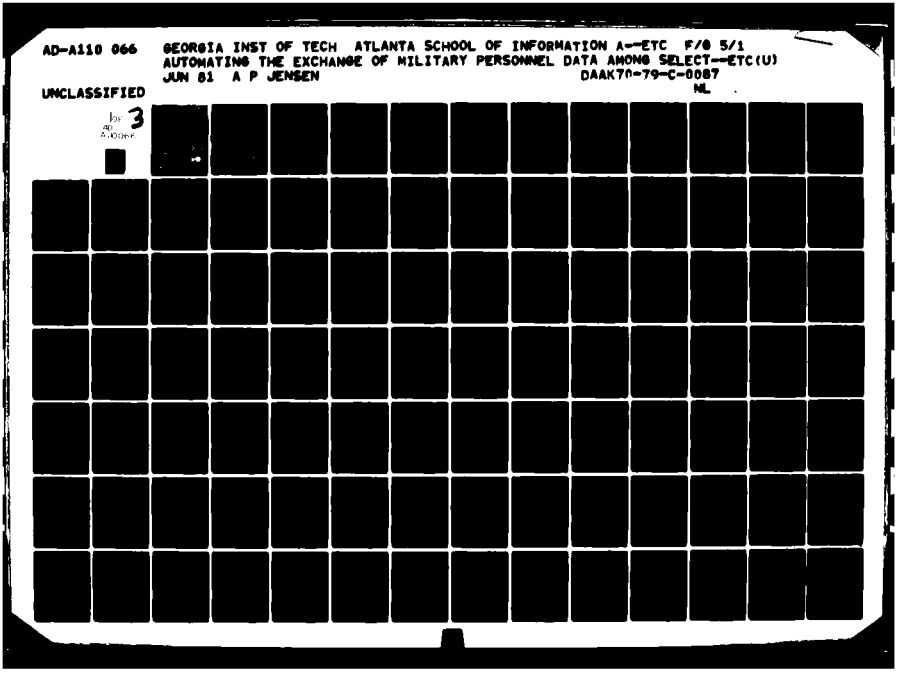
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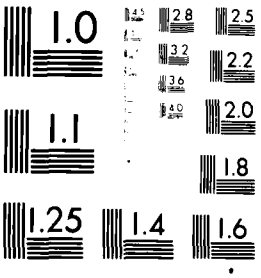

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APPENDICES
VOLUME II

# AUTOMATING THE EXCHANGE OF MILITARY PERSONNEL DATA AMONG SELECTED ARMY ORGANIZATIONS


Principal Investigator

Alton P. Jensen, Professor

Principal Project Staff

James L. Bingham, Research Technologist
James F. Doyle, Senior Research Engineer
John M. Gehl, Senior Research Engineer


Presented to

THE ARMY INSTITUTE FOR RESEARCH IN MANAGEMENT INFORMATION & COMPUTER SYSTEMS (AIRMICS)


Under

Contract No. DAAK 70-79-C-0087

Task Order No. 6

Research Project No. G36-647


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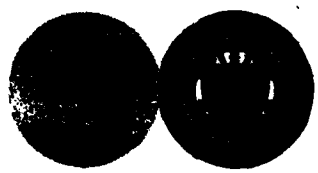
June 30, 1981


**GEORGIA INSTITUTE OF TECHNOLOGY**
A UNIT OF THE UNIVERSITY SYSTEM OF GEORGIA
SCHOOL OF INFORMATION AND COMPUTER SCIENCE
ATLANTA, GEORGIA 30332

# AUTOMATING THE EXCHANGE OF MILITARY PERSONNEL DATA AMONG SELECTED ARMY ORGANIZATIONS

## APPENDICES

## VOLUME II

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School of Information and Computer Science

GEORGIA INSTITUTE OF TECHNOLOGY

June 30, 1981

## DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

## APPENDICES

## TABLE OF CONTENTS

## APPENDIX I.
## ACRONYM LIST

This acronym list is a supplement to AR 310-50 Authorized Abbreviations and Brevity Codes November 1975. It includes abbreviations of systems, projects, and additional meanings to acronyms in AR 310-50 encountered during the course of this project.

# ACRONYM LISTING

AALOC - Active Army Locator Card
AAMMP - Active Army Military Manpower Program
ACOS - Automated Computation of Service
ACQ - Acquisition
ACSAC - Assistant Chief of Staff for Automation and Communications
ACT - Automated Control of Trainee
AD - Active Duty
AD-AO - Active Duty/Assignment Order
ADO - Active Duty Order
ADPE Automatic Data Processing Equipment
ADS - Automated Data Systems
ADT - Active Duty for Training
AEA - Assignment Eligibility and Availability
AFEES - Armed Forces Examining and Entrance Stations
AFP - Army Force Program
AHEAD - Army Help for Education and Development
AID-ACT III - Enlisted Assignments System
AID-E - Automatic Interaction Detection Model-Enlisted
AID-O - Automatic Interaction Detection Model-Officer
AIT - Advance Individual Training
ALO - Authorized Level of Organization
ALO - Location (data element)
AMEDD - Army Medical Department
AMO - Automation Management Office (or) Aviation Medical Officer
AMOPS - Army Mobilization and Operations Planning Systems
AMOS - Additional Awarded Military Occupational Specialty
AMOSC - Authorized Military Occupational Specialty Code
AMPS - Automatic Message Processing System
APLS - Army Personnel Locator System
ARA - Assigned Responsible Agency
ARADS - Army Recruiting and Accession Data System
ARCOM - U.S. Army Reserve Command
ARI - Army Research Institute
ARMR - Army Readiness and Mobilization Regions
ARMS - Army Master Data File Reader Microfilm Systems
ARNG - Army National Guard
ARPRINT - Army Program for Individual Training
ARS - Armed Forces Examining and Entrance Station System
ARSTAF - Army Staff
ARSTAFF - Army Staff
ARTEP - Army Training and Evaluation Program
ASI - Additional Skill Identifier
ASVAB - Armed Services Vocation Aptitude Battery
A-TRACS - AUTODIN Tracking System
ATRRS - Army Training Requirements and Resources System
ATT - Army Training Test

AUDB - Authorization Data Base
AUS - Army United States
AUTODIN - Automatic Digital Network
BASOPS - Base Operating Information System
BDC - Basic Data Card
BT - Basic Training
CAA - Combat Analysis Agency
CAP III - Centralized Assignment Procedure
CAR - Careerists
CARSTATS - Consolidated Army Reserve Statistical Report
CCSS - Centralized Command Selection System
CG - Commanding General
CIM-E - Central Integration Model Enlisted
CIM-O - Central Integration Model Officer
CIMPAMIS - Consolidated/Integrated Manpower and Personnel Automated MIS
CLG - Change to Lower Grade
CMF - Career Management Field (or) Court-Martial Forfeiture
CMIF - Career Management Individual File
COA - Comptroller of the Army
CODAP - Comprehensive Occupational Data Analysis Programs System
COMPLIP - Computation of Manpower Programs Using Linear Programming
COMPO - Component Code (data element)
CONUS - Continental United States
CONUSA - The Numbered Armies in the Continental U.S.
COOP - Continuity of Operations Plan
COPO - Chief Personnel Operations
CSN - Contract Surgeon
CSSS - Combat Services and Support Systems
CTARNS - Central Transient Account
CTAS - Central Transient Accounting System
DA - Department of the Army
DAISI - Training Documentation Accounting and Inventory
DAMIS - Department of the Army Management Information School
DAMPL - Department of the Army Master Priority List
DANSCRS - Department of the Army Name, SSN Central Registry System
DA-PAM - Department Army Pamphlet
DARTS - Data Records Transfer
DASO - Department of the Army Special Order
DASSO - Department of the Army Systems Staff Officer
DCSOPS - Deputy Chief of Staff for Operations and Plans
DCSPER - Deputy Chief of Staff for Personnel
DEDS - Digital Error Detection Subsystem
DEP - Delay Enlistment Personnel
DEROS - Date Eligible For Return From Overseas
DFREM - Dropped from Rolls
DFSR - Detailed Functional System Requirement
DID - Data Item Descriptions
DJOUL - Daily Jumps Update Output Listing
DLAT - Defense Language Aptitude Test
DMF - Distribution Management File System
DMOS - Duty Military Occupational Specialty
DOCE - Date of Current Enlistment
DOR - Date of Rank
DOS - Date of Separation (or) Disk Operation System
DPD - Data Project Directive
DPG - Data Processing Group (or) Date of Permanent Grade

DPI - Data Processing Installations
DPS - Data Processing System
DPT - Director of Plans and Training
DRASTIC - Daily Recurring AUTODON Strength Transaction Incoming Control
DRC - District Recruiting Command
DRC - District Recruting Command
DSCROTC - Deputy Chief of Staff for Reserve Officers Training Corps
DUI - Data Use Identifier
DVIS - Deserter Verification Information System
EAD - Enter Active Duty
EAD - Entered Active Duty
ELIM-COMPLIP - Enlisted Loss Inventory-Computation of Manpower Programs
EMF - Enlisted Master File
EPMD - Enlisted Personnel Management Directorate
EPMIS - Enlisted Personnel Management Information System
EPMS - Enlisted Force Status Model
EREC - U.S. Army Enlisted Records and Evaluation Center
ES - End Strength
ETS - Expiration of Term of Service
FAO - Financial Accounting Office
FAP - Finance and Accounting Policy
FAS - Force Accounting System
FDMIS - Force Development Management Information System
FORDIMS - Force Development Integrated Management System
FORECAST - Forecasting Systems - Army Strength and Personnel Management Data
FORSCOM - U.S. Army Forces Command
FSA - Force Structure Allowance
FT - First Term
GA - General of the Army
GFSR - General Functional Systems Requirement
GOCOMS - U.S. Army Reserve General Officer Command
GYMP - Group Year Management Program
HSC - U.S. Army Health Services Command
IDE - Interm Data Elements
IMS - Internal Management System
IPR - Individual Pay Record
IRB-A - Individual Record Brief (Active or Army)
IRGS - Enquiry Report Generating System
IRR - Individual Ready Reserve
JACS - Jumps-Army Automated Coding System
JAGC - Judge Advocate General's Corps
JCS - Joint Chiefs of Staff
JMCOL - JUMPS Monthly Compute Output Listing
JUMPS - Joint Uniform Military Pay System
JUMPS-AA - Joint Uniform Military Pay System/Active Army
JUMPS-RC - Joint Uniform Military Pay System/Reserve Component
JUMPS-WT - JUMPS War Time
LES - Leave and Earnings Statement
LIC - Language Identification Code (data element)
LOI - Letter of Instruction
MACOM - Major Army Command
MAP - Master Automation Plan
MAPES - Master Automation Plan for Enlisted Systems
MAPOS - Master Plan for Officer Systems
MAPS - Master Automation Plan
MARS - Machine Activity Reporting System

MBM - Military Strength Programs Division
MENS - Mission Element Needs Statement
MEPCOM - U.S. Military Enlistment Processing Command
MET - Mobil Examining Teams
MILMAP - Milpercen Master Plan
MILPERCEN - United States Army Military Personnel Center
MILPO - Military Personnel Office
MINES - Monetary Incentives Numerical Evaluation System
MISO - Management Information Systems Office
MITRON - Communications
MMOF - Military Master Organization File
MMPF - Master Military Pay File
MMSS - Military Management Support System
MO - Master Organization
MOB - Main Operating Base
MOBEX - Mobilization Exercise
MOBPERS - Mobilization Personnel System
MOBPERSACS - Mobilization Personnel Structure and Composition System
MODB - Military Occupational Data Base
MOF - Master Organization File
MOS - Military Occupational Speciality
MOVEM - Movement Oversea's Verfication of Enlisted Members
MPA - Military Personnel Army Budget
MPP - Mobilization Preassignment Program
MPRJ - Military Personnel Records Jacket
MSIS - Military Strength Information System
MSMGTS - Mass Storage Management System
MTBSP - Mobilization Troop Basis Stationing Plan
NCO - Non-Commissioned Officer
NGB - National Guard Bureau
NOMMOD - Nomination Module
OADO - Obligated Active Duty Officer
OASIS - Officer Accession Suspense Information System
OCC - Operational Command and Control
OCCH - Office, Chief of Chaplains
OCS - Officer Candidate School
OCSA - Office, Chief of Staff, U.S. Army
ODCSOPS - Office, Deputy Chief of Staff for Military Operations
ODCSPER - Office of the Duty Chief of Staff for Personnel
ODIS - Overnight Data Information System
ODP - Officer Distribution Plan
ODSAS - Officer Dual Specialty Allocation System
OER - Officer Evaluation Report
OERS - Officer Evaluation Reporting System
OMF - Officer Master File
OMPF - Official Military Personnel File
OMTR - Old Officer Master Tape
OPD - Officer Personnel Directorate, MILPERCEN
OPED - Other Pay Entry Date
OPLANS - Operation Plans
OPMD - Office of Personnel Management Directorate
OPMD - Officer Personnel Management Directorate
OPMIS - Officer Personnel Management Information System
OPUS - Officer Personnel Utilization System
ORAS - Officer Resource Accounting System
ORB - Officer Record Brief

O/S - Overseas
OSD - Office of the Secretary of Defense
OSG - Office of Surgeon General
OSPS - Officer Strength Projection System
OTJAC - Office of the Judge Advocate General
OTRA - Other Than Regular Army
OTSG - Office of the Surgeon General
OTT - One Time Tape
PA - Proponent Agency
PAAS - Personnel Authorizations Analysis System
PAF - Personnel Assets File
PASO - Personnel Administration Support Office
PASTR - Privacy Act Statistical Reporting System
PBG - Program Budget Guidance
PDB - Personnel Data Bank
PDI - Project Development Identifier System
PERSACS - Personnel Structure and Composition System
PERSINS - Personnel Information Systems
PERSINSD - Personnel Information Systems Directorate, MILPERCEN
PIA II - Personnel Inventory Analysis
PMF - Personnel Master File
PMO - Personnel Management Office, RCPAC
PMOS - Primary Military Occupation Specialty (data element)
PMP - Project Master Plan
PMS - Professor of Military Science
PMSD - Personnel Management System Directorate
PMSM - Personnel Management Support Model
PORTCAP - Automated Port Call System For AIT Graduates
POS - Personnel Occupation Specialty
PPA - PERSINS Processing Activity
PPBS - Planning, Programming and Budgeting
PPM - Personnel Priority Model
PRD - Personnel Records Division (or) Personnel Readiness Date
PRIDE - Personnel Research Information Data Extract
PROMIS - Production Management Information System
PRS - Personnel Reporting System
PSD - Personnel Service Division
PSNCO - Personnel Staff Non-Commissioned Officer
Q-STATS - Survey Questionnaire Status System
RA - Regular Army
RADB - Recruiting and Accession Data Base
RAPIDS - Random Access Personnel Information Dissemination System
RAS - Record Association System
RC - Reserve Component
RCCPDS - Reserve Components Common Personnel Data System
RCF - Reports Control File
RCMP - Reserve Component Mobilization Plan
RCOMD - Resource Command
RCPAC - U.S. Army Reserve Components Personnel and Administration Center
RCS - Requirements Control Symbol
REFORGER - "Annual Army Exercise Moving Troop to Europe"
REFRAD - Released from Active Duty
REP - Reserve Enlisted Program
REQUEST - Recruit Quota System
RESTAMS - Reception Station Minicomputer Systems
RESTAS - Reception Station System

RETAIN - Reenlistment Assignment System
RFD - Reserve Forces Duty
RFO - Request for Orders
RIG - Report Identification Group
RIG/RIN - Report Identification Group Report Identification Number
RIN - Report Identification Number
ROMF - Reserve Officer Master File
RPIRS - Reserve Personnel Information Reporting System
RPIRS-OS - Reserve Personnel Information Reporting System - Oversea's
RPMF - Reserve Personnel Master File
RRC - Regional Recruting Command
RSC - Record Status Code
SACS - Structure and Composition System
SAF - SIDPERS Active Army Locator File
SAIF - SIDPERS Assignment Instruction File
SAILS - Standard Army Intermediate Level System
SASF -SIDPERS Authorized Strength File
SCP - Security Classification Procedure
SCR - System Change Request
SCR - Systems Change Request
SDE - Standard Data Elements
SGA - Standard of Grade Authorization Model
SIB - SIDPERS Interface Branch
SIC - System Identification Codes
SIDPERS - Standard Installation/Division Personnel System
SIDPERS-RC - Standard Installation/Division Personnel System Reverve Component
SIDPERS-WT - SIDPERS War Time
SIP - System Implementation Plan
SIR - SIDPERS Information Retriever
SMEF - SIDPERS MOS Master Edit File
SON - Submitting Office Number
SOP - Standing Operating Procedures
SPF - SIDPERS Personnel File
SRCP - Special Reserve Component Personnel
SROF - SIDPERS Reserve Organization File
SRTS - Separtaion Records Transfer System
SRTS-O - Separations Records Transfer System for Officers
SSA - Social Security Administration
SSI - Secondary Skill Indicator (data element)
STAMMIS - Standard Army Multicommand Management Information System
STANFINS - Standard Army Finance System
TA - Transfer Activity
TAABS - The Automated Army Budget System
TAADS - The Army Authorization Document System
TACS - ARPRINT Class Schedule
TAGCEN - United States Army Adjutant General Center
TAGO - The Adjutant General's Office
TAMS - Trainee Accounting and Management System
TAPER - Theater Army Personnel Rollup System
TAPP - The Army Personnel Plan
TDA - Table of Distribution and Allowances
TDR - Transfer Data Record
TDRL - Temporary Disabled Retired List
TIMS - Tape Inventory Management System
TIRPERSINS - The Individual Ready, Standby Retired Reserve Personnel System
TOE - Table of Organization and Equipment

TOS - Top of System
TRADOC - U.S. Army Training and Doctrine Command
TREDS - TRADOC Educational System
TT - Type Transaction
UIC - Unit Identification Code
UIS - Unit Identification System
UISFORSTAT - Unit Identification System/Force Status and Identity Report
UNITREP - Unit Reporting System
UNITREP - Unit Status and Identity Reporting System
UPC - Unit Processing Code
USACCSA - U. S. Army Command and Control Support Agency
USACSC - United States Army Computer Systems Command
USAFAC - U.S. Army Finance and Accounting System
USAMSSA - U.S. Army Management System Support Agency Pentagon
USANG - U.S. Army National Guard
USAR - U. S. Army Reserve
USAR - U.S. Army
USARCPC - U.S. Army Reserve Components Personnel Center
USAREC - U.S. Army Recruiting Command
USAREUR - U.S. Army Europe
USARNG - U.S. Army Reserve National Guard
USC - United States Code
USMA - U.S. Military Academy
VIABLE - Vertical Installation Automation Baseline
VMP - Voluntary Mobilization Preassignment
VTAADS - Vertical - The Army Authorization Documents System
WAC - Women's Army Corps
WARCARS - Wartime Casualty Reporting System
WATS - Communications
WEEM - Women Enlisted Expansion Model
WOCT - WAC Officer Candidate Test
WOD - Warrant Officer Division
WOFT - Warrant Officer Flight Training
WOSB - Warrant Officer Selection Board
WTE - War Time Elements
WWMCCS - Worldwide Military Command and Control System

# APPENDIX II.
# STATEMENT OF WORK

## STATEMENT OF WORK

## SUPPORT OF MILPERCEN DATA SHARING CONCEPT

1. Background.

As the principal agent for Army personnel managment, the Military Personnel Center, MILPERCEN, provides officer and enlisted personnel data to various organizations in the personnel community including the US Army Management System Support Agency, Training and Doctrine Command, Forces Command, Recruiting Command, Deputy Chief of Staff for Personnel, and the Reserve Component Personnel and Administration Center. The extraction and transfer of data from MILPERCEN to these agencies is required to maintain data integrity between systems and to enable compilation of reports requiring accession of data from mutiple organizations. MILPERCEN also acts as a consumer of personnel data in that it accesses data from systems such as the Joint Uniform Military Pay System, (JUMPS), and the Standard Installation/Division Personnel Systems (SIDPERS), to update officer and enlisted records. The data transfers are accomplished on a periodic basis via a magnetic tape exchange between system proponents. This method for maintaining data integrity between systems is inefficient and results in costly manual processing to resolve inter-system discrepancies. There are no conversational, interactive precesses involved in the efforts to use data base information from differing Army agencies.

MILPERCEN and the US Army Finance and Accounting Center, USAFAC, have recently initiated several efforts to alleviate the inherent inconsistencies and inefficiencies in this mode of operation. Among these projects the development of a common data bank, or data utility, has been identified as a potentially beneficial action to improve access to data. The data bank would be established by consolidating the personnel and financial data bases of MILPERCEN and USAFAC into an automated system providing a single unimpeachable source of data for the personnel and financial activities. Although the data bank concept is currently under investigation only by MILPERCEN and USAFAC, it is generally accepted that the concept could be extended to serve the other members of the personnel community. The data bank would provide a data sharing utility including the interfaces necessary to satisfy all mutual data accession requirements of members of the personnel connumity and USAFAC. The data bank would also eliminate the need for off-line transfer of data bases, or portions thereof, between high level Army managers for the purpose of data management and strength reconciliation.

2. Scope.

The objective of this effort is to explore and identify feasible alternatives to facilitate a common exchange of personnel data

between selected Department of Army personnel and financial systems. The contractor will conduct a comprehensive assessment of data flow requirements surrounding the enlisted and officer personnel management systems maintained by MILPERCEN. This assessment will concentrate on identifying the interface requirements between the MILPERCEN systems and other systems within the personnel community noted above as well as the interface with the Joint Uniform Military Pay System for the Active Army maintained by USAFAC. Based on the assessment of data flow requirements, the contractor will propose a data sharing concept which will eliminate the need for off-line transfer of data bases, or portions thereof, between high level Army managers. The contractor will also propose a phased approach with which the concept could be implemented.

3.0 Tasks.

The contractor shall supply professional and support personnel as necessary to facilitate accomplishment of the tasks below. The contractor will organize and conduct interviews, symposia, briefings or other meetings deemed appropriate to collect and disseminate information needed to perform the tasks described herein.

3.1 Task 1

The objective of this task is to identify and analyze the data flow discussed above between MILPERCEN, members of the personnel community indicated above, and the U. S. Army Finance and Accounting Office. The analysis will identify the common data elements used by various organizations and characterize each organization's interaction with the data elements, i.e., as a consumer of established data items or source of new data. The analysis will be sufficient to recommand a proponent or agent for each common data element.

3.2 Task 2

The objective of this task is to propose a data sharing concept which will eliminate the need for off-line transfer of data elements of data between high level Army managers based on the common data elements and data flow requirements identified in Task 1. The contractor will propose a system or alternative systems which will provide a single, consistant view of the common data elements required by the activities of the various personnel agencies noted above and USAFAC. The contractor will propose a phased, evolutionary plan for implementing the data utility and identify both constraints imposed by current hardware and software components and additional technology required to implement the overall concept.

4.0 Government Furnished Facilities/Assistance.

The government will provided the following:

4.1 Personnel knowledgeable with the personnel management systems of the agencies noted above.

4.2 Material pertinent to personnel management systems of the agencies noted above. This includes information required to establish the data flow requirements of personnel data.

5.0 Contractor Deldiverable Items in Accordance with Attached DD Form 1423 and DD Form 1664.

To complete the requirements the contractor will supply the following:

5.1 Monthly Cost and Performance Reports indicating the cost for work scheduled and performed, actual work performed and variance of scheduled work and actual work.

5.2 A Task completion schedule submitted within one month after commencement of work for AIRMICS approval indicating the approach to be used to accomplosh the tasks, personnel to be involved in accomplishment of tasks and a work schedule with estimated start and stop dates for each task.

5.3 A final report due within 60 days after completion of last task presenting the entire project from conception to summary of data, conclusion and recommendations achieved during accomplishment of the tasks.

6.0 Place of Performance

Work on this task, with the exception of coordination and data collection, will be conducted at the contractor's facilities.

7.0 Personnel.

Personnel required to complete this task should include:

| | | |
|---|---|---|
| Task 1 | Senior Research Scientist | - 1 |
| | Research Scientist | - 2 |
| | Research Assistant | - 2 |
| Task 2 | Senior Research Scientist | - 4 |
| | Research Scientist | - 2 |
| | Clerical Support for both Tasks | - 1 |

8.0 Task Completion Date.

Completion of this task will be approximately 7 months after contract award.

## APPENDIX III.
## LETTER FROM GENERAL JOHN S. CROSBY

DEPARTMENT OF THE ARMY
U.S. ARMY MILITARY PERSONNEL CENTER
200 STOVALL STREET
ALEXANDRIA, VIRGINIA 22332

REPLY TO
ATTENTION OF:

DAPC-PS

SUBJECT: Research of Alternatives for Data Resource Sharing

Commander
US Army Computer Systems Command
Fort Belvoir, VA 22060

1. Due to the ever increasing need within the Army for timely and accurate automated data, we have initiated several projects in the Data Base Management area to be accomplished over both a short and long range period. Looking toward the future, we see an even greater need for Army Managers to share data resources through the use of automation.

2. As a result of our discussions with the AIRMICS staff, some productive research can be done to explore alternatives for better data resource sharing. Accordingly, inclosed is a work statement showing our description of the problem.

3. We would appreciate your consideration of this effort and stand ready to work with AIRMICS to further define the problem if the project can be undertaken.

1 Incl
as

JOHN S. CROSBY
Brigadier General, USA
Director of Personnel
Information Systems

# WORK STATEMENT

1. Sponsoring Command or Agency. Department of the Army, Military Personnel Center (MILPERCEN), DPI Code M-022.

2. Title of Proposed Service. Research on automated interface between Army data bases.

3. Classification of Study. Unclassified.

4. Purpose:

a. To explore and identify feasible alternatives to provide an automated interface between selected Department of Army organizations to facilitate a common exchange of personnel data between the various organizations.

b. Due to the advancements in technology of computer hardware, software and telecommunications devices for interface, it is believed that through research a solution can be found which will eliminate the need for the off-line transfer of data bases, or portions thereof, between high level Army managers for the purpose of data management and strength reconciliation.

c. There are currently systems within MILPERCEN which require the merger of data bases to produce the desired report results. For example, on an annual basis a summary report of civilian and military strength by activity within each state in the Continental U.S. is provided to the Comptroller of the Department of Defense. The preparation of this report requires accession of data from multiple organizations. A common interface would allow this accession of data to occur in an automated mode. Additionally, MILPERCEN sends extracts from its data base to the major Army Commands on a regular basis. There are currently no conversational, interactive processes involved in the efforts to use data base information from differing Army agencies. This research effort should strive to accomplish this goal.

5. Related Actions.

a. MILPERCEN currently matches the Officer and Enlisted Master Files against the field files located in more than 50 locations throughout the world. The data are transmitted via AUTODIN to MILPERCEN and the files are matched with resulting differences being used to make the HQ DA files more accurate.

b. A match of the Officer Master File is made against the Joint Uniform Military Pay System (JUMPS) file from the Finance Center at Fort Benjamin Harrison, Indiana. The results of this match are used to purify both of the matched files.

c. A match is also done of the Officer Master File against a mini-file created by a microform computer at MILPERCEN which is used to retain the Official Military Personnel Folder (OMPF) on every Officer and Warrant Officer. This is a relatively new project and the results are only used by the managers of the microform file at this time.

6. Scope of Effort. That AHMICS conduct research that would form a basis for future systems design efforts that would lead to a real-time, on-line, automated interface between various Army organizations, e.g. USAMMSA, USAFAC, USAREC, CIVPERSINS and MILPERCEN. Additionally, a consideration should be explored in linking the Personnel Data Base at MILPERCEN with the field (SIDPERS), but should not impact on the earliest completion of the overall study.

7. Deliverable Products. A document defining the feasible alternatives, with supporting rationale and costs, that could form a basis for major DA DPI's to proceed with the development of detailed specifications for the upgrade of software and/or hardware to implement an automated real-time system for data exchange between DPI's.

8. System Development Factors. Initially, the automated interface might involve only two or three sites with the provision for additional sites. The acquisition of hardware/telecommunication services is optional. The capability provided would be achieved through a common software linkage that would be exercised by any participating site initiating a call to any other participating site's data base to retrieve the needed data. The capability for interactive data base updates would be optional for future implementation. The use of common data base management software between the participating sites should be at the option of each participating site; however, if common data base software would provide a better solution, that approach could be explored. From the time one site initiates a request for data from another participating site, the delay for data base attachment should not be greater than 30 minutes. System connect time between sites should not exceed three wallclock hours per session. The size of the data base at each participating site could range from a very small size up to two billion characters. The capability to access multiple data files at each site should

be provided. The quantity of data to be transfered during any one session would not exceed 100 million characters. At any given time, there would be a maximum of two participating sites on-line with any other site. Data requested from any site would be provided to the requesting site in its existing format. All processing of the data would occur at the receiving site. It is anticipated that one site's computer system would be designated as the host site for all participating sites. However, a stand-alone host facility is optional. The adopted capability must interface a variety of manufacturers hardware among the participating sites.

9. Results Anticipated. A significant reduction in the resource requirements and time for one site to obtain personnel management and strength data from participating sites. The cost of implementing the selected approach must make the alternative practical.

10. Estimated Starting Time. ASAP.

11. Estimated Duration of Research Effort. To be determined.

Sponsor's Representative.
Mr. Albert J. Gonzales
USAMILPERCEN
Personnel Information Systems Directorate
Data Base Management Division
200 Stovall Street
Alexandria, Virginia 22332

DAPC-PSD 11 JUN 1979

MEMORANDUM FOR DIRECTOR OF PERSONNEL MANAGEMENT SYSTEMS

SUBJECT: Memorandum of Understanding with Finance and Accounting Center

1. On 31 May 1979, I formally agreed through a Memorandum of Understanding with the Commander, US Army Finance and Accounting Center to undertake joint research projects for the items at TABS A through J. This Memorandum of Understanding, TAB K, was initiated and finalized to set the framework in motion for developing the project teams and to carry on the momentum of the conversations between BG Lynn and myself. These initial projects were identified by BG Lynn and myself as areas of mutual interest and of possible benefit to both our organizations.

2. There have been comments, however, from PMSD action officers that some of these projects which we are undertaking should rightfully be the responsibility of Personnel Management Systems. These projects were identified as:

| | | |
|---|---|---|
| a. | JUMPS-AA/Master File Cutoff Compatability | TAB A |
| b. | Enlisted Accession Processing | TAB B |
| c. | Research Proponency | TAB E |
| d. | JUMPS-AA Coding System/SIDPERS Interface | TAB G |
| e. | Data Exchange | TAB J |

# APPENDIX IV.
# MEMORANDUM OF ON-GOING STUDIES

DEPARTMENT OF THE ARMY
U.S. ARMY MILITARY PERSONNEL CENTER
200 STOVALL STREET
ALEXANDRIA, VIRGINIA 22332

REPLY TO
ATTENTION OF

# MEMORANDUM OF UNDERSTANDING
# BETWEEN
# DIRECTOR, PERSONNEL SYSTEMS DIRECTORATE
# MILITARY PERSONNEL CENTER
# AND
# COMMANDER, US ARMY FINANCE AND ACCOUNTING CENTER

1. PURPOSE. To define the respective responsibilities of the Commander, USAFAC and Director, PERSINSD in support of the mission to establish joint project teams to research areas of mutual interest as outlined in paragraph 3 below.

2. REFERENCES: a. USAFAC/MILPERCEN GO meeting, 27 March 1979; b. USAFAC/MILPERCEN GO meeting, 9 May 1979.

3. BACKGROUND. Pursuant to the meeting of 9 May 1979 at USAFAC, Fort Benjamin Harrison, the Work Statements/Information Papers attached at appropriate TABS were approved for study. Joint project teams will be composed of personnel from USAFAC and MILPERCEN. The following items were approved during that meeting:

| | | |
|---|---|---|
| a. | JUMPS/Master File Cutoff Compatability | TAB A |
| b. | Enlisted Accession Processing | TAB B |
| c. | Data Standardization Program | TAB C |
| d. | Data Proponency | TAB D |
| e. | Research Proponency | TAB E |
| f. | Mutual COOP | TAB F |
| g. | JUMPS-AA Coding System/SIDPERS Interface | TAB G |

11 JUN 1979

DAPC-PSD
SUBJECT: Memorandum of Understanding with Finance and Accounting Center

3. I stand ready to transfer responsibility for those projects in paragraph 2 above to PMSD and to continue to pursue the remaining projects with PERSINSD resources. If, after reviewing these Work Statements, you feel the requirement to renegotiate the Memorandum I feel we can come to a mutual agreement on project responsibility.

John S. Crosby

JOHN S. CROSBY
Brigadier General, USA
Director of Personnel
Information Systems

CF:
MILPERCEN AMO

h. Development of Common Data Bank TAB H

i. Information Terminals TAB I

j. Data Exchange TAB J

4. RESPONSIBILITIES.

a. The USAFAC central point-of-contact will be Mrs. Adele Wiley, JUMPS-AA Division, Pay, Policy and Systems Directorate, AUTOVON 699-2144. The MILPERCEN central point-of-contact will be CPT S. Fisher, Data Base Management Division, PERSINSD, AUTOVON 221-8926. The USAFAC and MILPERCEN points-of-contact will make preliminary arrangements for team meetings within 10 working days of the final signature on this agreement. Individual project officers will be contacted by the respective point-of-contact.

b. Leadership of the individual project teams will be determined by the team members during the initial planning sessions. The project leader will be responsible for coordinating team meetings to insure project suspense dates and/or milestones are met.

c. MILPERCEN and USAFAC personnel will identify additional resource requirements necessary to implement the Memorandum of Understanding.

d. Each project leader will be responsible for conducting a joint status briefing to the Commander, USAFAC and Director, PERSINSD at a quarterly meeting.

e. Each project team will be responsible for providing a monthly status report each command's point-of-contact for submission to the Commander, USAFAC and Director, PERSINSD.

f. Each project leader will be responsible for preparing a Memorandum for Record for distribution to team members and for distribution to other project teams as appropriate. If a meeting involves two or more project teams, the project leader requesting the meeting will be responsible for preparing the Memorandum for Record.

g. An initial meeting of all project leaders will be held to establish the foundation for the project's development. The time and place of this meeting will be established at a later date by the points-of-contact.

h. Team meetings will be rotated between the two commands. Project leaders will be responsible for travel and accommodation arrangements.

i. The Commander, USAFAC will be responsible for providing the Director, PERSINSD with the name, grade and telephone number of the individual project officer(s) within 10 working days of the final signature on this agreement. PERSINSD project officers and their AUTOVON telephone numbers are identified in the RECOMMENDATIONS of the projects at TABS A through H. The project officers for the projects at TABS I and J will be designated within 10 working days of the final signature on this agreement.

JOHN S. CROSBY
Brigadier General, USA
Director, Personnel Information
Systems Directorate

31 MAY 1979

C. T. LYNN, JR.
Brigadier General, USA
Commanding
US Army Finance and
Accounting Center

31 MAY 1979

**INFORMATION PAPER**

DAPC-PSD
16 May 1979

SUBJECT: JUMPS/Master File Cutoff Compatibility

WORK STATEMENT:

JUMPS-AA and the MILPERCEN Master Files cutoff processing at different times during the month, causing erroneous or incomplete data during monthend audits. A study would determine if it is possible to develop a compatible cutoff date for JUMPS-AA and MILPERCEN to improve the accuracy of information on both data bases. In addition it will be necessary to determine if changing reporting period is in consonance with DA, DOD and Congressional policies.

DISCUSSION:

1. Once each month the Enlisted/Officer Master File (OMF/EMF) is compared against and extract tape of the JUMPS Active Army file. These tapes are extracted closest to the same monthend as possible to insure accurate data is available for automated audits. The JUMPS-AA current monthend is on/about the 16th of the month, varying each month and announced to the field via message. All transactions are due in from the field prior to that date for processing in the end-of-month cycle. JUMPS-AA then extracts their audit tape on/about the 24th - 26 of the month to reach MILPERCEN no later than the 30th of the month. This tape may or may not include all necessary transactions from the field. The OMF/EMF, however, process monthly transactions for an additional 8 - 9 days into the succeeding month to capture all incoming/late transactions up to and including the 30th of the month.

2. As a result of staggering these reporting system's cutoff dates the data audits and file matches performed by PERSINSD are incomplete or inaccurate. The major impact of not having a uniform cutoff date is felt in the end-of-month personnel gains and losses and resulting accountable strength figures. These figures may be over - or under - stated and very seldom are in agreement with each other.

3. The concept of a common cutoff date between JUMPS-AA and MILPERCEN would theoritically reduce many of the discrepancies now generated by the dissimilar cutoff dates, thus more realistically aligning the strength of the Army.

CONCLUSION:

1. There exists a need to develop the concept of a compatible JUMPS-AA/MILPERCEN cutoff date.

2. Data and strength audits in the personnel and financial systems will be enhanced as a result of this effort.

3. New ADP hardware may move the finance cutoff date closer to actual calendar monthend.

RECOMMENDATION:

1. That an individual from USAFAC and MILPERCEN determine the feasibility of a compatible cutoff date and insure compliance with all DOD, DA and Congressional directives.

2. That by 30 June the team document the approach, considerations and milestones for approval by CG, USAFAC and Director, PERSINSD.

3. That necessary resources be made available to research the concept by both USAFAC and MILPERCEN.

4. The MILPERCEN project officer will be CPT Fisher and can be contacted at AUTOVON 221-8926/8927.

**INFORMATION PAPER**

DAPC-PSD
16 May 1979

SUBJECT: Enlisted Accession Processing

WORK STATEMENT:

1. The 69 AFEES gather various data for each individual entering the Army. This data is forwarded by the AFEES to USAREC for processing by the AFEES Reporting System (ARS). The ARS System transmits the data via AUTODIN (five card images per individual) to MILPERCEN for processing accessions to the Enlisted Master File.

2. Since USAFAC also co-lects data pertaining to accessions, there exists the possibility of unnecessary duplication of data collection and data processing.

3. A coordinated review and evaluatio· would determine the possibility of increased data sharing between USAFAC and MILPERCEN with commensurate reduction in costs for data collection and processing.

DISCUSSION:

1. The Armed Forces Entrance and Examination Stations (AFEES) currently process data on all indivi'uals entering the Army. This data is passed by each AFEES to USAEREC and is processed by the AFEES Reporting System (ARS) for input onto the Enlisted Master File at MILPERCEN.

2. Data is also received and processed b, field Finance and Accounting Offices and SIDPERS Interface Branches (SIB's) through the Reception Station System (RESTAS). Information received through the RESTAS system is then massaged by the F & AO to verify such data as name, SSN, sex, and EAD. Massaging of this data inherently causes a delay in accessing

the individual to the finance system. Information is accepted directly as it is received from RESTAS and is not massaged by the SIB's prior to transmittal to MILPERCEN.

3. The strength differences between JUMPS-AA and MILPERCEN currently being experienced are due in part to the dual accession reporting system. Problems with each system cause delays or errors in accession of personnel to their respective reporting system. There exists a need for JUMPS-AA and MILPERCEN to jointly explore these inherent problems. The review would also evaluate common problems with each system with the ultimate goal of determining the sole source of enlisted accession data. The tangible benefits would be; (1) more compatible Army strength figures; (2) more accurate data bases; and (3) reduced data collection costs,

4. USAFAC requires additional assignment and personal information that is not provided for by the current accession system. The finance office needs the initial unit identification code to initiate automatic payments in a more timely manner. Presently, the servicemember is paid through a manual system for at least three payments (two end-of-month's, one mid-month). In addition, USAFAC needs to know the member's marital status for payment of BAQ and any related benefits due the individual.

CONCLUSION:

1. There exists the need for a joint USAFAC, MILPERCEN and study group to identify/determine a single source of enlisted accession data.

2. The current systems do not produce timely, accurate information.

3. The current systems duplicate data collection efforts.

4. The current accession systems do not provide UIC and marital status to USAFAC in a timely manner.

RECOMMENDATIONS:

1. That a joint USAFAC/MILPERCEN work group be formed to study and recommend changes to the financial/personnel reporting systems.

**INFORMATION PAPER**

DAPC-PSD-M
15 May 1979

SUBJECT: Data Standardization Program

WORK STATEMENT:

The purpose of a standards program is to identify, define and document data elements in order to achieve common data representation for the orderly exchange of information. Areas to be addressed include the terms, names, definitions, abbreviations, attributes of data elements such as validation criteria, and to access the impacts upon data systems where data inconsistencies exist.

DISCUSSION:

In an effort to achieve the orderly exchange of information in the integration of system processes and the sharing of the data resource within the military personnel community, the Data Base Management Division, PERSINSD is involved in a program to standardize the data necessary to support the management of military personnel. Efforts to date have included, but are not limited to, the definition, classification, and cataloging of the data elements contained in the Officer and Enlisted Master Files and the SIDPERS personnel file. These efforts are directed towards bringing order to the data passed between and amongst military personnel systems. PERSINSD will develop and present the standards for the data elements as a strawman. This will be accomplished by a data standardization conference where each standard will be discussed, reviewed and approved.

CONCLUSION:

1. There exists the requirement to bring order to other functions affected by manning, such as equipment, force structure and finance.

2. Close coordination between MILPERCEN and USAFAC is essential if the personnel and financial management communities are to integrate across common data. In this effort, standardization is a must for proper data communications.

DAPC-PSD 16 May 1979
SUBJECT: Enlisted Accession Processing

2. That by 30 June the team document the approach considerations and milestones for approval by CG, USAFAC, and Director, PERSINSD.

3. That all necessary resources be committed to accomplishing the project in a timely manner.

4. That the group specifically investigate how initial assignment data and martial status can be provided to USAFAC in a timely manner.

5. The project officer will be Ms. Virginia Dorwart, AUTOVON 221-8881.

**INFORMATION PAPER**

DAPC-PSD-M
15 May 1979

SUBJECT: Data Proponency

WORK STATEMENT:

1. To identify and document the source of data as it relates to individual soldier information.

2. The proponent of a data element is defined as being the primary user of the data and, therefore, assumes the administrative responsibilities for (1) establishing the need for the data element; (2) defining and describing the data element; (3) defining the input source; (4) defining the method of data collection; (5) monitoring the accuracy of the data values; (6) defining obligatory sources for correction of the data; and (7) eliminating the data element once it becomes obsolete.

DISCUSSION:

The Data Base Management Division, PERSINSCOM has been tasked to identify and document the source of data as it relates to the military personnel management function. The source is referred to as the proponent. The proponents for data elements contained on the officer master file have been identified and documented. An action is currently being staffed to identify proponents of data elements contained on the enlisted master file. Once completed, the proponency for the OMF and EMF data elements will be analyzed and validated against the proponents for the SIDPERS personnel file data elements.

DAPC-PSD-M 15 May 1979
SUBJECT: Data Standardization Program

RECOMMENDATIONS:

1. A joint committee, comprised of personnel from MILPERCEN and USAFAC, be established to address the standardization of data necessary to interface and integrate the personnel and financial management communities as they relate to the individual soldier.

2. The committee be tasked with developing definitions and attributes of the common data.

3. The committee develop a plan to accomplish the implementation of the standards within the respective communities by 30 June 1979.

4. MILPERCEN and USAFAC jointly sponsor the data standardization conference.

5. All necessary resources be committed to accomplishing the project in a timely manner.

6. Close coordination must be maintained with the data proponency committee due to the fact that data proponency must be established prior to the establishment of data standards.

7. The project officer will be Mr. Harry Graul, AUTOVON 221-8878.

**INFORMATION PAPER**

DAPC-PSD-A
3 May 1979

SUBJECT: Research Proponency

WORK STATEMENT:

A subject related to data proponency and any exchange of data is research proponency, or responsibility. Both MILPERCEN and USAFAC resources are devoted to data research, much of which appears duplicative. The centralization of research responsibility visualized accepting valid data from a single responsible source and promised to free resources for other purposes.

DISCUSSION:

1. JUMPS Active Army files are matched to DA personnel files monthly. Differences are counted and files containing information from both data bases are maintained so that individual records can be researched. Lists of records unmatched on SSN and/or name are produced each month for research both by USAFAC and MILPERCEN. This dual research is done by both USAFAC and MILPERCEN because there is no system interface that would permit either agency to change the files of the other.

2. The primary research effort done on a recurring basis is to correct name and SSN. Programs selectively extract records containing differences for mailing to the MILPOs and DSSNs for research and resolution. Thus far, research is being done on sex, grade, and basic pay entry date. Our current personnel system provides notices to the SIDPERS personnel processing activity of record when a name or SSN change is processed from the top of the system, but this is true of only the name and SSN.

3. There is a systems change request under consideration that will add to our selectivity of records for mailing out to the MILPO and/or DSSN.

DAPC-PSD-M 15 May 1979
SUBJECT: Data Proponency

CONCLUSIONS:

1. There exists a requirement to integrate the personnel and financial management functions related to the individual soldier.

2. To properly accomplish the integration, close coordination between MILPERCEN and USAFAC must take place to identify and document the proponents of data common to both functions.

RECOMMENDATIONS:

1. A joint committee, comprised of personnel from MILPERCEN and USAFAC, be established to identify and document the proponents of data common to the personnel and financial management communities as they relate to the individual soldier.

2. The committee develop a plan of action to accomplish the project by 30 June 1979.

3. The proponents of the data elements will be identified and documented prior to the establishment of standards for the data elements.

4. A priority sequence for the documentation of the proponent will be established by category of data. The work accomplished by MILPERCEN on the OMF/EMF will be used as a start point.

5. Once the proponents have been identified, the goal of the committee will be to eliminate duplicate reporting requirements between MILPERCEN and USAFAC where it exists.

6. The committee will work closely with the Data Standardization committee.

7. All necessary resources be committed to accomplishing the project in a timely manner.

8. The project officer will be Ms. Chris Lundeen, AUTOVON 221-8445.

**INFORMATION PAPER**

DACA-FAP-M
30 May 1979

SUBJECT: Mutual COOP

WORK STATEMENT:

USAFAC and MILPERCEN currently utilize UNIVAC ADP hardware.

DISCUSSION:

1. USAFAC is currently installing UNIVAC model 1182 (1100-82) computer hardware. MILPERCEN currently uses UNIVAC 1108 hardware. Both of these systems are in the same UNIVAC 1100 series of ADPE and both utilize the EXEC 8 operating system. Therefore, it is possible that MILPERCEN and USAFAC could provide mutual COOP support.

2. Some minor program modifications by USAFAC would be necessary to achieve production status if USAFAC programs are processed on MILPERCEN 1108 hardware. The USAFAC system, however, can emulate the MILPERCEN 1108 hardware and little, if any, programming changes are necessary.

3. With a "Front End Processor" to be installed at some future date, MILPERCEN could conceivably provide the necessary COOP for USAFAC. It is also possible that USAFAC could furnish MILPERCEN with its COOP responsibilities.

CONCLUSION:

1. USAFAC and MILPERCEN ADP software systems could be processed on an exchange basis.

2. The USAFAC system is capable of emulating the UNIVAC 1108 with little or no program changes.

3. A "Front End Processor" could allow USAFAC to process on the MILPERCEN 1108 system.

4. The prospect of a centralized research responsibility will require modifications to current systems which will provide notices of change from the centralized site that will accomplish corrections to all files affected.

CONCLUSION:

1. USAFAC and MILPERCEN perform dual research functions for the same data elements.

2. Research is currently limited to a select few data elements but may be expanded to include more data elements in the future.

3. There is a need to identify a single source of research for data elements now being researched by JUMPS-AA and MILPERCEN.

4. System modifications will be required if a single source of research can be identified.

RECOMMENDATIONS:

1. That an individual from USAFAC and MILPERCEN determine feasibility of designating a single source responsible for data research of specific data elements.

2. That by 30 June the team document the approach, considerations and milestones for approval by CG, USAFAC and Director, PERSINSD.

3. The MILPERCEN project officer will be Mr. Robert Miller, AUTOVON 221-8894/8895.

**INFORMATION PAPER**

DAPC-PSP-D
14 May 1979

SUBJECT: JUMPS-AA Coding System/SIDPERS Interface

WORK STATEMENT:

To explore incorporating the input/output (I/O) methodology of the JUMPS - Army Automated Coding System (JACS) into SIDPERS I/O upgrade efforts as a first step toward attaining shared pay and personnel automated data at the field level. This step will require the personnel community to take a greater degree of responsibility for the accuracy of the initial input data to meet the rigid standards specified by the pay system.

DISCUSSION:

1. The concept for the future field personnel system to replace SIDPERS has been developed by SIDPERS Division, PERSINSD. The initial phase of the concept focuses on satisfying the urgent need to upgrade the input/output (I/O) techniques used in SIDPERS. Vertical Installation Automation Baseline (VIABLE) is the Army project to upgrade the Base Operating Information System (BASOPS) hardware. In the first phase of VIABLE, on-line terminals will be provided for data entry and limited information retrieval by SIDPERS users.

2. USAFAC has developed JACS, a planned system improvement to the current JUMPS-AA input system. JACS is an on-line automated data entry application that utilizes terminals to prepare and validate pay changes at the field finance office for transmission to USAFAC to update the Master Military Pay File. Five sites have been approved to test JACS for a six month period beginning Apr - May 79. The first test results will be available in Jun 79 from the test in the 1st Cavalry Division at Ft Hood.

DACA-FAF-M 30 May 1979
SUBJECT: Mutual COOP

RECOMMENDATIONS:

1. A joint group of personnel from MILPERCEN and USAFAC be established to study the feasibility of providing mutual COOP.

2. The committee develop a plan to document the approach, formulate the considerations and develop milestones for approval by CG, USAFAC and Director, PERSINSD by 30 July 1979.

3. That all necessary resources be committed to accomplishing the project in a timely manner.

4. The MILPERCEN project officer will be MAJ Thomas, AUTOVON 221-7551. The USAFAC Project Officer will be Mr. James Zinkan, AUTOVON 699-2241.

**INFORMATION PAPER**

DAPC-PSD
15 May 1979

SUBJECT: Common Data Bank

WORK STATEMENT:

The collection and maintenance of information for the personnel and financial data bases is costly and inefficient. The consolidation of the personnel and financial data bases to form a Common Data Bank could enhance the exchange of information between USAFAC and MILPERCEN. Areas to be addressed include required data elements, data collection procedures, input/output requirements, file formats, etc. Close coordination with the data proponency and data standardization committees will be necessary.

DISCUSSION:

1. USAFAC and MILPERCEN are jointly undertaking research projects to identify areas of common or mutual interest. These projects (e.g., data standardization, data proponency, enlisted accession processing, etc.) will attempt to identify duplicate functions and processes performed by USAFAC and MILPERCEN, to identify problems in data collection or to identify means of system's interface. The future of the personnel and finance systems may be enhanced by the consolidation of these separate data bases into one Common Data Bank.

2. Finance and personnel presently maintain separate data bases, independently collect specific data and conduct individual research. During monthly automated audits USAFAC and MILPERCEN attempt to reconcile differences in like-data elements. These differences are then researched, resolved and data bases corrected. This process is time-consuming, duplicative and cost inefficient. Current ADP systems are near saturation points and processing is slow and laborious.

3. USAFAC has recently acquired a UNIVAC model 1182 that is expected to significantly increase USAFAC ADP capabilities

3. Based on information received on JACS, it appears that JACS could be of benefit in providing a methodology that can be employed in developing the application for using terminals in the personnel system. There is a need to explore how JACS operates using terminals so that a means of sharing common data of the pay and personnel systems can be developed. Sharing common data would eliminate the existing requirements for duplicate reporting to each system by the functional clerks.

CONCLUSION:

1. MILPERCEN should take advantage of the JACS methodology where possible in developing the application for using on-line terminals in the personnel system.

2. Close coordination between MILPERCEN and USAFAC must be established to develop a means for sharing common pay and personnel data at the installations.

RECOMMENDATION:

1. That a joint USAFAC and MILPERCEN working group be established to:

a. Meet in early June to discuss the results of the Ft Hood JACS test.

b. Explore using JACS methodology in the development of the SIDPERS I/O upgrade at installations.

c. Investigate methods for sharing common data between the pay and personnel systems at installations.

2. The project officer will be Ms. Constance Drew, AUTOVON 221-9006.

# FACT SHEET

SUBJECT: Information Terminal

DISCUSSION: Currently, MILPERCEN researchers use microfiche of J-AA prior month data or use "LOC" input which requires several days to obtain output. Neither are current data on the personnel files readily available to USAFAC personnel. This study would determine the feasibility of providing MILPERCEN (including EREC) with terminal(s) for querying the J-AA MMPF and USAFAC with terminal(s) for querying the personnel data bases OMF/EMF.

CONCLUSION: The feasibility project should be established to begin Jun 79. The USAFAC portion of the project would be assigned to Systems and Programing Operations. If it is determined feasible, an implementation project will be established to determine data elements to be queried, installation of terminal(s), etc.

RECOMMENDATION: Establish a three month feasibility study to begin in Jun 79.

with the capacity for future system expansion. This system, if so designated, could conceivably handle the Common Data Base.

4. Certain of the joint research ventures entered into by USAFAC and MILPERCEN could lay the foundation for the Common Data Bank concept. MILPERCEN will begin studying the JUMPS-AA Coding System (JACS) as a possible input mode to a future personnel system that could be adapted for use on the new data bank. In addition, research will be done on data element proponency, standardization and research to determine responsibilities for data entering into the current dual data base system. These studies and their findings could easily support the Common Data Bank concept. This Common Data Bank concept could effectively reduce the amount of duplication in data collection and research and at the same time reduce the amount of resources required to maintain separate data bases.

CONCLUSION:

1. USAFAC and MILPERCEN perform dual data research and collection that is costly and inefficient.

2. Some of the joint research projects could support the Common Data Bank concept.

3. Expandable ADP hardware is currently available at USAFAC.

RECOMMENDATIONS:

1. That a joint committee composed of personnel from MILPERCEN and USAFAC study the feasibility of developing a Common Data Bank.

2. That the group work in close coordination with the JACS, COOP and Data Proponency Committees.

3. That all necessary resources be committed to accomplishing the project in a timely manner.

4. That the committee be tasked to document the approach, co-siderations and milestones by 30 June 1979.

5. The project officer will be CPT Fisher and can be contacted at AUTOVON 221-8926/8927.

# FACT SHEET

SUBJECT: Data Exchange - J-AA to MILPERCEN

DISCUSSION: Currently, all ID (name and SSN) changes processed against the J-AA MMPF each update, are transmitted via AUTODIN to MILPERCEN. This project would determine the feasibility of expanding this output to include other data elements, such as AWOL transactions, field grade changes and PCS arrivals. If it is determined feasible to expand the output, this study would include data elements to be added by USAFAC and actions to be taken by MILPERCEN upon receipt of the data.

CONCLUSION: The feasibility project should be established to begin on/about 1 Apr 80, to run three/four months. Resource impact would be heavier on MILPERCEN than USAFAC (FAPPS, PPSD). If it is determined feasible, the data elements should be identified to establish an implementation project, which would include programing requirements, method of formatting and forwarding data, controls for dispatch of data by USAFAC and receipt by MILPERCEN, date of implementation, etc.

RECOMMENDATION: Establish a project to begin during third quarter FY 80.

## APPENDIX V.
## PROJECT FILE

The project file consist of four sections: folders, books, microfiche, and program listings. The project file sources include items obtained from MILPERCEN, trip visits, the Georiga Tech Library, and papers generated by project personnel. The folder section includes file descriptions, reports, flowcharts, presentation material, and copies of files from the data bases developed by the project. The microfiche section consists of technical reports dealing with management, pay, and modeling of personnel systems. The book section includes user manuals, proposed system studies, and evaluation reports of existing systems. The program section contains two programs on the strength audit system and an output listing of a data element dictionary.

## PROJECT FILE LISTING

### PROJECT FILE FOLDERS

1. Organizational Chart of the Army

   Part of AR 10-5. Date: 1978
   Contains overview of the following staff units:
   a. Deputy Chief of Staff for Personnel
   b. Controller of the Army
   c. Chief of Engineers
   d. The Surgeon General
   e. Chief of Chaplains
   f. Chief Army Reserve

2. Military Personnel, Organization, and Type of Transaction Codes. AR 680-29 September 1, 1978 Personnel Information Systems

   Part of AR 680-29. Date: September 1, 1978.
   Contains the following items:
   a. MILPO Codes and Addresses
   b. Military Organizational Codes
   c. Military Authorization Codes
   d. Type of Transaction Codes

3. Document and Form List (Appendix) AR 640-10 April 26, 1973

   Part of AR 640-10. Date: April 26, 1973.
   Contains a list of minimum documentation for the MPRJ and a document and form list for both the OMPF and the MPRJ as required for officers and enlisted personnel.

4. GA 1.13: FPCD-80-30 GAO Report B-196857 Army Guard and Reserve Pay and Personnel Systems Are Unreliable and Susceptible to Waste and Abuse FPCD-80-30 January 28, 1980 33 pages.

5. Forms Used for Inprocessing of Personnel and Outprocessing of Personnel PAM 600-8-9 December 15,1976

   Part of the SIDPERS Military Personnel Office Level Procedures In/Out Processing DA PAM 600-8-9. Date: 1976. Contains a list of in/out forms used and a checklist for incoming personnel.

6. Reporting Requirements for Active Army Enlisted Personnel AR 680-200 March 1, 1971

   Part of AR 680-200. Date: 1971.
   Deals with how transactions are to be sent to

MILPERCEN, MILPERCEN's control number, and DA control number.

7. Reporting Requirements for Active Army Officer Personnel
AR 680-100 June 1, 1972

Part of AR 680-100. Date: 1972.
Requirements for transactions on officers when using AUTOVON and AUTODIN.

8. U.S. Army Management Systems Support Agency (USAMSSA)
AR 10-39 August 16,1974

Part of AR 10-39. Date: 1974.
Organization and Functins of USAMSSA:
U.S. Army Management System Support Agency.

9. Individual Military Personnel Records AR 640-10 June 15, 1973

Part of AR 640-10. Date: 1973.
Summary of the MPRJ as to its initiation, preparation, sections, filing documents, removal of documents, obsolete documents, missing MPRJ, and access and review of OMPF.

10. ODIS Review

ODIS - Overnight Data Information System.
No date on this document; obtained from MILPERCEN.

11. Policies, Objectives, Procedures, and Responsibilities
AR 18-1 May 1, 1976

Part of AR 18-1. Date: 1976.
Table of contents and Appendix O: Army Management Information System (AMIS) Configuration Identification (CI) Codes.

12. Automated Data Systems - MILPERCEN February 4, 1980

Date: February 4, 1980. Obtained from MILPERCEN. Narrative summary and instructions for completion of MILPERCEN ADS.

13. IRB Interface with Wartime Casualty Branch February 27, 1980

Information memorandum on IRB and the Wartime Casualty Reporting System; contains a list of data elements on the IRB/PDC.

14. Work List for Data Audit and Analysis Branch (MILPERCEN)
March 1980

Blank forms and list of procedures followed in the Data Audit and Analysis Branch; part of this is unofficial documentation and part

is official documentation.

15. Organizational Chart Data Audit and Analysis Branch MILPERCEN

16. Enlisted Master File System Flowchart

    Taken from Enlisted Data Requirements Master File: contains Edit System for EMF Input, EM Update System, Distribution System Programs Output; conceptual flowchart for EMF.

17. Personnel Master File (PMF)

    Taken from Enlisted Data Requirements Master File. File description contains English data element description and position of data element in the PMF.

18. PSD - 36 EMF -258 Version 258 character version

    Taken from Enlisted Data Requirements Master File 258 character version; contains relative position, identification of data element, abbreviation, length, type, and location of data elements. Data on record layout is December 1975.

19. PSD-1 EMF-420 Version 420 character version

    Taken from Enlister Data Requirements Master File. Date 1979. 420 record description; includes relative position, identification, abbreviation, length/class, and location. System ID is PSD-1. File ID is ES146 UR01 through 09. Record layout date is 1977.

20. EMF Dynamic File 70 character version

    Taken from Enlisted Data Requirements Master File. Date 1979. File ID - BM280UT02. Includes relative position, identification of element, abbreviation, length/class, and location. Date on record layout is 1977.

21. JUMPS-AD MILPERCEN October 13, 1978

    Record layout for JUMPS-AD and MILPERCEN. Date 1978. Record length - 110 characters. Includes relative position, identification, length/class, and location. Abbreviations of data elements very incomplete. Some question as to if some data elements are used as given.

22. JUMPS Data to MILPERCEN Record Layout

    Record length is 264 characters and is what is sent from USAFAC. Includes data abbreviations and relative position.

23. PERSINSD Strength Interface Flowchart 1979

    Taken from Enlisted Data Requirements Master File. Date 1979. Flowchart of Strength Interface.

24. Enlisted-Officer Strength Audit Flowchart

    Flowchart composed of three sources:
    1. MILPERCEN Documentation
    2. Unofficial Documentation
    3. Data gathered on MILPERCEN visit

    Flowchart not complete for OMF track.

25. A2AAC MOS Master File August 1, 1979

    SIDPERS MOS Master Edit File (SMEF). This file is a record of each officer specialty skill identifier and each warrant officer and enlisted MOS used in SIDPERS and in VTAADS. Each record includes grade, branch, physical category, additional skill identifiers, special qualification identifiers, and other required information.

26. A2BAAC AALOC August 1, 1979

    SIDPERS Active Army Locator File (SAF). This file contains a record of each Active Army unit worldwide. Unit information, such as unit name, location, command of assignment, and unit status, is maintained in every SAF record. Update is accomplished through Active Army Locator (AALOC) Information Records transmitted by ODCSOPS to the SIB via the Automatic Digital Network (AUTODIN).

27. A2CAAC Organization Master Record August 1, 1979

    SIDPERS Organizational Master File (SOMF). This file contains a record of each unit serviced by the SIB. The orgaization master record includes unit identification, location, command assignment, unit status, and strength (assigned, attached, and authorized). Also, it contains such local information as analyst code, originator code, and mail code for input/output management and distribution of reports. Source of input for unit information is the

organization's Unit Identification Code Information Officer (UICIO) through the UIS/FORSTAT system.

28. A2HACC Enlisted Gaining Assignment Instruction August 1, 1979

29. B2CAAC Authorized Strength Record August 1, 1979

    SIDPERS Authorized Strength File (SASF). This file contains a record of each authorized space in the units serviced by the SIB. The record includes such information as the authorized grade and the authorized MOS or specialty for the position. Update of the file is accomplished automatically through system interface with VTAADS. Approved projected positions (those reflected in an authorization document with a future effective date) can be recorded also.

30. A2FAAC RNF Officer Format 1-5 Enlisted Format August 1, 1979

31. Flowcharts January 23, 1980 - February 21, 1980

    Flowchart developed based on reading SIDPERS manuals and conversations about MILPERCEN. None of these reflect the larger picture in terms of subsystems.

32. A2EAAC SIDPERS Personnel Master Record August 1, 1979

    Includes relative position, field title, type length, and remarks; no variable names given; total record length is 477 characters.

33. Data Resource Mangagement Program

    Draft of a new system for MILPERCEN; includes a list of definitions.

34. Data Element Dictionary KWIC Index (CSCR 18-5) May 4, 1979

    Sample pages from the U.S. Army Computer Systems Command Interim Data Element Dictionary.

35. System 2000 Data Base Management System January 1980

    An introduction to the System 2000 Data Base management system data base. Most of the material came from the System 2000 User's Manual.

36. MILPERCEN Data Standardization Conference January 7, 1980

Sample sheets and results from the MILPERCEN data standarization conference.

37. Computer Hardware Configuration 1108 Mass Storage Configuaration October 3, 1977

    1108 Mass Storage Configuration; flowchart for the eight systems; includes list of other equipment not included in computer configuration.

38. EES Presentation of MILPERCEN

    Copy of slide presentation given to EES. Includes one sheet on SIDPERS Wartime.

39. EMF Enlisted Master File 1977 Historical File 738 Characters

    Taken from Enlisted Data Requirements Master File Manual. File ID is BM530UT01 and BM530UA01.

40. Acronym Listing

    The acronym list is made up of acronyms gathered from all documents encountered in the project to date. Many were taken from AR 310-50 Authorized Abbreviations and Brevity Codes. November 1975.

41. JUMPS Wartime

    Single sheet obtained on a visit to MILPERCEN. Node graph of plans to build JUMPS-WT.

42. List of Approved Recurring Reports Reports and Statistics MILPERCEN Supplement 1 to AR 335-11 February 15, 1978

    Listing includes Requirements Control Symbol (RCS), report title, report contents or purpose, preparing office, and frequency of report.

43. Transmission of Data via Autodin and Autovon AR 680-6 February 2, 1970

    Most of AR 680-6 reproduced. Includes general information, use of AUTODIN and AUTOVON, control instructions and formats and report transmissions.

44. RIG/RIN Codes January 31, 1980

    AMPERSINS System Identification Codes. List of systems and subsytems; includes primary and system responsible organization.

45. March Monthly Report 1980

46. April Monthly Report 1980

47. OMF Officer Master File CF165UT07 3800 characters

    Includes data abstract and data element abbreviation names from the 52K system.

48. Direct Exchange of Personnel Data Between MILPERCEN and SIDPERS AR 680-5 September 1, 1978

    Part of AR 680-5. Includes Master Index to MILPERCEN Input/Output Record Formats; Initial Transaction Inputs to MILPERCEN, General Introduction; and copies of sample input transactions.

49. SIDPERS Wartime Accession Data

    Obtained from MILPERCEN visit; supplied by OPMD; Date: February 29, 1980.

50. SIDPERS Authorized Strength File PAM 600-8-4 1977

    Includes English description of data element, size and record position; SASF paragraph header record format; SASF "ASTE" and "ASLC" input format cards one and two.

51. Sample of FMS/OMF Data Name Problems Using INGRES

    Listings from sample comparison of EMF and OMF data names using INGRES.

52. Strength Audit Flowchart Un-official Documentation June 13, 1979

    Flowchart obtained on a visit to MILPERCEN.

53. DMF/OMF/OPUS/OASIS Interface

    Flowchart obtained on a visit to MILPERCEN. No date given; single sheet.

54. SIDPERS Personnel Record Personnel Master Record Officer, WO, Enlisted PAM-8-5 1977

    Includes field, position, field name, type, length and remarks; data abbreviations and source given in table format.

55. IRB Data Elements List from Personnel Data Bank Analysis Definition Phase

    Listings of data elements only; no date; obtained on a visit to MILPERCEN.

56. SIDPERS Organizational Master File and Data Element Definitions PAM 600-8-4 1977

    Includes English data elements, size, and position; data abbreviations and source given in table format. Record size is 874 characters.

57. Taper Personnel Master File PAM 600-8-5

    Includes English data elements, size, type, and record position. Record size is 389 characters.

58. Boils and Glymph Slide Presentation April 17, 1980

    EMF and OMF presentations.

59. Experimental ID card Letter to Jim Doyle

    Correspondence to Jim Doyle from MILPERCEN. Date: April 1980. Labeled example of an ID card. Date: March 1980.

60. Project Statement of Work

    Includes copy of statement of work - not the original; copies of first slide presentation given by Steve Fisher here at Tech.

61. MILPERCEN Visit February 27-28, 1980

    Itinerary for visit of February 27-28; a brief summary of our understanding of MILPERCEN as of February 26, 1980.

62. Data Element Dictionary / Directory Bibliography

    Includes books, conference proceedings, trade-buyers guides, journals, government documents, technical reports and trade newspapers. This bibliography is centered on data element dictionaries/directories. Other references are included that are part of the environment in which a DDD operates, such as, DBA function, schemas, documentation, program maintenance/creation, and data checking.

63. ERAD Personnel Records Keeping Concept Flowchart

    One page flowchart obtained on a visit to MILPERCEN. No date given.

64. Working Bibliography

This list includes books and government documents that can be checked out of the Tech library and are not being kept in the office. This includes Army Regulations, NBS Special Publications, and SIDPERS manuals.

65. Monthly Report - Curt Welch

66. Monthly Report - Jim Bingham

67. Jim Doyle - Trip Reports

68. Reconciliation of Military Pay Records with Personnel Records AR 37-104-2 July 6, 1971

69. Data Element Dictionary / Directory Design List

70. Jim Doyle's Data Base.

    Outline of items to collect on each data element.

71. Monthly Report - Jim Doyle.

72. IRB-A Basic Record.

73. DBA Interview Outline. from Database Administration: Concepts, Tools, Experiences, and Problems. C 13.10:500-28. NBS Publication 500-28.

74. Information For Data Resource Directory

75. MILPERCEN Organization and Directory

76. Decision Memorandum on COPPER April 18, 1978

77. Sample Materials from FAO and SIB Ft. McPherson

78. COPPER Merger Steering Group Minutes March 15, 1978

79. Military Pay Voucher AR 37-104-2 April 17, 1970

80. Flowcharts January 23 - February 21, 1980 Folder II

81. Future Personnel Information System Concept Paper April 30, 1979

82. Project Master Plan
    Data Resource Management Program

83. MILMAP Master Plan: Objectives March 31, 1979

84. Large-Scale Data Bases:
    Issues and Insights by Polk and Decker
    The Technology of Data Base Management System

85. Lack of Control and Feedback Hinders Army Manpower Management

Improvements. PB 80-104-938. October 31, 1979.

86. Project File Listing

87. January 16 - February Report

88. May Monthly Report 1980

89. Introduction to SPF SIDPERS Personnel File January 1979
PAM 600-8-5.

90. QUOTES Listing

Quotes from GAO Reports and other Technical Reports.

91. USAMSSA Flowcharts

92. Enlisted Strength Gains and Loss Files

93. Enlisted Master File Monthly Extract for USAMSSA

94. Data Element Dictionary from Strength and Personnel Management
Forecasting System June 1979

95. Roy Carter

96. Army Can Improve Peacetime Use of Deployable Enlisted Personnel
September 7, 1978 GAO Report PB 285 810

97. Enlisted Career Force Management Systems: An Evaluation of
Department of Defense Comments on a Critical Report
GAO Report PB 278 560

98. Abbreviations List from System Specifications for the Military
Occupational Specialty Enlisted Strength and Personnel
Management Forecasting System. June 1979.

99. The Marine Corps Military Pay System: Too Many Errors and
Inefficiencies. GAO Report FGMSD-80-49. June 10, 1980.

100. Identification of Core Data Items for SIDPERS-RC
October 13, 1979.

101. Non-Unit Reserve File Description. Reserve Component.
450 characters. October 22, 1979.

102. Master Interface Control File Description. Reserve Component.
350 characters. September 1, 1978.

103. MOBPERS File Description. Reserve Component.
80 character record. November 18, 1977.

104. July 16 Presentation at MILPERCEN

105. Future Personnel Information System Concept Paper
April 30, 1979.

106. Interim Report 1. (Rough Draft)

107. List of articles sent to MILPERCEN.

108. JIMMY Data Base Listings. List of files to document one subsystem of MILPERCEN.

109. JIM Data Base Listings.

Data Base build to hold data on data elements (meta-data) collected for the project. Input to Jim Doyle's data base.

110. Personnel Bibliography

Articles, books, technical reports, government documents, and conference papers on civilian and military personnel systems.

111. File Summary

List of files in the JIM data base with matrix of items collected from each file; includes the number of tuples in each file.

112. File Directory

List of files in JIM data base; list of UNIX formatted files corresponding to the files in JIM data base; list of work file to produce the files in the JIM data base; and a list of the back up files on the PRIME which corresponds to the formatted files on UNIX.

113. RCPAC Visit Report

June 19-20, 1980 Visit to RCPAC by John Gehl and Jim Doyle.

114. MILPERCEN-USAFAC Transactions

Copies of work files. Transactions taken from AR 680-5 Direct Exchange of Personnel Data Between MILPERCEN and SIDPERS.

115. MILPERCEN-USAFAC Transactions

Copies of work files. Transactions taken from AR 680-5 Direct Exchange of Personnel Data Between MILPERCEN and SIDPERS.

116. MILPERCEN-USAFAC Memorandum - List of On-Going Studies.

117. Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition System (SACS). Report of Task E. Analysis of Current and Developing Systems Which Interface with LOGSACS and PERSACS to Determine to What Extent They Do or Do Not Support the Data Requirements of an On-Line SACS. AD A074 638. June 1979.

118. General Crosby's Letter - Research of Alternatives for Data Resource Sharing

119. RCPAC Visit Presentation

    1. The Individual Reserve Personnel Information System (TIRPERSINS)
    2. Personnel File Maintenance System (PFMS)
    3. Records Interface Control Systems: Objective-Requirements-Functions
    4. Problem Identification
    5. Flowcharts
    6. Identification of Core Data Items for SIDPERS-RC
    7. Equipment Configuration
    8. Data Base Management System

120. CAP III Transactions from DA PAM 600-8-10-1978

121. ARRSS/ARPRINT Course Master Record December 1978 from System Specifications for the Military Occupational Specialty Enlisted Strength and Personnel Management Forecasting System. by Holz; MCwhite; Milum; Klingman; and Moore.

122. DA Major Command Extract PSD-1

123. AEACC-9 Record Layout

124. The Personnel Management Model. by Richard F. Jonas (Thesis) June 8, 1979. 38 pages. Technical Report AD A077 038.

125. Letter from Ray Demarest to Pete Jensen Topic: Symposium/Workshop

126. Handbook of Forecasting Techniques: Appendix A and Glossary. Taken from AD A019 280.

127. USAF Military Personnel Costing: Problems and Approaches. by H. Anthony Baran. Advanced Systems Division. Air Force Human Resources Laboratory. Wright-Patterson Air Force Base, Ohio. August 1977. 54 pages. AD A047 761.

128. Phase One Report - Reading Copy

129. Phase One Report

130. Air Force Military Personnel Center Microform System. Executive Summary. by J. K. Garner, et.al. November 1975.

AD A020 073.

131. AD A045 829 An Analytic Review of Personnel Models in the Department of Defense. September 1977.

132. Partial List of Conference Attendees.

133. Proud Spirit MOBEX-80.

134. Agenda for Workshop October 6-8, 1980.

135. MAS Personnel Management and Reporting System.

136. File on Files

A set of files from other files within the project file itself.

137. Bibliography Listings

Copies of bibliographies from books, journals, etc. for further research; i.e. more leads on the subject at hand.

138. Readings on Manpower Planning and Organization Design.

Copies of some of the articles in the book Manpower Planning and Organization Design.

139. Models and Modelling for Manpower Planning.

Copy of an article in Management Science Journal.

140. File Structure for File (MPCD); from Jim Doyle.

141. Data Standardization Conference Roster.

142. Last attempt ot draw systems and sub-systems of data flows.

Pencil drawing showing systems and sub-systems at MILPERCEN.

143. Working List of Files, System and Organization.

144. File Directory UNIX and Prime Files Location.

Source files on UNIX and their backup on the Prime.

145. Evaluation Sheet form Models: Working Outline.

A list of items to attempt to evaluate the models that have been found.

146. Interlibrary Request Forms.

147. Invoices - Receipts.

148. Human Resource Address List.

149. Conference Mailing List - Human Resource Management Address List.

150. James P. Fry's Presentation

151. Wong's Presentation

152. Jack Funk's Handouts - DCSPER

153. Dave Jones Handouts I - IBM

154. Dave Jones Handouts II - IBM

155. Bob Hilton's Presentation - Coca-Cola

156. Jim Sheridan's Handout - AT & T

157. Paul Shinderman's Presentation - General Research

158. Quarterly Progress Report

159. Letter to Conference Attendees
Human Resource Information Management
Mailed November 24, 1980; letter and transcript mailed.

160. Project file copy of the Human Resource Information Management Workshop.

161. Organizational Chart Office of the Deputy Chief of Staff for Personnel. Department of the Army. 1 February 1980.

162. January 24, 1980 Meeting Agenda Plus Statement of Work. What was handed out at this meeting.

163. Information Resource Management (IRM) Task Force.

164. Data Base Performance Bibliography

165. INGRES Files (Extra)

166. Transcript of E. Wong

167. Transcript of James Fry

168. Transcript of Jim Sheridan

169. ELIM-COMPLIM Comparison

170. Manpower Planning Readings (Three Folders)

171. INGRES File Listings

172. Dave Jones IBM Presentation October 1980

173. Copies of Final Day Solution Workshop October 1980

174. Miscellaneous Papers

175. Corporate Manpower Planning from Management Decision 1977

176. Personnel Planning Databases and Modeling: A Software Approach by L. B. Boza Bell Labs. Winter Simulation Conf. 1977.

177. Enslow's Presentation - Extra Copies

178. Copies of Personnel Bibliography

179. Government Data Systems March/April 1980

180. Copies of Personnel Quotes

181. Working Copies of Workshop Transcript

**PROJECT FILE BOOKS**

1. Military Personnel Office Level Procedures DA PAM 600-8-2 December 1976.

2. SIDPERS Guide for Commanders DA PAM 600-8-8

3. SIDPERS Handbook for Commanders DA PAM 600-8-20 June 1979

4. Authorized Abbreviations and Brevity Codes AR 310-50 November 1975

5. U.S. Army Military Personnel Community Data Standardization Conference March 24-28, 1980

6. COPPER Report: Consolidation of Military Pay and Personnel Functions AD-A055-049 May 1, 1978

7. Officer Master File Coding Manual December 1979

8. Enlisted Data Requirements Master File March 30, 1979

9. Enlisted Master File September 12, 1978

10. SIDPERS User Manual Unit Level Procedures DA PAM 600-8-1 December 1976

11. Master Plan MILMAP 1979

12. Officer Master File User's Information Manual 1974

13. Advanced Information Systems Project Plan

August 1979

14. COPPER User Manual July 15, 1977

15. Personnel Data Bank Analysis - Definition Phase

16. SIDPERS/Top-of-the-System Impact Study

17. U.S. Army Military Personnel Center Organization and Functions August 1, 1979

18. Systems Analysis Documentation
Enlisted Strenth/Data Audit 1975-78

19. Consolated/Integrated Manpower and Personnel Automated Management Information System. System Specification. Draft. April 3, 1980. Prepared for Deputy Chief of Staff for Personnel Manpower, Plans and Budget Directorate.

20. Detailed Functional Systems Requirement Mobilization Preassignment Program (MPP) August 1, 1979.

21. System Specification for the Military Occupational Specialty Enlisted Strength and Personnel Management Forecasting System. by Operations Analysis Group of General Research Corporation. June 1979. MDA 903-78-C-0475. Project I.
by Betty Holz; Peter McWhite; Brian Milum; Darwin Klingman; and David Moore.

22. Survey of State-of-the-Art Database Administration Tools: Survey Results and Evaluation by James P. Fry. Technical Report DSRG 78 DE. University of Michigan Graduate School of Business Administration August 1978.

    A. State-of-the-Art Report
    B. Database Research and System Bibliography
    C. The Database Administration A Tutorial
    D. Appendices A, B, and C of the State-of-the-Art Report

23. The Design of an Information Management Program for Headquarters Department of the Army. Phase 2 Detailed Report. February 26, 1980. Arthur Young. MDA 903-C-0483.

24. The USAF Manpower and Personnel Plan. Volume Eight. Automated Information and Data Support System. USAFMPP-8 28 January 1980.

25. The USAF Manpower and Personnel Plan. Volume Seven. Total Force Manpower Management Systems. USAFMPP-7 3 August 1979.

26. The USAF Personnel Plan. Volume Six. Personnel Programming and Budgeting System. USAFFPP-VI. 19 September 1978.

27. The USAF Personnel Plan. Volume Four.
Reserve Forces Personnel Structure.
TOPREP.

28. Army Personnel Management System Study. Volume I.
Main Report. by Erwin R. Brigham.
Booz-Hamilton, Inc. 234 pages.

29. Army Personnel Management System Study. Volume II.
Appendices. by Erwin R. Brigham.
Booz-Hamilton, Inc. 348 pages.

30. Development of a Department of Defense Manpower Management Information System. January 18, 1980. AD A080 148.
by D. A. Bergeron and J. H. Miller.

31. The Army Prediction System (AMPS) Phase I. February 15, 1973. by Stephen Enke and TEMPO staff. 286 pages.

32. Master Automation Plan (MAP) September 1980.
Training Volume 3.

33. GAO Documents February 1979 Vol. 4. No. 1 &2.

**PROJECT MICROFICHE**

1. AD-A069-868 Naval Intelligence Processing Systems Support Activit - ~ Etc. Integrated Database Development and Design Guide

2. PB-274-035 Demonstration Model Personnel Management Information System

3. AD-A074-077 A Structural Model For Database Systems February 1979

4. AD-A055-049 COPPER Report: Consolidation of Military Pay and Personnel Functions

5. PB-285-810 The Army Can Improve Peacetime Use of Deployable Enlisted Personnel GAO Report FPCD-78-66.

6. PB-278-560 Enlisted Career Force Management Systems: An Evaluation of Departement of Defense Comments on a Critical Report GAO Report FPCD-78-20.

7. AD 616 704 A Markovian Model for Projecting Movements of Personnel Through A System. 1965.

8. AD A065 290 Defense Manpower Policy. Presentations From the 1976 Rand Conference.

9. AD A068 578 Feasiblity Study of a Computerized Management Information System. December 1978.

10. AD 616 704 A Markovian Model for Projecting Movements of Personnel Through a System. March 1965.

11. AD A037 429 Optimization in Military Personnel Management. January 1977.

12. AD A036 126 Force Structure and Manpower Management Study. October 1976.

13. AD A041 914 Documentation Report to Support the Analysis for M· ·ement of Recruiting Resources and Operations (AMRRO) Systems. June 1977.

14. PB 265 694 The Codasyl Data Base Approach: A COBOL Example of Design and Use of a Personnel File. February 1974.

15. AD A038 804 A Policy Evaluation Model and Prototype Computer-Assisted Policy Evaluation System for Naval Personnel Management April 1977.

16. AD A074 638 Analysis to Determine Functional Systems Requirements for An On-Line Structure and Composition System (SACS) June 1979.

17. AD A028 797 Two New Versions of the ELIM-COMPLIP System. Volume I. General Overview. June 1976.

18. AD A067 715 Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition (SACS). Report of Task C
Data Analysis of Accuracy and Timeliness March 1979.

19. AD A070 448 Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition (SACS). Report of Task B
Systems and Procedures Documentation January 1979.

20. AD A070 449 Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition (SACS). Report of Task D
Data Requirements Document May 1979.

21. AD A076 019 Analysis to Determine Functional and Systems Requirements for an On-Line Structure and Composition (SACS). Report of Task G
Final Report and Near and Long Term Improvements. September 1979

22. AD A047 607 Technical Description and User's Guide for the Enhanced Total Objective Plan for Officer Procurement (TOPOPS). September 1977.

23. AD A048 645 Advanced Technology Manpower Forecasting. December 1977.

24. AD A036 126 Force Structure and Manpower Management Study. October 1976.

25. AD A044 809 Handbook of Forecasting Techniques. Part I. List of 73 Techniques. August 1977.

26. AD A044 810 Handbook of Forecasting Techniques. Part II. Description of 31 Techniques. August 1977.

27. AD A019 280 Handbook of Forecasting Techniques. December 1975.

28. AD A070 160 Development and Analysis of Loss Rate Forecasting Techniques for the Navy's Unrestricted Line (URL) Officers. June 1979.

29. AD A066 306 Shore Activity Manpower Planning Models: Development and Application. March 1979.

30. AD A052 906 Forecasting Officer Losses An Examination of Methods. September 1977.

31. AD A020 594 New Developments in Navy Manpower Personnel Planning - Support of the POM-77 MRCP. July 1975.

32. AD A031 841 MINIFAST - An Interactive Model of the Navy's Enlisted Personnel System. August 1976.

33. AD A045 829 An Analytic Review of Personnel Models in the Department of Defense. November 1976.

34. AD A020 073 Air Force Military Personnel Center Microform System Executive Summary. November 1975.

34. AD 771 119 The ELIM-COMPLIP System of Manpower Planning Models Volume I. General Overview. December 1973.

35. AD 771 969 The ELIM-COMPLIP System of Manpower Planning Models Volume II. Description of Computational Procedures. December 1973.

36. AD A045 305 Computer-Assisted Manpower Models Using Goal Programming. July 1977.

37. AD A037 429 Optimization in Military Personnel Management. January 1977.

38. AD A041 383 Documentation on the FAST Model Utilities. April 1977.

39. AD A045 101 An Overview of the Protoype Integrated Simulation Evaluation Model of the Air Force Manpower and Personnel System. April 1977.

40. AD A032 090 The Constrained Officer Force Progression Model: A Steady State Mathematical Model of the U.S.

Air Force Officer Structure. September 1976.

41. AD A042 287 Forecasting the Retention of Navy Pilots. June 1977.

42. AD A046 496 Study of the Prediction of Manpower Change Behavior Using Regression Methods. June 1977.

43. AD A059 978 The NMC Manpower Requirements Model. June 1978.

44. AD A048 645 Advanced Technology Mnapower Forecasting. Naval Requirements for Skilled Manpower and the Introduction of New Technology. December 1977.

45. AD A067 658 EEO Goals Development in the Navy Sea Systems Command. December 1978.

46. AD A055 367 External Labor Market Analysis and EEO Goals Planning. April 1978.

47. AD A072 777 Budget Allocation and Enlistment Prediction Models for the Navy's Recruiting Command: The Proper Balance Between Recruiters and Advertising Efforts. May 1979.

48. AD A062 106 Forecasting Naval Enlisted Retention Behavior Under Alternative Retirement Systems. November 1978.

49. AD A063 762 The Prediction of Attrition from Military Service. September 1978.

50. AD A052 906 Forecasting Officer Losses- An Examination of Methods. September 1977.

51. AD A070 032 Effects of Industrial Compensation on Navy Enlisted Retention - Model Development. April 1979.

52. AD A059 732 Interactive Sea/Shore Billet Rotation Model. September 1978.

53. AD A072 976 Aggregate Sea/Shore Rotation Model (MOSES). March 1979.

54. AD 756-951 The Army Manpower Prediction System February 1973.

**PROJECT PROGRAMS (Listings and Output)**

1. AZ111 Enlisted Strength Data Audit (Milpc 27)

2. EM109M

3. Data Element Dictionary Output

4. GAO Data Base Listing

**APPENDIX VI.**
**MAPS REPORTS VOLUME 2 SECTION 4**

SECTION 4. SYSTEM INTERFACE PROBLEMS

4.1 Breakdown of Interfaces. There is a general breakdown of ADP system interfaces between commands. The primary causes of the problem are that there is no functional manager to control the automation change process as described in Part 1, Section 5, and there is little or no standardization.

4.2 Standardization. The logical consequence of each MACOM, FOA, or agency "doing its own thing" coupled with the complete failure of the DOD and Army data element standardization programs is enormous redundancy and lack of standardization. Non-Standard data element use and definition has made interface between and among systems within and among components and identity groups extremely difficult with suspect results. An aggressive standardization program should be the "number one" priority -- requirement for all new systems and most enhancements to current systems. Without such a program effective automation for mobilization support is impossible. We can no longer avoid the costly issue of standardization just because it is too costly. The alternatives to standardization have proven to be far more costly in terms of labor, redundancy, and inability to satisfy peacetime and mobilization interface requirements.

4.3 Redundant Data Capture. Related to the standardization program are the problems or issues of data element proponency and data entry/data capture responsibilities. Regardless of how the Army evolves its standardization program, data element proponency must be well defined and clearly designated to include responsibilities for data capture, use, access, interface, storage, etc. CDCSPER, for a time, was forcing a degree of standardization among the developing SIDPERS: AA, NG, RC. This effort has a limited scope, is not part of a larger plan, and seems to be floundering. MILPERCEN has recognized the many problems associated with non-standardization and organized a standardization effort by establishing a Data Administration Division. Once evolved, the MILPERCEN initiative will require unprecedented cooperation among those MACOM, DPI, FOA, activities involved in order to succeed because of the cost of such a program. In our opinion, Assistant Chief of Staff for Automation and Communications (ACSAC) must lead, direct, and manage a standardization program immediately to keep the separate initiatives from floundering, and to insure ultimate success across a broad arena.

4.4 PERSACS Problems (Volume 2, Part 3, 1.2.4). The areas identified from the MAPS study that can be defined as being within PERSACS are:

a. Lack of automated interface between manpower program systems and personnel systems.

b. Lack of discipline in making TAADS changes.

c. Imbalances between MACOM documents and data factored by SACS.

d. Inability of MILPERCEN to correct known errors in PERSACS/ Authorization Data Base (AUDB).

e. Restriction on MILPERCEN authority to discuss known errors on PERSACS/AUDB with MACOMS.

f. Inability of PERSACS to identify split units.

g. Overall lack of understanding of the SACS/PERSACS, manpower, TAADS, etc. relationship.

h. Exclusion of some units and personnel data from PERSACS.

## S O L U T I O N

An automated interface between manpower program systems and systems supporting the personnel community; e.g., ELIM/COMPLIP to PIA, should be designed and developed.

The update frequencies for SACS and all supporting systems should be synchronized to insure that all personnel actions based on output from these systems are using the same data baseline. This would discipline the flow of changes and eliminate imbalance between MACOM and SACS.

MILPERCEN should be granted authority to deal directly with the MACOMs on known PERSACS errors, and correct the AUDB DCSPER/DCSOPS guidance. The update would be centralized and controlled to prevent a compromise of accuracy and to protect the confidential nature of the AUDB. A transaction register would be maintained for audit-trail purposes and to insure correction through the SACS/ PERSACS processing.

Consideration should be given to listing split units in a separate record or records in PERSACS, which are keyed to the parent unit by

a pointer or flag. A call to the data base for a specific unit would not only extract the information for the called unit, but also alert the user that information on a subordinate unit not co-located with the called unit also is available in the data base.

Appropriate management and user personnel at all units of the Army should be provided standardized training to assure awareness and understanding of the overall importance of SACS/PERSACS. Training should be an ongoing program to assure that newly assigned personnel are included.

## RECOMMENDATION

DCSPER and DCSOPS develop plans and functional descriptions to accomplish the necessary automated interfaces between the applicable manpower and personnel systems.

DCSOPS should give priority to establishing an integrated relationship between the systems which support the SACS/PERSACS processes. Such relationship should define timeframes and dependencies of the varied processes, and attempt to improve the flow and timeliness of data throughout the system network.

It is recommended that DCSPER and DCSOPS grant MILPERCEN authority to develop and implement a procedure for coordinating with MACOMs and internally correcting PERSACS errors. Such procedure would include AUDB update and related actions.

DCSOPS should initiate the necessary modifications to the SACS/PERSACS process to correct the problem of split units.

DCSPER/DCSOPS should initiate action for development of necessary training/orientation programs for management and operating personnel.

4.5 Enlisted Redundant Data Entry and Inadequate Data Verification (Volume 2, Part 1, 5.3 and Part 2, 1.3). Four separate commands (MILPERCEN, TRADOC, USAREC, and MEPCOM) plus DCSOPS and DCSPER are involved in various segments of the enlisted active accession process. No one command or office controls the accession flow, or the automation. As a result, little or no reconciliation is conducted between systems and none of the management reports reflecting accession strength figures agree. Source data is recaptured no less than four times from the time an individual processes at an AFEES through departure from a Reception Station (ARS, REQUEST, RESTAS, and ACT).

## S O L U T I O N

A functional manager/proponent at ARSTAFF level must be designated who is responsible for the total enlisted accession flow, and coordinates all automation matters to insure that systems interface with no unnecessary duplication. The responsibilities of this manager would necessarily extend over many commands and staff elements.

The ARS/REQUEST/EMF interface as outlined in the GFSR (29 June 1978) would go a long way toward providing an interim solution to the redundancy and error prone processes described in the problem statement. This solution as outlined (Figure 5-1) matches the ARS and REQUEST data bases and forces a reconciliation of unmatched data before further processing to update data bases outside of the Reception Station occurs. While this process has the inherent problem of operating within the constraints of current hardware with the recognized problems, it is a good short term solution that requires no hardware changes and relatively minor software updates. This interface would operate just as effectively during mobilization as it would during peacetime conditions (Figure 5-2).

USAREC is currently developing a segment of the original June 1978 GFSR for implementation. (Figure 5-3.) The primary differences between the original GFSR and the USAREC project are as follows:

a. In the USAREC project, discrepancy notification will be sent to the guidance counselor on personnel shipped, rather than to the Reception Station where the individual and record are located.

b. The original GFSR called for the forwarding of unresolved strength discrepancies from the ARS/REQUEST match to the reception stations on shipment date, while the USAREC version forwards only ARS data to Reception Stations with after-the-fact strength discrepancy resolution.

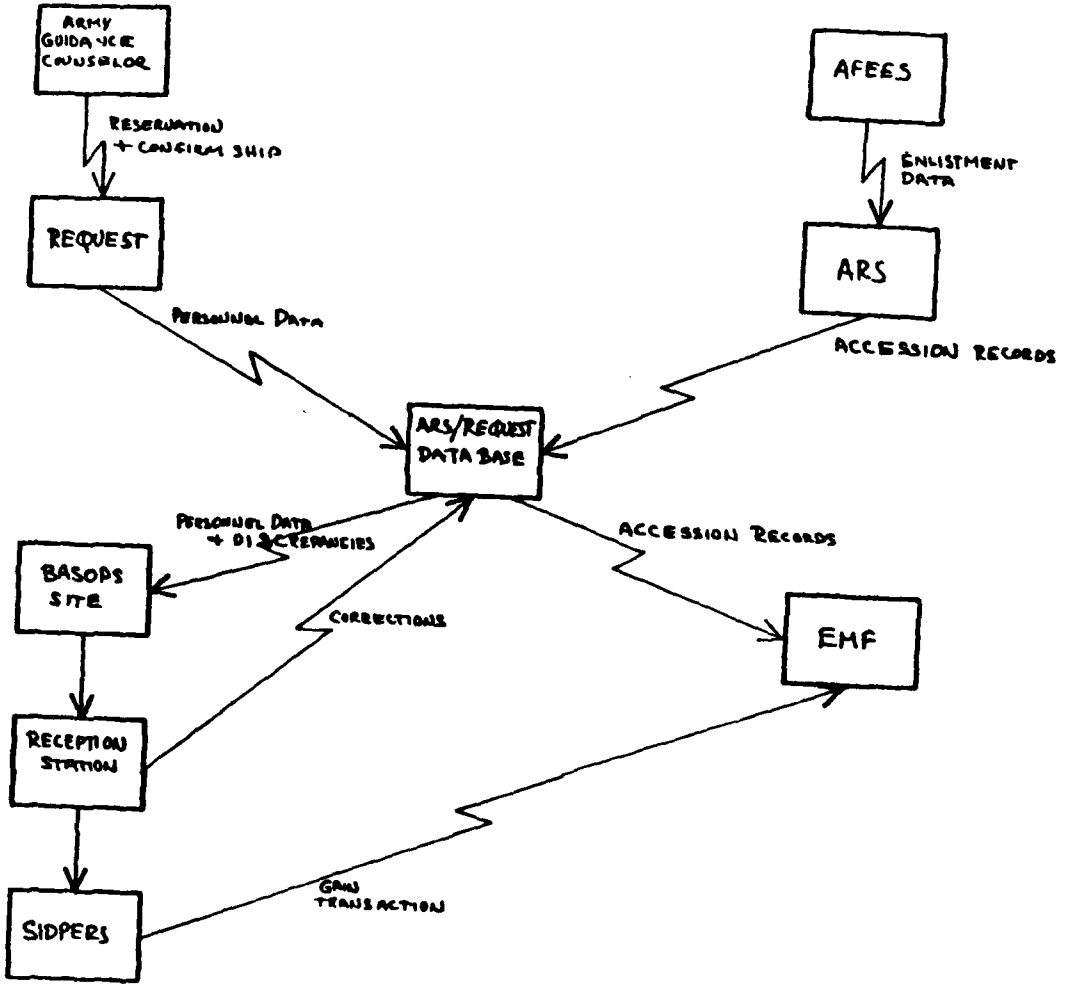


Figure 5-1. ARS/REQUEST/EMF Interface (Proposed Accession Processing)

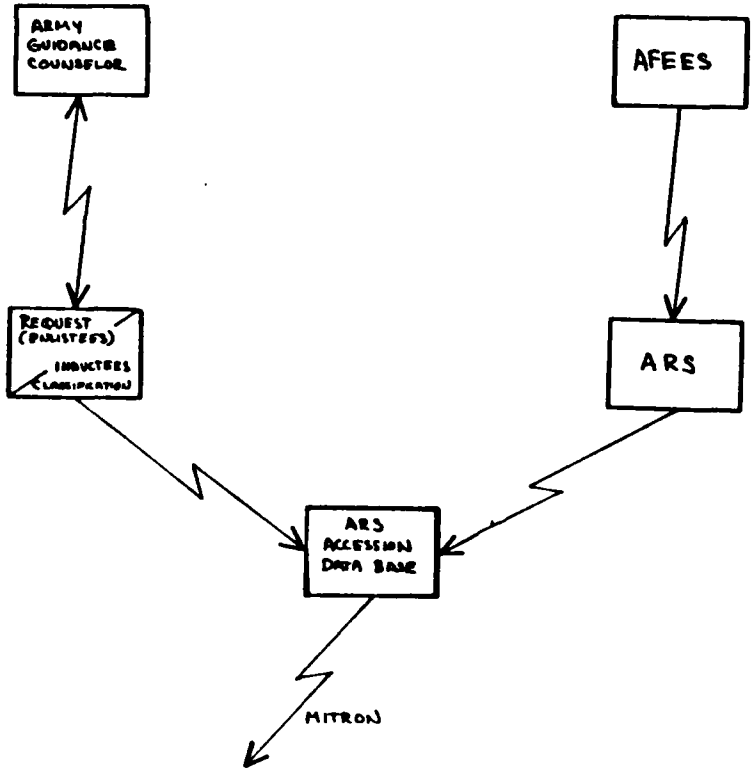


Figure 5-2. ARS/REQUEST/EMF Interface (Mobilization Processing)

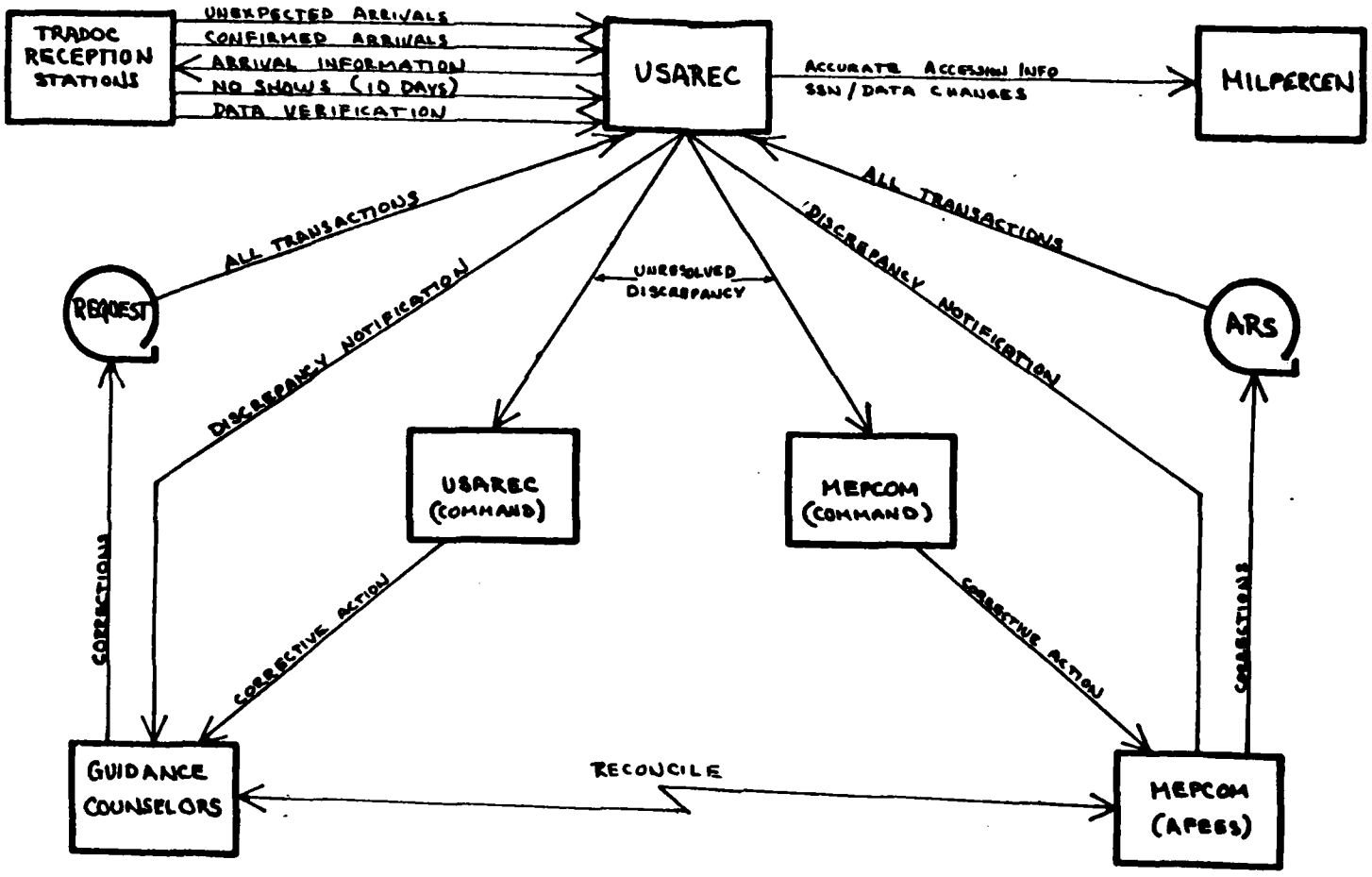


Figure 5-3. ARS/REQUEST Interface (General System Flow)

c. The original GFSR also called for the forwarding of a basic data card (BDC) on every individual scheduled to arrive at a Reception Station based on training scheduled in REQUEST. The USAREC version will include BDC on only personnel that processed through an AFEES because ARS is used to create the card rather than a combination of ARS/REQUEST.

The key advantages of either process beyond the forced reconciliation of some of the data elements duplicated between ARS and REQUEST is that an accession transaction will not be sent to MILPERCEN until ARS/REQUEST/RESTAS agree that the individual is an accession or a determination is made to accept the accession data when only two of the systems agree. In addition, the generation of ACT input by RESTAS would be reduced significantly by this process because the personnel data for ACT would be captured by the combined ARS/REQUEST data base at USAREC and forwarded directly to MILPERCEN. If the automated flow of data in this process is rigidly followed, the mismatch problems between the EMF, SIDPERS, ACT, and JUMPS will be reduced significantly. The development of the ARS/REQUEST/EMF Interface was officially tasked to USAREC by DCSPER on 2 July 1979. The projected implementation date is 1 June 1980.

The longer term solution to the redundant data entry problem with resulting discrepancies lies in the placement of an intelligent terminal linked to REQUEST at the AFEES for the guidance counselor. (See Figure 5-4.) This terminal would have a communication link (probably hard wired) directly to an AFEES data base that is generated and maintained on a proposed AFEES minicomputer. This interface could be satisfied by the Army Recruitment and Accession Data System (ARADS) being developed by USAREC. On 14 February 1979 the MEPCOM CG approved both a short and a long range approach to improving AFEES automation. The significant approach is the long range proposal with projected implementation in late FY 81. The long term AFEES needs fall into two categories, automated mental tests and a data base collection and retrieval system to interface with the ARS mainframe and the service unique job selection networks; e.g., REQUEST for Army. The plan is for the AFEES minicomputer to share the previously recorded ARS applicant data with REQUEST or the future ARADS. MEPCOM plans to implement this process from October 1980 - June 1981, to eliminate the redundant data entry and accelerate applicant processing procedures. This new process (Figure 5-5) would include automated forms generation that include capture of mental data via OCR, and preprinting of medical and personal forms to the maximum extent possible. It is envisioned that REQUEST/ARADS data entry will be limited to Army unique requirements and will not begin until after receipt of that portion of the AFEES data base that pertains to potential Army emlistees.

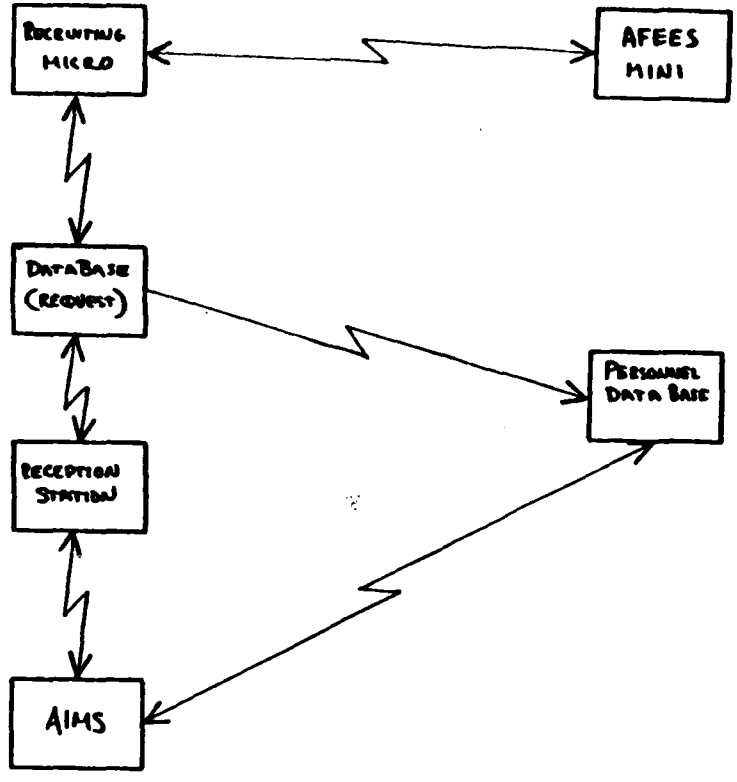


Figure 5-4. ARS/REQUEST/EMF Interface (Future Systems)

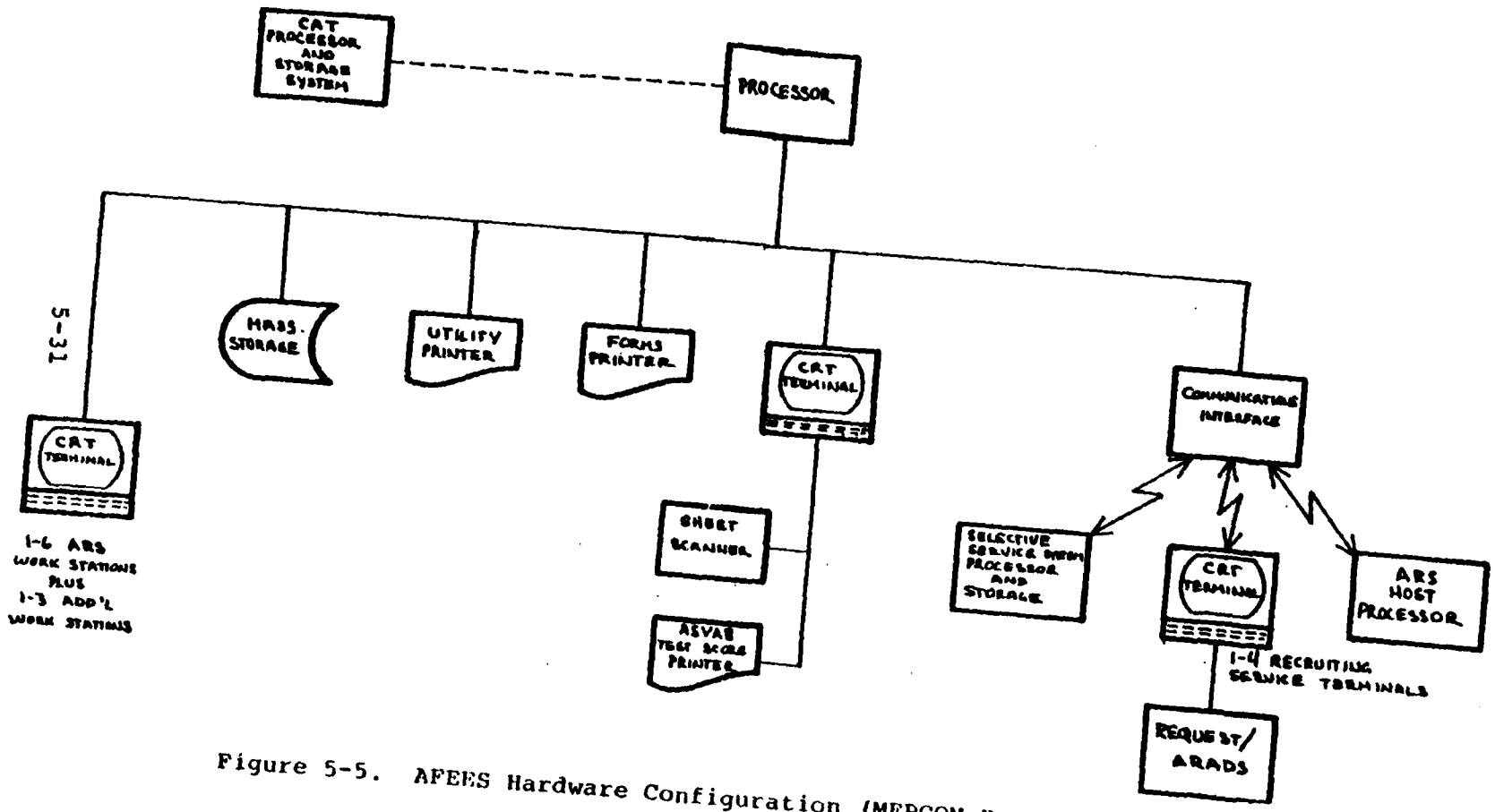


Figure 5-5. AFEES Hardware Configuration (MEPCOM Proposal)

An upgrade of the equipment located in the Reception Station is required to allow a direct interface between the ARS/REQUEST data base at USAREC and the Reception Station process. A HQDA study of enlisted processing, dated July 1976 (CAP IV) talks about a Reception Station Minicomputer System (RESTAMS) as a possible solution. Whatever the system is called, it is obvious to all concerned that the recently installed UNIVAC UTS 700 microprocessor to support RESTAS is inadequate to effectively interface with the accession process beginning with the implementation of the ARS/REQ/EMF Interface in FY 80. A system is required that can communicate directly with the ARS/REQUEST data base, receive this data base, report corrections and changes directly back, and assist in the preparation of the numerous Reception Station forms and processes without constant human intervention. (See Figure 5-6.) The implementation of a centralized system with the capability to control the total Reception Station flow is the only way that the Army can insure that the various data bases in ACT, SIDPERS, AIMS, and JUMPS are all updated with identical data.

## R E C O M M E N D A T I O N

USAREC continue development of the ARS/REQ/EMF Interface in coordination with MILPERCEN and TRADOC, and implement as soon as possible.

MILPERCEN/USAREC continue to monitor (at a minimum) the development of the AFEES automation project and insure that the capability exists to interface directly to the AFEES data base with some type of communications device for input to REQUEST/ARADS. Insure that the development of ARADS includes the placement of a terminal for the guidance counselors use that is capable of data capture directly from the AFEES minicomputers, and reduce the data entry and allow data verification/update prior to release of the data from ARADS to REQUEST. TRADOC conduct an in-depth review of the Reception Station functional requirements, then perform a design review in an effort to determine the automation requirements of the Reception Station based on current inadequacies and projected interface requirements. One consideration should be to determine if the hardware proposed for the Automated Instructional Management System (AIMS) could also satisfy RESTAS automated requirements.

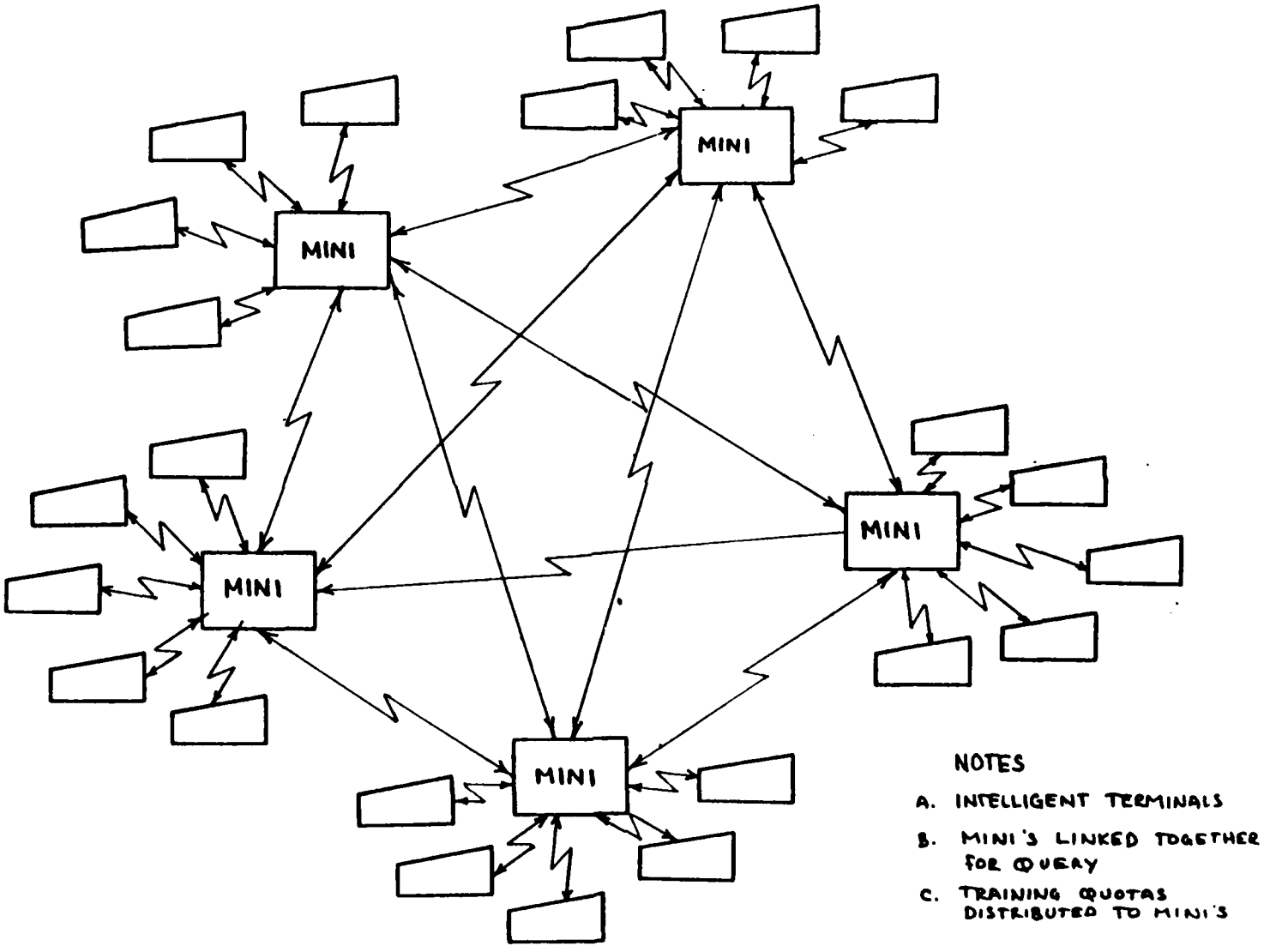


Figure 5-6. Proposed REQUEST Distributed Network

4.6 Master File Interfaces (Volume 2, Part 2, 1.3.15; 2.6d; and 3.6b). There is no automated interface or automated exchange of information between the Reserve Personnel Information Systems (RPIRS) used by troop units of the USAR, the Personnel Reporting System (PRS) used by the Army National Guard, and the master files (OMF/EMF) used by the active components. An interface exists between the active component master files and the Personnel Master File (PMF) used by RCPAC to account for personnel in the Individual Ready Reserve (IRR); however, this interface is not timely and is difficult to administer due to inconsistencies in data field codes and definitions. Standard data elements have not been uniformly introduced into any of the systems discussed. This situation prevents a direct automated exchange of personnel data for individuals transferring between active and reserve components, and between various reserve components, resulting in redundant data entry and loss of previously validated data.

## S O L U T I O N

The short term solution is for all elements to exchange personnel data keying on a loss transaction and pass this data to the gaining component. Even if this data cannot be provided in a manner timely enough to be available at the time of accession, the data can be used to supplement and validate accession data.

The mid-range solution to this automated interface between elements is now in progress of being developed under the name SIDPERS-RC (Reserve Components). SIDPERS-RC is the umbrella name for SIDPERS-USAR and SIDPERS-ARNG. A stated objective of SIDPERS-RC is to facilitate exchanges of automated data among SIDPERS (Active Army, ARNG, and USAR), JUMPS-RC for pay, Reserve Components Central Personnel Data System (RCCPDS) for DOD reporting, and other systems; e.g., MOBPERS, SIDPERS-WT, etc. SIDPERS-USAR is scheduled for extension in April 1981 while SIDPERS-ARNG is scheduled for extension in January 1983. These systems will all use a code data base comprised of various levels. In all cases, at lease one level of the core will contain data elements that are completely compatible within all SIDPERS systems.

The long term solution to this problem is for the development of a military personnel data bank containing records on all military personnel regardless of component or status. This data bank could consist of one or more military personnel files located at one or more locations that are linked into a managed data base system to facilitate common data inquiry, transfer, and retrieval plus single source data entry.

## RECOMMENDATION

To satisfy the short term solution, DCSPER should task MILPERCEN, RCPAC and Chief, Army Reserve, and coordinate with ARNG to insure that the exchange of data between personnel systems is accomplished when personnel change components, designate the losing organization responsible for passing master file data on a loss, and assign the gaining organization the responsibility of converting the personnel data from the losing organization's format to the gaining organization's format.

The mid-range solution is for DCSPER to monitor the system advisory group (SAG), currently under tasking to conduct in-process reviews (IPR) quarterly for SIDPERS-ARNG and SIDPERS-USAR, to insure the interface is provided. The SAG currently has this tasking, and transfer data records (TDRs) between systems are designed to facilitate the interface. This recommendation is made to remind policymakers of the importance of the interface.

4.7 EMF/OMF/SIDPERS Interface (Volume 2, Part 3, 1.4.4). Current integration between field and HQDA systems requires redundant data capture, reporting, and maintenance. As system interface problems cause imbalances between the field and headquarters files, the result is that personnel managers are using different data at each level. A prime example of this interface problem exists between the EMF/OMF and SIDPERS.

a. Different code structures are used for the same data elements in each system. This requires conversion of the data element to transfer the information from one system to the other.

b. Data can be entered into SIDPERS or the EMF/OMF from different sources without the other system being notified of the change, causing out of balance conditions until an update can be made.

c. Separate edits are used. A transaction can process in one system, yet fail in the other. This results in file imbalances, error reports, and the cost and time that is consumed to redundantly capture data in order to match files.

d. Time delays between update of one system and the update of the other can further promote file imbalances.

## S O L U T I O N

Standardization of data elements, edit routines, and error resolution procedures are the keys to improving interface betweer the EMF/OMF and SIDPERS. Concurrently, a detailed review of the total functional requirements of each system should be made, specifically, in light of creating an optimum interface between the SIDPERS and the OMF/EMF to provide personnel managers with timely, accurate, and useable information. This review should be followed by an integrated redesign effort to effect this interface.

## R E C O M M E N D A T I O N

PMSD and PERSINSD should initiate action to implement the solution identified above.

4.8 Active Master File (OMF to EMF) Interface (Volume 2, Part 4, 1.4.1). There is no interface or automated link between the EMF and OMF. This missing link is very apparent when it is realized that the basic personnel data of each enlisted applicant for appointment as a warrant officer and many commissioned officers must be manually captured at the OTSG, OTJAG, or Warrant Officer Division (WOD), even though most of this information is already in residence on the EMF. New key stroking is also required for the preparation of the results of the selection process as well as the related correspondence. Some of this new key stroke burden has been reduced by the use of form letters, but it continues to be a very labor intensive effort. In addition, enlisted assignment managers must manually check the roster of individuals fully qualified for appointment as a WO to prevent unnecessary expense by ordering the PCS movement of an individual who is soon scheduled for call to active duty as a WO and who then must be moved again to properly serve in the new status.

Presently, strength reports must be manually adjusted to take into account the number of those individuals known to have changed their status; e.g., enlisted status to WO or commissioned officer status, and the SIDPERS transactions that have not been recorded in the master files. Unless this is done, individuals are counted in the strength of both the EMF and OMF.

## S O L U T I O N

Short term: The OTSG, OTJAG, and the WOD should be given access to the EMF S2K file to obtain the personnel data already captured on that individual. A new data element should be added to the EMF and S2K file to indicate to enlisted assignment managers that a soldier has been placed on the Fully Qualified Roster for appointment as a WO.

The long term solution is the implementation of the Personnel Data Base/Data Set which will place the EMF and OMF into a single data bank. Linking this data into word processing equipment would provide the automated preparation of documents and correspondence relating to various needs; e.g., the selection process.

## R E C O M M E N D A T I O N

MILPERCEN (PERSINSD) initiate the short term solutions outlined above relating to the master files and S2K file as soon as practical. PERSINSD continue development of the "data bank" concepts,

and PMSD plan with PERSINSD the linking of word processing equipment with personnel data bases for use by DA selection boards and career managers.

4.9 OASIS Multiple Inputs (Volume 2, Part 3, 1.5.2). Multiple format and data content are used to add bulk accessions to OASIS. USMA inputs punch cards, ROTC Regions submit magnetic tape, and BIOCC inputs are in hard-copy format, as are other inputs which must be converted by MILPERCEN (PERSINSD). Further, data content from each source is governed by various regulations and local requirements. This inhibits establishment of an orderly interface between systems and requires duplication of data entry, thereby promoting the possibility of erroneous data on OASIS.

## S O L U T I O N

Standardize format and data content of accession data submitted to MILPERCEN for loading and updating OASIS. This would preclude accession managers from working with various types of record formats and would facilitate mass updating of records with the results of branch/specialty assignments, HQDA and MILPERCEN solution boards, and the BOBC Conference.

## R E C O M M E N D A T I O N

MILPERCEN (PERSINSD) develop a common format and data content for loading OASIS with preaccession information and coordinate this with USMA, TRADOC (ROTC Regions), RCPAC, OSG, OTJAG, and OCCH prior to implementation.

4.10 OASIS/OMF/Data for USMA Graduating Class (Volume 2, Part 3, 1.5.2). The personnel data from USMA provided to MILPERCEN during February is skeletal.

## S O L U T I O N

The present conversion effort is an excellent time for MILPERCEN to analyze and identify specific interface needs with USMA and have these requirements included as part of the UNIVAC specifications. It could prove feasible to use the results of the sixth-semester poll in November to update OASIS since there are few changes from this poll to the actual branching process. Planning data would then be available three months earlier than at present.

## R E C O M M E N D A T I O N

That the above action be initiated by MILPERCEN to insure active participation in the USMA conversion effort to provide build-in interfaces rather than band-aided interfaces as an afterthought.

4.11 OTSG Accession Interface (Volume 2, Part 3, 1.8). AMEDDPERSA use a procurement data base as a management tool in its manual accession process. Presently, the data base is not standard nor compatible to the common data elements in the OMF. This results in redundant key boarding by AMEDDPERSA accession personnel.

Records are created on OASIS and the OMF for personnel who do not enter active duty because of various reasons; e.g., continuing education, non-acceptance of commissions, RCPAC delays. This results in false total strength figures caused by "ghost" records. AMEDDPERSA states that elimination of these records in a timely manner is a difficult process.

## S O L U T I O N

As an initial improvement, the data elements used in the AMEDDPERSA procurement data base should be identical to the records in the OMF. This would eliminate potential errors in transferring information from the record on the procurement data base to the initial "OPUS ADD" and follow-up "OPUS RFO" transactions. Upon redesign of OASIS as an on-line system, the need by AMEDDPERSA for its procurement data base would be eliminated.

Recent upgrades to systems at RCPAC should improve response time to generate orders and initial assignment instruction. RCPAC has promised 2-3 days turnaround time, with worse case set at 7 days. AMEDDPERSA is procuring minicomputers and studying potential tie-in communications with the UNIVAC 1108 at MILPERCEN. Initially, AMEDDPERSA will receive an OMF extract tape containing records of all AMEDD officers after each OMF update. Using the minicomputers, necessary changes and updates will be made to medical officer's records. These change transactions would then be returned to MILPERCEN for updating the OMF. With the addition of a communication link, AMEDDPERSA would have direct access to the OMF to query records on a realtime basis. Transactions to change or delete records on the OMF could be developed as required. If AMEDDPERSA does acquire communication interface with the OMF, access must be restricted to medical officer records only.

## R E C O M M E N D A T I O N

AMEDDPERSA should reformat the procurement data base to be compatible with the common data elements and format of the OMF.

Representatives of RCPAC, TRADOC, AMEDDPERSA, and the other special branches should closely monitor the timeliness of active duty and assignment orders.

AMEDDPERSA should proceed with procurement of minicomputers to validate and change records of medical officers on the OMF.

## LIST OF FILES ANALYZED

1. Officer Master File
2. Enlisted Master File
3. Individual Record Brief
4. War Time Elements
5. Personnel Master File (DAPCS-370 ACT-I)
6. JUMPS Record to MILPERCEN
7. DCSPER Tape from MILPERCEN to DCSPER
8. SIDPERS Personnel Master File
9. Enlisted Gain
10. Enlisted Loss
11. PSD-1 DA Major Command
12. AEACC-9 (OMF Extract)
13. SACS
14. ELIM Tracking File
15. PERSACS
16. ELIMEMF (EMF Extracts for ELIM)
17. MOBPERS (Enlisted/Officer/WO Requisition)
18. RICS (Record Interface Control Master Record)
19. FMPMF (Non-Unit Reserve PMF)
20. PRIDE
21. TRANS2 Initial Transaction Inputs to MILPERCEN AR 680-5
22. TRANS4 MILPERCEN Change Notices AR 680-5

## APPENDIX VII.
## LIST OF FILES ANALYZED

The following list includes the files obtained so far to be included in the project study of data elements.

# APPENDIX VIII.
# PROJECT BIBLIOGRAPHIES

## WORKING BIBLIOGRAPHY


1. AMCP 310-1 Military Publications Index of Publications and and Blank Forms D 101.22/3:310-1/14

2. Accounting and Finance Manual January 1965 DLAM 7000.1 D 7.6/8: 7000.1/rep

3. Automatic Data Processing Equipment Inventory April 1979 GS 12.10: 978

4. An Analysis of Computer Security Safeguards for Detecting and Preventing Intentional Computer Misuse NBS Special Publication 500-25 C 13.10: 500-25

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19. SIDPERS User Manual SID Level Procedures Personnel Records Keeping and Reporting. D 101.22: 600-8-5/2

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21. SIDPERS User Manual SIB Level Procedures Special Features and Command Staff Reports. D 101.22: 600-8-6

22. SIDPERS User Manual Military Personnel Office Level Procedures In/Out Precessing. D 101.22: 600-8-9

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D 101.22: 600-8-2/ch. 5

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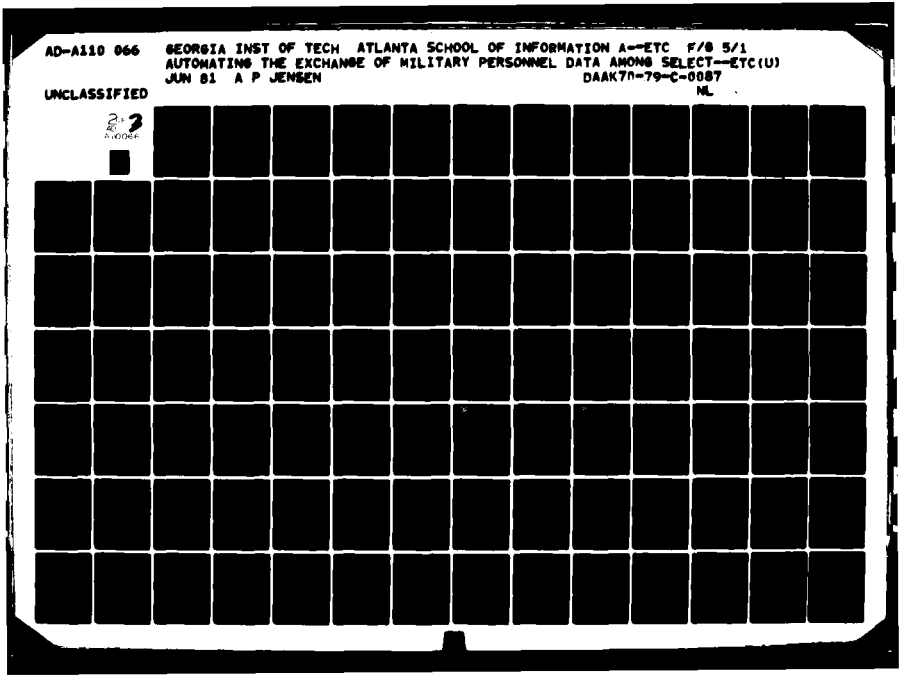
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# DATA BASE PERFORMANCE EVALUATION AND SIMULATION BIBLIOGRAPHY

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   This paper describes the development and use of a simulation tool to assist information system designers in testing alternate designs and to assist the manager in evaluating system performance. This tool, information and data system simulator (IDDS), provides the capability to study the effect of altering hardware devices software support, workload, human resources, and operational procedures. IDSS was developed using SIMTRAN a simulation language developed by General Electric. This research was funded by the Air Force and General Electric.

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   Two views of simulation and the characteristics of their inputs, internals, and outputs are presented. The "Here and Now" view is concerned with facts and representing reality as it is now. This view is concerned with tactical issues. The "There and Then" view is concerned with understanding, theory, and behavioral characteristics as it views a system from a distance. This view is concerned with strategic issues.

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   The Army Computer Systems Command is developing a set of tools to evaluate performance of software systems and resource costs and to aid in systems design efforts and maintenance.

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   "The ideas summarized in this paper were developed during an initial research phase on data organization and reconciliation of models. Once this phase of the work was completed the INTERACTIVE FLOW SIMULATION software system was constructed. It permits:

- retrieval of historical data from longitudinal information
- statistical analysis of the retrieved data, either for the past, or as a step towards modeling
- construction of user-defined flow models
- execution of these models and analyses of thier output."

page 302.

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"The initial USACSC research plan was developed in September 1975. Its purpose was to explore and demonstrate those technologies which would conceivably be utilized in Army data processing systems developed over the next five to eight years. These areas included on-line processing, formal data base management systems, mini and micro computers, and distributed data processing.

One aspect of the plan was to select a single functional area and build a baseline system which could be modified repetitively to add new features and migrate from one environment to another. SIDPERS, which processes Military Personnel actions was selected.

The computer system modeled was composed of a Front End Module (host machine) which processes SIDPERS transactions in a real-time interactive mode, attached to a Back End Module utilizing Cullinane Corporation's Integrated Data Base Management System (IDMS) to interface with the personnel data base. The backend machine modeled was the DEC PDP-11/70 System". pages 50-51.

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Ten Evaluation Criteria to support the NICOLS system:

1. Networked Data Structure
2. Data Record Placement Control
3. COBOL Inteface Capability

4. Logical Independence of all data from Programs
5. Data Privacy
6. Concurrent update and retrieval capability
7. Automatic restart and recover capability
8. Hardware Constraints
9. Training
10. Teleprocessing Interface

Packages Reviewed:

1. ADABAS
2. IDMS
3. IMS
4. MODS
5. NIPS/FFS
6. SYSTEM 2000
7. TOTAL

Specific Evaluation Points:

1. Data Base Development
2. Data Base Effectiveness
3. Data Base Updating
4. Data Base Retrieval
5. On-Line Utilization
6. Data Base Recovery
7. Data Base Security
8. Ease of Operation
9. Core Storage Utilization
10. Programmer Use
11. Vendor Support

pages 1 - 4.

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Objective.

"Investigate the problem of minimal cost allocation of files in a computer network with respect to the design of efficient computer networks; establish the relationships which need to be considered to accurately model the file allocation problem in a computer network.

Results.

1. Existing distributed data base file allocation models are broken down by type (deterministic one-phase, deterministic milti-multi-phase, stochastic discrete, stochastic continuous) and reviewed. They are described in terms of file information and parameters, transmission characteristics, computer characteristics

and costs.

2. The models defined are found to be initially very general, but simplification for computational tractability results in restricting them so severly in scope or detail that they end as unrealistic.

Recommendation.

Develop and analyze realistic adaptive stochastic models."

page i.

File Information Parameters

1. Number of copies of a particular file
   a. Given at design time
   b. Variable - one of the parameters to be used in the optimizaton procedure
2. Length of file
   a. Short - no interaction between files
   b. Known length
3. Request rates for information contained within the file
   a. Rate at which a particular program request a file
   b. Rate at which a node in the network request a file
4. Update rates for modifying a file
5. Query rates for obtaining information
6. File dependence
   a. Independent of each other - no interaction between the files
   b. Dependent upon each other

Transmission Characteristics

1. Time to retrieve file from one node of the network to another node
2. Maximum retrieval time
3. Transmission channel capacity
4. Message queuing
   a. Average delay in sending request or query
   b. Average delay in receiving a reply from a query after it has been sent
   c. Poission arrivals of messages - requests and reply
5. Random lengths of messages
6. Priorities
   a. Short requests - high priority
   b. Long requests - low priority
7. Rate of message traffic from file to user

Computer Characteristics

1. Memory
   a. Finite amount of memeory
   b. No restriction on memory
2. File update and retrieval time
3. Programs only run on specific machines

Costs

1. Storage Cost
   a. File storage cost
   b. Program storage cost
2. Communications cost
3. Query cost
4. Update cost
5. Reconfiguration or transition cost when a file moves to a new site
6. Communication cost of queries
   a. Program (user) to file
   b. File to user communication costs
7. Communication cost of updates
   a. Program (user) to file
   b. File to user communication costs

pages 22-23.

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MODEL SURVEY QUESTIONNAIRE

The first eleven questions of the set pertain to computer utilization.

1. What programming language is used?

2. What specific computer can the program be used on without program modification?

3. What are specific core requirements?

4. Is the total program structured into independent subprograms? If so, what are the subprograms?

5. What is the average running time?

6. Is the program documented, and to what degree (i.e., does this documentation contain flow charts of varying degrees of detail or expository comments?)

7. What is the cost of average running time on available computers?

8. What specific computers can the program be used on with minor program modifications? What is the extent of these minor modifications? What is the cost of making these modifications? What is the degree of difficulty in making these minor modifications?

9. Same as Question 8 for major modifications.

10. What is the degree of complexity involved in augumenting the program?

11. Has the program been debugged and tested?

The following seven questions pertain to the structure of the model.

1. Is the model a mathematical description of events or a simulation?

2. If the model is mathematical - what is its structure

   - mathematical programming. linear, integer, non-linera
   - game theoretic
   - simultaneaous differential equations
   - statistical - markov chain, regression by least squares, etc.
   - other?

3. If the model is a simulation - what is its structure:

   - how are events simulated
   - what is the level of detail

4. Is the model probabilistic or deterministic?

5. If the model is deterministic, what are the underlying relationships, and associated assumptions, that relate Input to Output?

6. If the model is probablistic, what are the change parameters and what are the assumed underlying probability distributions, if any, and are results expected value results?

7. Does the model use a convergence algorithm and has it been demonstrated that the algorithm guarantees convergence - and, if so, what, a feasible or optimum solution?

The next six questions pertain to the purpose of the model.

1. What was the specific purpose for which the model was constructed?

2. What are the assumptions of the model to this purpose?

3. For what other purposes can the model be used with either no, or minor modifications?

4. If the model represents a theoretical development - to what specific purposes can the theory be applied?

5. If the purpose of the model includes the maximization or minimization of an objective function - what is the form and nature of this objective function?

6. Does the purpose of the model indicate that the model is used to:

   - test a hypothesis or determine feasibility
   - estimate value parameters
   - make projection of future time requirements
   - determine optimum or feasible mixes of existing or projected "technologies"?

The final eleven questions relate to the input and output features of the model.

1. What goes into the model?
2. What comes out of the model?
3. Are the model inputs available?
4. Are the inputs empirical or hypothetical?
5. In order to use the model, how much and what kind of manipulation is required to process existing information and data in order to meet input format requirements?
6. What type of analysis can be employed on the model output?
7. What inferences can be made from the model output?
8. Does the model output allow the model user to identify critical parameters in the relationship between input and output?
9. What types and what level of decisions can the model output be used to justify or test?
10. If statistical procedures are used within the model, such as t-test, analysis of variance, etc., are these procedures identified?
11. Is it possible to judge the validity of the model, i.e. can test cases be handled by the model that will allow a comparison between model output and empirical evidence?

# DATA BASE TECHNOLOGY

## DESIGN - PERFORMANCE - EVALUATION

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**442 Technical Report Secondary Services**

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
RESERVE COMPONENTS PERSONNEL AND ADMINISTRATION CENTER
ST. LOUIS, MO 63132

IN REPLY REFER TO

AGUZ-S-SP

13 OCT 1978

SUBJECT: Identification of Core Data Items for SIDPERS-RC

HQDA (DAPE-PBP)
The Pentagon
Washington, D.C. 20310

1. References:

a. Ltr, DAPE-PBP, Subject: Continued Development of SIDPERS-RC, dtd 3 Jul 78.

b. In Process Review, Systems Advisory Group Meeting, 11 Oct 78 agreement to identify core data elements by DCSPER, MILPERCEN, NGB, OCAR, FORSCOM/CONUSA, RCPAC representatives.

2. The attached list of data elements have been identified as core data elements to include core levels. These elements will remain identical in name and definition. Changes to these elements will be staffed in accordance with reference 1a.

3. Data elements used in the SIDPERS family have been identified by category with an associated level comparible to the core levels and are not a part of the core data element concept. The explanation of levels and categories are included as inclosures.

4. This document with inclosures accomplishes the directive of reference 1b.

C. B. VARNADO
LTC, GS
DCSPER Representative

JERRY KUSHNER
DAC GS-12
MILPERCEN Representative

# APPENDIX IX.
# CORE DATA ITEMS IDENTIFIED BY SIDPERS-RC

RESERVE COMPONENTS PERSONNEL CENTER
ST. LOUIS, MO 63132

IN REPLY REFER TO

AGUZ-S-SP

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C. B. VARNADO
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ACUZ-S-SP 13 OCT 1978
SUBJECT: Identification of Core Data Items for SIDPERS-RC

DONALD F. KNAPP
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OCAR Representative

ELEANOR D. SIMS
DAC, GS-11
RCPAC Representative

PHILIP T. HANPETER
CPT, AG
USAR Work Group Representative

ROBERT C. BENNETT
CPT, AG
CONUSA Representative

2 Incls
as

CF:
Each SAG Member

## CORE LEVELS OF
## DATA ELEMENTS IN SIDPERS

LEVEL 1

Data elements identical in title and definition in SIDPERS-Active Army, ARNG and USAR.

LEVEL 2

Data elements identical in title and definition in SIDPERS-ARNG and USAR.

LEVEL 3

Data elements identical in title and definition in SIDPERS-ARNG and USAR for Troop Program Units (TPU).

## SIDPERS CORE DATA ELEMENTS

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| ACTIVE FEDERAL SERVICE | 6N | 2 |
| ADDITIONAL SKILL IDENTIFIER - PMOS | 2AN | 1 |
| ADDITIONAL SKILL IDENTIFIER - SMOS | 2AN | 1 |
| ADDITIONAL SKILL IDENTIFIER 1 | 2AN | 1 |
| ADDITIONAL SKILL IDENTIFIER 2 | 2AN | 1 |
| ADDITIONAL SKILL IDENTIFIER 3 | 2AN | 1 |
| ADDITIONAL SPECIALTY SKILL IDENTIFIER | 3AN | 2 |
| ADDITIONAL WITHHOLDING TAX | 3N | 3 |
| ADDRESS MAILING | 52AN | 2 |
| ADMINISTRATIVE DUTY PAY | 1N | 3 |
| ALTERNATE SPECIALTY SKILL IDENTIFIER | 3AN | 1 |
| ARMED FORCES TEST SCORE | 3N | 2 |
| ARMY RESERVE COMPONENT ACHIEVEMENT MEDAL SUSPENSE | 2N | 2 |
| ATTACHMENT CODE | 1A | 2 |
| ATTACHED PAYROLL NUMBER | 3AN | 3 |
| AVIATION SERVICE ENTRY DATE | 6N | 1 |
| BASIC BRANCH | 2A | 1 |
| BENEFIT STATUS WAIVER CODE | 1N | 3 |
| BRANCH SCHOOL COMPLETED | 2A | 2 |
| BRANCH SCHOOL ENROLLED | 2A | 2 |
| CITIZENSHIP STATUS, UNITED STATES, ORIGIN | 1A | 2 |

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| CIVILIAN EDUCATION LEVEL | 1AN | 1 |
| CIVILIAN GRADE | 4AN | 2 |
| CIVILIAN OCCUPATION | 3AN | 2 |
| COMMISSION/WARRANT OFFICER SERVICE DATE | 6N | 2 |
| COMPUTATION CODE AND DATE | 7AN | 2 |
| COURSE LEVEL ENROLLED | 1AN | 2 |
| CUMULATIVE MONTHS OF EXTENSION | 3N | 2 |
| CUMULATIVE RETIREMENT POINTS | 4N | 2 |
| CURRENT AERONAUTICAL RATING | 1N | 2 |
| CURRENT ORGANIZATION CODE | 1A | 2 |
| CURRENT UNIT PROCESSING CODE | 5AN | 1 |
| DATE OF BIRTH | 6N | 1 |
| DATE OF INITIAL ENTRY INTO A RESERVE COMPONENT | 6N | 2 |
| DATE OF LAST PHYSICAL EXAMINATION | 4N | 2 |
| DATE OF RANK (RESERVE) | 6N | 2 |
| DEPENDENTS, NUMBER OF | 2N | 1 |
| DESIGNATED CONTROL SPECIALTY | 2N | 1 |
| DETAIL BRANCH | 2A | 2 |
| DRILL ATTENDANCE COUNTER | 12N | 2 |
| DUTY MILITARY OCCUPATIONAL SPECIALTY PROFICIENCY TEST DATE | 4N | 2 |
| DUTY MILITARY OCCUPATIONAL SPECIALTY PROFICIENCY TEST SCORE | 3N | 2 |
| DUTY MILITARY OCCUPATIONAL SPECIALTY TESTED | 4AN | 2 |

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| DUTY MILITARY OCCUPATIONAL SPECIALTY TEST FAILED | 1N | 2 |
| DUTY POSITION | 9AN | 2 |
| DUTY POSITION QUALIFIED CODE | 1A | 3 |
| EFFECTIVE DATE OF ATTACHMENT | 6N | 2 |
| EFFECTIVE DATE OF GRADE | 6N | 3 |
| EMPLOYER | 1AN | 2 |
| ENLISTMENT/REENLISTMENT BONUS - RESERVE | 9AN | 2 |
| ENLISTMENT WAIVER CODE | 1N | 2 |
| ETHNIC GROUP | 1AN | 1 |
| EXPIRATION DATE OF ATTACHMENT | 6N | 2 |
| EXPIRATION READY RESERVE OBLIGATION DATE | 6N | 2 |
| EXPIRATION STATUTORY MILITARY OBLIGATION DATE | 6N | 2 |
| FINANCE PROCESSING CODE | 1N | 3 |
| FLAG CODE AND DATE | 7AN | 2 |
| GRADE ABBREVIATION AND CODE | 4AN | 1 |
| HEIGHT | 2N | 1 |
| HIGHEST MILITARY COLLEGE/COURSE COMPLETED | 2AN | 2 |
| INCENTIVE PAY NUMBER ONE AND DATE | 7N | 1 |
| INCENTIVE PAY NUMBER TWO AND DATE | 7N | 1 |
| LANGUAGE IDENTITY | 2A | 1 |
| LATEST EVALUATION REPORT | 6N | 2 |
| LONG NAME INDICATOR | 1AN | 2 |

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| MAJOR SUBJECT OF COLLEGE EDUCATION | 3AN | 1 |
| MANDATORY REMOVAL CODE AND DATE | 7AN | 2 |
| MARITAL STATUS | 1N | 1 |
| MILITARY PERSONNEL CLASS | 1A | 1 |
| MONTHS OF CURRENT EXTENSION | 3N | 2 |
| NAME, INDIVIDUAL | 27A | 1 |
| NCO EDUCATION | 1AN | 1 |
| NCO EDUCATION ENROLLED | 1AN | 2 |
| NEXT DRILL DATE | 6N | 3 |
| NUMBER OF EXEMPTIONS | 3AN | 3 |
| NUMBER OF EXTENSIONS OF ENLISTMENT | 1AN | 2 |
| PAY ENTRY BASIC DATE | 6N | 1 |
| PAY STATUS CODE AND DATE | 7AN | 3 |
| PHYSICAL CATEGORY CODE | 1A | 1 |
| PHYSICAL PROFILE SERIAL CODE | 6N | 1 |
| PMOS HOW ACQUIRED CODE | 1A | 1 |
| POSITION NUMBER ASSIGNED DATE | 6N | 2 |
| PREVIOUS DUTY POSITION | 5AN | 2 |
| PREVIOUS ORGANIZATION CODE | 1A | 2 |
| PREVIOUS UNIT PROCESSING CODE | 5AN | 2 |
| PRIMARY MILITARY OCCUPATIONAL SPECIALTY | 5AN | 1 |
| PRIMARY SPECIALTY SKILL IDENTIFIER | 3AN | 1 |
| PRIVACY ACT DISPUTED RECORD | 1A | 1 |
| PROJECTED PROMOTION ELIGIBILITY DATE | 6N | 2 |

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| PROMOTION CONSIDERATION CODE | 2AN | 2 |
| QUALITATIVE/SELECTIVE RETENTION CODE AND DATE | 7AN | 2 |
| RACE | 1A | 1 |
| RECORD OF SERVICE FLAG | 1N | 2 |
| RECORD STATUS CODE AND DATE | 7AN | 1 |
| RELIGIOUS DENOMINATION | 2AN | 1 |
| REQUIRED INITIAL ACTIVE DUTY TRAINING (WEEKS) | 2N | 3 |
| RETIREMENT POINT RECORD | 18AN | 2 |
| SECONDARY MILITARY OCCUPATIONAL SPECIALTY | 5AN | 1 |
| SECURITY CLEARANCE | 1A | 1 |
| SECURITY INVESTIGATION STATUS | 1A | 1 |
| SERVICE COMPONENT | 1A | 1 |
| SERVICE COMPUTATION DATE | 6N | 2 |
| SERVICEMEN'S GROUP LIFE INSURANCE ELECTION | 1AN | 2 |
| SEX | 1A | 1 |
| SOCIAL SECURITY NUMBER | 9N | 1 |
| SOURCE ORIGINAL ENLISTMENT/INDUCTION | 1N | 2 |
| STATE TAX CODE | 2A | 3 |
| SUB-RECORD | 39AN | 2 |
| TECHNICIAN/SELECTIVE SERVICE CODE | 1A | 2 |
| TERM OF ENLISTMENT - RESERVE | 3N | 2 |
| TOTAL YEARS SATISFACTORY FEDERAL SERVICE FOR RETIREMENT | 2N | 2 |
| TRAINING STATUS CODE AND DATE | 1A | 2 |

| DATA ELEMENT | LENGTH/ CLASS | LEVEL |
|---|---|---|
| TWENTY YEAR CERTIFICATE CODE | 1A | 2 |
| TYPE ATTACHMENT | 2N | 2 |
| UNIFORM ALLOWANCE CODE AND DATE | 7AN | 2 |
| UNIT MAILING ADDRESS | 52AN | 3 |
| UNIT PROCESSING CODE | 5AN | 1 |
| UNIT PROCESSING CODE OF ATTACHMENT | 5AN | 2 |
| UNIT TELEPHONE NUMBER | 22N | 3 |
| VERIFICATION STATUS SOCIAL SECURITY ACCOUNT NUMBER | 1AN | 1 |
| WEIGHT | 3N | 1 |
| YEAR AND MONTH ELIGIBLE FOR ARMED FORCES RESERVE MEDAL | 4N | 1 |

## CATEGORIES OF COMMON NON-CORE DATA ELEMENTS IN SIDPERS

CATEGORY X--

Data elements used in the SIDPERS-Active Army, ARNG and USAR, but these elements can be used uniquely in each system. These items are not passed as Transfer Data Record elements. Definitions may vary between users.

CATEGORY Y--

Data elements used in SIDPERS-Active Army, ARNG and USAR as (automated) input interface items. The proponancy for these data elements resides with the agencies responsible for the interfacing systems.

CATEGORY Z--

Data elements that are generated for output or accepted for pass through to other automated systems. The proponents for these elements are the receiving agencies.

Incl 2

| DATA ELEMENT | LENGTH/ CLASS | CATEGORY/ LEVEL |
|---|---|---|
| CURRENT AUTHORIZATION DOCUMENT IN USE | 15AN | Y 1 |
| DA ORGANIZATION CLASS CODE | 2AN | Y 1 |
| DA REQUIRED STRENGTH | 10N | Y 1 |
| DATE ASSIGNED TO UNIT | 6N | Z 3 |
| DAYS WAIVED | 5N | Z 3 |
| EFFECTIVE DATE OF DOCUMENT | 6N | Y 1 |
| EFFECTIVE DATE OF IMPLEMENTATION | 6N | X 3 |
| EFFECTIVE DATE OF OESTS | 6N | Y 1 |
| EMPLOYMENT STATUS CODE | 1N | Z 3 |
| EXPIRATION TERM OF SERVICE DATE | 6N | X 1 |
| FUNCTIONAL CATEGORY CODE | 1AN | Y 2 |
| GRADE HOW ACQUIRED CODE | 1A | Z 1 |
| INPUT STATION NUMBER | 3AN | X 3 |
| LAST TYPE TRANSACTION AND DATE | 10AN | X 1 |
| LEVEL OF DUTY | 2AN | X 1 |
| LOCAL DATA - AUTHORIZED | 10AN | X 1 |
| LOCAL DATE - ORGANIZATION | 10AN | X 1 |
| LOCAL DATA - PERSONNEL | 30AN | X 1 |
| LOCATION NAME | 9AN | Y 1 |
| MAIL CODE | 2AN | X 1 |
| MANNING LEVEL | 1AN | Y 3 |
| OCCUPATIONAL SPECIALTY CHANGE CODE | 2N | X 2 |
| OPERATIONAL CONTROL - UPC | 5AN | X 1 |
| ORGANIZATION CLASSIFICATION | 1A | Y 1 |
| ORGANIZATION STATUS CODE (OESTS) | 1A | Y 1 |

## SIDPERS COMMON NON-CORE DATA ELEMENTS

| DATA ELEMENT | LENGTH/ CLASS | CATEGORY /LEVEL |
|---|---|---|
| ADMINISTRATIVE CONTROL-UPC | 5AN | X 2 |
| ANALYST CODE | 2AN | X 2 |
| ARMY AREA AND STATE/ COUNTRY CODE | 3AN | Y 1 |
| ARMY LOCATION CODE | 5AN | Y 3 |
| ARMY READINESS REGION AND GROUP CODE | 2N | X 3 |
| AUGMENTATION CODE | 1N | Y 3 |
| AUTHORIZATION DOCUMENT NUMBER | 15AN | Y 1 |
| AUTHORIZED BRANCH | 2A | Y 1 |
| AUTHORIZED DUTY POSITION | 9AN | Y 1 |
| AUTHORIZED GRADE (ABBREVIATION AND CODE) | 4AN | Y 1 |
| AUTHORIZED IDENTITY | 1A | Y 1 |
| AUTHORIZED LINE DESIGNATOR | 2N | Y 1 |
| AUTHORIZED PARAGRAPH DESIGNATOR | 3N | Y 1 |
| AUTHORIZED POSITION STATUS CODE AND DATE | 7AN | Y 1 |
| AUTHORIZED POSITION TITLE | 20AN | Y 1 |
| AUTHORIZED POSITION VACANCY CODE | 1N | X 3 |
| AUTHORIZED STRENGTH POSITION NUMBER | 4AN | X 1 |
| AUTHORIZED STRENGTH UNIT PROCESSING CODE | 5AN | Y 1 |
| BENEFIT STATUS CODE | 1N | S 3 |
| CHECK MAILING ADDRESS | 102AN | S 3 |
| CONTROL BRANCH (WARRANT OFFICER) CODE | 2A | X 2 |
| CREDITABLE YEARS FOR BASIC PAY | 2N | S 3 |

| DATA ELEMENT | LENGTH/ CLASS | CATEGORY/ LEVEL |
|---|---|---|
| ORIGINATOR CODE | 3AN | X 1 |
| PARENT UNIT NAME | 30AN | Y 1 |
| PAY GRADE | 2AN | Z 3 |
| PAY GRADE UPDATE | 4AN | Z 3 |
| PAYROLL NUMBER | 3AN | X 1 |
| PERSONNEL FILE STRENGTH | 20N | X 1 |
| PLANNED ACTION DATE | 6N | Y 1 |
| SECURITY CLEARANCE REQUIRED | 1A | Y 1 |
| SOURCE COMMISSION/WARRANT | 1A | X 2 |
| TEST CONTROL OFFICER CODE | 3N | X 1 |
| TOE/TDA STRENGTH AUTHORIZED | 10N | Y 1 |
| TOTAL FEDERAL OFFICER SERVICE | 6N | Z 3 |
| TRAINING CENTER CODE | 3AN | X 3 |
| TRAINING PAY CATEGORY | 1A | Z 3 |
| TROOP PROGRAM SEQUENCE NUMBER | 5N | Y 1 |
| POSITION NUMBER | 4AN | X 1 |
| PROGRAM ELEMENT | 6AN | X 1 |
| RECORD TYPE | 1A | Y 1 |
| REPORT SEQUENCE CODE | 4AN | X 1 |
| RETIREMENT YEAR ENDING DATE | 6N | X 2 |
| UNIT NAME (TOE/TDA DESIGNATION) | 30AN | Y 1 |
| WAIVER CODE | 1N | Z 3 |

# APPENDIX X.
# UNIVERSE OF PERSONNEL DATA ITEMS IDENTIFIED BY KRAD STUDY GROUP

Appendix A

Data Elements - Current Personnel Management System

Accession Processing Date
Active Federal Commissioned Svc
Active Federal Service (Months)
Actual Assignment Area
Actual Assignment
Actual SIDPERS Activity Code
Actual Location
Actual Status
Actual Unit Identification Code
Actual Installation Acty Reqn
Additional Air Medals
Additional Language
Additional MOS/SSI X7
Additional MOS/SSI
Additional MOS-Suffix (WO)
Additional MOS/ASI (Comm)
Additional MOS-SSI (Comm)
Additional MOS - Basic (WO)
Additional Skill Identifier X6
Additional Pay Code
Aircraft Qualification
Pilot Qualification
Type of Aircraft/Type Gun Sys
Alternate Speciality
American Board Certification
American Board Certification Title
American Board Speciality
Year of American Board Certification
Army of the US Selection Board Status
Aptitude Area Scores - AFQT
Aptitude Area Scores - GT
Aptitude Area Scores - MDB
Aptitude Area Scores - SC
Aptitude Area Scores - EL
Aptitude Area Scores - AP
Aptitude Area Scores - COA
Aptitude Area Scores - MM
Aptitude Area Scores - CL
Aptitude Area Scores - FA
Aptitude Area Scores - GM
Aptitude Area Scores - OF
Aptitude Area Scores - ST
Army Location Code
Assignment Considerations
Aviation Service Data
Total Federal Officer Service
Aviation Service Entry Data
Aviation Gate Board Status
Total Operational Flying for CR Duty
Aviation Data
Aviation Instrument Certificate
Aviator Key
Pilot Status
Safety/Test Pilot Course
Year-Month of Initial Aviation
Aviator Gunnery Qualification
Awards
- Awards
- Badges
Area Current Foreign Svc Tour
Area Last Combat Tour
AWOL - PERSINS Proc Activity
AWOL - Parent Unit
AWOL - Description
AWOL - Report Indicator
AWOL - Date Dropped From Rolls
Active/Inactive Indicator
Attached Indicator
Anticipated Date of Loss

## Data Elements - Current Personnel Management System

Aerial Port Debarkation
Aerial Port Embarkation
Ahead Project
AIT Data
Area of Preference (CONUS)
Area of Last Comp Short Tour
Area of Previous OS Tour
Area of Preference - Overseas
Armed Forces Entrance Exam Station
Armed Forces Qualification Test
Assignment Information + Area Code + Date
Basic Branch for Comm Off
Basic Date for Appointment
Basic Pay Entry Date (PEBD)
Basic Pay Entry Date Ver
Basic Active Service Date (BASD)
Basic Year Group
Branch Detail Expiration
Bonus Data
Career Division (Mgmt Field)
Career Pattern Area
- Career Pattern Identification
- Control Branch Unique
Category Status
Central Transient Account Code
Chaplain Career Data
- Chaplain Advanced Training
- Chaplain Indorsing Agent
- Chaplain OER Analysis
- Chaplain Potential Performance
- Chaplain Professional Competence
- Chaplain Professional Specialties
Civilian Education Level
Civilian Education Degree
- Civilian Education Degree
- Civilian Education Institution
Civilian Education - Yr of Comp
- Civilian Education - Degree Source
Completed Months of Active Fed Svc
Control Branch
Control Branch Common
Control MOS (WO)
- Control Speciality
CONUS or OS Unit Code
Country of Citizenship
Country of Citizenship (Spouse)
Country or State of Birth
Country or State of Birth (Spouse)
Current Asg Area
- Current Command Asg Code
- Current Duty Title
- Current From Date
- Current Location Code
- Current Location Name Abb
- Current Unit Designation
- Current Unit Number
Current Assignment & Two Previous
- Arrival/Strength Date
- Report Date
- Unit Processing Code (UPC)
- Position Number
- Departure Date
- NR Days Temporary Dty
- Potential Gaining Unit PC
- Movement Designator Code
Change of SSN (Date of)
Character of Separation
Citizenship Status
Component Service
Date Appointed General Off
Date Departed for OS Tour
Date Departed/Joined Actual Assg

## Data Elements - Current Personnel Management System

Date Dependents Arrived OS
Date Eligibility for Return Frm OS
Date Joined Command
Date of Availibility
Date of Birth
Date of Entry on Active Duty
Date of Last Permanent Ch of Station
Date of Last Reassignment Gain
Date of Last AUS Deferment
Date of Rank Perm Grade
Date of Rank Temp Grade
Date of Regular Army Appointment
Date of Return From Overseas
Date of Separation
Date of Source Document
Defense Aptitude Test
Deliquent Indicator (OER)
DPA Audit Code
Duty Military Occupational Spec/SSI
- DMOS - ASI (Comm)
- DMOS - Lang (Comm) (EM)
- DMOS - Suffix (WO)
- DMOS - Secondary Spec (Comm)
- DMOS - SSI (Comm)
- DMOS - Basic (WO)
- DMOS - Duty Spec (Comm)

Date Commenced OS Tour
Date Last Accession
Date of SQ Test
Date Returned Last SH Tour
Date of SMOS SQ Test
Delay in Separation Code
Dependents Handicapped
Designation Skills SQT
Designated SQT Tests -
- Designated PMOS Tested
- Designated SMOS Tested
- Designated Prior PMOS Tested

Dropped From Rolls Trans
Dropped From Rolls Date
Drill Sergeant Indicator
Delete Code
Duty Position Data
- Duty Position Speciality Code
- Duty Primary Spec Code
- Duty Secondary Spec Code
- Duty Additional Skill Ident

Duty Status Code
Dual Service Component Status
Dual Service Comp Grade & Code
Duty Status Date (Effective)
Date of Last Reconciliation
Date of Last Expired Susp Notice (SPF)
Duty EPMS Designator
Duty Language Ident Code
Date Special Pay #1 & #2
Date Incentive Pay #1 and #2
Date of Trans (Type) Personnel
Ethnic Group Designation
Expiration Date of Current Svc
Expiration Date of Former Svc A.
Eligible to Reenlist
Eligible to Rtn From OS
Enlisted Evaluation Score
Enlisted Option Code
Enlistment/Reenlistment Waiver
Enl/Renl Bonus Indicator
Finance Audit Indicator

Data Elements - Current Personnel Management System

iscal Year Aviation Rating
oreign Area Officer Program
ormer Service Agreement
ield Transaction, Last Type
ield Transaction, Last Date
oreign Tour History - Prior
oreign Tour History - 1st Prior
lag for Suspension of Pay
HA Insurance Eligibility
aining Assignment Area
Gaining Assignment
Gaining SIDPERS Activity Code
Gaining Location
Gaining Status
Gaining Unit Identification Code
rade in Which Serving
rade in Which Serving Code
rade Data Last Change
rade Title/Abbreviation
rade/Last Change Type Trans .
roup Area - Home Basing
roup Identification Code
unnery Qualification
lome of Record At Entry Act Dty
dentification of Verified Svc
ndication of Verified Perm Date of Rank
inguist Area
- Language Identity
- Language Proficiency - Reading
- Language Proficiency - Speaking
- Language Proficiency - Primary
- Language Proficiency - Secondary
- Language Yr-Month of Test
osing Assignment Area
- Losing Assignment
- Losing SIDPERS Activity
- Losing Location
- Losing Status
Incentive Pay 1 & 2
Losing UIC
Local Data (40 Positions)
Main Civilian Occupation
Mandatory Retirement YR-Month
Marital Status
Medical Internship
- Hospital of Internship
- Medical Speciality Intern
- Months of Internship
- Year Internship Completed
Medical Residencies & Fellowships
- Hospital of Residencies
- Medical Speciality or Fellowship
- Months of Residencies
- Year Residency Completed
Medical Service Training Hist
- Berry Plan
- Clinical Clerkship Program
- Date of Graduate Fm Med Sch
- Early Commission Program
- Excess Leave - FY -
- Expected Date of Completion
- Graduate Education Program
- Medical Academic Instruct
- Military Internship
- Military Residency Program
- Number of Months Civ Med
- Present Training Code
- Promotion Eligibility Date

Data Elements – Current Personnel Management System

- Scholarship Program
- Senior Medical Student Prog
Military Education Level
Military Personnel Class
Military Schooling
- Military Schooling Course
- Military Schooling Year
Month of OS Service Assg
Movement Designator Code
Name, Individual
Number of Army Non-Sel Prom
Number of Army Non-Sel Deferments
Number of Dependents - Adults
Number of Dependents-Child
Number of Dependents
Number of Long OS Tours
Number of PCS - Fiscal Year
Number of RA/Reserve Non-Sel
Number of RA/Reserve Deferm
Number of Short OS Tours
Number of Times Enlisted/Reenl
Non-CONUS Residence
Number of Dependents - PCS
On Orders Data (14 Items)
Officer Evaluation Report Data
Officer Record Brief Audit Date
Officer Record Brief Audit Ind
Overseas Service Indicator
- Months of Overseas Svc Assg
- Overseas Location Code
- Type of Tour Completion
- YR-Month Rtn From OS
- Service Assignment
Permanent Grade Abbrv
Permanent Grade Sel Fail (Col)
Permanent Grade Sel Fail (Def)
Permanent Promotion Sel Bd
Personal Mailing Address
- Apartment Number
- City or Town
- Postal Zip Code
- State Abbreviation
- Street Address
Personnel Security Clearance
Personnel Security Data
Physical Data
- Height
- Physical Profile PULHES
- Weight
- YR-Month of-Last Exam
Previous Assignment Area - X19
- Previous Command Asg Code
- Previous Duty MOS
- Previous Duty Title
- Previous From Date
- Previous Location Code
- Previous Number of Months
- Previous Unit Designation
- Previous Unit Number
Previous Designated Spec
Previous Processing Program No.
Primary Military Occupation Spec
- PMOS Suffix (WO)
- PMOS ASI (Comm) (WO) EM
- PMOS SSI (Comm)
- PMOS Basic (WO) (EM)
Primary Act Disputed Record
Promotable Indicator

Data Elements – Current Personnel Management System

urement Program Number
iciency Pay Status
oll Number
notion MOS
sical Category Code
nary EPMS Designator
ent Unit Indicator
centile Prior Score - PMOS
Date, 1st Previous
Date, 2nd Previous
manent Party Type
manent Station Code
SINS Processing Acty (PPA)
sonnel Indicator
sonnel Progression MOS
mary MOS - How Aquired
QT Score
listorical Scores
core Dates
OS in Which Tested
hange Date
jected MOS - Date
jected MOS - EPMD
imary Speciality
ocessing Cycle - DA Fm 2, 2-1
og Army Location Code
ojected Assignment Area
Allocation Area
Date & Type of Source
Gaining Control Branch
Geographical Area
MOS Under Assignment
On Orders
Projected Assg Indicator
- Projected Gain Assg
- Projected Gain UIC
- Projected Instl Activity
- Year-Month of Reporting
- Projected Assg Unit
- Projected Assg Station
- Projected Assg MOS
- Reason For Assignment
Projected Speciality
Promotion History Area
- Prom Hist Perm GD-DOR
- Prom Hist Perm DOR-Abbv
- Temp Hist DOR - GD
- Temp Hist DOR-Abbv
Promotion List NR For RA
Race
Religious Denomination
Record Status Code
RA Selection Board Status
Reporting Date
ROTC School Code
Recruiter AFEES
Recruiter Code
Recruiter Flag
School Year Group
SMOS - Special Skill Ident
- SMOS - ASI (Comm) (WO)
- SMOS - SSI (Comm)
SMOS - Current (EM)
SMOS - Date - SQT Test
- Score-SQT
- In Which Tested
Separation Data
- Date of Separation

Data Elements – Current Personnel Management System

- Proc Date of Separation
- Separation Program Desig
- Shipment Control Nbr
Service Agreement Source Date
Service Component
Sex
Social Security Number (SSN)
Source of Original Appoint
Stabilized Assignment
Strength Data Audit
Special Pay - #1 & #2
SRCP Report Record Status Co
Secondary EPMS Designator
SIDPERS Flag
Social Security Nbr Verification
State of Enlistment
State of Residency at Enlist
Status Code - Current
Status of Tour - Short/Long
Temporary Grade
- Temporary Grade Abbrv
- Temporary Grade Code
Temporary Grade Prim Zone pl
Temp. Grade. Pri. Zone Failures
Temp. Grade./Prom Grade Code
To Date - Last Efficiency Rating
Total Service
- Service Total Identity
- Service Total Number of Months
Troop Command Designated Off
- LTC Command Designator
- LTC Year of Command
- COL Command Designator
- COL Command Selection
- COL Year of Command
Type of Original Appoint
Term of Service
Term of Enlistment
Type of Transaction Most Recent
Type of Transaction "Personnel"
USAR/NGUS DP Acty Code
USAR/NGUS UIC Parent Unit Des
Year-Month of Efficiency Susp
Year-Month of Armed Forces Med
Year-Month Completed Last Combat
Year-Month of Photo Suspense
Year-Month of Completion OJT
Verified or Retained PMOS
Year of Verified or Retained PMOS
Verified or Retained SMOS
Year of Verified or Retained SMOS
Year-Month of Term Area Code
Year-Month of Good Conduct Susp
Year-Month Source Agree Svc
Zip Code of Actual UIC
Year-Month Eligible for AFRM
Year-Month Branch Detail Expires
Grade-Group Code
Promotable Status Code
YR-Month RA Officers Mandatory Retirement
Or Projected YR-Month once RA Officers Ret
YR-No Expiration of Current Svc Agreement
YR-No of Reporting to Gaining Command
Year-No of Reporting From Losing Command
Allocation Number
Military Occupational Speciality
Under Which Reassgned
Gaining Control Branch

Data Elements – Current Personnel Management System

Last Overseas Tour
Troop Program Sequence Number
Element Sequence
Location Code - Current
Location Abbreviation - Current
Unit Number
Unit Designator
CONUS Station Name/OS APO
State
On Orders Speciality
Active/Inactive Indicator
Physical Category

# APPENDIX XI.
# WORKING PAPER ON PERSONNEL PLANNING

# MODELING, FORECASTING, PLANNING, AND PERSONNEL: FUNCTIONS IN CONFLUENCE THROUGH COMPUTERS

The systems related concepts of modeling, forecasting, planning, and personnel seem to be converging into a new humanistic field as yet unnamed but related to manpower management or human resource management. This new field is an integration of ideas from statistics, economics, engineering, operations research, psychology, management, sociology, and computer science. Modeling and forecasting are very old processes. Models are built to give forecasts which are in turn used to make a plan for the future. What has given modeling and forecasting new importance is their usage in a computer environment in which much data and many alternatives can be processed.

As one looks at traditional management structures (classically, a management pyramid), we can observe various ways modeling, forecasting, and planning are used. On the bottom, we see objective models being used successfully to make item-level forecasts. In the middle of the pyramid, we see the objective models being used with other models to handle the exceptions that management must face. The middle level methods of modeling and forecasting tend to be both qualitative than quantitative (6). At the top of the pyramid, we see objective models fed by "validated" information generated by middle management being used by top management in making decisions modulated by historical performance, experience, opinion, market data, current events, company policy, etc.

A brief look at the literature in forecasting and modeling in the military and civilian sectors elicits the following observations:

* On the military side, the Navy has built more models to forecast and plan than any of the other services. The Navy has integrated into its models given personnel problems and the cost of a given problem. The Air Force has done the most work in moving towards a total force integrated personnel system. The Air Force has made good progress in integrating the familiar military functions of accessions, separations, promotions, and retirements. The Army has contributed and characterized an extensive list of forecasting techniques by identifying 150 possible forecasting methods (1, 2, 3).

* Military personnel systems are "closed" systems in that people are trained and promoted within the system; the literature refers to such systems as a "closed labor force". The military services account for the cost of their personnel on the basis of averages. The costing is done along two fundamental lines - one, the costing of the man and two, the costing of the job which the man performs. The Navy has superior personnel cost methods due to research they were directed to develop by the DOD. This research effort was based on an in-depth application of the accounting approach to cost data. The results of this research effort were ultimately not transferable to the other services due to the fact that the costs were related to Navy weapons systems (4).

* The military services have developed many models in the area of personnel systems during the past 10 years. They

are in many ways pioneers in this new area of manpower development. A brief survey of their work shows several problems that they have not been able to overcome and which limit their progress in this new area. The primary observation is that many models have been built in isolation and few are integrated at a higher level. Secondly, many models were built for one specific purpose or to study a particulary problem and have no link to a total planning system. Thirdly, most of the models were developed on an ad hoc basis and often work against one another. This ad hoc development many help explain why the cost of personnel (be it recruiting, special pay, promotions, or retirement) has not been strongly connected into the military models. More comprehensive and systematic models are needed for better planning of manpower personnel and the cost of this manpower.

* In industry, there has been a four fold increase in the number of companies using modeling and forecasting during the years 1970 to 1976. The major reason for turning to modeling and forecasting is the high risk and uncertainty in the external environment that the companies face. The type problems that the companies are attempting to deal with are related to energy, inflation, shortages, declining productivity, and economic uncertainty (5). Advances in planning technology and in computer technology have also contributed much to increased use of corporate modeling. Corporate models are used to answer three types of questions: 1) What is? or What has been? 2) What if? and 3) What to do to achieve? (7). The primary application of corporate models is financial in nature - cash flow analysis, financial forecasting, balance sheet projections, financial analysis, profit planning, and long range forecasts. The primary use of corporate models is financial and planning - evaluation of policy alternatives, financial projections, long term planning, and decision making (5). Despite this heavy emphasis on financial uses of modeling and forecasting, other uses include manpower needs, marketing, operations, and research and development. If a company has a human resource planning model, it is most likely part of the company's total planning concept.

* The civilian sector accounts for the cost of their personnel on an individual basis. An individual basis method can take several approaches - such as, an economic approach, accounting approach, alternative investment approach, and investment technique ... depending on the reasons for costing (4).

General observations from the literature from both the military and civilian sectors are simple in nature. Top management must support and understand the objectives of modeling and forecasting efforts in order for the efforts to be successful. Validated data must be used to make the forecasts. This is particularly true since the model choosen is often closely linked to the data used. Model developers must make explicit their assumptions; such as, requirements and constraints, supply of manpower, costing methodology, and management objectives, etc. Model building in the personnel area has two distinct characteristics that other model building does not have. First, the product being modeled is the conduct of human beings which can not be treated in the same way as

other variables in a system. People do not behave with the same regularity as other material inputs and outputs to classic systems. Second, the manpower source is not easy to predict in that people enter into and change employment following some period of education (or experience) which may not be a valid predictor of interest or abilities. Manpower planning will take on new dimensions as organizations try to retain and retrain middle-aged personnel due to declining birth rates, as new skills become required for organizations, and as new fields and knowledge create new jobs. The optimistic principal use of models and forecasts in manpower planning will be an aid management in making decisions and to evaluating available alternatives.

In reviewing the literature, it is not clear how many of the models encountered are still in existence. Many of the military models have been changed since their initial implementation and publication. A good guess is that very few are still in existence compared to the total number developed. Future attempts to build an integrated personnel system model, should as a beginning, survey those in existence and those that never make it into usage. The contrast from such an analysis would assure a better understanding of the limitations and capabilities of models that have been tried. The benefits of past work could then be integrated into a new effort to bridge the gap from theory to application in dealing with modeling, forecasting, and planning of personnel.

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# APPENDIX XII.
# SELECTED PERSONNEL/MANPOWER PLANNING QUOTES

## SELECTED QUOTES FROM PERSONNEL BIBLIOGRAPHY

**Forecasting. edited by S. Makridakis and S. C. Wheelwright. 1979. North-Holland.**

Forecasting is only useful when its results are applied in planning or decision making. Practical applications may derive from theory, but they require considerable modificatons before they can be used. Strong bridges are required to connect theory and practice, and many problems must be solved before forecasting methods can be used efficiently and effectively in management situations. Thus, the practice of forecasting in business and economics becomes of utmost importance. page 3.

Going up the rungs of aggregation showed up a difficulty in the use of computer forecasting models. Managers generally welcome help but often balk at the responsibility for results they do not personally control. An objective forecast is not easy to adjust - particularly by one who does not understand its derivation in the first place. The objective computer models were widely acceptable down at the specific item levels, but with each step up the pyramid of aggregation, these forecasts met more and more opposition. pages 22.

The objective computer models are not enough. Lack of managerial cooperation is not the only problem. The fact is that a forecaster must build methods for getting ... the exceptions. The most neglected area of forecasting is that part that is exceptional. Forecasters, who must anticipate change, face this dilemma: objective models tend to be averaging processes, but every real-world forecast brings one head-on against a unique event, - rampant with exceptions and special considerations. The truth is that what is about to happen in the next discrete period in not adequately explained by averages, even though averages do represent the proper place to begin. ... It is clear that forecasters must bring together the objective and subjective if they are to create a total forecasting system. page 23.

Step 1. Model Building.

- Naive Models
- Moving Average
- Decomposition Methods
- Exponential Smoothing
- ARMA-ARIMA Models
- Filtering Techniques
- Regression Models

Step 2. Eclectic Systems.

- Objective Models

Tabular Presentations
Graphic Systems
Surveys & Anticipations
Leading Indicators
Economics

Step 3. Judgmental Inputs.

The Exception
Informed Opinion
Experience: Market Feel
Dialogue: Meetings
Historical Analogy
Management Approval

from pages 21, 23, and 25.

The computer models can represent an objective first premise to be adjusted by subjective information - first from the eclectic systems and finally from the managers themselves. page 24.

No matter what technique is employed or how much work is entailed, ultimately a forecast must be approved by those in management. In bringing managers into the forecasting operation, two basic problems must be resolved: 1) only those managers should be enlisted who have useful information obtainable by interview and dialogue, and 2) a system should be developed to get the information with the least amount of their time and aggravation. In effect, a system should be designed that begins with an objective set of recommended forecasts that can be subjectively altered by a jury of executive opinion through the process of dialogue. page 25.

In building the total forecasting system for the organization, many levels of development must be considered. Certainly the short-, medium-, and long-term horizons are among them. The integration of the work of many disciplines into the system - statistics, mathematics, economics, engineering, operations research, and marketing research to mention the most obvious - must be considered. The various forecasting problems related to the different levels of aggregation are also important. page 29.

**Manpower Research in a Defense Context. Proceedings of the NATO Scientific Affairs Committee. N. A. B. Wilson editor. 1969.**

The problems associated with manpower policy decision making often elude scientific analysis due to the complexity found in large organizational patterns. This very complexity, however, often results in conflicting evaluations relative to the value of a particular policy since, from one point of view, the policy may appear to be near optimum while, when the policy is viewed from a different aspect, it shows up very poorly. For example, a policy may produce very satisfactory short range benefits only to produce highly undesirable long range effects. What is required if one is to be able to evolve a comprehensive policy evaluation procedure is to provide a "total-system" approach to such evaluations. page 105.

Model-building covers a very wide field; and, indeed, it may be argued that all science is model-building in so far as it helps us to construct economically a logical framework for the universe around us, or for selected part of it. In studies of manpower there are some special features which are worth noting.

In the first place, we are dealing with human beings, who may not react to changing circumstances with the regularity which we find in physics or chemistry.

Secondly, the future course of the populations with which we are concerned is relatively easy to predict; or rather, if children do not enter the manpower orbit until, say, the age of 15, we have at least 15 years from birth to plan their future as a group; and this, notwithstanding that birth-rates since World War II have fluctuated in a most remarkable manner.

On the other hand, human beings take a long time to grow, and we cannot easily take measures to adjust supply and demand in the way, for example, that industry can adjust its output or consumption.

Thus we have a set of new problems in manpower planning, the production of new skills, the retaining of the middle-aged and, in general, the acceleration in the rate of obsolescence of knowledge and expertise. This is one of the reasons why systematic planning of resources is an increasingly important and urgent problem; and manpower is one of our major resrouces and will remain so in spite of the mechanization of the chores of life. pages 114 and 115.

**Forecasting Methods for Management. by Steven C. Wheelwright and Spyros Makridakis. 1980.**

In recent years a tremendous emphasis has been placed on improving decision making in business, government and other organizations. One aspect of this improvement has been the requirement that the steps taken be made more explicit than they have been in the past. Be making these subparts of the decision-making process distinct they can the be focused on for purposes of individual improvement. Thus, although many managers 20 or 30 years ago were able to run their businesses, whether large or small, largely on their own feelings and intuition about the industry and their own situations, that kind of management is rapidly disappearing. In its place we hear more and more about the use of new management decision-making techniques: operations research, statistics, computers, and principles of organizational design.

A key aspect of any decision-making situation is being able to predict the circumstances that surround that decision and that situation. Such predictions, generally handled under the title of forecasting, have been identified as a key subpart of the decision-making process. As a natural consequence of the increased emphasis placed on systematic management, the area of predicting and forecasting has been studied extensively, and methods of making predictions more objective and reliable have been developed. These techniques vary considerably in their spohistication and usefulness. page 1.

...forecasting is merely a means of improving decision making and is not an end in itself. pages 2.

Elements common to all forecasting:
The first element that will be noticed is that all these situations deal with the future and time is directly involved. ... A second element that is always present in forecasting situations is uncertainty. ... The third element present in varying degrees in all the situations described, is the reliance of a forecast on information that is contained in historical data. The term "data" is generally used to refer to any number or fact that may be available. The amount of information contained in such data is a measure of how relevant that data is to decision making. pages 3.

One point that deserves special attention here is the notion that planning and forecasting are different functions. Forecasting is generally used to describe what will happen in a given set of circumstances. ... Planning, on the other hand, involves use of forecasts to help make decisions about what circumstances will be most attractive for the company. ... Generally speaking, forecasting and a forecast are only one input to the planning process. page 4.

Two type of forecasting techniques: quantitative techniques and qualitative techniques.

Quantitative forecasting techniques have gained wide acceptance over the last few decades for at least three reasons. One has been that they developed a record of accuracy as a means of preparing forecasts. ... A second important factor has been the development and adoption of computers. ... The last reason is that quantitative forecasts are, generally, much cheaper to obtain than any of the available alternatives.

The aim of qualitative methods is to forecast changes in a basic pattern as well as the pattern itself. ... Because of the difficulty (and cost) of working with qualitative methods of forecasting, they are generally applied only to long-term situations and to those of major importance to the firm. page 5.

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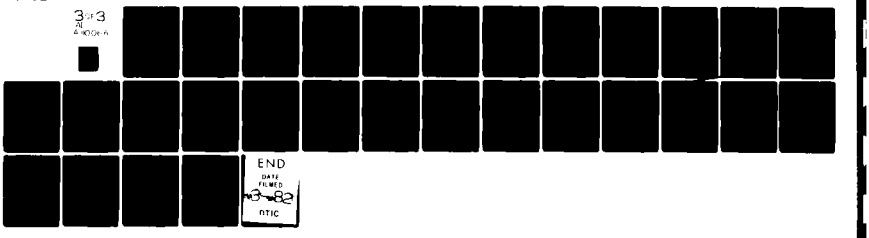

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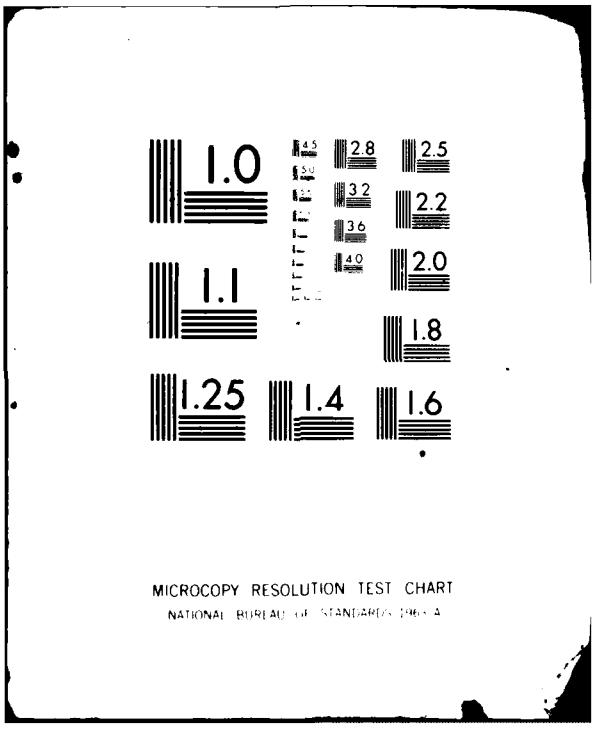
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

**Manpower Planning and Programming. Elmer H. Burack and James W. Walker editors. 1972.**

Models must incorporate data which could not otherwise be considered in manpower planning. Job assignment patterns, individual characteristics, career patterns and aspirations, and other structural, behavioral, and policy information must be considered in the development of realistic models for forecasting manpower conditions in the firm.

Markov analysis offers one tool for this effort, extending past experience regarding personnel movement to future conditions. It should be used with discretion, however, recognizing that transition probabilities are principally extensions of past experience which may not be valid in the future. They should be recognized as only one form of informational input in modelling future manpower supply and demand. Linear programming models and simulations make possible more exhaustive and manipulative studies of manpower flows by examining the elements of system behavior underlying probabilities of movement.

So far, emphasis has been on the development of models and not on the solution of critical manpower planning problems. Existing models are not, however, merely sterile exercises in mathematics. Models have been limited in their applicability principally by lack of data. The building of a model requires the model builder to define what data he needs in terms of units, collection needs, and interrelationships with other requirements.

The principal use of models, even highly sophisticated and complex ones, will likely remain evaluation of decision alternatives for managers in manpower planning. Researchers are not attempting so much to build a master planning model as to develop effective tools for assessing implications of frequently repeated, relatively routine but significant manpower management decisions: structural and policy changes, promotions, recruitment planning, selection, assignments, etc. pages 141-142.

**Strategies for Manpower Planning and Programming. by Elmer H. Burack. 1972.**

Manpower Planning vs. Personnel Administration.
Manpower planning is a process which seeks to bring together business objectives and manpower resources. It is inherently future oriented. The key step in the process is initiated with manpower forecasts tied to organizational goals.

Closure is gained when those charged with personnel or "manpower" responsibilities meet forecasted manpower needs as to quantity, quality and timing; all the internal functions of the personnel service are tapped to help meet these ends. Manpower planning is a future-oriented process, whereas the functional orientation of the personnel staff requires them to work mainly with "givens" determined by manpower planners.
page 59.

A comprehensive approach to the actual conduct of "manpower planning" consists of two basic components:

1. A forecasting component which builds on an up-to-date audit of "on board" manpower resources in predicting anticipated future needs, in the most specific and time-targeted terms possible; and
2. A programming component which specifies the implementation steps responsive to the forecast, e.g., how to and where to recruit needed numbers and types of future employees; how to audit personnel already within the organization to determine the degree to which future needs might be met through organization-sponsored training and educational opportunities; and related matters.

page 61.

**Computerized Information Systems in Personnel - A Comparative Analysis of the State of the Art in Government and Business. by Edward A. Tomeski and Harold Lazarus. Academy of Management Journal. Volume 17. Number 1. March 1974.**

Computerization of the personnel function has not kept pace with the general advance of computer technology or with applications in other functional areas such as finance. Computerization of personnel work which has been achieved does not yet attain the objectives of modern information systesm, e.g., to improve decision making.

The federal departments and the business organizations represented in this research have more advanced computerized personnel systems than do the states, counties, and cities studied.

Some of the apparent reasons for the inhibited progress of computerized personnel systems are the relatively low priority given to personnel systems, the absence of an overall plan for integrating personnel work, and inadequate cooperative effort of computer and personnel staffs.

If is is true that people are indeed the most valuable organization resource, we may yet see a surge of computer utilization toward the goals of more rational and humanistic management of people. This surge is not yet in evidence. page 172.

**Elements of Manpower Forecasting and Scheduling. by Glenn A. Bassett. Human Resource Management. Fall 1973.**

... there is perhaps no such thing as "human resource management" until the manpower forecasting and scheduling process has been mastered. page 35.

Effective manpower forecasting thus requires the following elements of data:

* Reasonably reliable sales forecasts
* Reliable historical data on direct hours of manpower required for production of each unit of product
* A reliable "indirect to direct" manpower ratio
* An agreed upon productivity improvement ratio
* A reasonable estimate of overtime which will be worked in the forecast period
* A reasonable estimate of the absentee rate of the forecast period

page 36.

A seldom appreciated fact of manpower scheduling is that when a change from current manpower levels is required, unless it can be instantly effected, it is necessary to either exceed the average required level for a time during the forecast period when you start out below the average, or, alternatively to drop below the average some of the time during the forecast period if you start out above the average manpower level required. It is impossible to get from the starting to the ending points in any forecast period by means of a "straight line" and still achieve the required average level for the total period unless you either immediately add enough new employees to reach the average level, or lay-off enough people to get down to that level (depending on where you start). pages 36-37.

The day of the personnel manager whose task was simply to await word from operating components to turn the right valve and thereby open or close the employment pipeline is passing quickly. A minimum data base and a simple computer program can today put the personnel manager of virtually any size business in position to manage employment fluctuations rather than merely to cope with them after the fact. If a personnel manager can round up the data, a computer can process it quickly and cheaply into the appropriate forecasts and schedules. Workable approaches to manpower forecasting and scheduling are at hand. They need only be applied to make real the fact of Modern day Manpower forecasting and scheduling in the personnel office. page 40.

**An Integrated Framework for Personnel Utilization and Management. by Benjamin Roter. Personnel Journal. December 1973.**

... the ability to describe the internal work structure of an organization using a systematic, common language is an essential step in establishing an integrated personnel framework. A common language is an essential step in establishing an integrated personnel framework. A common language, or taxonomy, controls communications and thereby serves as an integrating factor. The use of a common language, moreover, suggests the applicability of computer techniques, for more efficient and effective information about jobs and about those who perform them.

The components of an integrated personnel framework are, then:

- A controlled, systematic language for describing and analyzing jobs and their requirements which could also be used to describe and analyze the set of working skills and experiences an individual possesses at any point in time.

- A computer-based information source serving multiple users in a variety of personnel contexts, including employment, training, career counseling, and compensation planning.

page 1032.

**A Human Resource Planning Model. by Vincent R. Ceriello and Richard B. Frantzreb. Human Factors. February 1975.**

To determine recruiting and training quotas for an organization today is a more complex task because optimal quotas depend heavily on uncertain future conditions. Additional considerations include expectations (with regard to that organization's growth), level of retirements and separations, promotions, transfers, and the proportion of trained personnel the firm will need to have in key positions at every level. Then there are external conditions such as macroecomomics, legal constraints, labor supply, social responsibility, etc., which have impact upon the manpower planning problem.

An efficient solution to this rather complex problem is a computer-based simulation model. The simulation model, for these purposes, is a technique through which the computer attempts to represent the real-world and can react to "What if...?" questions. The model that has been developed by Manpower Planning at the Bank of America - called MPQ: Manpower Planning Quotas - uses historical and current data to translate staff totals intoa series of equations and personnel inventories. MPQ gives the user an opportunity to specify all of the critical management policies regarding the selection and training of personnel. It then proceeds to simulate the personnel experience of a single year - promotions, separations, retirements, and hires. The model then notes how many people will be required and from what sources they should be obtained; in other words, what the recruiting and training quotas should be. It repeats this simulation process for as many years as the user has specified, giving him the opportunity to change his inputs at the beginning of each year.
pages 35 and 36.

Assuming that MPQ is an accurate representation of the personnel policies of the bank for purposes of predicting the flow of manpower, it many be put to a variety of uses.

(1) MPQ can be used for calculating training program quotas in the absence of changes in promotion or placement policies and in the absence of changes in retention, separations, and retirement experience.
(2) The effects of changes in retirements, separations, and training program retention can be predicted so that the bank may properly account for any disequilibrium caused by the changes.
(3) The effects of different personnel policies involving promotions and transfers may be tested before actual implementation to determine their effects on promotion rates, levels of penetration of training program graduates, and training program quotas.
(4) Experimentation with various external factors, caused by economic or demographic conditions, can be performed so that appropriate tests of their potential effects can be taken into account.

page 41.

**Cost/Benefit Analysis of Human Resource Accounting Alternatives. by Richard S. Savich and Keith B. Ehrenreich. Human Resource Management. Spring 1976.**

I. Human Resource Historical Cost Model

... The historical model focuses upon the investment made in human assets. ... the historical cost model would account for the investment in human resources as the unexpired portion of the costs for recruiting, hiring, training, and developing personnel for the firm. These represent current and/or past outlays which will be of benefit for several future accounting periods. It should be noted that this system of measurement deals with value to the organization only at the date of acquisition. This value can (and usually does) become quickly outdated. However, the historical cost system has two strong advantages which make it a worthy surrogate measure of an employee's value. One, acquisition cost is consistent with current conventional accounting procedures for other long term assets in that it reflects the price actually paid by a purchaser. Secondly, this system is simple, inexpensive, and entirely feasible to install within a reasonable time frame. pages 7 and 8.

II. Replacement Cost Model

Replacement costs are quite similar to the ideas expressed in the ... Historical Cost Model in that the recruiting, hiring, training, and development costs are still critical values, but differ to the extent that the prior section stressed original or historical costs, whereas current market costs are utilized here. The Replacement Cost Model, then, overcomes the major disadvantage of outlay cost in that the measurement process usually has no relationship to value after an elapsed time. Replacement costs are of greater relevance and provide better managerial information in that they are more current, more realistic and are market price oriented. page 12.

The advantages of a Replacement Cost Model of accounting for human resources are that it gives external users current value information which should be easy to understand and use in the evaluation of financial statements. Replacement based cost data has the additional advantage of adjusting human value to price trends in the company, thus taking into account the effect of inflation upon asset values.

There are several major deficiencies associated with the use of replacement costs. First, this apporach is not consistent with current accounting methods of valuing assets, which would prevent human asset valuation from being comparable with the other assets included in financial statements. Another problem with replacement costs is that they would be difficult to verify. ... a replacement cost system will not take into account all organizational positions. Certain investments made in the past will not be repeated again, therefore no

replacement cost may be ascertained. Also, investments in certain positions not made in the past may be contemplated for the future. For these reasons, replacement costs may not denote the true value of personnel who currently work within the organization.

Another advantage of replacement based data is that it would focus managerial attention upon the organization structure and facilitate planning of which individuals should be moved when a position becomes open. This would give employees a feel for their career path and give management a cost-benefit analysis of contemplated changes on the organizational chart. page 14.

III. Discounted Cash Flow Model

A third, and more sophisticated approach to measurement of human asset values is an attempt to determine the economic value of individuals to an organization. It it is possible to accurately predict the future earnings employees will generate, by discounting these cash flows to the present, a human asset valuation is determined. page 15.

The Discounted Cash Flow is probably the best conceptual model of the three explained. Its basic premise is that of quantifying the future service potential of an asset. If an asset can be said to be an economic resource and we acquire these resources to utilize them, then it is the future benefits and costs we are concerned with not past outlays or even present expenditures. There is the primary disadvantage of its subjectivity due to the heavy emphasis on predictions. page 17.

**Time-Sharing & Information Systems. by Frank Pfeilmeier. Personnel Journal. Volume 57. Number 2. February 1978.**

Several Essential System Requirements

Accuracy: ... any automated pesonnel system must maintain a high degree of accuracy. ... Since the potential for human error is everpresent, the system must be extremely easy to use and should include relisble data validations which are built into the computer programs.

Flexibility: Since each organizations's structure and information needs are unique, the automated personnel system must be adaptable to these features whenever compromise will affect performance. Also, since the information squeeze on personnel often demands one-time, unpredictable analysis and reporting "due yesterday", tools must be provided for ad hoc inquiry to the personnel database, varied information retrieval and analytical routines for calculations, summations, etc. The most comprehensive and accurate personnel database is worthless without effective means of using the data on a day-to-day, on-demand basis.

Dynamic: Automating the personnel system in many organizations represents a data processing enigma since the system requirements are rarely well defined and never permanent. Ideal data processing problems are structured, organized and stable, and personnel is, at best, a moving target. Changing business conditions, compliance regulations and management policy present an environment to which the system must adapt with minimal disruption. Without proper consideration for change today's automated personnel system may soon become less productive and in time obsolete.
page 69.

**Using the Computer as a Management by Exception Tool in the Personnel Field. by LTC William M. Hughes, Jr. United States Military Personnel Center. Eighteenth Annual Technical Symposium. Information Systems. June 21, 1979.**

The model being offered in this paper is useful to anyone who maintains automated data bases in which the variability of the data portrays the operational efficiency of the organization. The model specifically sifts through recent historical information and singles out a few data areas for senior management. The few data areas are so unusual as to suggest human analysis even though no crisis may be apparent at the time. ... The model, which contends with the muddy affairs of an ongoing concern such as questionable data and changing structures, displays one method of using the computer to scan available information over time and telescope it to a few cases for senior management attention. page 189.

The model ... deals with the relationships over time of three manpower structure goals which are in conflict and the reality of the personnel inventory. In order to be effective the model must deal with data which are frequently not credible. ... The model selects for special attention only 9 skills a month after evaluation of about 350 skills by 7 pay groupings by 12 periods by 4 goals/inventories.

Unfortunately many of the management policies are very specific at the total force level. The senior manager ... must somehow produce the right person for assignment when his distribution and skill requirements are in a constant state of flux. He must initiate an accession process for a new soldier as much as one or two years in advance to man equipment which may not yet be in the active army. To further complicate the situation he must prorate his available manpower because his distributional requirements at unit levels are inconsistent with his budgetary guidance from the Department of Defense. At the present time the enlisted force managers are aware that their distributional requirements in terms of skills, seniority, and location are stated in conflicting policies which drive separate subsystems. The field soldier can sometimes detect that some of the subsystems such as retention incentives, accessions, and promotions appear to be out phase.

... there is a scarcity of programs to automatically scan the the data bases and report to the manager indicators showing that the ability of the Military Personnel Center to match requirements with people is deteriorating. Very often this type of information is detected only when the Personnel Center has little time to correct the underlying cause but rather must correct the immediate sympton of actual personnel shortages. page 190.

The size of a skill can vary from over 65000 individuals or requirements to less than 50. Large skills are politically sensitive to deviations from their de facto goals. Small skills can appear to be radically changing because of the near

zero content of some information cells. The model does not address the perceived sensitivity of some skill due to criticality of mission. page 191.

The budget and the Enlisted Personnel Management System (EPMS) goals are more static and tend to change in a minor fashion only over a period of several years. ... The EPMS goal was essentially not available through an automated process, was not totally current, nor was there a system to keep it current. page 192.

The initial by-product of this model portend utility in data discipline even if the basic model does not become an accepted tool. Although the model is not uncovering new vistas of knowledge, it has shown again certain facts which were known but perhaps not disseminated too widely: Over 10 percent of the skill labels in the space goal structure are either obsolete or never existed. ... that there appears to be no way of correcting many of the known errors. Approximately 400 individuals have no skill label in the data base from which they are assigned and monitored. Some individuals have obsolete or never existent skill titles. It appears that the Personnel Center has a method of correcting known errors but no procedure for assigning responsibility for identification and correction of the data base. The inventory track record is not all that bad. However, knowledge of distributions of people by years in the service and ratios of inventory to space goals leads one to suspect that the obvious errors are only a tip to the iceberg. page 194.

**Monitoring the Human Resource System. by Ruth Gilbert Shaeffer. Changing Imperatives in Managing Human Resources Conference. April 20, 1976. New York City.**

Comparisons of Industry Data with the Military

At the request of the Department of Defense, which funded this preliminary research, another set of curves was added to the study. These curves represented the total active-duty officer force including warrant officers) in the combined Armed Services of the United States. ... Both the Department of Defense and The Conference Board were surprised at how closely the Armed Services' HO (Hierarchical Organization) and HI (Hierarchical Incidence) curves matched the curves of the very large, very complex business organizations we had been studying, even though the Armed Services are at least one order of magnitude larger than any private American company. The findings suggest that, for whatever reasons, there may be much more "elegance" and "orderliness" in the brave new world of large-scale human resource systems than most of us have been aware of. page 14.

The Kinds of Measurement Required

The basic unit of measurement that is generally used in monitoring and managing a human resource system is not dollars, but numbers of people in various categories. Depending on the purpose, these numbers-of-people measurements may, of course, either be expressed in the form of absolute numbers or translated into relative terms, such as proportions, ratios, or percentages. Establishing stable, meaningful categories upon which to base the measurements used for various purposes is, of course, crucial, but it is proving to pose many practical problems.

Once some logical framework for the necessary analyses has been established, two kinds of measurement that are complementary, not conflicting, are likely to be needed in order to provide all the different kinds of human resource system information needed to serve various purposes. One kind of measurement is a static one. It provides a snapshot, if you will, of the numbers of people in various categories in the human resource system at some particular moment, say, the end of the year. The other kind of measurement is a dynamic one. It, in turn, provides a movie of how the system functions during a particular time period - the inputs that occur, the various changes and flows that take place among the categories within the system, and also the outputs that occur.

Among the different kinds of analyses discussed by the various panelist, and based on these two forms of measurement, were:

Static comparisons. Comparing the size, configuration and composition of the human resource system at some moment - either over overall or in detail - with:

* The size, configuration and composition of the same system at different times in the past;

* Some expected or preferred size, configuration and composition of the system at that time;
* The size, configuration and composition of similar human resource systems at that same time.

Dynamic comparisons. Comparing the flow processes of the system during a particular time period - either overall or in detail - with:

* The flows in the system during past time periods;
* The expected or preferred flows during that particular time period;
* Similar flows in other human resource systems during that same time period.

Combination analyses.

* Projecting past data about the size, configuration and composition of the system and about the flows of human resources to determine the probable outcome of continuing existing policies and practices until a selected future date;
* Forecasting human resource needs by adjusting such projections in accordance with various indicators of foreseeable change in technology, business plans and economic trends;
* Modeling the configuration of human resources that would probaly result by a certain time from specified changes in staffing strategies or changes in other personnel policies and practices;
* Measuring managerial accountability for human resource utilization by comparing actual as against planned outcomes.

Thus, just as in financial planning and control, the effective management of a human resource system truns out to hinge on the integrated applicaion of realistic planning and control measurements. pages 3-4.

**Administering the Company Personnel Function. by William R. Marshall. Prentice-Hall, Inc. 1976.**

The following functions are usually found in major company personnel departments:

-Manpower planning
-Equal Employment Opportunity
-Recruitment, selection and placement
-Performance appraisal
-Training, management and organization development
-Labor relations
-Employee benefit plan administration
-Compensation
-Communications
-Safety and health
-Personnel policy development
-Personnel records and control
-International personnel administration
-Personnel research

pages 18-19.

Integrated, mutally supportive functions of personnel administration produce a synergistic effect that provides superior results. Too frequently, personnel departments build walls between their functions and become almost competitive with each other.

Each function of personnel administration is incomplete in itself. It must be joined to the other functions and interface in order to maximize its effectiveness to the operating components and to the total business.

Six tips on unifying personnel administration that came from seasoned professionals who agree that it produces superior results:

1. It is easier to unify personnel functions when those responsible have frequent contact with each other.
2. Unify record keeping. Whenever possible make one record serve for several functions' requirements.
3. Design each function with unification in mind.
4. Combining functions into larger organizational units make unification easier.
5. First establish an objective for the broad field of personnel administration; then for each functions under it.
6. To achieve an integrated personnel administration, instruct all personnel administrators in your company to seek it, monitor to insure that everyone understands and agrees it is the best way to get results and, if possible, reward efforts toward integration.

pages 23-24.

Chapter 16: Personnel Research for Solving Tomorrow's Operating Problems.

Personnel research, like any other personnel function, is more

effective when it is integrated with other functions of personnel administration and with line management.

Practical personnel research starts by studying the long range business plans of your company. Knowing where your company is going and the type of problems it is likely to encounter signals the direction for your investigation. ...

Personnel research, like all functions of personnel administration, can contribute more toward the success of your company than functions involved with financial and physical resources if it will:

-establish clear objectives
-plan each program step
-link to the power structure of the company
-establish checkpoints
-measure results and
-integrate with other personnel functions and business plans.

pages 203-204.

**Markov Analysis in Human Resource Administration: Applications and Limitations. by Herbert G. Heneman III and Marcus G. Sandver. Personnel Management: A Computer-Based System. Sang M. Lee and Cary D. Thorp, Jr. editors. pages 75-85.**

The range of possible uses of MA (Markov Analysis) suggests that it is often a necessary and/or desirable technique in human administration. It appears that the effect of current and proposed government regulations regarding equal employment opportunity will be to increase the use of MA, or something akin to it, in organizations.

At the same time, it is crucial to recognize the potential limitations on MA applications. In general, MA is best suited to situations involving large numbers of individuals, where substantial movement of individuals occurs on a stable basis among specific job states. The limitations regarding conditional probabilities and forecasting accuracy also involve essentially empirical questions, which have not been satisfactorily answered due to the paucity of research conducted on them. It is imperative that these areas receive considerably more research attention than they have so far. page 83.

# APPENDIX XIII.
# QUOTES FROM GAO REPORTS

QUOTES FROM GOVERNMENT DOCUMENTS ON PERSONNEL MANAGEMENT

Title: Lack of Control and Feedback Hinders Army Manpower Management Improvements

PB80-104938

"The Army has recently consolidated many headquarter manpower functions and has taken steps to solve other problems. But major weaknesses will not be solved until the Army's top management makes a long-term commitment to establish a control and feedback system for managing human resources. Over 50 percent of total Army dollars is used for human resources. The Army needs to define and implement accountability for all manpower actions; link its major manpower activities to a common data base; use workload information to determine manpower needs at the operational level; provide the information and incentive for top-level managers to make the best use of the total labor force, and insure adequate development and availability of professional staff for manpower functions." page i

"Activities and functions should be tied together with common data bases and reporting systems which are simple and can be adapted to meet the manpower and budgeting needs of managers at all levels.

The Army should develop a long-range plan, and in preparing and carrying out the plan the Army should:

-Involve top-level managers and use outside expertise when appropriate in designing the integrated system.
-Design management activities that use common data for operational and headquarters management as well as budget development.
-Allocate sufficient staff to develop the data base needed by manpower managers.
-Evaluate audit agencies' recommendations and make improvements which are best for the total manpower function rather than for each component of manpower management." pages ii and iii

"This report summarizes those problems which need to be corrected before the Army can develop a good manpower system. We stress these problems in this overview report because they affect the Army's ability to determine, justify, and use manpower funded by the Congress. In reports issued to the Secretary of Defense, Office of Management and Budget, and the Congress, we have identified weaknesses and recommended

-centralizing manpower functions into one organization which has control and accountabiltiy for manpower requirements and assessment of use,
-coordinating manpower management activities so that requirements determined at low levels can be tied into the budget

process and changes in workload or manpwer can be quantified and anticipated,
-improving the methods and reliability of data used for determining manpower requirements for civilian and military personnel, and
-hiring professional managers and adequate staff to run the manpower system.

The army has made nominal changes to a complex manpower management system which has grown piecemeal to accommodate changing requirements imposed within the Army and by higher authorities". page 2 and 3

"During the time of manpower cuts and ever-increasing demand, the attitude of some Army officials is that, although the Army manpower management system does not provide the control, data, and accountability needed, a new system cannot be established. The Army, according to these officials, must do the best it can with an imperfect system.

Other Army officials believe an integrated system of organizations, data, and accountability is a must. For example, the Army's manpower management task force under the Deputy Chief of Staff for Personnel is making imporvements by designing a system to determine manpower needs by function and planning an automated process to report the number of spaces used against the number authorized. But lacking a long-term commitment by top Army management, these officials' efforts will affect only a small segment of the total system." page 3

"-The Army' manpower management activities are not coordinated with a common data base. (See ch. 3.)
-Top-level support, technical assistauce, resources, and procedural guidelines are not always provided for programs designed to develop detail manpower requirements at the operational level.
-Organizational placement of programs to determine manpower needs and evaluate manpower use are not controlled." page 4

"The Army does not have an integrated manpower management system with common objectives. Data control and feedback are missing. Thus, the flexibility delegated to Army commanders has forstered many individual efforts lacking mutual direction and purpose." page 7

"The Director of Manpower needs to obtain top-level support to make improvements and integrate manpower management activities at all levels. The Army, however, must be willing to give up or revise many components of man power management which have evolved over a number of years and are not part of an integrated system." page 8

"The Army encountered a problem in its first attempt to develop a zero base budget because it did not have a common data base. This problem still exists, and the adequacy of the Army's budget will be suspect until it develops a direct traceable relationship between manpower requirements and the budget and can directly

relate manpower to workload." page 11

CONCLUSIONS

"The Army needs an integrated systems approach to manpower management. That is, all components of manpower management should interrelate so that when one part of the system changes, changes in other parts of the system can be traced and quantified. The Army lacks one of the most important parts of an integrated system - a common data base which can aggregate manpower needs according to budget categories, dirctly related manpower to workload, trace budget changes back to the detail level, and evaluate manpower use.

We do not believe the Army can effectively manage manpower or comply with zero base budgeting requirements without an integrated data system. Top management must direct and support the development of such a system and should consider the needs of all users of manpower data. The Army man need to get outside expertise to help design the system.

We recommended that the Army develop a management information system for its garrison units (primarily base operations) which use a common data base for work center needs, garrison costs, budget requests, allocations, and evaluations of manpower use. The information should integrate accounting, manpower reporting, and staffing standards information." page 12

"The Army's first priority is combat readiness, but it needs to make better use of its enlisted personnel during peacetime To do so we recommended that it designate a single authority to prescribe and enforce policies and regulations and establish a working system for managing and using its enlisted personnel as effectively as practicable. The Army continues to rely on the chain of command but is implementing a personnel development distribution management system to solve the kinds of problems we have been finding in our reviews. For example, The Army

-had not made suree enlisted personnel were sent where they were needed;
-had not made the best use of enlisted personnel with critically needed skills during peacetime;
-had overrecruited for cetain skills which were previously in short supply, and paid unnecessary enlistment bonuses; and
-had no criteria to gauge the training needed to maintain proficiency in a certain skill and, therefore, did not know how much time it needed to keep an enlisted person proficient in peacetime." page 24 and 25

"The Army's inventory of personnel who are qualified in many skills does not meet requirements. Moreover, Army regulations have not provided the headquarters effective controls to match available personnel and authorized spaces. During our review at Fort Carson, the Army's distribution of enlisted personnel was not in accordance with its priority distribution plan which shows where personnel are most needed. We found a similar situation where both the total Army and FORSCOM had surplus personnel in several critical skills, but some units had significant short-

ages." page 25

"The primary purpose of military forces in peacetime is to be prepared to fight in war. Because preparing enlisted personnel for combat is often less than a full-time job, deployable troops are abailable for peacetime duties. The problem is how to establish an effective feedback system on the status of readiness and also provide a useful management tool for other management actions. The Army's current readiness report focuses on status and, in our opinion, does not provide needed management information." page 30

CONCLUSIONS

"Work measurement standards provide the ability to monitor productivity and predict staff needs, but the Army's program has not achieved this potential. Inadequate policies, control, and information on the use of personnel is another symptom of Army manpower management problems. The Army, under its current system, cannot seek the most cost-effective mix of people, or make sure the chain of command properly uses available people.

To be effective, manpower management should cover all sources of labor so it can determine the best mix of manpower. Even though the Army has numerous constraints, such as ceilings on its various labor sources, a more integrated approach could consider needed tradeoffs and make sure data is available to justify total needs and determine adverse effects. For example, the Army should be able to show how using combat personnel for peacetime duties affects readiness, and the number of military positions by skill needed for rotation.

The Army should identify its expectations or goals on how enlisted personnel should be assigned and used and be able to monitor actions accordingly. If goals are selectively chosen and reporting systems integrated, paperwork should decrease because some reports could be eliminated. For example, standards by skill on the minimum training and experience needed to maintain proficiency would give local commanders more expertise on how to best use deployable personnel during peacetime." page 31 and 32

"Developing data for manpower management and budget purposes which is accurate, verifiable, and can directly relate manpower to workload requires a long-term commitment of resources. The Army has not provided the necessary top-level direction or made sure programs have adequate staff support.

Army headquarters must provide direction so that lower echelons in the orgainzation will develop a common data base for their use as well as to satisfy the needs of top management. Headquarters should also make sure the data is developed by the most cost-effective means and is accurate within acceptable limits. Enough qualified people must be provided to develop the information within a reasonable time." page 36

"Headquarters must provide direction and staff support in developing detailed requirements data. Without direction, the programs will continue to use data which is not valid and which does not meet the needs of all users. Without staff support the programs cannot provide accurate data or develop information with-

in a reasonable time. The Army may have to obtain outside help to properly design an integrated approach and provide adequate procedures." page 38

CONCLUSIONS

"The Army cannot effectively manage its Total Forces because of ill-defined and uncoordinted manpower management responsibilities and an ineffective management information system. Although it has recently consolidated many headquarters manpower functions, it still has no line of accountability for all manpower management functions.

The Army's decentralized management philosophy gives subordinate commands complete flexibility in managing resources. We are not recommending that the Army do away with decentralized management. But, to effectively use it, the Army needs a defined structure for setting goals, acquiring needed information, and establishing accountability to compare performance with goals.

In earlier reports, we have recommended the Army correct various problems. (See app. I.) It has corrected some, but many still exist. Some imporvements have been rather superficial because the Army is unable to view the overall effect of problems on total manpower functions. Other problems cannot or will not be corrected until headquarters emphasizes manpower management more. In either case, the problems cannot be corrected overnight; the Army's top leadership must make a long-term commitment to establish a control and feedback system for focusing management's attention on human resources. Correcting manpower management weaknesses will result in more economical and better use of human resources which account for more than 50 percent of all Army expenses.

The Army needs to continue to improve manpower management and consider the problems we and the Army Manpower Division studies have identified. It also needs to involve top-level managers from all manpower functions in planning improvements and obtain outside help when needed. The Army should strive for a coordinated system so that when one part of the system changes, related changes in other parts of the system can be traced and quantified." page 39

RECOMMENDATIONS TO THE SECRETARY OF THE ARMY

"To promote successful manpower management, we recommend that the Secretary of the Army design a manpower management system integrated at all organizational levels. The system should be designed to identify the functions and accountability of headquarters and commanders at each lower level so they can exchange information on goals and results. Functions should be tied together with common data bases and reporting systems which are simple and can be adapted to meet the manpower and budgeting needs of managers at all levels.

The manpower management system should be an extension of recent efforts to consolidate headquarters manpower functions. But it should do more than just consolidate these functions. The Army should develop a long-range plan, and in preparing and carrying out the plan the Army should:

-Involve top-level managers from all manpower functions and use outside expertise when appropriate to design the integrated system.
-Design management activities that use common data for operational and headquarters management as well as budget development.
-Allocate sufficient staff to develop the data base which manpower managers need." pages 40 and 41

Title: Army Guard And Reserve Pay And Personnel Systems Are Unreliable And Susceptible To Waste And Abuse

FPCD-80-30

DIGEST

"The Army Guard and Reserve payroll is about $1.3 billion. Management controls over this payroll and the related personnel systems are not adequate to prevent erroneous payments. Inaccurate drill attendance recording and reporting by Guard and Reserve units and inadequate error detection procedures at payroll processing stations are resulting in Guard and Reserve members being (1) erroneously paid for drills they did not attend, (2) paid twice for the same periods of training, or (3) paid by both the Active Army pay system and Guard and Reserve pay systems. In addition, vital personnel strength information maintained in the pay and personnel systems is frequently inconsistent, inaccurate, and can adversely impact on budget and mobilization plans.

ATTENDANCE REPORTING ABUSES

The Reserve drill pay system operates on an exception basis, i.e., Guard and Reserve personnel are automatically paid for scheduled drills unless the unit reports them absent.

The accuracy and propriety of drill payments depend on the attendance information submitted by the unit. It is at this level that pay system controls are the weakest.

Many Guard and Reserve units have abused attendance reporting by recording absent members as present at drill assemblies to show high attendance levels. The Army Audit Agency and other military review groups have frequently reported during the last several years that units are inaccurately reporting attendance and are not following required procedures. This includes counting members present for drill they did not attend, liberally granting excused absences without valid reasons, and failing to take appropriate action to remove reservists from the rolls for excessive unauthorized absenses." page i and ii

"To correct the problems in the drill recording and reporting system, GAO recommends a comprehensive compliance strategy be developed to strengthen the controls at all levels of the

Reserve drill pay system." page iii

"Vital information kept on Army reservists and guardsmen by they pay and personnel information systems is unreliable and contributes to the problems of erroneous payments. Members are often not entered or separated from both systems simultaneously, and are consequently overpaid, underpaid, or counted in strength figures long before or after they actually participate as drilling reservists. The Congress, Department of Defense, and the military conponents depend on information from these systems to assess strength levels, prepare budgets, develop mobilization plans, and project manpower losses and recruiting goals." page iv

"The analysis of the 1st Army management information system shows, among other things, that Reserve personnel strength is in error by 7 percent in accounting for increases and decreases in assigned personnel and is overstating strength by 3.6 percent or 3,550 reservists. In the Guard, about a 5-percent net variance exists between the total number of members in the National Guard Bureau personnel system and the pay system for District of Columbia, Indiana, and Virginia." page iv

"GAO believes that the reliability of the information in the pay and personnel systems is questionable primarily because data is not updated in a timely manner of information is lost, rejected, or erroneously changed. Therefore, GAO recommends that the Army give prompt attention to
-reconciling pay and personnel data vital to management needs;
-developing procedures to improve the timeliness, flow, and accuracy of source data; and
-developing programs to readily verify or correct information as the need arises." page iv and v

"To strengthen the controls over the drill pay system, the Army should, among other things
-redesign the automated pay system so that Army Reserve and Guard members who continually fail to attend training drills cannot be paid,
-identify members who are being paid incorrectly by both the Reserve pay system and the Active Army system and establish responsibilities and procedures to eliminate this condition,
-upgrade computer program edits, and
-make better use of the management information provided by the system to identify and correct problems." page v

"... we believe a design change should be made for positive attendance reporting and pay processing as part of the Army's plan to fully centralize Reserve and Guard pay processing during the early 1980's." page 5

"The accuracy and propriety of payments for weekend drills under JUMPS-RC depends on the attendance information submitted by the unit. It is at this level that JUMPS-RC controls are the weakest and most susceptible to fraud and abuse. The propriety of drill attendance information submitted for pay depends

on the integrity of the people responsible for recording and certifying unit attendance - the unit commander and his supervisory personnel." page 5

"USAFAC efforts to collect overpayments from Guard and Reserve members has not been very successful. During the 6 months ending June 30, 1979, over $909,000 in debts were referred to USAFAC for collection action. Respective collections by USAFAC during the same period amounted to less than 9 cents on the dollar. Officials in the Collection Division at USAFAC told us collection action is not started until a member is seperated and that the collection rate would improve if collection efforts were started earlier rather than many months after a member quits attending training drills.

In our opinion, many overpayments could be prevented by programing the Army Finance Center's computer to automatically assign members to a nonpay status after they have been absent for 3 consecutive months. Such members would be paid only if their respective unit commanders submitted documents to USAFAC stating they should be paid and removed from the nonpay status. Not only would this reduce overpayments but it could readily identify members who, if unexcused, should be ordered to active duty, discharged from the service, or transferred to a control group by State Adjutant Generals and Continental U.S. Army commanders." page 10

JUMPS-RC COMPUTER PROGRAM
EDITS NEED TO BE UPGRADED

"To insure that data entering the JUMPS-RC system is accurate, complete, and reliable, computer programs contain edit checks which detect missing or invalid data. Invalid and incomplete information is getting in to the JUMPS-RC system because
-additional edits need to be incorporated into JUMPS-RC computer programs to catch errors and
-unit and input station technicians process transactions which bypass the JUMPS-RC computer program edits." page 11

"We believe the JUMPS-RC system could produce a unit roster showing all JUMPS-RC pay accounts assigned to the unit and a 6-month pay history for each account. Unit commanders believe this kind of information would help them monitor drill attendance to insure that members were being paid correctly, and would help keep them informed of changes made to members' pay accounts.

FPCD-77-42 103773 September 29, 1977

Title: Urgent Need for Continued Imporovements in Enlisted Career Force Management

Findings: Enlisted force management plans specify the objectives of the services' enlisted management services. Years of service is the key to planning "objective career forces," a projection of what the service decides it needs in the way of career personnel. The services plan to achieve their objective career forces in 7 to 10 years. The 7 to 10 year lag is unnecessary and costly.

Recommendations to Congress:
The Secretary of Defense should: develop a system of automated programs which will permit evaluation of the services' program by individual occupational specialty; strengthen the Enlisted Management Systems Directorate so it can evaluate the services' enlisted grade requirements and long-range plans; establish a standardized methodology for determining costs of objective forces, including costs of changing from the present to the objective force; and establish, in conjunction with the services, a system comparable to the Navy's for uniform defense cost-benefit studies.

FPCD-78-61 107172 September 5, 1978

Title: Continuous Management Attention Needed for Army To Improve Combat Unit Personnel Requirements

Background:
GAO reports and Army studies during the past 14 years have shown widespread, serious weaknesses in the Army's system for determining personnel requirements for combat units. The Army's Manpower Authorization Criteria provides criteria for determining the staff needed for combat functions which have measurable workloads. Errors in estimating either workload or soldiers' available worktime can have a major impact of the number of soldiers available.

Findings:
In the past 15 years since the inception of Manpower Authorization Criteria, the Army has not solved its problem of determining and justifying manpower requirements. Shortcomings in methods for estimated both workload and available worktime used in the formula make the results unreliaable. A March 1978 proposal suggested new methods to model personnel requirements under varying wartime and peacetime conditions. This proposal provides an organized approach for improving the determination of maintenance personnel requirements and recognized the need for an orderly, concerted, and long-range improvement effort. When complete, it should provide a basis to account for the differences between wartime and peacetime requirements and should result in more efficient resource allocation, large scale economies, and improved readiness.

Recommendatins to Congress:
The Armed Services Committees should direct the Secretary of the Army to establish a comprehensive program for developing, implementing, and operating a reliable system to determine personnel requirements for combant units. The program should identify the system's objecttives and include Army funding, organizations, personnel, and other resources needed to acheive the objectives.

FPCD-78-82 108459 January 24, 1979

Title: DOD "Total Force Management" - Fact or Rhetoric?

Findings:

The Air Force is the only service with a total force management system; the Army and Navy have only recently started to develop a total force management system.

Recommendations to Agencies:
The Secretary of Defense should take the lead in developing with the services a comprehensive total force policy which includes all manpower resources. The policy should define: the objectives of total force management; the manpower elements of the total force and their respective peacetime and wartime roles; manpower systems that provide for integrated management; and the contributions of host nations' manpower in determining U.S. manpower requirements. The Secretary should prescribe guidance to help the services manage the total force, as follows: the services need to provide a balance between determining manpower requirements and the ability to acquire the desired mix; factors influencing short-and long-term manpower requirements; methodology to determine manpower requirements; cost elements to be used in figuring manpower; the need for cost benefit analyses in examining manpower mix alternatives; measures of improved capability over the current force and methods of effecting that capability; clarification of criteria used ot decide between performing in-house or contracting out for products and services; and the information needed by OSD (Office of the Secretary of Defense) to evaluate service requests.

FPCD-79-32 109425 May 21, 1979

Title: Improvements Needed in Army's Determination of Manpower Requirements for Support and Administrative Functions

Recommendations to Agencies:
The Secretary of Defense should identify the type of information the Army needs to prepare and support its manpower budget. The Secretary should require the Army headquarters to use personnel experienced in budgeting, manpower, workload planning and control, data processing, and work measurement to design a manpower management system. This system should have the following characteristics: (1) an organizational structure that combines the manpower-related responsibilities and staffing into one organization at all levels; (2) a methodology for determining manpower needs based on work measurement where it is feasible and cost effective, using onsite reviews only to review methods, procedures, and organizational efficiency in connection with the development and validation of staffing standards; (3) a management information system which uses a common data base for work center needs, garrison costs, budget requests, allocations, and evaluations of manpower use; and (4) a determination of the spaces needed to implement the system and an allocation of these manpower resources to the program.

PAD-77-8 100642 November 12, 1976

Title: Alternatives in Controlling Department of Defense Manpower Costs

Findings:
The portion of DOD's Budget that is related to manpower costs has increased because of switching to an all-volunteer force, adopting the pay raise comparability principle, rapid rises in military retirement costs, changes in the composition of defense manpower, and changes in grade distribution. Savings in manpower costs can be achieved only by reducing the number of personnel, reducing pay levels, or using personnel more efficiently. Manpower requirements depend upon perceived threats to national security. Reducing pay to achieve savings would require a judgment that present levels of compensation and recruitment policies could be adjusted to attract the needed manpower at a lower net cost. Potential efficiency improvements are in five areas: (1) reducing the size of headquarters and support functions; (2) relying on more reserve forces; (3) converting from military to civilian positions; (4) reducing military turnover; and (5) making training more efficient. (RRS)

## APPENDIX XIV.
## LIST OF OCTOBER 6-8, 1980 WORKSHOP ATTENDEES

## WORKSHOP ATTENDEES

| Name | Affiliation |
|---|---|
| A. Pete Jensen | Georgia Tech (ICS) |
| Jim Doyle | Georgia Tech (ICS) |
| James P. Fry | University of Michigan |
| J. R. Jeffrey | US Army Soldier Support Center |
| Glenn Racine | AIRMICS |
| Dale N. Murray | AIRMICS |
| Lou Sernovitz | AIRMICS |
| Robert L. Johnson | US Army Soldier Support Center |
| James Glymph | MILPERCEN |
| Deborah Wilson | Georgia Tech (ICS) |
| Jim Bingham | Georgia Tech (ICS) |
| Krishna Mitra | Georgia Tech (ICS) |
| Curt Welch | Georgia Tech (ICS) |
| Terry Keene | AIRMICS |
| Bob Hilton | The Coca Cola Company |
| Stephen Ratzel | AIRMICS |
| Dorothy Grayson | IBM Corp. |
| Robert Tabb | Arthur Anderson Company |
| Dave Jones | IBM Corp. |
| Paul Shinderman | General Research Corp. |
| Jack Funk | ODCSPER, HQLDA |
| Ken Millen | Management Science of America |
| Philip H. Enslow | Georgia Tech (ICS) |
| Eugene Wong | University of California, Berkely |
| Donald Atwater | UCLA |
| James Sheridan | AT & T |
| John Gehl | Georgia Tech (ICS) |


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