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FINAL REPORT

(ITEM NO. 002AC)

RECORDS FILING, MAINTENANCE AND DISPOSITION SYSTEMS STUDY

FOR

DEPARTMENT OF ARMY

CONTRACT NUMBER: MDA 903-80-C0721

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CONTRACTOR: CALCULON CORPORATION

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18 SUPPLEMENTARY NOTES

The Final Report includes a Literature Search, dated 17 April 1981, which provides a wide-ranging bibliography for the newly emerging concept of Information Resources Management and Paperwork Reduction in the Federal Government.

19 KEY WORDS (Continue on reverse side if necessary and identify by block number)

Information management; records management; Manual filing systems, equipment, techniques; Records disposition; records schedules; records retention; Records Center operations; vital records; Emergency duplicate records; archives; legal issues and implications; Documentary evidence; non-paper media; microforms; COM; Computer assisted retrieval (CAR); Electronic mail; Paperwork Reduction Act

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

This report is in Staff Study format with a short management summary preceding the main study. The body of the study covers only the main points and ideas. Development is contained in tabbed appendices. The Army Functional File System (TAFFS) is institutionalized in Army Regulations 340-1 and 340-18-1 thru 340-18-16. It was developed in the later 1950's; implemented in 1963; and received major refinement in 1969. It replaced a subject file system (The War Department Decimal File System) with functional system which included a comprehensive disposition system. The development of office technology eroded the use-

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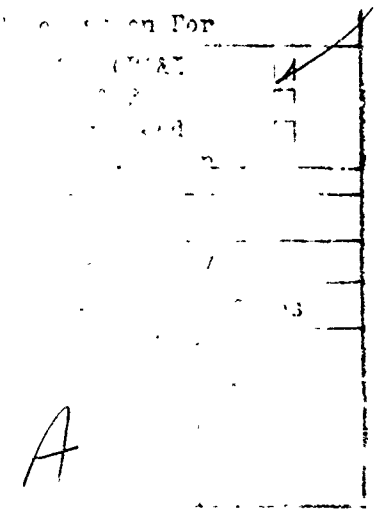
fulness of TAFFS although a manual file system must be the mainstay of the Army of years to come. The Study infers that TAFFS should be replaced because it (1) does not lend itself to automation; (2) possesses major flaws in its management support characteristics; and (3) is not a good wartime system. Army Records Management Officials do not fully agree with this assessment. The Contractor suggests that in replacing TAFFS the Army should position itself to adopt such state-of-the-art developments as it finds useful and cost effective and install a simpler more management oriented manual system for immediate interim use. To accomplish this, Calculon maintains that a first order of business is to develop a simpler information classification system. A subjective or functional subjective system which eliminated the complexity of TAFFS is advisable. The Contractor recommends testing over 18 months two groups of subsystems and concepts. One is a conservative test based on a simplified TAFFS; and, the other is innovative, based on a long standing Army subjective classification system used to classify and number Army regulations. The innovative system includes a number of concepts which the Contractor advances to improve management support characteristics and which also lend themselves to automation. Army Records Management Officials do not accept the Contractor's findings en toto; however, see merit in the innovative test program, but feel a great deal of further development (in house) is essential prior to any actual testing in the field.

INTRODUCTION

This report is submitted in accordance with paragraph F-2 Deliverables, A0002CAD, "Final Report," of the contract cited on the previous page.

In accordance with the provisions of the contract the report is in staff study form. A short management summary precedes the staff study. The body of the staff study covers only the main points and ideas. Development of these points and ideas is contained in attached, tabbed appendices. The reader has available several levels of detail - the management summary, the staff study and finally the appendices. For convenience an index of appendices is contained in the Table of Contents.

The project manager for this project has been John Maher. Contributing for various periods and purposes was John Gorsuch, Vice President of Calculon, who brought his extensive experience in government records system development to bear on the major problems of this study. Ms. Nancy Nelson and Dr. Jeffery James did much of the research and writing and Ms. Ann Stillman was responsible for the state-of-the-art literature search contained in Task 1.



MANAGEMENT SUMMARY

The Army Functional File System (TAFFS) was developed in the late 50's and implemented in 1963 to replace the WD Decimal File System. It replaced a subjective file system with a functional system, replaced emphasis on retrieval with emphasis on disposition of records, therefore serving archivists more than managers.

The development of office technology is eroding the usefulness of TAFFS although a manual paper system must be the mainstay of the Army for the immediate future.

TAFFS should be replaced because it (1) is not automatable; (2) has major faults as a manual system (mainly its lack of management support characteristics); and (3) is not a good wartime system.

In replacing TAFFS the Army should position itself to adopt such state-of-the-art developments as it finds useful and cost effective and install a simpler more management oriented manual system for interim use.

The first order of business is to develop a simpler information classification system. A subjective or functional subjective system which eliminates the complexity of TAFFS is advisable.

The contractor recommends testing over 18 months two groups of subsystems and concepts; one group (Test A), conservative based on a simplified TAFFS and the second (Test B), more innovative based on a long standing Army subjective system used to classify and number Army Regulation. In Test B are included a number of concepts which promise to improve system management support characteristics and which are also automatable.

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I. PROBLEM: To design a new records management system for the Army

II. FACTS BEARING ON THE PROBLEM:

1. There is a technological revolution taking place which affects office procedures including records management. (Appendix A-1)

2. The Army has in place or under development a number of systems using these technologies. (Appendix A-2)

3. The Army Functional File System, TAFFS

- because of its structure is not suited to automation and hence the new technologies; (A-3-1)

- has disadvantages as a manually-operated paper-based system that make its replacement advisable even for the short term; (A-3-2)

- has major disadvantages as a wartime system. (Appendix A-3-3)

4. Other services and federal agencies have problems similar to those the Army faces. (Appendix A-4)

5. The legal and regulatory constraints, including the newly enacted Paperwork Reduction Act, place limits on records management. (Appendix A-5)

6. The major commands (MACOMS) express definite views for one "universal" Army records management system, against return to centralized files and an almost even split for functional or subject classification systems. (Appendix A-6)

III. DISCUSSION

(NOTE: All topics are abbreviated below and discussed in detail in indicated appendices).

A. GENERAL (APP B-1)

What is needed now is a new records management system which will --

o Position the Army to take advantage of and to adopt state-the-art developments in office automation as such applications become desirable and prove cost effective.

o Improve the manual, paper document system of records support of day to day management while insuring or improving the safeguarding of records of archival value.

B. SYSTEM CHARACTERISTICS AND REQUIREMENTS (APP B-2)

o It is important to distinguish between the "what" of a records system -- the information to be managed and its organization -- and the "how" -- the manipulation of the information, its storage, the media used, and the processes by which it is filed, searched, retrieved, transmitted and disposed of.

o Central to answering the "what" question is determination of the classification system to be used to order the information for storage and retrieval.

o The major requirement for a new Army Records Management system is a simpler classification system which lends itself to both manual and automated operations.

o Other techniques, concepts or procedures which will improve retrieval characteristics, as well as the identification and safeguarding of information of archival value should be sought out, tested and adopted.

o Any systems should accommodate transactional records under appropriate subjective or functional classifications. (e.g., Bills of lading by bill of lading number, personnel actions by service number, etc.

C. CLASSIFICATION SCHEMES (APP B-3)

o While there exists numerous classification schemes for purposes of Army correspondence classification, three should be considered -- Functional, Subjective and combined Functional and Subjective. Each has advantages and disadvantages.

o TAFFS is the ultimate functional system (see A-3-1, 2 and 3.) As it stands today it does not meet the requirements stated in paragraph B above. It could be modified into a Functional/Subjective system that better meets the Armys needs.

o A subjective system is more easily understood and is adaptable to Army requirements.

D. UNIVERSAL VS. SPECIALIZED SYSTEMS (APP B-4)

o A single classification system is more economical and useful to the Army than using a variety of classification systems at different command levels or in different environments. A universal system requires less training, less administration and is more in accord with the unique mobility of Army Admininstrative personnel.

o Currently the Army dejure has one classification scheme -- TAFFS. But de facto it has four classification systems, one at OSCA/OCS, one at HQDA under ASG, another at Brigade level and below (AR 340-2) and TAFFS which is used in all other organizations. As each office is restricted to its

functional files list, it may be argued that the Army has an individual classification system for almost every office.

o A universal classification system does not require a universal system of manipulating the information so classified. That is, universal "what" does not require a universal "how." In fact a single universal classification system facilitates and encourages using whatever media, hardware and process best meets command level and environment requirements.

o A universal system is the preference of about 75% of the MACOM records managers.

E. CENTRALIZED VS. DECENTRALIZED FILES (APP B-5)

o Each has advantages and disadvantages.

- Centralized, paper document files provide economy, greater professionalism of files personnel, security and increased uniformity and efficiency but tend to be inconvenient to users, slow down retrieval, and foster creation of duplicate convenience files.

- Decentralized files are convenient, locate documents with their creators and those expert in the information they contain, but lack control and uniformity in meeting procedures and standards and are usually manned by part-time file personnel.

o The question to be answered in deciding between centralized and decentralized files is whether the increased control and efficiency from centralization offsets the ease, convenience and first-hand knowledge of files material that derive from decentralization.

o Automation can offer opportunities for centralized storage and control with decentralized access -- the best of both worlds.

o Decentralized filing is the heavy favorite of MACOM records managers (See app A-6).

F. KEYWORD INDEXING (APP-B-6)

o Keyword systems are actually subject-based interlocking cross-reference systems. By themselves they do not provide a substitute for an information classification system. They require the underpinning of a good classification system although they can operate with very crude systems such as a chronological number.

o Keywording does not answer all records management problems. It can be a very helpful on the front end of the records cycle by promoting efficient and quick search and retrieval.

o The Army requires a simple subjective or functional classification system which can act as the basis for manual or automated

systems using any of the available media. Such a system should be adaptable to keywording.

G. RETENTION AND DISPOSITION PROCEDURES (APP B-7)

o Records vary in the length of time they are useful. Some are of "permanent" value. Others are of momentary value and should be destroyed quickly to avoid cluttering the files and thus slowing search and retrieval and increasing costs.

o Historically records managers have met this problem by establishing retention time periods, based upon experience and advice, during which it is estimated the document will continue to be useful.

o There is another approach, from the ADP experience, which is worth considering for paper and microform systems. This consists of keeping track of the number of times a record is accessed and disposing of it based upon usage rather than time retained. The assumption is that if a record is not referred to a specified number of times it is not useful and should be disposed of. A sort of break even point between the number of references and the cost of maintaining the information is established as a standard.

o Starting from that premise, a number of features can be added to refine and tune the system. First, it is not applied to permanent documents. These are retired to archival channels rather than destroyed. The period of time established before review of record can be long or short as judgment and experience dictate. The number of accesses to qualify for retention can be varied depending on the degree of caution desired or the type of record. An override can be added requiring a review by management before destruction of a document.

o Rather substantial savings in equipment, space, time and costs are achievable using this concept. More important, increased efficiency and speed of retrieval would also result from the resulting reduction of the quantity of records maintained.

o The idea appears worth testing to determine its soundness and to develop cost data. (See Section V).

H. "INSTANT" ARCHIVING VS. KEEPING PERMANENT DOCUMENTS IN REFERENCE FILES (APP B-8)

o Despite the fact that TAFFS is archivist rather than management oriented there is evidence that permanent records are not always satisfactorily identified and processed in either peace or wartime environments.

o The idea "archiving on creation" has attractions in improving both the archiving and management support aspects of records management.

o The system operates as follows: Copies of permanent documents are made for the reference file as soon as they become file material, and the record copy is retired immediately to archival channels -- the Records Holding Area in the Army. A variation is to copy the document on microfilm and return the microfilm to the records holding area as the record copy. In any case the retained copy serves the office as a reference copy in place of the permanent record copy and is not subject to the restrictive maintenance rules necessary to safeguard permanent records.

o This procedures effectively separates the archiving and management aspects of files maintenance which at present are intermingled to the detriment of both. Conceivably a better job would be done by allowing offices to concentrate on management support and avoid worrying about archival records in files. In this case the responsibility is transferred immediately to the professional record manager.

o The copying costs, estimated to be $1.5 million per year (See APP B-8), are not excessive and are largely offset by the benefits of improved management support and preservation of important documents which are now lost or destroyed. A second benefit arises from reducing the number of copies made for convenience files which should result from an increased confidence in the official reference files.

o There is an administrative congeniality between this concept and disposition based on usage idea discussed above and in Appendix B-7.

I. MAINTAINING FILE INTEGRITY (APP B-9)

As an alternative to the conventional system of checking out documents to users the concept of making and issuing copies of the document to the user while retaining the reference copy in the file has advantages.

o It maintains file integrity. Users can be assured that the file is always complete.

o It eliminates waiting times for checked out items and thereby reduces retrieval time.

o It tends to reduce convenience files - one can always get a copy when one needs one.

o It encourages turning important papers over to the system as likelihood of loss of the document is reduced.

o The approximate cost of this concept cannot be calculated at this time but could be estimated during a test. However, there are apparent offsetting savings, particularly those resulting from increased safety of documents.

J. MISCELLANEOUS TECHNIQUES (APP B-10)

1. COLOR-CODING - Color-coding provides a number of relatively inexpensive ways of speeding filing and retrieval to decrease costs.

2. FILING EQUIPMENT - There is an array of filing equipment available which under certain circumstances can save space, filing and retrieval time and cost over much current equipment. Local conditions as well as government supply policies and funding are predominant and prohibit generalizations about such equipment. Local studies by on-the-spot records managers is the only satisfactory approach to equipment selection and replacement.

3. LABELLING - TAFFS labelling instructions reflect the system and are therefore disposition oriented rather than retrieval oriented. Simplification of the records system and emphasizing management support will suggest simplifications of the labeling system. A number should be tested under field conditions as part of complete systems tests.

4. HOUSEKEEPING FILES - Segregating routine administrative files documenting actions performed by all offices has advantages in clearly differentiating these files from mission files. This system is recommended by GSA and has been a hallmark of TAFFS. It also creates confusion and provides an easy escape from the more rigorous discipline required for mission files. Whether elimination of housekeeping files would be a useful simplification or an over simplification remains a question to be answered by field testing.

IV. ALTERNATIVES

There are two classes of alternatives to TAFFS to be considered.

The first involves the classification system to be adopted.

The second class is that miscellaneous group of techniques, concepts and processes that provide advantages over the current system in improved retrieval and safeguarding archival documents.

CLASSIFICATION SYSTEM ALTERNATIVES (APP C)

There are four courses of action available for solving the need for a new, simpler classification system. These are --

1. Scratch design a new classification system using a functional, subjective, or combination functional/subjective system.

2. Update the War Department Decimal File System published in 1943.

3. Develop a Functional/Subjective system based upon AR 340-2 -- "TAFFS Simplified."

4. Develop a subject classification system based upon the Administrative Publications classification and numbering system, AR/310-2.

These courses of action have the following advantages and disadvantages:

	Advantages	Disadvantages
1. Scratch design new system.	- Can be tailored to requirements.	- Requires great time and effort to develop both classification codes and retention guides.
2. Update WD Decimal File System	- An easily understood, subjective system would result.	- Far out of date in describing Army activities. - Disposition system would have to be developed.
3. TAFFS Simplified (AR/340-2)	- Based on the current, generally accepted system. - Retention guides exist for each file number. - TAFFS is well liked by Field Records Managers. - No change necessary in files below division level.	- AR340-2 represents only a beginning. File designators from other TAFFS regulations would have to be added to meet higher HQ requirements.
4. AR Subject System (AR310-2)	- Well known by Army Admin. personnel. - Subjective - easy to learn and apply. - Pragmatic - covers all current Army activities. Easy to amend. - Offers opportunity to unify directives and file system in one classification scheme.	- Although basic classification structure is complete, all requirements are not covered by an AR Number and subject. - Disposition guides would have to be developed.

Alternatives 3 and 4 offer the greatest advantages with the least disadvantages and therefore should be considered for adoption.

A clear choice between these two courses of action is not distinct. Both should be tested in a typical Army administrative environment before a decision is made (See V below.)

OTHER ALTERNATIVES

There are other concepts, techniques and procedures which offer alternatives to the way some things are done under TAFFS. These are --

o Centralizing files

o "Instant Archiving"

o Issuing copies of reference documents to users rather than checking out documents from the files.

o Retention and disposition based upon actual usage rather than the passage of time.

o A universal classification system.

Of the first four, the Army has experience only with centralized files, and this was many years ago. The other three concepts are new to the Army. While centralized files are overwhelmingly opposed by field records administrators (App A-6), this approach provides some attractive advantages (security, control, more professional personnel, e.g.)

All four of these concepts appear worthy of testing under actual operating conditions before a decision is made as to their adoption.

The question of a universal classification system presents a different problem. Currently the Army has four systems in operation at different echelons. The advantages of a single universal classification system are overwhelming -- lower administrative and training costs, better use of personnel, efficiency in communication (see App B-4) The MACOM survey highly favor a universal system and are generally hostile to multi-systems. A universal classification system does not exclude, in fact may foster, the use of whatever combination of hardware, media or process best suits the particular level of command and environment.

The alternative, a multiple classification system, does not appear worthy of consideration in developing a new Army records management system and is therefore eliminated from further considertion.

Certain of the miscellaneous techniques should be subject to field testing. Color-coding should be tried in several modes. Labelling also offers several options to improve the current TAFFS labelling plan. Housekeeping records (versus no differentiation of such records) should also be resolved by field testing rather than staff decision.

V. RECOMMENDATIONS

1. It is recommended the Army accept for test two new classification systems.

o Functional/Subjective system, to be called "TAFFS Simplified," and based upon AR 340-2.

o A subjective system based upon the Administrative Publications system prescribed in AR 310-2.

2. That the Army also simultaneously test:

o Centralized files vs decentralizied files.

o "Instant archiving" vs retaining permanent documents for office reference.

o Maintaining file integrity by issuing copies of reference documents vs checking out reference documents.

o A disposition system based upon document usage vs the conventional system based upon time elapse.

3. That these alternatives be grouped into "conservative" and "innovative" test groups identified for convenience as Test A and Test B as follows:

TEST A (Conservative)	TEST B (Innovative)
o TAFFS Simplified	o AR subject classification system
o Decentralized files	o Centralized files
o Continue to retain permanent documents in reference files	o "Instant Archiving"
o Check out reference documents	o Maintain file integrity issue copies to users.
o Continue to use present retention based upon time	o Retain/dispose based usage
o Use housekeeping files	o Do not use housekeeping files

4. That at the end of the test period decision be made based upon demonstrated, and -- where possible -- measured, effectiveness, efficiency and cost of each individual element of each test plan. (That is, a decision not be made between Test A complete and Test B complete, but for each individual component of each test).

5. That the test plan outlined in Appendix D be approved for use in conducting the test and arriving at a decision.

6. That the Army adopt the wartime doctrine of (1) "Instant Archiving" of permanent records in the combat zone and (2) maintaining copies of vital records in the rear area (i.e., records required to

reconstitute a unit in operational condition). Systems to do this should be based upon the results of the tests recommended above supplemented by a further study conducted to determine just what records are to be considered "vital records".

APPENDIX A-1

THERE IS A TECHNOLOGICAL REVOLUTION TAKING PLACE WHICH AFFECTS OFFICE PROCEDURES INCLUDING RECORDS MANAGEMENT. While eventually all records will be maintained electronically, this will not happen for some time. In the meantime, paper records will not only continue to be used but probably grow in number.

Detailed information in support of this statement is contained in "Final Report, Task 1 -- Literature Search" performed by CALCULON Corporation in support of this project, dated 17 April 1981, a copy of which is included with this report.

APPENDIX A-2

CERTAIN ARMY SYSTEMS USING THE NEW OFFICE TECHNOLOGY WHICH ARE NOW IN OPERATION OR UNDER DEVELOPMENT IMPACT THE ARMY RECORDS MANAGEMENT SYSTEM.

The Army has in operation or under development several systems using the automated office technology and reflecting the related approach of treating information as a resource (IRM). These developments impact on the design and development of a new Army records management system in several important ways.

The systems form a related hierarchy. There is in certain cases (at HQDA level for example) a recognition of the interface among systems (e.g., ASG and OPTMIS with ARSTADS). However there is no central planning or control of all development at HQDA (or in Computer Systems Command (CSC) as one might expect given CSC's mission). In fact, there is an impression gained by an outsider of an electic approach to the opportunities offered by the new technologies rather than the attitude of determining the central problems of Army administration and planning out a concerted approach to their solution using such of the new technologies as might be useful.

Information Resource Management

The capstone of the HQDA systems is the proposal made by Arthur Young and Company*, that the Army change its view from managing the media by which information is stored and retrieved to management of the information content of the media - "managing the message not the media."

This idea is not original with Arthur Young. The Commission on Federal Paperwork in its report of July 29, 1977 on Records Management stated --

> "Traditionally, records and paperwork managment have concentrated on developing more efficient ways to streamline, simplify and mechanize document handling. Paperwork systems improvements, for example, have tended to emphasize the use of modern information-handling technologies and tools to speed up, unitize, miniaturize and reduce the costs of collecting, storing, transferring, and disposing of files and records. Too little attention, relatively, has been given to the information content of documents."

From the ADP viewpoint the Commission was equally critical --

> "Much attention was given in recent years to management information systems (MIS). But MIS deals with only the relatively narrow band of highly specialized data needed by top managements-

* "An Information Management Study for Headquarters Department of Army" 26 Feb 1980

whether in government or in private industry. Another concept -- data base management -- deals with data at the other extreme, the efficient handling of large volumes of data "bits and pieces." Only recently have theorists and practitioners begun to look at data and information as a resource, no less critical to management's needs than the other kinds of resources -- human, financial, material, physical and natural."

And it ended with this recommendation --

"The National Archives and Records Service of the General Services Administration should introduce the concept of Information Resources Management (IRM) with the view of shifting attention to the data content of records and forms instead of the traditional focus of records/paperwork management".

Phase I of the Arthur Young study was completed 12 June 1979 and a report of Phase II was submitted 26 February 1980. The study recommends --

o That at HQDA information be treated as a resource and be centrally managed, indexed, tracked and controlled.

o That initially the information management system apply only to automated files and later be extended to manual files. The study synopsis states "The IRM program will build upon established DA programs not duplicate them, but it will also introduce new functions and concepts."

o TAG is to have major responsibilities in the IRM "community" for forms control, reports management, IRM education, and record managment. Records management will become a functional program with TAG as the program manager. This chart shows the proposed organizational and functional relationships.

In addition, each DA staff agency will have an IRM office with "Records Control" responsibilities.

Implications for design of a new Army records management system:

o A new Army records management system should emphasize management of the information contained in documents or other media rather than the documents themselves (as does TAFFS). The features of the system which facilitate storage, search and retrieval of information should take precedence over the disposition and retirement of records without ignoring those archival functions which are required by law and regulation and good information management.

o As automated files are to be incorporated in the IRM concept and system first and manual records at some, as yet unspecified, later date there is time to carefully develop, test and install a new records system more in tune with IRM.

o Although HQDA is the focus of the IRM proposal the study mentions that the new system can provide a "role model" for field adaptation. It is important to recognize that large amounts of the data maintained by HQDA are supplied by the field. Therefore uniform standards and information classifications are necessary for efficient information handling between HQDA and the field as well as within the HQDA staff.

o While the amount of information stored in both electronic and paper form is increasing a shift from paper to electronic media (with perhaps a pause in microforms) is both probable and desirable. Therefore the new records management system must be more "automatable" than TAFFS in order to accommodate and facilitate this development.

o The nature and advisability of initiatives to adapt automated office technology to records management situations should be judged against the long range perspective of the IRM concept. Applications that improve the media but ignore the message -- that speed the handling, unitize the records, or minaturize the media without concern for the arrangement, retrievability, classification and handling of the information they contain -- should be carefully weighed before approval.

ARSTADS (Army Staff Automated Administration Support System)

This is a major project limited in its application to the HQDA staff agencies. It was approved for prototype installation and testing in ODCSPER beginning 10 October 1980. It contains several state of the art features from the automated office concept with the expressed objective of improving the administrative support to the Army staff.

The ARSTADS prototype contains four systems. These are the -

- o Document System
- o Management System
- o Support System
- o Personnel System.

Each system has several subsystems. ARSTADS will also incorporate two existing systems, OPTMIS and ASG which interface with one or more of the ARSTAD systems and subsystems. OPTMIS and ASG are discussed below.

The Document System is of particular interest to this study. It includes Receipt, Tracking and Control, Research, Preparation/Coordination, Dispatch and Storage subsystems.

These subsystems combine to provide a centralized correspondence preparation control and file system. This is a major departure from the decentralized configuration dictated by TAFFS.

Records management is dealt with in broad undefined strokes. How information is to be classified or on what basis retention, disposition or retirement are to be decided are not yet addressed.

TAFFS has not been used in the DCSPER prototype and presents many problems in such an environment (as discussed in Appendix A-3-1).

It is intended to incorporate two operating systems, OPTMIS and ASG, which are discussed below. These two systems represent part of the HQDA solution to the records management problem.

OPTMIS

OPTMIS, a commercially available (Batelle) automated keyword search system, has been in operation in support of the DA staff for some time. It was introduced in ODCSOPS and now is available across the DA staff under TAGO auspices.

Using a telephone-based portable terminal about the size of a small typewriter the user can query the system by a sequence of key words narrowing his search to pertinent document abstracts from which can be selected those abstracts of interest.

While OPTMIS provides a very useful feature to be incorporated in the ARSTADS system it has several distinct limitations at present.

- o It does not contain reference to all documents generated by the Army staff but only those considered key by the responsible action officer or his organization.

- o It contains only unclassified information although unclassified leads to classified documents may be included.

- o It has not yet been decided how and when to purge the system.

- o It is not now a document retrieval system (unless one argues that furnishing an abstract is an adequate substitute for the document itself). An early attempt to add retrieval to the system was abandoned as unworkable. Many of the problems discussed in the Arthur Young IRM study are, or will be, problems for OPTMIS, i.e., duplication, redundancy, differing classifications, etc. Eventually the problems of redundancy and duplication of items and the introduction of a classification base (as far as we know TAFFS has not been used in this regard) will have to be addressed to solve the purge problem and to undertake the logical extension of OPTMIS to include the retrieval function.

ASG - OSA/OCSA/HQDA Automated Correspondence Control.

This system was originally designed to control all correspondence and documents processed by OSA and OCSA. It is now being installed throughout the

DA staff. ODCSPER is one of the first staff agencies affected thus combining ASG with the ARSTADS prototype.

The system initiates response control and turns out the tasking document which provides the action agency with instructions and a suspense date for reply. In addition statistical reports can be generated such as cases on hand, actions completed and types of actions. It also provides a classified document control inventory.

The system uses mini-computer and micrographics and retains documents or cases in micrographic form supported by an automated retrieval system.

It is planned to have ASG installed in all HQDA Agencies by September of 1982.

It is of interest that OSA and OCSA did not discard the War Department Decimal System for TAFFS. The basis for this decision was that offices at the pinnacle of the Army organizational structure were responsible for all Army functions not just a specific function or functions. TAFFS was therefore not considered appropriate.

It is also of interest, that the ASG installation in DCSPER uses a classification system that groups documents by DCSPER Directorate, of which there are five, and files the fiche by chron numbers within directorate. Keyword retrieval is available. Permanent documents are identified by the action officer.

Thus ASG represents a complete break with TAFFS. The resulting classification system while it appears to serve the Agency needs presents some real problems to Army Records Management.

- o It is not a system that can be used without automation. It would be a very bad manual system if its adaption throughout the Army were comtemplated. In a manual mode it would represent a return to the antiquated 19th century system of filing by date. Retrieval in ASG depends on keywording and automation.

- o When permanent documents -- and the importance of such documents tends to increase at the higher echelons of a Federal Agency -- are retired problems of filing and retrieval are presented to NARS because of the lack of an information classification system. It would appear that a miniature ASG system complete with hardware will be required in the Records Center to search and retrieve from the files.

IMPLICATIONS OF IRM AND ARSTADS (With OPTMIS and ASG as Sub Systems) FOR A NEW ARMY RECORDS MANAGEMENT SYSTEM

The IRM proposal places the records management function in an influential position in the so-called "IRM community" and in the proposed IRM office of each HQ DA staff agency.

The problem we see is that ARSTADS, and particularly ASG, seems to be abandoning TAFFS, probably with good reasons but without substituting a fully developed new classification system, either subjective or functional as the necessary foundation.

By definition a good records management system extends from records orgination to retirement or destruction. The combination of keyword research and chron number being used by DCSPER is probably good for search and retrieval of information -- a major TAFFS weakness -- but the system seems to lack a sound and systematic method of identifying and processing information of permanent value to DA, DOD and the government.

The timing and sequence of the introduction of these HQ DA systems seems to be the problem - probably an uncorrectable problem at this point. If, for example, IRM had been introduced before ARSTAD was developed, the records management organization could have acted to insure more extensive consideration of a sound records management underpinning for ARSTADS, ASG and OPTMIS, and therefore the DA staff function. As it is, it seems that the records administrator under IRM will have to deal with a fait accompli - a records management system jerry built by the ADP personnel and tacked on to the automated office system.

FIELD SYSTEMS

There are a number of systems being developed and installed in the field. We have information on the following.

AMARS (Advanced Micrographics Access and Retrieval System) RCPAC, St. Louis

OASIS (Office Administration Services and Information Systems) TRA DOC, Ft. Monroe

IIADSS (Installation Integrated Administration Support System) Ft. Benning

AMARS (Advanced Micrographic Access and Retrieval System)

This system is being installed by the Army at Reserve Components Personnel and Administration Center (RCPAC), St. Louis, MO. It combines computer micromedia and video technology to provide on-line access to microfiche images. Document identification and access is available at remote locations.

Access is provided to the official military personnel file of selected reserve officers and to three sets of COM currently maintained by RCPAC. Access to the personnel file is indexed by social security number. These are essentially "transactional records" filed by "man number."

It is understood that certain hardware problems have plagued the system and remain to be resolved.

IMPLICATIONS FOR A NEW RECORDS MANAGEMENT SYSTEM

AMARS presents an intriguing combination of system and hardware for other possible applications where a central file can be maintained and remotely accessed. A truly Army-wide system can easily be visualized with satellite communications capability added. Such a system could support all parts of the Army from one central file in CONUS. However it is very important to note that extrapolation of this concept from transactional files to much more diverse correspondence files requires an underlying classification system which is flexible and adaptable to automation. TAFFS does not provide this for the reasons outlined in APPENDIX A-3-1.

OASIS (Office Administration Services and Information Systems) TRADOC, Fort Monroe, Virginia

This system serves the TRADOC staff with a mini-computer based "automated message center" which includes correspondence preparation, automated retrieval of documents, response control and electronic mail. According to the TRADOC Records Manager, Ms. Ann Thompson (May 81) work had begun in her office to construct a file manual for use with OASIS. She intends to tie this to the TAFFS system by including the TAFFS file designator in the coding system.

IIADSS (Installation Integrated Administration Support System) Fort Benning, Georgia

This system links the administrative structure of Fort Benning and the Infantry School and Center with communicating word processors and includes electronic mail. In addition, it automates the post locator file and order preparation. Micrographics are also a feature of the system.

According to the TRADOC Records Management Officer (May 81) there was no real interface between the system and TAFFS at this point in time.

SUMMARY

The salient feature of existing and planned DA administrative automation systems is the lack of a solid link between the records management system and the automated systems.

One comes away with the impression of two worlds -- an automated world and a manual records management world -- each of which exists with

little or no interface with the other. Each seems puzzled about what connection and coordination should exist between them.

IRM recognizes the existence of the records managment function and affords it a place in the IRM firmament. But the IRM study does not explain how the records management system will interface with the total information system or what job it will do in managing information as a resource. It should.

APPENDIX A-3-1

TAFFS BECAUSE OF ITS STRUCTURE IS NOT SUITED TO AUTOMATION AND HENCE TO THE NEW TECHNOLOGIES

The general provisions for the Army Functional File System, TAFFS, states that the system is "based on the concept that each Army element or office maintains records documenting the performance of one or more specific functions"*

TAFFS is structured to provide for the maintenance of documents in an office; that is, it provides for what amounts to an array of separate, individual office file systems tailored to the functions of the particular offices.

These "systems within a system" are decentralized and exclusive. The file numbers used in one office -- with certain exceptions for housekeeping files -- are not to be used in another nearby office. Even the "common missions" of both offices have different file numbers. For example, documents relating to "staff visits" in the Finance Office are filed under a different number than staff visits made by G4 Office.

When it comes to mission files, those specific to the office function, the same document may correctly be filed under different and unrelated numbers in different offices because the document is filed according to the function it relates to, not its subject. For example, a Military Police Investigation could be filed under 508-17, MP reporting files, in the Provost Marshall's office under 1461-31, Report of Survey Files, in the S-4 Office and 305-08, Financial Data Record Folder Files, in the Finance Office.

TAFFS assumes a document is the object to be managed, not the information contained in the document. (Or perhaps more accurately it assumes that if you manage the document you also manage the information.) TAFFS assumes the most logical place for that document to be filed is in the office having responsibility for carrying out the function that it documents. That these assumptions are correct in the opinion of a large number of users in the field is borne out by the MACOM survey results (Appendix A-6). About half of those responding prefer the functional classification system to the subject system and the vast majority favor continued decentralization of records as opposed to central filing.

"Automation" refers, in its original and literal sense, to the automatic handling of information. Rather than in verbal form on paper (or in microform) manually manipulated, the automated information is in digital form and manipulated electronically. The media for transmitting and storing information in each case is very different and this influences the system for arranging and storing it.

* Para 1-6, AR 340-18-1, C-15, April 1980.

In the early years of automating of business systems usually involved automating an existing manual system, often one of long standing. Now automated systems are just as often designed from scratch to meet newly arising needs. However the transition from a manual system to an automated system is frequently desirable as changes in technology take place. Such is the case with the Army records management system. Automation is the wave of the future. The desirable speed and the approach to the conversion is discussed elsewhere; suffice it to say evolution is more likely and desirable in this particular case than revolution.

The document orientation of TAFFS and its decentralized nature are its major strengths as a manual system. These characteristics are also major obstacles to its conversion to an automated system.

Even without a major systems analysis, it can be seen that TAFFS as it now stands, is clearly not a good candidate for automation.

The decentralization of the TAFFS structure is the major reason for this. As stated above, TAFFS is "a system of systems," an amalgamation of file systems designed to support each office producing and filing documents, rather than a unified, cohesive, tightly organized classification system. One of the major benefits of automation is its ability to store large masses of data, cheaply and efficiently and to search that file, retrieve the data, process data into information and supply it to a user with great speed. This usually means adoption of a system of centralized storage and decentralized access. TAFFS stands this idea on its head. Its structure resists such an approach. No simple tinkering will make it amenable to automation.

There are other reasons than concept or structure that argue against automating TAFFS but they are relatively less important.

The redundancies touched on above, the misfiles caused by TAFFS' complexity (Appendix A-3-2),the tendency , particularly by untrained people, to file papers in "Reference Files" or "Unidentified Files" all indicate a system lacking the kind of discipline required of a good automatable system. But these are characteristics that make TAFFS work, not things that can be "cleaned up" by tightening the system.

This is not to say that a modified TAFFS classification system could not be devised which could be automated. There are good reasons for considering such an alternative which are discussed in Sectional IV, but this is not the same thing as automating TAFFS.

The approach to such a modification should include eliminating the restrictions on using TAFFS numbers as well as turning TAFFS into a simple, universally usable file classification structure -- in effect, converting TAFFS to a functional/subject filing system. The benefits and drawbacks of this concept are discussed in Section III, and specifically in Appendix B-3.

APPENDIX A-3-2

TAFFS HAS DISADVANTAGES AS A MANUALLY-OPERATED PAPER-BASED SYSTEM THAT MAKES ITS REPLACEMENT ADVISABLE EVEN FOR THE SHORT TERM.

Automation aside, TAFFS does not work well as a paper-based manual system. Reasons for this are both inherent and externally caused.

Let's take the external factor first. Basically the problem is the quality of people that too often are called on to operate the system. "Filing" continues to be considered drudgery in many minds and is consequently delayed or is done hastily and often is not properly supervised. The decentralized nature of TAFFS has eliminated the professional file clerk of the past. Filing is a part-time job usually assigned to the lowest ranking or newest clerical person in the office. As a result filing is often delayed, sloppy, and incorrect. Permanent records are not always identified and destruction of records that should be saved occurs. (See discussion of the Catch-22 nature of this problem in Appendix A-3-3.) While this criticism is not true of all filing personnel -- long-time Local National employees in Germany are certainly an exception -- it is true of the average transient military clerk to the point that TAFFS can be described as not being "soldier proof."

Recognition of this situation occurs even among TAFFS most fervent supporters. Statements are made that TAFFS will work splendidly if only "qualified people" are assigned to it. Or another variant, appearing often in responses to the MACOM survey (Appendix A-6), "nothing is wrong with TAFFS that better (or more) training won't remedy."

While both of these arguments may be valid it is unreasonable and unlikely in these days of personnel quality problems in all the services that records management in any form can achieve sufficient status within the Army's list of priorities to make any real change in the quality of personnel now doing the filing. One concludes then that the system must be simplified to the point that all of the operators understand it and execute its provisions effectively and accurately.

An ancillary external, or, if you will, environmental, problem is the decreasing time available for Army Records Administrators to assist users and to conduct training in TAFFS. Since TAFFS was initiated there have been additional duties assigned to these managers caused by related advances in the art (micrographics, for example) and statutory additions and changes -- Privacy Act, Freedom of Information Act, etc. -- that detract from the purely management duties of the Records Administrators. Normally these additional duties have been imposed gradually over the years without additional resources. As a result the TAFFS effort has been diluted. These duties are not going to change and additional resources are scarce providing thus another reason for simplification.

But the inherent faults are the most persuasive in the argument for replacing TAFFS with better manual system. There are two basic reasons why it should be replaced:

- o TAFFS emphasizes the disposition end of the records management cycle to the detriment of the retrieval function. It is an archivist's system rather than a managers' system.

- o TAFFS is too complex and therefore too difficult to understand and operate accurately and effectively.

Disposition vs Retrieval

The only reason for keeping information is the probability that it will be referred to in the future. At one end of the spectrum the purpose may be to retain information for quick use in day to day management control, and that information may be of short-lived usefulness. At the other end, it may be the record of the development of a major policy decision which is of permanent archival value to to the Federal Government.

TAFFS emphasizes the archival function at the close of the records management cycle. It neglects -- not purposely, but by the weight of its emphasis or disposition of records -- the search and retrieval functions.

The conditions which caused this are worth a brief review.

For many years the Army operated a Decimal File System based upon the Dewey Decimal System of subject classification that was used almost universally by American libraries. The "bible" was a cloth bound volume, available throughout the Army, which was arranged by subject and which provided a file number for each subject or subdivision of a subject. An alphabetical cross index was also provided.

An appropriate file number was selected when correspondence was initiated. It was placed on the letter heading and became the number under which the letter and its endorsements were filed in the various headquarters receiving and adding to the correspondence. Cross references were made to related file numbers to aid in search when appropriate. In large headquarters files were normally centralized in the Adjutant General's office and file clerks became expert in identifying and manually retrieving files in response to inquiries.

This system served well between World Wars I and II when the Army was small and most of its business conducted by letter at a relatively leisurely pace.

Problems with it began during the tremendous expansion of the Army during World War II. Communication activity increased and the method of communication began to shift to more rapid and efficient means such as telegraph and radio. The end of the war found the Army with great masses of paper records which gave rise to horror stories in the press about the size of filing sections and record storage areas and the expense to the taxpayer of maintaining these records. It was apparent that the pre-war record system failed to serve the increased size and changed character of the post World War II Army.

To attack the clutter problem, the Army began directing the disposition of records by imposing a records control schedule system on top of the decimal filing system. This often required extensive and laborious review of files to identify records worth keeping and those to be destroyed. Records of permanent and transitory value were usually filed together indistinguishably.

The Army spent considerable time searching for solutions to its problems of record-keeping. It had been a pioneer in the microfilm approach to record storage. But roll microfilm is difficult to search and not easy to read. It is useful primarily in storing permanent records which might be infrequently searched. Microfilm simply reduced the physical volume of records while creating additional problems of its own.

It is apparent that in the period just after World War II the Army considered orderly and timely disposition of paper documents a major shortcoming of its records management system. In devising a new system this consideration was paramount.

After considerable field testing, TAFFS was adopted in 1959 and fully implemented by 1963. TAFFS' provisions were strongly influenced by the problem of disposition of hard copy records and the related desire to cut paper work costs.

The subject classification of the decimal filing system was junked in favor of functional classification, i.e., by the function, subfunction or process of the office creating the record.

"Thus the correct classification of records under TAFFS often requires that the subject of individual documents be subordinated or even ignored in the classification process. Papers are filed, regardless of subject, under file numbers identifying records that are retained in the office filing the papers."*

Strong emphasis on disposition appears throughout the regulations governing TAFFS (AR 340-18-Series and AR 340-2). Each file number is followed by disposition instructions. Prescribed file folder labels include disposition notes and the position the label is to be placed on the file folder indicates the relative permanence of the file as well as its disposition.

It is symptomatic of this emphasis on disposition that only 7 pages of AR 340-18-1, the general regulation governing TAFFS, pertain to maintenance and reference procedures and only 2 of these to reference. The remainder of the regulation, approximately 40 pages, deals essentially with records disposition. TAFFS remains hard-copy or "correspondence" oriented despite the rapid growth of electronic communication and storage systems in the Army.

TAFFS decentralizes record keeping. Files are stored close to those who create and use them. The previous AG Central Files Section has disappeared and consequently there are few "professional" file clerks now

* Briefing, "The Army Functional Files System (TAFFS)".

within the larger headquarters. The decentralized files are usually maintained as an additional duty by a typist or office clerk. Classification and storage activities lack uniformity and as a result and retrieval is slowed. These short-comings affect the users of the TAFFS by delayed responses, decreased productivity and the quality of product.

TAFFS provides for the immediate identification and segregation of permanent records. The aim is to avoid the periodic combing of a subject file for records to be sent to permanent storage or otherwise disposed of. However, this provision is not observed uniformly. The complexity of the system discussed below has contributed to this deficiency.

File numbers are no longer placed on correspondence, only the office symbol of the originator. A recipient of a letter may therefore file the correspondence under a different file number than the originator. As different numbers have different retention periods, this could result in one office destroying what another office retains. References are not pin-pointed as they were under the decimal file system but indicate only the office in which the record should be found. All of these factors inhibit research and retrieval.

Complexities of TAFFS

There are two major areas of complexity which negatively impact on the efficiency, effectiveness, and usefulness of TAFFS:

1. The TAFFS system is not well communicated to the users. Even if the system design were optimal, the documentation is so complex that it is very difficult to understand.

2. The basic design of the TAFFS system is complex and difficult for the average file person to understand and therefore to execute.

TAFFS System Documentation

The effectiveness of any records management system is dependent to some extent upon how well the system documentation guides, instructs, and informs users in the everyday operation of the system. Since the best of systems will fail if improperly documented, we focused a part of our efforts on analyzing the way TAFFS was communicated to users. For purposes of this evaluation, we concentrated on TAFFS documentation.

Using the GSA guidance for effective directives,* the TAFFS regulations should:

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* GSA. Records Management Handbook, FPMR 11.3, "Communicating Policy and Procedure," 1967.

- o Pinpoint responsibility;
- o Help prevent repetitive judgments on routine matters;
- o Delineate work relationships;
- o Explain work procedures, thereby reducing confusion and doubt;
- o Help instruct supervisors and employees in their routine tasks, thus minimizing "learning curve" time; and
- o Help supervisors play a more positive role and improve operations.

TAFFS falls short of the above criteria. Our findings and analysis indicatre that the regulations are not clear or simple enough, are sometimes untimely or out-of-date, are sometimes garbled and in conflict with each other. A user may have to consult several sources to find an answer. Even if TAFFS were the optimal system for managing the Army's records, the system would not be completely effective given the current documentation.

To determine specific communications problems, the 16 basic TAFFS regulations were evaluated as well as the supplemental regulations such as AR 340-2, against criteria established by GSA for effective directives and other technical writing standards. Major effectiveness elements are completeness, conciseness, currency, flexibility, and simplicity. These critical factors are discussed in the subparagraphs below.

Completeness

Only when each user has the complete story will the records management system be effective. All of the operations and procedures should be contained within a single system, and there should be no gaps in guidance and information for each different type of user.

Based on our analysis of TAFFS and our interviews with users, the TAFFS documentation is incomplete. Not all information is included in the system; i.e., TAFFS is document - not information-oriented. The regulations are often incomplete for daily operations.

A complaint received from the MACOM survey (Appendix A-6) was that changes to the filing system lag changes to policies and procedures that give rise to new records. This can be viewed as a result of failure to recognize this problem by the Army staff and a subsequent failure to staff such directives with TAGO. On the other hand it may be viewed as a failure of TAFFS' to meet the requirements of a good classification system which is broad enough to cover such unexpected shifts and changes. A possible solution is to include file instructions in the policy or procedural directive, as the Air Force does (see Appendix A-4).

In extension of this point, from the Records Management Office at Fort Belvoir and users of AR 340-2, a common complaint was that many subjects

were not addressed, e.g., "protocol." From major command users, the complaint was also voiced that not all functions were covered.-

Perhaps a major inadequacy is the lack of a good files series index. TAFFS is a functional system. Users, however, typically think in subject terms. A comprehensive index which leads users to the correct functional breakdown would improve the system. Admittedly, this would be difficult, if not impossible, to achieve since a given document can be filed under several different codes and users are restricted to the files allocated to the function(s) of this office.

Conciseness

In this category, we looked at three related questions:

1. Are the regulations presented in the clearest, easiest to follow form?

2. Are they written in the most concise manner?

3. Are the regulations so clearly written that no reader or user can misunderstand?

Our project team found TAFFS documentation very difficult to read and interpret. Attending a TAFFS training course clarified some of the instructions; in some instances, we were further confused.

The volume of TAFFS documentation alone would indicate a lack of conciseness. TAFFS documentation is at least 10 times the volume of the directives of other services. One records management office highlighted the relevant portions of TAFFS and stated that the remainder was "ash and trash." Users also felt there were too many disposition instructions. Almost without exception, users interviewed felt that documents could be classified several different ways. This was also a very common problem in the training class. This is not necessarily a system design problem. It may be simply a matter of unclear instructions.

Another common complaint from all levels of users is that housekeeping and mission files are easily confused. Again, this may reflect imprecise writing.

The retention periods, as well as the description of the records sets, could be stated in much simpler, shorter understandable terms. For instance, when retention periods are contingent upon an event, it is not always certain that the event will occur and that its occurrence can be objectively determined or verified by the person performing the file function. Events such as "when no longer needed" cannot be determined. Moreover, most records are disposed of only after they are no longer active or needed. In some instances events are used that, while they are certain to occur, are difficult to determine. For example, "2 years after GAO audit" is an impractical retention period. The following examples illustrate the lack

of conciseness in disposition instructions. All examples cited are from the housekeeping file categories (AR 340-18-1).

File No.	Description	Disposition
101–01	**Suspense files.** Papers arranged in chronological order as a reminder that an action is required on a given date; a reply to action is expected and if not received should be traced on a given date; or transitory papers being held for reference may be destroyed on a given date. *Note.* File numbers are not required on these papers or on labels of file drawers or folders in which the papers are filed. Examples of papers in suspense files are: *a.* A note or other reminder to submit a report or to take some other action. *b.* The file copy, or an extra copy of an outgoing communication, filed by the date on which a reply is expected. *c.* Papers which may be destroyed in 30 days or less as being without further value. *d.* An incoming communication filed by the date on which action is expected to be taken.	Destroy papers of the type described in subparagraph *a* after action is taken. Withdraw papers of a type described in subparagraph *b* when reply is received. If suspense copy is an extra copy destroy it; if it is the file copy, incorporate it with other papers for file. Destroy papers of the type described in subparagraph *c* on date under which suspended. Withdraw papers of the type described in subparagraph *d* when action is to be taken.

Figure 1

The above figure illustrates a disposition instruction for a simple, routine, usually temporary file. The simple has been made complex. Despite all the verbage, it was easily confused in the TAFFS training with the following (Figure 2):

* 103–03	**Reading files.** Copies of outgoing communications, arranged chronologically, and maintained for periodic review by staff members.	Destroy after 1 year.

Figure 2

In the example shown in Figure 3 below, the event is unclear. What is a "periodic application" of the procedure?

10	**Standard of conduct files.** Documents relating to procedures used to assure that all personnel fully understand the standards of conduct and ethics required of them. For example, procedures requiring that each individual periodically read applicable directives.	Destroy after the next periodic application of the procedure, or 1 year after obsolescence of the procedure.

Figure 3

The next example (Figure 4) is a disposition instruction for a file that every office should have because every office must have supplies. Yet, only one user's files in the TAFFS training class contained this file. Another valid observation from a user was that this instruction, like many others, was very specific as to file content, but not precise enough to determine if anything else could be classified under this number. However, we feel the major problem with the instruction is that two file folders with two different retention periods are required if the DA Form 12 series are involved. This is not readily apparent from the instructions.

101-17	Office service and supply files. Documents relating to ordinary supplies and equipment used by an office; office space and utilities; communications, transportation, custodial, or other services required by an office; and to the general maintenance of an office. Included are: Requests to supply activities for supplies, receipts for supplies and equipment, and similar papers pertaining to office supply matters. Requests and other documents concerning the issue of keys and/or locks to an office. Requests for publications and blank forms, and other papers relating to the supply and distribution of publications to the office. Documents relating to local transportation and drayage services required by, or available to an office. Documents relating to custodial services required by an office. Requests for office space and similar routine documents related to office space. Requests for installation of telephones, floor plans showing location of office telephone extensions, requests for change to telephone directories, and similar papers. Documents relating to the modification, repair, or change of office heating, lighting, ventilation, cooling, electrical and plumbing systems. Documents relating to painting, partitioning, repairing, or other aspects of maintaining the office physical structure. Documents relating to other logistical-type services required by, or provided to an office.	Destroy 1 year after completion of action, except pinpoint distribution files (DA Form 12 series) will be destroyed when superseded or obsolete.

Figure 4

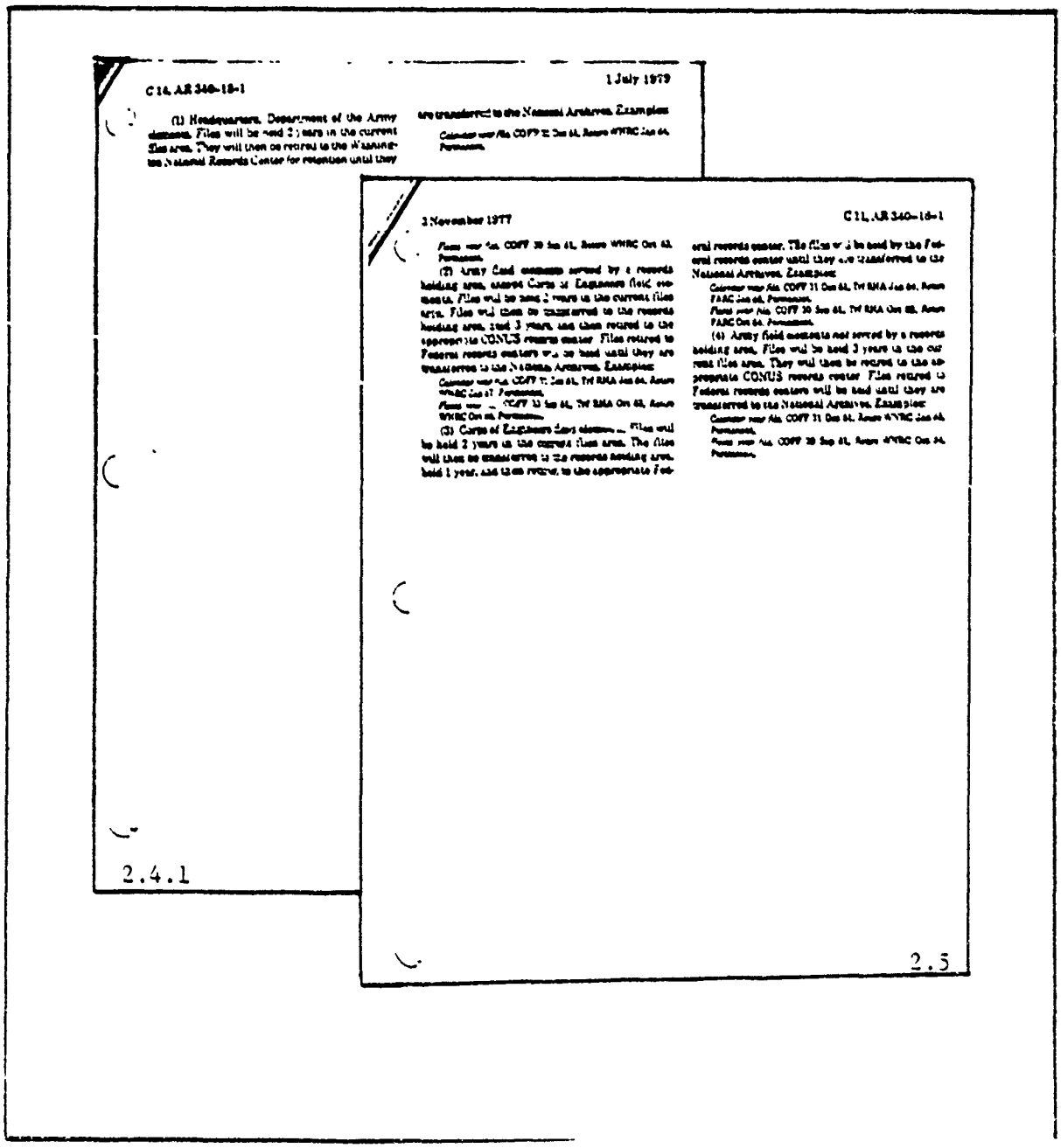
Our last example, (Figure 5) illustrates how difficult it is to classify a seemingly simple, routine memo dealing with military personnel strength. We observed that users justifiably classified such a document under any of the following numbers; 101-06 is correct.

File No.	Description	Disposition
★ 102-01	**Office general personnel files.** Documents that relate to the day-to-day administration of military personnel and civilian employees in individual offices. Included are papers that relate to attendance at work, copies of reports of attendance and overtime, and notices of holidays and hours worked; notices about participation in athletic events and employee unions; notifications and lists of employees to receive Government medical services, including X-rays and immunizations; notices and lists of individuals to receive training; and comparable or related papers.	Destroy after 1 year
★ 102-02	**Office personnel register files.** Documents used in accounting for office personnel and in controlling office visitors, such as registers reflecting personnel arrival, departure, on leave, and temporary duty travel, but not official personnel registers used as direct source documents for preparing morning reports.	Destroy after 6 months.
102-13	**Office military personnel files.** Documents relating to the supervision of military personnel performance duty in a staff office. Included are papers pertaining to classification, promotion, orders, sponsors, indebtedness, leave, enlistment, waivers, statement of service, bonus, evaluations, identification, group life insurance, applications for appointment, application for outside employment, academic and individual training reports and instructor evaluations, and related documents. *Note.* For Privacy Act purposes, this files series is covered by system notice A0708.03bDAPC.	Destroy 1 year after transfer or separation of individual.
101-06	**Office organization files.** Documents relating to the organization and function of an office, such as copies of documents which are duplicated in the comptroller, management, or comparable office charged with determining the organization and functions of the agency. Included are copies of functional charts and functional statements; copies of documents relating to office staffing and personnel strength, such as extracts from manpower surveys and manpower authorization vouchers; copies of tables of distribution and allowances, and similar papers. Also included are documents reflecting minor changes in the organization of the office which are made by the office chief and which do not require evaluation and approval by the comptroller-type office.	Destroy when superseded, obsolete, or no longer needed for reference.

Figure 5

Flexibility

The numbering system used in the TAFFS documentation makes it very difficult to insert new paragraphs. The example shown below illustrates this observation. The particular paragraphs cited are crucial to TAFFS and instruct users on the handling of permanent records. In this instance, a new page (page 2.4.1) has been inserted to clarify instructions. The page contains about an inch of printed material. It is not apparent that the instruction then continues on the following page.



C 14, AR 340-18-1 1 July 1979

(1) Headquarters, Department of the Army [illegible]. Files will be held 2 years in the current files area. They will then be retired to the Washington National Records Center for retention until they are transferred to the National Archives. Examples:

[illegible] COFF 31 Dec 61, Annex WNRC Jan 64, Permanent.

2.4.1

3 November 1977 C 11, AR 340-18-1

[illegible] COFF 30 Jun 61, Annex WNRC Oct 63, Permanent.

(2) Army field contracts served by a records holding area, except Corps of Engineers field contracts. Files will be held 2 years in the current files area. Files will then be transferred to the records holding area, held 3 years, and then retired to the appropriate CONUS records center. Files retired to Federal records centers will be held until they are transferred to the National Archives. Examples:

[illegible] COFF 31 Dec 61, TM RMA Jan 64, Annex WNRC Jan 67, Permanent.

[illegible] COFF 30 Jun 61, TM RMA Oct 63, Annex WNRC Oct 66, Permanent.

(3) Corps of Engineers field contracts [illegible]. Files will be held 2 years in the current files area. The files will then be transferred to the records holding area, held 1 year, and then retired to the appropriate Federal records center. The files will be held by the Federal records center until they are transferred to the National Archives. Examples:

[illegible] COFF 31 Dec 61, TM RMA Jan 64, Annex FARC Jan 66, Permanent.

[illegible] COFF 30 Jun 61, TM RMA Oct 63, Annex FARC Oct 64, Permanent.

(4) Army field contracts not served by a records holding area. Files will be held 3 years in the current files area. They will then be retired to the appropriate CONUS records center. Files retired to Federal records centers will be held until they are transferred to the National Archives. Examples:

[illegible] COFF 31 Dec 61, Annex WNRC Jan 64, Permanent.

[illegible] COFF 30 Jun 61, Annex WNRC Oct 64, Permanent.

2.5

Figure 6

In the TAFFS training class, the trainees had occasion to consult this instruction. Without exception, the trainees stopped their reading, quite logically, on page 2.4.1. However, the applicable material was contained on page 2.5.

Currency

The content of the TAFFS regulations is not always current. TAFFS as a system has not kept pace with modern techniques of information handling. Users interviewed were often unclear regarding procedures for the storage of magnetic media records. Records managers voiced concern about the way these records were handled. Aside from this problem, changes to the regulations are often untimely and users do not always have the most up-to-date information.

Consistency

As we have pointed out in previous sections, the format of the TAFFS documentation is less than optimal. It does not provide accurate identification, easy reading, rapid reference, or emphasis of the major points.

In addition, there are inconsistencies in the content of the writing. For example, in some instances the disposition instructions for housekeeping records read "Destroy in CFA after 2 years." This is unnecessarily inconsistent and confusing since the disposition procedures (p. 2-3, AR 340-18-1) indicate that all 2-year files are destroyed in the current file area. From records management supervisors came the observation that disposition instructions for permanent records were very inconsistent.

Simplicity

Simplicity is a key ingredient for both the records management system and the accompanying procedures. Again, the volume of documentation makes it impossible to interfile and maintain all the pertinent regulations as a single set or to quickly locate all the material on a single subject.

We observed in the training class that users had difficulty in determining if they had the latest revision and in inserting new pages and removing obsolete pages.

The numbering system of the regulations is much too sophisticated for the intended user and makes finding a particular paragraph extremely difficult. This also hampers revising the regulations. The lack of an alphabetical subject index (as mentioned previously) and adequate cross-references further complicate the problem.

Readability

Our nine hours spent in the TAFFS training session were extremely profitable. We observed that a major obstacle to the training was the difficulty the trainees had in using, reading, and comprehending the regulations, the basic filing tool. The regulations were obviously ill-suited

to the needs of this particular audience. A number of factors could have contributed to this difficulty: the organization of the regulations, the indexing, or the technical writing. We focused on ascertaining if the writing itself was adapted to the technical level of the intended audience by applying an objective test of readability to the regulations.

Many methods for testing the level of reading difficult have been developed over the years. We used the FOG INDEX, a highly effective, simple numerical test. The test is easy to apply and has been shown in many studies since 1944 to give consistent, reliable indications of readability. It has proved widely useful in practical applications in industry and government. Originally the numerical values of the FOG INDEX corresponded quite closely to levels of reading difficulty by school grade. It should be noted, that educational standards have declined and today's 10th grade education, particularly with respect to reading, is considerably less than that of several years ago. Nonetheless, we felt that the test was suitable for our purposes.

We sampled 10 passages from the basic TAFFS regulation, AR 340-18-1. The FOG INDEX ranged from a low of 12.8 to a high of 18.4, with a mean of 16.0. Our findings correlate with the NARS inspection report of the Army dated June 1978. The NARS report cites an average FOG INDEX of 16 for Army directives. An index of 16 corresponds to a reading level of a college senior.

Several defense analysts have recently pointed out that today's Army is largely recruited from the unemployed and economically and educationally disadvantaged. Yet, it is this group of new recruits who are largely responsible for the day-to-day operation of the filing function. It is obviously ineffective to present simple filing instructions and ideas at such a high level of reading difficulty. NARS recommends that directives be written at a level of 12; other authorities recommend a level of 9-12.

To find the FOG INDEX of a passage, the following procedure is used:

1. Several samples of approximately 100 words spaced evenly throughout a document are taken. The number of words in each passage are divided by the number of sentences to obtain the average sentence length of the passage. Each independent clause is counted as a sentence.

2. The number of three-or-more syllable words in the passage are counted. Words that are capitalized; combinations of short, easy words; and verb forms made three syllables by adding -es or -ed are not counted. This gives the percentage of hard words in the passage.

3. To find the FOG INDEX, the two factors counted are totaled and the result is multiplied by 0.4.

Thus: $$\text{INDEX} \quad \frac{\#\ \text{words}}{\#\ \text{sentences}} \quad + \quad \frac{\#\ \text{hard words}}{100} \quad \times \ .4 \ = \ \text{FOG}$$

TAFFS SYSTEM DESIGN

Systematic filing should satisfy three separate but related needs:

1. Information retrieval,

2. Efficiency in office practices, and

3. The Archivist's need for preservation of permanent documents

TAFFS addresses the third item very well; however, this is done by sacrificing the other two needs as well as simplicity. This complexity and inattention to items (1) and (2) above evidences itself in illogical, incomplete, and obsolete file categories; excessive misfilings; and costly file operations. This is also manifested by the proliferation of non-integrated, costly automated systems when the more practical solution to the problem may be simply a better conventional file.

Filing Arrangement

The key to efficient, effective, fast retrieval of information is the system of files arrangement, or the classification scheme. If the search for a given document takes more than 2 or 3 minutes, it usually indicates something is wrong in the classification scheme.

Under the TAFFS system initial classification of a document is extremely time consuming. Retrieval is in many instances even more time consuming--if not impossible. Some users have attempted to make the system work by establishing duplicate files arranged in a more convenient, usable scheme. One use of the 340-2 series had arranged a large volume of files in accordance with the regulations to pass inspection. Heavily referenced files were duplicated and placed in "07" folders. It was a way to force the system to work.

The primary difficulty with TAFFS is in the retrieval function. This is directly attributable to the classification scheme. In breaking down files, the material is first divided into basic types or groups., Next, the material is further broken down within each separate file group or collection. TAFFS uses two types of arrangements. The first breakdown is into mission or housekeeping. The second breakdown is by function and disposition, indicated by a numeric code. It is at this point that TAFFS disintegrates. This system is unduly complex, because it does not consider the filing features of a document, the features the user will most often know, or the informational content of the material. The classification scheme requires a reorientation in thinking for file users since people instinctively think in subject terms.

Filing by function can, of course, be a logical arrangement if the retrieval process is carefully considered. An alphabetized subject listing of retrieval headings (the way people will be most likely to remember where they have seen a fact) is critical. TAFFS fails to provide this crucial element.

Moreover, the TAFFS' design is such that one number may represent several folders or even cabinets of material. There is an absence of clear instruction as to how to further label and classify this material (the internal arrangement of files). Each user must exercise his own discretion. Consequently, there is a lack of uniformity and consistency of the system from office to office.

Labelling

One of the most difficult concepts to grasp in TAFFS is the labelling process; however, the effectiveness of TAFFS hinges on this process. It is cumbersome, time consuming, and complex. Moreover, it requires a myriad of decisions that the file clerk is often ill-equipped to make. First, the classification of documents is complex. Users tend to think in subject terms; thus, they perceive that a document can be classified under several numbvers. Also, users tend to file the document by the subject rather than by mission or function. Users typically believe that all 16 regulations are applicable to their filing function. For instance, the file person in an office in MDW may classify material relating to military personnel under the 700 (military personnel) series rather than the 102 (housekeeping) series. In our interviews, we asked records supervisors and inspectors the most common problems. Labelling and classifying documents headed every list.

The label itself contains disposition and cutoff instructions as well as file title and number, while the label position denotes the location of final disposition.

Preparing a file label requires:

- Determining the applicable regulation or function (series and group);
- Determining the correct number and title;
- Ascertaining correct abbreviations (a file label could typically contain 50 - 100 words);
- Determining whether the file is calendar or fiscal (there are no guidelines for this decision):
- Determining the cutoff date;
- Determining the correct disposition instructions; and
- Determining the label position.

A user would typically consult 2 or 3 regulations before the label could be prepared.

In our TAFFS training class, this process was the most difficult to learn. One of the later exercises was to prepare labels for 7 documents. All were housekeeping-type records. There were numerous errors and confusion.

The least length of time to finish the exercise was 45 minutes; others took over an hour; some did not finish.

Because of the design and stringency of the labelling process, users cannot take advantage of filing techniques, such as color coding, which would help in the identification and retrieval process.

The Air Force has alleviated much of the preparation time and complexity of this process by using preprinted labels which are used only on the guides. The number of labels with disposition instructions required is considerably fewer; the user is prompted as to the necessary categories to be completed; and there are no formatting decisions.

Proliferation of Convenience Files

The complexity of TAFFS encourages "crutch" records--employee desk files, 07 reference files, chron or reading files, etc. These extra files may seem efficient and in some cases it may be the only way to quickly locate information. However, they are expensive to maintain and misleading for they seldom contain complete data; thus, decisions made from these files may be unsound. In addition, "convenience" files undermine the main files. Some information may not reach the main files. In time, no one knows where to look. However, the use of "convenience" files is understandable. TAFFS has real deficiencies and in many instances has proved too unreliable to justify confidence.

APPENDIX A-3-3

TAFFS IS INADEQUATE AS A WARTIME RECORDS MANAGEMENT SYSTEM.

RVN Experience

Because of its complexity and its organic structure (decentralized filing, emphasis on disposition of records, large number of file subject classifications), TAFFS is not a good system for identification, storage, retrieval and disposition of records in the combat zone. One of its major drawbacks, functional filing, is ameliorated to some extent by the publication of AR-340-2 which simplifies TAFFS' for application in units of less than division size. However, the requirement for combat units to maintain records of permanent value for reference purposes works to the disadvantage of good records management.

Of interest in this regard is the criticism of records management in RVN by the Peers Report published in 1970. Incomplete records, unauthorized destruction of records, and failure to identify and safeguard records of permanent value, combined to make difficult the conduct of the investigation of the My Lai incident. This situation existed to the point that records management was the first of a number of "Peripheral Issues" General Peers believed should be called to Hq DA attention for follow-up action and correction.

General Peers pointed out a tendency of units "to destroy records rather than retain them in accordance with established procedures." Destruction prior to IG inspections is cited as a possible reason, the implication being that rather than putting files in proper order prior to inspection it was easier and apparently "safer" to destroy them.

General Peers recommends action be taken throughout the Army "to emphasize the importance of periodic screening of records to insure that documents of historical significance are retrieved and not destroyed."

VITAL RECORDS IN WARTIME

Industry has taken increased interest in the preservation of records necessary to sustain operations in the event of natural or other disaster. In records management parlance these records are referred to as "Vital Records."

The basic Army publication on this subject is AR-340-26, "DA Alternate File Program" which deals with the DA Continuity of Operation Plan (COOP) and is applicable to HQDA and its alternate sites. No policy or publication pertains to the records of tactical units in the combat zone. While the need to reconstitute the records of a company, battalion, brigade or division probably did not arise in RVN, this was due to the nature of operations in that conflict. Operations from base camps provided security for administrative functions and the relatively low probability of destruction of a unit and/or its records made reconstitution of a unit's records an unlikely requirement. In the case of nuclear warfare or the return to conventional

warfare such as characterized Korea and W W II, a vital records program will become more important, and, it would appear, a required feature of the Army records management system.

NEED FOR A WARTIME SYSTEM

It seems obvious that a records management system should be designed primarily to work efficently and effectively in wartime.

TAFFS fails to meet the criteria. TAFFS was devised in the period between Korea and Vietnam to solve the problem of mounting numbers of paper files. Then files grew in size, not as a result of the nature of the Army Decimal File System then in effect, but because that system did not provide for disposition and retirement of records. It was necessary to superimpose retirement schedules on that system and these requirements were laborious and episodic in their work load on the major commands and units of the Army.

TAFFS emphasized immediate identification of permanent records, immediate identification of retention periods, and immediate disposition of records on schedule. The system was a peace time solution. Its operation in wartime was not anticipated nor provided for.

APPENDIX A-4

OTHER RECORDS MANAGEMENT SYSTEMS

PURPOSE

This appendix describes the Task 2 fact finding activities conducted by the CALCULON project team with respect to the records management programs of other services and non-DOD federal agencies.

OBJECTIVES

The objectives of this effort were to:

1. Identify useful, possibly transferable processes and approaches to records management problems within large federal agencies;

2. Gain the benefits from the experiences of other federal agencies; and

3. Ascertain and avoid pitfalls that other agencies have encountered in the records management function.

SCOPE AND METHODOLOGY

This effort encompassed a review and analysis of other services and selected non-DOD agencies. Our approach was to use the results of our Task 1 literature search, as well as "word-of-mouth" recommendations, to select the most promising non-DOD agencies. In selecting non-DOD agencies, we looked for innovative uses of current technology to solve records management problems rather than specific parallels to the Army organization. Non-DOD records management systems reviewed were the Departments of Transportation and Energy.

For the other services, the project team selected those organizations with operating needs and problems which most closely parallel the Army. DOD records management systems reviewed by the project team were the Departments of the Air Force and Navy.

To accomplish the proposed work plan, the project team reviewed the records management and systems directives of the selected DOD and non-DOD agencies. Site visits to these organizations provided further amplification of the systems. In addition, one team member attended an Air Force records management training course.

FINDINGS

Both DOD and non-DOD agencies reviewed share information handling problems. All agencies are largely buried in paper. The so-called

information explosion has taken its toll on all the agencies, with no signs of relief in sight. The need for higher quality, more timely information to make effective decisions continues to grow. Staff shortages, freezes, loss of positions, and inadequately trained people, together with the need for increased productivity, plague all the agencies. Records management problems are not lessening; they are growing astronomically.

All the agencies reviewed are concerned about information handling problems; all have active improvement programs underway to solve their problems. Although approaches, philosophies, and the degree and sophistication of technology used differ, our review highlighted a number of common paperwork bottlenecks which are still largely unsolved.

Information often moves slowly, is occasionally lost or misplaced, and is managed, for the most part, with traditional techniques and technologies. The process of creating, preparing, disseminating, and storing documents is often long, tedious, and inefficient. There is little awareness of what other offices within an agency are doing and coordination of efforts between offices or agencies to manage information is rare.

Records management is generally time-consuming, complex, and requires a high degree of user sophistication. Regulations and legislations governing the records process continue to grow and further complicate the problem. Because of this legislation, federal agencies are lengthening retention periods, thus increasing the paperwork management burden. Some of these issues are discussed elsewhere, in the section on legal implications.

Those technologies which are being introduced to alleviate paperwork problems are being developed independently in various segments of the organizations, with little consideration for eventual integration or near-term optimization of the significant investments that are being made. Technologies and new systems are seen as a potential solution to a particular problem or subset of a problem where the solution is expected to follow from the technology. In some cases, a technological solution exists but is not used.

The following paragraphs highlight some of the methods and technologies being used by the agencies reviewed to handle information.

DOD Records Management Systems

The CALCULON project team visited the records managers of other services to examine their records management problems and requirements. The Air Force and Navy/Marine records management systems were selected to review because their organizational structures, purposes, management concepts, and information handling requirements are similar to the Army. Obviously, these organizations have different characteristics, traditions, and missions. Furthermore, their records management requirements are determined, at least in part, by organizational magnitude. However, the nature of military organizations logically compels this comparison.

Department of the Air Force

The Air Force shares many of the Army's information handling problems. The Air Force records holdings are approximately the same as the Army's--1.5 million cubic feet. Permanent holdings are about 5 percent of the total holdings. The Air Force, like the Army, has a shortage of personnel in the records management function.

The Air Force has a functional/subjective classification system. Topics are first divided by function, the second division is by subject. File series are organized by mission, common mission, and housekeeping files. Coding is alphanumeric. An alphabetical subject index to the common mission files is provided.

Some of the major differences between the Air Force system and TAFFs are:

1. The Air Force's classification outline and the records retention control schedules are separated. Disposition instructions are in "look-up" tables using a decision logic table format.

2. An effort has been made to encompass all phases of a record's life cycle in the Air Force records management program. When technical directives and bulletins are created, they are referenced to the file classification and disposition table number.

3. The system has enough rigidity to maintain integrity and uniformity, yet has enough flexibility to be applicable to the many divergent needs of the Air Force organization. For example, color coding can be used; secondary and tertiary subdivisions can be made at the user's discretion.

4. Labeling is much simpler than the Army system, yet accommodates all the elements of TAFFS. Preprinted gummed labels are used. The disposition instructions are placed on guides rather than folders. Thus, guide cards can be reused and the laborious task of typing disposition instructions on each file folder is eliminated.

5. The file plan form is very similar to the Army's form; however, the internal arrangement of each file series is listed on the form. This additional column is a significant improvement and eliminates filing mistakes and confusion.

6. Input to system changes is on a semi-annual basis.

7. The Air Force has made a concentrated effort to reduce the "fog" in their written communications. This is reflected in the records management instructions; they are simple, clear, and straightforward. Disposition instructions are short, concise, and effective.

The Air Force is currently studying their records management problem. A high priority is to incorporate current technology in the system as a replacement for labor-intensive tasks. They are also looking for more effective ways to accommodate the total spectrum of records media within the system.

Of the systems reviewed, the Air Force system is structurally the closest to TAFFS. While the origin of the sysstem is uncertain, it almost seems that the Air Force began with the basic TAFFS structure and corrected perceived deficiencies.

Department of the Navy

The Navy also has its share of information handling problems. The Navy is producing records with increasing speed and ease; information is given ever-wider distribution. Yet, there is a shortage of personnel available to keep pace with these increased production and dissemination techniques.

The volume of Navy records holdings is comparable to other services; temporary records are 95 percent of the volume.

Although the Navy's records disposal program has been in operation since the Records Disposal Act was passed in 1943, past procedures were not always universal. In 1961, the Navy issued, in a single document, a set of universal, uniform disposition instructions to be used by the Navy and the Marines. Change 1 to the instructions was issued in 1964; the basic instructions were slightly modified and reprinted in 1967.

The 1961 basic instructions and file system are still in use today. It has been suggested that the Navy "has done nothing" in records management because the basic system has not been revised as often as other systems. It can also be argued that the initial subject classification system was well designed and provided enough flexibility to accommodate future changes.

The Navy's disposition instructions number approximately 200 as compared with about 2800 for the Army. Consequently, the instructions are much broader and less subject to change. This general grouping of records allows for minor differences in terminology or the local character of the records. It also makes the instructions more adaptable by each activity to its individual record series. While most standards for Navy records are broad, some must be narrower in scope and, of necessity, more specific. While simpler instructions are necessarily less precise and therefore less accurate in application.

The Navy records management instructions recommend, where possible, an overall centralized control of each activity's disposal program even though file maintenance may be decentralized. This decision is one made by the user organization; size is the key factor in the decision.

The instructions are simple and well organized. The required readability level is low. In terms of the size of regulations, the total records management instructions are less than one-inch thick.

The records management system encompasses the life cycle of a record in practice as well as theory. File codes are an integral part of the document creation process, as well as the maintenance and disposition process.

The Navy has recently reduced their total holdings significantly. An objective of the program is to dispose annually of a volume of records at least equal to the volume created annually. The Navy is also trying to reduce the number and volume of long-term or permanent naval records, yet increase the significance of those to be preserved. Retirement of records does appear to be cyclic. However, this is true of many systems, particularly in government agencies, and could be a result of the human element in the records management function rather than a system design weakness.

Non-DOD Agencies

Additionally, the project team visited the records managers of several non-DOD agencies to examine their file and records management procedures. The Department of Transportation and Department of Energy were considered because both agencies have recently experienced changes in their records management systems which might be useful to the Army. As mentioned earlier, innovative technological applications have been attempted at the Department of Transportation which are noteworthy if not controversial.

The paragraphs below detail the records management situations at both agencies.

Department Of Transportation

Under the guidance and at the bequest of Edward W. Scott, Jr., Assistant Secretary for Administration during the Carter administration, the Transportation Automated Office System (TAOS) was designed and installed to test the feasibility of "the paperless office" concept. As with the other Federal agencies, the Department of Transportation is attempting to handle the explosion of information and the sheer quantity of paper and has developed a pilot automated electronic information system to address the problem. This system promotes efficient use of information for critical decision making and the rapid completion of routine office chores. Employing an array of equipment including a mainframe computer, several mini-computers, laser and impact printers and almost 200 terminals, the TAOS system offers capabilities to maintain an individual's work calendar and a telephone log, dispatch and receive electronic mail, maintain phone directories, place phone calls, perform mathematical computations, edit text, access data bases, and several other correspondence management jobs. This system is growing in the tasks it performs, the number of terminal and users making up the system, and perhaps to overall acceptance within DOT. It is claimed to promote cost effectiveness within government through more timely decisions and better information. However, TAOS has not become a permanent feature of DOT's office and records

management systems. Moreover, for widespread Army application the TAOS system contains several serious limitations, and as a result, is of great curiosity only for this study.

"Electronic filing" is not yet a feature of the system. The impact of TAOS on the great mass of Department records is not yet clear

Department of Energy

The Department of Energy is in some ways a unique example of Federal records management in that it is an amalgamated agency, created out of several disparate agencies. The result has been several, sometimes competing records management systems being used in various sections of DOE, residual systems resisting standardization efforts because they have worked successfully for years at another location. These files occasionally have types of record material included in them which other file stations do not have, complicating the effective installation of a universal system. Standardization has been attempted nonetheless, and the description which follows describes that standardized system.

The DOE 0222 filing system and 0230 records disposition standards are hybrid systems adapted from previous filing systems in military organizations and the prior Atomic Energy Commission. They are subject-oriented alphanumeric systems which employ mnemonic identifiers for the 19 major categories into which records are differentiated. The 0222 system of records management was first installed in over 50 file stations of the Fossil Energy Organization of ERDA, predecessor to DOE, in 1976 by CALCULON Corporation. The system provides for primary, secondary, and tertiary breakdowns of material within the 19 categories, to be used only as record volume warrants. Considerable flexibility is allowable as to which record category is selected, as long as records are consistently filed in that area. Training manuals and training itself were undertaken, and the DOE Manual Chapter 0222 Records Management System remains the offically prescribed system within the agency.

The aforementioned does not mean, however, that other approaches to records management have not been undertaken. One alternate approach is a four-digit numeric subject clasification system adapted from the Navy classification system. Users of this system complained they were required to use this system and that it did not work well at all in the basic functions of filing, retrieving or disposing of documents. These individuals, professional in records management, strongly counseled that either a subject-numeric system or an alphanumeric system be selected and tested, as their four-digit system was poor, and moreover, difficult to learn, while the others here were not. It was their view that a subject approach is most easily comprehended, intuitively obvious, clear, and simple and effective in use. For the interim, at least, several systems will continue to prevail at DOE until common agreement or authority dictates the final selection of a permanent and omnipresent records management system.

SUMMARY

Several general conclusions can be drawn regarding information and records management within military and non-military agencies alike.

Clearly there appears to be no "one best way" to store and retrieve documentation of official activity. How records are retrieved, retained and disposed of depends as much on the traditions and missions of an agency as on the records management system employed. The goal, however, is clear. It is to select the optimal system which marries the best procedures to meet the needs of both manager and archivist.

There exists a general consensus regarding the desirability of subjective filing among professional records managers, because people seem to most readily "think" in subjects, rather than numerically or functionally.

With regards to the TAOS system in place at the Department of Transportation, this automated approach is expensive, cumbersome, inflexible vis-a-vis environmental constraints (humidity and temperature requirements for the computer), and inadequate for the storage of complete texts of longer documents, such as reports. An automated file system has not yet been implemented. Finally, the TAOS system may not actually reduce in any significant way the volume of paperwork created in the course of the agency's business, although it is too early to confirm this with practical experience.

Non-concurrence with some aspect or all of the filing regulations established by military and non-military agencies alike is frequently observed. This suggests NARS regulations are often not observed and do not prevent the mushrooming of countless "mini-systems" in agencies which become reified through use over time, redundant, and unknown to other than their users.

The Air Force and Navy records systems have features that could be considered for Army use. Air Force labeling procedures are more efficient than the Army's system, and both Air Force and Navy systems have subject indexes that TAFFS lacks. Both systems seem to handle issues of creation, maintenance and disposition of records - for the total system - in much simpler and less complex ways which should enhance their flexibility and "soldier-proof" qualities.

APPENDIX A-5

LEGAL IMPLICATIONS

BACKGROUND

Current legislation governing federal records evolved over a period of many years. After the Civil War the government began a series of efforts to control federal paperwork. Variou committees and commissions were established to solve federal paperwork pro 'ems. By the 1920s, the mounting paper in the government resulted in passage of two laws, the Budget and Accounting Act of 1920 and the Act of May 11, 1922, which placed controls over the increasing flow of federal reports, records, and publications. However, the first organized effort to manage federal paperwork was the establishment of the National Archives on June 4, 1934.

World War II created an unprecedented explosion of paper. Executive Order 9784, issued September 24, 1946, recognized this problem and required all agencies to conduct continuing programs for records management. The Hoover Commission's task force report published in January 1949 made an impressive case for improving records management and recommended that a Federal Records Management Act be enacted, establishing comprehensive legal authority for the creation, preservation, management and disposal of federal records. Following this Commission's recommendations, several bills were introduced in both Houses of Congress. From these bills emerged the Federal Records Act of 1950.

Under this Act, the GSA is responsible for developing and improving standards, procedures, and techniques regarding the creation, organization and maintenance, and disposition of records. The GSA is responsible for establishing and operating federal records centers, as well as the National Archives, and evaluating the effectiveness with which agencies manage their records. Overall responsibility for this program is assigned to NARS.

The Commission on Federal Paperwork (CFP) is the latest in the succession of committees and commissions to look into the paperwork problem of the federal government. The CFP endorsed the passage of Public Law 94-575, amending the Federal Records Act of 1950. These amendments expanded the definition of records management. Under this act, records management now means "the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved with respect to records creation, maintenance and use, and disposition." Operating within the life cycle of records, NARS is authorized to intervene in all phases of the records management practices of all federal agencies.

AUTHORITY

The Army's records management program is mandated by two basic pieces of legislation. Authority for regulation of Army records is contained in the Act of July 7, 1943, as amended (44 U.S.C. 366-376, 378-380), more commonly referred to as the Records Disposal Act, and the records provisions of the

Federal Property and Administrative Services Act of 1949, as amended (44 U.S.C. 3901-396, 3907-401).

SCOPE

The Records Disposal Act defines the term "records," as "all books, papers, maps, photographs, or other documentary materials, regardless of physical form or characteristics, made or received by any agency of the U.S. Government in pursuance of federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the government because of the informational value of data con ained therein. Library and museum material made or acquired and preserved solely for reference or exhibition purposes, extra copies of documents preserved only for convenience of reference, and stocks of publications and of processed documents are not included within the definition of the word 'records' . . ."

The Federal Records Act of 1950 requires the head of each federal agency to establish and maintain an active, continuing program for the economical and efficient management of the records of the agency. The program must encompass the entire life cycle of the record. In addition, each federal agency must submit to NARS an annual summary of its records holdings.

Specifically, the Administrator of GSA and the head of each federal agency are charged with the responsibility to establish effective programs for the creation; organization, maintenance, and use; declassification; and disposition of agency records, as well as records equipment and supplies.

PROGRAM EVALUATION

The Federal Records Management Amendments of 1976 authorize the Administrator of GSA to inspect the records management practices or records of any federal agency for the purpose of making recommendations for improvements. The Amendments require the Administrator to report to the Congress and to the Director of the Office of Management and Budget annually on the results of records management activities. Responses to recommendations for improvements are to be reported annually to the Congress and to the Director of OMB. In addition, NARS has the authority to periodically inspect federal records to determine agency compliance with the provisions of the Records Disposal Act, the Federal Records Act, the Federal Property Management Regulations, as well as to evaluate records management effectiveness. Each agency also has the responsibility to develop and implement self-inspection programs.

Thus, certain Federal statutes include restrictive provisions which affect the creation, maintenance, and disposition of Army records. By far, however, the most specific and complex restrictions deal with the disposition of records.

DISPOSITION OF RECORDS

Basic regulations governing the disposition of Army records are contained in the Federal Property Management Regulations. These regulations prescribe policies, standards, procedures, and techniques for the disposition of all federal records in accordance with 44 U.S.C. chapters 21, 29, 31, and 33. These regulations specify the following criteria for the records disposal program.

Each federal agency must compile and maintain on a current basis a records control schedule for all major groups of records in its custody having importance in terms of content, bulk, or space and equipment occupied. Schedules must identify and describe the records series covered and shall contain instructions that, when approved, can be readily applied. Schedules must be readily adaptable to all organization levels and elements of the agency and each office must have a clearcut understanding of the retention schedule. The schedules must be integrated with the existing filing arrangement so that records can be disposed in large blocks. The retention schedules must also address the many types of records which are temporary, transitory, or duplicative. Schedules must be reviewed annually to maintain their currency. The records schedule must make provisions for the entire spectrum of records; i.e., those that should not be retained, the removal of inactive records to federal records centers, the identification of permanent records, and retention of active records.

Disposition refers to the actions taken to records AFTER APPRAISAL by NARS. No disposition of any series of records is authorized before the NARS appraisal. Disposition as defined by the regulations includes destruction or donation of temporary records, transfer of records to federal agency or records center storage facilities, transfer to NARS, or transfer of records from one federal agency to any other federal agency.

Under these regulations, an agency must:

- Inventory all records in the custody of the agency annually;
- Develop disposition standards for each type or series of records, to include specifying whether the records are of permanent or temporary value;
- Formulate specific disposition instructions for each series of records, including instructions for the retirement of records to federal records centers and to NARS;
- Assemble disposition standards and instructions into one comprehensive document;
- Obtain approval of the schedule from the Archivist of the U.S.; and
- Apply the records schedule to all records of the agency.

The identification of permanent records is developed by the Agency and proposed to NARS. Approval is by the Archivist of the U.S. Records recommended for retention longer than 10 years solely for administrative purposes must be justified in accordance with the procedures in the FPMR. Nonrecord material must be maintained separately from official agency files to facilitate records disposition.

General Records Schedules, issued by the GSA (NARS) govern the disposition of certain types of records common to many or all agencies. Application of disposition instructions in these schedules is mandatory. These schedules also provide for identifying certain permanent records which should be offered to NARS. These schedules apply to the following types of records:

- Civilian personnel records
- Payroll and pay administration records
- Procurement, supply and grant records
- Property disposal records
- Budget preparation, presentation, and apportionment records
- Accountable Officers' Accounts records
- Expenditure accounting records
- Stores, plant, and cost accounting records
- Travel and transportation records
- Motor vehicle maintenance and operation records
- Space and maintenance records
- Communication records
- Printing, binding, duplication, and distribution records
- Information services records
- Housing records
- Administrative management records
- Cartographic, remote sensing imagery, and related records
- Security and protective service records
- Research and development records
- Machine readable records
- Audiovisual records
- Design and construction drawings and related records.

The above schedules were developed by NARS in cooperation with OPM, GAO, and other appropriate agencies and have been approved by the Archivist of the U.S. The Archivist announces all new schedules.

Legislation is very specific with regard to the disposition of records and severely limits an agency: "No records of the government shall be destroyed or otherwise alienated from the Government except in accordance with 44 U.S.C. 3314. The Administrator of General Services will establish procedures to be followed by Federal agencies in compiling and submitting lists or schedules of records for disposal (44 U.S.C. 3302)."

FPMR 101-11.405-1 requires NARS to establish standards for the retention of those records having continuing value (permanent records) and to assist federal agencies in applying the standard to records in their custody (44 U.S.C. 2905). NARS has identified 16 generic records descriptions

intended to illustrate the types of records normally appraised by NARS for permanent retention. They are:

1. General subject files documenting substantive agency programs
2. Selected case files
3. Analytical reports
4. Formal minutes of boards and commissions
5. Records of internal agency, interagency, and non-federal committees
6. Legal opinions and comments on legislation
7. Evaluations of internal operations
8. Formal directives, procedural issuances, and operating manuals
9. Records on functional organization
10. Briefing materials
11. Public relations records
12. Agency histories and selected background materials
13. Publications
14. Visual, audio, and graphic materials
15. Scientific and technical data
16. Socioeconomic micro-level data.

SUMMARY

Summarizing these regulations, each federal agency must:

- Segregate housekeeping and mission files;
- Segregate temporary and permanent files;
- Apply the GSA retention schedules to those records common to all federal agencies;
- Obtain NARS approval prior to disposition of any record; and
- Retain records permanently in accordance with the NARS identification, appraisal, and specifications for permanent records.

IMPACT OF THE PAPERWORK REDUCTION ACT

In December of 1980, Congress enacted P.L. 96-511, the Paperwork Reduction Act. Basically, this law deals with the formal implementation of the information resources management (IRM) concept within the federal government. This law establishes a central office in OMB with overall responsibility for developing, implementing, and managing an integrated IRM program. Records management, as well as privacy, EDP, telecommunications,

information collection, paperwork control, etc., are activities encompassed by the Act.

The Act is not specific in many areas and no OMB circulars have been issued to date with respect to the Act. It is not clear from the Act how deeply involved OMB will become in the records management process or how or if the current role that NARS plays will be affected. Some general requirements of the Act are known and the Army has taken steps to interpret and implement these. It is clear, however, that the records management function must in the future move from filing systems to information management. The federal records management programs must be integrated into total information systems. This will of necessity change some traditional ways of managing records, organizational relationships, and job specifications.

CONCLUSION

It is obvious that federal agencies can exercise very little discretion with respect to the retention and disposition of records. Presumably, the passage of the Paperwork Reduction Act will alter this situation in the future. Until the Act is more clearly articulated, information management becomes more broadly understood, and agency roles are defined, the multitude of restrictive federal statutes dictate a program of paperwork preservation. Emphasis will remain on the disposition and archival phases of the record cycle and will tend to preclude the use of records as a management tool.

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APPENDIX A-6

SURVEY RESULTS OF MACOM TAFFS USAGE QUESTIONNAIRE

I. Introduction & Purpose

As part of the fact-finding portion of the TAFFS study, we asked The Adjutant General to solicit the views of users of TAFFS, at all levels and locations throughout the world. This would allow a compilation and assessment of views from an informed, participatory group which could logically be assumed to be representative of most operators of TAFFS. Care was taken to insure that a balanced group of respondents was the source of data. In this report we strove to use the data in two manners, grouped by size of command represented, and by aggregated totals.

Several months were given to respond to the questionnaire, and more than one hundred replies were received. A copy of the questionnaire and cover letter are included here as Appendix A, with particularly interesting responses following in Appendix B.

It perhaps should be mentioned that there are benefits and drawbacks to soliciting Records Management Officers' (RMOs) views. The sample is not reliable, not being random, nor are the data statistically valid. Many respondents took one position, for their location and then were sympathetic to the plausibility of another position at another level. Their involvement, however, and use of TAFFS makes them an informed group surely, with precise knowledge as to the efficacy of the TAFFS system. On the other hand the required use of TAFFS by this group also co-ops their neutrality, prejudices their perspectives, limits their awareness of other systems' suitability, and depending on their attitudes towards TAFFS, potentially biases or skews their views.

These are only potential problems. But it may alert the reader to certain problems of a "vested interest" nature that the respondent sample may have demonstrated.

Finally, it is important for the reader to note that the duration of respondent experience also varies greatly. Some individuals have worked in records management for perhaps as long as two decades; other are much newer to the field, and thus less experienced. In the aggragate analysis some are major command records managers and others merely administrative assistants in a staff section. In the command analysis all are major commands reporting to HQDA, but with varying numbers of records and records management problems. The precise length of involvement by respondents was not elicited by the quesionnaire, and thus only estimates can be made. Aggregate opinions were taken, and these are what we turn to next.

An important additional consideration is that while the letter suggested users of TAFFS -- Action Officers, managers and the like -- no identifiable user responses were received. The results are the opinions of operators of the system and do not reflect a user's assessment of a major purpose of the system -- management support.

II. Quantified Summary of Non-Substantive Responses

Seven of the nine questions asked drew responses which can be considered essentially non-substantive opinions, meaning a yes-no dichotomy, or favoring or opposing a certain suggestion. Many respondents explained their positions, and these will be considered later in this report.

To begin, of the 103 responses from records managers in the United States, Japan, Korea and Europe, 78 answered that they believed TAFFS successfully fulfilled the filing functions articulated in question No. 1 (see Appendix A for the MACOM questionnaire). 21 respondents did not feel TAFFS adequately handled these functional requirements, roughly one-quarter of those who approved. The few remaining users adapted neutral stances on the issue, usually accompanied with suggestions for improvements or other delineations of the question.

Question 3 asks users to declare a preference for either a functional or subjective classification system, and further, if they believe the functional approach offers more advantages than disadvantages.

By a ratio of 2-1, respondents chose TAFFS and its functional approach. Sixty individuals were in this group. Twenty-nine persons thought that a subjective filing classification scheme would simplify filing and heighten filing accuracy. Interestingly, 11 records administrators, or approximately 10 percent of the sample, suggested a hybrid system be developed. This system would adopt the more intuitively obvious subjective classification within each of the fifteen functional areas of TAFFS, thus avoiding the misunderstanding caused by TAFFS' functional approach and the generally inadequate training for it which users cite as root causes of difficulty.

The automation of TAFFS and the creation of the "paperless office" were the issues raised in Question 4. Of the 103 sampled, 56 believed TAFFS is automatable, while 30 said it is not. Some others stated they thought TAFFS to be automatable, but only at certain levels, or at great cost to the Army with no appreciable gain. Few seemed to think that automation was decisively advantageous.

On the subject of universality, 76 or three-quarters of those responding stated strong preferences for a universal system, citing the mobility of file personnel and training advantages. Only 16 individuals thought different systems were likely to be useful at varying organizational levels. A few reported they saw advantages and disadvantages to both a universalist approach and to a multiple-systems concept, and thus took no decisive position on the question.

TAFFS's functional division of the universe of Army documents seems to have generated the impression that this makes TAFFS too complex. Responding to Question No. 6, almost half, or 49, agreed that TAFFS is overly complex and not easily comprehended. Most of this large group blamed the system's alleged complexity on inadequate training, which they claim is given poorly, too seldom, and to the wrong people. Many feel that action officers

and senior-level individuals should be taught how TAFFS operates, and not merely the file clerks.

Opposing those who feel TAFFS is complex is another group, almost as large (44), which claims TAFFS is not abstruse, but merely requires thorough training on a regular basis. Several spoke of the need to routinely repeat the training course, and almost all respondents commented on the present inadequacy of the TAFFS training program.

Centralization of files, at almost any level, (whatever violence this does to the actual meaning of centralization!) was resoundingly rejected 80 to 9. A few users commented that centralized files would only be possible or feasible in an automated records system. The overwhelming response was that it would be harmful to record retrieval, an egregious delay of Army work, and conclusively counter productive. No other question produced the unanimity or intensity of response as did this question.

The previously noted fact that respondents were all operators with a stake in a decentralized file system in which they are staff supervisors, not hands-on operators is perhaps of significance here.

Finally, less than half, or 39, of those questioned reacted positively to the suggestion that a microfiche automated indexing and retrieval system be created to handle Army documents. Of this group of 39, almost 30 voiced reservations as to such a records system's practicality or cost-effectiveness. Eighteen respondents strongly opposed an automated indexing and retrieval approach, for approximately the same reasons of practicality and cost. Only two of those counted were neutral on the issue.

III. The Responses of Four Major Commands

Four of the larger major commands surveyed during the course of this study - including the U.S. Eighth Army, USAREUR, FORSCOM, and TRADOC were analyzed as a group. Responses from this group show generally uniform reactions except on the issues of automation and complexity. These are summarized in tabular format in Table 1 (see page 4-a).

In brief, these commands

- o Prefer TAFFS to a subjective system
- o Want a Universal system
- o Desire to retain decentralized files.

They divided evenly on the question of whether TAFFS is too complex, and have some reservations about the TAFFS automation and the microform system proposal.

Additionally, six representative smaller technical major command headquarters were selected to determine their potential variance with the larger commands examined earlier. These included the Recruiting Command at Ft. Sheridan, Illinois; the Health Services Command at Ft. Sam Houston, Texas; the Communications Command at Ft. Huachuca, Arizona; the Criminal

Investigation Command at Falls Church, Virginia; the Computer Systems Command at Ft. Belvoir, Virginia, and the Intelligence and Security Command at Arlington, Virginia. The responses are presented in summary form in Table 2 (see page 5-a).

As may be seen by a comparison of the larger and smaller units' responses to the questionnaire, there is a general consensus on most questions. The exceptions are the responses to question 4, where both large and small organizations split on the issue of automatability of TAFFS. Clearly some believe it would be neither useful nor cost-effective to automate TAFFS. Furthermore, question 6, the complexity of TAFFS, divides the respondents in both large and small organizations, with some holding that it is too complex (in organizations where filing personnel are often inadequately trained transient employees) and others reporting its functional structure and delimited scope make accurate filing easy to accomplish. The operant condition in these responses appears to be the training variable. Throughout the questionnaire respondents either attribute TAFFS' felicity with documents to thorough regular training, or they blame its "complexity" and "awkwardness" on the lack thereof. Thus these opinions are likely subjective responses to training rather than objective considerations of TAFFS philosophy, method and structure.

Significant Suggestions and Comments By Respondents

A rich collection of comments and suggestions was accumulated during the course of this questionnaire analysis which is both interesting and edifying to the records manager charged with the responsibility of using TAFFS. Some are included here anonymously and verbatim, selected for their particular insightfulness or utility in this study. They are arranged numerically and without comment.

Question 1: Any filing system should ensure the following:

a. Reasonably short searches for records.
b. Accurate retrieval of records.
c. Identification of records of permanent value.
d. Orderly archiving of records.
e. Timely destruction of records.

How well do you believe TAFFS fulfills each of the functions listed above?

"TAFFS is a workable system for existing records. The only improvement would be to coordinate the creation of new records with TAFFS prior to dissemination to the field. As an example, if a change to an AR requires a new report, a TAFFS representative should examine the report and prescribe a file number, to be included in the change. A change should then be made to TAFFS identifing the file number and referencing the applicable regulation. While it is understood some files have no regulatory basis, those

that do should be clearly identified; and those that do not should be carefully examined to determine what government function is benefited (if any) by the files existence. The complexity of Army operations has made it virtually impossible for records management personnel to individually identify and properly categorize new records."

"The TAFFS system should in theory fulfull each of the listed functions. However, a problem exists in that action officers are not trained in TAFFS and rely on clerical employees to determine appropriate file number determination. If clerical personnel are not properly trained, and many times this is the case, papers are never filed properly nor disposed of in manner intended under TAFFS."

"The functional files system is an extremely effective system of establishing files for maintenance, retrieval, and disposition.

a. Searches for records are lengthy only when files have not been properly established. When the guidance provided in the AR 340-18 series is applied to a set of files, searches are minimal.

b. Retrieval of records is simple when files are properly established under TAFFS.

c. The identification of permanent files is a problem area only because of unclear definitions of the contents for permanent files. This problem could easily be resolved by providing clear concise descriptions of permanent files in the AR 340-18 series. Clarity in the disposition instructions will also provide added help to files personnel. Frequently lower operating levels cannot determine if the permanent files disposition or a lesser retention priod applies. Re-wording and standardization of terminology in disposition standards would be extremely helpful.

d. Schedules for transfer and retirement of records are adequate to meet most reference needs and the removal of records with decreased reference requirements from the current files area. Retirement restrictions imposed by NARS is a serious hindrance to the movement of records from records holding areas. This problem would not be resolved through a major revision of TAFFS.

e. TAFFS provides for an orderly disposal of records. The only problem with the destruction of files is after action files. These files require periodic reviews to eliminate superceded or obsolete documents. These files do not get reviewed frequently enough to have a current file. This type of disposition should be reduced to a minimum and where possible a definite retention period should be established".

"a. Reasonably short searches for records. TAFFS does not fulfill this function. Filing by functional category is hard for many

personnel to comprehend. Filing by subject matter rather than by function would be easier for all concerned.

b. Accurate retrieval of records. When analyzing a piece of correspondence, it oculd be filed in a number of places. Frequently, when the person who filed the paper is not available, another party has a difficult time trying to locate the paper. Filing by subject would make it easier to retrieve records.

c. Identification of records of permanent value. If you know what functional category the file belongs to, you should be able to identify the permanent value of the correspondence. Disposition instructions explain what is to be done with the correspondence.

d. Orderly archiving of records. If the disposition instructions are followed, archiving the records should not be difficult.

e. Timely destruction of records. If the disposition instructions are followed, destruction of records should be done when indicated."

Question 2: How might TAFFS be improved in fulfilling each of these functions?

"Only by returning to a subject file system. All items can be identified by their subject, but functions are hard to comprehend. All housekeeping files should be listed in the 101 subfunction for everyone and the common mission files in each subfunction eliminated."

"1. TAFFS can be improved in fulfilling the functions in the areas of searches and retrieval by -

a. Improving filing techniques.

b. Emphasizing training and conducting a series of classes and follow-up review sessions.

c. Designing a training package which is simple and understandable at the lowest level, that starts at point A and follows a simple path through TAFFS to point Z, that introduces the concept of records management, why we need records management, and the concept of TAFFS - a logical step by step illustration.

d. Illustrating a method within a subfunction or a file as to how it can be subdivided, e.g., by subject for ease of filing and retrieval as well as numerical, alphabetical, or geographical.

2. The AR itself is difficult for most individuals to read through and form a concept upon which to base more complex information. The AR's could be rewritten with clerical personnel in mind so that they could follow a more logical sequence and thus assimilate the material more easily."

Question 3: TAFFS is a functional as opposed to a subject filing system. Documents are filed based upon the functions of missions performed by the office concerned rather than the main subject of the document. Do you believe the advantages of functional filing--decentralization of files to the user, relationship of classification to work performed, etc., outweigh the disadvantages? Would you prefer to return to a subject classification system?

"The functional system is far superior to a subjective files system in that the functional system allows for disposition according to the need of functional offices. A subjective filing system would allow numerous offices to maintain the same document for the same disposition period. This could cause a serious problem with duplication of records and would rapidly increase the volume of records maintained by the Army. The decentralization of files is necessary to provide easy reference to action officers. Centralized files would be replaced by duplicate copies in the desk drawer of action officers. Many important documents would never be sent to the centralized files making them inaccurate and ineffective."

"The functional filing system is by far the best system. Pitfalls involved in subjective filing include again, the individual's interpretation. An organization's mission and functions are never clear cut. It is conceivable that a single function could have numerous subject titles. Volume of files could increase with a subjective filing system. There would be a file folder for each subject."

Question 4: Do you believe that TAFFS is adaptable to such developments as the automated office or the "paperless office?" If not, why not?

"In its current form, the TAFFS filing system is not conducive to automation. The rigid structure of data required for automation is not compatible with the rather judgemental functional approach to filing under TAFFS. However, TAFFS could be used as part of a two step filing process in which the automation could be applied to the first step, the files index, which would provide appropriate information to locate documents filed under TAFFS, the second step."

"With the advances in microfiche storage and retrieval systems, and proper indexing, a paperless office is imminent."

"No. The TAFFS system is already confusing to the average user. To incorporate it into a system which requires further indexing to accommodate microfilm or microfiche would make files virtually useless to the common user and would lead to a duplicate paper file being maintained out of frustration

with the automated system. Frequently a hard copy of a document is needed. Provision would have to be made for providing hard copies or a microfiche reader available at each work station."

Question 5: Is a universal records system necessary at all levels and in all functional areas of the Army? If not, what characteristics are required of the individual system and how could documents in separate systems be related for reference, filing and disposition?

"The universal records system at all levels is considered the most suitable to permit movement of personnel from one place to another without having to learn a new filing system. Extracting files from AR 340-18 series for use by TOE units below division level, Reserve Components, etc. helps the unskilled clerks select appropriate files without being confused by the entire AR 340-18 series."

"Yes, it is necessary to have a uniform filing system throughout the Army.

a. When there is only one system, the training is only for a single system and refresher training is easier. If individual systems are developed, training would be required each time an employee is transferred. The cost of such a diversified system could not be justified. This problem would be especially acute where civilian and military work together. The military would be constantly learning a new system.

b. The reference requirements at the creating activity should not cause serious problems in obtaining reference service after the records are retired by the creating activity. The amount of difficulty experienced would depend on procedures for notifying MACOMs, HQDA, and NARS of filing procedures. Standard records schedules or some similar records scheduling procedure would be essential. The preparation of standard schedules should be no more time consuming than present procedures; however, if individual creating activities must prepare their own schedules, the added preparation time could prove unecomonical."

"Yes. 201-06 Staff Visit Files is a subject file and is listed under each subfunction as 301-06, 401-06 etc, a visit is a visit why list it as a subfunction in Finance, Legal and Information, etc. why not just list once in the housekeeping portion of the files."

Question 6: TAFFS has been categorized as unduly complex for comprehension by those responsible for filing. Do you find it so? If so, what suggestions do you have for simplification?

"People that complain TAFFS is too complex or that it doesn't meet their needs don't understand the simplicity and flexibility (within the file

number) of the system. It is impossible to find a system that will please everybody."

"Yes. A Military Police Investigation is listed as being filed under 508-17 M.P. Reporting Files, under 1416-31 Report of Survey Files, and under 305-08 Financial Data Record Folder Files for the same investigation. What confusion if all copies of the report had to be retrieved from every office. An investigation should be filed as investigation file in all offices. Return to subject filing."

"TAFFS requires too much research of the ARs (to determine where a document should be filed) for it to be useful. The simple solution to TAFFS is to return to subject filing."

"Yes. A secretary can easily file a document as long as a number has been assigned. Deciding what number to assign is difficult for a secretary, especially when it is based on a functional systsem."

Question 7: Decentralization is integral to TAFFS. Do you see any advantages, now or in the future, to return to centralized files? If so, at what organizational level should be centralized?

"The problem with completely decentralized files is that some branches do not have clerks to do the filing and higher grade individuals must do it. Partial centralization is advantageous in such instances and is permitted currently. Complete centralization is not advantageous in large offices or organizations. Decentralization should be accomplished to the maximum extent practical--which permits logical decisions on files maintenance based on personnel authorization and office needs. Disadvantages of centralization in large offices are:

a. Personnel have to wait their turn in line for the clerk to get the files and complete charge out document. This is bad when one is handling a telephone inquiry.

b. Files are often incomplete since action officers will not release all of the supporting documents/notes to a central file.

c. Documentation is incomplete and documents are filed more by subject because centralized file clerks aren't functionally oriented and don't recognize cases where two (or more) actions should be filed together.

d. More file cabinets and copies are required because action officers maintain duplicate copies of actions so they will have actions/references close to them."

"I can see no advantage to returning to a centralized files system. Centralized files would most likely result in a proliferation of paper through the maintenance of duplicate files."

Question 8: At certain headquarters and installations where the volume of paper records and frequency of access may justify, an automated index and retrieval system could be installed. All incoming and outgoing correspondence would be placed on microfiche or a similar medium. The fiche would then be indexed and stored in an electronic storage and retrieval device. Retrieval would be accomplished by keying in the appropriate indexing data. The fiche would be brought, automatically by the storage device, into place for viewing on a CRT or similar device by the action officer. This fiche would then become the record copy, eliminating the need for the paper document. Records having permanent retention would be retired in fiche mode. At the time of filming, disposition instructions would be applied to the correspondence. What is your reaction to this concept? What are the advantages/disadvantages of such a system? What criteria do you feel should be established to make it effective? Any general comments on the concept itself?

"The concept sounds good for a savings in storage space. It is not good from the operation standpoint, except in a few operations, because it has all the disadvantages of the centralized file ..."

"Advantages: Savings in filing equipment, filing space and, in some instances, personnel. Savings in personnel occurs only where clerks are hired only for filing."

"Having worked in a finance and accounting office where records were unsuccessfully maintained on microfiche, I could not endorse such a filing system. However, ours was a manual and not an automated system. Perhaps an automated systsem would not have had the problems we encountered:

a. Papers were generated faster than they could be microfilmed, thus creating a backlog which continued to grow. When the commander decided to discontinue the use of microfiche, a six-month backlog of filing had accululated and many manhours had been lost searching through stacks and stacks of paper looking for particular records. Since filmers, viewers, and storage units were purchased and not leased, the government also loses money for equipment not in use.

b. The system was so inefficient, it could not be used long enough to pay for itself.

c. Retrieval of files was difficult and time consuming, even with cross referencing. Here again, this was a manual system; automation may have alleviated this problem.

d. The images made were often of poor quality or unreadable, necessitating refilming or machine repairs."

"The disposition of any correspondence based on the TAFFS system is far too complicated. Putting retired material on microfiche is a good idea as long as you have enough information to be able to locate the material."

"For all correspondence or general correspondence - no. Microfiche would not work for "all" correspondence or all organizations. "Data" should be treated separately from "correspondence". although some correspondence contains data. The decision as to what type of automation is appropriate must be made on a document by document basis in the action office. For microfiche, the sender of the communication would need to identify it as suitable for microfiche; the recipient wuld need to see that it would be acceptable as microfiche. The size of the action office is a factor in whether or not to put it on fiche. Microfiche retrieval systems work out well for engineer drawings, specifications, publications, contracts and some other documents; but not for general correspondence. It is conceivable that a microfiche retrieval system could be evolved with a built-in optical character reader to retrieve by key works; however, it probably would not be cost effective at this stage."

"Advantages:

a. Reduction and elimination of storage containers.

b. Reduction and elimination of storage facilities.

c. Instantaneous retrieval of information.

d. Automated searching could be accomplished by subject, function or organization.

To make the concept effective once the system is developed and free of problems, a well-developed training program properly administered, would be a critical requirement."

"Automated Retrieval Systems: The concept of an automated index and retrieval system has merit. Such a system could be beneficial when there is a large volume of records and a requirement for frequent access. The obvious advantages are faster access to specific records and a reduction in paper records. The system would be especially beneficial for large volumes of records of the same type which are indexed by a simple key. A common problem in TAFFS is properly indentifying papers for filing to simplify retrieval. An automated index system under the TAFFS system would not eliminate that problem. The key to implementing an automated indexing system will be sound system design which reduces the possibility of incorrectly indexing documents. This should indicate that the retrieval should be subject oriented retrieval keys should be determined by action officer. Maximum use should be made of computers to support document filing. Key word techniques should be used in searches. Microforms should be used for storage. The entire command/agency files indexes should be available in a master index to each office.

Other Comments: Files are one end of document life cycle, and also the start point in a "recycle" of that information. Hence TAFFS needs to complement suspense systems and reference systems used on correspondence. (E.g., office symbols, subject lines). The information is the commodity that needs to be managed. The document is merely a "package" that needs to be

controlled, indexed and stored. Whatever system is to be used, it must be designed as simply as possible. The current system is not. The TAFIS system is a favorite subject for inspections, because even inspectors often cannot agree on the correct file number for a document. This leaves the filing clerk in a state of bewilderment."

"The concept is good for the handling of large volume of record but the main problem will be in coding. If Finance is filing the item under 305-08, Logistics is using 1416-31 and the Military Police use 508-17, which will be the primary code? Which disposition instructions would apply? A subject code file would be much easier for more people to use and understand."

Question 9: What other suggestions do you have?

"1. Recommend that prior to publication of an AR in thh AR 340-18 series, a draft be coordinated with all interested MACOMS for their comment/concurrence with a view towards alleviating problems that may be encountered in the field. One problem noted on surveying commands is the frustration they have trying to find a file number that does not exist or trying to use an existing one that doesn't quite fit the application.

2. Recommend design and distribution of a small, handy, desk-top Flip Chart printed on card stock for quick and ready reference. The Flip Chart would be reduced down to 5 x 8 1/2" size and flip over vertically. It would contain at a quick glance, many of the items clerical personnel need to refer to in cumbersome regulations. For example -

a. The AR 340-18 series across to the top of a card with a vertical listing of each subfunctional file series.

b. Sample Folder Labels with various subdivisions.

c. Sample Lists of Selected File Numbers.

d. Sample File Drawers at different organizational levels.

e. Sample Completed Retirement Form.

f. Sample Records Holdings Report."

3. Suggest the consideration of an option to file reference papers pertaining to a specific file in a folder just behind the record material folder for ease of use and retrieval rather than in another part of a drawer or cabinet. Or consider filing reference papers on the left side of the record folder, to be removed and destroyed prior to transfer or retirement of record material."

"Return to subject coding, eliminate common mission files, use only one housekeeping file and put all common mission files therein, make the

mission file to reflect only mission requirements. A file should be filed in the same folder (file designation) in all offices regardless of the function of the office."

"Suggest system be simplified. There are too many regulations which, unless thoroughly familiar with the system, information desired is hard to find and interpret. A great number of clerical personnel involved in filing are lower graded, have been with DA for a short period and generally file the way predecessor did, right or wrong."

"TAFFS is very complex and it is very difficult to always have trained clerical help to make the system work."

"This office believes that the TAFFs could be made into a better filing system if the instructions could be simplified so that personnel doing the filing could readily understand the system."

"An additional improvement could be achieved by training the originator of material whichis to be filed in the coding method of the system and require him to classify it."

"No, suggest that due to the high rate of turn over in the clerical and administrative field, training classes be held much more frequent."

"The system should be more understandable to the average user. It is not economically feasible to provide enough training to make experts of all users, and therefore the system should be simplified and the instructions be modified to make the system understandable ..."

APPENDIX B-1 -- DISCUSSION GENERAL

The state-of-the-art in Records Management has not advanced to the point that it provides an obvious cost effective solution for all of the Army's broad-scale records management requirements.

Eventually, it is safe to assume, automation will replace paper-based manual systems in very large organizations like the Army. It is also safe to assume that this will not be done suddenly but by fits and starts with elements of trial and error (despite efforts to avoid this approach). The Army's case is characterized by a high level of interest and activity in office automation at HQDA and a less enthusiams toward it in the field. Evidence against instant "paperlessness" appears in the sporadic, relatively unintegrated approach at the HDQA level, further evidenced by the adoption of a basic information philosophy, as represented by IRM, after rather than prior to the installation of operating systems (like OPTMIS) which should follow adoptions of that philosophy.

The office automation projects under way in the Army are not using TAFFS -- not using its classification scheme and not interfacing with TAFFS decentralized management structure. Automated systems and TAFFS exist side by side with little or no interface between them. The automated systems tend to serve the higher echelons where the authority and resources needed to innovate and experiment are available. TAFFS continues to serve the great bulk of the Army field establishment which also has the great bulk of the Army's records to worry about.

Currently the automators are not only ignoring TAFFS but devising their own records management rules as they go along (see ASG, App-A-2). These solutions are sometimes not well devised and tend to slight recognized records management principles and policies. In some instances they may well jeopardize compliance with statute and the Federal Property Management Regulations. Office automation is tending to take records management out of the experts hands to the disadvantage of the Army.

A major reason for this is TAFFS' lack of good automation characteristics (APP A-3-1). Because of its orientation toward records disposition, the weaknesses of its retrieval capabilities, and particularly its complexity, TAFFS should be replaced by a much simpler sytem which is as near "file-clerk-proof" as possible and manager-oriented rather than archivist-oriented.

What is needed now is a new records management system which will --

1. Place the Army records management system in an improved position for automation, permitting the Army to select and adopt any attractive and cost effective automation application, and which will facilitate its move toward eventual automation of all records.

2. Improve the manual, paper-document system to be used by the Army -- particularly the Army in the field -- during the foreseeable future.

This system should enhance the retrieval of information, while insuring the identification and preservation of important records. The system should also aim at improved wartime records management.

APPENDIX B-2 -- SYSTEM CHARACTERISTICS AND REQUIREMENTS

It is important in discussing records management to separate "what" is managed from "how" it is managed.

The "what" pertains to the information to be managed and includes its organization or classification.

A good system of classification should be --

o Inclusive and comprehensive to insure that all information of value is covered by the system.

o Easily used and logically arranged to assist in speedy and accurate retrieval and provide relatively recise rules and instructions for disposition of unneeded information.

o Expandable to accommodate new subjects easily and logically.

o Clear and descriptive in its terminology.

The "How", on the other hand, describes the manipulation of information, its physical storage, the media used, the processes by which its transmitted, searched for, retrieved, and archived or destroyed.

The classification system -- the "what -- strongly contributes to or detracts from the efficient storage and manipulation of information. It is therefore of fundamental concern to records management system design. If the way information is classified is not inclusive and comprehensive, nor the items logically arranged, "forced fitting" of information into the file structure will necessary. Search and retrieval will be slow or will fail.

The classification system is of particular importance to the Army's records system. To repeat, the system the Army adopts must --

o Be ready to adapt to the progressively more sophisticated records storage and handling systems as the state-of-the-art advances and offers opportunities for increased speed and efficiency in meeting the requirements of the various command levels, mission and environments.

o Provide an improved manual paper-based system which will serve the Army well until that unknown future date when all records can be automated safely, cheaply and efficiently.

A major problem in public and private records management is the frequent confusion of "what" with "how" questions. This occurs particularly in the tendency to manage the media rather than the information.

This mistake is easy to make. First because information is intangible and the media is all too tangible. The streamlining and simplification of processes, improvement of mechanical handling and storage devices, the standardization of formats, miniaturizing, etc., all ameliorate or solve the tangible problems of managing tangible media. Such activities naturally tend

to become the focus of management attention. Indirectly these advances also improve the retrievability of information. Thus, it becomes easy to concentrate on the media and ignore its content -- to manage media primarily and information secondarily or not at all.

A second reason for this undue emphasis is that the information explosion has heightened the problem of managing a media. The sheer size of recent paper and machine output has challenged the records manager to avoid innundation.

The Army was an early victim of this paper flood. The Army's response was TAFFS, with its emphasis on records retention and disposition schedules. It was futile to think of information management before one could get a handle on all that paper.

For a time automation seemed to provide an answer but many of the automated management information systems tended to support only top management and neglect lower echelon needs. Indeed, in many cases ADP increased the flood of paper in the form of punched cards and"computer printouts" and presented records management problems still unsolved.

Microform was one answer to the volume problem. But microforms bring with them their own new problems in the need for special reading, photo developing and printing devices which are costly and hard to use, and not always available when and where needed.

Dealing successfully with records management problems in this period of overloaded paper systems and on-rushing records automation requires a difficult shift in perspective from managing the media to managing the message. This is forcefully argued and demonstrated in the Arthur Young study approved by HQDA in 1980.

Information is the constant -- the factor common to all records. The management of information is therefore the true objective and should receive the major attention of records management systems analysts and designers. The system by which information is grouped and classified is a key to accurate and timely retrieval. In other words, the classification system is the basic consideration. Physical storage, the media used and the manipulative process are should be secondary considerations.

APPENDIX B-3 -- CLASSIFICATION SCHEMES

Classification theory, when applied to such problems as classifying all human knowledge, can be complex and arcane. Because no one classification system is without fault, a number of systems have been developed over the years to correct perceived problems and deficiencies.

Luckily the range of information represented in Army correspondence, while great, is not as great as that faced by most libraries; a more simple approach may be taken to meeting those criteria of a good classification system which were discussed in B-2 above.

Essentially an Army records classification system should be selected from among these three choices:

o Functional -- classifying information by the functions, sub-functions and processes of the using organization. (TAFFS is the utlimate functional system.)

o Subject or Subjective -- Grouping information by topic or class, and subtopic, or subclass.

o Some combination of functional and subjective -- Such as subject within function.

Functional filing offers advantages, particularly when files are decentralized. Documents, or other hard-copy media, can be co-located with the organizational element responsible for the function for handy reference use.

A major disadvantage is that people usually do not think in functional terms. When seeking information, they tend to think in terms of subject (See "Complexity" App A-3-2). Subjects relate easily to one another. While grouping like functions is a principle of organization, the relationship of functions is often arbitrary (e.g., "Planning, Programming, Management, Historical and Combat Development Files" are considered functionally related in TAFFS.) Finally, organizational relationships are often changed and must be considered somewhat temporary.

Subject filing is a more "natural" approach in the minds of most people. (See MACOM comments App A-6). It is also more adaptable to automated information systems and data bases. A subjective system is easier to search and therefore provides faster retrieval, all other system characteristics being equal.

The combination of the subject and functional approaches seeks the best of both worlds. However, a tendency toward redundancy in classification is characteristic -- e.g., same subject falling under different functions.

It can be argued that many file classifications may be either subjective or functional -- Personnel, for example. In this sense all subjective systems are probably combination systems as they all tend to include subjects which can be either subjects or functions. In these instances, the real difference

lies in the filing rules, not the classification structure. For example, TAFFS authorizes housekeeping personnel files which are common to all functions and are used by all elements. It differentiates these files from personnel files dealing with organization-wide personnel policies and procedures and provides that functional responsibility and sole authority for such files lie with the G1/DCSPER. In a subject system, such as the old WD Decimal File System, any organization or organizational element could file under the 600, Personnel, series. In TAFFS, Military Personnel Files numbers are restricted to elements performing the function.

Subjective systems lend themselves to cross-indexing, a valuable retrieval aid. Where more than one subject is represented in a letter or document cross-referencing aids greatly in search.

The WD Decimal File System, as one might expect, encouraged cross-referencing. An extensively cross-referenced document will tend to be found and retrieved more quickly than one that's not cross-referenced. The likelihood that the first subject that comes to mind, even though it is not the main subject, will lead to a "hit" is good. This characteristic advantage carries over into automated systems using subject classification and indexing.

A functional system such as TAFFS can be cross-indexed but to less advantage. TAFFS does not encourage cross-indexing and admonishes that "cross references will be proposed only when essential to finding needs." The likelihood of a document applying to more than one function is not as high as it's pertaining to more than one subject. The value is marginal in decentralized files of cross-referencing an MP investigation, which under TAFFS is filed in the Provost Marshal's Office under 508-17 and in the Finance Office under 305-08.

It can be agrued, if not demonstrated, that a functional file system is harder to update to meet changing classification requirements than a subject system. TAFFS, for example, provides for an "Unidentified Files" classification in which papers are filed for which there are no current file numbers, i.e., not authorized for the function being performed by that organizational element, or not currently in TAFFS under any functional subdivision. An additional number and designation is requested from the records manager. This request goes all the way to TAGO if necessary.

It is also probable that the elimination of obsolete, TAFFS file numbers does not occur as frequently as it should. The pressure to eliminate numbers is not as great as it is to add numbers.

In any event functional alignments are more apt to change. With a subject system there is less need for change. Documents are more likely to fit into the file structure. The WD Decimal File System or example, states "Subjects will undoubtedly arise in correspondence which have not been provided for specifically by name in the number classification. There will be found, however, subjects of a correlated or similar nature, or class to which they can be allotted."

Both TAFFS and the WD Decimal File System provide for the subdivision of file numbers into alphabetic, geographic or numeric (SSN, Bill of Lading Number, etc.) classifications. By this feature both systems provide a highly useful measure of flexibility.

A final factor in considering classification systems which is specific to the Army, is the attitude of records managers in the field toward functional and subjective classification (see App. A-6 p.3). When asked to vote on this, the functional system won hands down. However, it is not difficult to raise objections to the validity of this outcome, such as --

o The voters had a professional stake in TAFFS. Respondents were principally the system operators. In their view change is perhaps to be feared and avoided.

o Few had knowledge of subject systems as they have grown up with TAFFS.

o Many who voted for it nevertheless thought TAFFS was too complex. The favorable votes were not without qualification. While there was an inclination to lay complexity at the door of inadequate training and pleas were made for more assignment of "qualified" personnel to filing positions, understanding was also expressed that TAFFS is more difficult to comprehend and apply than a subjective system.

APPENDIX B-4 -- UNIVERSAL VS. SPECIALIZED SYSTEMS

Should the system be uniform from top to bottom or is deviation desirable at different command levels or in different environments?

Again, it is important to differentiate between the "what" and the "how" in answering this question, or more specifically, between the classification system and the media storage and manipulation system.

It seems clear that it is highly desirable that the classification scheme the Army adopts be universal. On the other hand the media (paper, microform, or digital), the storage and manipulative processes should be variable to take advantage of cost, state-of-the-art, and to accomodate the size and level of the organization as well as the environment in which the organization is operating.

Universal classification schemes have overwhelming advantages:

o Uniform training in just one system is less costly and more effective.

o Simplicity results in consequent economies of effort and cost in administering the system.

o Mobility of administrative personnel is a major factor in an Army system. A single system decreases the time required for new personnel to become effective and thus improves administrative support.

o A universal classification system, selected with automation in mind, can facilitate the installation of an automated records system.

In fairness it should be pointed out that TAFFS is not a universal classification system. AR 340-2 provides for a simplified TAFFS for use below Division level in TOE units and is a unit level system. Action at HQDA level has been taken to invent new systems for use with ASG and ARSTADS (see App A-2). OSA and OCSA have never ceased to use the WD Decimal File system. In effect there are four command level oriented systems now in use within the Department of the Army.

Finally, it is of interest and significance, that about three-fourths of those responding to our MACOM questionaire favored a universal system and in most cases stated their perference a very strong terms.

It is highly probable in our judgement that digital electronic is the inevitable universal media of the furture. The advantages it offers in manipulation, storage and transmission as well as the continuing downward trend in hardware costs will push Army and other agencies in this direction. But this does not mean adoption of a universal hardware system. Hardware configurations will and should be designed to meet thoe needs dictated by command level, cost, environment and size of the using organization.

APPENDIX B-5 -- CENTRALIZED VS. DECENTRALIZED FILES

Considering the question first from the standpoint of paper files in a manual system, central files have certain impressive advantages:

o Economy of personnel, space and equipment

o Greater professionalism because of specialization of file personnel

o Greater security because files are concentrated and controlled and maintained by full-time personnel.

o Greater conformity and efficiency in the operation of the file system.

o Central files have equally impressive disadvantages:

o Inconvenience - people usually have to walk or travel some distance from their work places to obtain a file from the central location.

o Slower retrieval than if the files were maintained at the work site.

o Fosters duplicate files at the work site and creates reluctance to yield important documents to the central file section and thus to the system.

The advantages and disadvantages of decentralized files are of course reverse images.

Advantages

o Convenience

o Files are co-located with the experts who created them.

o Knowledge of files is more extensive and intimate.

o Questions bring records and action officers into the problem simultaneously.

Disadvantages

o Lack of uniformity in interpreting the system, its rules and its results.

o Filing is usually a part-time job for clerks and typists. This results in lack of professionalism and inadequate, untimely results.

There is often a failure to file documents and to retain and dispose of them properly, inaccordance with policy.

In considering centralization vs decentralization of a paper, manually-operated system the tradeoffs are easy to ascertain but often difficult to measure and weigh.

The question can be posed: Does the increased control and specialization from centralizing files offset the greater ease, convenience and knowledge that arise from decentralization? The answer should not be determined solely by the popularity or lack of popularity of either concept (deccentralized filing is overwhelmingly popular with TAFFS users - App. A-6), but by the comperative efficiency of each option. This comparison should involve retrieval time (how long from request to receipt), retrieval accuracy (how many "hits" or how many misses) and number of misfiles as examples, recognition and identification of records of permanent value (or failure to do so) and accurate and timely disposition (destruction or retirement).

The best of both worlds would appear to be achieved in automation when it is possible to combine centralized files with decentralized access. AMARS (APP A-2), when operational, would provide an impressive realization of this concept. The records of the selected Reserve Offices maintained on computer can be accessed at remote locations, read on a CRT and hard copies printed at the CRT station if desired. It is easy to imagine, with satellite help, perhaps the accessing of a reserve officer's record in Europe or Hawaii. The implications for control, storage and remote access of widely used files is intriguing. However, as we mentioned in Appendix A-2, a good universal classification system is needed* before such a systems could be advanced as a serious answer to general Army records management problems.

*As well as the solution to some hardware problems

APPENDIX B-6 -- KEYWORD INDEXING

There is some very sophisticated work being done in the automation of information retrieval. It includes automated methods of devising classification systems and automated methods of classifying documents. The latter involves the design of specific mathematical procedures for computing the probability of a document's belonging to a designated category and thus providing automated assistance to the classifier.

Automatic classification systems are closer to what's popularly conceived of as keyword indexing and involve developing a thesaurus of word terms common to several documents which then serve as search words, or keywords, for those documents. "Documents" can also be microforms or information in electronic form.

The more esoteric work being done in this area is of possible future use to the IRM project. However it is too sophisticated and unproven to be considered for the simple, "soldier proof", world-wide application that the Army needs now.

The question remains whether a keyword system,, as represented by OPTIMIS (App A-3), for example, doesn't offer possibilities for an Army-wide classification system.

A keyword system is actually a subject-based, interlocking, cross-reference system. The cross-referencing is essential but key word index requires an additional element to be effective -- an "address" where the document or information can be found. In the case of OPTIMIS this "address" is verbal information indicating where the document is located. For example, -- This document is stored in the lower left hand drawer of Lt. Col. Jones, Room 1C-654,, Telephone 0xxx."

The ASG system (App A-2) in addition to key wording uses the chron number assigned to the document by the Administrative Office as the "address." This is used by the microform storage device to store and retrieve the fiche.

Even if documents were filed under a key word -- "Ammunition", for example -- some ordering of documents filed under "Ammunition" would be necessary. This might be Ammunition-1, 2, 3, etc., or Ammunition 12/02/81, 12/05/81, etc. If more than one key word appears in a single document -- and we have tried to emphasize cross-referencing is the essence of key wording -- a single file address is required for the document.

Thus, the keyword index is a retrieval device. It is obivous value to the searcher. He need not concern himself with the file address, the machine will do that for him. But the real classification system, the system that orders the information so it can be found, is of primary interest to the system designer and the records manager. It is necessary to manage the system to keep its costs in money, machines storage space, etc. within bounds and to establish a rational purging system.

While keyword retrieval can work well in conjunction with a simple chron number filing system, the chron file does not work well without the automatic

keyword system. A manual system in which documents were filed chronologically was abandoned by the Army at the turn of the century as inadequate to its needs -- inadequate even in that unsophisticated age. In other words, the sound basis for a keyword retrieval system is no different than for a manual paper system -- a good information classification scheme.

APPENDIX B-7 -- DOCUMENT RETENTION AND DISPOSITION PROCEDURES

An area which may be profitably re-examined by records managers is the establishment of retention periods for classes of documents or information.

The only reason for retaining a document (or storing information) is the probability that it will be of value in the future. If one knew certainly that a document would never be referred to there would be no reason to keep it.

At one end of the spectrum of documents are those of a class and nature that they should be preserved "forever." These are usually described as "permanent" documents or documents of archival value. In addition to archival value they generally have a period of usefulness for reference purposes in the organization in which they originate and an retained for a period before transfer into the archival channel.

At the other end of the spectrum are documents that are destroyed "immediately", or after a very short time, -- handwritten drafts, for example.

What goes into establishing a retention period? Experience with similar classes or types of documents certainly. Judgement by those involved in creating it certainly. Estimates by those likely to need to refer to it certainly. The process is almost completely an exercise of judgement. Therefore is it to be expected that some documents will be retained that will never be referred to and some will be destroyed that will prove to have been needed. Under this situation a tendency to be safe rather than sorry must surely prevail. The trouble with this is that it inevitably retains more documents (microforms, discs or tapes) than are needed with consequent additional costs in people time and money that adhere to their storage, search, manipulation, transfer and disposition In short, the natural tendency is to keep a document longer than it is needed and the result is additional cost in people, money and retrieval time.

An alternative to this lies in a system of automatic purging of records that has been applied in ADP systems based upon use rather than time. Simply described the machine counts references or accesses to a record and is programmed to delete records periodically that have been referred to less than a pre-established number of times.

Application of this concept to a manual paper based system is feasible and might provide distinct benefits -- such as--

o Reduction of total record maintained and thereby maintained costs

o Prepositioning the Army's manual system more closely to its eventual configuration as an automated system.

Safeguards would be necessary such as --

o Permanent records should be identified and either excluded from purging or immediately transferred from reference files to the records holding area (see "Instant Archiving" App B-7 below).

o Management review before purging the record could provide a safeguard against destroying permanent or otherwise valuable records.

Of course such an innovation should be throughly tested before adoption (see App C-2). A test would permit, in addition to assessing feasibility, an estimate of the cost savings possible from the aproach by comparing the actual number of documents in a file station during the test of this approach with the estimated number if the station had used the current TAFFS retention guides.

APPENDIX B-8 -- "INSTANT" ARCHIVING VS. KEEPING PERMANENT DOCUMENTS IN REFERENCE FILES

"Although one of the principal objectives of TAFFS is to move "permanent" documents (i.e. those of archival value) to the National Archives and Records Service (NARS) to satisfy legal requirements, many are never transferred to NARS. Offices tend to hold these documents for future operational use. There is also a tendency to conduct records cleanout campaigns and to toss out documents that are really arachival."*

The Peers Report on the My Lai incident complained about the tendency of units in RVN "to destroy records rather than retain them in accordance with established procedures" and noted that this was particularly prevalent just prior to IG inspections.

While TAFFS is an archivist rather than a management oriented system there is some evidence, and a great deal of expressed opinion, that it does not serve this function as well as desired. One reason is the complexity of the system as discussed in Appendix A-3-2. Another is the decentralization of the system into often unskilled and perhaps sometimes uninterested hands.

One of the practical rules of systems design is "make it easy to do right." TAFFS too often makes it easier to do wrong than right. It is not, in the Army R & D parlance, "Soldier Proof."

A simpler, more easily understood system would go a long way toward correcting this problem, but there is no assurance that this step alone would assure that permanent documents were preserved.

One idea we have examined is a return to a central files system with records under the control of professional file clerks. This would undoubtedly improve identification and preservation of permanent records. However, there are mixed views of the desirability of returning to central files (App B-5).

Another attractive solution is to "centralize" only the permanent files. This could be done by making a copy of the document which would be retained in the office for reference purposes and immediately transferring the original copy of the permanent document to the servicing Records Holding Area -- "instantly archiving" the permanent document.

This concept is worthy of serious consideration for a number of reasons which extend beyond achieving better safeguarding of archival documents, important as that may be.

It effectively separates records into one group whose sole purpose and use is to support management and another group of maintaining for archival purposes. It this allows more specific and effective, policies and procedures to be applied to each category.

*RFP for this project, p.4.

The current system assumes, indeed all systems assume, that all documents produced by an office have some reference value. The bulk are of temporary usefulness, while a few others are of permanent or archival value. To identify and flag these permanent records while they are still in the reference files and to insure their eventual transfer to an archival activity, TAFFS provides elaborate identification instructions and labeling provisions which apply during the period they are held for reference purposes in an office. These procedures must bear the blame for much of the systems complexity (App A-3-2). The identification and safeguarding problem is distinct from the problem of retrievability. In TAFFS' case safeguarding interferes with retrieval by complicating file maintenance.

The use of permanent documents for day to day reference before their retirement to the archives is a relic of the pre-copier days. In the past there was no choice but to retain permanently useful documents in the reference files until the passage of time insured need for less frequent local reference. Then they could conveniently be passed on to the archivist. The ubiquitous copier offers a means to avoid this necessity. It only remains for systems designers and records managers to realize the obsolesence of the idea that valuable documents must be used for reference before they are archived.

o With permanent records out of the way reference files can be treated solely as management support tools. For example, they can be disposed of based upon usage rather than the elapse of time as suggested in Appendix B-6.

o Immediate transfer of permanent records to the Records Holding Area will improve the safeguarding and handling of valuable records. Transfer to the archival channel early in the records cycle shields the document from the neglectful actions of clerks and action offices more interested in operations than in safeguarding documents and entrusts them to professional records managers earlier in the records cycle.

o It provides a key feature for an improved wartime records management system. If units in the combat zone are directed to transfer permanent records to a Records Holding Area Center in the rear as quickly as possible improved identification, retention and safeguarding of permanent records will be assured. (App A-3-3). In addition, a "vital records" program can be instituted as an arcillary feature, assuring quick reconstitution of records for the reconstitution of units destroyed or decimated as a result of wartime actions. (Also discussed in App A-3-3). (Some but not all permanent records may also be vital records).

o While making copies of permanent records will increase costs, the benefits will outweigh the additional costs.

Varying estmates of the numbers of permanent records have been advanced. In industry the figures 1 to 2% of all records are suggested. The percentage for a federal agency are greater, but 5% is probably an upper limit. Given an estimated one half million linear feet added to the Army files each year, and assuming 5% are permanent records, 25,000 linear feet of permanent records are generated each year. At 2500 sheets of paper per linear foot and at an Army-wide average cost of 2.5¢ per copy, the estimated cost of hard copy reproduction would be $1,562,500 per year.

But against this must be offset some incalculable gains such as --

o The savings generated by quicker and easier retrieval of permanent records as a result of this centralization in RHA under professional control.

o The savings represented by improved preservation of permanent records now lost misplaced or destroyed in unit and office files.

o The savings in reducing the number of copies made for "CYA" files as confidence in the ability of the system to preserve and produce important records increases.

o The benefit of improved retrieval from reference files which may be expected when this function can receive more concentrated attention.

Actual cost data for this concept to validate the above gross estimate could be gathered during the system test phase of selecting a new system.

APPENDIX B-9 -- MAINTAINING FILE INTEGRITY

One of the problems with paper files is that checking out documents to users makes that document unavailable to other possible users. This is also the case with microfiche files, although not with electronic files, as will be explained below. This gives rise to other problems -- chasing down the document and wresting it away from the possessor, a tendency to increase convenience files to insure an important document is immediately available, reluctance on the part of originators to turn important documents over to the system -- are some that come to mind. If microfiche are checked out (or heaven forbid, roll microfilm) the gap in the file is even wider because other unneeded documents are checked out along with the needed document.

These problems exist whether files are centralized or decentralized, but information gaps are a more vexing problem under a central files system. It should be easier to run down the document in a decentralized system. However, the tendency toward less discipline in such systems may complicate retrieval of document issued to a user.

Since it is impossible to "check out" information in electronic form this problem does not extend to electronic systems. This is not to say that other unique problems do not arise with such systems, but a document which has to be viewed on a CRT does not create a gap in the electronic file.

An answer to the file integrity problem is to make and issue to the user a copy of the document and thus constantly to maintain the file intact. This idea is easily acceptable in the microform system where an additional microfiche, or paper copy of the fiche can be made, and issued to the user. It's adaptation to paper files has many of the same advantages that seem so obvious in microform systems.

The concept undoubtedly would be of greatest value in a centralized system, but it would also be of value at large decentralized file stations.

The cost of making copies is the disadvantage most people cite on first considering this approach. However, there is an offsetting savings by eliminating the "out-of-file" condition which causes a loss of time and efficiency. The Records Administrator of the State of California estimates the cost of this condition to be $15.00 per file. It should be simple enough to count copies made in a test configuration, cost them out and extrapolate the cost to an Army-wide application. The cost of out-of-file situations can also be computed and a net cost determined.

The cost and time to reproduce voluminous case files may require exception to demands in such cases. Two solutions suggest themselves. First, to charge out case files rather than reproduce them. This exception would tend to be localized in those sections making heavy use of such files. The second approach is to reproduce only the one or two pages from the file of interest to the user. This would minimize the cost and time objections.

The benefits, as usual, are much more difficult to express in dollar terms. There are at least two --

First, as copies will be freely issued it will tend to reduce the number of copies made for convenience and "CYA" files.

Second, the assurance that once in the file documents will not be lost through issue or be stolen will reduce the tendency to "hoard" valuable documents and increase the willingness to trust important documents to the system.

This concept is versatile enough to be applicable to any media mix. Paper documents could be copied either on paper or on microform. Microform documents could be copied on fiche or on paper. It is a flexible approach in accord with a major thrust of this study -- that the Army Record Management System should be positioned to take advantage of any developments in the states of the art that appears useful to the Army.

APPENDIX B-10 - MISCELLANEOUS

A. COLOR-CODING

Color-coding is a relatively inexpensive technique that can speed manual filing and retrival. There are a number of applications -- colored file folders to denote year, origin or function, colored labels or bars, an unexpensive substitute for colored folders, colored checkout cards, color for exceptional records or those requiring special attention and handling.

A number of possible applications to a new Army record system suggest themselves:

- o Color-coding a subject or functional grouping
- o Color-coding check out cards as to identify the office which checked it out, or for the day or week of check out.
- o Color-coding controlled (not classified) document folders.

A number of these are worth testing and are recommended for test in Section IV Alternatives.

B. FILING EQUIPMENT

There is a very wide range of filing equipment which in a given situation may reduce space requirements and costs as well as filing and retrieval time. We understand much of this equipment is not available through normal supply channels but may be obtained with special justification.

The question of the type of equipment that should be selected for use in an Army manual paper-based system does not lend itself amenable to generalization. Decision should be arrived after considering a large number of local factors -- e.g., efficiency, age and cost of present equipment, physical factors of space and environment, possible shifts to automation, mission of the organization, and cost versus benefit anticipated. Also one must consider those restrictions enforced by government office equipment policy and procurement regulations.

The obstacles to arriving at a decision on the local level are many. However local records managers should be encouraged to make such studies and recommendations where records management efficiency and effectiveness can be improved.

C. LABELLING

One of the complaints against TAFFS is that the file labelling system is difficult to understand and therefore to comply with. (See "Labelling" App A-3-2)The label is placed on the perpendicular file folder in one of three positions -- the left side, the middle or the right side. The first position indicates "Destruction in the current files area," the second, or middle,

"Transfer to the Record Holding Area" and the third, "Retire to Records - Center."

While the system appears to be not only simple but helpful there is often confusion in arriving at the proper classification the cut-off date, disposition instructions and other information required by the regulations.

In many ways the confusion over labelling is an outgrowth of system complexity, not the labelling instructions per se. Simplification of the records system and a change to emphasize retrieval will facilitate simpler labelling provisions.

Some the information contained on the label could be more easily conveyed by color-coding (dispositon for example). Further simplifying and standardizing disposition instructions would permit putting labels only on file dividers (as in the Air Force system) freeing color-coding for other purposes.

D. HOUSEKEEPING FILES

TAFFS recognizes a need for "Housekeeping files." These are files pertaining to routine administrative operations which have no direct relation to the mission of the office. These are a recognized General Administrative files, Personnel files pertaining to office personnel (not the command personnel function) and office reference files.

The desirability of continuing housekeeping files as opposed to returning to using general file categories for both housekeeping and mission functions is debatable. It probably should have been included as a question in the MACON questionaire but unfortunately was not.

A major criticism of housekeeping files is that reference files tend to siphon off records that belong in the mission files. As all housekeeping files are eventually destroyed this tends to endanger permanent records.

APPENDIX C - ALTERNATIVES

CLASSIFICATION SYSTEM ALTERNATIVES

1. SCRATCH DESIGN A NEW CLASSIFICATION SYSTEM

An obvious approach to the problem of improving or replacing TAFFS is to design from scratch a new classification system. While there are many classification schemes, and some of them used in civilian activities might be theoretically adaptable to Army records, the Army's need is for a pragmatically designed system of classification that is inclusive as well as comprehensive and includes all subjects that are, have been, or may be of importance to Army activities.

Not only should the subjects and topics be exhaustive, they must be arranged systematically. Users must be able to identify what they want easily and logically. The scheme must be flexible and expansive to be hospitable to new subjects. Finally, the terminology should be clear and descriptive.

All of these criteria must be met if the new system is to offer improvements in improved automation characteristics, better wartime adaptability, greater timeliness and speed of retrieval.

Obviously, designing a system from scratch is a major undertaking requiring lengthy research and considerable time. It would be far faster, more efficient and cheaper to capitalize on existing and related Army sytems. Three such possible source systems are candidates --

- The old War Department Decimal File System
- TAFFS itself, modified to avoid the problems or have identified
- The subject system used to classify and number Army Regulations contained in AR310-1 and 310-2.

2. ADAPT AND UPDATE THE WAR DEPARTMENT DECIMAL FILE SYSTEM

This system was used extensively by the Army for many years until it was replaced by TAFFS in the early 1960's. It is based upon the Dewey Decimal System of Library Classification, and is therefore a subject-based system. It was universally used throughout the Army at all levels and has the advantage of being relatively simple, straightforward and easy to understand.

Reactivating the Decimal File system has two major drawbacks --

- It is out of date. Army activities and functions have changed tremendously since the revised edition was published in 1943. (Examples: it does not include "Automation" but does include "Army Air Corps".)
- It lacks disposition and retirement instructions.

These flaws are fatal, in our opinion. A revision of the system with the requisite disposition instructions would be a major undertaking in much the same category with designing a classification and disposition system from scratch.

3. USE FUNCTIONAL FILE SYSTEM FOR TOE UNITS (AR 340-2) AS AN ARMY-WIDE FILE SYSTEM

AR 340-2, "Maintenance and Disposition of Records in TOE units of The Active Army and Army Reserve", provides an abbreviated TAFFS -- a functional file system, for use in TOE units below division level.

Including change 1, dated 1 Dec. 1979, it comprises 125 file numbers. These numbers consist of a functional category number of three or four digits and a process/action number of two digits which reflects the specific process, actions or transaction within the functional category. For each file number a description and disposition instructions are also furnished.

Several MACOM respondents to the MACOM records management survey recommended using AR 340-2 as an approach to an improved TAFFS.

AR 340-2 is a truly abbreviated TAFFS, for example, it has (125 as compared 2600 numbers). Not all TAFFS functions and therefore not all Army functions, are represented. (see Figure 1) The file numbers reflect the basic functions are represented. The file numbers reflect the basic functions performed at unit level. It does not contain all of the file numbers or descriptions needed at higher echelons or in some TD units. For some of the file numbers furnished the disposition instructions vary from those appropriate for documents generated at higher headquarters and indicated elsewhere in the TAFFS regulations. This is a result of the TAFFS tendency to prescribe varying disposition criteria for varying organizational levels.

The possibility of using AR 340-2 as a basis for a simpler, more flexible, functionally based file system should be seriously considered and tested.

TAFFS as presently used is not only functionally organized as to its classification scheme but is also functionally restricted in its use. (see App A-3-2). For example, offices whose primary mission falls in the communications function, are restricted to those files designations approved for the communications function and barred from using numbers under other functional areas. This characteristic of TAFFS causes confusion, particularly among the untrained who are naturally inclined to look for a file designation that fits the subject of the document rather than trying to identify it with a process.

A simpler TAFFS under which any appropriate TAFFS file designation might be used by any office or unit, thus transforming TAFFS into a more generalized -- functional/subject filing system -- has appeal for several reasons.

4. USE THE ARMY REGULATION CLASSIFICATION AND NUMBERING SYSTEM AS A SUBJECTIVE FILING SYSTEM

Army Regulations 310-2 contains a subjective classification and numbering system for AR and other Army administrative publications (circulars, pamphlets, posters, orders and memoranda). Table 2-1 of the regulation provides 105 subject titles, definitive descriptions of functions and subjects covered by each title. Also included is a base ("series") number of one to three digits for each title. This classification system is not only applicable to HQDA publications but those issued by subordinate field commands as well.

The system provides, therefore, a subjective classification structure which --

o Has been and is used throughout the Army and is a familiar system to all military and civilian administrative personnel.

o Due to its modification and up-dating over the years, presents a presumably accurate, pragmatic description and complete coverage of subjects that represent the Army's current activities.

AR 310-1, Index of Administrative Publications provides a listing of the current ARs by base (series) numbers, sub-numbers within the category and title. Other DA administrative publications are included. It also provides an alphabetic index of all administrative publications by subject. The AR sub-number, which follows the series number, has no particular purpose other than to differentiate among AR's in the same series. There is no relationship between AR sub-numbers and other publication sub-numbers -- e.g. AR 210-5 is "Planning Procedures for construction Projects in the National Capital Region" while pamphlet 210-5 is "Credit Unions Serving Army Personnel." Both are classified under 210, "Installations", but there the relationship ceases.

The alphabetic index is extensive (68 pages, three columns per page), and is cross-referenced. For example, under Classified Information, are seven entries (each with a reference to an AR, including this one -- "Clearance of DA Personnel -- AR 604-5". This appears again, slightly altered, under "Security Clearances" as "Granting, Denial and Revocation for DA Personnel -- AR 604-5."

AR 310-2 could not be used as it presently stands as a replacement for the TAFFS classification system. It would require as a minimum --

o Retention and disposition instructions. These can be devised by cross walking to TAFFS.*

o The controlled addition of sub-series numbers for file subjects not included in current AR's but germane to the series.

We have developed a program to accomplish this cross-walk. A complete cross-walk between TAFFS and AR 310-1 will be furnished with our final report.

This concept needs some expansion and discussion: One of the advantages of this approach is to tie together ARs and the correspondence and reports that result from compliance with the regulations. The Air Force uses this technique extensively and successfully (App A-4). The two-part number on the AR should also be the designator for the file. However not all correspondence logically falling under one of the broad series numbers, such as 220, "Field Organizations," will find a corresponding published AR listed in AR 310-1. It will be necessary to designate other two-part series and sub-series numbers ("AR numbers") not now in AR 310-1 strictly as file designators for these subjects: for example, "AR 220-11 Oversea Reception, file number only." Implementation of this concept would require continuous coordination within TAGO between Records Management and Publications as to adding and deleting new regulations and file numbers to the master list (AR 310-1) not an insurmountable staff problem.

The use of the AR classification and numbering system provides the following advantages.

o It already exists, thus avoiding the lengthy and expensive process of devising a new subjective system.

o It covers the actual range of subjects of interest and concern to Army administration rather than some philosophic classification system *

It offers an opportunity to extend the uniformity of the Army administrative system by classifying correspondence under the same scheme as the directive which generates correspondence or other documents.

It offers the option of including records management instructions in a regulation. (e g., directions as to where to file forms mentioned in the regulation, where to find disposition instructions for records generated under the directive, etc.)

The additional file numbers needed for which an existing AR does now exist can be largely determined during a test period. Assuming that an active organizational element performs the test, the procedure would be to file actual correspondence under an appropriate published AR number. If an appropriate AR number does not exist in 310-1 request would be made to the test control activity for assignment of a tentative number and subject. At the end of the test period the control activity could analyze all of the tentative numbers used and make recommendations for a comprehensive list of file numbers and subjects to be added to AR 310-1.

*The fact is worth noting that when the Library of Congress book collection grew too large about the turn of the century, a new classification system was deivsed governed by the actual co ntent of the collection rather than the Dewey and other systems which constructed a philosophic structure into which the books, would have to be forced.

APPENDIX D - PROPOSED SYSTEMS TEST PLAN

A dual test plan is proposed which will examine the performance of two records management systems, one of which potentially will replace The Army Functional File Systems (TAFFS).

The program will consist of three distinct phases, occuring sequentially over eighteen months time. The first phase is a preplanning period of three months' duration, followed by the second, the actual test phase for one year. The plan concludes with a three month data analysis and reporting period, at the end of which time a recommendation will be made. Each of these three stages is defined and detailed more completely below.

1.0 Preplanning Stage - (Three Months)

This three-month period consists of eight distinct activities.

1.1 Identify and select an installation at which the test is to be conducted. Suggested criteria for this selection are:

- a conus large post with typical functions to insure a wide range of correspondence and filing problems;

- an installation in the national capital area which allows frequent contact with a extensive on-site visits by TAGO personnel;

- Fort Belvoir is suggested as the most logical candidate. Fort Meade is a possible candidate but not as close to meeting the broad functions needed for a good test.

1.2 Coordinate and obtain approval for the test from the installation commander.

1.3 Select two appropriately sized and functionally similar organizational elements on the selected post in which Test A and Test B will be conducted.

1.4 Write test material, including questionnaires for use in interviewing file personnel and data sheets for recording comments and suggestions, classification alternations and additions. (see Enclosure 1, for a description of objectives and types of test material to be developed and used)

1.5 Pre-test this material for clarity, thoroughness, and overall adequacy.

1.6 Brief file users and files personnel regarding the significant features of each proposed test system, and how these differ from TAFFS.

1.7 Conduct training sessions for file personnel to ensure a working understanding exists regarding test systems.

1.8 Conclude all pre-test liaison work with Records Management personnel. This concludes Stage One of the plan.

2.0 Test Period - (Twelve Months)

This year-long period is designed to cover one complete cycle of administrative activity. It is the longest period of the test plan, and is of critical importance in determining the operational effectiveness of both proposed experiemtal records management systems. Here the effort is broken out into seven distinct sectors of activity as detailed below.

2.1 Visit test organizations "A" and "B" to help establish file stations and to distribute file system explanatory documents, including the file numbering on correspondence test, and data sheets for responses from users regarding each system.

2.2 Establish routine procedures for test sites "A" and "B" to file documents in accordance with each system; in cases where prevailing categories or classifications of documents do not provide appropriate file numbers for classification of documents or are otherwise inadequate, records personnel will telephone test administrators for definitive classification of documents in question. This process will cause complete classification numbering systems to evolve through usage during the test period thus expending AR 340-2 and AR 340-1 into comprehensive classification systems.

2.3 Maintain regular contact, visiting test locations at least weekly at a minimum, answer questions, offer suggestions, provide classification categories and numbers, assess both systems' performances, and maintain established file standards and general test momentum and continuity.

2.4 Collect data reporting sheets from both system test locations.

2.5 Design the data analysis measures for eventual aggregation of test data from test organizations, maximizing clarity of results and objectivity of responses to test. Data measures to be utilized will include measures such as numerical totals, percentages, numbers of misfiles, lot or misplaced documents, numbers of newly-generated classification categories, scaled opinion totals of important aspects of each system, retrieval time or speeds if available, and seminal commentary by users which reflects prevailing opinion. Seen en toto these measures will present the empirical basis for assessing the systems "A" and "B" from the present TAFFS approach, (and for understanding its objective performance.)

2.6 After approximately six months of testing, reports of early, tentative in-progress findings will be produced and studies for indications of eventual characteristics of both systems, and for successes and problem areas. Determine if possible at this point the major weaknesses of each system.

2.7 Development of a final report outline will occur.

2.8 Data sheet collection will be completed at the conclusion of the twelve-month period, and final scrutiny of files and material therein will take place.

2.9 The twelve-month period will conclude with closing interviews of file personnel regarding specific elements of test and performances in critical areas and in general. This concludes Stage Two of the plan.

3.0 Data Analysis and Reporting Period - Three Months

3.1 Using the data analysis instruments developed earlier in 2.4, the intitiation of final data analysis shall begin.

3.2 Conclusions and suggestions for the installation of one of the two proposed classification systems and other attenative features shall be developed from data collected during the one-year test phase.

3.3 A preliminary draft report shall be prepared and presented to TAGO for its consideration and review.

3.4 Upon receiving comments from TAGO regarding the report produced in 3.3 above, a revised draft shall be undertaken and produced, to be issued in final format as a concluding report. This concludes Stages Three of the plan.

DA - TAFFS RECORDS MANAGEMENT PROJECT - PHASE II

- o Write test material for consideration of Systems A and B against TAFFS, and pretest, then refine documents for test period.
- o Select file organizations for test.
- o Brief RM personnel in both selected file organizations and at DA headquarters.
- o Conduct preliminary training sessions prior to start of test period.
- o Conclude final pre-test liaison and briefings.
- o Visit file organizations A and B and maintain regular contact.
- o Advise orgs. A and B on system modifications and refinements.
- o Collect data sheets from A and B.
- o Design data analysis instrument.
- o Begin final report outline.
- o Complete data collection and all interviews.
- o Initiate data analysis.
- o Begin draft report
- o Deliver draft for review.
- o Revise draft.

Deliver final draft.

Stage I (Three Months) Stage II (Twelve Months) Stage III (Three Months)

Enclosure 1 TEST MATERIAL

Test material should aim at two objectives.

First, it should seek to provide quantitative data for comparisons of the two sets of records management concepts and practices that are being tested and of the individual alternatives contained in each test set. Of major interest is the measuring of retrival time. An analysis of the effect of using one or the other classification scheme on retrival time is of interest, but so is the effect of centralized vs decentralized files. Cost data, which will provide a basis forjudgement of assessing the several features involving copying machines, is a quantative factor to be planned for and collected misfiles and document losses will require a data collection plan as well.

A second objective should be to gather subjective judgements of two distinct group of people; those operating the system and those using the system. .The latter are best approached through periodic interview and are particularly important in arriving at an acceptable management-oriented records system.

FINAL REPORT

Task 1 - Literature Search

April 17, 1981

Unscheduled Deliverable

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TASK 1 - Literature Search

MANAGEMENT SUMMARY AND COMMENT

This survey of the current literature describing the state of the art in records management was made as Task 1 of the project to develop a new records management system for the U.S. Army. In addition to providing the basis for this report the information gained also provided input to Task 2, the staff study which will result in recommendation for a new Army records management system.

This report is a summary document which provides synopses of the literature in three major categories of technological development. It further provides paths to increasing levels of detailed information. A bibliography with one line descriptions of each publication follows each major section. Abstracts of an article or final copies of the articles themselves are available on request.

Methodology. The research was performed as follows:

- Information sources were identified. They consisted of computerized bibliographic data bases, specialized on line data bases and technical libraries.

- Document sources were then prioritized.

- A search strategy was developed and executed by computer and manually.

- The abstracts produced by the search were reviewed and those pertinent were selected.

- Copies of the articles described in the selected abstracts were procured, reviewed and synopses made of the information they contain under these major headings:

  - Information Management (the development of information resource management or the change from managing documents to managing information).

  - Records Management (including Manual Filing Systems Equipment and Techniques, Records Disposition, Records Retention, Records Center Operations, Vital Records, Archives, Legal Issues and The Paperwork Reduction Act).

  - Information Technologies (including Micrographics, Microfilm, COM, CAR CIM, Word Processing, Electronic Mail, Facsimile, Communicating Word Processors, Mailgram, Communications, Data Processing and Reprographics).

- A bibliography was developed for each of the three categories.

OVERVIEW AND COMMENT

As this report is a summary document, an attempt at further summarization in this section would not be useful. However, a few general comments are in order for the consideration of the manager--both the records manager and the general manager with administrative responsibilities.

o There is currently a surge of technical development which is loosely characterized as "the automated office." Under this heading can be grouped a number of developments which are related to differing degrees, developing at differing rates, and which have differing prospects for survival.

o Some technologies, such as word processing, will obviously be part of the office administration landscape of the future. Others, such as the electronic calendar or scheduling, may have trouble surviving a cost benefit analysis and in any event seem destined for limited use at the higher echelons of organization.

o There is some movement toward integrating these technologies. This is evident in the term "automated office" itself. But at this stage there is still an air of pasting together related new developments because they currently exist rather than proceeding from perceived requirements, to established needs, to R&D planning and programming. This situation is probably typical of all new areas of technological development.

o It is a reasonable (and useful for planning purposes) to assume that all recordskeeping will eventually pass from hard copy to electronic media. This will happen at some undetermined date in the future, but in the case of completely electronic files the future is not now. Applications of administrative automation are presently limited to the "office" as opposed to the "agency" (or Corporation). The cost of electronically filing all record material is still greater than the benefit to be derived. Legal and regulatory constraints are still a factor in favor of maintaining paper records or, as a second choice, microforms.

o Paper records and manually operated records management systems will be the mainstay of large agencies and corporations for one or two decades to come. Xerox, for example, believes that "people think because you have (the new office equipment) there will be a paperless society. As a matter of fact it leads to more paper because it is easy to use."* In fact, a good paper-based records management system is needed to provide the basis for the introduction of the electronic features of the automated office.

o There is a "people" problem with the new developments that is not addressed in the literature and reminds those who have gone through the computer revolution of the unanticipated balkiness that met some of the new "miracles of automation." Electronic Fund Transfer (EFT) and more recently the checkout counter pricing of grocery items by OCR are examples of very logical systems resisted by an irrational public. It is perhaps niggling to

* Emmett Reagan, Xerox Corporation, quoted in "Copier Capital of the World," Washingtonian, February 1981.

suggest that a Vice President (or a Colonel) will object to giving up a live secretary for a CRT. But it is worth remembering that, as a Harvard Business School scholar named Fritz J. Roethlisberger stated, "Everything in the work situation has a social as well as a functional significance." There are, in short, other things affecting the acceptability of the automated office than improved efficiency. The acceptance of the office revolution is not going to be automatic. Its successful introduction will involve some very careful personnel planning.

- Finally, literature concerning a new technology is characterized by optimism and even euphoria. This is the quite natural result of the enthusiasm generated by technical advances and discovery. Awareness of limitations comes later. There is little that is critical or cautioning in the literature surveyed at this point. But the limitations exist and will eventually surface. A wise management will try to anticipate them.

TASK 1 - Literature Search

FINAL REPORT

Background

The purpose of CALCULON's contract # MDA903-80-C-0721 is to design an efficient and effective system for filing, maintaining, and disposing of Army records. The specific objectives of this project are to:

(1) Redesign and modernize the Army Functional Files System (TAFFS) based on the latest technical advances and equipment;

(2) Examine modern state-of-the-art interactive data processing, word processing, electronic mail, microfilm retrieval devices, and any other new or advanced technology which may be applicable to records maintenance and disposition and which would enhance the efficiency and effectiveness of an Army system.

To accomplish this proposed work program, two tasks have been identified: Task 1 - Literature Search; and Task 2 - Analysis and Recommendations.

Purpose

This report describes the activities conducted by CALCULON during the performance of Task 1. The objectives, scope, assumptions and liabilities, methodology, and findings of this work effort are described in the following paragraphs.

Objective

The objective of Task 1 was to identify and review state-of-the-art literature pertaining to manual and automated records management theories and practices. The concepts and approaches discussed in the literature which were relevant to the project then became the information base for the requirements study and final recommendations performed under Task 2.

Scope

The scope of Task 1 encompassed those general subject areas which influence the design, development, and maintenance of any records management or information system which functions in today's environment. These factors included but were not limited to records creation and control management, indexing and retrieval systems, legal and regulatory requirements, multi-media records, classification and coding systems and techniques, centralized and decentralized systems, integrated office systems, and identification and protection of vital and archival records.

Our search comprised all stages of a record's life cycle; i.e., creation, active and inactive use, and destruction. While the Army's problems seem to be primarily with correspondence or reference files, transactional records were also considered within the overall context of records management systems.

A primary focus of our search was to examine those records management issues which are unique to, relate to, or have a major impact on large, widely dispersed organizations. The literature was searched for parallels to the current Army records problems and records management case studies of government agencies and large, multinational corporations.

Assumptions and Limitations

In order to perform Task 1 concurrently with Task 2, it was assumed that all subject areas and issues had been correctly and completely established in our original search parameters and that the literature search task was therefore finished at the end of the first quarter. While we believe Task 1 to be complete at this point, the fact-finding, analysis, and development of recommendations in the Task 2 effort may dictate a need for supplementary searches.

Methodology

Identification of Information Sources. As a first step, information sources which had relevance to the project were identified. Total information sources available numbered 246 and consisted of the following types:

- Computerized bibliographic commercial data bases;
- Specialized online data bases of other organizations and government agencies; and
- Public, private business, and other technical libraries.

Prioritization of Information Sources. After identifying available information sources, the next step was to determine the most promising data sources.

For the automated bibliographic data bases, descriptive hard copy references and online thesauri provided by the vendor were used. These references provide detailed descriptions of each data base and a sample record that illustrates the components of the available information. These references were used by the project team to select data bases which would probably contain the most items within the subject area of interest, as well as provide the most information per citation.

After determining which data bases were related to our search topic; i.e., primarily business, library, and government data bases, the index of each data base was examined online to determine how many applicable entries or "hits" were available. The following example illustrates this procedure:

e records management

Ref	Index-term	Type	Items	RT
E1	RECORDKEEPING		23	
E2	RECORDLNG		1	
E3	RECORDON		1	
E4	RECORDRD		1	
E5	RECORDS		3175	
E6	-RECORDS MANAGEMENT		3	
E7	RECORDSINGS		1	
E8	RECOREDS		1	
E9	RECORERY		1	
E10	RECORF		1	
E11	RECORFS		1	
E12	RECORGANIZATION		1	
E13	RECORIENTATION		1	
E14	RECORING		1	
E15	RECORRELATED		1	
E16	RECORRELATION		1	
E17	RECORRING		1	
E18	RECORVERED		2	
E19	RECORVERY		1	
E20	RECOSTING		1	

-more-

Figure 1. Example Online Index

From COMPENDEX (Computerized Engineering Index), produced by Engineering Index, Inc., available on Lockheed Information Systems

This technique also enabled us to determine the precise search synonyms or related terms when used in a particular data base.

For manual searches, local libraries were visited or contacted by phone and indexes or catalogs were scanned manually.

Using the above-described methodology, the number of information sources was narrowed from 246 to 23.

Defining Search Parameters. In defining search parameters, the concepts and practices of interest were translated into search terms and synonyms. This step, when properly done, is the most complex and time-consuming, but yields extremely cost-effective results.

The project team identified primary, secondary, tertiary, and, where applicable, quarternary search terms. This procedure is illustrated below.

PRIMARY	SECONDARY	TERTIARY
Records Management	Issues	Effectiveness
		Productivity
		Change
		Technology
		Growth
		Paperwork Reduction
		Information Explosion
		Predictions
		Improvements
		Future

Figure 2. Example Search Worksheet

Although these parameters were of necessity modified as the task progressed, this step provided the framework and foundation for the online searching.

Online Searching Strategies. Using the search parameter sheets for guidelines, terms were keyed in with commands specific to the search service and unique to that data base. In search statements containing more than one term, Boolean logic was used by the searcher to manipulate the terms until a manageable, cost-effective number of relevant "hits" was displayed. Three Boolean operators (and, or, not) were used. An example using Boolean logic is shown below:

```
User14724   Date: 8dec80   Time:11:41:57   File:  8

Set Items Description
  1   527 INFORMATION DISSEMINATION
  2  1398 INFORMATION RETRIEVAL SYSTEM?
  3  1823   1 OR 2
  4   308 RECORD?(F)MANAGEMENT
  5    39   3 AND 4
  6     7 LAND RECORDS
  7    36   5 NOT 6


Print 9/5/3-10

Search Time:  0.114   Prints:   8   Descs.:   6
```

Figure 3. Example Search Statement

Reviewing the example above, the searcher has first used the operator OR which yielded a total of 1,823 records:

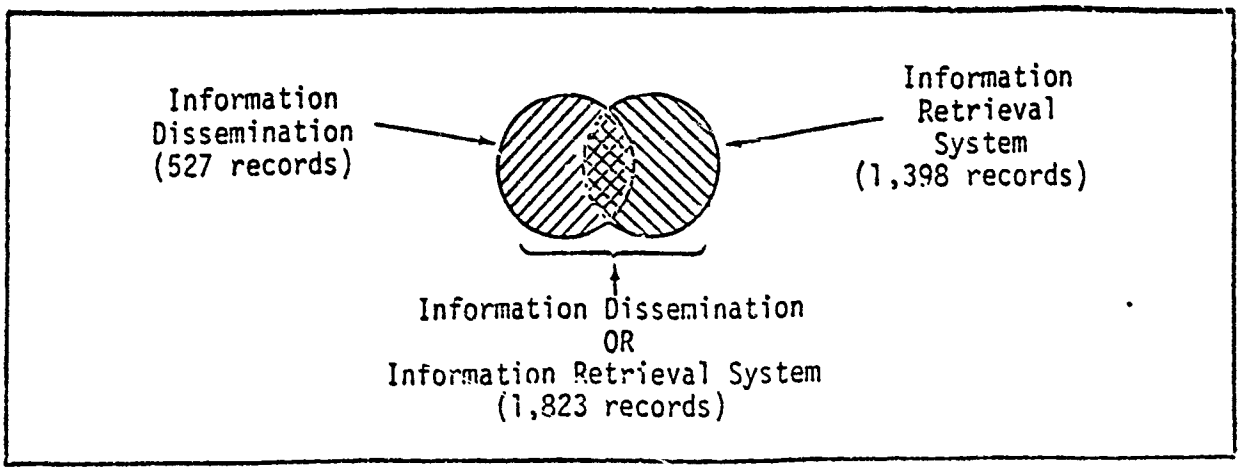

Figure 4. Use of OR Operator

The search was further limited to 39 records by the operator AND:

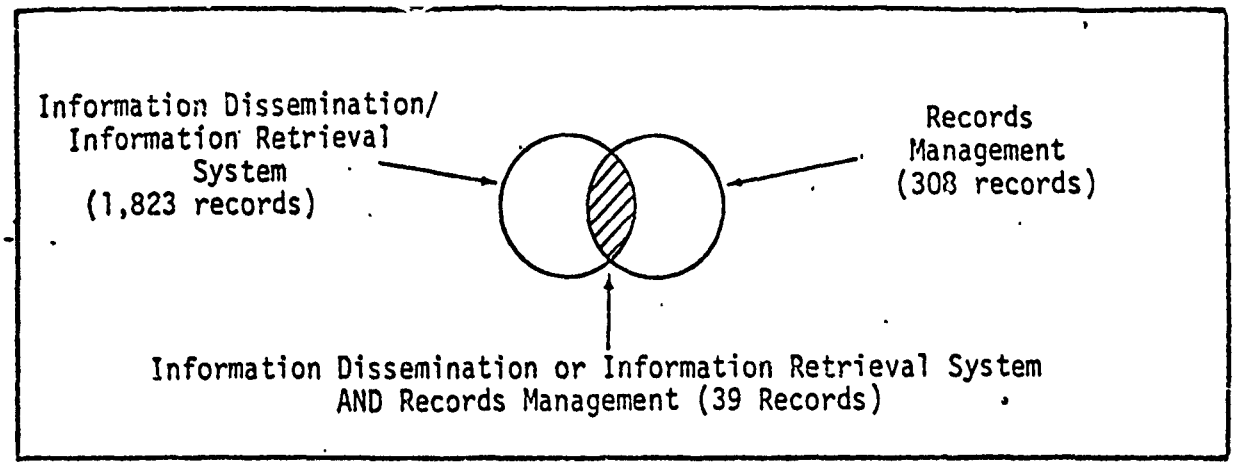

Figure 5. Use of AND Operator

Finally, the search yielded 36 records by employing the operator NOT.

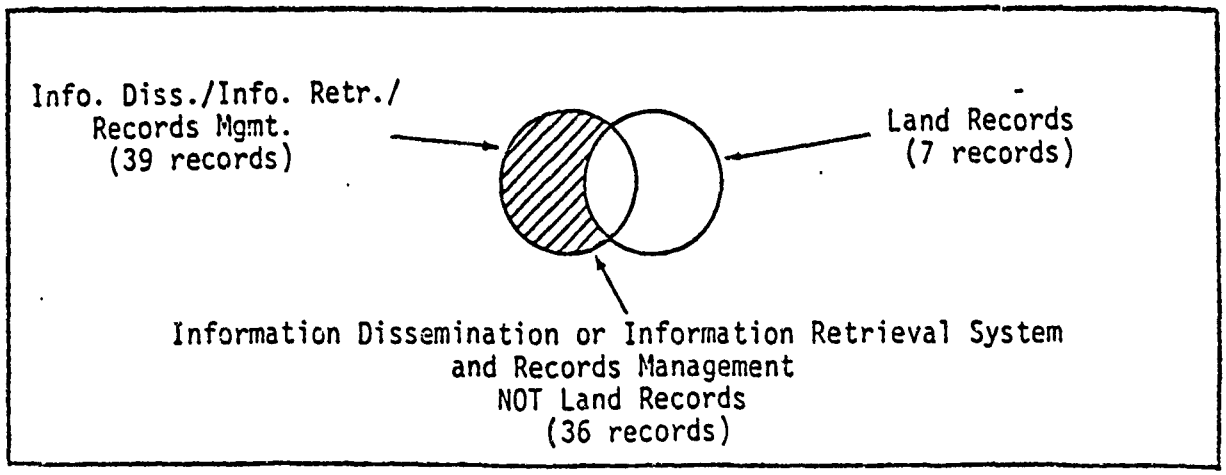

Figure 6. Use of NOT Operator

This technique as well as other search strategies such as full-text searching, truncation, and expansion of search terms, etc. were used in developing the searches. The searcher might have examined abstracts and descriptors at any point in the search to determine their relevancy. The search might also have been modified at any point to broaden or narrow its scope.

At this point, the searcher requested a list of titles of the relevant information. In many instances, the information sources were further narrowed by quickly reviewing the titles. The searcher then requested that the most promising abstracts be printed offline.

Review of Abstracts. The project team initially scanned the abstracts as they were received to eliminate irrelevant, duplicate, or redundant material. When all the abstracts were received, they were compared with the originally defined search parameters to ascertain if the subject areas had been completely addressed or if there was a need for supplementary searches.

After a satisfactory base of abstracts had been determined, the documents were acquired. The documents were reviewed by the project team and grouped by the categories identified in the search parameters. This established the information base to be used in Task 2. Appendix A is a summary statement of the literature search with respect to information management technology and an annotated bibliography.

APPENDIX A

SYNOPSES OF CURRENT INFORMATION MANAGEMENT LITERATURE

This appendix in brief format proposes to outline the current issues and technological progress being made in various subfields within the larger field of information management. Additionally, its purpose is to present a selective bibliography of current articles germane to the major issues and problem areas found in information management. We have included in the synopses and bibliography only articles we felt to be particularly appropriate or relevant to this contract. Finally, this Appendix implicitly suggests that the Army's paper systems of the present, adapted by Task 2 in the near future, will need to be compatible with the technological needs of automated systems. In other words, any new classification scheme or system must be adaptable to technology. It is from this perspective that we considered current literature in the various subfields of information management and are designing the new system for eventual trial and installation.

It should be noted this Appendix is divided into three separate but related sections. The first section, Information Management, presents an overview of information management. The second section, Records Management, includes those topics dealing with the traditional life cycle of a record. The third section encompasses the subfield of Information Technologies, where the most dramatic innovations are occurring.

Recent studies by consultants in the field of office management and organization, as well as by the U.S. Government's Federal Paperwork Commission have concluded that the creation and storage of documents is costly, and increasingly so, in human labor and in space requirements. Additionally, the overall volume of records is growing despite earlier predictions of reduced paper records with the advent of automated office information systems. Perhaps this is not totally surprising, given the general growth of government functions and programs. The conclusion must be, however, that in the future greater concern must be paid to all governmental costs, to labor and space requirements, and most importantly to rapid information retrieval. Accurate and efficient records storage is thus a requisite for effective and efficient program management.

There are five major areas which will demonstrate major technological changes toward more rapid information handling. First, the processing of information will speed up greatly, and costs will be lowered as a consequence. Computers have led the way in this regard, and are likely to continue as miniaturization occurs. Second, electronic storage costs of records is likely to decline as much as 95 percent in the 1980s while newer storage modes, such as microfiche, bubble memories and video and laser disks, become more economical and prevalent. Third, electronic transport costs will likely decrease as newer systems employing satellites and microwave technology are introduced and become commonplace within organizations. Fourth, input/output devices such as voice processing, laser-optic and ink-jet printing are revolutionizing the process of record production. In some

instances significant cost reductions are also being made. And finally, software development, which has historically lagged behind equipment development, is likely to show improvements to effectively utilize those made in hardware.

These improvements require additional caveats, however. Many improvements do not apply equally to the record management circumstances of all organizations. Moreover, the human resistance to "paperless" records and recordkeeping is strong, and likely to abate only as quickly as confidence grows in "fail-safe" electronic or mechanical measures. The costs of transition from paper to electronic media will need to be monitored and kept manageable. Changes are not going to occur immediately; they will be gradual and probably steady as all of these factors interact. All paperwork functions may be assumed by technology, but not immediately.

SECTION I - INFORMATION MANAGEMENT

Although the concept of information management is not new, it has received increased visibility recently. The demands for information and information costs are both on the increase and are a significant factor in the cost of doing business. Organizations today realize the importance of effectively and efficiently managing this resource and are deeply involved in demanding, creating, using, storing, retrieving, and disposing of information.

Most of the information used by managers exists on paper, causing ever increasing problems with the physical aspects of using, storing, retrieving, and disposing of information. As people in business recognize the limitations placed upon communications systems which rely exclusively upon paper, other forms of information processing such as minicomputers, microfilm, CRT, and video recorders are coming into greater use.

For many years, the amount of information coming out of a system was kept within the ability of people to absorb and use the information. Current technology, however, produces massive amounts of information at high speeds and at comparatively low unit costs. Methods and organizations have not yet caught up with information-producing technology. Information is treated in much the same way it was two or three decades ago. Thus, the biggest challenge in information management today is not more sophisticated technology, but rethinking the management of this resource. Recognizing this, many forward-thinking organizations have established information management departments which encompass the broad range of information resources. These resources include computer services, forms, reports, word processing, reprograhics, mail, correspondence, and records management.

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SECTION II - RECORDS MANAGEMENT

During the past 30 years, records management came to be defined as "the application of systematic analysis and scientific management of records and information from their creation through processing, maintenance, protection, and to final disposition or archival retention." It is becoming clear, however, that today's definition of records management may be too limited in scope for the business and governmental environments of the future. Records management today needs to develop into information management in the 1980s.

There is widespread, recognition by business executives and top-level government administrators of the need for organization-wide management of information and records in all forms. The functions of records management and related functions are moving steadily up the levels of managerial priorities and organizational ladders as the need for the services provided by these functions are more fully recognized and appreciated.

Despite a proliferation of sophisticated hardware and technology, the records management problem grows larger. The current challenge is to look for more effective and efficient ways to manage records--to harness information--rather than naively presuming that hardware is always the answer. The design of the system is far more critical than the hardware. If a system can access a page in milliseconds but users can't figure out from the index which pages are needed, speed is useless. Understanding how the information will be used and addressing those needs in the system design is essential. Certainly technology should not be downgraded; new technologies often allow an office to do the same things faster. Records management should, however, ask "why" something needs to be done. Care must be taken that an existing poorly executed procedure isn't automated without first excising any useless paperwork, thus simply creating a faster "mess." New technologies and hardware should be used, but used judiciously and intelligently.

Manual Filing Systems, Equipment, and Techniques

For economic reasons as well as other factors, manual filing systems will be in existence for many years to come. Critical factors of the filing function to be considered have not changed; i.e., systems, personnel, and equipment. There have been, however, changes in management's attitude toward and approach to these elements.

Systems. In designing current file systems, the basic principles still apply. The most desirable system is one that is simple, thrifty, flexible, logical, transferable, functional and uniform. The classification system is the key ingredient, with the emphasis on customizing the system to the organization's needs. Obviously, the time spent filing and retrieving information is the most expensive part of a filing system. However, more effective filing systems are available to provide efficient storage and retrieval of records. Authorities claim that over 60 percent of filing costs can be realized by proper reorganization of the average system.

Equipment. There is a wide range of filing equipment available which both substantially reduces the cost and improves the efficiency of recordkeeping in any office or organization. Some filing equipment is available, for instance, which:

- Saves 40 percent in manpower;
- Requires 25-45 percent less space;
- Improves filing and retrieval productivity by as much as 40-60 percent; and/or
- Costs less initially than other equipment.

Because of this potential savings, management must pay closer attention to this area in the 1980s. Top-grade space, equipment, and supplies must be provided--not leftovers from other requirements.

Personnel. There is a growing recognition of the importance of personnel in the file function. As records management receives more emphasis and moves up the organizational ladder, filing personnel must also be upgraded. Regardless of how well the filing system is designed, no filing system is any better than the personnel who operate it.

Techniques. The most popular current filing technique is the use of color. The special character and distinguishing quality that color adds make filing and retrieval faster and easier. The use of color simplifies identification, reduces errors and speeds retrieval. Color is being used in the following ways:

- File Folders--Color is used either to denote years, origin, or function.
- Labels or Bars--Colored labels and bars are an inexpensive substitution for colored folders.
- Out Cards--Color in out cards quickly identifies missing material; it may also denote where the file is, when it is due back, when it was removed, etc.
- Signals--Signals are related to out cards and are used to denote exceptions, records that must stand out from the rest of the collection, or records requiring special action.
- Coding Systems--For large numeric systems, the addition of color for digits or groups of digits greatly simplifies searches. Misfiles are readily evident and can be corrected at a noncritical point in time. Alphabetic and alphanumeric systems also lend themselves to color coding.

Records Disposition

Records disposition has three objectives:

- Promoting the retrieval of records
- Disposing of unneeded records
- Demonstrating compliance with existing federal regulations and statutes.

Thus, records disposition encompasses: records retention, vital records, records center operations, and archives, as well as the physical destruction of records.

The most significant factor in this area of records management is the continued surge of total volume of paper storage despite the advances of non-paper technology. The growth of hard-copy storage is attributable to an increasing complexity in day-to-day operating procedures, the requirement for more sophisticated management and decision-making, a greater emphasis on documenting routine events, federal regulations and statutes mandating longer retention periods, and increased caution on the part of managers regarding destruction of records, and maintenance of duplicative information. While current micrographics technology causes the records retrieval curve to slope downward, this does not affect the storage curve which has continued to slope upward. This trend is predicted to continue at least through the 1980s. Consequently, the records disposition function assumes increasing importance, requiring a higher degree of managerial professionalism.

Records Retention. Increasing paperwork necessitates a more carefully planned records retention program. It calls for rethinking of the function, innovative management techniques, and an approach tailored to the organization.

Some successful techniques cited in current literature are:

- Providing indexes to records maintained in storage;
- Using low-cost inactive record storage;
- Eliminating duplication;
- Identifying those documents which should not be considered records or information sources; and
- Automatically producing records destruction authorizations.

One effective and innovative solution to today's retention problem is to use a system consisting of two file structures. The structures are based on two separate, fundamentally different information needs. One file structure provides for those records with specific regulatory and statutory retention

requirements. The second structure provides an information base for day-to-day needs. Since the effort is centrally coordinated, users concentrate solely on the use of information as a resource; the records management office is responsible for retaining official records.

Records Center Operations. As the volume of paper increases, the use of off-site inactive record storage becomes more important. Efforts to use this space in the most efficient manner are a priority; centralizing inactive files is one answer. Because records must be retained longer, attention to environmental factors such as humidity and temperature, security, fire protection, etc. is critical.

Computerized indexing of inactive records alleviates many of problems traditionally associated with this function. Since the retrieval curve typically slopes upward when records are moved to inactive storage, current computerized indexing technology is an effective solution to this problem. Destruction schedules and annual inventory listings can also be automatically generated.

Vital Records. Programs for vital records protection today continue to be oriented toward protecting records against accidental or natural disasters, sabotage, and civil disorders. The need for a vital records program is widely accepted. Current emphasis focuses on solid management techniques and common sense rather than costly hardware and highly complex procedures and systems.

Archives. A successful archives program is one in which this function is integrated with all other areas of records management; i.e., a thorough understanding of current files management to archives management. Records are accumulating at alarming speeds. Therefore, current archival management must consider volume, organization and completeness of records. Archives management today requires highly sophisticated skills such as the appraisal of records; thus, the old attitude that "anybody can file" must be eliminated.

Legal Issues

Federal regulations and statues severely affect the records management function within the federal government. The specific retention requirements imposed by NARS, the Privacy Act, and the Freedom of Information Act, etc., have imposed a massive burden on federal records managers. Unfortunately, there are few articles in the current literature that deal specifically with these problems. Current literature does, however, deal with two separate, but related, issues: non-paper media as documentary evidence and the implications of the Paperwork Reduction Act of 1980. Both of these issues impact all federal agencies and will require careful consideration in the near term.

Non-Paper Media as Documentary Evidence. Currently, records must satisfy the rules of the laws of evidence as applied to documents made in the ordinary course of business. The issue to be resolved is whether magnetic media and microfilm documentation are sufficiently different from traditional records to

require new laws of evidence to be written to accommodate them. The question boils down to the trustworthiness of a document and whether the law can rely on the authenticity and verifiability of non-paper media without having to change laws.

Until reliable standards are established, records managers must either put double systems in place (one for paper originals that might be needed in court, the other for the convenience that microfilm provides) or gamble that the trustworthiness of a document will not be challenged.

Paperwork Reduction Act of 1980. Probably the most serious problem facing federal records managers today is that of excessive and unnecessary records. The Federal Paperwork Commission has recently concluded its work in exploring the causes of and solutions to this problem. In its research, the Commission found that the main problem facing government was not failure to make use of technological advances; indeed the government is often a pioneer in the use of technology.

The problem, according to the Commission, is one of excessiveness in information collection and maintenance and excessiveness and duplication of information elements and of entire filing systems. The main problem, the Commission noted, is not how can the records be handled more efficiently, but rather, is the information collection necessary in the first place. The Commission found excessive information creation and collection to be a way of life within the government. The practice is traceable to Congress and its expectations. Thus, information collection becomes a survival tactic. The Commission also found widespread duplicate recordkeeping, both within and between agencies.

The Commission did not address the elaborate and redundant government practice of retaining inactive records. There is opinion that current retention periods on the average far exceed known needs for many types of records. This poses a burden on both the federal records manager and the taxpayer.

Thus, the focus of the Commission was on more traditional records management considerations as well as the basic systems analysis question of evaluating if the information is really necessary. The Commission astutely observed that it is inefficient to create a redundant or unneeded information system. The Commission's report also implies that "blind" microfilming or digitizing of paper files is not a ready-made solution.

The Commission noted that there were many things wrong with the way the government handles information. The root cause is that information is not treated as a resource. The mechanics of implementing this concept were left for OMB, NARS, and others to develop. This concept presents some difficulties--definition of functions, organizational and managment roles, etc., which await resolution in the future.

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SECTION III - INFORMATION TECHNOLOGIES

Records managment has enjoyed an ongoing partnership with technology. Technologies that are being interfaced and integrated to create automated information handling systems include: micrographics, word processing, data processing, voice systems, reprographics, electronic mail, photocomposition, and communications.

Micrographics

Micrographics today is an efficient method of storing and retrieving records used in active information systems and is expected to have a continuing active and vital role in the future. Electronics and micrographics have successfully merged to meet current information needs. In this case, two technologies were brought together to produce a system stronger than either single process standing alone.

Microfilm. As more information is accumulated and stored, microfilm will continue to be used in even greater proportions for large masses of data not practical to digitize. As hardware becomes more sophisticated, large central data banks become more practical. The converse is also possible: more dispersed microfilm storage locations and more portable microfilm applications. Micrographics is expected to continue to merge with other disciplines and technologies, just as it has merged with EDP to produce COM and CAR, and will play a greater role in information handling in the future. For example, fiber optics will increase the use of color in micrographics systems; communications techniques will allow remote locations to be served instantly; and electrophotographic technologies promise new speeds, capabilities, and conveniences.

Computer Output To Microfilm (COM). In the decade since its introduction, COM has become increasingly attractive to organizations of all sizes. Certainly any technique that reduces the paper volume and paper cost is attractive. COM can reduce the cost of computer output as much as 80 percent. It offers not only low-cost efficiency, but simplicity and flexibility. COM can be updated, has the ability to accept indexing in ways that are tailored to the exact needs of the user, and has a wide range of applications, serving both archival and dynamic applications.

Computer Assisted Retrieval (CAR). The computer offers a highly effective solution to one of micrographics major problems: finding a document among thousands in a microfilm data base. This combination of EDP and micrographic technologies to retrieve microforms (CAR) is growing rapidly. Computer intelligence is becoming less costly, vendors of CAR devices are gearing themselves more toward a systems approach, and users of microfilms are becoming more aware of the need for computerized indexing and retrieval systems.

The office of today uses file systems designed over 100 years ago. In addition, it is increasingly difficult to find filing personnel. CAR is rapidly gaining acceptance as the preferred solution to this problem.

Computer Input from Microfilm (CIM). A technology just being developed, this system, when connected to the computer, scans the microfilm image and inputs the information into the data base. Although CIM is somewhat a "gleam in the eye" at this point, it holds promise for the near future.

Word Processing

The word processor constitutes the newest and most dramatic advance to capture the attention in the office environment. The interrelationship between records management and word processing is growing steadily to increase the potential for meeting information management goals. Word processing installations, after being in operation for a time, are becoming more involved with their users in an effort to help cope with the problems of using, filing, retaining, and disposing of information. Word processing operations are becoming and will become more involved with the entire information flow in the system, not just their own part as the production unit. By necessity, forms and records responsibilities are involved.

Word processors are bringing the office closer to total document control at a reasonable price. Word processors can easily be used to create indexes that can be loaded into a computer to create a CAR system. Sophisticated word processors can input directly to COM (either transmission, floppy disc or magnetic tape) and also create an index for a CAR system.

Yet another use of word processing is to use the WP center for the central filing location, which eliminates the multiplicity of correspondence, duplication of filing efforts, and the loss factor. This central file also adds convenience to information retrieval and research and frees administrative personnel from the filing task. Thus, word processing can be used as an effective solution to the age-old problem of master or office of record correspondence files.

Electronic Mail

Electronic mail is finding increasing acceptance in the office for the tremendous savings in time, cost, and efficiency that it is capable of providing. The three major systems embraced in the term "electronic mail" include facsimile transmission, communicating word processing, and mailgram. Based on different technologies, each offers different benefits. Some offices may be able to justify only one of these systems, while others can utilize all three for different applications. The telephone serves as the common denominator for all of them.

Facsimile. Facsimile transmission has existed for over 50 years; however, only recently has technical quality improved. Consequently, the interest in facsimile from the records management standpoint is relatively new.

Facsimile provides an excellent means of transmitting data to and from off-premise locations, such as low-cost records storage centers or vaults.

The range of units available run the gamut from small portable units that operate off battery packs to large console copiers.

Communicating Word Processors. With the communicating option, text editors can interact with computers, other text editors, and/or other vendors' equipment. Such equipment is a natural for sending information quickly with minimal clerical support. The ability to communicate directly with a host computer enables some word processors to perform such functions as the merging of information from a computer data base with text and records stored on diskettes.

Communicating word processors have rapidly become a significant presence in the domain of electronic telecommunications. The cost of computer time on main or shared-logic systems, personnel and production costs, and the need for quick and accurate communication of information will continue to bring them into the forefront of information management systems.

Mailgram. Mailgram, while much slower than the other two systems, does have two major benefits. First, it is delivered in the next morning's mail, thus providing a guaranteed transmission time. Second, the envelope looks like a telegram and catches the recipient's immediate attention.

As the capabilities of facsimile, word processing, and telecommunications equipment continue to grow, more sophisticated records management systems can become a reality. Electronic mail promises an avenue whereby a large, widely dispersed organization such as the Army can receive needed material from a central information system in the time it takes to walk to a file cabinet.

Communications

Communications provide the means to integrate technologies and subsystems. There are several current developments which will have a significant, positive effect on records management.

The Bell Systems networks effectively transmit voice information in the form of analog signals. However, office machine communications are digital. Although telephone analog networks can handle digital information, it is done by brute force. As a result, networks of communicating machines are not commonplace. Two major advances in communicating facilities, fiber optics and satellites, will change this. These two new technologies are very efficient for digital communication.

Fiber optics are replacing copper cables as carriers of both analog and digital signals. Potentially a fiber optic can carry 10,000 times as much information as the same diameter copper wire. Other advantages are unlimited bandwidth, immunity to electromagnetic and radio interference, elimination of "cross-talk," less signal loss, better security systems, and less weight and size.

Extended networks, or the use of satellites, provide more effective communication channels particularly for digital signals. There are four networks currently under development; some will offer large corporations and government agencies all-digital network service for integrated voice, data, and image traffic. One of these new extended networks can reduce a 28-hour transmission job to 15 minutes. These developments are definitely future considerations for records managers.

Data Processing

As discussed in other sections of this appendix, data processing has merged with several technologies to produce information handling systems. In this section, data processing is discussed with respect to automated information storage and retrieval.

As organizations grow larger and activities become more varied, filing systems become more complex. It is not unusual for organizations to have department files, central files, and a computerized data base system. Files are duplicated, cross-filed, cross-indexed, and frequently misplaced. Misfiles occur most often in active files--where that record is needed most. It is usually difficult to correlate data from different files to answer a specific need for information. Fully automated records management can provide an effective solution to these file problems. The system is a result of merging microform systems, mini- and micro-computer systems, and relational data base technology. Though the technology is presently available to produce such a system, current literature predicts a gradual shift (about 20 years) from manual systems to totally automated systems. The key to retrieval usefulness, however, is not the machine or technology used, but the design of the system.

Eventually, most data and text are likely to be stored electronically, with additional paper or other files being maintained for convenience or legal purposes. There are, however, some problems which need to be overcome before fully automated records management becomes a practical reality. Electronic storage has to become cheaper. Access to files will have to be available using normal user terminology; for example, a user is not likely to request information by accession number. There will have to be an inexpensive, reliable, quick way to enter the incoming paper records as well as some of the paper records created before the electronic system. Omnifont optical character recognition scanners show some promise for converting typed material to digital codes. A legal way of filing things on magnetic media that is not subject to invisible, undetectable change or a low-cost alternative to magnetic media needs to be developed. Optical media, such as video and optical disk, may have applicability here. Security and privacy of information must be addressed; computers have hardly made a dent in this area.

Automated indexing offers another avenue to improving productivity in the records management process. Indexing systems overcome many of the severe retrieval problems, inflexibility, and rigidity of functional files. There are many approaches to indexing schemes, e.g., concept coordination, uniterm, inverted indexing, key-word-in-context, etc.; all provide a possible alternative to subject or functional classification of files.

The advantages of converting to an automated indexing system are:

- Up-to-date, accurate information on all stored information regardless of volume received,
- Generation of destruction notices,
- Establishment of audit trails,
- Extensive research capability,
- Total control over information processing,
- Faster information input,
- Faster search and response, and
- Accommodation of increases in volume.

While automation in records management, whether through indexing or retrieval devices, can offer increased productivity, a great deal of careful planning and a certain amount of caution must be exercised. If an organization is converting from an inadequate and inaccurate manual system, the result will be an inadequate and even more inaccurate automated system. Therefore, a good manual system must be the base on which an automated system is created.

Reprographics

One of most impressive recent developments in reprographics is the electronic printing system. Of all the tools available for the information/records transfer process, page printers are the leading edge of commercially available interfacing technology. Page printers merge computer, laser, xerographic, and micrographic technologies. The input is magnetic tape; the output is paper, cardstock, and/or microfiche.

Data processing systems have traditionally sacrificed quality printing for quantity; word processors quality but sacrifices quantity. Neither data nor word processing can produce graphics. Page printers, however, give quality, quantity, graphics, forms, signatures, etc.

Page printers are high volume, expensive systems. However, for large organizations with volumes of 200,000 impressions per month and significant information transfer problems, the electronic printing system offers a cost beneficial solution.

Summary

There is a proliferation of electronic systems currently on the market and most organizations clamor to be a part of this revolution. In the above paragraphs, we have highlighted the major technologies included in the "office of the future" which will play a role in the records management function.

Today's office, however, is still essentially a manual office environment. There are a number of significant points regarding "office automation" which should be kept in mind as today's office is transitioned to the future.

- Methods, techniques, and tools to perform office functions are undergoing the greatest changes in history; however, the systems themselves are not the solution. They are the tools to help an organization improve its productivity and effectiveness in managing information. These tools change the way things are done not why things are done.

- The office of today is a combination of hardware, software, procedures, and people as will be the office of tomorrow. All of the ingredients are critical to the functioning of an office. One element cannot be substituted for another.

- Automation is not a panacea for an organization's records problems; in fact, advanced technologies such as word processing exacerbate the problems if they are superimposed on records inefficiency.

- Information should be dealt with for its end use--not as an ingredient in a system. A system must be a total, integrated information system aimed at a specific end use application, not a technological element or methodology.

We are moving quickly toward the day when most large document collections will be accessed with the aid of a minicomputer. However, this does not mean we are also moving to an era when most records will be digital. The "paperless office" means less paper--not zero paper. There are and will continue to be three major categories of information media: paper, digital, and micrographics. Each must be managed efficiently and effectively.

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