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REMARKS

Mr. Fitzwater may be interested.
 specifically asked that a section on the Records Center be included.

The Task Force on "Optical Film Storage and Retrieval" changed its charter to look at the broader issues of "Agency Document Storage and Handling Problems." The attached resulting document gives surprisingly (to me) broad recommendations that provide little guidance to budget planning.

of, Agency/Post) <i>015/PYMS</i>	Room No.—Bldg <i>1205 Annex</i> Phone No. <i>1</i>
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MEMORANDUM FOR: See Distribution

FROM:

[Redacted]

SUBJECT: Report on Agency Document Storage and Handling Problems

1. Attached is a copy of our task force report on Agency Document Storage and Handling Problems which was forwarded to the Executive Director on 6 June 1985.

2. I want to thank each of you for your cooperation and help in preparing this report. Although we were in disagreement on many issues, I think it does reflect our collective views. I'm sure we all learned something for our efforts.

3. It was a pleasure working with each of you, and again thanks for your help.

[Redacted Signature]

Chairman, (Optical Disk) Task Force

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C O N F I D E N T I A L

AGENCY DOCUMENT STORAGE AND HANDLING PROBLEMS

This report was prepared in response to a requirement
set forth by the Executive Director in March 1985.

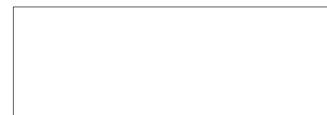
PREPARED BY

Agency Task Force
Chaired By
DI/Office of Management, Planning, and Services

6 June 1985

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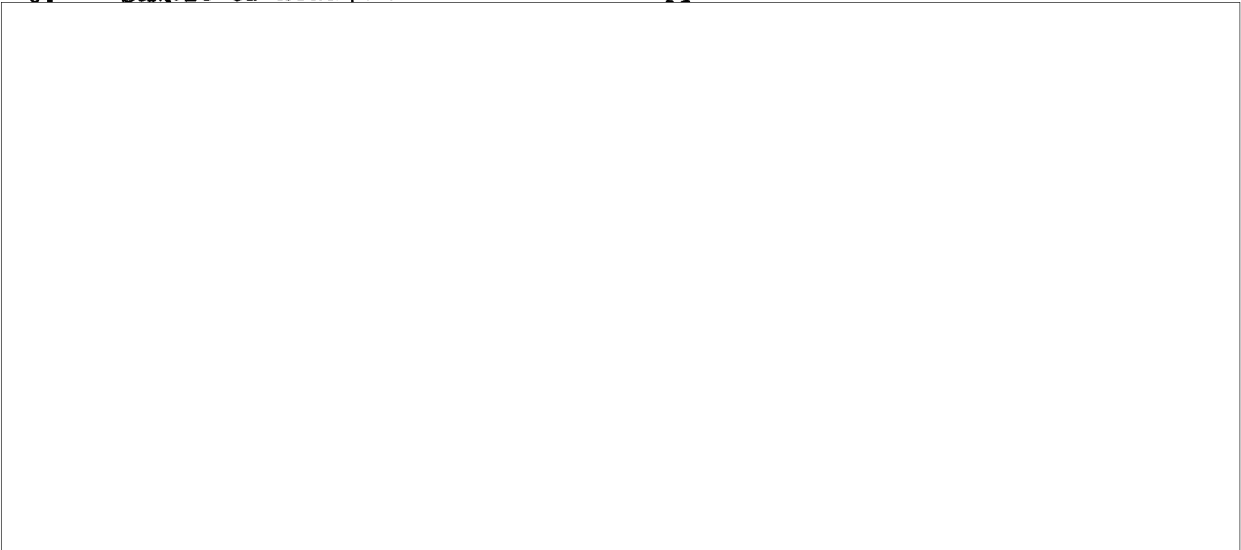
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C O N F I D E N T I A L

TABLE OF CONTENTS

Para	Subject	Page
1.	Executive Summary.....	1
2.	Background.....	2
3.	Problem Areas.....	2
	a. Space	
	b. Retrieval	
	c. Dissemination/Transmission	
	d. Manpower	
	e. Quality of Paper or Microfilm	
	f. Compartmentation/Security	
	g. Non-Textual Data	
	h. Archiving/Retention	
	i. Backup	
4.	Observations/Recommendations.....	5
	a. Prioritize Problems	
	b. Use Commercial Technology	
	c. Invest in Agency Specific Requirements	
	d. Exploit a Range of Technology	
	e. Accelerate Retention of Data in Electronic Form	
5.	Overview of Headquarters Area Document Holdings.....	7
6.	Sample of Headquarters Area Hard Copy Collections.....	8

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C O N F I D E N T I A L

AGENCY DOCUMENT STORAGE AND HANDLING PROBLEMS

1. EXECUTIVE SUMMARY

This paper responds to a request by the Executive Director for an assessment of document storage and handling problems throughout the Agency. It was prepared by an interdirector task force, headed by the DI Office of Management, Planning, and Services.

The Annual Records Inventory for FY 1984 shows that hard copy records occupy 244,780 cubic feet of space at Headquarters--the equivalent of 30,580 four-drawer safes. Included in this total are large, frequently used files such as those in the Offices of Personnel, Security, Medical Services, and Finance as well as smaller collections such as those in the DI Arms Control Intelligence Staff and the Office of Legislative Liaison. The task force found that regardless of the size, age, composition, or use of any given file, the problems associated with information retrieval were consistently cited as the single most significant issue that needs to be addressed. Those offices that have large paper holdings also face severe input problems, ranging from a lack of clerical support to long delays in receipt of hard copy to overwhelming backlogs in processing. Another frequently mentioned problem was lack of space, resulting in the need to purge potentially valuable information on a periodic basis.

In weighing the trade-offs between using new technology to optimize retrieval, automate input to the extent possible, or reduce the physical size of a file, the issue of the intelligence value of the collection and the ways in which the data are used to answer intelligence questions must be weighed very carefully. It may or may not be prudent to implement one technology that will result in space savings for a large collection at the expense of neglecting retrieval capabilities for a small collection that would significantly enhance intelligence production. It would appear from the task force survey that there are many offices that have similar information handling problems that could be solved by the application of common technology. However, a solution that addresses the requirements of one collection may not necessarily be applicable to other collections without modification, nor should it be "force fit" because of resource constraints.

After reviewing the record holdings of 19 document collections in offices that had over two-thirds of the Agency's total hard copy records, the task force determined that the Agency should:

- a. Prioritize Problems: Document collections that would benefit from automation need to be identified, the basic requirements established, and each ranked on a cost versus benefits basis.

C O N F I D E N T I A L

C O N F I D E N T I A L

b. Exploit a Range of Technologies: There are numerous technological advances available for improving the handling and management of document collections. The Agency should use the technology that best meets the specific collection's requirements.

c. Use Commercial Technology Where Possible: The Agency should invest in product development when it appears probable that commercial development will not satisfy our needs. The conversion of poor quality and foreign language materials as well as applications requiring high density storage are examples of areas for Agency investment.

d. Accelerate Retention of Data in Electronic Form: Maintaining documents in their original electronic form eliminates the need for conversion, reduces storage space, and offers an improved retrieval capability.

2. BACKGROUND

In early March 1985, the Executive Director tasked the DI Office of Management, Planning, and Services to head an interdirectorate task force to assess Agency-wide mass storage requirements to determine the applicability of optical disk storage and retrieval technology. The purpose of this undertaking was to assist senior Agency managers in determining the extent to which we should underwrite development or invest in this technology. Two milestones were established for the task force: an interim briefing to the Information Systems Board on 26 April 1985 and a final report to the Executive Director in June.

Following the interim briefing, the task force was redirected to pursue a somewhat more realistic goal of identifying existing document storage and handling problems throughout the Agency, including the Records Center. This was accomplished by interviewing representatives from a cross section of offices who could provide information on a variety of data storage and handling problems. This paper highlights the task force findings, provides some general observations about future trends based on extensive group discussions, and summarizes the results of our office interviews.

3. PROBLEM AREAS

Although many components of the Agency have developed systems to improve information handling (e.g., ALLSTAR and SAFE), problems associated with the storage and handling of documents continue to result in costly, time consuming, and labor intensive practices. The task force identified the

C O N F I D E N T I A L

following to be the most prevalent problems with hard copy collections today:

a. SPACE

° We are running out of space and paper takes up more space than any other commonly used storage media (2,000 pages per cubic foot). The following illustrates the storage capacity of five types of media:

1 cu. ft. 8 1/2 x 11 in. paper	2,000 pages
100 ft. reel microfilm (x24)	2,500 pages
1/2 in. digital tape	3,600 pages
Winchester 5 1/4 in. disk	10,000 pages
12 in. optical disk	52,000 pages

° The number of people and machines in a finite amount of space is growing. As a result, paper collections that were not a space problem a few years ago are today.

b. RETRIEVAL

° The filing and retrieval of paper and microform are labor intensive functions.

° The possibility of misfiling or losing hard copy is very high.

° Without an accurate index, the chance of missing or overlooking important information is also high.

° Many requests require a response on an immediate or time sensitive basis.

° Many hard copy collections are not colocated with the users making it time consuming to access the data.

° Filing or processing backlogs often prevent the most current information from being available.

° Documents in hard copy files can be accessed by only one user at a time.

° Mixed media files (paper/microform/electronic) are the most difficult and time consuming for users to retrieve and use.

C O N F I D E N T I A L

c. DISSEMINATION/TRANSMISSION

- Paper and microform are generally dependent on manual (courier system) dissemination.
- Paper and microform generally require duplication by the sender/originator if there is more than one recipient. Hard copy collections with high dissemination requirements, such as the Office of Personnel Applicant Files, involve extensive duplication.
- A slow dissemination capability often leads to duplicate files in several locations. Duplicate files, such as component personnel soft files, provide users faster access, but add to the space problem.

d. MANPOWER

- The time and effort required to file, retrieve, duplicate, and purge hard copy is enormous and the costs per year are in the millions of dollars.
- Clericals are, and will continue to be, difficult to recruit and retain.

e. QUALITY OF PAPER OR MICROFORM

- Depending on source and age, many hard copy documents are difficult or impossible to duplicate or convert. Currently there is no commercially available technology capable of handling this problem.

f. COMPARTMENTATION/SECURITY

- There is a reluctance to automate highly compartmented systems on central mainframes.
- Coded magnetic media is currently easier to alter without detection than paper or microform. Optical digital data disk is the most difficult, but is not currently available in any Agency system.

g. NON-TEXTUAL DATA

(Annotations, Signatures, Graphs, Pictures, Nonstandard Type)

- Most paper files contain information that cannot be easily captured in electronic form, such as handwritten correspondence, notations, graphs, charts, over-sized engineering drawings, pictures, etc. Paper

C O N F I D E N T I A L

and microform are the only currently available media used in the Agency to maintain these types of data. In addition, there is no other media available to handle special fonts, such as those associated with stamped classification markings and foreign languages.

h. ARCHIVING/RETENTION

° Most office automation systems do not have the storage capability to provide for the long-term retention of documents, therefore, the record copy is eventually paper or microform.

° Agency destruction/archival policies are in effect for all paper and microform documents, but since document-based "record copy" electronic systems do not exist in the Agency:

(a) Agency guidelines and policies for maintaining record copies in electronic form also do not exist and

(b) no Agency proposals for electronic archiving have been submitted to the National Archives and Records Administration.

° Paper (especially acid-free) is the most stable storage medium to maintain over a long period of time (50 to 100 years or more) followed by microform; magnetic is the least stable. All are expensive to restore once deterioration has progressed. The archival capability of the optical digital data disk is unknown but is in excess of ten years.

i. BACKUP

° Most hard copy collections have little or no backup because of space limitations and the lack of manpower to duplicate and update the files.

4. OBSERVATIONS/RECOMMENDATIONS

While there is clearly a lack of consensus among members of the task force about many issues related to information storage and handling problems, we are able to make the following observations and recommendations:

a. Prioritize Problems

Although the task force survey of existing hard copy holdings did not include all Agency offices, it is apparent that there are many areas that would benefit from automation. Not all of these applications involve large paper holdings, and many have special requirements that need to be more clearly defined before resource decisions are made.

C O N F I D E N T I A L

It is clear that some offices share common problems--a difficulty in accessing existing data, the need for better indexing or a full text retrospective search capability, a lack of space for file growth, a shortage of clerical support to maintain files, etc. One approach to developing an investment strategy for resolving our "paper problems" would be to aggregate the requirements of those applications that could benefit from common technological solutions, identify applications that have special or unique needs, and then prioritize the results. This would lead to the identification of a number of offices that would benefit from the implementation of similar technological solutions and at the same time allow us to address those unique areas that may otherwise go unnoticed.

b. Use Commercial Technology

The Agency has a long history of technological innovation which has greatly benefited the Agency and its customers. However, when our unique developments have been followed by comparable commercial ones, we have been forced to continue to support expensive, non-standard implementations. Since the current level of commercial innovation directed toward document handling is quite high and costs are rapidly declining, it would be prudent to adopt Agency-specific solutions only in those cases where it is evident that the Agency's problems are unique.

c. Invest in Agency-Specific Requirements

Not all of our hard copy problems can be solved by using commercial technology. The poor quality of some of our old, but highly valuable documents precludes conversion to digital form using currently available optical character readers. Similarly, foreign language materials will continue to be received in large quantities and these cannot presently be scanned with commercially available equipment. Investments to improve the quality of older documents and in research to enhance optical reading and scanning equipment are appropriate.

d. Exploit a Range of Technology

The wide range of hard copy problems we face implies a review of a wide range of technological solutions. For example, converting some holdings to microform could reduce space requirements, and creating an automated index to a hard copy file could improve accessibility. However, in evaluating these kinds of options many factors need to be taken into account, such as the tradeoff between space savings (e.g., microform) and data accessibility (e.g., availability of microform readers and analyst willingness to use them). In each case the cost

C O N F I D E N T I A L

of the improvement must be weighed against expected benefits.

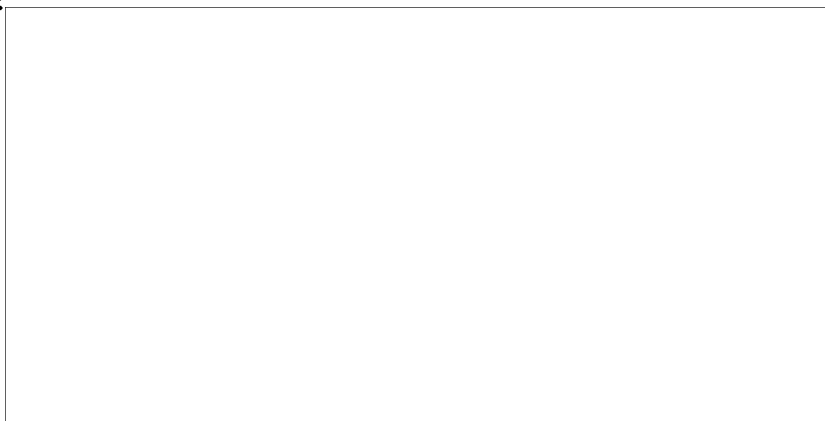
e. Accelerate Retention of Data in Electronic Form

The benefits of textually coded information with respect to information retrieval are so overwhelming as to dictate that every effort be made to "capture" existing electrical information in its coded form. Although a significant portion of incoming information is currently received in electronic form, it is disseminated in hard copy. Similarly, internal correspondence is generated on word processing equipment, but is typically distributed and stored in paper form. As we move toward greater use of automation, we should look at solutions that will allow us to maintain and manipulate data in its coded form.

On the other hand, retaining electricals in digital form will not solve all of the information handling problems we face now or in the future. While the volume of electrical traffic has grown perhaps ten-fold over the past decade, there has not been a corresponding decrease in hard copy receipts. A significant amount of data will continue to be received as hard copy (open source publications, externally generated raw and finished intelligence, photographs, maps and charts, etc.). In conjunction with our efforts to eliminate paper copies of electrical messages, we should continue to pursue mechanisms such as the evaluation of commercial scanning equipment or the development of customized equipment to capture and convert this important data.

5. OVERVIEW OF HEADQUARTERS AREA DOCUMENT HOLDINGS

Based on the 1984 Annual Records Inventory, the following chart indicates the amount of space (in cubic feet) occupied by paper files at Headquarters:



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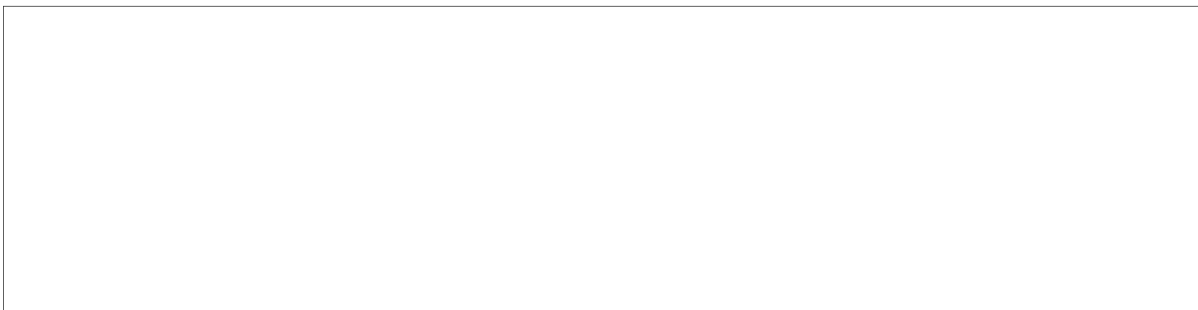
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In an effort to understand trends in the growth of paper, the task force reviewed year end statistics for the past five years. Although the growth rate appears to be flat for that period of time, there are several factors that need to be addressed to understand the apparent lack of growth in our paper holdings. First, because of space limitations, offices have had to adopt a "zero growth" policy on some types of files, such as analyst working files. While this approach has helped with the space problem, it has created a potentially more serious problem in that the material that is purged could be valuable and its destruction could represent a significant intelligence loss. Second, many analysts use the Records Center for "secondary" storage which also helps with the space problem at Headquarters, but adds to the space and retrieval problems at the Records Center. The 1984 Annual Records Inventory reveals that nearly 17,000 cubic feet of material--most of it hard copy--has been added to the Records Center since 1980. Finally, many offices have converted older materials to microform. This again helps the physical space problem but in reality causes retrieval problems for the users of this data because of the cumbersome nature of the media.

6. SAMPLE OF HEADQUARTERS AREA HARD COPY COLLECTIONS

Information on the various problems associated with hard copy holdings was obtained by reviewing a broad range of file collections. In most instances a task force member spoke directly with the collection users; often, however, the aggregate knowledge of the task force was sufficient to answer the relevant questions and the time consuming interview process was avoided. While being far from exhaustive, it is believed the collections cover most, if not all, of the Agency's major paper or microform-related problems. Lack of space was one of the most frequent complaints of the users of paper collections and, to put this aspect of the collections into perspective, they have been grouped according to their relative size -- small, medium, or large -- and are listed under those groupings by directorate and component.

a. Collections Under 1,000 Cubic Feet at Headquarters
(Less Than 125 Four-Drawer Safes):



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