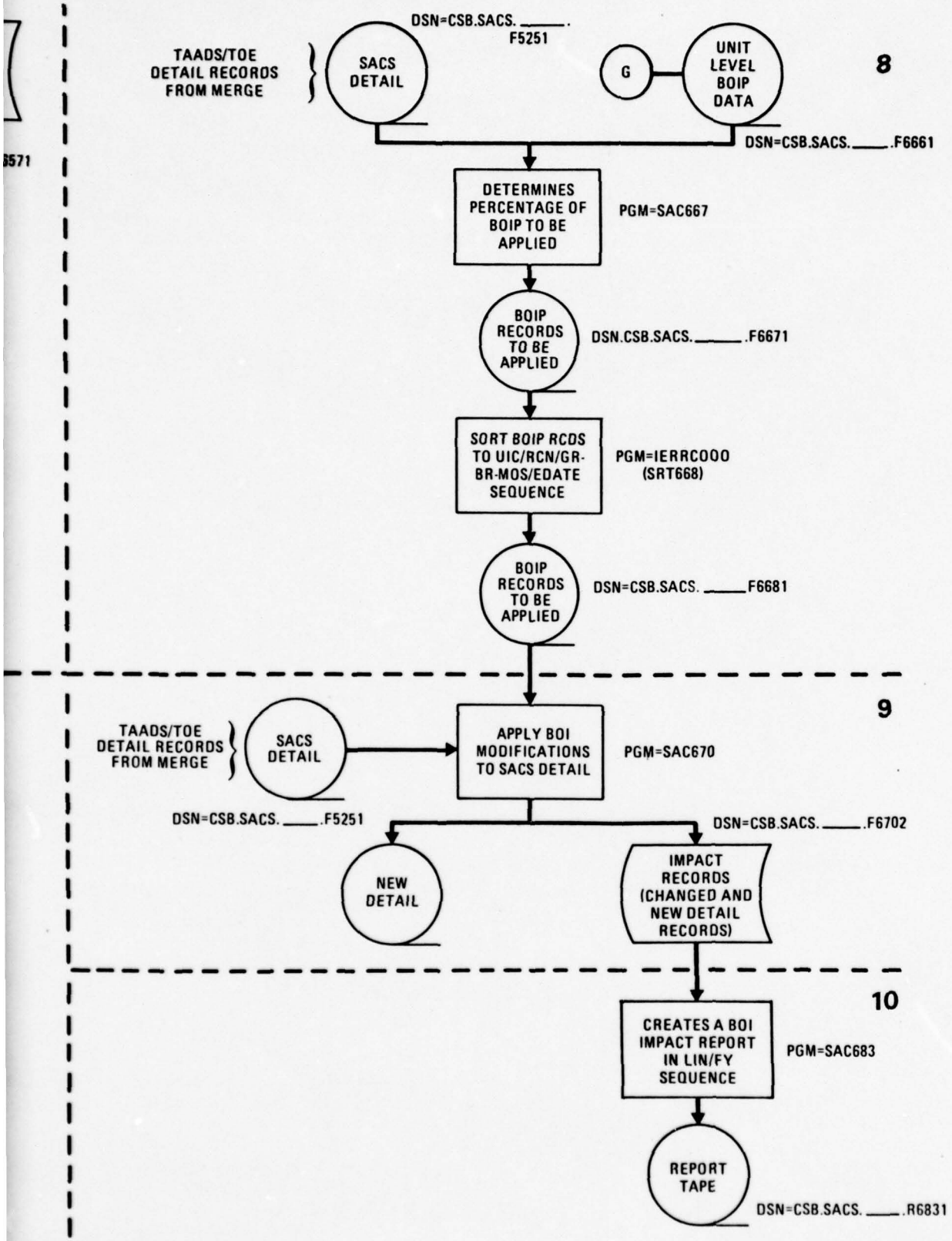


Figure 3.5. BOIP Update and Application to SACS
(3 of 3)



nd Application to SACS Detail Records
(3 of 3)

corrective action can be taken by adding or delecting specific BOIP serial numbers. As a result of the process, the SACS Branch provides another list of BOIP serial numbers to USAMSSA. The update of BOIP and the application of BOIP data to the detail TAADS/TOE file is repeated. This is an iterative process which may be repeated several times during each LOGSACS production process.

The SHN application complements the BOIP in that it can serve to correct errors in the BOIP, substitute for BOIP where the BOIP has not been updated, or provide LIN detail for units where LIN detail data were either not available or unacceptable from TAADS or TOE.

The SHN file provides the only SACS-related data that are specifically the responsibility of and maintained by SACS Branch Equipment Analysts. Prior to each LOGSACS run, SACS Branch personnel meet with requirements personnel in DAMO-RQR to determine which SHN data should be applied in the current LOGSACS process. As a result of this meeting, SACS Branch personnel develop or revise and code the new SHN, and the selection criteria applicable to the previously automated SHN. These SHN coded data are provided to USAMSSA for updating the SHN magnetic tape file and for subsequent processing against the detail TAADS/TOE file to which BOIP data have already been applied. This process results in reports which are produced for the SACS Branch Equipment Analysts who perform a thorough review and analysis of the results of the SHN application process. If the results are acceptable, the LOGSACS process continues; however, if the results are <u>not</u> acceptable, the SHN data are reviewed and analyzed and the SACS Branch Equipment Analysts determine the type of SHN "fix" required to correct the problem(s). Problems are corrected by SACS Branch personnel by coding revised or new SHN data and the entire SHN process is repeated. The SHN application is an iterative process which may be repeated several times during each LOGSACS run.

The Air Armament process is based on zeroing the quantities on specific LIN and inserting quantities that are found in the Air Armament program. These quantities are ratios based on aircraft versus air armament systems. The ratios included in these programs are the responsibility of the SACS Branch Equipment Analysts. If a change is required, they must provide the new ratios and appropriate instructions to USAMSSA for coding them into the appropriate computer program.

The Automated Tank Armament process is currently inoperative. When operable, it performs a function similar to the Air Armament program. The problems with the programs are under study and are to be corrected by USAMSSA. In the interm, SACS Branch Equipment Analysts compensate by developing appropriate SHN for application at the time that all other SHN are applied. These SHN are developed based on the tank versus tank armament weapon system ratio.

The final review of LOGSACS products by SACS Branch personnel may determine that some corrections or changes are appropriate before LOGSACS magnetic tapes and reports are released to the ARSTAF and other users. SHN programs are utilized to effect last minute corrections. These SHN are developed and processed as stated above. The number of SHN in this application is usually minor in comparison to the main SHN application. The fine-tuned LOGSACS products are ready for release to the ARSTAF when the final process is completed.

SECTION 4

THE SACS DATA BASES

4.1 GENERAL

The SACS is a network of automated processes with manual data review points interspersed. These review points are used to verify data for accuracy and permit "continue-processing" or "go-back-and-rerun" decisions to be made based on review results. SACS Branch responsibilities do not include data base maintenance (e.g., update) functions. The SACS network interfaces with several automated data bases that are maintained by the functional users of other systems. The other systems involved are:

- FAS (which provides a copy of the M Force).
- TAADS (which provides MTOE/TDA documented unit-level data).
- TOE (which provides a copy of the TOE SRC header and TOE SRC detail files).
- BOIP (which is updated and provided for application in LOGSACS).
- SHN (which is developed and updated for application in LOGSACS).

4.2 PERSACS

The PERSACS data base is a composite of unit data from the selected SACS force, which for PERSACS purposes is designated the P Force. This force is matched to unit detail data from either the TAADS or TOE files. The objective of this matching process is to establish an integrated PERSACS data base that can be used to forecast Army personnel and training requirements. The selected force is first matched to TAADS and then to TOE to obtain unit-level strength data (required and authorized) for the entire force by grade, branch, and MOS.

In utilizing the TOE file, the PERSACS data base also utilizes AURS data which are included in the TOE file and in it are incorporated

some BOIP data. To the extent that BOIP data are included in AURS, they are included in PERSACS. The vast majority of BOIP data exist in the BOIP format only, hence a very large portion of this important Qualitative and Quantitative Personnel Requirements Information (QQPRI), which is currently reflected in the BOIP, is never applied to the personnel unit detail data in PERSACS to reflect important unit changes that are projected based on revised Army doctrine and equipment modernization programs. BOIP data are applied in the LOGSACS, hence Army logisticians preparing and utilizing The Army Equipment Distribution Plan (TAEDP) may initiate unit equipment distribution actions for which DCSPER cannot simultaneously distribute/assign qualified personnel. The BOIP are not utilized in PERSACS because a methodology for their application has never been developed.

The PERSACS data base must not reflect more military personnel by identity for a command than the approved end-strength constraints for that command reflected in the AFP. Therefore, the PERSACS data base is loosely balanced to AFP end-strength constraints by command and military identity in that, if the PERSACS data base reflects strengths smaller than the AFP numbers, they are generally accepted. While overall command end-strength balancing is important, it is more important that aggregated unit level military identity balancing take place so that specific grade and MOS authorizations are as nearly correct as possible. The methodology employed is one of "factoring" the unit detail records (by grade, branch, MOS, and quantity) either up or down so that the TAADS or TOE numbers equal the corresponding M-Force totals by UIC. The factoring process is performed by a computer program which compares M-Force authorized unit aggregate strengths to the TAADS/TOE authorized unit aggregate strengths by military identity. In instances where a variance exists, the discrepant quantity and military identity are identified and adjusted. The program then looks at the applicable military identity data by grade, branch, MOS, and quantity and commences to adjust the plus or minus variance until the aggregated unit strengths are exactly in balance with the M-Force aggregated strengths by military identity. The factoring process starts with the lowest grade with the highest numbers of

authorized spaces and works toward the higher grades with the lowest numbers of authorizations to achieve the desired balance.

4.3 LOGSACS

The LOGSACS data base is a composite of unit data from the selected SACS force which, for LOGSACS purposes, is designated the L Force. This force is matched with unit detail data from either the TAADS or TOE files. The objective of this matching process is to establish an integrated LOGSACS data base that can be used to forecast Army equipment requirements. The selected force is first matched to TAADS and then to TOE to obtain unit detail data that describe unit equipment requirements and authorizations by LIN.

The LOGSACS data base has its origins in the same data that are the basis for the PERSACS. However, since LOGSACS is oriented exclusively to equipment and since FAS, which originally provided a copy of the M Force from which L Force is derived, has no equipment information, the LOGSACS process cannot perform a check and balance procedure comparable to the aggregate command and UIC military identity strength checking, balancing, and factoring as in PERSACS. The checking and balancing of the LOGSACS data are the responsibility of SACS Branch Equipment Analysts working in conjunction with FISOs. This is a manual procedure which requires the understanding and use of BOIP, SHN, and a comparison analysis system called BOIMARS. Though the BOIP are TRADOC-developed data, it is an ODCSOPS responsibility to determine which BOIP must be applied in developing LOGSACS products. SHN are developed and maintained within the SACS Branch and serve to revise (generally to constrain) data previously adjusted by the BOIP and to correct or to provide unit detail data applicable to TDA units not currently documented in TAADS and essential to be included in LOGSACS products. BOIMARS does not provide or modify data included in LOGSACS. It performs a comparison function of two similar LOGSACS products and produces reports which reflect equipment authorizations by UIC and LIN. Through the BOIMARS reports, SACS Branch Equipment Analysts can determine sources of authorizations (TAADS, TOE, BOIP, or SHN) and determine whether adjustments are

required (usually input via TAADS) to compensate for incorrect authorizations. Incorrect TAADS equipment authorizations can be the result of TAADS including two different LIN with the same quantity (for a new and an old item) where one LIN should have been deleted.

The LOGSACS check and balance procedures performed by the SACS Branch Equipment Analysts are concentrated on the procurement of equipment and missiles, Army[1] (PEMA)-type items. The common items of equipment procured from other than direct procurement appropriations (stock funds) are not included in these check-and-balance procedures.

---

[1]PEMA is an obsolete term. It is still used, however, with reference to major items of equipment.

SECTION 5
SACS DATA SOURCES

5.1 USE OF FAS DATA

The FAS provides the M Force to SACS. The FAS units selected for a SACS computation are used for both PERSACS and LOGSACS. To include unit-level detail covering personnel and equipment requirements in a SACS computation, the unit must be recorded in FAS. FAS provides unit identifying data to SACS by the UIC, SRC, CCNUM, EDATE, and other pertinent data for both MTOE and TDA units. FAS also provides programed manpower end-strengths by MILID, which are the control basis for the target totals and factoring processes in SIGMA and PERSACS, respectively.

5.2 USE OF TAADS DATA

TAADS data are utilized in SACS indirectly and directly. The indirect use is via the AUTS, whereby approved TAADS documents are entered into the M Force. The direct use is via SIGMA and Basic SACS where TAADS data are matched to the selected force data so that errors identified in this process can be corrected to achieve an optimal match of selected force units to TAADS-documented units in Basic SACS processing. The absence of TAADS documents or uncorrectable errors in TAADS documents requires the selected force units to be matched to TOE. The match to TAADS establishes the source of detail data for personnel and equipment as does the match to TOE, if required.

5.3 USE OF TOE DATA

TOE serves as the second or alternate source of unit personnel and equipment detail data. When selected force units are unmatched to both TAADS and TOE, the procedure in PERSACS is to drop the unit out of the PERSACS products. This can happen to TDA units. Conversely, unmatched units in LOGSACS need <u>not</u> be dropped since SACS Branch Equipment Analysts can add unit equipment detail via the SHN. No such capability has been developed for PERSACS.

In addition to TOE serving the above purpose, TOE serves as the baseline document for MTOE units to verify item and quantity requirements or authorizations if there are questionable equipment authorization data presented in the LOGSACS review.

5.4 PERSONNEL FACTORING

When the M Force and TAADS documents have not achieved an aggregate MILID strength balance, the PERSACS factoring process forces a balance. The factoring process in PERSACS is, therefore, an alternate methodology to balance either TAADS or TOE unit aggregate military identity strengths to the selected force unit aggregate military identity strengths. In those imbalance situations, the factoring either increases or decreases the unit personnel detail data by grade, branch, MOS, and quantity until it exactly balances to the selected force aggregate military identity totals. This process is explained in detail in Appendix G.

There are situations whereby factoring can significantly distort unit personnel authorizations when a significant increase or decrease is reflected in the selected force and has not been documented in TAADS. The factoring first changes authorizations of the lowest grades with the highest strengths and works toward the higher grades with the lower strengths until a balance is achieved. However, the factoring process serves an essential role in developing PERSACS. It ensures that personnel authorizations to not exceed established manpower end-strength constraints.

5.5 APPLICATION OF BOIP DATA

BOIP and its use are explained in Appendix D. The automated update of BOIP and its application to the selected SACS force for LOGSACS are depicted in the general flow schematic in Figure 3.5.

The BOIP is developed in TRADOC and closely monitored by ODCSOPS (DAMO-RQR). It reflects data applicable to changes in Army doctrine

and to new items of equipment. The BOIP is related to units through the use of SRC or UIC and serves to change, add, or delete authorizations. The BOIP is applicable to personnel by MOS, grade, and quantity, and to equipment by LIN and quantity.

The application of BOIP in LOGSACS is closely controlled and monitored by SACS Branch Equipment Analysts. For each LOGSACS, SACS Branch personnel in coordination with FISOs determine which BOIPs are to be applied. This information is provided USAMSSA for BOIP update prior to its LOGSACS application.

BOIP development and update require significant lead time to incorporate revisions and changes in the TRADOC-provided BOIP file. To compensate for untimely but required BOIP changes, SACS Branch Equipment Analysts develop appropriate SHN. Such SHN have the effect of revised BOIP on the LOGSACS product.

5.6 APPLICATION OF SHN DATA

SHN and their use are explained in Appendix H. They are developed and manually coded by SACS Branch Equipment Analysts for each SACS run and provided to USAMSSA for updating the SHN. SHN are currently applied in developing LOGSACS only. They are not applied in PERSACS since a methodology has not been developed for their use to appropriately modify personnel authorizations.

The application of SHN in LOGSACS is closely controlled by SACS Branch Equipment Analysts to adjust BOIP that have not been updated, to function as BOIPs that are under development, to adjust erroneous conditions existing in selected SACS units detail, or to provide detail LIN authorizations for TDA units when TAADS-documented detail does not exist.

5.7 PERSACS DATA VALIDATION

PERSACS validation processes are controlled by the FAS unit aggregated military identity strengths explained in Appendix G, the PERSACS description. In addition, SIGMA (described in Appendix I) has an option,

identified as "target totals," which develops a printout for use by SACS Branch Personnel to manually compare command manpower end-strength authorizations to comparable AFP totals.

In addition to the foregoing, a program identified as the Personnel Authorizations Analysis System (PAAS) can compare the current PERSACS product to two previous PERSACS products and provide SACS Branch Personnel with printouts of variances in personnel authorizations over the time period of the three PERSACS. The PAAS products identify and analyze the varying conditions to determine whether corrections are necessary prior to releasing the PERSACS products. When corrections are required, they must be made to the P Force and Basic SACS (see Appendix C), and PERSACS (see Appendix G) must be rerun.

5.8 LOGSACS DATA VALIDATION

The principal LOGSACS validation process is through the BOIMARS. BOIMARS compares the current LOGSACS output to a previous, similar LOGSACS output. The BOIMARS reports are tools for the SACS Branch Equipment Analysts to access data accuracy, and, if required, initiate corrective action prior to releasing the LOGSACS products. Corrective action can only be initiated through BOIP or SHN and rerunning the appropriate LOGSACS programs.

SECTION 6
SACS SYSTEM SUPPORT

6.1 MANUAL PROCEDURES

Overall SACS procedures are outdated. the SIGMA decision processes that are required to develop the SACS P and L Forces are not documented in detail. Despite the condition of the specific SACS procedures, well written, completely current SACS procedures will not significantly improve SACS, since it does not have its own data base. The procedures for maintaining the M Force, for documenting units via TAADS, for developing and applying BOIP, for developing SHN, and for developing AURS and TOE are procedures that directly impact SACS and its capability to provide timely and accurate data. The SACS procedures, regardless of how well they may or may not be documented, produce results directly related to the products produced by the procedures of the aforementioned systems.

ODCSOPS (DAMO-FDA) personnel have recognized inadequacies in the Army force manpower management procedures and systems. Action to correct these inadequacies are underway through development of FORDIMS with its guidance tracking procedures. When these significant procedures are completely implemented, gradual improvement in data timeliness and accuracy should result.

Regardless of these improved procedures and systems, the procedural effectiveness is dependent upon the important ingredients of a complete system. They are:

- Trained personnel
- Controlled responsibilities
- Consistent decisions
- Complete current procedures
- Timely error identification
- Correct error resolution
- Timely error resolution
- Effective control techniques
- Effective system interfaces

ODCSOPS is handicapped (as are many ARSTAF organizations) by personnel turbulence caused by reassignments and retirements of both military and civilian personnel. When experienced personnel depart from the force and manpower management functions, their departure contributes to degradation since their expertise developed over time is lost. This reflects in the SACS data bases. Though degradation based on one individual's departure and another individual's arrival is negligible, it is compounded when departures occur in several critical functions over a short period of time. Personnel turbulence coupled with the absence of some aspect of the listed ingredients all contribute to SACS products being less than the quality products which the ARSTAF are striving to produce.

ODCSOPS is also handicapped by the absence of sufficient staff to completely document all of the day-to-day operational procedures and provide for future systems and procedures too. Of the items listed above, the error identification and resolution within and between the systems that contribute to the SACS data bases are lacking more than any of the other ingredients.

6.2 AUTOMATED SYSTEM SUPPORT

The automated systems that contribute data to SACS were developed to support a specific need and function over the past decade. They were not specifically developed to accommodate SACS nor to provide the ARSTAF with data on personnel and equipment requirements and authorizations in SACS type products. SACS incorporates second generation automation concepts (sequential-magnetic tape-batch processing) through the entire Basic SACS, PERSACS, and LOGSACS. SIGMA is near to current state-of-art software in that it is activated via terminal, performs interactive conversational functions, and provides some operator prompting.

The ADP support provided SACS is adequate if a "status quo" environment of Army operations could be assumed. Since this is unrealistic, the ADP support currently available to SACS is inadequate to accomplish other than "emergency" or "essential modifications" to the computer programs.

The support provided SACS is for maintenance of its operational integrity only and the support limitations are because of the number of available systems analysts/programers to work SACS.

The USAMSSA ADP support involves the entire range of ADP functions. Each function can impact the ODCSOPS capability to produce timely and accurate LOGSACS and PERSACS information. These functions are:

- Systems analysis
- Computer programing
- Computer operations
- Magnetic tape handling
- Cataloging reels of magnetic tape
- Controlling reels of magnetic tape
- Controlling computer programs

Because SACS is a sequential processing magnetic tape bound batch system, it takes much more clock time and central processing unit (CPU) time to process Basic SACS, LOGSACS, and PERSACS than if it were a disk-oriented system.

The design of SACS presents computer operations a magnetic tape control problem because of the large number of reels of tape necessary for each SACS run. SACS magnetic tape requirements for each run can range from as few as 125 reels to 380 reels of magnetic tape. The effort to catalog, store, and retrieve this number of reels is significant. The control problems presented to the CPU operations personnel border on being unreal and operations must pay close attention to handling of each reel of magnetic tape to ensure that the file being used is proper and that it is correct by its cataloged serial number. The magnetic tape control problem involves the LOGSACS to a much greater extent that Basic SACS or PERSACS since the BOIP and SHN applications require many of the reels of magnetic tape. Also, potential rerun requirements are greater in LOGSACS and each rerun has its attendant requirements for cataloging and controlling reels of magnetic tape. As an aid to control the LOGSACS operations, the LOGSACS systems analyst/programer draws a

detailed flowchart of the entire LOGSACS process. These flowcharts identify all reels of magnetic tape by file and reel serial number identity. The preparation of these LOGSACS flowcharts is a laborious, time-consuming task. They are essential to the control that is important to ensure that LOGSACS programs process the correct data files in the proper sequence.

APPENDIX A

AUTOMATED UNIT REFERENCE SHEET (AURS)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Automated Unit Reference Sheet (AURS)

b. Status: Operational

2. REFERENCES

a. Army Regulation 71-2, Basis of Issue Plan, 10 April 1976.

b. Army Regulation 310-31, Management System for Tables of Organization and Equipment (The TOE System), 2 September 1974.

c. TRADOC Regulation 71-17, Force Development Unit Reference Sheets, 1 July 1973.

d. Interviews:

Mr. W. Braswell, ODSCOPS (DAMO-RQR)
Mr. G. Hill, ODCSOPS (DAMO-FDA)
Mr. J. White, TRADOC
Mr. R. Adams, USAMSSA

3. STAFF PROPONENT

ODCSOPS (DAMO-RQR): This office exercises Army General Staff responsibility. The US Army Training and Doctrine Command (TRADOC) is charged with AURS development, and consolidation of AURS with TOE data.

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM 370/165 or 3033

5. PURPOSE

a. Procedures for use of a Unit Reference Sheet (URS) have been in existence for quite some time. However, the process was manual and was not used extensively. The URS document proposes or portrays certain basic data for organizational development purposes. HQDA Staff need for early-on force structuring and out-year budgeting data led to the requirement for automating unit reference sheets.

b. AURS is utilized only when requirements dictate the need to establish new type units that will support new equipment requirements, and new or improved operational concepts and doctrine. Since AURS is

required early-on, it must be recognized that complete data may not be available. The AURS data which are available, however, are of significant assistance to DCSPER and DCSLOG in the planning and programing necessary to support new concepts and equipment scheduled to come into the inventory in the near future.

c. TRADOC is responsible for developing the AURS and incorporating AURS with TOE data in the TOE master file. AURS applies to TOE units only and contains information similar to a TOE (when it can be determined) as would be applicable to any other TOE unit except that:

- Units developed under the AURS process are always at strength level 1.
- The TOE type number in the AURS record will always carry a "B: instead of an "H" in the TOE series position.

Once the AURS is incorporated in the TOE master file and an SRC is assigned:

- TOE subproponents are required to maintain the AURS current.
- Updating/revision will be accomplished by revising the original SRC, not by assigning a new SRC for each new iteration.

d. Generally with the development of AURS, a tentative Basis of Issue Plan (BOIP) and, in some cases, quantitative and qualitative personnel requirements (QQPRI) must be developed. As outlined in Appendix D covering the role played by BOIP in a SACS computation, BOIP is a prime management tool used to predict requirements early in the materiel acquisition cycle. BOIP new equipment requirements data make an important planning and programing contribution to LOGSACS computations, but no methodology has been developed to make direct use of BOIP in PERSACS computations. AURS, on the other hand, are used in the PERSACS process. Though AURS applies only in those cases where new type TOE units are constituted to accommodate new equippage and concepts, AURS does provide in those cases the vehicle for new qualitative and quantitative personnel requirements to be input to PERSACS computations through the TOE system. That input represents a manpower management contribution of significant benefit in the form of automated data which would not otherwise be available to PERSACS.

6. CONTRIBUTION TO SACS

AURS makes a small but important contribution to SACS primarily for PERSACS for the reasons addressed in paragraph 5d, above. BOIP is only applied during the LOGSACS process. While BOIP contains both the personnel and equipment requirements for new operating systems being programed and budgeted, only DCSRDA and DCSLOG have access to these requirements for use in the planning and programing process. However, if the new equipment dictates a new type TOE, development of the required AURS and the resulting input to the TOE master file includes appropriate projected personnel requirements. Since the TOE master file is used in PERSACS, DCSPER and subordinate manpower and personnel authorities acquire the benefit of planning and programing information for personnel which is comparable to that DCSLOG has for equipment.

7. MAJOR DATA ELEMENTS

The same elements that are applicable to TOE (see Appendix K) are used in AURS.

8. INTERFACE WITH OTHER SYSTEMS

Since AURS becomes part of the TOE master file, the resulting effective interface for AURS is the same as for the TOE system (see Appendix K).

APPENDIX B

AUTOMATED UPDATE TRANSACTION SYSTEM (AUTS)

1. SYSTEM/MODEL/DATA BASE

a. Title: Automated Update Transaction System (AUTS)

b. Status: Operational

2. REFERENCES

a. USAMSSA Project Initiation Documentation, Automatic Update Transaction Summary System (AUTS), 1 September 1976.

b. Standing Operating Procedure for Maintenance of the Army Master Force (M Force), Force Programs and Structure Directorate, Office of the Deputy Chief of Staff for Operations and Plans, February 1978.

c. Interviews:

LTC A. Taylor ,ODCSOPS (DAMO-FDA)
Ms. R. Baker, ODCSOPS (DAMO-FDA)
Ms. T. Fasick, ODCSOPS (DAMO-FDA)
Mr. C. Danford, USAMSSA
Ms. V. Hughes, USAMSSA

3. STAFF PROPONENT

ODCSOPS (DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM 370/165 or 3033

5. PURPOSE/ROLE

a. The AUTS serves two key purposes:

(1) To record in the M Force the latest documented unit data that have been recorded in TAADS.

(2) To provide force development managers with meaningful FAS-TAADS information.

b. These purposes are fulfilled by:

(1) Automatically aligning FAS-TAADS documented authorized positions based on pre-defined rules.

(2) Providing management reports to FAS and TAADS Force Managers which will:

- Show how the M Force will change due to AUTS transactions.
- Show M Force positions vis-à-vis TAADS that need a decision in order to be changed.
- Indicate errors in the FAS and TAADS data bases which need to be resolved.

c. The AUTS is run on a monthly basis as near month end as possible.

6. CONTRIBUTION TO SACS

AUTS provides a major contribution to the SACS process in that it provides data to update the FAS file to include all of the latest documented unit data that have been recorded in the HQDA TAADS. This update is especially critical in view of the fact that the FAS is the source for all of the units that will be selected to be studied in a SACS computation. The FAS data base provides SACS with the unit information it needs to identify uniquely a unit being studied and it provides the elements for a TAADS/TOE interface.

7. MAJOR DATA ELEMENTS

While both the FAS and TAADS contain many data elements, AUTS only makes a comparison on the following:

AMSCO Army Management Structure Code. (This element is compared for TDA units only.) This is the major fiscal language code used for Army planning, programing, and budgeting and for the Army budget presentation before Congress. TOE units have one AMSCO which is recorded in the PROFA while TDA units may have multiple AMSCOs which are recorded in the Manpower Annex file.

AUSTR Authorized Strengths. That portion of the required manpower which can be supported by allocated manpower. Includes AUOFF (Authorized Officers), AUWOF (Authorized Warrant Officers), AUENL (Authorized Enlisted), AUAGR (Authorized Military Aggregate), AUUSD (Authorized US Direct Hire), AUFND (Authorized Foreign National Direct Hire), AUIDH (Authorized Indirect Hire), and AUCIV (Authorized Civilian Aggregate).

CCNUM Command Control Number. This is the major FAS/TAADS linking code. Positions 1 and 2 equal command assignment; positions 3 and 4 equal number of changes; and positions 5 and 6 equal FY document processed for the unit. This applies to all TAADS documents.

EDATE Effective Date. THis is the date on which a unit's force structure position becomes effective.

MTOEC Modified Table of Organization and Equipment Control Number. This code identifies a specific modification of a TOE by number within each command.

SRCTO Standard Requirements Code. This identifies the basic Table of Organization and Equipment of both personnel and equipment, plus variations for a TOE unit.

STSTR Structure Strengths. For TOE units this is the full TOE strength and for MTOE and TAD units it represents the "Required Strength." For MTOE units, structure strength is always at level 1. Structure strength for TDA units is individually determined to support the unit's requirements. Included is STOFF (Structure Officer), STWOF (Structure Warrant Officer), STENL (Structure Enlisted), STAGR (Structure Military Aggregate), and STCIV (Structure Civilian Aggregate).

TMCCC Type MTOE Indicator. This code indicates the series that defines the basis or organization and authorization of a TOE unit.

UICCC Unit Identification Code. This is an alphanumeric code which uniquely identifies a particular TOE or TDA unit.

8. INTERFACE WITH OTHER SYSTEMS

AUTS principal responsibility is to interface TAADS with FAS.

APPENDIX C

BASIC STRUCTURE AND COMPOSITION SYSTEM (BASIC SACS)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Basic Structure and Composition System (Basic SACS)

b. Status: Operational

2. REFERENCES

a. Handout in Support of USAMSSA Inter/Intra Divisional Briefings, Computational Systems Branch, US Army Management Systems Support Agency, 25-29 June 1973.

b. Force Accounting System User's Guide, Force Accounting and Systems Division, Office Deputy Chief of Staff for Operations and Plans (ODCSOPS), HQ DA, March 1976.

c. Army Regulation 71-2, Basis of Issue Plans, 19 April 1976.

d. Structure and Composition System (SACS) User's Guide, US Army Management Systems Support Agency, undated.

e. Army Regulation 310-31, Management System for Tables of Organization and Equipment (The TOE Systems), 2 September 1974.

f. Army Regulation 310-49, The Army Authorization Documents System (TAADS), 10 June 1975.

g. CSR 18-11, Force Development Management Information System, 18 February 1976.

h. Interviews with:

MAJ R. L. Meredith, ODSCOPS (DAMO-FDA)
Mr. G. P. Hill, ODCSOPS (DAMO-FDA)
Mr. C. P. Joyce, USAMSSA
Mr. S. D. Haupt, USAMSSA
Mr. R. M. Walden, USAMSSA
Mr. R. Frank, USAMSSA
Mr. R. G. Good, USAMSSA

3. STAFF PROPONENT

ODCSOPS (DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM/370/165

5. PURPOSE/ROLE

a. General

Basic SACS processing and execution establishes a SACS environment common to both the military personnel (PER) and equipment (LOG) computational systems. Otherwise separately maintained discrete files are integrated into one working detail file. Subsequent LOG and PER processing activities use this detail as a base on which to perform their respective SACS computations.

b. Specific

Basic SACS is a SACS endogenous set of processing procedures divisible into five discrete functions:

(1) Force Selection

(2) The Army Authorization Documents System (TAADS) Match

(3) Standard Requirements Code (SRC) Assembly

(4) Table of Organization and Equipment (TOE) Match

(5) Detail Merge

Each of these processing functions is integral to the Basic SACS and each is described in ensuing paragraphs.

(1) Force Selection. The Force Accounting System (FAS) is the vehicle used by the Department for force accounting and force structuring. FAS is designed as a multiple force system in which the Master Force and several alternate planning forces are retained in a single data base. This file is the original source for the units studied in a SACS computation.

The first thing done in any SACS computation is to select a force for study. The force selected is a product of the SACS Information Gathering and Management Analysis (SIGMA) "pre-processor." Criteria for force selection include:

- Component Code (COMPO)
- Type Code (TYPCO)
- Force Code (FORCO)
- Display/Compute (DSCMP)
- Effective Date (EDATE)
- Termination Date (TDATE)

These criteria are specified within the Data Processing Request (DPR) prepared by ODCSOPS (DAMO-FDA) and delivered to USAMSSA. DPR selection criteria are mirrored in the SIGMA processing which implements force selection. That is, the SIGMA process provides Basic SACS with the selected force and components (e.g., active, Army Reserve, National Guard) conforming to DPR force selection criteria by type unit and for the time period under study. The selected force structured through the SIGMA process is "released" to USAMSSA and constitutes the Basic SACS Selected Units File on which processing is based. From this point, processing may proceed toward alignment of detailed, documented personnel (military only; civilian personnel computations are not a part of either Basic SACS or the overall system encompassed by SACS), and equipment characteristics for each unit under study.

In order to effect alignment of given units with their respective documented detail characteristics, certain data elements common to the files to be interfaced are used as keys, thus facilitating an inter-file indexing/addressing capability. Elements of particular significance in the file interfaces (i.e., having inter-file referencing utility) within Basic SACS include:

- The Unit Identification Code (UIC), a unit unique alpha-numeric code assigned to a particular TOE or Table of Distribution and Allowances (TDA) unit (e.g., WCGD99).
- The EDATE indicating the date on which a unit is activated, inactivated, or reorganized (e.g., 830930, equating to 30 September 1983)
- The TAADS document number identifying the TAADS document to be used in developing manpower or equipment requirements (e.g., M1W012AA).
- The TOE document number identifying the TOE document which can be used in developing manpower or equipment requirements (e.g., 0704HE101).

Each unit of the force selected for a given SACS computation must be matched to a detailed unit manpower and equipment document (e.g., TOE, modified TOE, or TDA). Lacking detailed manpower and equipment composition documentation, a unit may be disallowed proper computational processing in both PERSACS and LOGSACS.

(2) TAADS Match. TAADS match processing is a first order attempt to pair units with their detailed resource composition documents. The design objective of TAADS is to provide each Army unit with a document containing its respective personnel and equipment requirements and authorizations. TAADS documents reflect "tailored" quantities; the system seeks to provide each Army unit with its own TAADS document detailing "tailored" personnel and equipment authorizations. TAADS incorporates both TDA and modified TOE (MTOE) documentation.

- TDA documents are individually constructed from the outset. Each is, effectively, individually "tailored" to provide the necessary manpower and materiel resources to successfully execute specialized missions outside the combat, combat support, combat service support, and certain other selected areas permitting "standardized" unit structure.

- MTOE documents cover the last mentioned mission areas. Each is predicated upon a "standard" base case TOE document (e.g., artillery battalion, infantry battalion, signal brigade, maintenance battalion). The base case unit manpower and equipment structure may evolve and be modified over time as specialized mission objectives and the operational environment change. Resulting MTOE documentation is incorporated in TAADS, reflecting for each unit the manpower and materiel resources authorized to successfully execute its combat, combat support, or combat service support mission in the postulated operational environment.

TAADS match is directed toward anchoring each Army unit in the selected force to its respective documented resource detail in the TAADS, if such documentation exists. TAADS match is done using the following key data element vehicles:

- UIC, as defined above.

- Command Control Number (CCNUM), a unit unique alphanumeric code used to identify separate modifications to the TOE documentation of a specific TOE unit (e.g., AR0179).

When a TAADS match occurs (i.e., properly identified unit manpower and equipment documentation is successfully located in TAADS, and is accepted by the systems operator) military personnel or equipment information is written, respectively, to the PERSACS or LOGSACS detail file, whichever is applicable.

• Military positions are carried at the grade, branch, and military occupational specialty (MOS) detail level. As outlined in our basic Report and detailed in our Appendix G on PERSACS, a "Factoring" process is applied in PERSACS to reconcile TAADS documented manpower authorizations (commissioned officer, warrant officer, enlisted)--required strength documentation is not affected by any factoring procedure--with the FAS programed M Force such that PERSACS authorized officers, warrant officers, and enlisted personnel will equal the constrained totals in the programed force. The "Factoring" subsystem effectively allows for adjustment of the military manpower authorizations in TAADS, or a given strength level in TOE (see "TOE Match" below), until the constraining quantity limitations in FAS are met.

• Equipment is carried at the line item number (LIN) detail level. The PERSACS "Factoring" subsystem briefly referenced above is not applied to LOGSACS equipment quantities.

• Each personnel and equipment data record obtained contains an EDATE as well as a termination date (TDATE). These dates apply to each unit and to its associated equipment and personnel; they serve to bracket the time frame in which a given unit's resource requirements and authorizations are valid.

When a TAADS match does not occur, the causative factors may be:

• Through errors it is possible that a unit in the Selected Units File has been incorrectly identified. This eventuality is remote; unit identification errors are generally eliminated by SIGMA edit and correction pre-processing.

• Through error, omission, or time delay, properly identified unit manpower and equipment documentation is not resident within TAADS. Time delay becomes a causative factor by virtue of the time required for programed force structure actions to be translated into unit manpower and equipment detail and incorporated in TAADS. The time required will vary. It is a function of current procedure requiring bulk allocation of resources to major commands (MACOMS) which respond with manpower and equipment detail by unit for inclusion in TAADS after HQDA approval. In some cases, inclusion in TAADS of initial TDA or MTOE documentation for a new

unit may not have occurred by the time a SACS computational study is initiated.

• Through intervention of system operators, a TAADS mismatch may be "forced." That is, though unit detail documentation is properly identified in TAADS, it is rejected by the operator as being deficient. In some cases, the perceived unit detail documentation deficiency which is the proximate cause of the reject decision may stem from either the error, or the omission, or time delay factors referenced above, the latter affecting timely inclusion in TAADS of unit detail reflecting Army Force Program changes. It is emphasized here that TAADS mismatch decisions and their impact are effectively pre-assessed during the SIGMA process, referenced earlier in this Appendix, and discussed in detail in Appendix I. That is, they normally do not emerge full-blown for the first time to confront the operator and demand a decision during the TAADS match process of Basic SACS. The measures taken to correct errors and omissions such that TAADS mismatch is minimized are discussed in SIGMA Appendix I. Whether those measures can be improved, and whether or not they fully involve the resource managers who are or should be most vitally concerned, are issues briefly treated in our basic Report and requiring subsequent evaluation in the course of our review of the overall methods, procedures, and systems encompassed by SACS. However, the following observations regarding the so-called "forced" TAADS mismatch should be made here:

- The apparent implication of the TAADS match rejection decision is that "better fit" unit detail resource documentation is available elsewhere and will be more in consonance with actual unit resource attributes prescribed in the real world in the Army Force Program.

- Where the decision to "force" a mismatch is based upon rejection of manpower detail contained in TAADS, that decision either explicitly or implicitly reflects an unwillingness to accept the automated "Factoring" process as a means of bringing TAADS personnel documentation into aggregate alignment with the Army Force Program. The "Factoring" process has previously been discussed briefly herein, is detailed in our PERSACS Appendix G, and is discussed in our basic Report

including the larger impacts of rejecting the "Factoring" process as a means of accommodating to manpower program constraints.

Whatever the reason for the lack of a TAADS match, and given proper subsequent user or analyst action/input, alternate means are available for aligning units in the selected force with their respective manpower and equipment document detail. Though available, these alternative means are not always formalized, are not always used and, if used, may not always produce the most desirable result. In any event, it should be emphasized here that a TAADS mismatch in Basic SACS does not result in dropping the unit concerned; while that may be an eventual result, as outlined below, the unit concerned is carried forward through the Basic SACS processing steps for disposition in the course of LOGSACS/PERSACS processing.

When a TAADS match does not occur for a selected TDA unit, the only other source of unit resource detail is through analyst input using the Shorthand Notes (SHN) override system. SHN is discussed in detail in other appendixes (see especially LOGSACS Appendix E) and is also discussed in the basic Report, but the following points require particular emphasis here:

- Using SHN, the analyst may supply equipment detail for the selected TDA unit in the course of LOGSACS processing.
- However, no such provision is available for the unmatched TDA unit in PERSACS. Such an unmatched unit will simply be dropped by PERSACS at "Interface" processing time (see PERSACS Appendix G) and effectively excluded from the PERSACS output computation. All subsequent management and resource actions which do not manually take account of this substantive deficiency in PERSACS output data will be deficient in commensurate measure. Hence, the previously discussed early role of SIGMA in resolving nondocumented TDA unit and related deficiencies is a particularly critical aspect of the compelling need to provide complete and accurate manpower resource data to the Army manpower and personnel manager.

When a TAADS match does not occur for a selected MTOE unit, the alternative of obtaining a TOE match remains available, is a part of Basic SACS processing, and is discussed below. Before proceeding with that discussion, the following points require particular emphasis here:

• Since default to the TOE match process automatically results in the case of a TOE-type unit on which there was no TAADS match (or on which a TAADS mismatch was "forced"), manpower data are not summarily lost to the system, as they may be in the case of TDA units by virtue of the fact that SHN does not apply to PERSACS output computations. TOE manpower detail is available and is, effectively, substituted for the detail which would have been available had there been an accepted TAADS match.

• However, a default to the TOE match process does result in summary loss of the important "tailored" resource detail built into MTOE documentation carried in TAADS. The loss of tailored MOS detail, for example, can have particularly substantive impact upon PERSACS outputs and subsequent manpower recruitment, training, and management costs and capabilities within the Department. Comparative data are not immediately available at this time to permit assessment of the relative manpower, materiel, and dollar impacts of "forced" TAADS mismatches of otherwise legitimate TAADS matches; or the relative advantages/disadvantages of retaining the "tailored" TAADS baseline as the starting point for distribution of a resource increment or decrement, in lieu of "forced" mismatch and recourse to the TOE "standard" baseline.

(3) SRC Assembly. Each SRC uniquely identifies a specific TOE. An SRC is the vehicle employed to identify each document in the TOE file which, by design or default, will be used in the TOE match process as the source of unit resource detail.

As indicated at the beginning of this appendix, FAS is the source of the SIGMA-generated Selected Units File constituted as the essential first step in any SACS computation. All of the data elements in FAS are carried in SACS. The SACS Selected Units File is augmented by essential data from two FAS files having special relevance to the SRC assembly and TOE match processes of SACS: the Multiple Forces File (PROFA), and the Notes File.

• A limitation of FAS is that only one SRC per unit record is carried in PROFA. It often occurs, however, that multiple TOE documents are required to adequately characterize a unit's complete organizational structure in a SACS study time frame. Multiple SRCs which augment

the MTOE documentation to be applied in unit resource calculations in SACS must be brought together or "assembled" in preparation for the TOE match.

o The FAS Notes File helps to fill that need. It was designed to augment PROFA by identifying any additional SRCs which might be applicable to the subsets in that forces file. The Notes File is a special purpose source containing the additional SRCs which combine to reflect the organizational and resource composition of a given unit. It may be updated by addition/deletion of SRC Notes, as appropriate.

The required bringing together of applicable SRCs is accomplished through cross referencing between Notes File content and the Selected Units File, using the following key elements:

- Force Identification Code (FICOD) identifies the particular FAS force in the multiforce file.
- COMPO identifies the duty status of the unit where: 1 = Active Army, 2 = National Guard, 3 = Army Reserve, 4 = Unmanned Army, B = Restructured Reserves, C = Mobilization.
- UIC.
- EDATE.

For example, a particular unit in our selected force might have an SRC augmentation in the Notes File formatted as:

UIC	EDATE	SRC	TIMES	SIGN
WABCAA	790630	07047H000	002	+

This would serve to increment (+) the specified unit (WABCAA) by 2 Rifle Companies (0704H000) on 30 June 1979. The increment augments the specified unit indefinitely or until deleted by an opposite-signed SRC Notes File entry:

UIC	EDATE	SRC	TIMES	SIGN
WABCAA	800630	07047H000	002	-

In sum, the SRC assembly process is an assimilation and integration of all TOE documented augmentations to the elements of the Selected Unit File. The SRC assembly process is evaluative to the extent that, for the time frame identified for SACS study, the impact of discrete SRCs on unit organization is the sum of all effective plusing (+) and minusing (-)

across the time period under study. When SRC assembly is complete, each unit destined to obtain its authorizations from TOE will be characterized as to its organizational structure through the aggregation of all agumenting SRCs, and is then prepared to enter the TOE match process.

(4) TOE Match. The TOE match is designed to unite each MTOE unit in the selected force remaining unmatched (because no TAADS document was found or a TAADS mismatch was "forced") with the "standard" documented manpower and equipment detail contained in applicable TOE documents. Assembled SRCs are the match vehicles used to identify TOE documents containing resource detail for these MTOE units.

When a TOE match occurs, military personnel and equipment information is written, respectively, to the PERSACS or LOGSACS detail file. Outcomes essentially identical to those we previously discussed in the case of a successful TAADS match are applicable:

- Military positions are carried at the grade, branch, and MOS detail level. A "Factoring" process will be applied to PERSACS to reconcile TOE documented strengths with programed Army force structure quantity constraints as reflected in FAS. (Note: For G-series TOEs, strength level 1 is used as the base line. For H-series TOE documents, the "authorized" strength level is used as reflected by the 12th digit in the SRC shown in FAS.)
- Equipment is carried at LIN detail level.
- EDATE and TDATE delimiters serve to bracket a time frame during which unit resource requirements and authorizations are valid.

While conceivable, it is unlikely that a TOE match will not occur where MTOE documentation was not found in TAADS or where a TAADS mismatch was "forced." There might be a case in which, through error omission or time delay, properly identified TOE documentation is not resident within the TOE system due to emergent operational requirements or "short-fuse" action directed by highest authority. Except in the most unusual circumstances, such a possibility either would not eventuate or would be obviated through the operations of SIGMA to which we have previously alluded.

(5) Detail Merge. Detail merge does exactly what its name implies by merging the personnel and equipment lists obtained through the TAADS match and TOE match processes into one Basic SACS Detail File. At this point Basic SACS processing is complete.

All subsequent divergent processing for PERSACS or LOGSACS specific computations will employ the two key files which now effectively constitute the Basic SACS data base:

- The Selected Units File
- The Basic SACS Detail File

6. CONTRIBUTION TO SACS

Basic SACS serves an integrational role. It is designed to bring together otherwise separately maintained discrete data files into one working SACS data file. That data file is the foundation upon which PERSACS and LOGSACS processing may proceed. The fundamental Basic SACS process of unit match to the manpower and equipment resource detail prescribed in DA-approved TDA, TOE, and MTOE documents is integral to an elaboration of the personnel and equipment associated with those units and is precursive to all further SACS processing.

7. MAJOR DATA ELEMENTS

ACTCO — Action Code, the force structure change to a unit on a given date. A = Activation, J = Inactivation, C = Reorganization, G = Gain to a new command assignment.

ADCON — Administrative Control Code, the UICCC of a headquarters or higher unit exercising administrative control over the unit.

AMSCO — Army Management Structure Code, the major fiscal language code used for Army planning, programing, and budgeting and for the Army budget presentation before Congress. TOE units have one AMSCO which is recorded in the PROFA; TDA units may have multiple AMSCOs which are recorded in the Manpower Annex file.

ASGMT — Assignment, the major command or DA staff agency to which the unit is assigned.

ASICO — Additional Skill Indicator Code.

AUBFA — Authorized Before Factoring, if factoring of the authorized strength is necessary, the AURES is moved to the AUBFA data field and the result of the factoring is recorded in the AURES data field thus preserving the original strength to determine the impact of factoring at a detail level.

AUBOI — Authorization from BOIP.

AUOTR — Authorization Quantity, other.

AURES — Authorized Structure Strength.

AUSHN — Authorization from Shorthand Notes.

AUSTR — Authorized Strengths, includes AUOFF (Authorized Officer), AUWOF (Authorized Warrant Officer), AUENL (Authorized Enlisted), AUAGR (Authorized Military Aggregate) and AUCIV (Authorized Civilian Aggregate). Authorized strength is that portion of the structure strength which can be supported by allocated manpower.

AUTAD TOE — Authorized TAADS or TOE Strength.

BRCHP — Branch of Service, Personnel.

BRNCH — Branch, an abbreviation for the branch of service under which a TOE unit is organized.

CARSS — Combat Arms Regimental System, the historical designation assigned to combat and combat support units of Infantry, Armor, Field Artillery and Air Defense Artillery TOE units.

CATCO — Category Code, an internal FAS manipulative code.

CCNUM — Command Control Number, the major FAS/TAADS-VTAADS linking code. Identifies the command assignment, changes, and fiscal year for all TAADS documents.

CIVCN — Civilian Control Number, summary level aggregate of units which are applied against the command's civilian employment limitation.

COMPO — Component Code, identifies the duty status of the unit. 1 = Active Army, 2 = National Guard, 3 = Reserve, 4 = Unmanned Army, B = Restructured Reserves, C = Mobilization.

DAMPL — DA Master Priority List, priority grouping of all units or activities for the allocation of personnel and/or equipment.

DEPLO — Deployment Package Assignment, special unit mobilization category.

DPMNT — Deployment Designation, indicating the deployment area and month for units scheduled for movement in the event of general war mobilization.

DSCMP — Display/Compute Indicator, indicates if a unit is displayed for information and computed (DSCMP = DC) or is displayed only and not computed (DSCMP = DO) for FAS reports and Structure and Composition System (SACS) computations.

EDATE — Effective Date, the date on which a unit's force structure position becomes effective.

ELSEQ — Element Sequence Number, sequences the subordinate units of major units, e.g., battalions which are part of a division.

EQCON — Equipment Readiness Condition Code, actual current equipment readiness for deployment.

ESCON — Equipment Serviceability Condition Code, actual current equipment serviceability for deployment.

FICOD — Force Identification Code, identifies the particular FAS force in the multiforce file.

FNCAT — Functional Category, a FAS code used for miscellaneous force structure aggregations.

FPLAN — Force Planning Code, the major FAS management language used to structure Army units and force packages. First position indicates strategic category: A = Division Forces, B = Special Mission Forces, C = General Support Forces. Second position displays force package and the third position displays location or orientation.

FORCO — Force Code, identifies special authorization or exception units.

GRADE — Grade of the authorized or required position.

IDENT — Identity Code, designates the position as officer, warrant officer, or enlisted.

JCSTY — JCS Unit Type Code, describes the type of unit for which the force requirement is stated.

LICCO — Language Identity Code.

LIN — Line Item Number.

LOCCO — Location Code, the location at which a unit is stationed or is programed to be stationed. Within CONUS, the code is a combination of the Army area and state abbreviation. For overseas locations, the code is an abbreviation of the country.

MATCO — Month and Action Code, contemplated deployment action for units not mobilized until after M-Day.

MBCMD — Mobilization Command Assignment, major command or agency to which units are assigned after mobilization.

MBLOC — Mobilization Location Code, location of a unit on or after M-Day; indicates the Army area and state for units in continental locations and overseas abbreviation for units in theater.

MBPRD — Mobilization Period, indicates the appropriate month after M-Day a unit will be activated or called to active military service.

MBSTA — Mobilization Station, the current station for CONUS active Army units; the overseas location for Army Reserve, National Guard, and COMPO C units.

MGCMD — Major Command.

MILCN — Military Control Number, a summary level aggregate of units which are applied against the military strength portion of a command's manpower ceiling.

MOS — Military Occupational Specialty Code.

MTOEC — Modified Table of Organization and Equipment Control Number, a major FAS/VTAADS linking code for TOE units. Identifies the first six positions of unit's SRCTO, its command assignment, and the latest document change number. An MTOEC EQ 9999999999 indicates that the document is not a VTAADS one.

NTREF — Note Reference Number, a reference which includes additional descriptive information for a unit.

OPAGY — Operating Agency Code, DA organizational element to which funds are allocated or sub-allocated.

OPDAT — Operational Date, indicates the date of unit assignment to the force commitment on the NATO Defense Planning Questionnaire.

OPSTR Operating Strength, by officer, warrant officer, enlisted, aggregate military, and civilian.

PECOD Program Element Code, the major DOD management language used to aggregate units, manpower, and dollars associated with the Five Year Defense Program structure.

PERMK Remark - Personnel.

PHASE Phase Code, the authority for a unit record. PHASE D or G indicates that the record is supported by an approved TAADS document or general order. Any other PHASE Code indicates that the unit has an approved program position not yet supported by TAADS or a general order. M = DA message or letter; C = Command originated change; A = Approved Program Assumption; S = DA Staff Actions.

PRCON Personnel Readiness Condition Code, actual current level of personnel readiness of a unit.

RCNUM Record Control Number, 1 designates the personnel record and 2 the equipment record.

RMKS1 Remarks, applicable as further discriminators of MOS and position requirements.

RMKS2 Remarks, applicable as further discriminators of MOS and position requirements.

ROBCO Readiness Objective Code, for Active Army (COMPO 1) units, this code packages units according to the light/heavy corps, Reforger, Airborne D, or 2+10 concept. For Reserve and National Guard units, this code packages units according to readiness concepts.

RQBOI Requirements for BOIP.

RQOTR Requirements for Quantity Other.

RQRES Required Structure Strength.

RQSHN Requirements from Shorthand Notes.

RQTAD TOE Required TAADS or TOE Strength.

SORCE Source of Data, TAADS, TOE, SHN or altered by factoring.

SPLIT Split Unit Indicator, identifies those parent UICCCs and their subelements which are located at different command assignments. Additionally, the parent unit and the subelement must have unique TAADS documents.

SRCTO — Standard Requirements Code, identifies the basic Table of Organization and Equipment plus any variations for personnel and equipment in a TOE unit.

STACO — Station Code, the alphanumeric code designating the unit's geographic location.

STNNM — Station Name, a meaningful abbreviation of the unit's geographic location.

STSTR — Structure Strengths, includes STOFF (Structure Officer), STWOF (Structure Warrant Officer), STENL (Structure Enlisted), STAGR (Structure Military Aggregate), and STCIV (Structure Civilian Aggregate). For TOE units, structure strength is always at level 1. For MTOE and TDA units, structure strength is individually determined to support the unit's requirements.

TDATE — Transaction Date,* designates the last Julian date on which a record was updated.

TMCCC — Type MTOE (Modified Table of Organization and Equipment) Indicator, identifies the TOE series of the unit as defined by its TAADS/VTAADS SRCTO.

TPSNA — Troop Program Sequence Number, a code which groups units according to their mission and size.

TRDAY — Transaction Date, designates the last Julian date on which a record was updated.

TRCON — Training Readiness Condition Code, current level of readiness condition based on unit training.

TYPCO — Type of Unit Code, identifies the basic organization of the unit, 1 = TOE unit, 2 = TDA augmentation to a TOE unit, 3 = TDA unit.

UIC — Unit Identification Code, the alphanumeric designation which uniquely identifies a unit.

UNCAP — Unit Capability, unit readiness capability assigned by HQDA and reflected in the TAADS document.

---

*This acronym is used to designate transaction date and termination date. Termination date is established based on EDATE in the SACS unit selection process.

UNCLC Unit Classification Code, aggregates units according to the exact function they perform, e.g., Air Cavalry Squadron, Neurosurgical Det, etc.

UNCON Unit Readiness Condition, current overall readiness condition of the unit. Incorporates personnel and equipment readiness conditions.

UNMBR Unit Number, a part of the unit's description. For TOE units, the UNMBR is the numerical portion of the unit's designation. TOE augmentations carry the number of the unit augmented. TDA units list the first four characters of the UICCC in this field.

UNPID Unit Package Identification Designator, identifies units in specific force groupings.

UNTDS Unit Description, the narrative title of a unit which explains its functional mission. UNTDS is related to a unit's TPSNA/ELSEQ and SRCTO.

8. INTERFACE WITH OTHER SYSTEMS

Basic SACS may be conceptualized as having pivotal interface with PERSACS and LOGSACS in that its product, the Basic SACS Detail File, may be used for continuance into either PERSACS or LOGSACS processing.

Basic SACS interfaces with SIGMA since it assumes the selected forces file generated by SIGMA.

File interface internal to Basic SACS impacts subsequent SACS processing with respect to both unit and resource representation in final SACS products. Optimally, each of the selected units driving Basic SACS should be matched to TAADS/TOE resource documentation, thereby permitting full and current unit and resource representation in the PERSACS or LOGSACS product. To the extent that this is not achieved in Basic SACS processing, subsequent system outputs may contain distortions of resource data. In the case of PERSACS outputs, omissions of both resource and unit structure will also result for units remaining unmatched to TAADS or TOE documentation.

APPENDIX D

BASIS OF ISSUE PLAN (BOIP)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Basis of Issue Plan (BOIP)

b. Status: Operational

2. REFERENCE

a. Handout in Support of USAMSSA Inter/Intra Divisional Briefings, Computations Systems Branch, US Army Management Sysetms Support Agency (USAMSSA), 25-29 June 1973.

b. Army Regulation 71-2, Basis of Issue Plan, 10 April 1976.

c. Interviews with:

Mr. W. Braswell, DAMO-RQR
Mr. R. Frank, USAMSSA
Mr. S. Haupt, USAMSSA
Mr. W. Collins, DAMO-FDA
MAJ J. Ionoff, DAMO-FDA
MAJ F. Anderson, DAMO-RQA

3. STAFF PROPONENT

ODCSOPS (DAMO-RQR): This office exercises Army General Staff responsibility for review, coordination and approval. The Training and Doctrine Command (TRADOC) is charged with BOIP development, review, update and, after DA approval, publication.

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM 370/165

5. PURPOSE/ROLE

a. General

Army Regulation 71-2 identifies three primary roles for BOIP:

• To predict, early in the materiel acquisition cycle, quantitative requirements for a new item of equipment to be included in:

- Tables of Organization and Equipment (TOE)
- Tables of Distribution and Allowances (TDA)
- Common Tables of Allowances (CTA)
- Joint Tables of Allowances (JTA)
- Additive Operational Projects (AOP)

• To predict personnel and other equipment changes that may be necessary in TOE/TDA/CTA/JTA/AOP in order to accommodate the new item of equipment.

• To serve as a management tool for use by:

- HQDA to forecast new equipment densities for procurement programing purposes and to identify resultant personnel changes.

- Combat development authorities in revising TOEs.

- Major commands in revising TDA and other authorization documents after type classification of a new items of equipment (Standard LCC-A).

Thus, BOIP is designed to serve equipment and equipment-related personnel forecast management informational needs. BOIPs are planning documents only, not authorization documents. Their use facilitates the incorporation in SACS computations of new equipment requirements and authorizations before documentation in The Army Authorization Documentation System (TAADS) or TOE. The BOIP data base documents either the specific units by unit identification code (UIC), or types of units by Standard Requirements Code (SRC) that are to receive the new equipment. Additionally, it details support equipment and personnel changes required for the new equipment.

b. Specific

(1) BOIP currently is utilized in LOGSACS only, even though it is designed to serve as a basis for the determination of new equipment requirements for the programed and budgeted force as well as new personnel requirements associated with the new equipment. To date only new equipment requirements from the BOIP data base have been included in SACS processing. Where new units must be constituted, BOIP data are incorporated into Automated Unit Reference Sheet (AURS). (See Appendix A for a further discussion of AURS.)

(2) BOIP is composed of four files. In order of progression in the life of a BOIP, these files are:

• Process File - a BOIP "holding area" used by TRADOC until the particular BOIP is entered into In-Process Files.

• In-Process File - contains BOIPs subject to modification (units which are programed to receive new equipment).

• Master File - contains BOIPs in final form. Units to receive the new equipment are known and recorded.

• History File - contains old BOIPs reflecting equipment that has been type classified standard and documented in other appropriate publications.

The In-Process, Master, and History Files contain the BOIPs from which are selected those used within a given LOGSACS study. The majority applied in LOGSACS are derived from the Master File, a lesser number from the In-Process File, with the History File contributing less than 5 percent.

(3) BOIPs are developed, reviewed, updated and coordinated by TRADOC. ODCSOPS has Army General Staff responsibility for BOIP review, final DA coordination and approval. DA-approved BOIPs are published by TRADOC.

(4) Integration System Officers (FISOs) have Army responsibility for specific items of equipment contained in the BOIP list. Preparatory to a LOGSACS run, DAMO-RQR circulates a listing among FISOs of all approved In-Process and Master File BOIPs formatted as in Figure D.1. The individual FISOs review the entire BOIP listing with particular attention directed toward those equipment items for which each FISO is directly responsible. In collaboration with DAMO-FDA analysts, FISOs determine which BOIP listings:

• Are still valid (since the previous LOGSACS).

• Had impact on the previous LOGSACS.

• Should be applied, constrained, or not applied in the present LOGSACS computation.

Upon completion of review and recommendations by the several FISOs, DAMO-RQR consolidates FISO recommendations. The consolidated list is forwarded to DAMO-FDA analysts for final review and coding. Finally, the coded BOIPs are submitted to USAMSSA for application in the LOGSACS computation.

DATE OF REPORT 780815 BASIS OF ISSUE REPORT--INPROCESS --LOGISTICS

PLAN SER NUMBER	LINE ITEM NO	PREP DATE	AVAIL DATE	EST TC STD A	ESTIMATED UNIT COST	BOI PROP	RIC	NOMENCLATURE	SCTY CLAS	DCS OPS	PE MA
77-0101-I	Z83511	771011	820630	800930	1112000	TCB640		TEST SET GUIDED MISSILE SYSTEM: ORG MAINT US ROLAND OMTS	U	A01	P
77-0131-I	Z74690	771220	850930	810930	3126000	TCB160		SOTAS AIRBORNE SYSTEM:	U	C22	P
77-0132-I	Z74691	770517	850930	810930	2451000	TCB160		SOTAS, PRIMARY TERMINAL	U	C22	P
77-0133-I	Z74693	770710	850930	810930	623000	TCB160		SOTAS, SECONDARY TERMINAL	U	C22	P
77-0134-I	Z74692	770710	850930	810930	300000	TCB160		SOTAS POSITIONING SYSTEM:	U	C22	P

Legend:

PLAN SER NUMBER is the BOIP Serial Number assigned and maintained by TRADOC.

LINE ITEM NO is the unique line item number assigned to this equipment.

PREP DATE is the BOIP Preparation Date.

AVAIL DATE is the availability date for this equipment item.

EST TC STD A is the estimated time for the equipment to be Standard Type Classified A.

ESTIMATED UNIT COST is the unit cost of equipment.

BOI PROP is the Basis of Issue Proponent.

RIC is the Routing Identifier Code for the Army inventory control point having Army item management responsibility.

NOMENCLATURE refers to equipment descriptors.

SCTY CLAS is the security classification of the particular BOIP.

DCSOPS identifies the FISO responsible for the equipment.

PEMA refers to the "Procurement of Equipment and Missiles, Army" portion of the Army budget.

Figure D.1. BOIP Listing Format

6. CONTRIBUTION TO SACS

a. The primary contribution of BOIP to the SACS computational process occurs in LOGSACS processing and accrues from its key role in providing a vehicle to take into account programed requirements for new equipment items.

b. Currently, BOIP does not contribute to PERSACS. WHile the BOIP file contains data pertaining to new personnel requirements associated with new equipment, no PERSACS methodology has been developed to utilize these data.

7. MAJOR DATA ELEMENTS

AD	Add/Delete, indicates whether MOS or secondary LIN add or delete quantity is plus or minus.
ASI	Additional Skill Indicator.
ASSOCIATED BOI PLAN NUMBER	Associated Plan Serial Number for a secondary/associated line item.
ASSOCIATED LINE ITEM NUMBER	Associated Line Item Number.
AVAILABILITY DATE	Date primary LIN will be available for issuance (formatted as YYMMDD).
BOI PLAN PROPONENT	Proponent agency or major command which submitted BOI Plan to HQDA.
BOIPSN	BOI Plan Serial Number.
BR	Branch within grade and MOS.
CLASS	Classification of BOI Plan.
EST BOI DATE	Estimated date by which BOI Plan will be completed (formatted as YYMMDD).
ESTIMATED UNIT COST	Estimated Unit Cost of Primary LIN.
GRADE	Grade within MOS.
JULIAN DATE	Computer generated date added to record at time it is added to BOI data base.
LIN	Line Item Number.
MOS	Military Occupational Specialty.
NOMENCLATURE	Nomenclature of the primary LIN for which the BOI Plan was developed.

ORGANIZATION DESIGNATION	Unit Organization Description.
PEMA	Procurement of Equipment and Missiles, Army, indicates whether or not primary LIN is to be procured as a PEMA item.
PREPARATION DATE	Date BOI Plan submitted to HQDA (formatted as YYMMDD).
PRIMARY LINE ITEM NUMBER	LIN or primary item for which BOI Plan was developed.
QUANTITY	Quantity by which BOI Plan will affect MOS or LIN.
QUANTITY CURRENTLY IN TOE	Quantity in TOE data base as of the change under which the Plan was drafted.
RCN	Record Control Number, commonly referred to as "Record Name."
REPLACE LINE ITEM NUMBER	LIN which the primary BOI LIN is to replace.
SRC	Standard Requirements Code, same record position is occupied for SRC, TDA, and AOP authorizing equipment where no TOE, MTOE, or TDA exists.
STANDARD-A DATE	Date primary LIN will become Standard A (formatted as YYMMDD).
TAADS	The Army Authorization Documents System, indicator to show if BOI record has been applied to TAADS.
TDA	Table of Distribution and Allowances.
UNIT COST	Cost of primary line item.

8. INTERFACE WITH OTHER SYSTEMS

BOIP processing has interface with three systems, in addition to its use in LOGSACS. They are:

- The Force Accounting System (FAS)
- TAADS
- TOE

One application of FAS is in the BOIP impact subsystem, where a report is produced which computes the cost of equipment and personnel changes involved in applying a BOIP to a specified force during a particular time frame.

The BOI/TAADS interface subsystem of BOIP serves to identify those TAADS documents affected by the introduction of BOIP items of equipment into the Army during a specified time frame. This process is as follows:

- BOIP file is matched to a specified FAS (usually the current year force) in order to create a complete listing of unit-level requirement changes imposed by BOI.
- Individual units found on the FAS tile are then located in the TAADS data base in order to determine the impact of BOIP application during a specified time interval.
- Various reports are generated which provide detail and summary information extracted from the two systems.

TOE is used to edit SRCs in the BOIP update process to ensure validity and to compare TOE and BOIP personnel and equipment detail requirements. The LIN edit file used by TOE is also used to check the validity of BOIP transactions.

Major data elements common to BOIP, FAS, TAADS, and TOE are shown in the following figure.

System	Data Element					
	SRC	UIC	Grade	LIN	MOS	LIN Nomenclature
BOIP	X	X	X	X	X	X
FAS	X	X				
TAADS	X	X	X	X	X	X
TOE	X		X	X	X	X

APPENDIX E

EQUIPMENT STRUCTURE AND COMPOSITION SYSTEM (LOGSACS)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Equipment Structure and Compostion System (LOGSACS)

b. Status: Operational

2. REFERENCES

a. Handout in Support of USAMSSA Inter/Intra Divisional Briefings, 25-29 June 1973.

b. Program Formulation Specification: ARM05

c. Interviews:

Mr. W. Braswell, DAMO-RQR
Mr. R. Frank, USAMSSA
Mr. S. Haupt, USAMSSA
MAJ J. Ionoff, DAMO-FDA
Mr. W. Collins, DAMO-FDA

3. STAFF PROPONENT

ODCSOPS (DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM 370/65 or 3033

5. PURPOSE/ROLE

a. The Equipment SACS (LOGSACS) is a series of computer programs designed to support the Deputy Chief of Staff for Logistics (DCSLOG) and the Deputy Chief of Staff for Research, Development and Acquisition (DCSRDA) informational requirements integral to Army equipment management functions. LOGSACS begins with the Basic SACS data base and the Selected Units File and proceeds to perform a range of data refinements; such refinements being contingent upon the purpose and type of SACS computation being run. LOGSACS may be characterized as having two distinct types of computation which bear directly upon data refinement processing:

- Requirements
- Authorizations

A primary distinction between requirements and authorizations is one of:

M-Day Force needs at top readiness level (AL01)	versus	Current Force needs at less than top readiness level
↑		↑
Idealized Requirements on Mobilization Day if war should arise		Actual Authorizations for use in maintenance of a peacetime force

LOGSACS computations are the official HQDA record of MTOE and TDA equipment authorization data for determining basic material requirements in support of the Procurement of Equipment and Missiles, Army (PEMA) portion of the Army's budget. A Requirement LOGSACS, e.g., a Budget or Apportionment Computation, is used to compute the mobilization day requirement of a peacetime force and typically computes/displays such a force at the budget year and for four additional years beyond budget year. An Authorization LOGSACS, e.g., The Army Equipment Distribution Plan (TAEDP) computation, on the other hand, is used to compute the equipment authorizations for the current force for display at the current fiscal quarter and projected to infinity.

b. Refinements to the Basic SACS as performed through LOGSACS processing is accomplished by way of five subsystem applications:

- Negative Suppression
- Basis of Issue Plans (BOIP)
- Shorthand Notes (SHN)
- Air Armament (Air Arm)
- Tank Armament (Tank Arm)

Each of the above subsystems are peculiar to equipment SACS processing and are described in the following paragraphs.

(1) The Negative Suppression subsystem of LOGSACS is the first LOGSACS subsystem subsequent to Basic SACS' creation of a combined TAADS/TOE Detail File and is designed to programatically suppress any equipment quantitites which contain a negative value. Such suppression of negative equipment values is effected through replacement of all minus quantities by zero.

Negative equipment quantities may be obtained as a byproduct of certain Basic SACS and LOGSACS processing. Two subsystems identified as having particular potential for yielding negative quantities of equipment are:

- SRC Assembly (in Basic SACS processing)
- Shorthand Notes (in LOGSACS processing)

Negative quantities may, in certain instances, be the outcome of: Combining (assembling) augmenting TOEs (identified by SRC) from the FAS Notes File where a preponderance of minus (-) signed SRCs occur relative to Basic SACS data base quantities.

Example:

Basic SACS Data Base

UIC	EDATE	SRC
WABCAA	760630	07045H000
WABCHA	790630	07045H000

Notes File

UIC	EDATE	SRC	TIMES	SIGN
WABCAA	790630	07047H000	200	-

In this case, a clerical error (200 should have been 002) would cause an Infantry Battalion to lose 200 Rifle Companies from its requirement on 790630 generating a net result of negative equipment quantities. Negative suppression is always applied after SRC assembly to set such negative quantities to zero.

Application of Shorthand Notes to delete X number of specific equipment quantities in a given unit on dates for which no such equipment is resident in that unit. Net result is negative equipment quantities. Negative Suppression is always applied after SHN application to set such negative quantities to zero. Note that when multiple SHN

applications occur in a given LOGSACS run, each SHN application is followed by Negative Suppression.

(2) Basis of Issue Plan (BOIP). During the TAADS and TOE Match subsystem of Basic SACS equipment authorizations are obtained for each unit in the selected force. The TAADS and TOE documents used to develop equipment authorizations may or may not have taken into account requirements and authorizations for new equipment items scheduled to become available in future years. Information about such new equipment is contained in the BOIP File.

In its role to provide current information regarding changes in personnel and equipment requirements due to initial issuance of new or improved equipment items in the Army, BOIP:

- Modifies the equipment authorizations given in TAADS and TOE to account for plans to issue new equipment.
- Contains appropriate new personnel requirements associated with the new equipment. (NOTE: Currently, BOIP is not used in PERSACS computations to determine force personnel requirements)
- Includes the estimated cost of line items of equipment. (Therefore, the cost of equipment changes involved in applying a BOIP to a specified force during a particular time frame can be computed.
- Automatically updates the LOGSACS authorized equipment quantities and LIN.

Application of discrete BOIPs to a given LOGSACS computation is user specified. SACS allows ODCSOPS (DAMO-FDA in conjunction with DAMO-RQR) to constrain the application of these BOIP to certain types of units, to units in certain areas of the world, to units of a specific component, or to other strategic elements. The BOIP identifies through either a specific unit identification (the UIC of a unit), or through a SRC (TOE document number), which units are to receive the new equipment items in SACS. The BOIP file also identifies what support equipment changes are required for the new equipment, what old equipment is to be replaced, and what the specific personnel requirements associated with the new equipment will be. BOIP is presented in greater detail in the BOIP appendix D.

(3) Shorthand Note (SHN) System is designed to facilitate changing equipment quantities within the LOGSACS environment through:

- Add,
- Delete, or
- Change

SHN application does not impact LOGSACS input files. Only output is affected. Thus if, for example, a units' tank authorization quantity is required to be increased by a factor of two via SHN, such increase is reflected in only the present LOGSACS output. That is, future LOGSACS computations for this particular unit will require similar SHN increment (X2) in order to provide its full tank requirement (this assumes that no document updating activities have occurred in the interval).

The Shorthand Notes application is brought to bear under "last minute" change conditions to effect a more accurate LOGSACS. Such "last minute" change conditions obtain when it is necessary to:

- Substitute for a BOIP when time or circumstances do not permit use of the BOIP system.
- Incorporate decisions concerning new equipment into SACS when other systems are untimely.
- Provide a temporary correction of SACS output data.

Shorthand Notes are written to modify quantities of equipment in particular units. Equipment quantities are adjusted either by adding to existing quantities or by changing the existing quantity with a new figure.

The Shorthand Notes process consists of a single Master file. The SHN Master File is resident on magnetic tape and is maintained by DAMO-FDA Equipment Analysts. The Shorthand Notes are aggregated into batches, with similar types of equipment usually in particular batches. When the equipment analysts write the Shorthand Notes they identify which notes apply to a particular SACS computation. Within a given Note, the analyst has the capability of changing any of all of the following elements: LIN, SRC, UIC, required quantity, authorized quantity, or any of the constraining information (e.g., EDATE, TDATE, COMPO, ASGMT, FPLAN, LOCCO, TPSN, STATUS, USAGE).

The Shorthand Note System is a powerful tool in that it facilitates override of equipment quantities specified by TAADS, TOE or BOIP. In the original design of the SHN system, SHN application was the very last step in the LOGSACS process, i.e., the "fine tuning" of the LOGSACS. However, subsequent to initial implementation of the SHN system, processes specifically addressing Aircraft and Tank Armament have been appended to LOGSACS necessitating further SHN "fine tuning" applications.

(4) The Air Armament (Air Arm) is a process designed to calculate the number of armaments packages, e.g., machine guns, necessary to support certain helicopters. Air Arm objective is to insure that each unit identified as requiring helicopter armaments is given exactly the number of armament systems it should have. Fixed ratios have been defined so that, based on the number of helicopters that a unit has, it will receive a certain number of armament systems. For example, the following are Aricraft LINs and their associated Armament LINs and the ratio used by the Air Arm program to compute the quantities given to the Aircraft LINs:

AIRCRAFT LIN: 233490

	I	II	III
ARMAMENT LINs generated:	A90123,	A90344,	L92260

Ratio used to compute the ARMAMENT LIN quantities follow:

I. Ratio: 1 ARMAMENT LIN A90123 generated for 1 AIRDRAFT LIN 233490

II. 1 ARMAMENT LIN A90344 generated for 4 AIRCRAFT LIN 233490

Thus:

Aircraft →	Z33490	1	2	3	4	5	6	7	8	9	10	11	12
Armament →	A90344	1	1	1	1	2	2	2	2	3	3	3	3

III. Ratio: 2 1/4 ARMAMENT LINs L92260 generated for 1 AIRCRAFT LIN 233490

Thus:

Aircraft →	Z33490	1	2	3	4	5	5	5	8	9	10	11	12
Armament* →	L92260	3	5	7	9	12	14	16	18	21	23	25	28

*Note: Because of the physical characteristics of each of the ARMAMENT LINs, fractions or remainders after computations are made are determined by Army Staff user and in most cases do not follow any mathematical logic such as "round up" or "round down."

Air Arm processing begins with the SACS detail file. The detail file remains unchanged, except for those armaments LINs and helicopter LINs which have been specified by the user. Air Armaments which are user-designated to be controlled via Air Arm ratio-computational processing follow a two-step process wherein:

- Step 1: Whenever the user-designated helicopter armament LIN is encountered in the detail file, the record is deleted from the detail and written (unchanged) to a smaller output file for possible future reference. New detail records for these LINs are generated in the next step.
- Step 2: New armament records are created on the basis of user-prescribed ratio of Armament LINs per Aricraft LIN. New armament records are given the SRC and EDATE-TDATE spread of their associated helicopter and are merged into the SACS detail file.

Air Arm processing thus facilitates the analyst's prescription of an Armament-to-Aircraft ratio schedule for certain specified helicopter armaments.

(5) The Tank Armament (Tank Arm) subsystem is very similar to Air Arm in objective and processing. Tank Arm, however, has recently met with several processing problems of a programmatic nature which have resulted in its being held in application suspense until such time

as program difficulties are remedied. Presently, Tank Armament adjustments are effected through application of Shorthand Notes.

When Armaments processing is complete, application of SHN batches of lesser magnitude then the initial LOGSACS SHN (5-6 batches versus 50-60 batches) is available for equipment analyst use. Such minor "fine tuning" is normally available whenever computational manipulations have impact of an interactional nature on other equipments.

Upon completion of minor SHN processing, Negative Suppression is invoked as a final measure to ensure the non-occurrence of negative equipment quantities. Following Negative Suppression the LOGSACS is prepared for report generation.

The primary analytic report produced by the equipment SACS is the "LIN Summary." This report shows the required and authorized quantities for each equipment item in the LOGSACS computation for six fiscal years. Each of the previously described subsystems in the Equipment SACS also produces a series of reports displaying what transpired in that particular subsystem. Such reports are helpful to SACS analysts in maintaining an audit trail through the SACS computational cycle.

6. CONTRIBUTIONS TO SACS

LOGSACS contributes the principal SACS product for the Logisticians of the ARSTAF and field activities. LOGSACS encompasses equipment requirements and authorizations at the UIC level of detail. This overall equipment requirement and authorizations data support (1) functions of programming and budgetting of resources and (2) functions of procurement and distribution of items of equipment.

APPENDIX F

FORCE ACCOUNTING SYSTEM (FAS)

1. SUBSYSTEM/MODEL/DATA

a. Title: Force Accounting System (FAS)

b. Status: Operational

2. REFERENCES

a. AR 1-1, Planning, Programing, and Budgeting within the Department of the Army, 25 May 1976.

b. Force Accounting System User's Guide, March 1976.

c. CSR 18-11, Force Development Management Information System, 18 February 1976.

d. Interviews:

LTC A. Taylor, ODCSOPS (DAMO-FDA)

Ms. T. Fasick, ODCSOPS (DAMO-FDA)

Ms. R. Baker, ODCSOPS (DAMO-FDA)

Mr. C. Danford, USAMSSA (ACAM-SDD-C)

Ms. V. Hughes, USAMSSA (ACAM-SDD-C)

3. STAFF PROPONENT

ODCSOPS (DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA (ACAM-SDD-C)

b. Equipment: IBM 370/165 or 3033

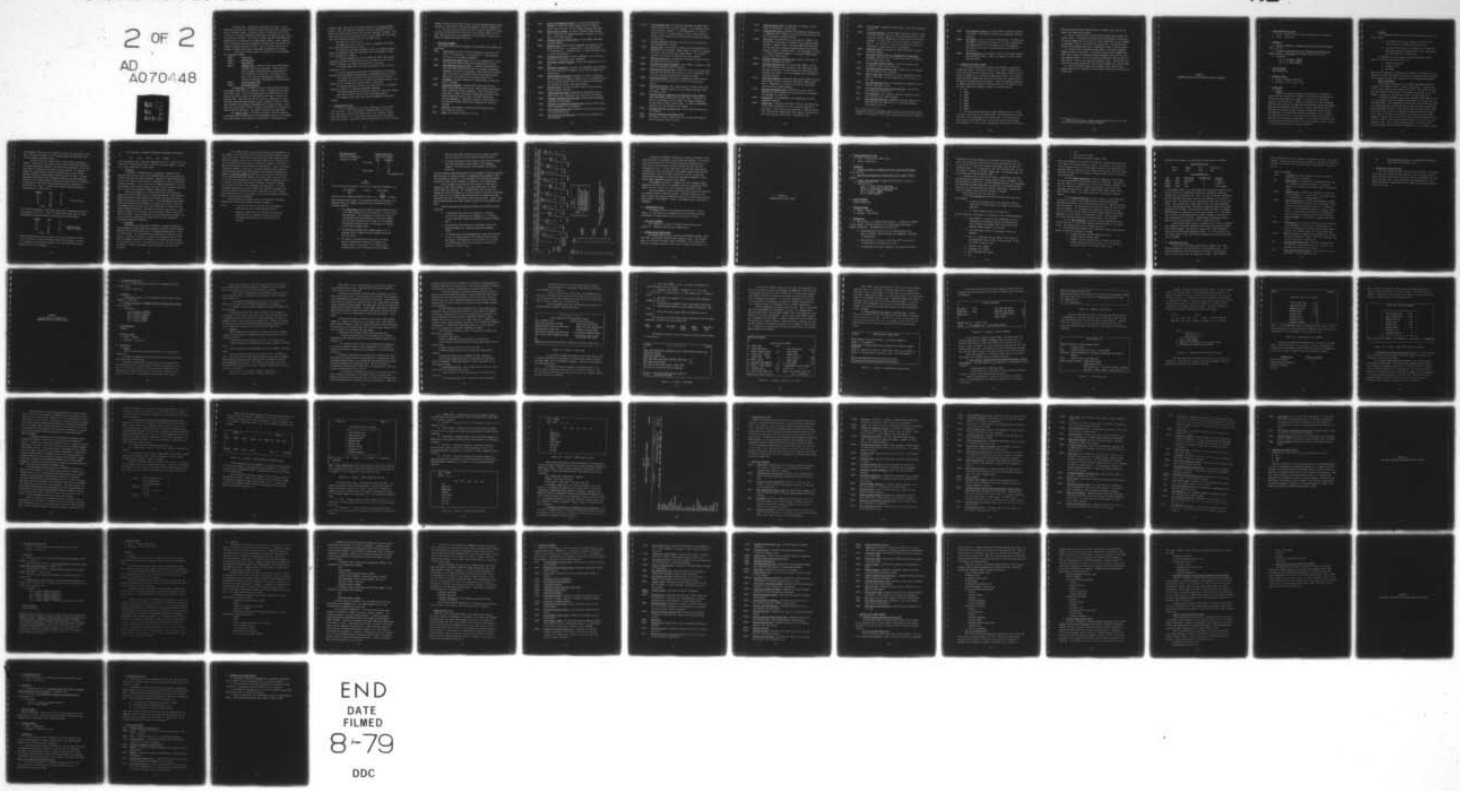
5. PURPOSE/ROLE

a. FAS provides the Army Staff with an automated means of maintaining the Master (M) and other forces at the UIC level of detail and the capability to access such unit data for Active Army, Army Reserve, Army National Guard, and mobilization units rapidly. It is a major subsystem of the Force Development Management Information System (FDMIS), and is used as a comprehensive data base to support all phases of the Army Planning, Programing, and Budgeting System.

b. FAS is composed of several files, the Forces File (PROFA), Notes File (NOTFA), and Manpower Annex (MANX).

AD-A070 448 GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS GROUP F/G 5/1
ANALYSIS TO DETERMINE FUNCTIONAL AND SYSTEMS REQIREMENTS FOR AN--ETC(U)
JAN 79 F O DEPPNER, J ANDERSON, J I POSNER MDA903-78-C-445
UNCLASSIFIED 1070-01-79-CR NL

2 OF 2
AD
A070448



END
DATE
FILMED
8-79
DDC

(1) Forces File. The PROFA is the main file of FAS. It is a multiple forces file and contains the Master Force as well as additional work or notional forces. The Master Force, also known as the M Force, is the force from which planning, programming, and budgeting force structure data are extracted. The M Force contains manpower requirements and authorizations as reflected in Program Budget Guidance (PBG), Command Plans, and other planning and programing documents from the current date through the budget year plus 5 years. Work or notional forces can be created to support other force structuring requirements and studies.

Each force contains units of at least one of the following six components (COMPO):

COMPO 1	Active Army
COMPO 2	National Guard
COMPO 3	Army Reserve
COMPO 4	Unmanned Units - identifies TOE units which contain equipment pool but no personnel. These units are used in budget and apportionment computations for the procurement of equipment. FAS contains only basic force structure and manpower information; it contains no equipment requirements or authorizations.
COMPO B	Active National Guard
COMPO C	Active Army Reserve

(2) Notes File. The NOTFA is used to record multiple Standard Requirements Codes (SRCs) for Modified Table of Organization and Equipment (MTOE) units. This is necessary because the PROFA File can only display one SRC per record and the NOTFA must be used to account for multiple SRCs. Note SRCs are used for units not supported by a TAADS (The Army Authorizations Documents System) document in order to ensure that personnel and equipment requirements are correctly defined. Note SRCs can be used either to add or subtract requirements to the matching PROFA record for MTOE units. The NOTFA interfaces only with PROFA.

(3) Manpower Annex. The MANX was created to maintain manpower requirements and authorizations by Army Management Structure Code (AMSCO) and Program Element Code (PECOD) for those Table of Distribution and

Allowance (TDA) units that are allocated resources from multiple AMSCO sources. Also, the MANX file maintains civilian strengths by identity, whereas the PROFA file maintains only civilian aggregate strengths. Only Active Army TDA and TDA augmentation units may have MANX data since MTOE units are allocated resources from only one AMSCO source.

c. The objectives of FAS are to:

(1) Manage an accurate file of current, programed, and planned units within the Army's force structure.

(2) Provide a data base from which current or projected authorization or organization data for a specific unit, or grouping of units, can be retrieved for analysis.

(3) Provide managers and staff at HQDA with timely and accurate management information pertaining to units or grouping of units in the current, programed, or planned force structure of the Army.

(4) Provide HQDA with the official Army Master Force (M Force) Program per AR 1-1.

(5) Aid in maintaining unit-level accountability for Army military and civilian manpower authorizations at AMSCO/PECOD level of detail.

(6) Account for all parent Unit Identification Codes (UICs).

(7) Reflect the latest force structure and manpower guidance from Congress, OSD, and HQDA that has been issued to the field.

(8) Express the force structure in traditional force development languages as well as in financial management languages.

(9) Define planning force structures under the Total Army Concept.

(10) Provide input to various force development models.

(11) Interface with other Army resource management information systems.

6. CONTRIBUTION TO SACS

a. The first thing done in any SACS computation is to copy the M Force for study. This is initiated by ODCSOPS(DAMO-FDA) providing force selection criteria which identify the force components (Active Army, Army Reserve, etc.), type units (MTOE, TDA), and time periods selected for study. The FAS data base provides SACS with unit information

needed to identify units being studied, and the programed manpower aggregations for those units at the projected EDATE of the SACS computaiton.

b. The file of units selected from FAS during the selection process is called the Selected Units File and is the principal input file to a SACS computation, since the strengths and units present in FAS are the basis for PERSACS and LOGSACS controls.

7. MAJOR DATA ELEMENTS

FAS contains about 85 data elements; the following list contains the major ones:

ACTCO — Action Code, the force structure change to a unit on a given date. A = Activation, J = Inactivation, C = Reorganization, G = Gain to a new command assignment.

ADCON — Administrative Control Code, the UIC of a headquarters or unit that exercises higher headquarters administrative control.

AMSCO — Army Management Structure Code, a standard classification of Army activities and functions used for planning, programing, budgeting, and resource accounting. MTOE units have one AMSCO which is recorded in the PROFA; TDA units may have multiple AMSCOs which are recorded in the Manpower Annex file.

ASGMT — Assignment, the major command or DA staff agency to which the unit is assigned.

AUSTR — Authorized Strengths, includes AUOFF (Authorized Officer), AUWOF (Authorized Warrant Officer), AUENL (Authorized Enlisted), AUAGR (Authorized Military Aggregate), AUUSD (Authorized US Direct Hire), AUFND (Authorized Foreign National Direct Hire), AUIDH (Authorized Indirect Hire), and AUCIV (Authorized Civilian Aggregate). Authorized strength is that portion of the structure strength which can be supported by allocated manpower.

AUTHR — Authority, the document or guidance authorizing the unit's force structure position.

BRNCH — Branch, the branch of service of a unit.

CARSS — Combat Arms Regimental System, the historical designation assigned to combat and combat support units of Infantry, Armor, Field Artillery, and Air Defense Artillery TOE units.

CCNUM — Command Control Number, the major FAS/TAADS-VTAADS linking code. Identifies the command assignment, changes, and fiscal year for all TAADS document.

COMNT — Component Code for the Notes File, the FAS COMPO containing the Note SRCTO(s).

COMPO — Component Code, identifies the component and component duty status of the unit. 1 = Active Army, 2 = National Guard, 3 = Army Reserve, 4 = Unmanned Army, B = Active National Guard, C = Active Army Reserve.

DAMPL — DA Master Priority List, priority assigned to a unit for the allocation of personnel and/or equipment.

DEPLO — Deployment Package Assignment, special unit mobilization category.

DPMNT — Deployment Designation, indicates the deployment area and month for units scheduled for movement in the event of general war mobilization.

DSCMP — Display/Compute Indicator, indicates if a unit is displayed for information and computed (DSCMP = DC) or is displayed only and not computed (DSCMP = DO) for FAS reports and Structure and Composition System (SACS) computations.

EDATE — Effective Date, the date on which a unit's force structure position becomes effective.

ELSEQ — Element Sequence Number, sequences the subordinate units of major units, e.g., battalions which are part of a division.

EQCON — Equipment Readiness Condition Code, actual current equipment readiness for deployment.

ESCON — Equipment Serviceability Condition Code, actual current equipment serviceability for deployment.

FICOD — Force Identification Code, identifies the particular FAS force in the multiforce file.

FINOT — Force Code for the Notes File, the FAS force containing the Note SRCTO(s).

FPLAN — Force Planning Code, the major FAS management language used to structure Army units and force packages. First position indicates strategic category: A = Division Forces, B = Special Mission Forces, C = General Support Forces. Second position displays force package and the third position displays location or orientation.

JCSTY — JCS Unit Type Code, describes the type of unit for which the force requirement is stated.

LOCCO — Location Code, the location at which a unit is stationed or is programed to be stationed. Within CONUS, the code is a combination of the Army area and state abbreviation. For overseas locations, the code is an abbreviation of the country.

MACTO — Month and Action Code, contemplated deployment action for units not mobilized until after M-Day.

MBCMD — Mobilization Command Assignment, major command or agency to which units are assigned after mobilization.

MBLOC — Mobilization Location Code, location of a unit on or after M-Day; indicates the Army area and state for units in continental locations and overseas abbreviation for units in theater.

MBPRD — Mobilization Period, indicates the appropriate month (after M-Day) a unit will be activated or called to active military service.

MBSTA — Mobilization Station, the current station for CONUS active Army units; the overseas location for Army Reserve, National Guard, and COMPO 6 units.

MTOEC — Modified Table of Organization and Equipment Control Number, a major FAS/VTAADS linking code for MTOE units. Identifies the first six positions of unit's SRCTO, its command assignment, and the latest document change number. An MTOEC EQ 9999999999 indicates that the document is not VTAADS.

NEDAT — Effective Date for the Notes File, the FAS EDATE containing the Note SRCTO(s).

NTSRC — Notes File Standard Requirements Code.

NUMBR — The number of times a single Notes File Standard Requirements Code is computed within its UICCC.

OPAGY — Operating Agency Code, DA organizational element to which funds are allocated or suballocated.

PECOD — Program Element Code, the major DOD management language used to aggregate units, manpower, and dollars associated with the Five Year Defense Program structure.

PHASE — Phase Code, the authority for a unit record. PHASE D or G indicates that the record is supported by an approved TAADS document or general order. Any other PHASE Code indicates that the unit has an approved program position not yet supported by TAADS or a general order. M = DA message or letter; C = Command originated change; A = Approved Program Assumption; S = DA Staff Actions.

PRCON — Personnel Readiness Condition Code, actual current level of personnel readiness of a unit.

ROBCO — Readiness Objective Code, for Active Army (COMPO 1) units, this code packages units according to the light/heavy corps, Reforger, Airborne D, or other concept for Army Reserve and National Guard units. This code packages units according to readiness concepts.

SPLIT — Split Unit Indicator, identifies those parent UICCCs and their sub-elements which are located at different command assignments. Additionally, the parent unit and the sub-element must have unique TAADS documents.

SRCTO — Standard Requirements Code, identifies the basic Table of Organization and Equipment plus any variations for personnel and equipment in a TOE unit.

STACO — Station Code, the alphanumeric code designating the unit's geographic location.

STATS — Status Code, classifies the status of Active Army STRAF units by the state of readiness for use in specific missions or activities. Other units may be classified as CONUS Operating (CO), Theater (TH), Reimbursable (RM), Special Foreign Activities (FA), Exception Units (CE), or Deployable (DI).

STNNM — Station Name, a meaningful abbreviation of the unit's geographic location.

STSTR — Structure Strengths, includes STOFF (Structure Officer), STWOF (Structure Warrant Officer), STENL (Structure Enlisted), STAGR (Structure Military Aggregate), and STCIV (Structure Civilian Agregate). For MTOE units, structure strength is always at level 1. For TDA units, structure strength is individually determined to support the unit's "requirements."

TDATE — Transaction Date*, designates the last Julian date on which a record was updated.

TMCCC — Type MTOE (Modified Table of Organization and Equipment) Indicator, identifies the TOE series of the unit as defined by its TAADS/VTAADS SRCTO.

TPSNA — Troop Program Sequence Number, a code which groups units according to their mission and size.

TRCON — Training Readiness Condition Code, current level of readiness condition based on unit training.

TYPCO — Type of Unit Code, identifies the basic organization of the unit, 1 = TOE unit, 2 = TDA augmentation to a TOE unit, 3 = TDA unit.

UICCC — Unit Identification Code, the alphanumeric designation which uniquely identifies a unit.

UICNT — Unit Identification Code for the Notes File, the FAS UICCC containing the Note SRCTO(s).

UNCAP — Unit Capability, unit readiness capability assigned by HQDA and reflected in the TAADS document.

UNCLC — Unit Classification Code, aggregates units according to the exact function they perform, e.g., Air Cavalry Squadron, Neurosurgical Det, etc.

---

*This acronym is used to designate transaction date and termination date. Termination date is established based on EDATE in the SACS unit selection process. For purposes of this report, transaction date will be TRDAY.

UNCON Unit Readiness Condition, current overall readiness condition of the unit. Incorporates personnel and equipment readiness condition.

UNMBR Unit Number, a part of the unit's description. For MTOE units the UNMBR is the numerical portion of the unit's designation. TDA augmentations carry the number of the unit augmented. TDA units list the first four characters of the UICCC in this field.

UNTDA Unit Description, the narrative title of a unit which explains its functional mission. UNTDA is related to a unit's TPSNA/ELSEQ and SRCTO.

8. INTERFACE WITH OTHER SYSTEMS

a. The Army Authorization Document System (TAADS), is the major interfacing system. HQDA Detail TAADS is now a part of FORDIMS and is called the Authorizations Subsystem (AS). HQDA Summary TAADS is not yet a part of FORDIMS but is derived by summarizing AS data. On a monthly basis (see AUTS, Appendix B) FAS records (M Force) are updated with information from approved TAADS documents. These data replace assumption or command plan data previously reflected in FAS for the specific unit. The major linking data elements common to FAS and TAADS are:

- UICC
- EDATE
- CCNUM
- MTOEC
- SRCTO
- AMSCO
- STSTR
- AUSTR

b. The Structure and Composition System depends on FAS to provide the M Force structure for its computations. SACS interfaces FAS, TAADS, TOE, BOIP, and the Shorthand Notes System (SHN). By combining these data sources, SACS computes force structure personnel and equipment authorizations. In all of these computations, FAS provides the Selected

Units File which contains controlling unit reference data and the programed unit authorized strength.

c. FAS is interfaced with the Army Force Program (AFP) through the WILCON* report. FAS manpower authorizations (allocations) for the units of a given command must not exceed the total allocations for that command as reflected in AFP for the end of each fiscal year. The WILCON report provides force managers with such a comparison of data in these systems.

d. Vertical Force Accounting System (VFAS) is the major commands' (MACOM) version of the DA FAS. It provides selected Army commands with their units' data in an automated force development data base for internal command purposes. Its use accelerates information flows between the field and DA. VFAS has the same data elements as FAS. FAS and VFAS data tapes are exchanged between HQDA and the major commands that utilize VFAS.

e. FAS has interface (manual and automated) with several other systems that are not discussed in this document since they do not directly involve SACS.

---

*WILCON is an original acronym combining abbreviations of the word "control" and the name of an original requester.

APPENDIX G

PERSONNEL STRUCTURE AND COMPOSITION SYSTEM (PERSACS)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Personnel Structure and Composition System (PERSACS)

b. Status: Operational

2. REFERENCES

a. Handout in Support of USAMSSA Inter/Intra Divisional Briefing, 25-29 June 1973.

b. A Study of Army Data Bases for Personnel Authorizations and Assets, Volume 1 - Main Report, GRC Report OAD-CR-70, Nov 1974.

c. Interviews:

Mr. R. M. Walden, USAMSSA
Mr. S. D. Haupt, USAMSSA
Mr. C. B. Joyce, USAMSSA

3. STAFF PROPONENT

ODSCOPS(DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA (ACAM-SDD-C)

b. Equipment: IBM 370/165 or 3033

5. PURPOSE/ROLE

a. General

PERSACS is a series of computer programs that are designed to provide the Army General Staff (ARSTAF) with personnel requirements and authorizations information to support the functions of recruitment, training, distribution, etc. PERSACS is supportive of these management functions in its role of providing the Army Personnel System with requirements and authorizations by MILID (i.e., Officer, Warrant Officer and Enlisted) and by grade, branch, Military Occupational Specialty (MOS), and Remarks for all authorized positions in Army-wide units included in the user-specified force. To the extent that PERSACS is successful in meeting such informational requirements, it is of major contributive value in supporting the Army's objective of placing a trained soldier (a face) in every authorized position (a space) Army-wide.

b. Specific

(1) The PERSACS computation requires the availability of two key files, namely:

- The Selected Units File (extracted from the P Force which reflects the SIGMA corrective process),
- The Basic SACS Detail File (a merged file of TAADS and TOE requirements and authorizations detail representing the units selected for SACS study).

(2) PERSACS is a three-stage refinement adjustment process, applied to the Basic SACS Detail File, of:

- Remarks Adjustment,
- Interface, and
- Factoring.

When these refinements are completed, the PERSACS is distributed to the ARSTAF for further processing with respect to personnel related functions. The refinement processes are explained in the following subparagraphs.

c. Remarks Adjustment

The rationale and purpose of the remarks adjustment routine is to ensure that PERSACS reflects the best data possible. TAADS and FAS do not contain identical data element structures. Each system has some data that differs from the other. The remarks data element is one such element. Remarks are contained only within the TAADS data base.

The Remarks Adjustment ensure that documented TAADS remarks apply to TOE information, when both TAADS and TOE provide unit detail data for different EDATES. Unit information from the FAS is "time oriented" based on its EDATE and while a given unit may at time 1 receive its authorizations from TAADS, at time 2 it may receive from TOE, and at time 3 again from TAADS. When a unit is to receive its authorizations from TAADS, (e.g., time 1) its record in TAADS data base carries the data element "Remarks"; whereas, when the unit is to receive its authorizations from TOE (e.g., time 2), its record in the TOE data base will not carry the "Remarks" field. Thus, in those instances when a unit receives TOE detail information and TAADS detail information, as in the above example,

the "remarks" field does not automatically carry over from TAADS to TOE. This circumstance requires that the TAADS remarks be projected to TOE via the remarks adjustment process.

The TOE's lack of a remarks field is particularly relevant to a PERSACS. Specifically, the remarks field carries qualifying information for certain personnel positions; such qualifying information is over and above what is reflected by the grade, branch, and MOS. For example, a remark code could indicate peculiar qualifications such as tracked vehicles qualified, special weapon qualified, male or female. Remarks adjustment essentially involve holding as constant the percentage distribution of all authorizations with peculiar qualifications as reflected by the remarks field under TAADS-to-TOE transitional conditions as described above. Thus, if TAADS shows a Remarks Quantity/Percentage distribution for a given unit of

Remark	Qty	%
01	10	10
02	05	5
03	50	50
04	35	35
Total	100	

Projection Key

but the TOE counterpart to this TAADS shows only an aggregated authorization quantity of 80 (i.e., 100-80 = 20 fewer than TAADS) then the TAADS percentages distribution would be projected into the TOE thusly:

Remark	Qty	%
01	8	10
02	4	5
03	40	50
04	28	35
Total	80	

Projection Key Remains Constant

Remark characteristics are thus made to project from TAADS into TOE in direct proportion to their occurrence within TAADS document, resulting in a scaled-up or scaled-down version of particular qualifying remark quantities in the TOE document.

Upon completion of Remarks Adjustment processing, TOE elements of:

UIC Grade Branch MOS Remark %

will be expanded from a single TOE aggregated line for a given unit to be identical to TAADS multiple detail lines for the unit, albeit to scaled-up or -down quantities, as shown above.

d. Interface

Interface is a PERSACS program designed to "interface" the Selected Units File for, the current PERSACS study, with the detail file derived from the basic SACS processing. Through the interfacing process to match unit file to detail file, a determination is made of those units having no documents. If, at this point in PERSACS processing, a unit is undocumented, the Interface program will drop the unit from the unit file and it will not be reflected in PERSACS computational results.

Those units dropped in the Interface process were previously identified with the SIGMA process as being undocumented. With respect to PERSACS processing SIGMA presented the earliest and only opportunity to identify and correct such problem units. If an undocumented unit passes SIGMA processing and SRC information is carried on the unit, then TOE requirements data may permit basic SACS processing to continue the unit through PERSACS processing. TDA units carry no SRC data and are, consequently, destined to "No Compute" status in PERSACS unless rectified in SIGMA processing. Given no TAADS and no TOE authorization documents, the unit at interface processing is dropped from the final refinement/adjustment processing of PERSACS.

e. Factoring

Factoring is a process used in PERSACS to reconcile TAADS documents pertaning to MILID authorized quantities (Officer, Warrant Officer, Enlisted) with the FAS selected unit's personnel authorizations for the SACS under study. Such reconciliation is performed by individual units and is, in essence, a scaling up or down of HQDA approved TAADS or TOE detail documented quantities to conform to FAS authorizations reflected in the selected units file. Factoring adjusts only authorized strengths; adjustment to required strengths are not addressed in the factoring procedure.

In the SIGMA process, a user option permits the determination of the number of selected units (from FAS) having personnel quantities varying by more than a user-specified percentage from their respective HQDA approved strength. Such a role within the SIGMA process, referred to as the "Percentage Factoring" option, indicated the number of cases which mgiht warrant special user attention or intervention. Since, for example, a departure between a given unit's personnel quantities and respective TAACS personnel quantities requiring more than 700% factoring, tends to suggest an unusual discrepancy which may be the result of clerical error or an otherwise inadvertent change to the unit's data in the FAS file. In its role of "pre-processor" to basic SACS, SIGMA is intended to serve to identify these units that require inordinate factoring in PERSACS, and provides the facility for correcting such disparities. No actual factoring computations, to bring TAADS or TOE Personnel strengths into consonance with the selected unit record (from FAS), is done in SIGMA. Such computations are the sole domain of the Factoring module--the final step in the production of PERSACS.

The mechanics and iterative nature of Factoring are straightforward and may best be elucidated through an example:

Given:

1. A unit record (selected from FAS for this PERSACS) shows the unit to be authorized 100 officers.
2. Respective TAADS detail for the same unit reflects authorization of 4 different types of officers at the branch and MOS level for a total of only 90 officers.

FAS authorization		TAADS authorization	
Officers (in aggregate)		Officers (in detail)	
Strength Total 100		Type	Strength
	low grade	1	20
		2	40
		3	20
	high grade	4	10
			90 strength total

10%
disparity

Thus, on factoring iteration 1 (FI1) total authorized strengths of the

FAS aggregate	versus	TAADS detail
(100)		(90)

yield an initial computed disparity of 10%, i.e., $\frac{100-90}{100}$ by which TAADS strengths will begin, via the factoring objective process, to be adjusted toward FAS strength specification in accordance with the following schedule:

- The lowest grade with the highest strength (officer type #2 in the above example) will be the subject of the FI1 factoring adjustment. This strength is factored up or down by the computed disparity percentage to yield the strength value by which the given officer type is to be adjusted. The adjusting strength value, if fractional, is rounded to the nearest integer value.
- The adjusting strength delta (signed integer + or -) computed above is summed into the strength listed for the above grade.
- The impact on strength total effected by the above delta is determined by summing all strengths for grades subject to factoring. If the newly derived strength total is not yet identical to FAS strength,

then the next lowest grade with the next highest strength will be factored as per the above factoring procedure.

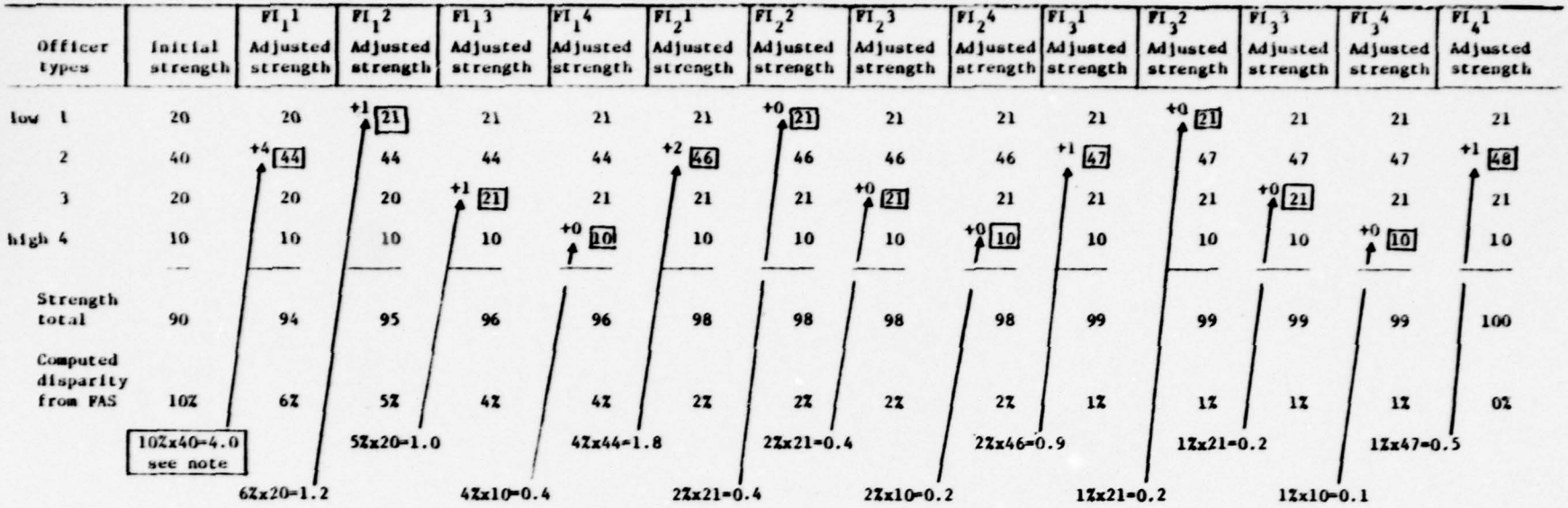
- o Factoring iterations continue until a newly derived strength total across personnel types equates to FAS aggregate strength. This may involve a great number of factoring iterations.

The above example, using TAADS detail officer strength of 90 with a requirement to factor all officer grades to an aggregate FAS strength of 100, is illustrated in figure G.1. The arithmetic and iterative processing involved to effect a 10% increment in strength is not insignificant.

Thus, as shown in the discusson and figure G.1, factoring is designed to make larger changes in the lower grades with the higher density MOSs and branches. The reasoning behind this is that such changes will have less impact on the unit's ability to perform its mission. Also, there is less training time associated with low grades and high population MOSs than with high grade, high skill positions. Hence, lower grade authorizations can be more readily restored if this becomes necessary.

Certain restrictions are observed within the factoring process including:

- A recognition that certain key jobs (e.g., aviators, doctors, etc.) should not be eliminated, i.e., factored to zero, even when authorized strength is reduced considerably.
- The exclusion from factoring of the highest officer and enlisted grades, e.g., general officers and sergeant majors.
- A provision within factoring generally avoids the reduction to zero of authorizations for any grade and MOS or grade and branch. The objective is to not factor to zero until all authorization lines for that military ID have been reduced to a value of one.



TAADS strength after:	TAADS strength:	
Initial	90	
FI_1^1	94	All grades adjusted$_1$
FI_1^2	95	
FI_1^3	96	
FI_1^4	96	
FI_2^1	98	All grades adjusted$_2$
FI_2^2	98	
FI_2^3	98	
FI_2^4	98	
FI_3^1	99	All grades adjusted$_3$
FI_3^2	99	
FI_3^3	99	
FI_3^4	99	
FI_4^1	100	

NOTE:

10% x 40 = 4.0

where,

10% is the computed disparity from FAS

40 is the strength attached to the lowest grade/highest strength

4.0 is the personnel strength to be added to this grade as a result of the factoring calculation

Figure G.1. Example: Factoring Iterations (FI) Required to Adjust Officer Strengths of a TAADS Document up to 10%

Factoring, in PERSACS processing, is a major contributor to the high incidences of discrepancy between TAADS and PERSACS. By virtue of the current practice to factor TAADS documented authorizations up or down to match FAS strengths, variation between the TAADS and SACS strengths will exit. In this connection, an additional SACS peculiar processing practice contributing to differences between TAADS and SACS authorizations files is the SACS utilization of TOEs as substitute authorizations documents for units that lack TAADS documents or where forced TAADS mismatched conditions are created.

When PERSACS factoring is complete, all unit strengths (MILID aggregates from FAS) will be in agreement with unit strengths by MILID within the unit's detail for record extracted from TAADS or TOE.

After the Remarks, Interface, and Factoring routines are completed, the PERSACS becomes a reporting system. A series of reports at the grade, branch, MOS, and type personnel levels are produced which indicate the contents of the PERSACS. A copy of the PERSACS type is provided to MILPERCEN.

6. CONTRIBUTION TO SACS

The PERSACS is one of the principal SACS products. In this respect, it contributes to the ARSTAF and field activities principal requirement and authorization data at the UIC level of detail.

7. MAJOR DATA ELEMENTS

Data elements are listed in the Basic SACS description at Appendix C. Therefore, they are not repeated here.

8. INTERFACE WITH OTHER SYSTEMS

The PERSACS product has no interface with ODCSOPS systems, other than PAAS, the Personnel Authorizations Analysis System. The principal user is the Military Personnel Center (MILPERCEN), where PERSACS data are used in systems relating to recruiting, training, distribution, etc.

APPENDIX H

SHORTHAND NOTE (SHN) SYSTEM

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: Shorthand Note (SHN) System

b. Status: Operational

2. REFERENCES

a. Handout in Support of USAMSSA Inter/Intra Divisional Briefings, 25-29 June 1973.

b. Structure and Composition System (SACS) User's Guide, USAMSSA, Undated.

c. LOGSACS (SHN SUBSYSTEM), USAMSSA DPR PH-0410-77, 15 April 77.

d. Interviews with:

Major J. Ionoff, ODCSOPS (DAMO-FDA)
Major R. L. Meredith, ODCSOPS (DAMO-FDA)
Mr. W. Collins, ODCSOPS (DAMO-FDA)
Mr. S. D. Haupt, USAMSSA
Mr. R. Frank, USAMSSA

3. STAFF PROPONENT

ODCSOPS (DAMO-FDA)

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Hardware: IBM 370/165

5. PURPOSE/ROLE

a. SHN currently is a LOGSACS subsystem only. It permits the ARSTAF to add, change, or delete equipment and related quantities during a LOGSACS computation. Shorthand Notes are used for:

- Correcting errors which may be in "authorization" data input to LOGSACS. Such correctons are immediately reflected in LOGSACS data.
- Substituting for a Basis of Issue Plan (BOIP) when time or circumstances do not permit use of BOIP.
- Incorporating last minute equipment authorization decisions.

Shorthand notes affect quantities of equipment in particular units. Units can be identified specifically by unit identification code (UIC), or by type of unit using the standard requirements code (SRC-the TOE document number). It is important to note that shorthand notes are used as a means of changing the LOGSACS output only - they do not change the contributing data base (TAADS, TOE, BOIP).

b. Shorthand notes are contained within a single Master File and are grouped into batches which contain similar items of equipment. New SHN are updated to this file. The SACS Equipment Analysts are responsible for developing the SHN, maintaining the SHN File, and identifying which notes are to be applied during each LOGSACS computation. The SHN File resides on magnetic tape which is maintained in USAMSSA.

c. SHN transactions and their uses are:

(1) The add transaction is the most frequently used and serves two purposes:

- To add new shorthand notes to the SHN File either by creation of a new SHN batch or by adding to an existing SHN batch.
- To replace existing notes in the SHN File.

The add transaction is matched to the SHN File on the following elements:

- Batch Number - a seven position alphanumeric used for information and retrieval purposes including analyst code, Standard Study Number (SSN) being analyzed and sequence number assigned by the analyst.
- Line Item Number (LIN) of the equipment item to be adjusted.
- S or U - S indicates that the SHN is to be written at the generalized level of SRC; U indicates that the SHN will affect a specific unit.
- Component Code (COMPO)
- Assignment Code (ASGMT)
- Force Planning Code (FPLAN)
- SRC

- o UIC
- o Location Code (LOCCO)
- o Troop Program Sequence Number (TPSN)

When these elements are matched to the SHN File, the add transaction data will replace the existing SHN File record. If a match is not found, then the add transaction data is appropriately inserted in the SHN File and a sequence number is automatically assigned to the note by the update system. Each note in each batch is assigned a sequence number when it is entered into the SHN File.

(2) The change transaction is used to change one or more fields in one or more notes in an existing batch on the SHN File. The analyst has the capability of changing any or all of the following elements: LIN, SRC, UIC, required quantity, authorized quantity, or any of the constraining information (e.g., EDATE, TDATE, COMPO, ASGMT, FPLAN, LOCCO, TPSN, STATUS, USAGE). The change transaction is matched on sequence numbers.

(3) The delete transaction is used to delete an entire SHN batch or portion of a batch from the SHN File where the SHN batch number specified corresponds to an existing batch in the file. SHN do not delete LIN from LOGSACS. LIN quantities may be reduced to zero but the LIN will still be present. If the required and authorized quantities are both zero, the LIN will not be printed on the LIN Summary Report (see LOGSACS appendix), but will appear in an SHN impact report. SHN processes will not delete (through subtracting) quantities below a zero quantity.

(4) The copy transaction is used to copy an existing batch from the SHN File and, in the process assign a new batch number to the copied notes. The original batch is not changed in any way.

d. The shorthand note application in LOGSACS is a four step operation which, in order of occurrence, includes:

- o Develop data and code SHN transaction forms.
- o USAMSSA prepares punched cards.
- o USAMSSA processes punched cards to update the SHN File.
- o USAMSSA applies SHN batches listed in the Data Processing Request (DPR) to the LOGSACS detail file.

Following is an example of a shorthand note application to LOGSACS.

Shorthand Note File

NOTE 1	WABBAA	(UIC)	Helicopter +1
NOTE 2	07015	(SRC)	Tank 2

SAC Equipment File

UIC	SRC	Equip.Item	Previous Qty	New Qty
WABBAA	01005	Helicopter	4	5 (NOTE 1)
WACCAA	07015	Tank	5	2 (NOTE 2)
WADDAA	05010	Tank	5	5 (No change)

In the example, NOTE 1 in the SHN Master File contains an addition transaction type note for WABBAA which will add 1 helicopter to whatever quantity the unit presently has. NOTE 2 is also an addition transaction of the replacement note type, which is to be applied to all units of a certain type. The type of unit is identified by SRC code, in this case 07015. This note will give these types of units two tanks regardless of what they originally had. The impact of these two notes on the SACS equipment file is shown. We see that the first note adds +1 to WABBAA authorizations for helicopters, giving a new quantity of 5. The second note, because its SRC matched that of WACCAA, replaced a quantity of 5 with a requirement of two tanks. WADDAA remains unaffected because it does not match the shorthand note file on either UIC or SRC.

The shortland notes system is a powerful tool in that it provides the capability to override equipment authorizations specified by TAADS, TOE, or BOIP systems. The decision to apply SHN to SACS ultimately rests with the SACS Branch Equipment Analyst. It is his/her judicious and proper usage of this "fine tuning" mechanism that benefits the accuracy of LOGSACS.

6. CONTRIBUTION TO SACS

Current SHN processing is applicable to LOGSACS only. SHN permit adjustments in LIN and quantity in the LOGSACS output. One of the more significant SHN contributions to LOGSACS is providing LIN data to FAS TDA units that are unmatched to TAADS. Unlike PERSACS,

where authorizations are not computed on unmatched FAS units, the LOGSACS Equipment Analysts can determine what equipment is required for particular TDA units and, through SHN, LIN detail data can be added to the LOGSACS products.

7. MAJOR DATA ELEMENTS

ASGMT	Assignment, the major command or DA staff agency to which the unit is assigned.
B/N	Branch Number, a seven position alphanumeric code used for information retrieval purposes. It includes analyst code, Standard Study Number (SSN), and sequence number.
COMPO	Component Code, identifies the component to which the unit is assigned. 1 = Active Army, 2 = National Guard, 3 = Army Reserve, 4 = Unmanned Army, etc.
FPLAN	Force Planning Code, the major FAS management language used to structure Army units and force packages. First position indicates strategic category: A = Division Forces, B = Special Mission Forces, C = General Support Forces. Second position indicates force package and the third position indicates location or orientation.
LIN	Line Item Number, is the specific equipment identification.
LOCCO	Location Code, the location at which a unit is stationed or is programed to be stationed. Within CONUS, the code is a combination of the Army area and state abbreviation. For overseas areas, it is the country code.
S or U	SHN field wherein S indicate that the SHN is to be written at the generalized level of SRC, and U indicates that the SHN will affect a specific unit.
SRC	Standard Requirements Code, identifies the basic Table of Organization and Equipment plus any variations for personnel and equipment in a TOE unit.
TPSN	Troop Program Sequence Number, a code which groups units according to their mission and size.

UIC — Unit Identification Code, the alphanumeric designation which uniquely identifies a unit.

8. INTERFACE WITH OTHER SYSTEMS

The only system that SHN interfaces with is LOGSACS. This interface permits the LOGSACS Equipment Analyst to add to, delete from, or change equipment quantities in specified type units throughout the force or one particular unit. This facilitates the incorporation of last minute adjustments in the LOGSACS output without necessitating complete reruns of the process.

APPENDIX I

SACS INFORMATION GATHERING AND MANAGEMENT ANALYSIS (SIGMA) SYSTEM

1. SYSTEM/MODEL/DATA BASE

a. Title: SACS Information Gathering and Management Analysis (SIGMA) System

b. Status: Operational

2. REFERENCES

a. SIGMA Users' Guide, US Army Management Systems Support Agency (USAMSSA), March 1978.

b. Handout in Support of USAMSSA Inter/Intra Divisional Briefing, 25-29 June 1973.

c. Interviews:

Ms. M. Randall, DAMO-FDA
MAJ R. Meredith, DAMO-FDA
MAJ J. Ionoff, DAMO-FDA
Mr. R. Walden, USAMSSA
Mr. C. Joyce, USAMSSA
Mr. S. Haupt, USAMSSA

3. STAFF PROPONENT

ODCSOPS

4. COMPUTER SUPPORT

a. Agency: USAMSSA

b. Equipment: IBM 370/165

5. PURPOSE/ROLE

a. General

SIGMA is a SACS exogenous process employed as a SACS pre-processing to:

- Accept any specified force selected from the Force Accounting ing System (FAS) for SACS study.
- Expeditiously identify apparent errors and inconsistencies between selected force unit structure and manpower aggregations in the Army Force Program as reflected in FAS, and the unit structure and manpower detail contained in The Army Authorization Documents System (TAADS) and the Table of Organization and Equipment (TOE) system.

• Afford a cathode ray tube (CRT) means of on-line correction of confirmed errors and inconsistencies, assuring that every possible unit in the selected force unit file is matched to either:

- Valid Table of Distribution and Allowances (TDA) documentation or Modified Table of Organization and Equipment (MTOE) documentation in TAADS, or

- Standard TOE documentation in the TOE file in the case of MTOE units for which no valid TAADS documentation is available.

• Achieve a near error-free interface between FAS, TAADS, and TOE data bases.

SIGMA emulates Basic SACS logic (see Basic SACS, Appendix C) to complete the unit match process and assess the percentage magnitudes of adjustment which will be required to bring TAADS/TOE selected unit manpower detail to FAS program level aggregations. However, SACS steps not essential to attain unit match/manpower adjustment SIGMA objectives are not replicated, thus greatly accelerating the SIGMA process.

b. Specific

Before SIGMA may be called upon to perform its role to prepare a force for structuring and computation, three data bases must be concurrently "frozen":

• FAS, specifically the Master (M) Force and the Notes File.

• TAADS, specifically TAADS Header with Detail Summary (strength) Files.

• TOE, specifically the TOE Header with Detail Summary (strength) files.

FAS contributes an exact copy of the M Force to the SIGMA process. The M Force copy is from FAS disk medium to tape using a USAMSSA utility program and effectively "freezing" the copied force, which is then redesignated the Q Force. The Q Force is the common force file from which SIGMA, based upon the Data Processing Request (OPR) selection criteria, will extract:

• A P Force for use within a PERSACS computation, or

• An L Force for use within a LOGSACS computation.

Upon SIGMA's P or L Force selection, the force will reside in its designated area on disk. TAADS and TOE document data bases are copies and frozen in like manner.

SIGMA performs sufficient SACS-emulating processing in its pre-SACS utilization to permit identification and correction of inconsistencies/incompatibilities between SACS-integral data bases. These deficiencies would not otherwise be identified until Basic SACS detail processing exposed interface failure between the TAADS, FAS, and TOE data bases when united within a SACS environment. Absent SIGMA, resolution of interface deficiencies exposed in Basic SACS would, effectively, require new start and re-run of the time consuming Basic SACS detail processing. Using SIGMA:

- The selected force is overlayed with current TAADS document numbers as a means of providing each constituent unit a key element to select detail document records for computation within a SACS environment. The association of a selected unit with a TAADS document earmarks that unit to receive its authorizations from TAADS.
- Those units not having a TAADS document number will:
  - Either be associated with a TOE document via a standard requirements code (SRC) and receive their authorizations from that TOE document; or
  - Be dropped from the force in the ensuing SACS computation, in the event a match to TAADS or TOE documentation is not effected through intercession of Command or Force Managers in successive SIGMA iterations.
- Interface deficiencies are expeditiously exposed; and resolution within the SIGMA process is facilitated by a conversational teleprocessing characteristic of the system (via CRT) which permits on-line corrections/updates to the selected units. The major sources of inconsistency/incompatibility identified as deficiencies for correction through the SIGMA process derive from:
  - The failure of selected force units to be paired with appropriate resource documentation from TAADS or TOE, as outlined above. Causative factors vary from initial use of incorrect unit identification through nonavailability of approved resource documentation. SIGMA edit

procedures isolate and allow addressal of mismatches, producing reports affording SIGMA users the opportunity to take on-line corrective measures insuring force-to-resource documentation interface compatibility.

- Isolation through the SIGMA percentage factoring option of those units having TAADS/TOE personnel strength quantities which depart markedly from unit strengths reflected in force data copies from FAS. Aberrant data are, thus, flagged and managers are effectively afforded advance notice in time to verify or correct the data concerned through on-line measures.

In sum, SIGMA has a key precursive role in force selection and preparation and is a pre-process integral to both LOGSACS and PERSACS computation. When SIGMA's role in force preparation is completed, the Force Accounting and Systems Division (DAMO-FDA), ODCSOPS, signals USAMSSA that the force is ready for a SACS computation. USAMSSA then proceeds to Basic SACS processing (requisite to both LOGSACS and PERSACS) culminating in a "FIRST STOP" processing pause for accuracy analysis prior to continuation of LOGSACS or PERSACS processing.

For descriptive purposes, SIGMA is functionally divisible into six discrete functions:

- Load the SACS force.
- Overlay TAADS/TOE files and match to the SACS force.
- Edit overlay, identify mismatch/strength aberrations, produce errors report.
- Update records and correct errors via CRT.
- Assess/validate target totals summarizing SIGMA process outcomes.
- Release the SACS force to USAMSSA for SACS computation.

Each of these SIGMA functions is accomplished via CRT (hard-wired into USAMSSA) by DAMO-FDA personnel. Each is described in the following paragraphs.

(1) Load the SACS Force. Before SIGMA users can effect a SACS force load, four conditions must obtain:

- The Q Force tape file copied from the FAS file must be available.
- The desired TAADS file (a tape file) must be available.

- The desired TOE file (a tape file) must be available.
- User authority for legitimate SIGMA program access must be recognized by the system.

Prior to initiation of a SACS force load, USAMSSA must be notified of the SIGMA user's intent to load a SACS force so that the Q Force (selected unit file), TAADS and TOE tape files may be made available for load to SIGMA's LOG or PER disk area.

After successful entry into the SIGMA process, the user is provided several options in CRT display form:

```
                    O P T I O N   L I S T
            PLEASE ENTER ONE OF THE FOLLOWING OPTIONS:
T-TO TERMINATE JOB                    NOTES-TO SPOOL NOTE FILE,
LOAD-LOADS SELECTED FAS FORCE           AFTER NOTES ARE SPOOLED
OVERLAY-OVERLAY FAS FILE WITH TAADS     ENTER P-TO PAGE SEQUENTIALLY
EDIT-FOR EDIT OPTION LIST               THROUGH UICS WITH NOTES
VIEW-DISPLAY SPOOLED DATA FROM EDIT   R-TO RELEASE COMMAND REPORTS
S-TO PAGE TO NEXT SEQUENTIAL SUBSET   F-TO RELEASE FORCE TO SACS
                                        (DO NOT USE THIS CODE)*
OR
ENTER EIGHT POSITION KEY TO VIEW A SPECIFIC UIC (FORCE, COMPO, UIC)
```

Figure I.1. Display: Option List

At this point in SIGMA processing the user must signal intent to LOAD the SACS force in response to the OPTION LIST prompt by typing the word "LOAD" into the CRT display terminal. Control is now passed to the SIGMA LOAD module.

The SIGMA LOAD module presents a prompting display to the user in order to ascertain specifics of force selection criteria. The user is asked to first enter the security key, enter the command "LOADIT" and then provide the following:

- Force Code (FORCO) - (e.g., M is used to designate the "frozen" Master Force or Q Force).
- Component Code (COMPO) - (Normally 1, 2, 3 or 4 where 1 = Active Army; 2 = National Guard; 3 = Army Reserve; and 4 = Unmanned Army).
- New FORCO (for example, "S" or any other alpha designator assigned by the user).
- Termination Date (TDATE) of SACS computational time frame.
- Effective Date (EDATE) of start of SACS computational time frame.
- Type of SACS being loaded (PERS for PERSACS or LOG for LOGSACS).

For purposes of our discussion example addressed in the following paragraphs, the force selection criteria are:

FORCE	COMPO	New FORCO	TDATE	EDATE	Type SACS
M	1	S	800930	780101	PERS

The display format for the force selection criteria prompt appears to the user as:

```
USAMSSA                    C S B - L O A D E R                    USAMSSA

THIS LOAD PROGRAM WAS DEVELOPED TO COPY A FORCE FROM FAS USING SACS
SELECTION CRITERIA.
ENTER THE SECURITY KEY
THE FORCE CODE, THE COMPO, THE NEW FORCE CODE,  1-3
THE TDATE AND THE EDATE                         4-15
THE TYPE OF SACS BEING LOADED - PERS, EQUIP.
A LISTING OF RECORD KEYS WILL BE PRODUCED

Security - KEY 12345678901234567890123456789O
LOADIT     M1S800930780101PERS
```

Figure I.2. Display: CSB-LOADER

In the current example, after the user types in the specifics of the force selection criteria and depresses the ENTER key, the force load is initiated such that the Q Force (COMPO 1) for the time frame ranging from 780101 to 800930 is loaded into the PERS disk area and the loaded force is assigned a new name, S. A convenient convention is to assign P to a selected force destined to be used in a PERSACS computation and L to a selected force to be employed within a LOGSACS computation.

Only one COMPO may be loaded at any one time. Thus, if the SIGMA user has a requirement to load COMPOs 1, 2, and 3, for example, then three discrete loads (with attendant "LOADIT" force specifications as per Figure I.2.) must be accomplished. Time to load a given COMPO is generally contingent upon the number of records contained within the COMPO and may require up to several minutes. While the force is loading, the user is kept informed (at one minute intervals) of the number of records loaded. A final record count display for the force specified in the previous example might be as follows:

```
M1S800930780101PERS
S1
                        SACS FILE LOAD COUNTS
A - INPUT PROFA                7,596
B - FAILED PRE-TDATE                        I - TOTAL MTOE UNITS          4,355
    EDATES GREATER 800930        350            BLANK CCNUM                479
C - FAILED POST - TDATE                         FORCED CCNUM                 2
    TDATES LESS    780101          4        J - TOTAL TDA UNITS           2,684
D - FORCO, SPLITS                  2            BLANK CCNUM                 52
E - DUPLICATE RECS DROPPED         0        K - TOTAL NOTES                283
F - ACTCO - J RECS DROPPED       201          RELATIONSHIP OF FILE COUNTS
G - SELECTED UNITS             7,039        A-B-C-D-F = G    G = I + J
H - DISPLAY ONLY UNITS (DO)      212        ENTER C FOR ANOTHER COMPO LOAD
LOAD RAN IN o MIN 54 SEC 00                          OR T TO TERMINATE
```

Figure I.3. Display: SACS File Load Counts

Thus, COMPO 1 units selected total 7,039 in the current example from the Q Force of 7,596 units. This unit selection is composed of MTOE and TDA units within COMPO 1 as constrained by the specified EDATE and TDATE. Having loaded COMPO 1, the user may proceed to load additional COMPOs or to terminate the LOAD module. Additional COMPOs are loaded in accordance with the procedures we have already described. If the user indicates LOAD termination, SIGMA returns to the OPTION LIST display (Figure I.1.) from which the user should select the next SIGMA action option: OVERLAY.

(2) Overlay TAADS/TOE and Match to the SACS Force. Having selected the OVERLAY option, the SIGMA user must initiate two required overlay passes one at a time. Displays for overlay specification and record count are similar for both. For example, on the first overlay pass the user will be asked to provide specification data as shown below:

```
USAMSSA                    COMPUTATIONAL SYSTEMS BRANCH

TAADS OVERLAY OF FAS WITH OPTIONS - USE OVERLAY HANDOUT #1
ENTER 'T' TO TERMINATE
ENTER YOUR 9 POSITION SECURITY KEY (OVERLAY##) FOLLOWED BY CONTROL
STATEMENT
TYPE 1-7, EDATE 8-13, FORCE 14, COMPO 15-19, TYPCO 20-22, DELETE 23,
CARDS 24, TAPE-OR-CARDS 25, SRCTO 26, LOGIC 27-28, TYPE-TAADS 29

SECUR-KEY000000000111111111122222222233333333334
123456789123456789012345678901234567890123456789
```

Figure I.4. Display: Computational Systems Branch

As was the case in the force load procedure, record counts are displayed for user information at one minute intervals until the overlay is completed:

```
                        OVERLAY COMPLETED

FAS READ -       5632                LOGIC HITS FOR SACS -          2
TAADS READ -    13530                UNMATCHED FAS RECORDS -      119
TRANS OUT -         4                SRCTO OR ASGMT CHECKS -       53
                                     BLANK CCNUMS -                55

OVERLAY RAN IN:  1 MINS 12 SECS
ENTER:  T - TO TERMINATE OR C - FOR ANOTHER OVERLAY
```

Figure I.5. Display: Overlay Completed

Two overlays are required during SIGMA. The first overlay is performed separately by COMPO for approved TAADS documents only. It overlays TAADS CCNUM and MTOEC data elements into the Selected Units record if they are blank. The second overlay is performed for all other matched TAADS documents, and overlays the CCNUM and MTOEC data elements into the applicable records of the Selected Unit file if they are blank.

After both overlays are completed, SIGMA returns to the OPTION LIST display and the EDIT option is normally selected.

(3) Edit Overlay, Identify Mismatch/Strength Aberrations, Produce Errors Report. The EDIT Module has the capability of performing two types of edits:

- Identification of unmatched units.
- Identification of units with critical strength differences relative to their corresponding resource documents.

Within the EDIT Module, the user is first asked to provide specific force-identifying information as indicated by the following CRT display:

```
YOU HAVE CHOSEN THE EDIT OPTION
PLEASE ENTER FORCE, COMPO, AND SIX * TO START EDIT AT BEGINNING OF COMPO
OR FORCE, COMPO, AND UIC TO START AT A PREDETERMINED POINT IN FILE
T - TERMINATE EDIT
V - VIEW SPOOLED DATA
```

Figure I.6. Display: Edit Option

The user identifies the force to be edited and has the option of beginning the edit from the first record in the force file, or from any predetermined point in the force file by specifying UIC. When the force to be subjected to the edit has been identified, the user is shown the following display from which to choose the type of edit to be performed:

```
                        EDIT OPTION LIST

PLEASE ENTER ONE OF THE FOLLOWING OPTIONS
T         - TERMINATE EDIT
EDIT      - SIMULATES FIRST STOP LOGIC - SPOOLS ERRORS
EDIT3XXX - CHECKS PERCENTAGE OF FACTORING, REPLACE XXX WITH DESIRED
           PERCENT
VIEW      - DISPLAY SPOOLED DATA FROM EDIT
ADD FOR TARGET PROGRAM:  CHOOSE EDIT OPTION.
                         FORCE/COMPO/******.
                         EDIT OPTION PAGE.  TYPE TARGET (COMPO IS EDITED).
                         TERMINATE:  CHOOSE TARGET:  ENTER DATES (UP TO 3)
```

Figure I.7. Edit Option List

Normally, the first option selected is "EDIT." This edit matches the FAS file against TAADS or TOE and displays unmatched units. All COMPOs are edited in one pass. When errors are spooled, they are automatically written to a designated disk area from which they may later be requested for viewing. A hardcopy report of all errors deriving from mismatching conditions is produced by USAMSSA for the SIGMA user's investigation of mismatch causative factors. The data contained in this report listing is formatted (by COMPO) as follows:

FORCE = L COMPO = 1

UIC	EDATE	TDATE	CCNUM	SRC	MTOEC	TAP	FAGR	TAGR	(MESSAGE)
WABDA	760621	790916	FC0278	06201H300100	06201HFC82	ICD	251	203	BAD CCNUM
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.

Where:

- TAP is: Type Code (1, 2 or 3)
  Activation Code (C, J, H, G)
  Phase Code (D, A, C, M)
- FAGR is the Force aggregate
- TAGR is the TAADS aggregate
- MESSAGE will be error descriptive (e.g., BAD MTOEC, NO MATCH)
- Other elements are as generally defined elsewhere

Figure I.8. Hardcopy EDIT Errors Report Format

Each discrepant unit is listed as a result of the initial edit procedures. The edit error listing of discrete problematic units is summarized at the end of the report as follows:

FORCE = L COMPO = 1

SIGMA FIRST STOP EDIT COMPLETE

FORFA RECORDS READ	-	8,317
TAADS RECORDS READ	-	24,399
NUMBER SRCS READ	-	1,036
MATCHED TAADS	-	7,226
MATCHED SRCS	-	1,036
RECORDS SPOOLED	-	171
FACTORED BY 0%	-	0
UNMATCHED RECORDS	-	55

NOTE: "FORFA RECORDS READ" refers specifically to the copy of the FAS file containing unit records exclusive of MANX and Notes File data; see FAS Appendix F for a discussion of the latter two files.

Figure I.9. Hardcopy EDIT Error Summary

Resolution of mismatching conditions as reflected by the error report listing (referred to as "scrubbing" the edit listing) may be accomplished by user manual research effort utilizing, in combination, the following primary reference materials generated by USAMSSA:

Report Title	Number of Volumes
TAADS Header Report	3 - 4
Comp File Digest Substitute	1
Monthly SRC Changes	1
AMS PAAL	3

While the edit is processing, record counts are displayed on the user's CRT at one minute intervals in a format similar to the edit hard copy summary. The record count shows both the number of records read and the number of mismatched units (to a maximum of 999):

```
                    SIGMA FIRST STOP EDIT COMPLETE

              * * * * * * * * * * * * * * * * * * * * *
              *    FORFA RECORDS READ  -   5,659     *
              *    TAADS RECORDS READ  -  13,530     *
              *    NUMBER SRCS READ    -     182     *
              *    MATCHED TAADS       -   5,445     *
              *    MATCHED SRCS        -     182     *
              *    RECORDS SPOOLED     -     194     *
              *    FACTORED BY 0%      -       0     *
              *    UNMATCHED RECORDS   -      32     *
              * * * * * * * * * * * * * * * * * * * * *
TIME  2 MIN 26 SEC  ENTER:  C-TO CONTINUE  V - VIEW SPOOL  T - TERMINATE
```

Figure I.10. Display: Sigma First Stop Edit Complete

(4) Update Records and Correct Errors via CRT. Correction updates to the selected force, based upon SIGMA user mismatch resolutions, are performed in batch mode by USAMSSA.

All corrective/updating actions employed by the SIGMA user must be executed in batch mode. All batch updates (whether directed toward P or L Force) are applied to the Q Force. Thus the "frozen" or ongoing M Force files are unaffected by SIGMA updates. The corrections made to SACS data via SIGMA are output on listings to Command and Force Managers. It is then incumbent upon them to code and input these corrections to a subsequent update of the FAS file in order that corrections made via SIGMA may become a matter of permanent record, if approved.

Batch updates are generally accomplished after regular working hours. When the Q Force update is completed (by the next morning) the selected P or L Force may be reloaded from Q into the appropriate SIGMA PER or LOG work area on disk. The impact of the force update is assessed as the user executes OVERLAY and EDIT options, as previously discussed. The batch update reload cyclical procedure is reiterated until the user is satisfied that the selected force and resource documents are "clean" and have high quality interface potential for computations within a SACS environment.

An important additional force and interface assessment option, Percentage Factoring, is available to the user with the SIGMA EDIT module. It identifies units having TAADS/TOE resource document strengths departing by more than a specified percentage from the strength aggregations copied from FAS. The user may select a percentage factor ranging from 0% to 100%. Results are of particular consequence to PERSACS users in early identification, assessment, and correction where possible of broadly disparate P Force vs resource document unit strengths. Absent correction, operation of the PERSACS FACTORING function (see PERSACS Appendix G) can induce substantive grade, military occupational specialty (MOS), and strength distortions in PERSACS output.

The Percentage Factoring Edit is the "EDIT3XXX" system in the EDIT option list (Figure I.6.) where XXX may assume a percentage value ranging from 0 to 100. The percentage specified serves as the compare criteria in the Percentage Factoring Edit wherever all documented strengths requiring XXX% or more factoring (in order to come into agreement with authorized strength in the selected forces file) are assembled and listed out in a report for user evaluation. As outlined above, the Percentage Factoring Edit thus facilitates the user's identification of records which would require extraordinarily high percentages of factoring if allowed entry into the SACS environment without modification. In this way, gross strength errors may be caught and corrected.

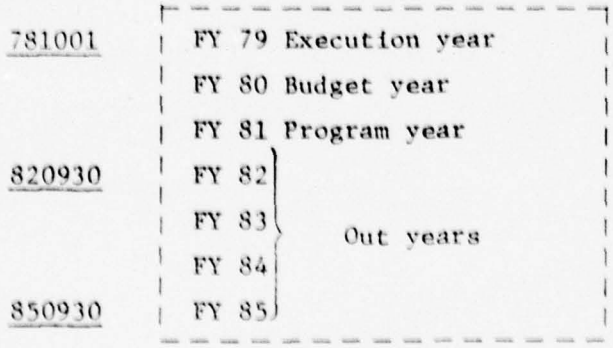
SIGMA has sufficient disk space allocated for spooled errors to accommodate up to 300 errors. To qualify for error spooling, a mismatching condition may exist or a record may require more than XXX% factoring. That is, SIGMA presently makes no distinction between errors spooled for

reasons of mismatch or of excessive factoring requirements. Out of consideration for this limited disk space, the SIGMA user will normally correct ("scrub") unit mismatch conditions before initiating the Percentage Factoring Edit.

(5) Assess/Validate Target Totals Summarizing SIGMA Process Outcomes. A final option available to the SIGMA user is the Target Program. Target totals are the PERSACS-oriented "last step/final check" in SIGMA processing. The identification of remaining unmatched units coupled with the display of records read, matched, spooled and unmatched, and other MACOM-specific data, are used by the PERSACS analyst as broad indices of strength validity preparatory to basic SACS processing. The Target Program option results in a hardcopy printout containing three general classes of display data:

- Identification of nonmatching units by UIC.
- Summarization totals of records read, matched, unmatched and spooled.
- Personnel category (OFF = commissioned officer, WOF = warrant officer, ENL = enlisted, AGR = military aggregate, CIV = civilian) strengths across "validity" indices by MACOM.

The three display classes are ordered first by date. At the outset the Target totals user provides three dates. Typically, these dates are chosen so as to be evenly distributed across PERSACS-addressed years. For example, from an October 1978 PERSACS the user might specify dates of:



Within the time frames bounded by the three dates specified, the display classes are ordered by COMPO and, within COMPO, the display classes are presented in the order given above. The first display class is a listing of unmatched units, by UIC, in the format given below as an example:

FORCE = P COMPO = 1

UIC	EDATE	TDATE	CCNUM	SRC	MTOEC	TAP	FAGR	TAGR
.	.							
.	.							
.	.							
WAQY90	790930	790315	11111T			2AA	8	NO MATCH

Figure I.11. Display: Target Listing of Unmatched Units

Those unmatched units not amenable to resolution by user analyst effort may be referred to the appropriate Force Manager for resolution by liaison with appropriate MACOMS. Unmatched units cannot be included in SACS computations.

The second display class is a summary of records read, matched, spooled and unmatched. Again, this display occurs by Date and by COMPO and follows the general format shown in Figure I.12. It precedes and is used by the PERSACS-oriented analyst in conjunction with the third display class shown in Figure I.12.

```
        FORCE = P                                          COMPO = 1

                        SIGMA FIRST STOP EDIT COMPLETE
                    * * * * * * * * * * * * * * * * * * * *
                    *  FORFA RECORDS READ  -              *
                    *  TAADS RECORDS READ  -              *
                    *  NUMBER SRCS READ    -              *
                    *  MATCHED TAADS       -              *
                    *  MATCHED SRCS        -              *
                    *  RECORDS SPOOLED     -              *
                    *  FACTORED BY 0%      -              *
                    *  UNMATCHED RECORDS   -              *
                    * * * * * * * * * * * * * * * * * * * *
TIME  MM  MIN  SS  SEC    ENTER:  C - TO CONTINUE  V - VIEW SPOOL
T - TERMINATE
```

NOTE: "FORFA RECORDS READ" refers specifically to the copy of the FAS file containing unit records exclusive of MANX and Notes File data; see FAS Appendix F for a discussion of the latter two files.

Figure I.12. Display: TARGET Summary of Records

The third display class, also ordered by Date and COMPO, is an expansion by MACOM of the preceding displays. This display takes the general form shown in Figure I.13. and is "rolled up" by COMPO to a summarized level, in Date totals, in the general form shown in Figure I.14. For both Figure I.13. and Figure I.14., the following definitions apply:

- "FAS" - Strength totals in each personnel category as contained in the P Force derived from the Q Force copy of the FAS selected units file.
- "UNDOC TDA" - Strength totals in each personnel category for TDA units in the selected force which are unmatched by TAADS resource documents.

- "UNMTCH TOE" - Strength totals in each personnel category for MTOE units in the selected force which are unmatched by either TAADS or TOE resource documents.
- "PERSACS" - Strength totals in each personnel category for the PERSACS P Force.
- "AVAIL TAADS" - Strength totals in each personnel category for units in the selected force which have been matched to TAADS resource documents.
- "AVAIL TOE" - Strength totals in each personnel category for MTOE units in the selected force which have been matched to TOE resource documents.
- "FAC TAD" - Indicates incidence by personnel category of Factoring which will be necessary in SACS processing to bring TAADS documented manpower strengths up to or down to P Force strengths derived from FAS.
- "FAC TOE" - Indicates incidence by personnel category of Factoring which will be necessary in SACS processing to bring TOE documented manpower strengths up to or down to P Force strengths derived from FAS.

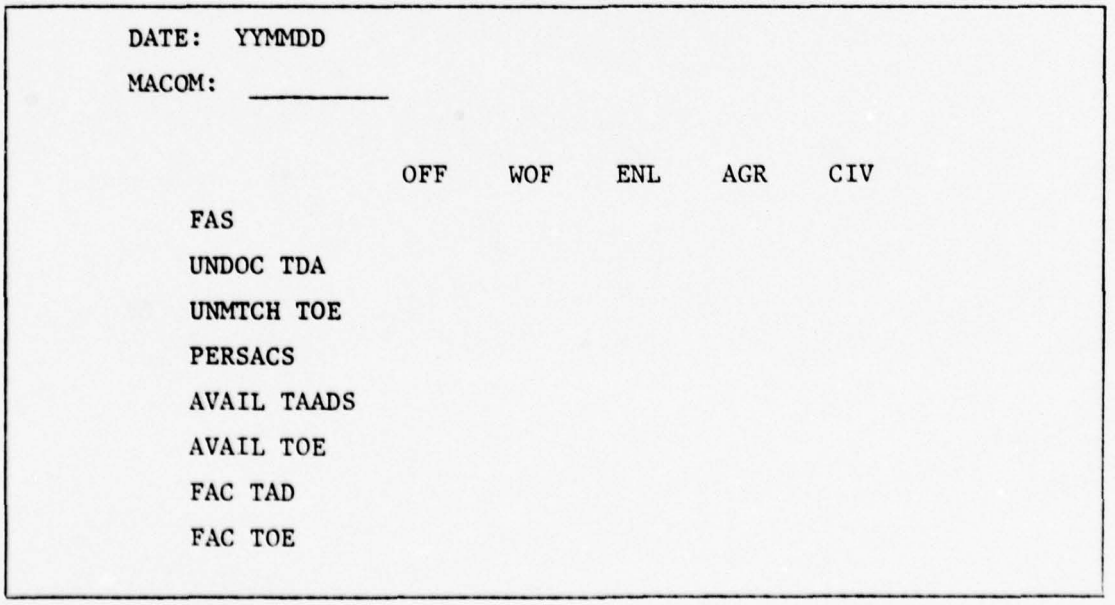


Figure I.13. Display: TARGET Totals by MACOM

DATE: YYMMDD

DATE TOTALS: _____

	OFF	WOF	ENL	AGR	CIV
FAS					
UNDOC TDA					
UNMTCH TOE					
PERSACS					
AVAIL TAADS					
AVAIL TOE					
FAC TAD					
TAC TOE					

Figure I.14. Display: TARGET Totals by Date

These displays facilitate analyst assessment of the plausibility of unit personnel composition and structure across personnel category, by MACOM and by COMPO. Certain expected internal consistencies support such analyses. These expectations include relationships such as the following:

FAS = (UNDOC TDA + UNMATCH TOE + PERSACS)

PERSACS > (FAC TAD + FAC TOE)

(AVAIL TAADS + AVAIL TOE) > (FAC TAD + FAC TOE)

Of paramount importance to the "final checking" of the force, before it is released from SIGMA for use in Basic SACS, is analysts' comparison of TARGET personnel category totals with a "Summary of DA Manpower Program by Command/FY" provided by DAMO-FDP and presented in a format showing military and civilian manpower by MACOM as shown in Table I.1. The summary manpower data presented represent program budget guidance manpower ceilings by personnel category across all MACOMs and may not be exceeded.

(6) Release the SACS Force to USAMSSA for SACS Computation. When the review of TARGET totals is accepted as demonstrating SIGMA preparatory processing to have satisfactorily purified the selected force, the force is released to USAMSSA for SACS processing.

Table I.1

SUMMARY OF DA MANPOWER PROGRAM BY COMMAND/FY
END FY 78

MM/DD/YY

COMMAND	MILITARY OFF	MILITARY W OFF	MILITARY ENL	MILITARY AGG	CIVILIAN TOT	CIVILIAN DH	CIVILIAN (FTP)	CIVILIAN (USDH)	CIVILIAN (FNDH)	CIVILIAN IDH	Manyears DH	Manyears IDH
					--Civilian Employment Projections--							
TRADOC												
FORSCOM												
USAREUR												
USARS												
USAEIGHT												
DEF AGENCIES												
DARCOM												
JOINT ACTIVITIES												
EUCOM												
USACC												
TSG(FOA)												
COE												
TAG												
ACSI												
OCSA												
USMA												
NGS												
USACIDC												
OSA												
NATL DEF UNIV												
USAINSCOM												
USAFAC												
MTMC												
BMDPM												
USAREC												
MDW												
USACSC												
USAHSC												
MILPERCEN												
TOTAL ARMY												

6. CONTRIBUTION TO SACS

SIGMA's contributions to SACS derive from its characteristic partial emulation of the Basic SACS process on a substantively more expeditious basis. The system objective is to assure rapid pre-identification of real or potential unit versis personnel document mismatch and strength discrepancies which otherwise would not become manifest until Basic SACS execution, with ensuing significant problem resolution and Basic SACS re-run delays. In addition to its "mini-Basic SACS" emulative capability, SIGMA features a corrective/updating function, not available in SACS endogenous processing, which can be directed toward the "purification" of real or potential problems before the applicable files are united in a "live" SACS. To the extent that SIGMA is successful in its role of selecting a SACS Force and assuring near error-free interface with TAADS and TOE files employed in SACS, its contribution to SACS data quality and outcomes is significant.

7. MAJOR DATA ELEMENTS

ACTCO — Action Code, indicates the force structure change applicable to a unit on a given date, i.e., activation, inactivation, reorganization, gain to a command.

ADCON — Administrative Control Code, the UICCC of the headquarters or higher unit which exercises administrative control over the unit.

ALOST — Authorized Level of Structure, level 1, 2, 3, B, or C for officer, warrant officer, and enlisted personnel. Applicable to TOE records only.

AMSCO — Army Management Structure Code, the major fiscal language code used for Army PPBS and for the Army budget presentation before Congress.

ASGMT — Assignment, the major command or DA Staff Agency to which the unit is assigned. For NG and AR units, the ASGMT is used to designate Army Reserve Commands (ARCOMS) and Army Reserve General Officer Commands (GOCOMS).

AUSTR — Authorized Strength, officers, warrant officers, enlisted personnel, military aggregate, and civilian US direct hire, foreign direct hire, indirect hire, and civilian aggregate.

AUTHR — Authority, directive, or concept, authorizing the transaction. Included in the history file for audit trail purposes.

BRNCH — Branch, the branch of service under which a TOE unit is organized.

CARSS — Combat Arms Regimental System, the historical designation assigned to combat and combat support units of Infantry, Armor, Field Artillery, and Air Defense Artillery TOE units.

CCNUM — Command Control Number, the major FAS/TAADS/VTAADS linking code. Identifies the command assignment, changes and fiscal year for all TAADS documents.

CIVCN — Civlian Control Number, summary level aggregate of units which are applied against the military strength portion of a command's manpower ceiling.

COMNT — Component Code, applies to the PROFA notes file. See COMPO for definition.

COMPO — Component Code, indicates Active Army, Reserves, National Guard or others.

DAMPL — DA Master Priority List, priority grouping of all units or activities for the allocation of personnel and/or equipment.

DEPLO — Deployment Package Assignment, special unit mobilization category.

DPMNT — Deployment Designation, indicates the deployment area and month for units scheduled for movement in the event of general war mobilization.

DSCMP — Display/Compute Indicator, for report display purposes; a FAS and SACS indicator if computation has taken place.

EDATE — Effective Date, the date on which the unit's force structure position becomes effective.

ELSEQ — Element Sequence Number, sequences the subordinate units of major units, e.g., battalions which are part of a division.

ESCON — Equipment Serviceability Condition Code, actual current equipment readiness for deployment.

FICOD — Force Identification Code, identifies the particular FAS Force in the multiforce file.

FINOT Forces Identification Code, identifies forces in the notes file.

FNCAT Functional Category, a manipulative FAS code used for miscellaneous force structure aggregations.

FORCO Force Code, a computational code identifying special authorizations or exception units.

FPLAN Force Planning Code, the major FAS management language used to structure Army units and force packages.

JCSTY JCS Unit Type Code, describes the type of unit for which the force requirement is stated.

MACTO Month and Action Code, contemplated deployment action for units not mobilized until after M-day.

MBCMD Mobilization Command Assignment, major command or agency to which units are assigned after mobilization.

MBLOC Mobilization Location Code, location of a unit on or after M-day; indicates the Army area and state for units in contental locations and overseas abbreviation for units in theater.

MBPRD Mobilization Period, indicates appropriate month after M-day that a unit will be activated or called to active military service.

MBSTA Mobilization Station, the current station for CONUS active Army units; the overseas location for Army Reserves, National Guard, and other component units.

MGCMD Major Command.

MILCN Military Control Number, summary level aggregate of units which are applied against the military strength portion of a command's manpower ceiling.

MTOEC Modified Table of Organization and Equipment Control Number, a major FAS/VTAADS linking code for TOE units. Identifies the first six positions of the unit's SRCTO, its command assignment, and the latest document change number. An MTOEC equal to 9999999999 indicates that the document is not a VTAADS document.

NEDAT Effective Date for the Notes File, equals the FAS EDATE for the matching SRCTO.

NTREF Note Reference Number, a reference which includes additional descriptive information for a unit.

NTSRC — Note Change, note reference change number. Same as CHGNR in PROFA.

NUMBR — The number of times a single notes file standard requirements code is computed within its UICCC.

OPAGP — Operating Agency Code, DA organizational element to which funds are allocated or suballocated.

OPDAT — Operating Date, indicates the date of unit assignment to the force commitment of the NATO Defense Planning questionnaire.

OPSTR — Operating Strength, by officer, warrant officer, enlisted, aggregate military, and civilian.

PECOD — Program Element Code, the major DOD management language used to aggregate units, manpower, and dollars associated with the FYDP structure.

PHASE — Phase Code, the authority for a unit record. Phase D or G indicates that the record is supported by an approved TAADS document or general order. Any other PHASE Code indicates that the unit has an approved program position not yet supported by TAADS or a general order. M = DA message or letter; C = Command originated change; A = Approved Program Assumption; S = DA Staff Actions.

PRCON — Personnel Readiness Condition Code, actual current level of personnel readiness of a unit.

REPCO — Report Code, a code used to retrieve mobilization reports from the file.

ROBCO — Readiness Objective Code, for active Army units, designates units according to light/heavy corps concept. For AR and NG units, designates units according to readiness concepts.

SPLIT — Split Unit Indicator, identifies those parent UICCs and their subelements which are located at different command assignments. Additionally, the parent unit and the subelement must have unique TAADS documents.

SRCTO — Standard Requirements Code, identifies the basic TOE plus any variances for personnel and equipment in a TOE unit.

STATS — Status Code, classifies the status of active Army STRAF units by state of readiness for use in specific missions or activites. Other units may be classified as CONUS operating, theater, reimbursable, ARADCOM, special foreign activities, exception units, or deployable.

STNNM — Station Name, a meaningful abbreviation of the unit's geographical location.

STSTR — Structure Strength, officers, warrant officer, enlisted personnel, and aggregate. For TOE units the structure strength is always at Level 1. For MTOE and TDA units, the structure strength is individually determined to support the unit's requirements.

TDATE — Transaction Date, designates the last Julian date on which a record was updated.

TMCCC — Type MTOE, identifies the TOE series of the unit as defined in the TAADS, VTAADS, and the SRCTO.

TPSNA — Troop Program Sequence Number, a code which groups units according to their mission and size.

TRCON — Training Readiness Condition Code, current overall readiness condition of the unit. Incorporates personnel and equipment readiness conditions.

TRDAY or TDATE — Programed Transaction Julian Date, designates the last Julian date on which a unit record is updated.

TYPCO — Type of Unit Code, designates the basic organization of unit, i.e., TOE, augmentation to a TOE, or TDA.

UICCC — Unit Identification Code, the alphanumerical designation which uniquely identifies a unit.

UNCAP — Unit Capability, unit readiness capability assigned by HQDA and reflected in the TAADS document.

UNCLC — Unit Classification Code, aggregate units according to the exact functions performed, i.e., air cavalry, infantry, neurosurgical, etc.

UNCON — Unit Readiness Condition, current overall readiness condition of the unit. Incorporates personnel and equipment readiness condition.

UNMBR Unit Number, a part of the unit's description. For TOE units, the UNMBR is the numerical portion of the unit's designation. TOE augmentations carry the number of the unit augmented. TDA units list the first four characters of the UICCC in this field.

UNPID Unit Package Identification Designator, identification of units as a part of a specific force grouping.

UNTDS Unit Description, the unit title which explains its functional mission. UNTDS is related to a unit's TDSNA, ELSEQ, and SRCTO.

VCHNR Voucher Number, identifies the analyst who prepared the data input.

8. INTERFACE WITH OTHER SYSTEMS

SIGMA directly interfaces the data of three primary systems:

- FAS
- TAADS
- TOE

SIGMA is, effectively, an interface evaluation and improvement system. Its task, as elaborated in preceding paragraphs, is to assess the effectiveness of interface between the specified systems, where the success of interface is predicated upon inter-file data element value matches. Where data element matches do not obtain between files, error listings are generated via the SIGMA edit option to report mismatch conditions to the SIGMA user. The SIGMA user then proceeds to use resources identified in preceding paragraphs to remedy the nonmatching condition, thereby implementing the interface improvement objective of SIGMA.

APPENDIX J

THE ARMY AUTHORIZATION DOCUMENTS SYSTEM (TAADS)

1. SUBSYSTEM/MODEL/DATA BASE

a. Title: The Army Authorization Documents System (TAADS)*

b. Status: Operational

2. REFERENCES

a. Army Regulation 310-49, The Army Authorization Documents System (TAADS), 10 June 1975.

b. Army Regulation 310-49-2, The Army Authorization Documents System (TAADS) Data Coding Procedures, 9 January 1976.

c. Army Regulation 310-49-3, TAADS Automated Support to Satellited Activities (TASSA), 9 January 1976.

d. CSR 18-11, Force Development Management Information System, 18 February 1976.

e. FORDIMS User's Guide, Volume III, Authorizations Subsystem, Unit Authorizations Division, Office, Deputy Chief of Staff for Operations and Plans, HQ DA, September 1977.

f. Interviews:

Mr. R. Adams, USAMSSA (ACAM-SDD-A)
Mr. A. Hibbert, ODSCOPS (DAMO-FDU)
Mr. S. Haupt, USAMSSA (ACAM-SDD-B)
Ms. V. Hughes, USAMSSA (ACAM-SDD-C)
Mr. C. Joyce, USAMSSA (ACAM-SDD-B)
Mr. R. Walden, USAMSSA - FORDIMS Development Team (ACAM-SDD)

3. STAFF PROPONENT

ODCSOPS (DAMO-FDU)

---

*Sources of unit resource detail are an essential part of SACS processing. Manpower data are required by grade, military occupational specialty (MOS) and branch. Equipment data are required by line item number (LIN). A principal source since SACS inception has been TAADS. The detail files formerly maintained at HQDA by TAADS have now been reconstituted as the Authorizations Subsystem (AS) of the Force Development Integrated Management System (FORDIMS). SACS systems, subsystems and processes have not been modified to interface with AS. To accommodate that situation, AS data are converted to TAADS format for SACS processing. Accordingly, in the basic report and these appendixes, reference is made to TAADS rather than AS.

4. COMPUTER SUPPORT

a. Agency: USAMSSA (ACAM-SDD-A)

b. Equipment: IBM 370/165 or 3033

5. PURPOSE

a. General

The purposes and objectives of TAADS are succinctly stated in AR 310-49 (AS objectives are essentially identical) and are excerpted below:

- Provide each Army unit with a basic authorization document which shows its personnel and equipment requirements and authorizations.
- Maintain overall HQDA control (except as specifically delegated) of organizational structures, and requirements and authorizations for personnel and equipment in all Army units.
- Maintain quantitative and qualitative data on personnel and equipment requirements and authorizations for both individual Army units and the entire Army Force Structure.
- Establish current and complete personnel and equipment data files for use by planners, programmers, and resource managers at HQDA, at each major Army command headquarters, and at selected Army installations.

FORDIMS AS, the source of the TAADS data arrays used in SACS processing, maintains the detail files at HQDA of "documented" personnel and equipment requirements and authorizations for all Active Army and Reserve Component Modified Table of Organization and Equipment (MTOE) and Table of Distribution and Allowances (TDA) units. Manpower data are maintained by Unit Identity Code (UIC), MOS, grade and branch while equipment is identified by UIC, nomenclature and LIN. For each UIC, the AS stores the current document, the programed document, and the planned document (if any). Thus, the system maintains not only current required and authorized information but, since a great portion of the units have projected requirements and authorizations that do not become effective until some later date, it also contains these future requirements and authorizations. The inclusion of future data is made possible through the use of effective dates (EDATE).

b. Specific

The footnote on page J-2 was inserted to help clarify the current status of TAADS and related systems and terminology. Substantive changes have taken place during the past several years. TAADS was designed as an automated system used in developing and documenting requirements and authorizations for personnel and equipment necessary to support the assigned missions of Army units. The TAADS master file was composed of the current and the history files. Both were subdivided into header and detail files, the former known as the TAADS Summary File, the latter as the TAADS Detail File. USAMSSA used to maintain these two files which together constituted the TAADS data base.

• TAADS Summary files contained two varieties of header records, one applicable to MTOEs and one to TDAs. Each header record was designed to accommodate data applicable to eight different authorization versions (time period defined by successive EDATEs) which could be approved or in the process of being developed or changed. In addition to authorization version data, unit headers contained UIC and Security Class (CLASS). Each of the eight authorization version data blocks contained data essential to its identification and use in TAADS.

- TDA headers contained the following information in each authorization version data block:

  Command and Control Number (CCNUM)
  EDATE
  Command of Assignment Code (CMD)
  Phase Code (PHASE)

- MTOE headers contained the following information in each authorization version data block:

  CCNUM
  EDATE
  Master Standard Requirements Code (SRCMS)
  Level-Equipment (EQULC)
  Level-Personnel (PERLEV)
  Base Authorization (BAUTH)
  MTOE Modification Number (MCNUM)

• TAADS Detail files included two varieties of detail records. One applied to personnel, the other to equipment. Personnel detail records were distinguished from equipment detail records by Record Control Number (RCNUM). Each personnel and equipment detail record was designed to accommodate required and authorized quantitites for eight authorization versions corresponding to those in the header records described above.

- Personnel detail records were identified by RCNUM "A" and contained the following data elements:

  UIC
  Grade (GRADE)
  Military Occupational Specialty (MOSCO)
  Miltiary Branch (BRCHP) - Civilian Category (CIVCAT)
  Army Management Structure Code (AMSCO) - TDA only
  Identity (IDENT) - TDA only
  Remark-Personnel (PERMK)

- Equipment detail records were identified by RCNUM "B" and contained the following data elements:

  UIC
  LIN
  Remark-Equipment (RMKEQP)

At about the end of December 1977, the TAADS Detail File was incorporated into FORDIMS as AS. The TAADS Summary File is to be incorporated into FORDIMS at a later date.

AS is currently operational. It accepts data from the field through the extension of TAADS to the major commands (MACOMs). That extension is known as Vertical TAADS (VTAADS). A further extension links the system to installation level and is known as Installation TAADS (ITAADS). The flow of information through ITAADS and VTAADS keeps the system up to date. These data are then used to produce the various detail reports identified in Reference 2e, above (includes Personnel Detail Reports, Equipment Detail Report, Header Lists, Audit Reports, and Document Level Reports). However, AS detail data are not acceptable for use in the Automated Update Transaction System (AUTS), the process used to update the Force Accounting System (FAS). Further, AS detail data are not acceptable for use in SACS.

Therefore, it is necessary for USAMSSA to summarize the detail data in AS using the pre-existing Detail TAADS and Summary TAADS formats. Once FORDIMS has been completely implemented (about March 1980), FAS will be incorporated into FORDIMS as the Force Structure Subsystem (FSS) and the AUTS process will no longer be required. However, SACS and SACS-related software will probably require modification to accept some revised data formats.

We have described above the flow of TAADS data and have noted that (through AS) the Detail TAADS and Summary TAADS files can be updated whenever required. However, as a result of the Management of Change (MOC) study, HQDA established two 90-day windows each year for the submission of documents by the field to update the files. These two periods end on 31 March and 30 September. Each VTAADS update submission is accompanied by a letter of transmittal which provides an indication of the data (by unit) that have been included in that VTAADS submission by the applicable field activity. This letter is received in triplicate and is distributed to:

- ODCSOPS (DAMO-FDU)
- ODCSPER (DAPE-MBA)
- ODCSLOG (DALO-PLF for the Equipment Authorization Review Activity of DARCOM)

These VTAADS document submissions are reviewed and any problems that may surface are resolved with the field activity concerned.

6. CONTRIBUTION TO SACS

TAADS data are an essential element of the SACS process through which unit resource documentation is "matched" to the Army Force Program. In a SACS study, the units which compose the force to be studied are first extracted from FAS. This selected file of units is then matched against TAADS resource documentation in a first order effort to match each selected unit with its MTOE or TDA personnel and equipment detailed "authorizations." While there are additional and alternative organizational structure match and resource detail processes which are subsequently applied, TAADS provides the critical, detailed, first order unit and resource documentation data base.

7. MAJOR DATA ELEMENTS

Appendix D of Reference 2e, above, contains a complete listing of data elements applicable to FORDIMS AS. As outlined at several points hereinabove, AS data output are not acceptable for use in SACS. Accordingly, in the interest of compatibility and completeness there are listed below major data elements of the pre-existing TAADS data base.

AMSCO — Army Management Structure Code, classification of Army activities and functions.

ASICO — Additional Skill Identifier Code, identifies additional special skills required.

ATCOD — Action Code, identifies the type of action (add, change, or delete).

AUAGR — Authorized Military Aggregate.

AUCIV — Authorized Civilian Aggregate.

AUENL — Authorized Enlisted.

AUFND — Authorized Foreign National Direct Hire.

AUIDH — Authorized Indirect Hire.

AUOFF — Authorized Officers.

AUSTR — Authorized Strength, indicates strength for specific types of personnel by grade, identity, or branch (includes civilians).

AUTEQ — Authorized Equipment Quantity.

AUUSD — Authorized US Direct Hire, total authorized US direct hire (USDH) spaces.

AUWOF — Authorized Warrant Officer, total authorized warrant officer spaces.

BCCNO — Base Command Control Number, CCNUM of the document used for modification.

BDOCN — Base Document Number, for MTOE identifies the base TOE number plus command code, plus modification number. For TDA identifies the UIC, parent unit, command and MO for MOBTDA.

BRNCH — Branch or Civilian Category Code, identifies the military branch or duty detail for officers, and warrant officers (optional for commissioned officers). Also, for TDA, identifies civilian categories.

CATCO	Unit Category Code, identifies TOE/MTOE units as belonging in one of three categories according to their mission and normal locations.
CCNUM	Command and Control Number, identifies the number of changes applied to a MTOE or TDA document during a fiscal year.
CICCO	Controlled Item Code, indicates equipment item as DA authorized and designated for centralized management.
CLASS	Security Classification, identifies the classification of MTOE or TDA document.
DDMBL	Date DMB Received-LOG, identifies date IAR is provided to USAMSSA Data Management Branch Logistics Section.
DDMBP	Date DMB Received-PER, identifies date IAR is provided to USAMSSA Data Management Branch Personnel Section
DEDTE	Document EDATE, identifies earliest effective date for any unit included in an MTOE document. The effective date of a TDA document.
DOCNO (MTOEC)	Document Number, identifies the MTOE or TDA number.
EDATE	Effective Date, identifies the date that a MTOE or TDA document applies to a specific unit (organization, activation, reorganization, discontinuance, or inactivation date).
EQRMK	Equipment Remark, identifies a remark in a MTOE or TDA document that provides guidance for distribution or restricted issue and usage of certain equipment.
FRCMD	Command from Which Document Came, identifies the command designated by HQDA that will receive an approved MTOE/TDA document.
GRADE	Grade Code.
IDENT	Identity Code, identifies the type of personnel (military or civilian).
INCDE	Installation Code, identifies installations having an ITAADS capability.
LEVEL	Authorized Level of Organization Code, identifies the level of MTOE authorized organization.

LICCO Language Identification Code, identifies special language capability.

LINUM Line Item Number, identifies the generic nomenclature of authorized equipment items.

MACOM Command Code, identifies the proponent command or subcommand.

MOSCO Military Occupational Specialty Code.

NOMEN Equipment Nomenclature.

NSRMK Non-Standard Remark Code, identifies a three-position numeric code (200-999) that applies to non-standard remarks.

PHASE Phase Code, identifies the status of a document.

POSIT Duty Position Title, the title of a position or job in a MTOE or TDA document.

PRMK 1&2 Personnel Remarks One and Two, identifies the additional duty requirements of personnel authorization in a unit.

PUAST Parent Unit Authorized Strength, identifies the total authorized strength of a unit including its subelements.

PURST Parent Unit Required Strength, identifies the total required strength of a unit including its subelement.

REQEQ Required Equipment Quality, identifies the quantity of equipment required.

RQAGR Required Military Aggregate, identifies the total of all of the required spaces in a MTOE or TDA document.

RQCIV Required Civilian Aggregate, identifies the total of all of the required civilian spaces.

RQENL Required Enlisted, identifies the total of all required enlisted spaces.

RQFND Required Foreign National Direct Hire, identifies the total of all required direct hire foreign national (DHFN) spaces.

RQIDH Required Indirect Hire, identifies the total of all required indirect hire (IDH) spaces.

RQOFF Required Officers.

RQSTR Required Strength, identifies the grand total of all required military and civilian spaces.

RQUSD Required US Direct Hire, identifies the total of all required total direct hire US (DHUS) spaces.

RQWOF Required Warrant Officers.

RTEXT Remark Text, provides a narrative description of a remark code (either personnel or equipment; standard or non-standard).

SCCNO Superceded CCNUM, identifies the CCNUM but has been replaced by the new CCNUM.

SDOCN Superceded DOCNO, identifies the CODNO but has been replaced by the new DOCNO.

SEQNO Sequence Number, controls line sequence in non-standard remarks.

SPARA SRCOD Paragraph, identifies a paragraph number in the TOE document used for modeling a MTOE.

SQICO Special Qualifications Identifier, identifies special qualifications personnel requirements.

SRCOD Standard Requirements Code, identifies a basic TOE or elements and variations thereof (MTOE).

STEXT Section I Text, identifies a line of text in Section I of a MTOE or TDA document.

SUBCO MTOE Sub-Unit Code, defines the sub-unit of a parent battalion or squadron. Also called the UIC descriptive designator.

TOETL TOE Title, identifies the complete title of a TOE document.

UICOD Unit Identification Code, identifies a code that uniquely identifies an organization.

UNTDS Abbreviated Unit Description, identifies the shortened title of a unit.

8. INTERFACE WITH OTHER SYSTEMS

a. Automated Update Transaction System (AUTS)

In this system TAADS is matched against the FAS on a monthly (or as required) basis for the purpose of determining if the latest documented unit data recorded in TAADS has been or should be entered into FAS.

b. Force Accounting System (FAS)

This is the major system with which TAADS interfaces. As noted in the preceding subparagraph, TAADS is used as the basis of documented

unit data in FAS. TAADS interfaces with FAS during SACS processing. In a SACS study, units which are relevant are extracted from FAS. TAADS is then searched to determine if the units are contained in the TAADS file. If the unit is found in the TAADS file, detailed personnel and equipment authorizations extracted from these records are used in calculating force requirements and authorizations.

While FAS contains no equipment authorizations, it does contain manpower authorizations aggregated by personnel identity. The major linking data elements common to TAADS and FAS are:

- Unit Identification Code
- Effective Date
- Command Control Number
- MTOE Number
- Standard Requirements Code
- Army Management Structure Code
- Structured/Required Strength
  - Officer
  - Warrant Officer
  - Enlisted
  - Military Aggregate
  - Civilian Aggregate
- Authorized Strength
  - Officer
  - Warrant Officer
  - Enlisted
  - Miltiary Aggregate
  - US Direct Hire
  - Foreign National Direct Hire
  - Indirect Hire
  - Civilian Aggregate

c. Army Force Program (AFP)

The AFP is an automated management information system (MIS) used within HQDA to produce guidance and audit trails for Program Budget Guidance (PBG) documents. Through this process major commands are informed of the changes in manpower allocation (i.e., changes in

manpower allocations for the current, and budget, and program years. TAADS and AFP can be linked by major command and, theoretically, HQDA guidance provided in the PBG should be reflected eventually in the TAADS file. There is no current procedure for linking the PBG guidance to the field implementation in MTOE/TDA documents. However, DCSOPS is currently preparing to implement a guidance tracking process which will ensure that authorization documents are either in balance with guidance or that any imbalances are auditable. TAADS has the following major data elements in common with AFP:

- Army Management Structure Code
- Major Command
- Structure/Required Strength
  - Officer
  - Warrant Officer
  - Enlisted
  - Military Aggregate
  - Civilian Aggregate
- Authorized Strength
  - Officer
  - Warrant Officer
  - Enlisted
  - US Direct Hire
  - Foreign National Direct Hire
  - Indirect Hire
  - Civilian Aggregate

d. Civilian Budget System (CBS)

The CBS is designed to provide automated support to the civilian manpower programing and budgeting process and to establish a civilian manpower and cost structure which can be used to analyze the impact of program and budget decisions on given force structure. Authorized civilian end strengths shown in CBS for a command should ultimately be reflected in TDA authorization documents in TAADS. There is no current procedure to track guidance from CBS to ensure proper implementation in TAADS TDA. The guidance tracking process when implemented will provide

this link. TAADS TDA files have the following data elements in common with CBS:

- Command Assignment
- Army Management Structure Code
- Authorized Civilians
  - US Direct Hire
  - Foreign National Direct Hire
  - Indirect Hire
  - Civilian Aggregate

e. The SACS Information Gathering and Management System (SIGMA)

SIGMA is a computer terminal system which provides a capability of replicating the initial phases of a SACS computation in a more rapid fashion than in SACS. Its objective is to assure an error-free interface between the FAS, TAADS, and TOE systems when united in a SACS environment. SIGMA requires an input of the Forces File from FAS which is to be used in the SACS computation, a Notes File from FAS compatible with the force selected, a TAADS header file with type personnel strengths as used by the FAS/TAADS overlay, and a TOE computational file with type personnel summary strengths.

Through SIGMA the analyst knows which of the units selected for the SACS computation do not have authorization documents and how closely units with authorization documents in TAADS and TOE match current strength data in FAS.

f. Basis of Issue Plan (BOIP) System

BOIP provides current information regarding changes in personnel and equipment requirements due to the initial issuance of new or improved items of equipment. Changes in requirements are detailed for each type of Army unit affected for a specified time frame. The Standard Requirements Code (SRC) identifies each of these types of units.

BOIP and TAADS interface principally in LOGSACS computations where TAADS equipment line item requirements are altered by BOIP to reflect planned changes. BOIP is not used in a PERSACS computation. The major common data elements in TAADS and BOIP are:

- Standard Requirements Code
- Additional Skill Indicator

- Line Item Number
- Branch
- Grade
- Military Occupational Specialty
- Quantity

g. Rapid Authorization Data Retrieval (RADAR)

The RADAR system provides the functional analyst with quick, responsive strength reports for all major data elements in the TAADS data base as well as MTOE and TDA documents for any given unit (personnel/equipment only or both) via CRT (with optional hard copy). RADAR has two data retrieval option lists. The first contains options for the entire TAADS file; the second permits the user to create a force of units using up to six different parameters (STACO, TPSN, SRC, MTOE, Batch of UICs, and LOCCO from the TAADS file).

APPENDIX K

THE TABLES OF ORGANIZATION AND EQUIPMENT (TOE) SYSTEM

1. SUBSYSTEM/MODEL/DATA

a. Title: The Tables of Organization and Equipment (TOE) System

b. Status: Operational

2. REFERENCES

a. Army Regulation 310-31, Management System for Tables of Organization and Equipment (The TOE System), 2 September 1974.

b. CSR 18-11, Force Development Management Information System, 18 September 1976.

c. Interviews:

Mr. W. C. Braswell, ODCSOPS (DAMO-RQR)
Mr. R. Adams, USAMSSA

3. STAFF PROPONENT

ODCSOPS (DAMO-RQR): While this Office exercises Army General Staff responsibility, US Army Training and Doctrine Command (TRADOC) has been charged with TOE development and systems maintenance.

4. COMPUTER SUPPORT

a. Agency: USAMSSA-MSB

b. Equipment: IBM 370/165 or 3033

5. PURPOSE/ROLE

a. The TOE System provides the method by which the personnel and equipment requirements for combat, combat support, and combat service support units are structured and documented.

b. TOE maintains data listing personnel (at various authorized levels of organization (ALO)) and equipment (at various ALO) for "Standard" unit types. These lists are used as a basis on which to build actual authorization and requirement lists for individual units as represented in The Army Authorization Documents System (TAADS) as modified TOE (MTOE). MTOE units contain no civilian strengths.

c. Each TOE is identified by a Standard Requirements Code (SRC) and is used as the authorizations source when MTOE units have no authorization documents in TAADS.

6. CONTRIBUTION TO SACS

a. TOE is used in the SACS matching process. The resulting file, when used in combination with similar files, provides audit trail information in the SACS.

b. The matching process evolves from the procedures used during SACS in which each unit record selected from the Force Accounting System (FAS) is matched against the TAADS Summary and Detail Files. During the course of the match certain FAS records will not match a TAADS document. There are several reasons for this occurring, e.g.,

- No authorization document for the unit in TAADS.
- Incorrect MTOE or TOE identified in FAS.
- Unit deliberately forced to mismatch TAADS.

Using the SRC Codes, which the TOE system contains, SACS matches the unmatched units to the TOE data base, and thus develops the lists of personnel and/or equipment for these units. An impact file is also created which shows the results of the TOE match.

7. MAJOR DATA ELEMENTS

ASICO Additional Skill Indicated Code.

BRNCH Branch. Identifies the branch of service under which a TOE unit is organized.

GRADE Grade. Identifies the grade of the authorized position.

LINUM Line Item Number. Identifies the Alpha-numeric line number assigned to an item of equipment.

MOSCO Military Occupational Specialty Code.

RMKS1 Remarks. Identifies further discriminators of MOS and position requirements.

RMSK2 Remarks. Identifies further discriminators of MOS and position requirements.

SRCTO Standard Requirements Code. Identifies the basic authorization of both personnel and equipment for a TOE unit.

RQTOE Required TOE Strength. This is the Strength Level of the TOE unit and is always at ALO 1. Included is the required strength for Officers, Warrant Officers, and Enlisted.

8. INTERFACE WITH OTHER SYSTEMS

a. TOE provides standard organizational, personnel and equipment data to TAADS for use in building MTOEs, if and when required.

b. AUTS uses the TOE file when a mismatch occurs between the FAS and TAADS. An attempt is made to obtain a FAS vs. TOE match.

c. TOE provides requirements data to the SRC assembly process when more than one SRC is involved with a unit.

d. TOE is a data source for SIGMA when FAS units are mismatched to TAADS. TOE becomes the alternate data source to match to FAS.