

# INTRODUCTION

## Purpose

The purpose of this handbook is simply to describe selected information retrieval systems in use today, so that those seeking information on the subject may learn what others are doing to solve their information retrieval problems. No attempt has been made to evaluate the relative merits of the systems described or to include all of the information retrieval systems in use within the Government today.

Three general principles were followed in selecting the systems to be included in the handbook:

- To cover, as far as possible, a representation of the more significant nonconventional methods and equipment in use today, from the simplest to the most complex.
- To provide a wide spectrum of the types of work activities where nonconventional information retrieval methods and equipment are being successfully employed.
- To limit the examples to operating systems, or those in the process of implementation, using equipment that is generally available.

This handbook clearly illustrates that there are many approaches one might take in solving any given information retrieval problem. Some of the systems described may at first seem too expensive for the situation you have in mind. This may not prove to be the case, since it may be possible to share the costs of development and equipment with some other group having a similar need or to have the work performed by a service bureau. On the other hand, some of the systems in the handbook may seem overly simple, and there may be a temptation to underrate their value.

The right choice in any situation can be made only after a careful cost-benefits study has been conducted—a study that compares

the best suited conventional methods for accomplishing the task against the best suited nonconventional information retrieval methods and equipment. Hence, the broader your knowledge of systems, the more likely you are to find the best answer to your information retrieval problem.

## Related Handbooks and Workshops

The National Archives and Records Service has three handbooks that provide guidance in the development and operation of conventional systems: *Subject Filing*, *Files Operations*, and *File Stations*. There is also available a training workshop, "Files Improvement."

In addition to this handbook on information retrieval systems, two others are being developed. The first is titled *Microform Retrieval Equipment Guide*, and the second is *Information Retrieval*. A workshop, "Office Information Retrieval" is also available. The materials for this workshop and the one titled "Files Improvement" may be purchased by individual agencies who wish to conduct workshops for their own personnel; or, in some situations, workshops may be conducted at an agency location by National Archives and Records Service personnel. In addition, agency personnel may attend the regularly scheduled workshop sessions conducted by the National Archives and Records Service in Washington, D.C., and by the General Services Administration regional offices.

If the system selected employs an electronic computer, one of the major costs and possibly the most serious problem will be in converting the input data to a machine-language format. The Records Management Handbook *Source Data Automation* and the workshop of the same title provide guidance in this area. There is also available a General Services Administration Handbook titled *Source Data Automation Equipment Guide*.

**IDENTIFICATION OF SYSTEMS BY METHOD AND EQUIPMENT CLASS**

LIST OF SYSTEMS	PAGE NUMBER	METHOD AND EQUIPMENT CLASSES																		
		CLUE-WORD EXTRACT CARD	PERMUTED INDEX	COLUMNAR CARD	DUAL DICTIONARY	EDGE-NOTCHED CARD	OPTICAL COINCIDENCE	PUNCHED CARD	MISC. CARD SELECTORS	MICROFILM JACKET	MICROFILM	MICROFILM STRIP	MICROFILM ROLL, MECHANIZED	MICROFILM ROLL, PHOTO-OPTICAL	MICROFILM CHIP, AUTOMATED	APERTURE CARD- PUNCHED	APERTURE CARD- EDGE-NOTCHED	MICROFILM, SUPERMINIATURE	VIDEO RECORDING	COMPUTER
Aerospace Information Dissemination	113									X										X
Aircraft Accident Analysis	14																			X
Aircraft Maintenance Manual, Distributing and Updating	145											X								
Allotment Disbursement Record	54											X								
Animal Inventory Management	125				X															
Automated Engineering Data Retrieval and Reproduction	32						X								X					
Automated Merchant Vessel Report (AMVER)	131																			X
Automated Name Search	122																			X
Automated Personnel	88																			X
Battelle Clue-Word Card	140	X																		
Battelle Dual Dictionary Index	143											X								
Beneficiary Information	82													X						
Building Space Information	34																			X
Census Age Search	20																	X		
Computer Output Data Retrieval	137												X							
Congressional Information Network	107																			X
Correspondence Retrieval	42																			
DDC Information Storage, Dissemination and Retrieval	75									X										X
Deficiency Identification	37																			X
Engineering Drawings Storage and Reproduction (with Color Overlays)	39																			X



## How to Use the Guide

*General browsing.* If you are looking for ideas on how you might improve information storage, retrieval, and dissemination, it is suggested that you take a look at most of the systems described. This is the preferred approach, since the answer to many information retrieval problems lies in the proper combination of methods and equipment. Also, you may find in some simple yet little known technique the necessary clue to the solution of your problem.

*Identifying systems by agency.* If you are interested in those systems used within a particular agency, the table of contents will direct you to the proper pages. However, please remember that this handbook includes only representative systems; therefore, no agency listing is complete and many agencies are not represented at all.

*Identifying systems by method and equipment class.* If you are interested in a particular information retrieval method or type of equipment, figure 1 classifies each system. While it is realized that the titles of some of the classes may not be ones with which you are familiar, or may represent classes that have also been given other titles, the system description should clarify any questions you may have.

*Identifying systems by functions served.* If you are interested in identifying systems by the information retrieval function served, the system titles may provide the necessary clue. However, you may find figure 2 helpful not only for this purpose, but also for gaining a better understanding of just what each system can do and what it cannot do. Please note that some of the systems in this handbook are designed to perform more than one function. The following is a definition of each of the four functional categories shown in figure 2:

DR—Document Reference (Index) Systems—Those used for conducting searches by subjects, characteristics, or attributes where the method and equipment employed merely identify, by name or number usually, the documents or other items that are pertinent to the

query. If complete information is needed, the user must refer to another source, often the document or other item itself.

DS—Document Storage Systems—Those used solely for storage of documents or their images. The documents or images are arranged and also retrieved on the basis of their name, number, address location, or some other simple identifier.

URS—Unified Reference-Storage Systems—Those that combine the functions of the first two (DR and DS). These systems are able to identify documents on the basis of subjects, characteristics, or attributes, and then automatically or simultaneously present or display those documents or their images that are pertinent to the search query.

DFR—Data or Fact Retrieval Systems—Those that provide the user with the precise data or facts pertinent to his query, rather than merely referring him to a document.

Data is defined for the purposes of this handbook as discrete quantitative or qualitative information such as names of persons, places or things; dates; units of measure; and physical characteristics or attributes.

Facts are defined as complete thoughts, concepts, or answers often representing conversational like responses to the search questions and expressed often in a conversational manner, as concise sentences, phrases, or paragraphs.

Data or fact retrieval, as covered by this handbook, is of two levels:

1. *Simple data retrieval* as in situations where the requirement is merely to look up data by name, number, or some other simple means, and extract all or some of the related data found in that part of the record store.
2. *Complex data or fact retrieval* involving comprehensive searching of the system store, correlating or other manipulating of data, and in other ways developing answers to questions. (Generally, systems capable of performing

complex data or fact retrieval can also be designed to serve one or more of the first three functions above.)

### **How to Obtain Additional Information**

Additional information regarding any specific system included in this handbook may be obtained by contacting the originator at the

address shown. Inquiries may also be directed to:

Paperwork Standards and  
Automation Division (NRP)  
National Archives and Records Service  
General Services Administration  
Washington, D.C. 20408

## IDENTIFICATION OF SYSTEMS BY FUNCTIONAL CATEGORY

LIST OF SYSTEMS	PAGE NUMBER	FUNCTIONAL CATEGORY			
		DR	DS	URS	DFR
Aerospace Information Dissemination	113	X	X		
Aircraft Accident Analysis	14	X			X
Aircraft Maintenance Manual, Distributing and Updating	145		X		
Allotment Disbursement Record	54				X
Animal Inventory Management	125	X			X
Automated Engineering Data Retrieval and Reproduction	32	X	X		X
Automated Merchant Vessel Report (AMVER)	131				X
Automated Name Search	122	X			X
Automated Personnel	88				X
Battelle Clue-Word Card	140	X			
Battelle Dual Dictionary Index	143	X			
Beneficiary Information	82				X
Building Space Information	34				X
Census Age Search	20				X
Computer Output Data Retrieval	137				X
Congressional Information Network	107	X			
Correspondence Retrieval	42			X	
DDC Information Storage, Dissemination and Retrieval	75	X	X		
Deficiency Identification	37				X
Engineering Drawings Storage and Reproduction (with Color Overlays)	39		X		
ERIC (Educational Resources Information Center)	80		X		
Failure Rate Data Dissemination (FARADA)	45				X
The Fosdic SS	17				X
Information Retrieval and SDI Current Awareness	98	X			
Information Storage and Retrieval for Patents ( Ex )	26	X	X		

Figure 2

**IDENTIFICATION OF SYSTEMS BY FUNCTIONAL CATEGORY (Cont'd)**

LIST OF SYSTEMS	PAGE NUMBER	FUNCTIONAL CATEGORY			
		DR	DS	URS	DFR
JCS Records Retrieval	29	X			
Land Patent Control Document Index	93	X	X		
Legal Information Through Electronics (LITE)	57	X			X
Machine Readable Catalog Dissemination (Project MARC)	110	X			
Meat Label Storage and Retrieval	8		X		X
Medical Record Storage	78		X		
Microform Engineering Drawings Support	72		X		X
Microform Personnel Record	60		X		
Miniaturized Management Reports Distribution	63		X		
Miniaturized Navy Catalog Data	48		X		X
NASA/RECON Automated Reference	116	X	X		
National Crime Information Center (NCIC)	104				X
National Driver Register	128				X
National Employee Account Card Holders	85				X
National Marine Data Inventory (NAMDI)	119				X
National Weather Records Center	23				X
Office Files Coordinate Index	66	X			
Personnel Skills Inventory	134	X			
Pesticide Label Control	11	X			X
Public Works Drawings Retrieval	51	X	X		
RIRA-Legal Information	101	X			
SDI Current Awareness	96	X			
Technical Data Dissemination and Retrieval	69		X		X
Video Tape Information Storage & Retrieval	91		X		
ZIP Code Data Retrieval	148				X

Figure 2 (Continued)