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AN ANALYSIS OF THE STANDARD
FINANCE SYSTEM (STANFINS)

by

Jimmy D. Stephens

December 1985

Thesis Advisor: Shu S. Liao

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The United States Army accounting systems are the backbone of the Army's formal financial management system. They have evolved from manual systems to current automated processes, increasing in scope and complexity along the way. The current Standard Finance System (STANFINS) is the Army's most widely used installation accounting system. This thesis briefly traces its evolution and examines its current processes in order to determine how well STANFINS is supporting resource management with respect to both a fiduciary and managerial role. Additionally, this study determines STANFINS's future involvement in the Army's efforts to improve financial management.

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An Analysis of the Standard Finance System (STANFINS)

by

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Submitted in partial fulfillment of the
requirements for the degree of

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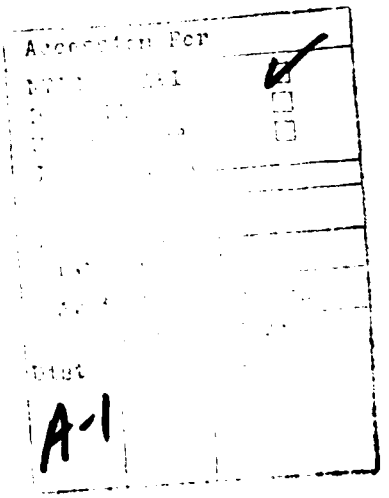
ABSTRACT

The United States Army accounting systems are the backbone of the Army's formal financial management system. They have evolved from manual systems to current automated processes, increasing in scope and complexity along the way. The current Standard Finance System (STANFINS) is the Army's most widely used installation accounting system. This thesis briefly traces its evolution and examines its current processes in order to determine how well STANFINS is supporting resource management with respect to both a fiduciary and managerial role. Additionally, this study determines STANFINS's future involvement in the Army's efforts to improve financial management.



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I. INTRODUCTION

A. THE NEED FOR SOUND FINANCIAL SYSTEMS

Since World War II, the Department of Defense and, in particular, the Department Army, has required more responsive and precise management information. As a result of the Army's advances in modernization and sophistication, its decision making processes have taken on ever increasingly important roles. Of particular concern, are those decisions involving the resource management community at the installation level. In an environment in which the use of scarce resources is closely scrutinized by the commander, installation financial managers must possess adequate information to be efficient and effective in mission accomplishment. accomplishment. Moreover, the situation is further complicated by governmental and public pressures. Because of these factors, there has been an increased emphasis on improving installation financial management. Specific reasons for the emphasis are increased internal information needs, budget constraints, greater Congressional oversight of resource utilization, and the inherent requirement to stay abreast of technology. In response to these forces, the Army has attempted to provide the resource management community with the best of financial systems. One such system, the installation level Standard Finance System (STANFINS), is the focus of this study.

B. OBJECTIVES AND SCOPE

The objective of this thesis is twofold: (1) To determine, through an an examination of the Army's Standard Finance System (STANFINS) and its processes, how well installation accounting is meeting its fiduciary and managerial roles in support of resource management; and (2) to

determine its future involvement in the Army's endeavors to improve financial management. While somewhat broad in scope, this analysis is intended to focus the research area mainly on the installation level with very little emphasis on the Major Command or Departmental level.

The study will initially provide a background of the evolution of Army financial systems and highlight key financial management events. This will establish a reference point for a better understanding of STANFINS's design and current processes. In order to assist in the evaluation of the system a conceptual approach to financial systems and regulatory requirements are discussed. The Standard Finance System is described and then evaluated for adequacy. Finally, the system's future role is determined and concluding remarks are offered.

C. METHODOLOGY

Information for this study was developed from a variety of sources:

1. Review of available literature.
2. U.S. Army Finance & Accounting Center (USAFAC) personnel.
3. Selected resource management personnel from field activities.
4. Selected field finance & accounting personnel.
5. My own experience and personal knowledge as a Finance & Budget Officer.

A preferred method for determining management information needs would have entailed the use of an Army wide survey. However, this was not attempted. For one, since STANFINS is a standard system, data from several installations was not necessary to conduct this study. Moreover, the Army is still trying to define exactly what the information needs are at the installation level. As such, surveys would not have provided a solid objective base for evaluative purposes.

D. THESIS ORGANIZATION

This thesis is organized into seven chapters as follows:

Chapter I provides a brief presentation on the importance of a financial system and the study's scope, objectives, and methodology.

In Chapter II, Army Financial Systems and key events impacting on the financial management community are presented as a guide for understanding STANFINS's development and current structure.

Described in Chapter III are financial control and information systems concepts plus financial system requirements as mandated by the Federal Government.

Chapter IV overviews the current STANFINS and documents its processes in terms of its system interfaces, support personnel, inputs, processing, automation, and reporting.

Chapter V evaluates STANFINS by using a conceptual financial control framework. Additionally, the system's future support role in installation financial management is determined.

In conclusion, Chapter VI summarizes study findings and offers recommendations.

II. FINANCIAL SYSTEMS BACKGROUND

A. EVENTS THROUGH WWII

Army financial systems' existence can be traced back to the birth of our nation. Earliest operational commanders did not play a significant role in the budget formulation of the material which their commands utilized. Financial management developed as a "line" responsibility with the commander being able to develop local systems subject to general guidelines from higher headquarters. Army systems remained unsophisticated through the end of WWII and were insignificantly influenced by line commander participation. Budgets were justified and managed by organizational elements which in turn provided funds to the operational units without reimbursement. As a result of the Army's fiscal documentation being recorded at summary levels, organizational managers began to rely on individual systems in order to meet their information needs. [Ref. 1: pp. 2-3]

Important developments within the federal government set the stage for financial management improvements. The Dockery Act of 1894 was a step to streamline, centralize, and simplify the financial management system. For about the next quarter century this act provided the federal financial guidance until the Budget and Accounting Act of 1921 was passed. A national budget system complete with the Bureau of the Budget (BOB, the predecessor of the Office of Management and Budget) and the General Accounting Office (GAO) were established by this act. Management reform initiatives that would later affect the agencies and departments were also important parts of the legislation. One such reform required agency directors to be responsible for budget submission to the Bureau of the Budget. Another key development occurred when Presidential power was increased

as a result of the President's Committee on Administrative Management in 1937. To facilitate management improvements within the federal government the President was given reorganization authority by Congress. Consequently, the Executive Office of the President (EOP) was formed with BOB under its "umbrella." With the progression of these events the natural tendancy for financial management was to develop in a centralized fashion. However, with changes brought about by the arrival of WWII, this centralized course began an opposite turn toward a decentralized environment. Government expansion in response to economic conditions coupled with WWII mobilization made it almost impossible to manage financial operations in a centralized mode. [Ref. 2: pp. 6-7]

B. THE GREAT LEAP FORWARD

After WWII, landmark legislation laid the framework for the Army's modern financial systems. Provided for under the National Security Act of 1948 were two key financial management positions: Comptroller of the Secretary of Defense and Comptroller of the Army. [Ref. 1: p. 3] The Budget and Accounting Procedures Act of 1950 was a significant attempt to improve and simplify accounting procedures within government. Each federal agency was to accomplish the following:

> Establish and maintain systems of accounting and internal control designed to provide for (1) full disclosure; (2) adequate financial information needed in management of operations; (3) effective control over income, expenditures, funds, property, and assets; and (4)reliable accounting results. [Ref. 3: pp. 834-836]

Public Law 84-863 (no title) passed in 1956 was a clarification and an improvement to the 1950 law. This specifically required the use of accrual accounting concepts in conjunction with cost-based or "performance" budgets. [Ref. 4: pp. 782-83] Also, near this time frame the

appropriation structure came into existence and classified resources by functions and input elements [Ref. 1: p. 3].

To comply with the previous legislative requirements, the Army Command Management System was established in 1956. With this system the installation commander had authority for managing those resources under his control. With the receipt of his funding document the commander had total flexibility beneath the appropriation level. Although the system was somewhat burdensome and had inherent weaknesses, it did, however, make a substantial contribution to resource management in the Army. In addition to the Army Command Management System the 1950's proved to be a decade of accounting improvements. Efficiency and standard cost concepts resulted from the use of revolving funds. With the Army Audit Agency at the forefront, internal auditing became a larger force in dealing with government wasted and mismanagement. Managers were becoming cognizant of the importance of sound financial management relative to their careers. Hand in hand with these improvements were selected work measurement programs, unit cost standards, and the importance of budget execution review and analysis. [Ref. 1: pp. 3-4]

C. MODERNIZATION

The Army's financial systems, which continued to improve with time, were primarily autonomous in nature until the very early 1960's. At that time Army financial management began to function in a reactionary mode--responding to the Office of the Secretary of Defense's (OSD) frequent changes. Reorganizations saw the deletion of certain organizational elements which previously had served as budget managers and functional transfers from the Army to the Defense Agencies. The Army's mission had now become one of equipping and training a force that had become an integral part of an interdependent Defense relationship. [Ref. 1: p. 5]

The efficient use of military resources and economic trade-off decisions were first addressed in the late 1950's by two economists, Charles J. Hitch and Roland N. Mckean who stated that,

> Increased recognition and awareness that military decisions, whether they specifically involve budgetary allocations or not, are in one of their important aspects economic decisions; and that unless the right questions are asked, the appropriate alternatives selected for comparison, and an economic criterion used for choosing the most efficient,military power and national security will suffer. [Ref. 5: p. 107]

Management systems within DOD did not adequately address the economic trade-off issue and, as a result, the Planning, Programming, and Budgeting System (PPBS) was instituted in 1961 under Robert McNamara's reign as Secretary of the Defense. In order to link budgets and plans as part of an integrated system, a program structure of ten major programs was developed. PPBS called for a five year pricing feature and use of systems analysts armed with computers and quantitative techniques.

Attempts to improve the Army's budget execution under the Command Management System were adversely affected by continued dynamism. Sound analytical justification was a requisite under the PPBS System. As a result of a shortage of well qualified system analysts, the Army did not initially do well under this system. Although the Army improved during a slow maturation process, its capabilities for budget execution review and analysis became weakened. [Ref. 1: p. 5]

In the summer of 1965 the Defense Comptroller, Dr. Robert N. Anthony, began an effort to make sweeping changes in programming, budgeting, and accounting systems. Known as Project PRIME (Priority Management Efforts), this undertaking involved the following items as described below:

1. It was concerned with operating resources as contrasted with investment resources. It's primary focus was on the Operational Maintenance and Military Personnel appropriations.
2. Programming, budgeting, and management accounting would have an integrated structure with consistent information.
3. The focus was on expenses, that is, on the resources consumed by organizational units in carrying out their part of the program. [Ref. 6: p. 5]

Because of the previous Command Management System developments, the Army only required few changes to implement the PRIME initiatives. [Ref. 1: p. 6].

The Vietnam era was a unique period for Army financial management. Actually budgeting for war for the very first time, operational demands for resources won out over fiscal controls. Strategic planning efforts to enhance financial systems was hampered by the resulting instability. Despite OSD's efforts toward decentralization, the 1970's saw more emphasis on centralization. Technology, potential cost savings and benefits, and force manning constraints greatly influenced the demand for standard information systems. In response to this demand the Army established the Standard Finance System (STANFINS) in 1970. Implemented at the installation level, this system provided for fund control at the program manager level. [Ref. 1: p. 7]

Although most systems immediately preceding STANFINS were manual in nature, there were some automated installation or command unique systems in existence. These automated systems, albeit crude with respect to today's technology, were useful in modeling for a standard system. STANFINS evolved from the Base Operating System (BASOPS) which was originally envisioned to be a big "interactive" standard financial system. BASOPS was to have had three

packages--standard accounting, logistics, and personnel. However, this system never really materialized as such. From the standard accounting package of the BASOPS concept emerged STANFINS as a financial system. But the original intent of STANFINS was not that of a financial management support package, but rather an accounting system to be used for reporting up the chain of command. With system enhancements in 1972, STANFINS came into being as a legitimate standard system. [Ref. 7]

III. FINANCIAL CONTROL SYSTEMS-A CONCEPTUAL FRAMEWORK

A. FINANCIAL CONTROL-A SUBSET OF MANAGEMENT CONTROL

The management process has traditionally been defined to include the functions of planning, organizing, leading, and controlling. With respect to organizations both its members and other resources are critical elements in management's efforts to achieve organizational goals. Controlling is the management function which acts as a vehicle to ensure that organizations move in the direction of their desired goals. As organizations have grown in terms of size and operational complexity, the controlling function has become key to the effective management of resources.

More detailed examination of this control function is necessary because of its definition scope as described by Anthony, Deardon, and Bedford: "Control is a broad concept applicable to people, things, situations, and organizations" [Ref. 8: p. 4]. Understanding of this concept has been facilitated by the stratification of the planning and control functions. The three activities that emerge are strategic planning, management control, and task control. Strategic planning involves the formulation of organizational goals and general strategies to be implemented for goal attainment. Management control occurs after the strategic planning process. Once the strategy phase is completed, management control acts as the "vehicle" to ensure organizational intentions are being followed. Lastly, task control is the more finite control of individual work activities and can be thought of as operating simultaneously with the management control process. [Ref. 8: pp. 14-17]

Although these processes are overlapping, one can readily see from a comparison of strategic planning and

management control, that they are still distinct in character. Strategic planning involves the highest levels of management dealing with many variables to document desired results. In contrast management control is concerned with line/senior managers faced with less variable complexities in efforts to achieve desired results. Another very important distinction is that strategic planning deals with a much longer time span than does management control. [Ref. 8: pp. 14-24]

As an aid to achieve organizational control, management control systems are normally centered around a financial structure where resources are valued monetarily. A concept relative to this structure is that of accounting control which has been employed for several years in the business world. Because of the increase in scope and persons involved in accounting control, this term can be closely identified with management control. [Ref. 8: pp. 13-25] In organizations resources provided to managers cannot be adequately monitored by higher management unless a system for management control is present. Introduced here to accomplish that task is the notion of financial control as described by Deardon:

> The purpose of a financial control system is to assist in providing this control. In other words, economic resources are a subset of the total resources of a company. The financial control system, then, is a subset of the total management control system. For practical purposes I have defined economic resources as those resources traditionally measured by the accounting system. [Ref. 9: p. 199]

Since management control involves a systems approach, it is appropriate to highlight common objectives of financial control systems. In his article about financial management system reviews Steininger lists five fundamental objectives that any system should encompass:

1. Necessary financial information in support of managerial decisions.
2. Complete financial disclosure of organizational results.
3. Reliable accounting data as a means for putting together a budget and monitoring its execution.
4. Provide for asset control/accountability.
5. Be able to integrate with necessary financial systems. [Ref. 10: p. 20]

In the control process an organization's management information system becomes an extremely important element. If managers are provided with accurate, timely, and complete information, they may exercise effective control which is an essential ingredient for goal realization [Ref. 11: p. 64]. Within this management information systems framework there is an integral part which is identified as the financial information system. Primarily concerned with the flow of dollars, the financial information system produces two types of information, internal and external. In the attempts to measure this flow, inputs are collected and transformed into accounting statements and various management reports. Management's internal needs are satisfied with information that enables them to efficiently manage day-to-day cash operations, gauge budget performance, and establish forecasts. Organizations also have a responsibility to provide information (external) to its shareholders, vendors, financial analysts, educators, regulatory bodies, and other interested parties. [Ref. 12: pp. 476-487]

To avoid costly dysfunctions the financial management system must operate within prescribed limits. A method for determining whether a system is on track in support of objectives involves the use of systems design principles. Non-adherence to a principle adversely affects the system's adequacy. Bower, Schlosser, and Zlatkovich identified nine such principles of design as follows:

1. Reasonable Cost. Considered the most important, this principle states that needs for required procedures and optional features should be met at a reasonable cost.
2. Report. Should be designed for effective reporting of internal and external information.
3. Human Factors. Since personnel are ultimately responsible for system effectiveness, human factors must be taken into account.
4. Organizational Structure. Given a clearly defined structure, the system should be geared to the organization's information and control needs.
5. Reliability. The system should be designed to ensure the reliability and accuracy of financial data with minimal error.
6. Flexible, Yet Uniform And Consistent. It should provide for reasonable standardization and consistency but allow for flexibility to accommodate change.
7. Audit Trail. It should allow for ease of tracing procedural steps in support of detail analysis of summary totals.
8. Data Accumulation. Planning, control, and administrative routine information should be provided by efficient , quick data recording and classification.
9. Data Processing. For information reliability and to make control easier, the system design should provide meaningful and continuous data flow which is controlled. [Ref. 13: pp. 18-19]

This overview of what management control encompasses and in particular, financial control concepts, provides a framework for exploring the adequacy of a financial control system. Although by no means exhaustive and complete, it will, however, serve as a conceptual base for analysis. For

useful purposes in later discussion the financial control system and the financial information system can be thought of as synonymous concepts.

B. FEDERAL FINANCIAL CONTROL REQUIREMENTS

The roots of modern federal financial control first appeared as a result of the first Hoover Commission (1947-49). Management efficiency recommendations of this commission were implemented with the passage of the Budget & Accounting Act of 1950. Through its direction, executive agency heads were tasked with the responsibility of implementing and maintaining accounting systems which provided for sufficient internal controls. [Ref. 2: p. 7] Agency in this sense is synonymous with department, and accordingly, the Department of the Army comes under this cognizance.

These systems must be operated in accordance with the General Accounting Office's (GAO) principles, standards, and associated guidance as promulgated by Title 2, GAO Manual For Guidance of Federal Agencies. Not only does GAO prescribe principles and standards, but also serves as both approval and review authority for these systems. To ensure that accounting systems and internal controls are in compliance with the above GAO requirements, the Federal Managers' Financial Integrity Act of 1982 mandates that each agency attest to adherence. [Ref. 14: pp. 1-17,18,2-1] Notwithstanding the various statutory accounting responsibilities, management's role is the fundamental key to success as stated in Title 2:

> The ultimate responsibility for good accounting systems and for financial statements remains with management. Good financial management is dependent on strong financial management systems, including accounting systems containing sufficient discipline, effective internal controls, and reliable financial information. Financial statements prepared in accordance with these standards are part of the discipline and quality of the accounting system, and it is the primary responsibility of management to ensure that the financial statements and accounting systems comply with these standards. [Ref. 14: p. 2-1]

The basis of the accounting standards are derived from objectives and concepts of federal accounting and financial reporting. Two major objectives of accounting and financial reporting as described in Title 2 are resource allocation (the process of budget authority distribution and determination of resource utilization) and assessment of management performance and stewardship. [Ref. 14: p. 2-3] Additionally, as relates to concepts, providing useful information is the primary concern of federal government reporting. Information is only considered useful because of certain characteristics. The seven characteristics of financial information listed in Appendix I of Title 2 are as follows:

1. Timeliness: This enables the user to obtain the maximum benefit from prompt financial reporting and calls for prompt transaction recording.
2. Relevance: The role that information plays to affect a decision outcome by providing user assistance about past, present, and future events.
3. Reliability: Considered reasonably error and bias free, information is presented in good faith.
4. Cost Benefit: If costs exceed benefits, information would not be provided except for statutory or certain specified purposes.
5. Materiality: This is the magnitude of the information or the nature of an item which would affect a reasonable person's reliance on the information.
6. Comparability: Information value and usefulness depend significantly upon the extent of which it is comparable to prior period information as well as to like information reported by others.
7. Consistency: The information produced by an entity using the same method over a specified time frame. [Ref. 14: pp. 8-9]

Guidance for the development, operation, assessment, and reporting requirements of federal financial management systems is provided for under OMB Circular A-127, "Financial Management Systems." In order to be in compliance with statutes as well as federal guidance, systems must meet the following objectives as set forth by the Circular:

1. Systems Operations. This requires the use of the finest current technology subject to reasonable cost to achieve objectives of usefulness, timeliness, reliability and completeness, comparability and consistency, and efficiency and economy. These operations objectives are as listed:

   a) Usefulness. This involves collection and processing of financial management data only to meet specific internal management needs or external requirements. It requires tailoring of reports to specific user needs and the termination of reports which are not cost effective.

   b) Timeliness. The recording of financial management data is required as soon as possible after an event takes place.

   c) Reliability and completeness. Information must be accurate, complete, verifiable and extracted from official records and systems. Information detail required only as necessary to meet management needs and external demands.

   d) Comparability and consistency. The recording and reporting of data should be in a like manner throughout the agency. Synchronized accounting and budgeting is required. Current definitions and classifications will be incorporated into new and revised systems.

   e) Economy and efficiency. Costs for the system design and operation will be within reason subject to OMB guidance. Overly costly systems shall be eliminated. This will be implemented by planning and evaluation, data sharing, deletion of overlap and redundancy, and the use of current, successful technology.

2. Systems integrity. System design, operation, and evaluative controls will be in compliance with OMB directives.

3. Support for budgets. This calls for the recording, storage, and reporting of data in such a manner to aid the budget process. Uniform classification of data shall be detailed enough to adequately support budget formulation and execution.

4. Support for management. Recording and reporting of data will be accomplished in such a way to assist program and administrative managers in handling their financial responsibilities. The financial management base shall be accurate, coherent, and timely.

5. Full financial disclosure. The recording and reporting of data as prescribed by OMB or Treasury shall enable accountability and complete disclosure in compliance with budget and accounting principles and standards. [Ref. 15: pp. 1-6]

In addition to the aforementioned guidance, other directives and legislative requirements have a significant impact on financial control. Recognizing the need for strengthening internal control within the Federal Government, OMB issued Circular A-123 which prescribed agency policies and standards for internal control programs to combat fraud, waste, abuse, and poor management. The passage of the 1982 Federal Managers' Integrity Act (Public Law 97-255) required internal accounting and administrative controls to be in accordance with GAO standards (also updated in Revised Circular A-123). [Refs. 16,17: p. 1, 3]

Within the Department of the Army, control over the distribution of the Operation and Maintenance appropriation is accomplished through the use of a Funding Authorization Document (FAD) which is issued to an installation from its major command. Administrative control of these funds is specifically addressed by the Anti-Deficiency Statutes (31 U. S. C. 1517) and implemented by AR 37-20- Administrative Control of Appropriated Funds. Major provisions of 31 U. S. C. 1517 are as follows:

1. Any officer or Government employee is forbidden from authorizing or incurring an obligation over the available amount of the appropriation or over the amount allowed by agency regulations.
2. Appropriated funds will only be used for their stated purpose as authorized by Congress.
3. Mandates apportionment by regular intervals; by activities or functions, or a mixture of both. [Ref. 18: pp. 1-2]

One last document is Army Regulation37-108- General Accounting and Reporting For Finance and Accounting Offices. Principles, standards, and procedural guidance for the design, alteration, and operation of the Army installation financial accounting and reporting system are issued by this regulation [Ref. 19: p. 66].

As government continues to run huge deficits and add to the existing astronomical national debt, resources have become even more scarce than ever before. Public awareness and constant media disclosure have contributed to the need for improved financial management and greater accountability. Clearly, effective and efficient accounting systems are key to the financial management community being able to successfully respond to this challenge. Concern for the government's "stockholders"--the tax paying public--resulted in the proliferation of rules, guidance, and regulations to insure the existence of adequate financial control systems.

IV. THE STANDARD FINANCE SYSTEM (STANFINS)

A. SYSTEM OVERVIEW

The Standard Finance System exists as a totally automated Army wide installation level financial system which performs general fund accounting. However, it presently operates without being a GAO approved system [Ref. 20]. One exception to Army wide usage is that of the Army Materiel Command (AMC) which has its own unique systems [Ref. 21: p. 8].

The primary goal of STANFINS as stated in the STANFINS User's Manual is to improve and standardize the means for the accumulation, reporting, and utilization of financial management information at the installation level. Specific objectives of the system also found in the Manual are listed in Appendix A. Accounting support with STANFINS involves those installations and activities which are mostly financed with consumer funds (primarily the Operations & Maintenance appropriation) [Ref. 22: p. 21]. Major commands (MACOMS) that are serviced by the systems are as listed below:

1. US Army Forces Command (FORSCOM)
2. US Army Training and Doctrine Command (TRADOC)
3. Eighth US Army, Korea
4. US Army Japan (USARJ)
5. US Army Western Command (WESTCOM)
6. US Army, Europe (USAREUR)
7. Military District Washington(MDW)
8. Intelligence and Security Command (INSCOM)
9. US Army Reserve Components Personnel and Administration Center (RCPAC)
10. US Military Academy (USMA)
11. US Information Systems Command (USAISC)
12. US Army Health Services Command (HSC)
13. US Army Recruiting Command (USAREC) [Ref. 20]

Within the installation, STANFINS's complexity of support to organizations varies according to the number of program/activity directors and type funding [Ref. 20]. STANFINS is that part of the installation's management control system which assists the commander in his quest to achieve effective and efficient operations. It serves as a means to report on the stewardship and utilization of resources at the installation. [Ref. 19: p. 32] The Director of Resource Management (DRM) at each installation advises and assists the commander on all financial and related activities. In this capacity he uses STANFINS as an information tool to address these areas.

Consumer funds, with emphasis being on the Operations & Maintenance, Army (OMA) appropriation, pay for those supplies and services which installations use in the course of their everyday mission requirements. Specifically, these functions include the following items:

> Training, Soldier Support Programs, Equipment Maintenance, Recruiting & Retention, Fuel, Repair Parts, Utilities, Facilities Maintenance, Food Service Operations, Shipment of Supplies, Medical, and Equipping the Force [Ref. 23: p. 5].

The magnitude of dollar accounting in these functional areas is fairly significant in relation to the Army's Budget. For example, in 1984 the OMA appropriation amounted to $17.3 Billion of total obligational authority or approximately 26% of the entire Budget [Ref. 24: p. 53]. In addition to accounting for the obligation and expenditure of appropriated funds, STANFINS provides fund control through recording of fund authorizations [Ref. 25: p. 46]. Issuance of a Funding Authorization Document is the installation's authorization to obligate funds. It identifies the appropriation and budget programs available for obligation as well as imposing certain administrative and legal fund

restrictions. Types of financial authorizations are direct obligation authority, funded reimbursement authority, and automatic reimbursement authority. [Ref. 19: pp. 90-92] The document's relation to STANFINS is described below:

> The FAD is not normally considered the source document for STANFINS but rather as a control document to ensure that fund distributions do not exceed any of the authorized amounts. The Budget Officer will provide the FAO with distribution documents for all applicable elements of the funding authorization. [Ref. 26: p. 28]

As alluded to previously, STANFINS does not cover all of the Army's operational environments as illustrated below:

> Status and cost accounting are performed for other appropriations, but only to the extent necessary to meet external reporting requirements and to preclude violations of statutes or other directives. Where full detail cost accounting is required, it must be accomplished outside the mechanized process of the current STANFINS. [Ref. 22: p. 18]

Financial transactions and related requirements are assimilated by the automated processes of STANFINS. The system produces and maintains (including periodic updating) the necessary financial data base from which statistical reports can be extracted as well as other data which provides input for updating higher level data bases. [Ref. 20]

STANFINS includes several features which provide for accurate and dependable data and ensure effective and efficient system operation. Some of the more important characteristics, which are mentioned by the User's Manual are as follows:

1. Automated Financial Control Register (AFCR). This provides a recapitulation of financial transactions broken down by cycle (i.e. daily, monthly) and categorized by dollar amount and item count. It provides a good source for manpower data because it reflects collection, disbursement, and interfund

bills (these are supply items ordered from other than local purchase and subsequently billed to the FAO by the National Inventory Control Point). The AFCR also serves as an "in-house" tool for the FAO in that it assists with balancing the Finance & Accounting Officer's Statement of Accountability.

2. Management by Exception. The system provides for exception reporting when normal data input is outside the predetermined parameters. Transaction by transaction error listings are minimized as much as possible. Responsible individuals are provided enough information without the burden of unnecessary data.
3. Accounting Processing Code (APC). Financial information is entered to the system of accounting data by means of a four character code which is locally assigned. It identifies the financial user at the installation level.
4. Internal Reports. Managers are provided reports which reflect the status of operations and assist in mission performance. These reports are produced by daily, weekly, monthly, and as required cycles.
5. Source of data. The system's coding structure is designed such that it allows for the maximum use of source documentation in the data conversion to machine language. Tape and punch card material external to the system can readily be processed without manual interruption.
6. Process Creations. Input transactions which fall into certain categories will cause the system to create related transactions. This greatly reduces time and effort as well as ensuring output accuracy.
7. Recording Transactions. The recording and reporting of financial transactions must be accomplished in the monthly accounting cycle. [Ref. 27: p. 5-6]

Costs can be tracked by STANFINS according to the Army Management Structure (AMS); by elements of expense; and by accounting processing code (code). The AMS code (eleven position) is uniformly defined by Army Regulation 37-100-FY and provides a method of classifying financial transactions by activity. A four digit classification code, the element of expense identifies the acquisition or consumption of goods and services by their nature. Example summary EOEs are as follows: 1100 Series- Personnel Compensation, 2600 Series- Supplies and Consumables, and 2200 Series- Transportation of Things. There are twelve major categories of EOEs. Designed by each installation, the four position code of the APC is a useful aid because it links the AMS code to a particular unit/activity. The APC may be viewed as the installation's mechanism to identify individual cost centers. [Ref. 28: pp. 8-10]

The data base for STANFINS is not a single file or even a few files but exists as a rather complex network of several tape and disk files which are related. Master tape files which make up STANFINS history and subsidiary files house detailed transaction data. Updating of the data base is effected after a particular processing cycle is run. Within the data base is found the ever important account-the general ledger which actually is a group of files of summary data. Balances of these accounts are maintained by AMS code and by Elemnts of Expense. [Ref. 28: pp. 15-17]

B. MAJOR SYSTEM INTERFACES

As an interactive system, STANFINS interfaces with other automated systems as depicted in Figure 4.1.[1] Interface can be defined as a system which feeds into the STANFINS system. Major system interfaces are as described below:

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[1]From p. 63 of Ref. 19.

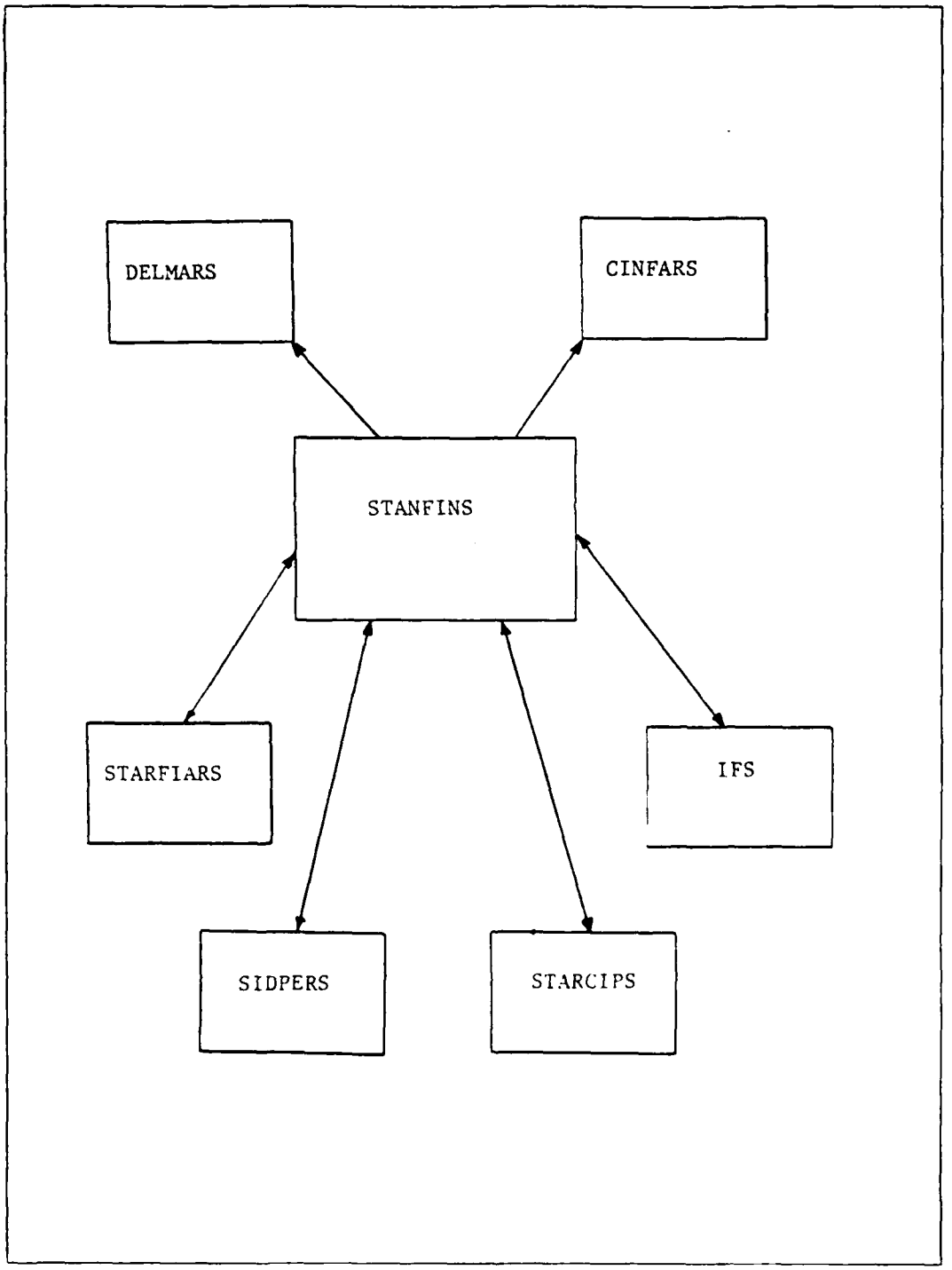

Figure 4.1 Major System Interfaces.

1. Standard Army Inventory Accounting and Reporting System (STARFIARS). Retail stock fund financial inventory accounting is accomplished by this system. In doing so, supply transactions are passed to STANFINS and disbursement/collection data is provided to STARFIARS from STANFINS.
2. Standard Army Civilian Pay System (STARCIPS). This system provides support to DA civilians to include processing of pay deductions, contributions, and leave information. STANFINS receives manpower and cost data from STARCIPS to account for labor expenditures and provide reporting data for budget and manpower use.
3. Integrated Facilities System (IFS). Information to facilitate the control of real property is provided by this system. One of its modules, the Facilities Engineering Management System is based on a job order concept. IFS provides a labor cost tape for input to STANFINS.
4. Standard Installation/Division Personnel System (SIDPERS). This is the military personnel management system which provides input transactions (military strength data) to STANFINS for labor expense.
5. Commercial Integrated Financial Accounting and Reporting System (CINFARS). This system is a Major Command accounting and reporting system. Installation appropriation and budget data are provided by STANFINS for input to the system. Although not really a pure interface, it is considered a by-product.
6. Data Element Management Accounting/Reporting System (DELMARS). This system provides expenditure data to a DA data base at USAFAC in order to comply with Treasury Department requirements. STANFINS reports

this information via the DELMARS system. This is also viewed as a by-product and not a pure interface. [Refs. 29,19: pp. 61-63]

C. SYSTEM SUPPORT PERSONNEL

System support personnel (other than computer types) who work day in and day out with the STANFINS processes are the accountants of the installation Finance & Accounting Office. Although budget personnel ultimately manage STANFINS's output, the accounting personnel can be viewed as "managers of the system." Collectively, they are known as the Accounting Division and their role is described as follows:

> The Accounting Branch is responsible for analyzing, recording, summarizing, verifying, and reporting accounting transactions and for maintaining fund controls to preclude overobligation of appropriated funds. The accounting transaction involved are the following: (1)expenditures; (2)reimbursables; and (3)miscellaneous. The Accounting Division controls records needed to reflect accurately the financial transactions of the installation. [Ref. 19: p. 54]

The Accounting Branch is structured by four clearly defined sections of Control, Accounts Maintenance, Analysis and Reconciliation, and Stock Fund. Major functions of each section are listed below:

1. Control Section: Responsible for receipt and control of the majority of accounting documents to include block ticket preparation and document disposition; responsible for both general and subsidiary ledgers for General Funds; coordinates computer processing activity; and ensures that selected reports are correct.
2. Accounts Maintenance Section: Has responsibility for fund document review; maintains informal commitment records prior to obligation; certifies fund availability; after receipt of obligation documents, cancels recorded commitments and adjusts records as

necessary; and verifies general ledger amounts with unliquidated obligations.

3. Analysis and Reconciliation Section: Maintains original vouchers until transmitted to USAFAC; responsible for reconciliation/analysis of records, reports, and supporting documents to include initiation of adjustments; reconciles monthly general ledger balances with applicable records; provides an internal audit function; and prepares various reports.
4. Stock Fund Section: Maintains accounting records and reports for the installation stock fund inventories. [Refs. 29,19: pp. 54-58]

The Accounting Branch is managed by the senior Operating Accountant, an individual who typically holds the civil service grade of GS-12 (grade structure varies slightly from installation to installation). This Branch Chief is subordinated to the installation Finance & Accounting Officer. An example of accounting manpower authorization is shown in Table I and Table II which represent actual Table of Distribution & Allowance (TDA) data for the Ft. Ord Accounting Branch. [Ref. 29]

One other very important member in the STANFINS process is the Installation Accountant. The distinction between the two types of senior accountants is the fact that the Installation Accountant's function mainly involves planning vice the Operating Accountant's role as an implementer and manager of the accounting activities. Most often found organizationally in the Directorate of Resource Management, this systems accountant who generally holds a GS-12 grade is the principle advisor concerning accounting policy, programs, and systems. In this capacity he works closely with financial managers as concerns their accounting policies and decisions. Also, he interprets directives and

TABLE I

ACCOUNTING BRANCH MANPOWER

HEADQUARTERS

1-GS12
1-GS11
1-GS 4

CONTROL SECTION

1-GS8
1-GS7
1-GS6
3-GS5

INSTALLATION ACCOUNTS SECTION

1-GS8
4-GS6
4-GS5
1-GS4

A & R SECTION

1-GS8
1-GS7
2-GS6
3-GS5
1-GS4

STOCK FUND SECTION

1-GS8
3-GS6
1-GS5

regulations which are received from higher headquarters as well as monitors STANFINS outputs for systemic errors. Also, responsible for implementing systems change packages, he serves as the coordinating link to the Directorate of Information and Management. Accountants are divided into two career categories: GS-525 Accounting Technician/Accounts Maintenance Clerk and the GS-510 Accountants who are the higher level managers. Representing the backbone of the system, the GS-525 technicians ensure

TABLE II

ACCOUNTING MANPOWER RECAP

TOTAL AND GRADE

1.....GS-12
1.....GS-11
4.....GS- 8
2.....GS- 7
10....GS- 6
11....GS- 5
3.....GS- 4

the correctness of the accounts as well as function in an advisory capacity to the financial managers (i.e. the program/actvity directors). To gain entry to the 510 series one must either have a bachelor's degree or have successfully completed 24 hours of undergraduate accounting. Limited training is available to both series. The 510 series accountants usually gain experience from on-the-job (OJT) training. Formal training consists of attending the four week Military Accounting Course conducted by the Finance School at Ft. Harrison, Indiana. The course which employs a STANFINS model is intended to provide a working knowledge of principles, rules, procedures, and reporting of OMA and Family Housing Management appropriations. Attendance is reserved for employees who are in the grade of GS-7 or above and waivers must be requested for lower grade personnel. A natural progression of education is attendance at the PPBES and Military Comptrollership courses. Training for the 525 series is conducted mostly via OJT, but other sources are available such as correspondence courses,

training extension courses (TEC), and training through the Office of Personnel Management's (OPM) Office of Training and Development. [Ref. 29]

D. INPUT AND PROCESSING

STANFINS receives input by two basic methods-- direct and via the Army standard system interfaces as previously described. Direct input comes from other installations, the installation Program/Budget Office, non-integrated disbursing offices (which are offices without internal accounting support), program/activity directors of installation units (to include tenant units who are not part of the installation command structure), and from the Finance & Accounting Office itself. Documents which are under transmittal control are received for input processing by the Control Section, Accounting Branch of the Finance & Accounting Office. A general description of direct input is as follows:

1. Other Installations. These are disbursements and collections which were transacted at an away installation citing the installation's funds (known as a transaction by others or TBO).
2. Installation Program and Budget Office. This office inputs dollar ceilings which are taken from funding authorization documents issued by the MACOM.
3. Non-Integrated Disbursing Offices. Typically these inputs are for tactical type units which rely on the installation FAO for expenditure accounting and reporting.
4. Program/Activity Directors (including tenant organizations). Input examples are temporary duty (TDY) data, contracts, receiving reports, and print orders.
5. The Finance & Accounting Office. Adjustment entries are made to correct obligations, accruals, and disbursements which had previously been recorded in error. [Ref. 29]

Types of transaction inputs can be grouped as funding transactions, obligations, accrual expenditures, expenses, disbursements, general ledger transactions, inquiries, and corrections. Major documents which are transmitted to the Finance & Accounting Office for input are shown in Table III. [Ref. 28: pp. 5-7]

The system provides for sophisticated predetermined editing/balancing routines upon processing as described below:

> All data must pass a series of edit master files as well as compatibility edits when specific data elements are entered as part of a transaction. All erroneous data detected by the edit routines will be suspended by block during processing, and the entire block of transactions will not be released until corrections are submitted. [Ref. 28: p. 13]

Transactions which affect asset, expense, income, and liability accounts are entered into STANFINS as source documents. As previously mentioned, they are transmitted to the Accounting Division for processing. Once documentation is found to be accurate, complete, and possess a valid accounting classification, control is initiated by sorting of documents by like transaction to facilitate their preparatory coding for computer input. Throughout the processing phase, documents are physically controlled by an installation block ticket. Data conversion, performed at another location within the FAO, is presently being conducted by keypunching data to a disk which is then converted to tape at the close of the business day. After forwarding to the installation Data Processing Center (DPC), the tape is transmitted to the Vertical Installation Automation Baseline (VIABLE) Regional Data Center (RDC) for the actual mechanized processing. Once the data is processed and the data base updated, the RDC sends back an output reporting tape to the installation. The VIABLE System will be

TABLE III

STANFINS SOURCE DOCUMENTATION

Obligation Documents:

- bills of lading
- civilian payroll vouchers
- contracts
- journal vouchers
- miscellaneous obligation documents(MODs)
- purchase orders
- requisitions
- travel orders

Accrued Expenditure Documents:

- bills of lading
- civilian payroll vouchers
- delivery orders
- invoices
- journal vouchers
- receiving reports
- travel orders

Disbursement Documents:

- civilian pay vouchers
- commercial payment vouchers
- fund transfer vouchers
- journal vouchers
- military pay vouchers
- reimbursable billing vouchers
- travel vouchers

Collection Documents:

- cash collection vouchers
- fund transfer vouchers
- journal vouchers
- reports of deposit
- schedules of voucher deductions

Expense Documents:

- journal vouchers
- monthly military labor summary
- monthly statement of borrowed labor

discussed in more depth in a later section. A general processing overview is depicted by Figure 4.2. [Ref. 29] Six processing cycles are available for utilization in the STANFINS system. As listed in the DA STANFINS Training Package, they are summarized below:

1. Daily. Direct source documentation received by the FAO and cards/tapes which result from interface systems like STARFIARS are processed into the system by this cycle. Figure 4.3[2] charts the typical cycle flow. Input is edited, processed, or rejected. Files are updated by the accepted data. Outputs are produced as management reports. This cycle is not necessarily run on a daily basis.
2. Weekly. Shown as Figure 4.4,[3] this cycle is run at irregular intervals and produces outputs by reformatting daily transactions.
3. Monthly. External reports are produced to satisfy higher level reporting requirements (Figure 4.5).[4] Included are the DELMAR expenditure reports and the Integrated Command Accounting & Reporting Package (ICAR).
4. Quarterly. Information produced by this cycle is for budget and external purposes.
5. Year-End. Its function is to make a files transition into the new fiscal year and close out old files.
6. As Required. This cycle is initiated at the direction of the FAO. It provides a listing of unliquidated transactions and ages unliquidated obligations. Also, adjustment transactions may be initiated by reinputing cards produced by the cycle. [Ref. 30: pp. 4-5]

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[2]From p. 117, Ref. 26.

[3]From p. 118, Ref. 26.

[4]From p. 119, Ref. 26.

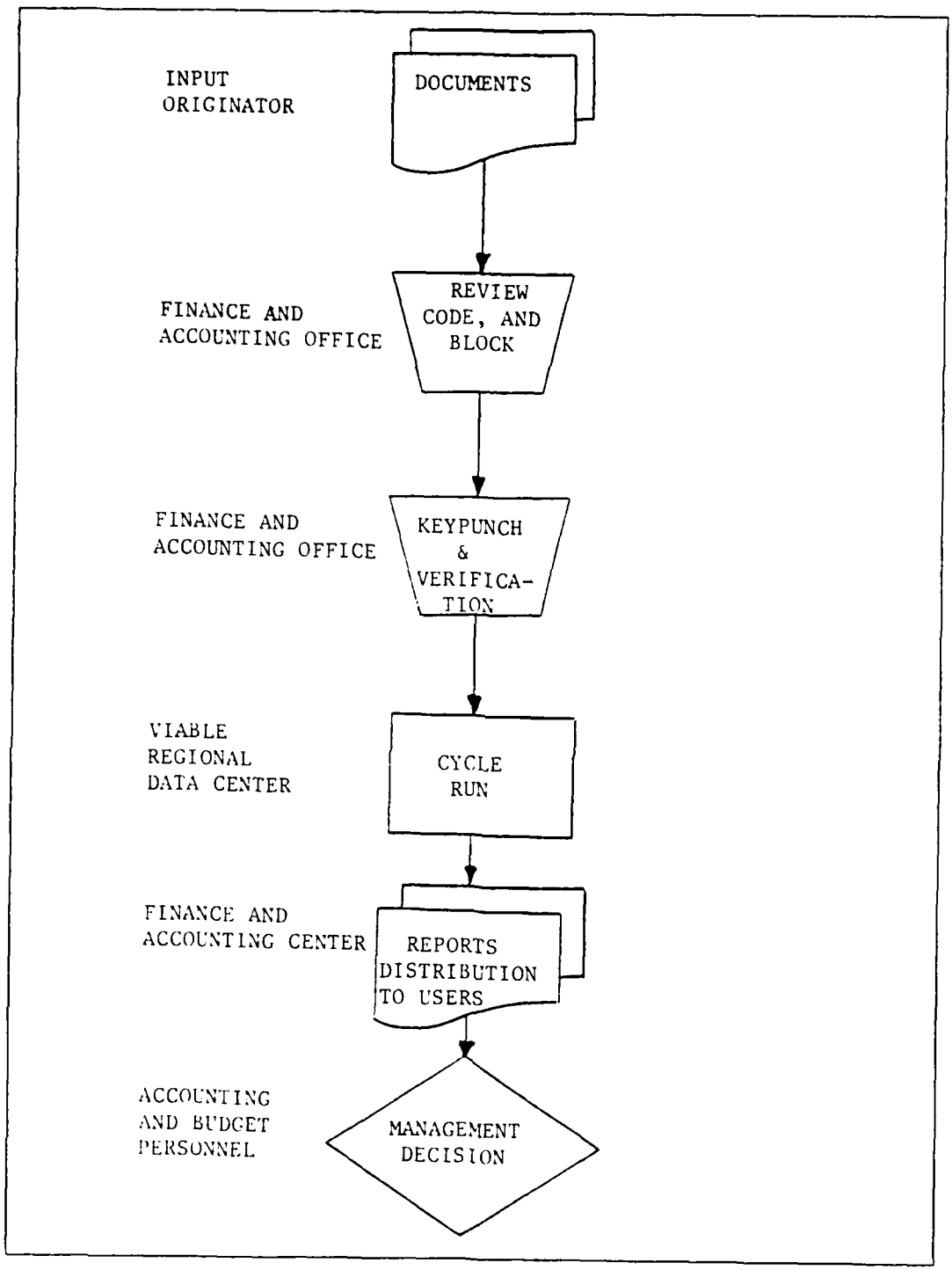

Figure 4.2 STANFINS Processing Overview.

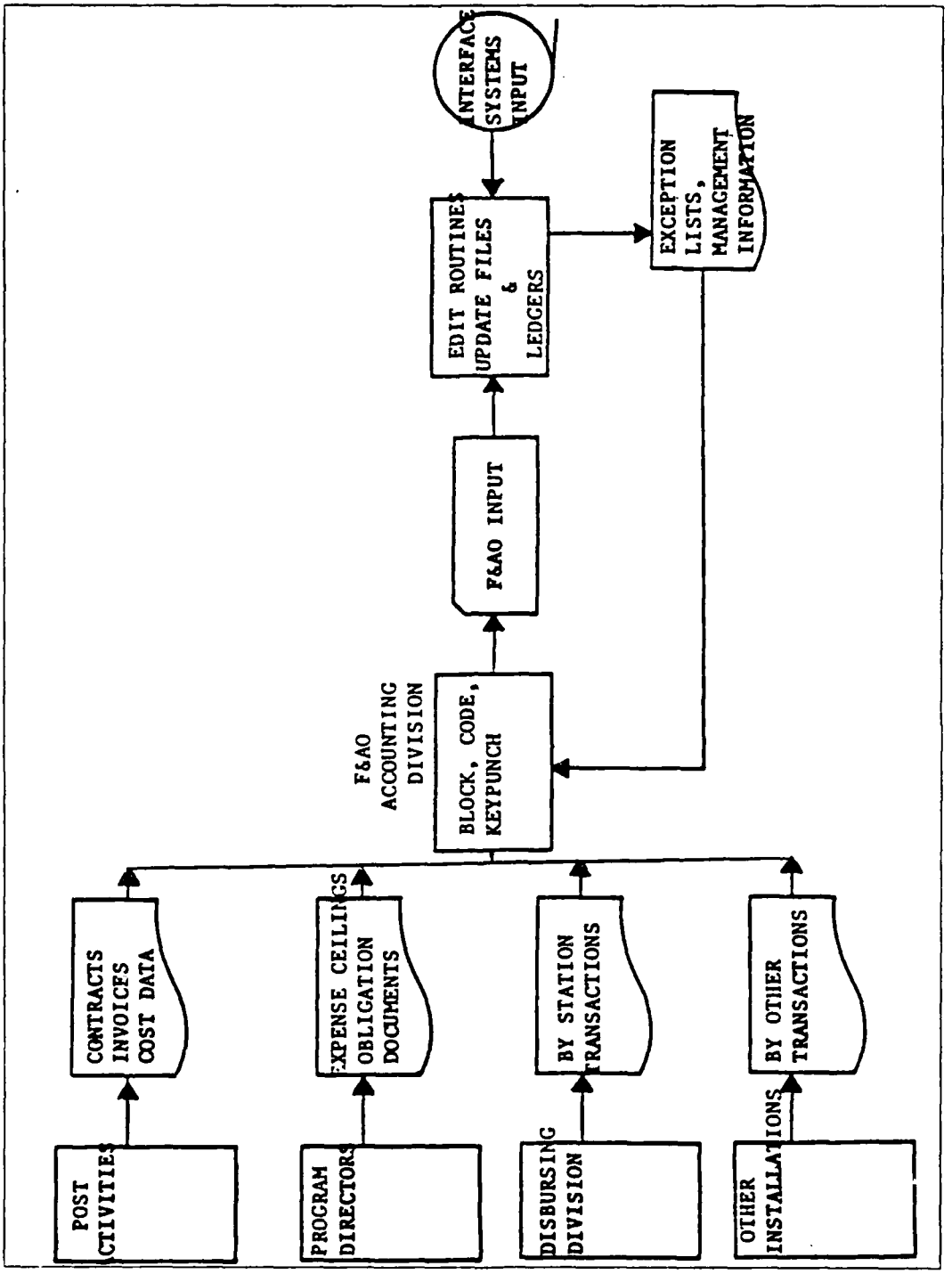

Figure 4.3 STANFINS Daily Cycle.

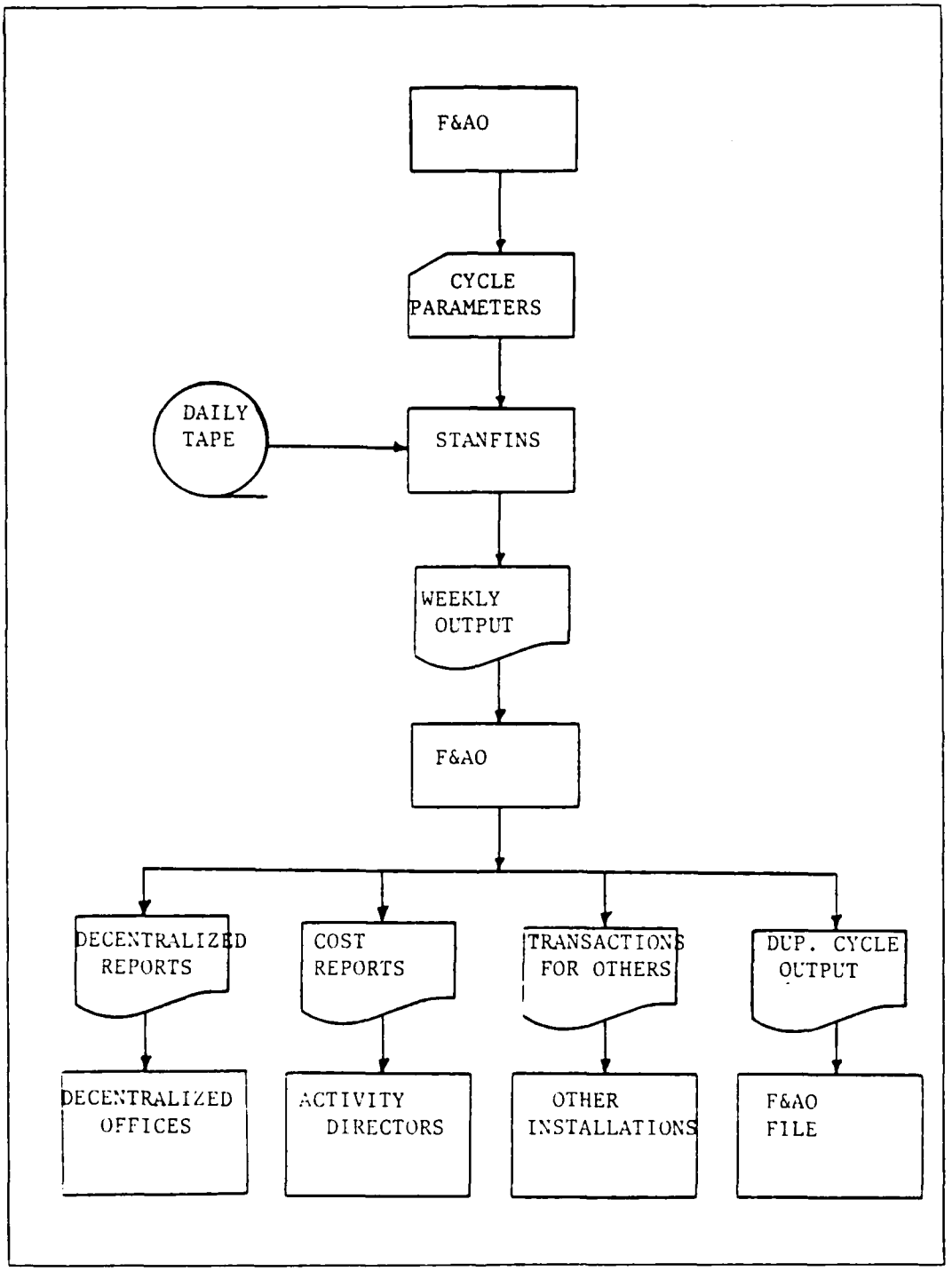

Figure 4.4 STANFINS Weekly Cycle.

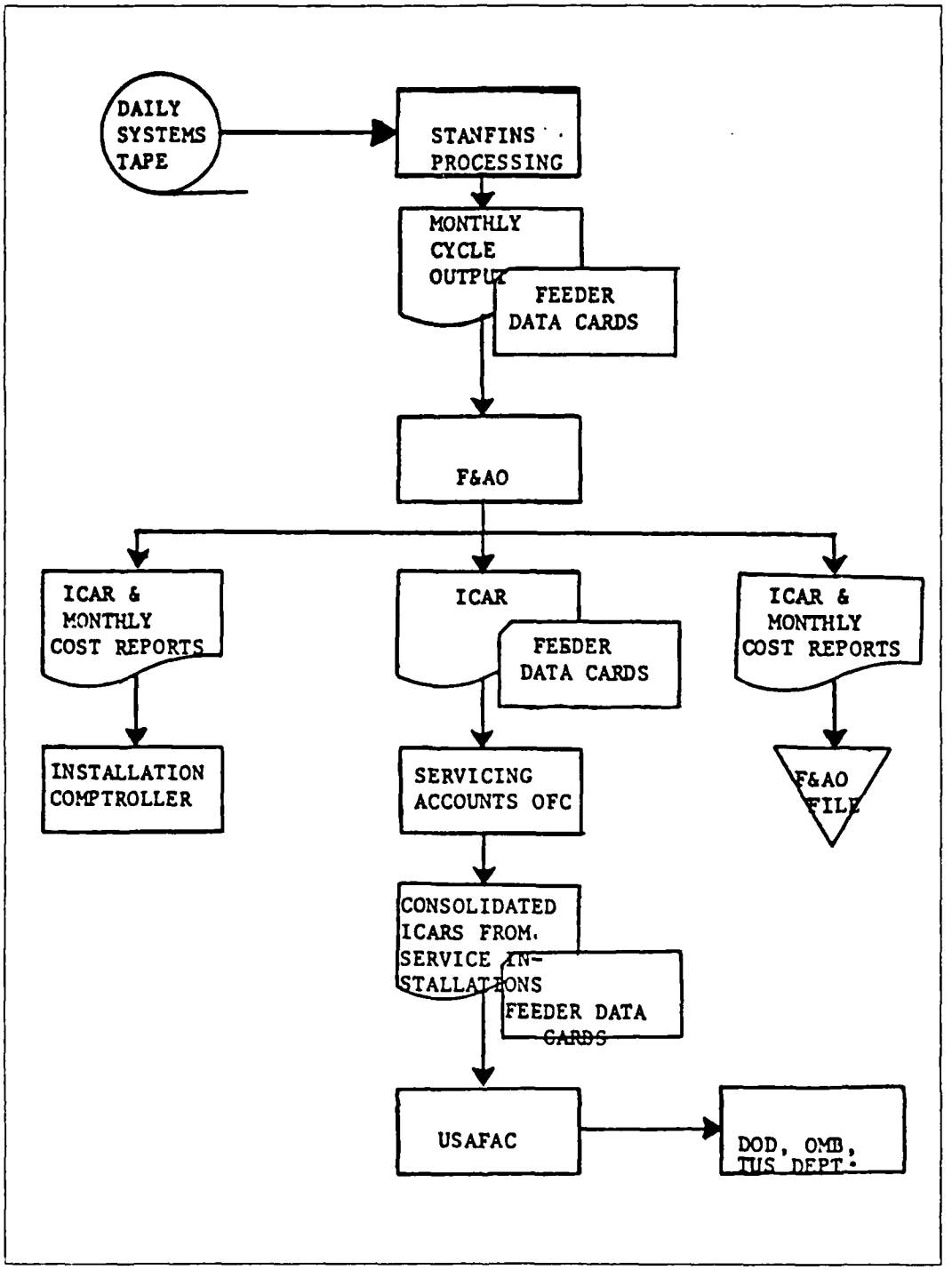

Figure 4.5 STANFINS Monthly Cycle.

E. VIABLE SUPPORT

Within the last few years the Army has experienced a quantum leap with respect to its computer technology. The focus of this advancement is the VIABLE Computer System which is for the most part fully implemented. Encompassing a large communications network, VIABLE was designed by and is operated by the Electronic Data Systems Corporation. Its operation is geared to employing some of the most sophisticated hardware and software. The VIABLE concept is an integrated network (Figure 4.6) consisting of five regional data centers(RDC's) which are linked to some 47 Army installations. The RDC support link to the installation is illustrated by the RDC, Monterey at Figure 4.7. An RDC is connected to the installation by telecommunication link to the Data Processing Center (DPC). The latter's processor serves as an information flow coordinator. When fully operational, VIABLE will provide installation terminal users instant access to RDC files from which to base management decisions. Both interactive and batch processing may be accomplished with VIABLE. In marked contrast to previously used "stand alone" decentralized systems, VIABLE processes enormous amounts of data in a centralized mode. VIABLE capabilities allow for more computing power, faster hardware, current information, and responsive centralized maintenance. For its computing power the Monterey RDC utilizes three AMDAHL Processors (the 470 model, the 580 model, and the upgraded 580 model). An insight into VIABLE's hardware capabilities can be gained just by examining the the AMDAHL 580 characteristics. Its features include 16 million characters of main storage, 16 high speed input/output channels, and processing 8 million instructions per second. Additionally, with an accelerator command, the last feature can be increased to 13 million instructions per second. RDC Monterey personnel stated that if the RDC just ran a daily

STANFINS cycle by itself, processing time would be approximately 13 to 14 minutes. This is in comparison to about a three to four hour period which was the norm during the previous method of processing (at the installation). [Ref. 31]

How is VIABLE currently supporting STANFINS? Although the VIABLE system is totally operational for processing, complete networking of users has not yet been achieved. Terminal hardware (primarily Ratheon PTS-200 terminals and associated "slave" printers) are still being distributed to installation users. As a result of VIABLE terminals not yet fully available for use, STANFINS is being processed in the batch mode. Terminal operation involves the utilization of a specially designed software package called Data Entry File Inquiry (DEFI). With this software, users are able to input data to the data base and inquire against appropriate files. [Ref. 31] Installations are at various stages of implementing the DEFI software. To illustrate the following examples are cited: Ft. Leonardwood, an early VIABLE convert, uses DEFI for about 85% of its transactions; Ft. Knox has started using Data Query but is not yet trained in the use of Data Entry; and Ft. Ord which to date has had very little DEFI training. Under Project VIABLE, DEFI training is being accomplished by a concept known as "train the trainers." This concept calls for training of a few installation personnel who then, train key installation personnel. The latter group, in turn, instructs other installation users. [Ref. 31,32] There are exceptions to electronic transmission of data to the RDCs. Cases in point are both Ft. Ord and Ft. Knox which because of their close proximity to their supporting RDCs (Louisville and Monterey respectively) courier input and output. [Refs. 31,32]

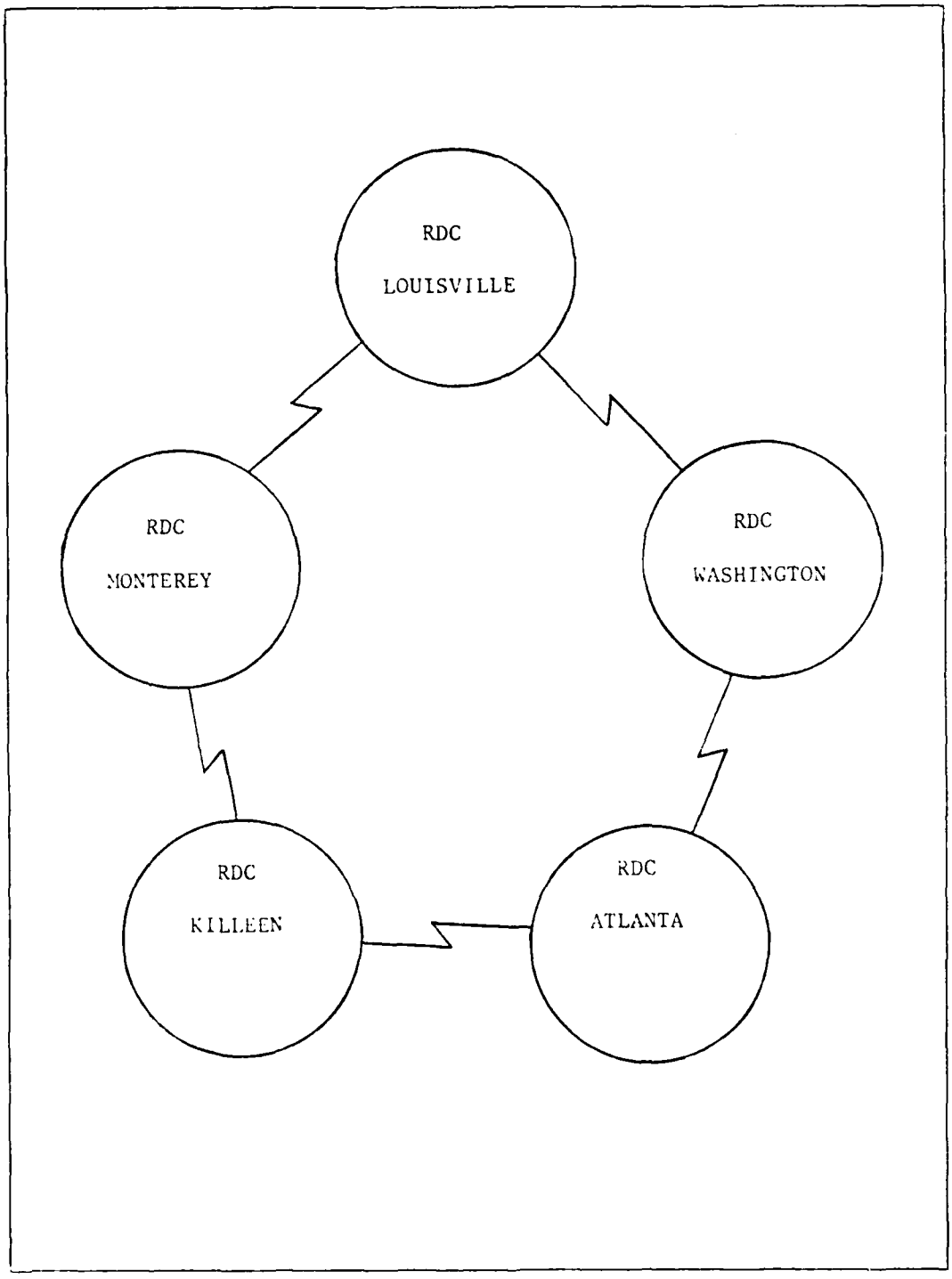

Figure 4.6 VIABLE Regional Network.

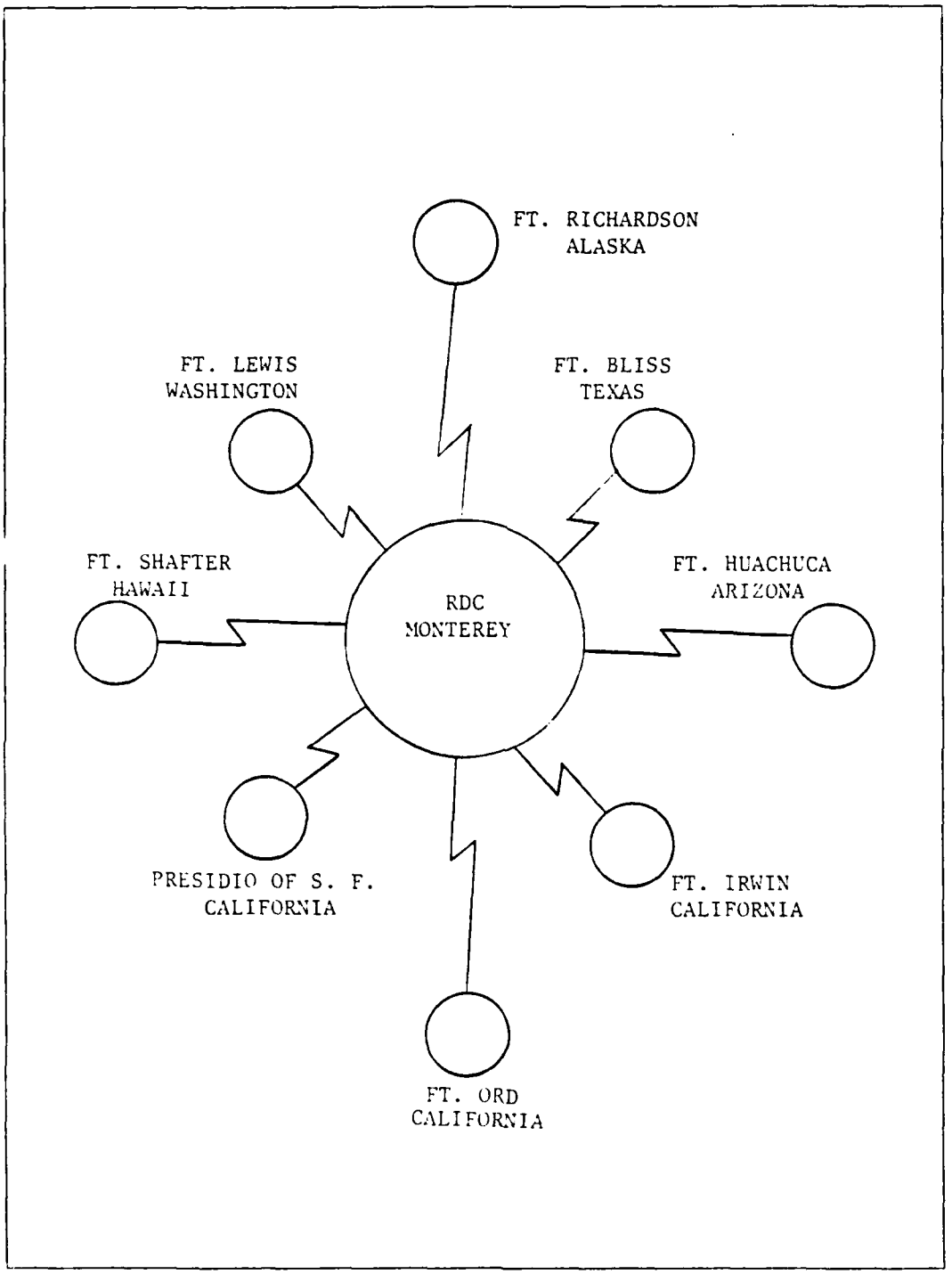

Figure 4.7 VIABLE RDC Monterey Support.

F. STANFINS REPORTING

Key players in the reporting arena are as follows: (1) FAO accounting personnel; (2) the DRM Program/Budget personnel; and (3) the various program/activity directors. Under the Standard Installation Organization concept, ten directorates exist as program directors (Appendix B) managing their respective financial areas [Ref. 33]. The number and grade of budget personnel dealing with the system varies according to installation size and location of the personnel (i.e. DRM versus program activity level). Although formal training is available to these personnel as relates to the PPBES and Resource Management functions (the PPBES Course and Military Comptrollership Course), no course is available to specifically address the management aspect of STANFINS outputs. The Military Accounting Course does not provide for this. Knowledge of how to use the system is either gained from on-the-job training (majority of cases) or from prior experience in the accounting field.

STANFINS output tape can be converted to hard copy listings, cards, and microfiche. Subsidiary ledgers include detailed accounting information which is the basis for reporting. Maintained by aggregate level, the general ledger provides a means for reports reconciliation. The reporting relationship to the STANFINS ledgers is as depicted in Figure 4.8. [Ref. 29] Although STANFINS has the capability to manufacture well over one hundred different types of reports, those which are common to all STANFINS installations are much fewer in number. Some twenty reports are considered to take on fundamental importance with respect to resource management decisions. They can be categorized in general as to expenditure, reimbursement, and regulatory type reports. [Ref. 34] For discussion purposes twelve reports are highlighted as being significant.

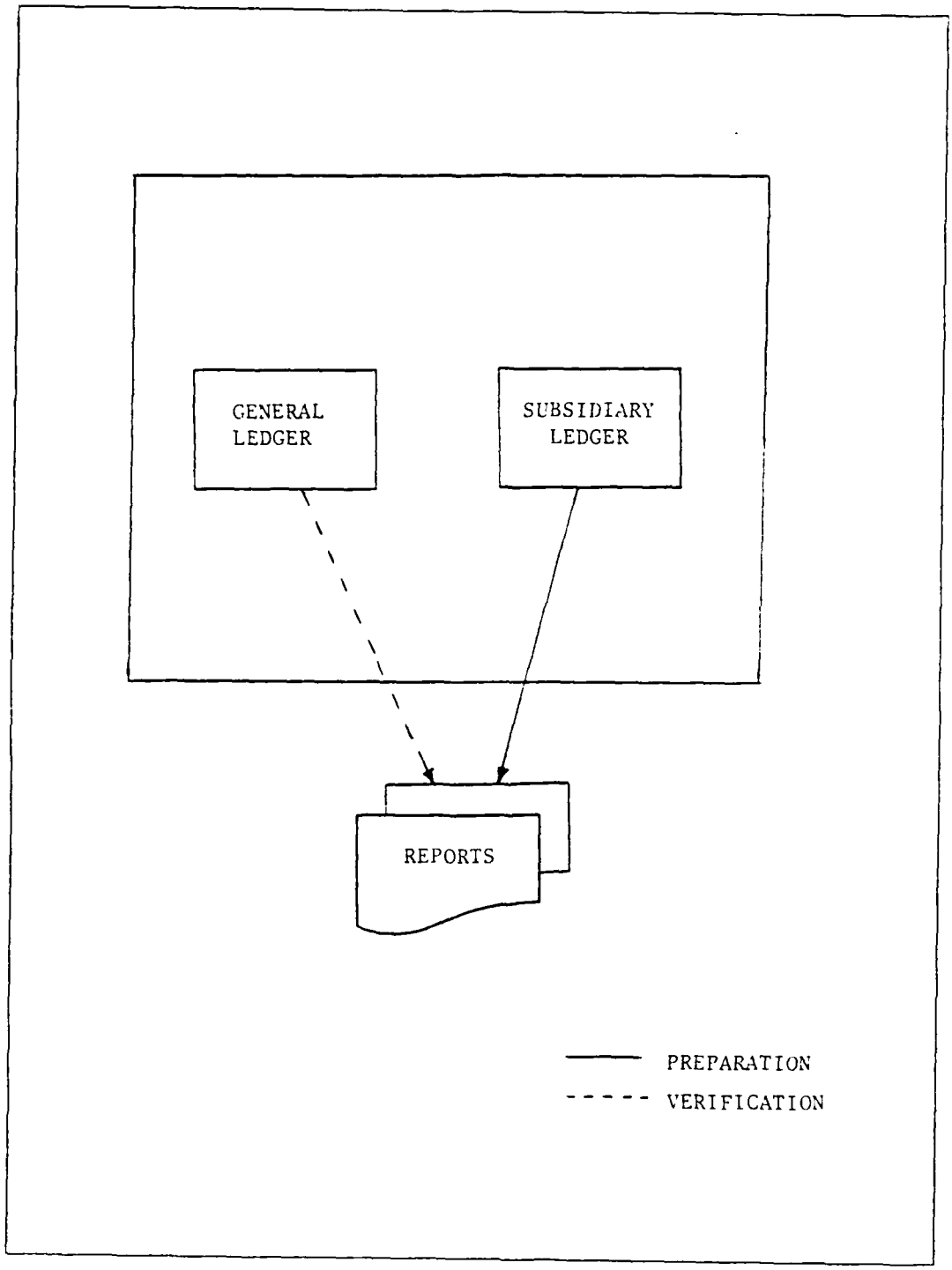

Figure 4.8 Reports Generation.

The FAO, which is involved with all STANFINS reports, utilizes three particular reports for "in-house" management. The FAO Input Listing provides a history of transactions according to processing order. Another tool is the Daily Preliminary Balance Listing (DPBL) which produces block totals by type/action code, identifies edit errors, and indicates processing backlog. Those transactions which do not pass the edit criteria are suspended from processing. The Automated Financial Control Register (AFCR) oversees the accuracy of STANFINS input and provides certain dollar or item number transaction totals as of the month and year to date. It is also used to monitor the D. O. Cash account and assist with balancing the Finance & Accounting Officer's Statement of Accountablity. [Refs. 29,34]

Outside the FAO, other reports are extremely useful to both the Program/Budget personnel of the DRM as well as to the program/activity directors. Probably the main instrument in the daily management of obligations is the Fund Control and Status Report which reflects current year summary data by AMS Code. Percentages of utilization are not given by this report and must be calculated by other means. The report may be formatted either by allotment level or by program director. Readily used to spot potential trouble areas, this report is a basic start point from which other reports can be investigated to isolate the source of concern. A main budget execution monitoring device, the Weekly Cost by AOB (Approved Operating Budget) is used primarily by program/activity directors. This summary level report displays data by element of expense within AMS and is used to manage expense and obligational ceilings. [Refs. 34,35,36,37,38]

Another report for program/activity director use is the Detail Obligation Report. Displayed by element of expense within APC, this report is a detailed look of transactions

by document number. Additionally, it gives summary level totals at various levels according to monthly and year to date amounts. As a means to "balance the checkbook," data is extracted from the report to perform commitment reconciliation/verification. However, this is a manual, time consuming process, as STANFINS does not perform commitment accounting. Produced on an as required basis, the Nonstock Fund Orders and Payables is the tool which program/activity directors use to track unliquidated (not expensed) obligations. To comply with the regulatory directive to joint review/reconciliation of unliquidated obligations, FAO and program/activity directors utilize this report. [Refs. 34,35,36,37,38]

STANFINS also produces a monthly reporting package which is a set of regulatory reports. They are transmitted to the installation's servicing operating agency accounts office via machine listing and card format sent electronically. Major reports are the Status of Approved Operating Budget (CSCFA-218), the Status of Allotments (CSCFA-216), the Obligation by Object Class (CSCFA-212), the Special Open Allotments (CSCAB-126), and the Status of Reimbursements (CSCAA-112). [Refs. 29,34]

V. STANFINS ANALYSIS AND FUTURE SUPPORT ROLE

In determining how well the Standard Finance System is supporting resource management in a fiduciary and managerial capacity it is helpful to utilize the conceptual framework described in Chapter III. An analysis of STANFINS is developed by linking the system to private and federal financial control requirements.

A. CONCEPTUAL EVALUATION OF STANFINS

Since STANFINS is indeed a financial management system, a logical starting point is with Steininger's five fundamental financial system objectives. In terms of the installation making complete financial disclosure, STANFINS produces regulatory reporting in terms of the ICAR package, Statement of Accountability, and the DELMARS expenditure data. It complies with the requirement to integrate with necessary financial systems by interfacing with the STARFIARS, STARCIPS, and IFS Systems as well as supplying input to the DELMARS and CINFARS Systems.

Although STANFINS has a sound fund control recording mechanism, it is severely lacking in the area of asset control. The system does not have a feature which accomplishes general ledger control over assets [Ref. 22: p. 20]. Its accounting data is reliable only to the extent that it is a means to monitor budget execution. As a supplier of data to support budget preparation, it is, in a sense, inadequate. This is because resource consumption, in terms of its value, cannot be captured by the system [Ref. 25: p. 4]. A prime example of how this "need" far exceeds the "tool" relates to the lack of quantifiable cost data that can be attached to a particular training exercise [Ref. 39].

Lastly, the objective of providing necessary financial information to support management decisions is only partially met. While the system outputs valuable information, it is degraded by poor reporting format, lack of flexibility, and loss of timing. These three facets of reporting will be discussed in subsequent paragraphs.

A helpful model exists which may be applied to STANFINS for determining whether it is operating on course in its pursuit of desired objectives. This model, developed by Bower, Schlosser, and Zlatkavich [Ref. 13: pp. 18-19], centered around system design principles. These nine principles as previously mentioned are as follows: reasonable cost; reliability; audit trail; flexible, yet uniform and consistent; organizational structure; report; data accumulation; data processing; and human factors.

Reasonable cost was achieved by STANFINS being employed as an automated and standard system. While STANFINS's recent conversion to the VIABLE RDC concept is most favorable in relation to reasonable cost, full benefit is yet to accrue due to continued inefficient batch processing of data.

With respect to reliability and audit trail (which encompasses accuracy), the system performs reasonably well. Accuracy of data is ensured by the Automated Financial Control Register (AFCR) as well as the extensive edit criteria which is built into the system. Additionally, the built-in feature of process creation also contributes to system accuracy. Reliability is enhanced by the VIABLE System-- new modernized equipment and a centralized maintenance program keep power outages/fluctuations to a minimum. One of STANFINS's biggest strengths is that it furnishes a detailed audit trail by displaying individual line item transactions by document number.

The principles concerning flexibility, organizational structure, and reporting are very much interrelated. Although STANFINS allows for flexibility in the installation's design of unique APC codes, it is, for the most part, inflexible as a total system. Because it is a DA centrally managed system, installations cannot implement their own system changes. Consequently, reporting outputs are prescribed by standard format and automated data manipulation is not attainable by the system. Reports do not "roll things up into plain English" as they are produced in the non- "user friendly" language of codes. The use of code terminology, such as AMS, EOE,and APC, is inconvenient for managerial use. Without extra manipulation of data (primarily in the form of "stubby pencil"), the program/activity directors and DRM budget personnel cannot readily furnish interpretable information to their respective commanders. The inability of STANFINS to allow for personally developed type programs is a negative aspect in that people's diverse management styles cannot readily be accommodated.

As Congress pushes for greater accountability within the Department of Defense, more and more reporting requirements are being generated by the individual Departments. For the installation commander to meet his higher level audit and inquiry taskings, manual labor-intensive procedures must be employed. One case that comes to mind involves the area of civilian pay. Since manpower is presently a topic of command focus because of funding constraints, installations must intimately manage personnel cost data to support manpower utilization. For example, in order to fully determine overtime costs, data must be manually extracted from STANFINS reports and reformatted to the usable level of detail. Still, there are other special areas of interest which must be monitored in much the same way.

With regard to the principle of organizational structure, STANFINS is only partially geared to the installation's fund control needs. While fund control is established through obligational ceilings, the system does not perform commitment accounting which is required for certain appropriations (i.e. OMA) under decentralized fund control. Instead, financial managers must utilize either a time consuming method of posting spread sheets or a personal computer (PC), if available.

Although the principle of report has partially been covered by the organizational and flexibility criteria, one other important aspect remains. Inherent in the report principle is the ever critical element of timing. Installation financial managers at all levels have a basic need to possess timely information which may be used as a solid basis for decision making. Ideally, managers would prefer information to be real time whereby a query to a system data base would result in up to the minute information. STANFINS does not yet fully offer real time capabilities as the DEFI software package is not completely utilized. Although the system does meet the timeliness objective in a most general sense by accomplishing the recording and reporting of financial transactions within the monthly accounting cycle, it falls far short of what is required for the daily management of resources. Both the daily and weekly STANFINS cycles are run at irregular intervals depending on work load and according to time of the year (i.e. end of the first quarter versus year end). As a result, information is often not current.

When budget personnel notice fluctuations in obligational data presented in the summary level Fund Control and Status Report (produced by the daily cycle), they have no way of immediately knowing the cause of the changes. This is because the detailed data (weekly cycle), which is

necessary to analyze such fluctuations, lag behind. With such time lag, managers are unable to view a true financial picture of their current status. Additionally, the timing lag can be overwhelming from a work load stand point. The manager goes from one extreme--scarce summary level data in the "daily" to the other--great detail of several transactions in the "weekly." In attempting to analyze and respond quickly to specific problem areas, financial managers face a difficult task. Because of the lag involved, managers lose critical reaction time required to solve a particular problem. Once a solution is identifiable, the problem may no longer exist.

As a result of STANFINS's inability to meet managers' needs in the areas of flexibility, timing, and report format, some installations have supplemented it with locally designed systems. For example, Ft. Ord uses the same STANFINS output tapes for input to its own local area network system [Ref. 40]. Tailored to their specific needs, reports generated include easy-to-read information which is summarized at appropriate low levels.

Concerning the principle of data processing, STANFINS's data flow adheres to the requirement that data be meaningful and controlled. The system does have an effective input coding structure by type action code and transactions are "blocked" under transmittal control throughout the process. However, the third element of data processing, continuous flow, is not fully met because of the inefficient batch processing method as well as irregular processing of daily and weekly cycles.

Under the accumulation principle, data are efficiently recorded and classified because of the system's mechanization. But, STANFINS data are not necessarily recorded rapidly. Data recording and classification occur only as fast as the system outputs the information and this too, is

hampered by cycle irregularity. Additionally, mail-in and "shot- gun" distribution of documents to the FAO hinder the recording process.

The last of the nine principles, human factors, weighs heavily in the STANFINS processes. Automated systems cannot by themselves, stand alone, and STANFINS is certainly no exception in this regard. Because of the high degree of interdependence between the accounting and budget personnel, system success is affected by both groups individually. As previously stated, accounting personnel are divided into two career categories, GS-510 Accountants, and GS-525 Technician/Accounts Maintenance Clerks.

Fundamentally important in a system's operation is the training of its users. Since the accounting technicians work intimately with STANFINS, they must be thoroughly knowledgeable in its operation. For the most part, available STANFINS training is adequate to accomplish this. However, there are exceptions which must be noted. Waivers must still be obtained for lower grade attendance to the Military Accounting Course. On-the-job training, which is commonly employed, poses a problem in that supervisory/ skilled personnel must find the appropriate block of time from already constrained schedules. Additionally, the high turn-over of technicians, with little or no replacement overlap, creates a scheduling problem for conducting on site training. This training can further be complicated by the use of the STANFINS User Manual and the DA STANFINS Training Package as training aids. These documents are incredibly lengthy and difficult to absorb in a short time period. Although accounting section supervisors need the detailed knowledge the MAC Course offers, they have no available supervisory level course to provide a much needed macro system background (i.e. managerial skills, overview of the Army mission, differences between a FORSCOM and TRADOC unit, and the importance of the budget side).

The GS-510 series accountants also attend the MAC Course. Here too exists a void because of the course's lack of managerial and analytical emphasis. Albeit too detailed to be sufficient as a supervisory tool, the MAC Course is effective in providing a firm understanding of how the system works. Operating in a complex environment, these accountants must still have a solid grasp of the system's intricacies in order to be successful in managing it. Unlike the GS-525 series, the GS-510 personnel have the opportunity to obtain the macro level picture by attending the PPBES and Military Comptrollership Courses. While the GS-510 accountants have a better knowledge of how they relate to the "budget side," they are much too few in number as compared with the technicians. Accounting branch chiefs and their assistants are extremely busy with daily administrative matters and supervision of personnel. Consequently, little time is left for problem solving analysis (i.e. identification of both potential and existing problems such as the tie-up of fund availability).

The other key players in the STANFINS processes are the output managers--the budget personnel of the DRM and the program/activity directors. Unless these personnel have prior experience in the Army accounting field, they are at an unfortunate disadvantage. Despite the MAC Course being available to budget personnel, it does not cover STANFINS reporting from a managerial stand point. On-the-job training in the budget area involves many of the same obstacles which the accountants face--personnel turnover, allocation of training time, and adequate training materials.

There are other factors which impact on both personnel groups. Because of restrictions on paper usage, much of the hard copy output is in microfiche form. Working with this particular type of output can be cumbersome for the

following reasons: 1) eye fatigue readily sets in; 2) copies are often blurred; 3) hard copy conversion is tedious; 4) copies cannot be written on for correction or comment.

Although the Project VIABLE offers significant progress, it presently has two areas of "human factors" concern. First of all, user terminal printers are rather noisy and second, the concept of "train the trainer" as relates to the DEFI software may be a less than optimum approach. This approach is not always the best method for achieving standardization. Whenever that type of training methodology is utilized, some translation is lost as training moves down the pyramid.

B. COMPLIANCE WITH FEDERAL REQUIREMENTS

As far as federal requirements are concerned, and specifically GAO Title 2 standards, STANFINS is not operating in strict compliance. This fact has adversely affected the Army's requirement to comply with the Federal Managers' Financial Integrity Act [Ref. 20]. However, it does provide for effective control over obligations through the fund ceiling mechanism. In this regard, adherence to the provisions of AR 37-20- Administrative Control of Appropriated Funds, is facilitated.

Also noted was the importance of the role of management in achieving system success. At the installation level, accounting and budgeting personnel perform critical management roles. Successful operation of the system is limited, somewhat, by the existence of the aforementioned human factor deficiencies.

Federal objectives which are common to system operation and reporting are those involving information usefulness, timeliness, reliability, comparability, consistency, and cost effectiveness. With the exception of comparability and consistency, these objectives have been addressed by the

discussion as it relates to system design principles. With respect to comparability, STANFINS does provide useful information in terms of obligational data. But, again, in reference to measuring resource consumption, there is no basis for comparability. The objective of consistency is achieved through the standardization of accounting transactions by use of uniform type/action codes.

While STANFINS financial control and reporting elements are favorable in terms of installations' fiduciary requirements, the system offers much less in a managerial sense. Inflexible reporting formats and timing deficiencies, coupled with human factor concerns, are present obstacles to the effective and efficient management of installation operations.

C. REDESIGN INITIATIVES FOR THE FUTURE

As previously mentioned, STANFINS has not totally supported the Army's installation financial management requirements. Recognizing the need for improved service, the Army has put forth considerable effort in attempting to correct the system's inadequacies. This effort, known as STANFINS Redesign, promises to be a "real-time" interactive system. When fully installed, the Army, hopefully,will have in place a GAO approved system operating in complete compliance with federal accounting standards and principles. This system, which is much more than just a "patch job" to the current STANFINS, is intended to become the sole standard installation resource management system for general as well as industrial fund accounting and reporting. In addition to those MACOMs presently supported by STANFINS, the redesigned system will also include the Army Materiel Command, which is rather large in terms of the number of installations. [Ref. 7]

The "state of the art" computer equipment, which is necessary to support such an undertaking, will be provided

by the VIABLE System. The vast majority of equipment has already been contracted for and is at various stages of deployment. However, critical "addressable" printers, which are a must for adequate reporting, are not currently under contract. [Ref. 31] This advanced technology is not limited to just the system's hardware. The system software design is also sophisticated in that it is based on structured analysis and uses Problem Statement Language, Problem Statement Analyzer (PSL/PSA), and Data Designer [Ref. 41].

Manpower and material benefits from STANFINS Redesign are anticipated to be substantial. With this system, command and local unique systems will gradually disappear. Besides its real time interactive advantages, benefits will also occur from consolidation of these systems. STANFINS Redesign is part of a nine program redesign effort which projected annual cost avoidance savings of approximately $40 million and 2,000 man-years [Ref. 42: no page]. Specific data relative to the new system are projected as follows:

- Manpower avoidance--314 spaces in FY 88
- Cost avoidance--$5.5 million in FY 88
- Manpower avoidance--694 spaces in FY 89
- Cost avoidance--$11.7 million in FY 89 [Ref. 43]

These avoidance savings are based on the greater volume of work load that can be accomplished without additional personnel. In this regard, actual manpower positions have not been identified for elimination.

The manpower savings are expected mainly in the Finance and Accounting Office because the role of input personnel (i.e. keypunch) in an interactive environment is greatly reduced. Relative to material savings, control features in the system will ensure better accountability of resources. To date, specific material savings estimates are yet to be identified. Manpower avoidance savings should increase with time until implementation is complete. Since the system

will encompass more than just current STANFINS installations, the savings will continue to accumulate from the sheer volume of added transactions. [Refs. 31,42]

In order to provide better financial management support, the redesign effort focuses around four major areas. Planned improvements in these areas are as summarized:

1. Cost Accounting. The entire cost of installation operations including unfunded items such as depreciation expense and military personnel are going to be available to resource managers. Costs by organization, cost center, and job will allow for performance evaluation in terms of operational efficiency.
2. Fixed Assets. They will be controlled by the general ledger as opposed to property records. Depreciation, with the exception of combat materiel, is expected to be included as an operations cost.
3. General Ledger. As the main control over resources, the installation general ledger will be the basis for reporting (via the trial balance). Within the ledger, supported organizations and their appropriation funding will be identified exclusive of each other. Additionally, the installation general ledger will be maintained as a basis for the Department of the Army's general ledger.
4. Managerial Support. STANFINS Redesign proposes to offer reports which are tailored to the installation's needs rather than higher reporting levels. Reports are expected to be less complex and offer more support in terms of query capability. Manual procedures will be minimized as a result of modernized computer technology. [Refs. 7,22: pp. 19-20]

Users of the system will basically remain the same as provided for under the existing STANFINS. The accountants,

the DRM budget personnel, and the program/activity directors will still perform critical roles in the management control process. But, two important changes which impact on how resources are managed involve transaction inputs and aspects of reporting. Documents which affect the financial management process will not flow through the Finance and Accounting Office as presently occurs. Users will be able to input data directly to the system data base from terminals at their location. The interactive capability of the system will also allow for queries (structured or ad hoc) to the data base. While it is envisioned that some routine type reports will still be processed in a batch mode, managers will be able to extract real time data in hard copy format. Access to STANFINS Redesign is going to be determined by each installation's management. Moreover, control will be established by employing user and job access tables. [Refs. 43,22: p. 21]

An indication of how STANFINS Redesign will support installation financial managers is illustrated as follows:

> Comptroller personnel will input data used in program/budget formulation, fund distribution, and performance measurements. Activity directors are responsible for playing a direct financial management role as a source of data relative to commitment and obligation of installation funds. Each activity may be further subdivided into additional responsibility (cost) centers that will provide some of the information used to determine the total cost of the activity. The system will provide output to cost centers and activity directors relative to fund usage as well as detailed cost information. [Ref. 44: pp. 9-10]

Inputs to the system will generate activity in one or more of seven functional modules-- Commercial Accounts, Cost Accounting, Disbursement/ Collection, General Accounting, Performance Measurement, Program/Budget, and Travel. With the exception of General Accounting, all have been "functionally" designed. These modules are designed to provide for the following:

1. Commercial Accounts: Direct entry of obligation documents and subsequent liquidation documentation; simultaneous recording of fund control data by the mechanized processing; better substantiation for disbursement transactions.
2. Cost Accounting: Recording cost of operations in subsidiary accounts, detailed by cost center/function and reflecting costs at the level of detail required for effective management; measurement of responsibility centers in terms of variance analysis.
3. Disbursement/Collection: Cash accountability control by recording of cash and check transactions via terminal entry by Disbursing personnel; strengthening of negotiable instruments' audit trail.
4. General Accounting: Recording, classifying, and summarizing of financial transactions by appropriate Government account to include installation revenue and expenditure data; general ledger control over installation assets; depreciation of fixed assets; incorporation of fund control procedures.
5. Performance Measurement: Management assistance by employing both local and DA engineered standards for use in productivity, manpower requirements, and budget reporting.
6. Program/Budget: An automated historical set of records from which financial managers can draw upon for budget formulation, execution/analysis, and reprogramming; establishment of future obligation and expense budgets which are based on past execution data.
7. Travel: Support for all parties who have travel responsibilities (i.e. Finance and Accounting Travel Branch, order approval authority, and the installation financial directors); efficient preparation and

computation of travel records by automating manual procedures; quick determination of fund availability by reconciling travel requests with fund control registers; readily obtainable obligational, accrual, and liquidation information. [Refs. 22,44: pp. 21-23, 9-11]

Phased implementation of the system is scheduled to begin in June of 1986 and is projected to continue through 1987. The beginning of its implementation calls for the Disbursing, Commercial Accounts, and Travel modules to be prototyped and tested at Ft. Hood, Texas. [Ref. 43]

As alluded to in previous text, a financial system's ability to interface with other systems is extremely important. STANFINS Redesign will offer a slightly different interface arrangement from the present structure. While the new system is also designed to interface with installation level systems such as STARFIARS, IFS, STARCIPS, and SIDPERS, it will have a sole external interface. Known as the Program Budget Accounting System (PBAS), this system was designed to serve as the Department level accounting system. In this capacity, it will accumulate, house, and process data to control the distribution of funds.[5] Installations will obtain funding authorizations from higher headquarters via the PBAS. Since PBAS will also act as a data base for higher level reporting, installations' external requirements will be greatly facilitated. Current requirements of the ICAR reporting package and DELMARS data will be captured by this system. [Refs. 42,44: pp. 1, 11-12] Its anticipated involvement with STANFINS Redesign reporting is as described below:

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[5]Presently, PBAS is on line only to the extent that it provides fund control distribution of the OMA appropriation.

> Each month STANFINS Redesign will produce a PBAS computer tape as part of its month-end processing procedure. Data will be provided electronically to USAFAC in general ledger trial balance format and include a "Fiscal Year To Date" trial balance and a summary of current month transactions. [Ref. 22: p. 21]

STANFINS Redesign will also have a key role in supporting the Output Oriented Resource Management System (OORMS). Currently, Army reporting under PPBES is in terms of obligations and expenses by appropriation. With this type of reporting, data is not available to identify how well (i.e. performance orientation) Army programs are being carried out. Through the use of Mission Decision Packages[6] (MDEP's), OORMS will close this existing gap in the PPBES cycle by relating "outputs" to "inputs." [Ref. 25: p. 2-5] This, too, will be aided by the on-going redesign of the Army Management Structure (AMS), which has not adequately supported PPBES as described below:

> Resources are programmed by Army function, . . . When the program year becomes the budget year, programmed resources are allocated and allotted in terms of appropriations and are accounted for in the appropriation oriented AMS. Thus, moving from the program to the budget year, track of the horizontal identification of Army programs, developed by function, . . . is lost. The current AMS does not identify budget, current and prior year resources to the Army programs which generated the resources. [Ref. 25: p. 26]

Installations will provide OORMS input data (i.e. obligation and expense by MDEP) from their STANFINS Redesign tape or disk. This data, will in turn, be "bridged" to the installation OORMS micro-computer, and then submitted to higher headquarters. [Refs. 7,25: p. 42]

STANFINS Redesign will offer the installation financial management community a much more comprehensive accounting and reporting system. As a result of its managerial

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[6]The MDEP consists of eight years--prior year, current year, budget year, and five program years.

emphasis, this system will allow financial managers to make better decisions which are soundly supported.

VI. CONCLUSIONS

A. THE CURRENT STANDARD FINANCE SYSTEM (STANFINS)

STANFINS is basically fulfilling its fiduciary responsibilities in support of resource management. In addition to supplying financial managers with data for historical and external purposes, the system provides for effective fund control. This support is enhanced by its operation as an automated standard system. As such, coding transactions are uniform and consistent. Reliability is ensured in terms of its extensive edit criteria, its Automated Financial Control Register, and its modern computer equipment from the VIABLE System. Last, but certainly not least, STANFINS furnishes a solid audit trail of individual transactions.

While the system offers these positive features, it is seriously deficient because it does not provide for general ledger control over the installation's assets. Consequently, the basis for reporting rests with the subsidiary ledgers.

With respect to its managerial responsibilities, STANFINS is supporting in a far less than desirable manner. Of primary concern are reporting and timing of information as well as related "human factor" issues. Although the system produces required data to monitor budget execution, it supplies no performance measurement data. As a result, managers do not have the means to determine organizational efficiency. For internal use and for responding to high level audits/inquiries, STANFINS' reporting formats are inflexible . Because of existing code terminology and the "high" level of reporting detail, usable information is not readily obtainable. Consequently, financial managers must resort to manual manipulation of data in order to fully satisfy their needs.

Relative to timing, managers are unable to view their true current status because of two factors: 1) the timing lag between receipt of the Daily Cycle Reports (summary level), and 2) the irregularity of cycle runs. Without timely information, managers do not have the "ammunition" which is necessary to appropriately respond to problem areas.

One major human factor issue which prevents the system from achieving a higher level of success involves training of its users. Formal training (via the Military Accounting Course) is not tailored to each groups' needs. The course is only taught from a single "detailed" perspective. While quite adequate for all accounting technicians, it does not offer the technician supervisors a managerial approach. Additionally, as it concerns the Operating Accountants, the course presents STANFINS in far too much detail without providing an analytical framework. With respect to budget personnel, the course does not specifically address STANFINS reporting from a budget perspective. To fill these voids, managers have resorted to on the job training. But, even with this method, training proficiency still suffers because of the lack of available time, bulky training materials, and high rate of personnel turnover.

Other human factor issues affect system success from a motivational stand point. Utilization of cumbersome microfiche and noisy terminal printers (for use with DEFI) are not positive influences on system users.

B. STANFINS REDESIGN

When STANFINS Redesign is fully operational, installation financial managers will be better supported in their decision making efforts. Its promise to be a real-time interactive system will allow managers to make informed decisions based on timely and accurate information. With query capability and the addition of "addressable" printers,

the system will offer the much needed report flexibility which is necessary in today's dynamic financial environment.

Its cost accounting feature will give managers a true cost of installation operations (to include depreciation), and allow them to conduct performance analysis. General ledger control will provide for better asset control and serve as a solid reporting base. Improved fund control procedures will eliminate "stubby pencil" commitment requirements and managers will have more thorough information to support the budget process. As it concerns higher level reporting, STANFINS Redesign's interface with PBAS and input to OORMS should enhance installation financial management.

Although STANFINS Redesign appears to offer corrective action for all of the current system's deficiencies, it does not fully address the aforementioned human factor areas. While interactive terminals and addressable printers should eliminate the concerns over noisy printers and microfiche viewing, training of system users will remain as an issue for future consideration.

One other area of concern involves communication in conjunction with the VIABLE System. In such a large interactive environment, several users will be utilizing the system. For STANFINS Redesign to be totally successful, installations must have an adequate number of phone lines to accommodate the traffic.

Since it will only be human nature to resist change, the system will initially face the usual obstacles that go with any change. However, because of its outstanding design, the system should gain quick acceptance. STANFINS Redesign will provide installation financial managers with a sound financial control system to facilitate the accomplishment of effective and efficient operations.

C. RECOMMENDATIONS

The following recommendations are offered for consideration:

1. That STANFINS Redesign user documentation be simplified and tailored to specific groups of users.
2. That appropriate numbers of "addressable" printers be procured and installed according to local requirements.
3. That installation studies be conducted to determine if existing communication lines are adequate to support STANFINS Redesign.
4. That future studies be conducted to assess the training needs of installation accounting and budget personnel as pertains to STANFINS Redesign.

APPENDIX A

STANFINS OBJECTIVES

- Establishment of a standard accounting system that is in compliance with DA's accounting principles and standards in AR 37-54 as approved by the Comptroller General.
- Operating the system on the accrual basis of accounting to provide effective control of resources and of their utilization.
- Development of standard accounting procedures and comprehensive user instructions to be adhered to by all installations operating under STANFINS.
- Providing system controls to safeguard resources and preclude violations of statutes and regulations governing the availability and utilization of resources.
- Providing information that will assist managers in the efficient and effective utilization of resources. Data provided will also be used by managers in the planning, programming, and budgeting processes.
- Development of techniques to inform management and accounting personnel of exceptional conditions without resorting to the rendering of voluminous transaction-by-transaction type outputs.
- Providing mechanical interface capability with other related systems at the installation and /or exterior to the installation.
- Establishment of a uniform and consistent coding structure to reduce and simplify manual applications, facilitate mechanical operations, and assist in standardization of accounting operations at diverse installations.
- Establishment of edit and balance routines to assure the integrity and accuracy of the input to this system.
- Providing a standard data base for extraction of financial data to serve installations, intermediate command, and DA needs.
- Establishment of internal audit procedures to substantiate the the validity of the system processes and attest to the accuracy and reliability of data rendered and stored by the system.
- Simplification and standardization of the interaction procedures between installation accounting offices and activities serviced thereby.
- Reduction of manual accounting effort in the installations' accounting office and serviced activities.
- Elimination of duplication of accounting effort at STANFINS installations.

- Establishment of responsibilities for those utilizing and being serviced by STANFINS.
- Training personnel in the utilization of the system and its related outputs.

APPENDIX B

PROGRAM DIRECTORS UNDER SIO

- Directorate of Logistics (DOL)
- Directorate of Personnel and Community Activities (DPCA)
- Directorate of Engineering and Housing (DEH)
- Directorate of Information and Management (DOIM)
- Directorate of Reserve Component Support (DRCS)
- Directorate of Plans, Training and Mobilization (DPTM)
- Provost Marshal's Office (PMO)
- Directorate of Resource Management (DRM)
- Directorate of Contracting (DOC)
- Directorate of Security (DSEC)

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38. Interview with Mary Azbel, Budget Officer, Directorate of Resource Management, Ft. Benjamin Harrison, Indiana, July 26, 1985.

39. Interview with James R. Jagielski, Colonel, USA, Director of Resource Management, Ft. Ord, California, July 19, 1985.

40. Interview with Lance Wright, Installation Accountant, Directorate of Resource Management, Ft. Ord, California, October 28, 1985.

41. Interview with Eugene Hansen, LTC, USA, Project Manager, STANFINS Redesign Office, ACOA (F&A), Indianapolis, Indiana, June 7, 1985.

42. U. S. Department of the Army, Financial Management Accounting Systems Development Executive Digest, ACOA (F&A), Indianapolis, Indiana, June 1983.

43. Interview with Jim Meier, MAJ, USA, STANFINS Redesign Office, ACOA (F&A), Indianapolis, Indiana, October 25, 1985.

44. U. S. Department of the Army, STANFINS Redesign Functional Description, dated April 4, 1985.

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