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NAVY LIBRARIES' INFORMATION STORAGE AND RETRIEVAL SYSTEM, PROCE--ETC(U)
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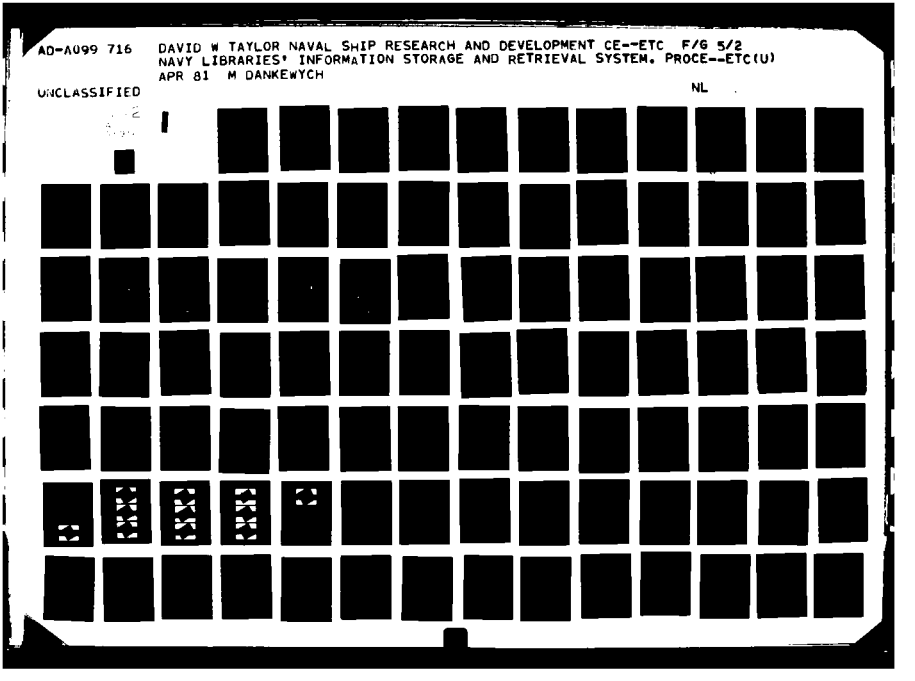

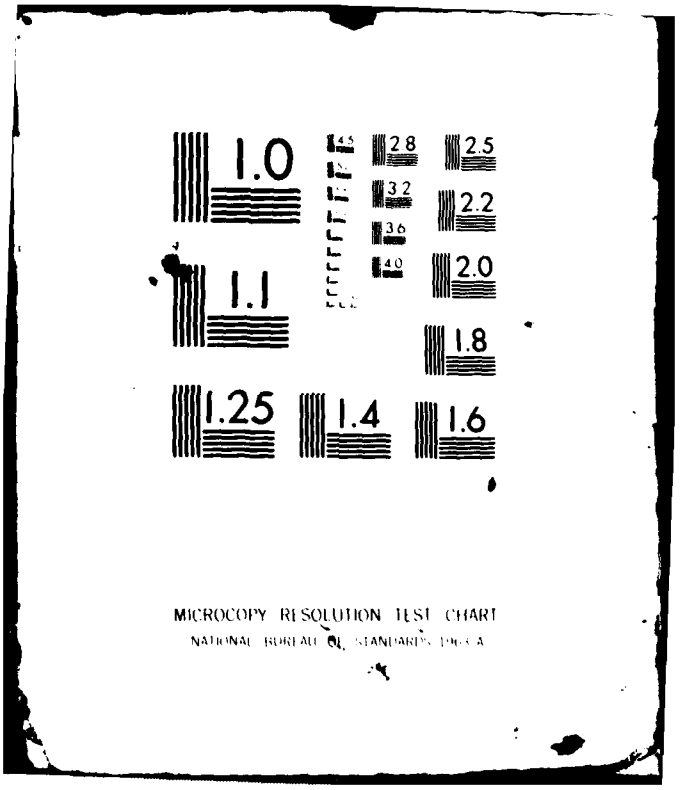
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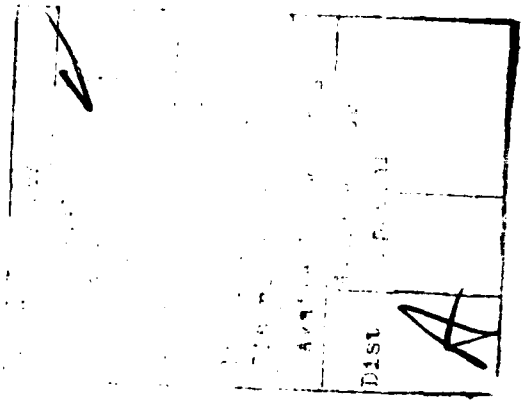

FOREWORD

"Navy Libraries' Information Storage and Retrieval System" was the theme of the 38th Annual Workshop of the Council of Navy Scientific and Technical Libraries (CONSATL).

The Automated Library System that was presented and demonstrated to the Council was designed and developed at the David W. Taylor Naval Ship Research and Development Center Library. This system automates several library functions: cataloging, reference, circulation, interlibrary loan, and shelf list control. The output includes: union catalog on computer-output-microfiche (COM) of the Annapolis and Carderock total library holdings; current awareness services; an accessions bulletin; bibliographies resulting from literature searches; a list of secret inventory; a Center report bibliography; overdue notices; a listing of borrower's holdings; yearly reminder notices of departmental loan holdings; and corporate source and subject headings thesauri.

Now, this automated system provides the Library with a new kind of technical power that would be too costly or difficult, if not impossible, to provide in a manual system. The COM catalog provides far more access points to a particular item than it was possible to provide conveniently and economically in a card catalog. The online information retrieval system easily handles highly complex search strategies, involving large numbers of terms in complex logical relationships, and is capable of providing a very rapid response to a critical request, that were virtually impossible to deal with manually. The system also facilitates the rapid handling of transactions and allows up-to-date file maintenance. The online circulation system speeds the process of charging books or reports in and discharging them and indicates almost immediately the location of a particular book or report.

During the design and development stage of the system, the ad hoc committee "Navy Libraries Online Network" of the CONSATL requested that the system also be designed to serve as a prototype of a bibliographic database for the Navy Research and Development Centers. It was the opinion of the Committee that ONE bibliographic information storage and retrieval system of the Navy R and D Centers will keep the scientific and technical staff abreast of the research and literature in their fields and will respond quickly and efficiently to their information needs.

We invite requests from other Navy R and D Centers concerning the use of our database for both queries and shared cataloging.

Michael Dankewych

Michael Dankewych

Head, Library Division

Technical & Administrative
Services Department

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PROGRAM

NAVY LIBRARIES INFORMATION STORAGE AND RETRIEVAL SYSTEM

WEDNESDAY, 23 APRIL 1980

8:00 – 9:00	Registration and Coffee, Bldg. 2, Lobby Conference Room 128
9:00 – 9:30	**Introduction and Welcome** Captain M. V. Ricketts, USN, Commander Miss C. L. Bias, Head, Technical and Administrative Services Department Mrs. Myrthe Rhodes, CONSATL, Chairperson
9:00 – 10:00	**User Needs for Library Automation** Michael Dankewych
10:00 – 10:15	Coffee
10:15 – 10:45	**Information Systems Analysis: System Overview and Requirements Study** Sherry Martin, Computer System Analyst
10:45 – 11:45	**BASIS – Battelle's Data Management System** Kenneth F. Szczesny
11:45 – 13:15	Luncheon (Dutch Treat)
13:15 – 14:15	**Information Systems Analysis: Design and Development** Sherry Martin
14:15 – 14:30	Coffee
14:30 – 15:30	**Database Input:** **Descriptive Cataloging** **Subject Cataloging** **Editing, etc.** Norma L. Dobay, Head, Cataloging Unit

THURSDAY, 24 APRIL 1980

9:00 – 9:20	**Circulation System** Alvetta D. Smythe, Annapolis Library Margaret A. Bowman, Librarian
9:20 – 10:00	**Reports-System Byproduct:** **BASIS Report Generating/Library Reports Mgt.** Sherry Martin
10:00 – 10:15	Coffee
10:15 – 11:30	**Information Retrieval Features:** **Bibliographies, SDI, Free Text Search, etc.** JoAnne Lappin, Head, Reference Unit

11:30 – 12:00	**Group Photography**	
12:00 – 13:30	Lunch – Speaker Stan Kalkus, Head, Navy Dept. Library – Report on Navy Libraries Union List of Periodicals	
13:30 – 15:30	Contracting out – S. Earl Lafon, Naval Weapons Center	

FRIDAY, 25 APRIL 1980 – CONSATL Business Meeting and Committee Reports

8:00 –	**Myrtle Rhodes, Presiding – Reports of Standing Committees:**	
	ADP and Advanced Processes	Peter Imhof
	History and Archives	John Commings
	Long Range Planning	P. Robinson, S. E. Lafon
	Membership	Frances Rugen
10:00 – 10:15	Coffee	
10:15	**Microforms**	C. Jacobson, L. Savage
	Procurement	G. Coble
	Liaison to Federal Library Committee	Stan Kalkus
	Training	Bonnie Davis, Kathy Wright
	Statistics	Joan Ingersol, David Hanna
12:00 – 13:00	Lunch	
13:00 – 14:15	**Continuation of Business Meeting and Committee Reports**	
14:15	Adjournment	

WORKSHOP SESSIONS

USER NEEDS FOR LIBRARY AUTOMATION

by

Michael Dankewych

In June 1979, the David W. Taylor Naval Ship Research and Development Center Library System became automated. The new Library Information Storage and Retrieval System called TITLES (Taylor Information Tie-Line for Engineers and Scientists) is the result of several years of study, analysis, and development. This system automates several library functions: cataloging, reference, circulation, interlibrary loan, shelf list control, and selective dissemination of information (SDI). The output includes: computer-output-microfiche (COM), combined for Annapolis and Carderock libraries; overdue notices; bibliographies; a new accessions bulletin; list of secret inventory; and a Center reports bibliography. As of today, the DTNSRDC Library database consists of 9,125 cataloging records and 2,700 circulation records.

This paper deals with the two major steps in problem analysis: (1) an examination of existing literature dealing with user needs for study, and (2) a study of the library user; both of which were adopted to user needs for library automation.

STEP 1: EXAMINATION OF EXISTING LITERATURE

In examining the existing literature that deal with user studies of scientific and technical user populations, several general characteristics emerge. The scientific and technical user wants immediate responses to his information needs and is willing to put forth only minimal effort to obtain them. As a first source, he seeks out the closest, most convenient source available. This first source may be colleagues, old college texts, or departmental or personal files. Only after these sources have been exhausted does he resort to more formal sources of information.

The various studies stress the importance of the availability factor. The Department of Defense (DoD) study, phase I, shows that in only 5 percent of the cases, a library or information service was selected as a first choice in seeking a solution to an information problem. It was the informal information network that was explored first. In 39 percent of the cases, this first source was sufficient.

The user's preference for the informal over the formal source appears to be dependent on the following:

1. The time pressure involved in finding needed information
2. The type of information required

3. The user's knowledge of the various formal information channels

4. The user's opinion of the quality of service provided by the formal information source(s)

In the science and engineering fields, the time in which to solve an information problem is often very short. Given this condition, it is only reasonable that the scientific and technical user would first consult his informal sources when a potential answer is only a file or phone call away.

In addition to the time factor, the user's selection of an information source depends on the type of information he needs. An answer to a specific question can very often be found by consulting a personal file, a textbook, or a colleague, but newer, more general knowledge is best acquired through the formal information service.

In selecting an information source, the formal sources are very often ignored because the user is unaware of their existence, or, because he simply is not informed about the services such a source could offer him. The DoD study, phase I, showed that DoD information services, such as the Defense Technical Information Center (DTIC), formerly DDC, or one of the other of 33 DOD specialized information analysis centers, were used by only 50 percent of all users due to this lack of awareness.

Still another reason for the user's preference for the informal information network over the formal information network, is his low opinion of the services offered by information services. The users had two major criticisms of formal information sources. They felt that information services and libraries supplied them with too much and often irrelevant information. Also, they had neither the time nor the inclination to wade through volumes of paper.

STEP 2: LIBRARY USER STUDY

In order to know our user better, our library staff prepared questionaires for the DTNSRDC Library User Study. Of the questionnaire results, 85 responses were from interviews, while 116 were individual responses, bringing a total of 201 responses. These are listed in Table 1.

COMMENTS ON SPECIFIC QUESTIONS

INFORMATION GATHERING PRACTICES OF THE DTNSRDC LIBRARY USER

1. How often do you use the library?

Those who gave a seldom or never response to this question indicated that their infrequent use of the library was due to:

Table 1 – The Combined Responses

Interviews and Individual Responses are as Follow:

Information gathering practices of the DTNSRDC Library user

		(Percent)
1. How often do you use the Library?		
89	occasionally	44
81	frequently	40
27	seldom	13
2	never	1
2	no response	2
2. What are your main reasons for using the Library?		
143	to obtain copies of known references	71
112	literature search	58
92	to obtain an answer to a specific question	46
27	to work in a quiet place	13
25	to keep current especially by reading periodicals	12
3. Do you prefer to do your own searching or to have a staff member do your searching for you?		
98	own	49
78	staff	39
25	mixture	12

4. How do you usually search for information?

		(Percent)			(Percent)
153	subject	76	12	all	6
67	title	33	3	series numbers	1
60	author	30	1	model numbers or ship types	0.5
29	corporate source	14	1	contract numbers	0.5

5. What are the formats of information that you find most useful in your work?		
145	technical reports	73
138	reprints and journals	69
121	textbooks	60
118	reviews and state of the art papers and reports	59
84	handbooks and manuals	42
76	conference proceedings	38
49	standards and specifications	24
47	other books	23
20	theses	10
17	photos, films, maps and other graphics	8
14	management reports	7
2	requirements documents	1
1	SES documents	0.5
1	submarine blueprints and ship plans	0.5
1	encyclopedias	0.5

Table 1 (Continued)

	(Percent)
User knowledge and use of Library services	
1. Card catalog	
a. Use of:	
178 use	89
22 do not use	11
b. Satisfaction with:	
117 satisfied	58
52 not satisfied	26
22 sometimes	11
10 no response	5
2. Dialog and DDC literature searches	
a. Knowledge of:	
55 knew about both	65
16 knew about neither	19
6 knew about DTIC	7
2 knew about Dialog	2
6 no response	7
b. Use of:	
32 had search done on one or both systems (51% of those who knew about the service),	
20 were satisfied (63% of those who had a search done) 37% were unsatisfied with the results	
Receptiveness to New System Proposals	
1. Skills index	
137 favor	69
40 not in favor	20
*19 no comment	9
5 qualified yes (forsee problems)	2
2. Union COM catalog	
91 favor	46.5
57 do not favor	28
51 no comment	25
1 wants both types of catalog	0.5
3. SDI's	
98 favor	49
82 no comment	41
21 do not favor	10
4. Control of overdues and departmental loan materials	
93 no comment	46
76 favor	39
21 do not favor	10
11 do not want control of departmentals	5

*No comment responses are not necessarily indicative of lack of interest. In most cases new system features were explained without indication to users that a response was expected.

Table 1 (Continued)

		(Percent)
What Services would you not want to see Eliminated?		
22	periodicals	11
13	literature searches	6
13	accessions bulletin	5
7	xerox machine	3
7	reading room	3
7	table of contents routing	3
6	ready reference help	3
6	ILL	3
3	Aero librarian and aero library	1
3	library staff xeroxing of articles	1
2	long term loans	1
2	stacks	1
2	SDI's	1
	Most answered nothing or no comment.	

(1) lack of time, (2) lack of opportunity (have been at the Center only a short time), (3) have had no need for library services because of the nature of their work.

2. What are your main reasons for using the library?

The most frequently cited reason for using the library was to obtain a copy of a known reference.

The performance of a literature search was the second most frequently mentioned reason for using the library. Literature searches of the library's holdings done manually are time consuming, hit or miss propositions.

3. Do you prefer to do your own searching or to have a staff member do your searching for you?

The majority of our users stated that they preferred to do their own searching since they were in the best position to immediately ascertain the relevance of material found in the search. This lends support to the library's proposal that each technical building eventually acquire terminals to enable and encourage the scientists and engineers to perform their own searches of the library collection.

Those who preferred a staff search felt that they did not have enough time to perform their own searches. Search time should be greatly reduced with the introduction of the automated system once the user became acquainted with the equipment and search technique.

Users who indicated a mixed preference said that in cases where a short search was involved, i.e., for a specific reference they would do the search themselves. If a more lengthy search was required, i.e., a literature search, they would want the help of the library staff. Once again the time factor is stressed as the deciding factor in who does a search. In spite of the fact that the search time should be greatly reduced in the automated system, there will still be many users who feel that they cannot afford any time at all for searching and many others who do not feel comfortable with the terminal and do not want to learn to use it.

4. How do you usually search for information?

The great majority of our users search for information by subject, but most indicated that they used at least two search fields. This was no surprise, but it underlines the importance of our thesaurus development with special attention to DTNSRDC subject areas. It also supports the library's contention that free-text search, stem search, and on-line index display capabilities will be invaluable assets in our automated system.

5. What are the formats of information that you find most helpful in your work?

Nearly all users indicated the need for three and more different formats of information in their work.

USER KNOWLEDGE AND USE OF LIBRARY SERVICES

1. Card Catalog

Of those who were dissatisfied with the card catalog, several mentioned that it seemed incomplete and that it appeared to contain much more old material than new. A few found fault with the indexing. They felt that the subjects were too broad, that sometimes they found more than one subject heading with the same meaning, and that there was a need for more cross referencing.

2. DIALOG and DTIC Literature Searches

Thirty seven percent of those who had requested and received results of a literature search on DIALOG or DTIC were dissatisfied with the results. The main reason for dissatisfaction was the large amount of irrelevant material in the search results. The scientists and engineers said that they do not have enough time to wade through volumes of information simply to choose pertinent references to read. Whether this is a function of the cataloger or the searcher is not clear. Obviously, both play a crucial role in the success of the automated search. Once again, the features that we have included in our automated system, free-text search, stem search, and index browsing are increasing the chances of relevant, and complete searches.

3. Accessions Bulletin

The reaction to the Accessions Bulletin was very favorable. The only criticism relating to the Bulletin was the inability to obtain announced material in a reasonable amount of time.

RECEPTIVENESS TO NEW SYSTEM PROPOSALS

1. Skills Index

Most users reacted favorably to this idea and were willing to have their names listed. The concept was seen to be especially valuable to new employees and to those working in interdisciplinary areas.

Although they liked the idea, a few were concerned about the criteria used to designate who was an expert in any given area. They felt that it might get "politically touchy." Some felt that the experts time would be consumed by these phone calls to the detriment of their own work. One user said that he had supposed that

the administration had such an index which it kept only for its own use. A few felt that we should include NAVSEA and NAVSEC. One engineer suggested that we include language skill in the index. Since most translating questions would take up a great deal of time, this suggestion does not appear to be feasible. Translating should be contracted out and paid for by the requester as in current practice.

2. Union COM Catalog

The union aspect of the COM catalog received the greatest amount of favorable comment.

Having the COM copies of the catalog available in different buildings was unimportant to the Annapolis users and was considered by them to be an unnecessary expense. A few Carderock users commented favorably on the "portability of the catalogs" because they were located too far from the main building to use the library as often as they would have liked.

Several of the Annapolis users were very concerned that the COM operation with the required reader-printers would be too costly.

The main concern of the Carderock users had to do with the availability and reliability of the COM reader-printers. They wanted assurance that there would be enough readers in the reading room to enable use of the catalog by several people at one time. A few users at Carderock were concerned that the reader-printers would not be working and that there would then be no way to access our holdings.

Most users questioned liked the idea of the print feature on the reader-printer, while a few felt that it was a needless waste of money and that a pencil and a piece of paper would serve equally well.

Two or three users suggested that, once the conversion was complete, NAVSEA and NAVSEC might want copies of our COM Catalog.

3. SDI's

Those who are currently receiving SDI's were very enthusiastic about this proposal. Many stressed the importance of including periodicals in our SDIs. A few indicated that an annual cumulative SDI would be of value to them. Our Patent Counsel Officer would like to see patents included in the SDI's.

4. Control of Overdues and Departmental Loan Materials

Nearly all users interviewed were very protective of their departmental loan materials. They want to keep them as long as they wish without a hassle from the library.

Several did indicate a receptiveness to the idea of an annual reminder of the departmental loan materials charged to them, but not to recall.

The recall of short term loans was regarded as a "necessary evil."

5. Analytical Entries

This proposal was one of the most enthusiastically received. It was not just okay, it was great!

Several users commented on the extra staff time required to catalog analytics and were concerned that there might not be enough staff to do the extra cataloging required.

A few also mentioned that there was a need for subject specialists in the library's Cataloging Unit.

CONCLUSION

By now, we have acquainted ourselves with the scientific and technical information user. He is generally busy. He wants information instantly and will seek out the closest, most convenient source in order to obtain it. Given this description of the scientific and technical user, the goal of our automated information system has been directed to provide information to the user at his work station. In a way, we have accepted the informal information network, and we will aid in making it more responsive to our users' information needs. If the user does not come to the library, the library, whenever possible, will take its services to the user. In order to accomplish this task, the DTNSRDC Library incorporated automated services. The computer is now firmly entrenched as the primary device for high-speed data processing in the library. The automated system now provides the Center Library with better control over its collection and files by: increasing circulation of current material; decreasing document loss and nonreturn rate; and shifting loans from long-term to short-term type transactions.* The interactive search system now enables Center

*The Library Staff had solved the problems of information organization and indexing for optimum storage and use. Now the computer is a far better retriever of information than any librarian could ever hope to be. The reference librarian now becomes the link between users and information stored in the computer by translating user's needs into strategies for computer storage searches – thus assisting the scientific and technical user in his never ending quest in today's research for tomorrow's ship.

personnel to keep abreast of current scientific and technical literature by both improving recall and precision ratios in literature searches, and by providing virtually unlimited information access through search retrieval aids, free-text record scanning, and post-coordination of assigned index terms.

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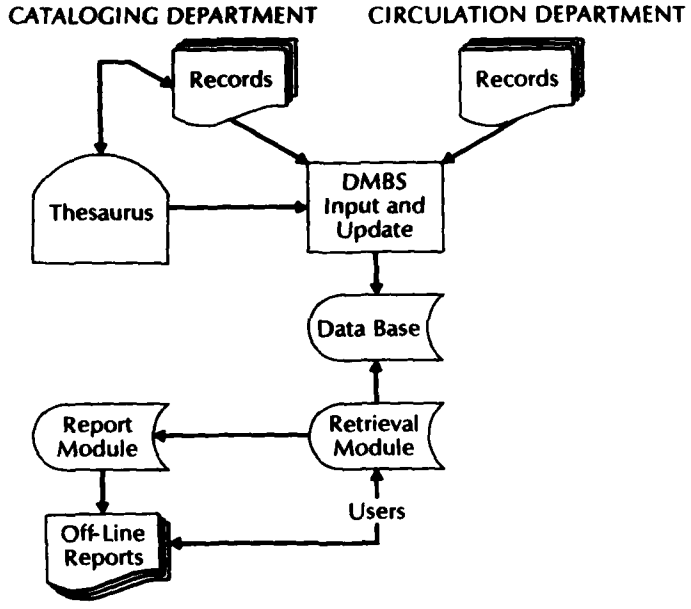
OVERVIEW OF THE AUTOMATED LIBRARY SYSTEM

by

Sherry L. Martin

LIBRARY SYSTEM COMPONENTS



COMPONENTS OF THE AUTOMATED LIBRARY SYSTEM

- DATA BASE FILES
  - Information on Each Library Publication
    - Descriptive Data
      - Corporate Source
      - Authors
      - Publication Data
      - Related Volumes or Parts; Previous or Superceded Editions
      - Report Number or Publisher
    - Subject Analysis
      - Major Subjects
      - Specific Keywords
      - Identifies (Hull Nos, Acronyms, Trade Names, Etc)
      - COSATI Field/Group Codes
    - Inventory Information
      - Library of Ownership ; Copies Owned at Each Library
      - Circulation Restriction
  - Information About Each Circulating Copy
    - Borrower Information
    - Due Date Information
  - Data Base Management System Files and Associated Programs

A TYPICAL CATALOGING AND CIRCULATION RECORD

Cataloging Record

```
ITEM 1

RECORD ID                16
 ALL NUMBER              VR 5.A 28
DATA BASE                N
RECORD ENTRY DATE        790104
 CATALOGER NUMBER        2
 CORPORATE SOURCE        NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER
PERSONAL AUTHOR MAIN ENTRY:ELLSWORTH W M
TITLE                    HYDROFOIL DEVELOPMENT-ISSUES AND ANSWERS. IN AIAA/SNAME
    ADVANCED MARINE VEHICLES CONFERENCE, SAN DIEGO, 1974
PERSONAL AUTHOR          ELLSWORTH W M
PUBLICATION DATE         19740200
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    ALLOYS;STAINLESS STEEL;PROPULSION SYSTEMS(MARINE);HYDROFOILS;STRUTS;
    CONTROL;SHIP STRUCTURAL COMPONENTS
IDENTIFIERS              DAP HYDROFOIL UNIVERSAL DIGITAL AUTOPILOT);SH;AGEN 1;
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CENTER DOCUMENT TY
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Circulation Record

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DUE DATE               780315
WAIT LIST              HAGEN G R 1560
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- Patents
- Conference Proceedings and Individual Papers
- Periodical Articles
- Drawings and Plans
- Handbooks, Dictionaries, Reference Works
- Microfiche and Film
- Serials

Not Included are Many Technical Reports and Periodical Articles from Other Available Data Bases, Such as NASA/RECON, DDC, and Lockheed Dialog

WHAT DOES THE LIBRARY SYSTEM DO?

CHARACTERISTICS OF THE PROPOSED AUTOMATED SYSTEM

- FILE MAINTENANCE OF ALL CATALOGING CIRCULATION AND INVENTORY RECORDS
- CENTRALIZATION AND INTEGRATION OF FILES FROM 5 LIBRARY BRANCHES
- PRODUCTION OF UNION PUBLIC CATALOGS ON COMPUTER OUTPUT MICROFICHE FOR USE BY LIBRARY CLIENTELE AND STAFF
- PRODUCTION OF WEEKLY CURRENT ANNOUNCEMENT BULLETINS
- PRODUCTION OF BIBLIOGRAPHIES ON DEMAND
- PRODUCTION OF KWIK INDEXES
- ONE LINE INTERACTIVE SEARCH CAPABILITY WITH FREE TEXT SEARCH OPTION
- MONTHLY SELECTIVE DISSIMINATION OF INFORMATION NOTICES TO INDIVIDUAL BRANCHES ACCORDING TO TAILOR MADE SUBJECT PROFILES
- CONTROL OF INDEX VOCABULARY BY A HIERARCHICAL THESAURUS
- GENERAL SEARCH CAPABILITY
- INVENTORY AND LOCATION CONTROL FOR INDIVIDUAL COPIES
- CONTROL OF OVERDUES AND DEPARTMENTAL LOANS WITH GENERATION OF OVERDUE NOTICES
- CONTROL OF CIRCULATION FUNCTIONS (I.E. CHARGING. DISCHARGING, RESERVES, ETC.)
- COLLECTION MAINTENANCE – AUTOMATED WEEDING SECURITY CLASSIFICATION CHANGES, ETC.
- GENERATION OF STATISTICS FOR MANAGEMENT DECISION MAKING

AREAS OF EMPHASIS IN DTNSRDC SUBJECT THESAURUS

- o SHIP DESIGN
- o PROPELLER DESIGN
- o SHIP'S TYPES
- o FLUID DYNAMICS
- o ENERGY CONSERVATION
- o POLLUTION ABATEMENT
- o ACOUSTICS
- o MATERIALS
- o STRUCTURES
- o AERODYNAMICS
- o FUELS
- o MARINE PROPULSION PLANTS
- o SHIPS AUXILIARY SYSTEMS

SUBJECT HIERARCHY FROM
DTNSRDC THESAURUS

```
   1/BROWSE

ENTER TERM
    /MARINE PROPULSION PLANTS

MARINE PROPULSION PLANTS
  SN   USE MARINE PROPULSION FOR GENERAL DISCUSSIONS.
  SN   FOR SPECIFIC SYSTEMS OR MACHINERY, CONSULT
  SN   MARINE PROPULSION PLANTS HIERARCHY.
  BT   MARINE PROPULSION
  BT   PROPULSION SYSTEMS
  UF   PROPULSION MACHINERY(MARINE)
  UF   PROPULSION PLANTS(MARINE)
  UF   SHIPS SYSTEMS
  UF   SHIP PROPULSION MACHINERY
  NT * MARINE BOILERS
  NT * MARINE NUCLEAR PROPULSION PLANTS
  NT * PROPULSION AUXILIARIES(MARINE)
  NT * PROPULSION UNITS(MARINE)
  NT * PROPULSOR SYSTEMS(MARINE)
  NT * TRANSMISSION SYSTEMS(MARINE)
  RT   EQUIPMENT
  RT   SHIPBOARD PIPING SYSTEMS
  RT   SHIP ELECTRIC POWER PLANTS

ENTER TERM
    /NAVAL ORDNANCE LAB

NAVAL ORDNANCE LAB
  SN   FOR LOWER ORGANIZATIONAL LEVELS SEE NOL(LOWER ORG
  SN   LEVEL) EX-NOL. RESEARCH DIV
  AB   NOL

ENTER TERM
    /BASIS
```

PROPULSOR SYSTEMS (MARINE)
- **PROPELLERS (MARINE)**
  - **ADJUSTABLE PITCH PROPELLERS**
  - **CONTRAROTATING PROPELLERS (MARINE)**
  - **CONTROLLABLE PITCH PROPELLERS (MARINE)**
    - **REVERSIBLE PITCH PROPELLERS (MARINE)**
  - **CYCLOIDAL PROPELLERS**
    - **VOITH SCHNEIDER PROPELLERS**
  - **OVERLAPPING PROPELLERS**
  - ***RING* PROPELLERS**
  - **SHROUDED PROPELLERS (MARINE)**
    - **STEERABLE SHROUDED PROPELLERS**
  - **SKEWED PROPELLERS**
  - **SUBCAVITATION PROPELLERS**
  - **SUPERCAVITATING PROPELLERS**
    - **VENTILATED PROPELLERS**
      - **SEMISUBMERGED PROPELLERS**
  - **TANDEM PROPELLERS**
  - **TRANSCAVITATING PROPELLERS**
- **PROPELLER SHROUDS(MARINE)**
- **PUMP JETS**
- **WATER JET PROPULSION**

User entry: 1/fuel storage system

Response includes records on storage of all types of fuels

```
ENTER TERM
    /FUEL STORAGE

FUEL STORAGE
  BT    STORAGE
  NT    COAL STORAGE
  NT  * GAS STORAGE
  NT    OIL STORAGE
  NT    PETROLEUM PRODUCTS STORAGE
  RT    ENERGY STORAGE
  RT    FUEL TANKS
  RT    UNDERGROUND STORAGE
```

```
1/ WELD*

 .ITEMS.      TERMS
A       6    DE=WELD JOINTS
             USE WELDED JOINTS
B       1    DE=WELD METAL
C       1    WELDABILITY
D       6    WELDED JOINTS
E      24    WELDING
F       1    WELDING POSITION
G      10    WELDS
END OF TERMS WITH YOUR STEM
PICK LETTERS TO COMBINE
```

```
   6/ENERGY USAGE

DO YOU MEAN ...
  .ITEMS.    TERM
 A      80  DE=ENERGY CONSUMPTION
 B      23  DE=ENERGY DEMAND
PICK LETTERS TO COMBINE
```

```
5/HIGH TEMPERATURE GAS TURBINES

     74  USE  DE=GAS TURBINES
     33  AND  DE=HIGH TEMPERATURE
  7 ITEMS SAVED AS SET 5
```

```
1/PRIME MOVERS

          USE  DE=PROPULSION UNITS
          (MARINE)
  16 ITEMS SAVED AS SET 1


ENTER TERM
    /NOL

NOL
  AF   NAVAL ORDNANCE LAB

ENTER TERM
    /SSTG

SSTG
  AF   SHIP SERVICE TURBOGENERATORS
```

SAMPLE LITERATURE SEARCH

```
1/SHIPS
     279 ITEMS SAVED AS SET 1
2/CS=NAVY DEPT

     341 ITEMS SAVED AS SET 2
3/CS=COAST GUARD

       8 ITEMS SAVED AS SET 3
4/PD GE 19770000

    1016 ITEMS SAVED AS SET 4
5/(1 AND (2 OR 3) AND 4)

      85 ITEMS SAVED AS SET 5
```

The Library Provides a Free-Text Search Capability

SCAN TI TRIDENT,SONAR

scans for any titles with the word TRIDENT followed somewhere by SONAR

SCAN TI BASE < 2 SYSTEMS

scans for any titles with DATA BASE followed in two or less words by SYSTEMS.(i.e. DATA BASE SYSTEMS and DATA BASE MANAGEMENT SYSTEMS)

SCAN TI, NT, CS, DE COAL GAS* OR COAL LIQUI*

scans for any titles, notes, corporate agencies, or subjects with any phrases beginning either with coal gas... or coal liqui... (i.e. coal gas, coal gases, coal gasification, coal liquids, and coal liquifaction)

OUTLINE FOR A COMPREHENSIVE INFORMATION SYSTEMS ANALYSIS

by

Sherry L. Martin

SUMMARY OF STEPS IN THE LIBRARY AUTOMATION PROJECT

- Literature Search
- Write and Present Plan for Systems Study
- Perform Systems Study
  - Systems Analysis
  - Evaluation Phase
  - Requirements Phase
- Feasibility Study
- Design Phase
- Test and Evaluation Phase-Design and Test Pilot
- Implementation
- Training and Orientation

WRITE AND PRESENT PLAN FOR A SYSTEMS STUDY

Define or Describe:

- The Problem
- Goals of the Organization
- Scope of the Study
- Methods and Techniques to be Used
- Work and Time Schedule of Study Team
- Benefits Expected

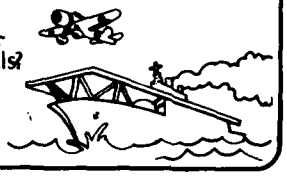
PURPOSE OF SYSTEMS STUDY

- To Avoid Automating Mistakes in Current System
- To Arrive at a Baseline or Yardstick for Measuring So-Called Improvements After Automation
- To Arrive at a Response Set of Requirements for an Automated System

SYSTEMS ANALYSIS PHASE

I. EXAMINE GOALS

- What is the Mission of the Library and the Organization it Serves?
- What are the Library's Objectives?
- What are the Library's Long-Range and Short-Range Goals?



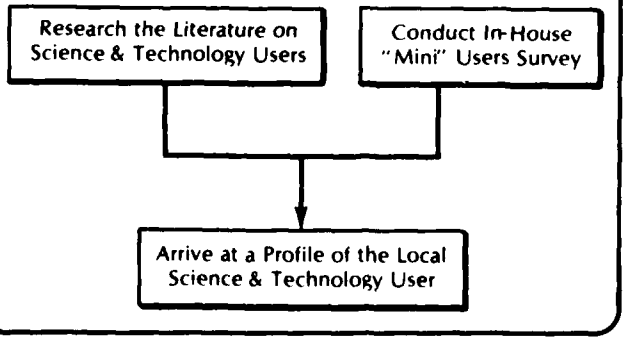
SYSTEMS ANALYSIS PHASE

II. INTERNAL LIBRARY ANALYSIS

- *Survey of Requirements* Placed on the Library
- *Survey of Current Procedures* and Operations
  - *Time/Motion Study*
  - Flow Charting
- *Survey of Inputs and Outputs*
  - Files Analyses
  - Forms Analyses
  - Reports Analyses

SYSTEMS ANALYSIS PHASE

III. SURVEY USER NEEDS



SYSTEMS ANALYSIS PHASE

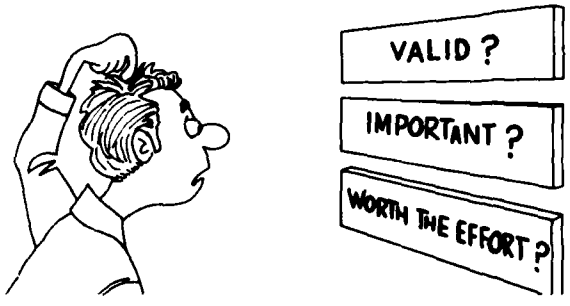
LIMITATIONS OF USERS SURVEYS

- While Users can Identify Problems with the Present System, the Design of Solutions is the Job of the Information Professional
- Users cannot Conceive of Potential New Services They Have Never Experienced

EVALUATION PHASE

I. EVALUATE REQUIREMENTS SURVEY

Are Requirements Placed on the Current System:

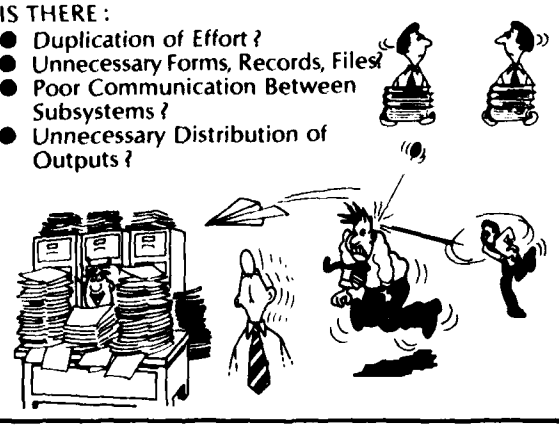


EVALUATION PHASE

II. INPUT OUTPUT SURVEY

IS THERE :

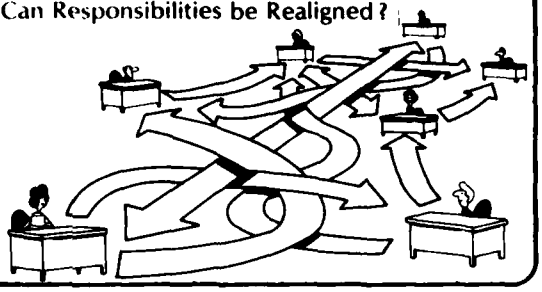
- Duplication of Effort ?
- Unnecessary Forms, Records, Files ?
- Poor Communication Between Subsystems ?
- Unnecessary Distribution of Outputs ?



EVALUATION PHASE

III. EVALUATE CURRENT PROCEDURES

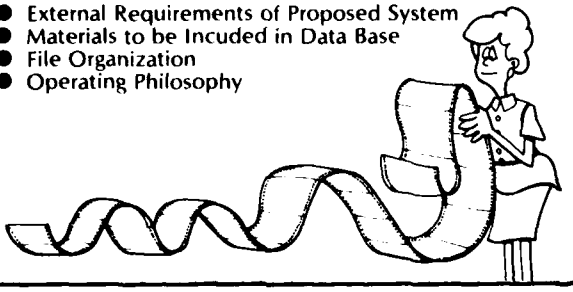
- Can the Flow of Work be Changed?
- Which Current Operations are Compatible with ADP?
- What are the Costs and Time for Each Operation?
- Can Responsibilities be Realigned?



REQUIREMENTS PHASE

DESCRIBE FOR THE NEW SYSTEM:

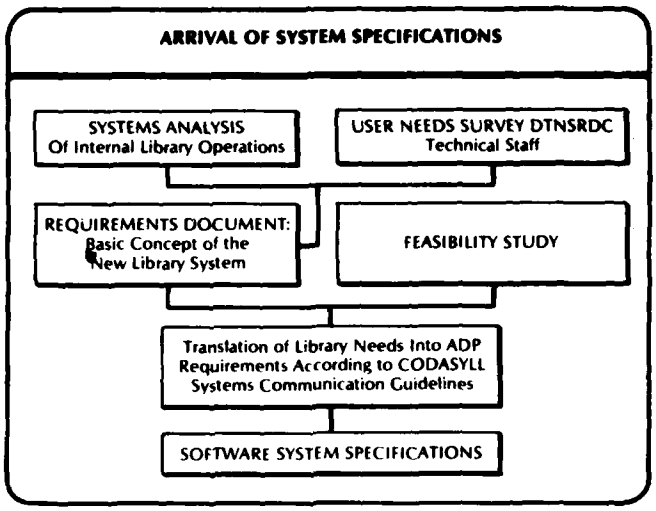
- General Requirements
  - Mandatory Plus Desirable
- Preliminary Sytem Functions, Subsystems, Tasks
  - Set Priorities
- External Requirements of Proposed System
- Materials to be Incuded in Data Base
- File Organization
- Operating Philosophy



FEASIBILITY STUDY

ASSESS:

- Equipment
- Software/Hardware
- Personnel Resources
- Budget
- Experience of Others
- Condition of Existing Files; Systems



DESIGN PHASE

I. INITIAL DESIGN OF SYSTEM CONFIGURATION

- Postulation of Alternatives
- Cost Analysis
- Software Selection and Procurement

DESIGN PHASE

COMPARE THE ALTERNATIVES:

- Baseline (Alt. 1) – Optimize the Current Manual System
- Alternative 2 – Develop (In-House) Software
- Alternative 3 – Lease a Commercial DBMS
- Alternative 4 – Procure a Commercial DBMS for Use on Supplier's Computer System
- Alternative 5 – Utilize an "Off-The-Shelf" DBMS on Center's Computer System
  - Alternative 5.1 – Use a DBMS Already Available In-House System
  - Alternative 5.2 – Procure New DBMS

DESIGN PHASE

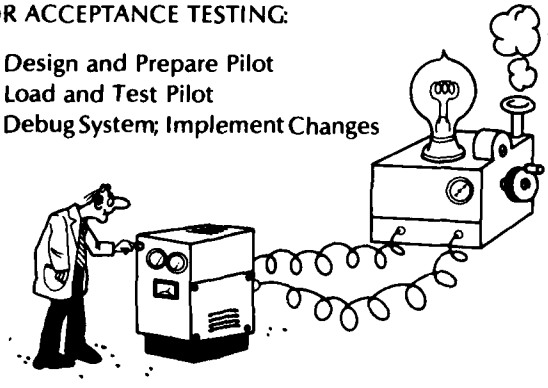
II. DETAIL DESIGN

- Design Reports and Output Products
- Define Data Base Records
- Establish New Cataloging Procedures
- Create Thesaurus
- Program Additional Features As Necessary
- Design Input Procedures
- Schedule Phased Conversion of Retrospective Files
- Design Procedures For Back-up and Recovery

TEST AND EVALUATION PHASE

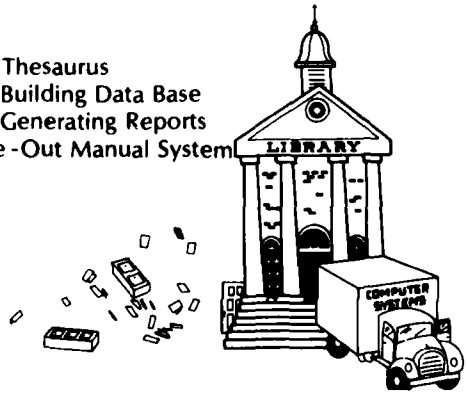
FOR ACCEPTANCE TESTING:

- Design and Prepare Pilot
- Load and Test Pilot
- Debug System; Implement Changes



IMPLEMENTATION PHASE

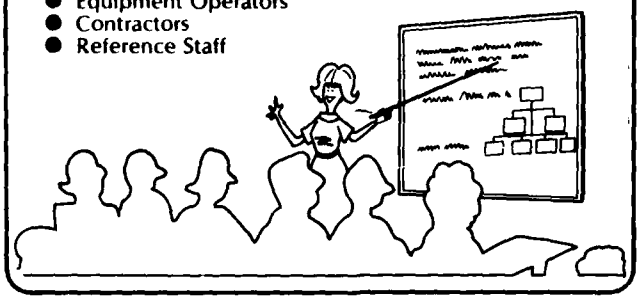
- Load Thesaurus
- Start Building Data Base
- Start Generating Reports
- Phase-Out Manual System



TRAINING AND ORIENTATION

I. PREPARE DOCUMENTATION AND PROVIDE TRAINING FOR :

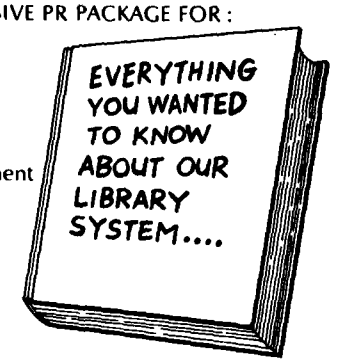
- Input Staff (Catalogers and Circulation Staff)
- Equipment Operators
- Contractors
- Reference Staff



TRAINING AND ORIENTATION

II. DESIGN COMPREHENSIVE PR PACKAGE FOR :

- Library Community
- Users
- Laboratory Management



BASIS - BATTELLE'S DATA MANAGEMENT SYSTEM

EXECUTIVE SUMMARY by

Kenneth F. Szczesny

OVERVIEW OF BASIS

BASIS is a Data Management System (DMS) developed and distributed by Battelle Memorial Institute. It has been operational since the early 1970's but has only recently undergone the major enhancements necessary to make it competitive with the best of the DBMS available in the marketplace. Upgrading, both in terms of capabilities and services, has taken place since the release of Version 4 last year.

In its simplest form, BASIS is an information storage and retrieval system. What sets it apart from other systems are the many user oriented features that have been built in as its components. One of the most attractive features of BASIS is the ability the user has to define new applications and to begin loading data within a few days. No computer programming is required by the user for most implementations. In addition, BASIS provides full ANSI standard thesaurus capabilities, procedure files to capture user's interactions, an on-line report writer, an on-line data entry processor, on-line sorting capabilities, and many more.

BASIS can perform searches either through the use of an inverted index or through the use of the actual data records. Although the first is more efficient, the second provides the user with a great deal of flexibility. In addition to providing a fast, efficient manner for entering search terms, BASIS permits the user to perform proximity searching, search on numeric ranges, scan the text records for terms, use prefix searches, map related fields together, perform hierarchical and universe searches, and use the full complement of Boolean logic on retrieved document sets.

BASIS applications have ranged from the standard bibliographical data bases to data bases dealing with aircraft safety, laboratory animal data, and mental health. Because each application is different, and has different needs, each implementation of BASIS varies. Each is tailored to the particular needs of the individual user.

BASIS is presently available on several mainframes (IBM 370/303X, UNIVAC 1100 series, CDC CYBER and 6000 series, and DEC 10 and DEC 20) as well as on the DEC VAX 11/780 minicomputer. It has the capability to handle multi-lingual applications, alphanumeric data, and very small or very large data bases. Through OLIVE, its on-line entry and validation component, it allows the user immediate access to the data base for the purpose of altering parts of it.

KEY ASPECTS OF BATTELLE AND BASIS

Following are several considerations relative to the utilization of BASIS by our potential sponsors:

Batelle has an Excellent Staff

All BASIS software has been designed, developed, enhanced, and maintained at Battelle for over ten years. Separate groups within the BASIS staff have been designated to support our sponsors in the five key areas of: Applications, Marketing and Training, Development and Maintenance, Service Bureaus, and Future Design Enhancements. Each group within the BASIS staff is and will be available to support our sponsor's efforts as required. More specifically, the key responsible designers and developers (the Development and Maintenance Group) of each BASIS module will be assigned the responsibility of supporting that particular module. In addition, all BASIS Group Leaders will be available to support any future desired enhancements to the BASIS system. Staff members from other research disciplines within Battelle will be available to support your staff as required.

Battelle Understands the Problem

Battelle, through its BASIS staff, has assisted in the development of many types of on-line data base systems. Our experience and expertise will allow the BASIS staff to support both you and your users to continue the utilization of state-of-the-art data base technology. Typically when problems are encountered or dissatisfaction becomes apparent in an on-line data base environment, they can be attributed to one of the following areas:

Data Content and Integrity. Since the quality of information in a data base can be no better than the input upon which it is based, it is imperative that BASIS provide a thorough editing and verification capability. While developing the data bases for each user application, the designer will have many powerful validation capabilities available through the BASIS DDL (Data Definition Language or Data Base Schema). BASIS supports a wide range of validation functions including: optional or required, range checking, table look-up, data element cross-referencing, and several others. Since all of the validation requirements for a data base can be described in the DDL, no edit and validation programs need to be written for most data bases. BASIS also permits the same verification criteria to be applied to the data whether it is entered on-line through the OLIVE module or batch through the FORMS module. System users who

do not have computer programming expertise can also design verification criteria for data bases. Again, all verification criteria for a particular data base is maintained within one data base reference, the DDL (Data Definition Language). A data base's worth and effectiveness will be relative to the quality and scope of the information submitted to it. Battelle addresses this potential problem area capably with the editing and verification capabilities within BASIS which will minimize the potential for errors and protect the integrity of each data base.

Security and Privacy. With the potential breadth of sensitive information to be accessed in many sponsor data bases, ample consideration must be given to the protection and confidentiality of these data bases. BASIS supports four levels of security at the data base level, as well as provides security and access controls for the update and modification of data base records.

The BASIS staff has participated in several projects evaluating the security and privacy of computerized data bases and will be available for consultation to sponsors regarding network security, administrative controls, privacy of personal data, security monitors, and several other security related disciplines.

Modularity. Data Management Systems must be flexible in order to easily support a broad spectrum of data bases. Battelle has ensured that BASIS was designed and developed with many powerful and independent features. These features have been segmented into eight separate modules. The Central BASIS System Module is the core module; all other modules are driven through the Central BASIS System Module. The seven remaining modules can then be added to the Central System and utilized as required. This modularity, available with BASIS, permits the expansion of user capabilities based on the requirements of each application and user need. The BASIS modular design philosophy also allows for incremental implementation to be accomplished. Thus, the capabilities of the REPORT and PROFILE (Procedure Files) modules could be utilized after a system becomes operational and it is determined these capabilities are required. From Battelle's perspective the BASIS modules can be maintained and enhanced more effectively and efficiently if they are supported as integrated, yet independent, modules.

User Acceptance and Involvement. Battelle has identified user acceptance as an area for discussion not because it is perceived as a problem, but to make sure it does not become one. To ensure user acceptance of BASIS supported data bases, several features have been provided:

1. The Query Language is a powerful tool, yet is simplistic in format. If a user desires to search for all references to the name John Jones, for instance, the Query to the data base would be: FIND NAME=JOHN JONES

   After the inverted index file is searched, BASIS returns to the user the number of records which meet that search criteria: 5 NAME:JOHN JONES

   The five records, with all or selected data elements, can then be displayed: DISPLAY ALL or

   DISPLAY NAME PHONE STREET CITY STATE

2. Support or Help related functions are available to the user during a terminal session. For instance: ?FIELDS when entered will show the user all the available fields (data elements) for that particular data base. In addition, information describing the data element itself is provided. Help functions available to support the user are also available in the areas of: the BASIS commands, the user's data base, and in the explanation of error messages. If a user receives an error message from BASIS, entering a "?" will provide further explanation about the error.
3. Finally, Battele believes that user enthusiasm can be generated by demonstrating the efficiencies and added capabilities available through BASIS supported data bases. For instance, BASIS provides an index browsing feature which will allow a user to "LOOK" into the computer index before attempting a search; this results in the elimination of empty search retrievals based on the user attempting to search for a term which does not exist.

The BASIS staff is aware of the potential problem areas in the development of on-line data bases. We believe the BASIS staff can assist your staff because of our prior experience in these areas and our interest in developing another successful BASIS installation.

BASIS is User Oriented

BASIS is a totally self-contained system. All typical data base requirements are supported through the BASIS modules. For most data base applications no programs will be required to support any aspect of the application. The powerful BASIS modules provide the capability to define, load, edit, verify, update, retrieve, query, output, and maintain data base information. If a very specialized or unique requirement cannot be supported through one of the BASIS modules, Battele's staff will be available to assist you in evaluating the most feasible alternatives. BASIS supports

many terminal and user functions for data base sessions which provide the user with flexible searching strategies. Several user oriented features have already been reviewed including simple queries, help functions, and index browsing. Two additional functions provided through BASIS include Universe and Hierarchical searching.

It is sometimes useful to limit searching to a portion of the data base. If, for example, the user were going to search a personnel data base for several different characteristics, but in the end only wanted to have results for females, there are two obvious approaches: (1) to select each characteristic and then combine that set of records with the set of all females to get a set of all females with that characteristic, or (2) to select a document (record) set of all females, declare that set to be the Universe, then select each separate characteristic; the resulting document (record) set will be effectively ANDed with the Universe.

If the user has many characteristics to select, the second approach has the obvious advantage of eliminating a separate AND operation in the generation of results. To use the UNIVERSE mode, a user simply creates the document (record) set desired as the universe and enters the command: SET UNIV=line number. All searches that follow will be automatically combined with the UNIVERSE document set when created. On the other hand, it is sometimes useful to limit the universe of a search to the last set of documents selected, so that the universe gets smaller and smaller with each selection. For example, assume the user wanted to select a document (record) set from a data base containing abstracts on transportation research, and this set was to eventually contain roughly half a dozen articles dealing as closely as possible with the subject of personalized mass transit in urban areas. Since the user has no way of knowing how many abstracts (if any) exist on this topic initially, the user may want to begin by selecting the most general subject areas and continue refining the request until the document set has been reduced to an appropriate size.

BASIS is a Portable Data Management System

BASIS has been designed and developed with portability in mind. The BASIS source code is written in machine independent ANSI FORTRAN. Eighty-five percent of the code is FORTRAN, with the remaining code in assembler language. The assembler code supports the various host operating system interfaces and I/O calls. The advantage this presents to BASIS sponsors is that users are not limited to one hardware vendor. Currently, BASIS is available on IBM 370/303X (and compatibles such as INTEL AS/5-3), UNIVAC 1100 series, CDC 6000 and CYBER series, and DEC Models 10 and 20 and the VAX

11/780. To support BASIS on another vendor's hardware, the assembler code (15 percent of the total software) would have to be rewritten, assuming a user acquired hardware not identified in the list above. The BASIS software is consistent between computer hardware. To a terminal user it would be transparent as to which machine was supporting BASIS and the user's data bases. All BASIS commands and features execute exactly the same, no matter which hardware is supporting the data bases. The advantage this approach gives to Battelle and the BASIS staff is that only one source copy of BASIS needs to be maintained and supported. When enhancements or maintenance is performed on the BASIS software, all modifications are incorporated into one master source copy at Battelle and are made available to all current BASIS sites at the next software release.

Battelle Provides a Sound Approach to Data Management

Battelle has supported the development of BASIS for over ten years. As opposed to profit making organizations, Battelle has insured that the BASIS revenues have been put back into the continuing development of BASIS. Several million dollars in staff time has been expended on BASIS, now in its Fourth Version released in 1979. Battelle will continue to commit revenues for future enhancements and versions of BASIS. A new evaluation of BASIS requirements for the 1980's has just been initiated. The BASIS staff believes new requirements can be identified through close evaluation of BASIS and our sponsor's data bases.

BASIS Optimizes Performance

The BASIS software was developed around two key computer concepts: (1) Users want a response to a data base search as fast as possible, yet have flexibility to their search criteria; and (2) Computer center staff want data base software which requires a minimum of on-line disk storage. Although these two criteria are sometimes mutually exclusive, the BASIS software supports both considerations.

The interface to BASIS data base records is through an inverted index. An inverted index is the most responsive retrieval technique in computer technology today. Not only will BASIS support an inverted index for each data element in a data base, but a data element may be indexed more than one way, for example, if special retrieval is required. Obviously, inverting a complete data base, for fast retrieval, will impact the second consideration, that of reducing on-line storage requirements to a minimum. To enable BASIS users to require minimal on-line disk storage, compressed

data base record formats are supported. The compressed record format supports both variable length records and variable length data elements. If a data element does not exist for a particular record, no storage is allocated, other than one bit in the record's bit map. In addition, all trailing and leading blanks are compressed. Thus BASIS provides a very compressed data base record which has been estimated to be 40 percent more efficient* than a leading competitor's DBMS record storage.

BASIS Source Code is Provided

BASIS source code is provided during installation. User installations may enhance the source code for their site if deemed necessary. Battelle would prefer to have modifications performed through the BASIS staff in Columbus. An advantage of having the source code on-site is the BASIS software can be modified by users to support unique data management features within the structure of the BASIS source code itself.

BASIS is Installed Worldwide

Currently, BASIS is installed at twenty major computer installations around the world. In addition, BASIS supports data base applications in Canada, England, [illegible], as well as through a worldwide time-sharing network.

[illegible] library, patent, abstracts, and vocabulary [illegible], and pharmaceutical related areas [illegible] supported by BASIS, Battelle is [illegible] also be accommodated by BASIS. If [illegible] sponsor contacts, Battelle will [illegible]

Battelle [illegible]

[illegible] Data Management System. As the BASIS [illegible] years, Battelle has supported continued [illegible] remains more than competitive with the major data [illegible] market today. Now, with the release of BASIS Version [illegible], Battelle believes that BASIS, as a totally self-contained

*An independent study conducted between BASIS and a leading DBMS in which BASIS was eventually selected.

system, is at the leading edge of data management technology. Future design considerations for BASIS in the 1980's are being evaluated at this time. All future enhancements and software releases to BASIS are available to current sponsors who maintain a BASIS maintenance contract. The acquisition of newly released BASIS Modules, not already installed at the sponsor's site, can be negotiated.

OVERVIEW OF DATA MANAGEMENT SYSTEM

BASIS HISTORY

- Battelle Has Been a Leader in Information Science Since 1950
- Originally Manual Systems
- In 1965 Battelle Began to Automate Many of Their Information Retrieval Functions
- Battelle's Information Scientist Began to Develop BASIS in 1968
- There Have Been 4 Phases to the System Development
  - Relatively Small Textual Data Bases
  - Large Textual and Numeric Oriented Applications
  - Machine Independence
  - Self-Contained System
- In the Late 60's BASIS was Only Used at Battelle
- In 1973 BASIS was First Made Available to Outside Sponsors
- Hundreds of Applications Have Been Implemented Using BASIS

BASIS ORIENTATION

- Self-Contained System
- Informatin Storage, Retrieval, and Analysis System
- User Oriented (No Computer Background Required)
- Utilized Interactively or in Batch
- Rapid Retrieval
- Textual or Numeric Oriented Information
- Complete Data Base Management Capabilities
- Variety of Applications
  - At Battelle
  - At Sponsors Sites
- Extremely Flexible

BASIS FEATURES

- Index Algorithms to Permit Flexible Index
- Data Base Definition and Loading Utilities
- Term Searching via Inverted Index or Sequential Search
- User Messages and Commands Can be Tailored to Application
- Thesaurus for Vocabulary Control
- Profile for Saving Search Sequences
- On-Line Report Definition and Generation
- On-Line Entry for Data Conversion
- Verification Rules Definable in Data Definition Language
- Monitor Feature to Evaluate Data Base Usage

MAJOR BASIS ADVANTAGES

- New Applications can be Implemented Quickly
- No Programming is Required in Many Cases to Load a Data Base; Defined Entirely in DDL
- Excellent Mass Storage Efficiency Due to BASIS Compressed Record Format
- Index File Structure Permits Growth in Data Base Without Significantly Impacting Response Time
- Excellent for Applications with Varying Retrieval and Reporting Requirements
- Extensive Flexibility in Defining Applications - Indexing Options, Display Labels, Dialog Modifiable, Etc.

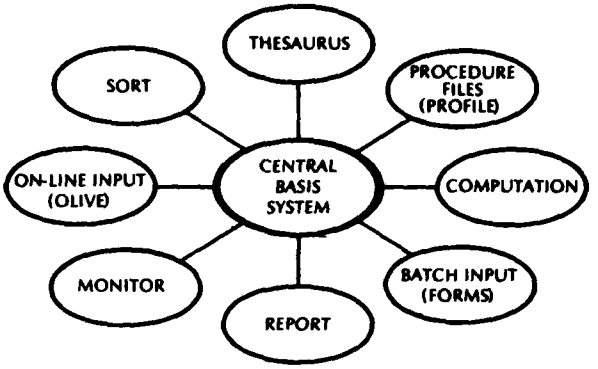
SYSTEM DESIGN

- Machine Independent (FORTRAN)
  - Approach
    - FORTRAN Coding that Meets ANSI Standards (Approximately 85%)
    - Assembler Routines for File I/O, Character Manipulation, Op Sys Interfacing (15%)
  - Advantages
    - User not Bound to One Vendor
    - All BASIS Features are Available in all Machine Versions
    - BASIS Less Affected on Operating System Changes
    - Single Package for Multi-Vendor Shops
- Modularity
  - Permits User to Select Only Modules Necessary
  - Efficient Use of Computer Resources

TABLE 1 - COMPUTER SYSTEMS ON WHICH BASIS IS AVAILABLE

Vendor	Models	Op. Sys.	Status
CDC	6000 CYBER 70/170	Nos, Nos/BE, Nos	Version 4 Version 4
DEC	DEC 20 DEC 10 VAX 11/780	Tops 20 Tops 10 VMS	Version 4 Version 3
UNIVAC	1100	Exec 1100	Version 4
IBM	370/303X	MVS	Version 4
(All Versions Operate Under Vendors Time-Sharing System)			

BASIS MODULES



BASIS CENTRAL SYSTEM

- User Help Function (Explain)
- Index Retrieval (Find and Look)
- Sequential Search Function (SCAN)
- File Managers and DDL Compiler to Aid in Loading and Maintaining Data Bases
- Indexing Algorithms to Permit Flexible Indexing of Data; Full Text Indexing Provided

PROFILE MODULE

- Permits Saving of Search Procedures for Later Use by Creators or Other Users
- Provides Functions for Maintaining and Modifying PROFILES
- Excellent Mechanism to Permit Casual Users to Perform Complex Searches

THESAURUS MODULE

- Permits Vocabulary Control in User Searches (Term Switching) and Data Base Loading (Authority List for Validation)
- Thirteen Thesaurus Relations and Supported Including BT (Broader Terms), NT (Narrower Terms), Etc.
- Multi-Lingual Capability (Data Base Interaction in Several Languages) Provided
- On-Line and Multi-Format Hard Copy Access to Thesaurus Information

THE SORT MODULE

- Capability to Establish a New Order in a Retrieved Document Set
- BASIS Document Sets are Ordered by Accession Number (Record Key) when Retrieved
- BASIS SORTS have the Following Characteristics:
  - The SORT is Based on any Data Elements
  - Partial Data Elements may be Used
  - Several Data Elements may be Used
- SORT Keys are Field Mnemonics or Numbers

OLIVE (ON-LINE INPUT, VERIFICATION AND EDITING) MODULE

- Permits User to Perform On-Line Input of Data and Modification of Existing Documents (Records) in the Data Base
- Data Verification is Performed Based on the Editing Rules Defined in the Data Base Definition Language (DDL)
- Stores Update Transactions into a Hold File (Queue File); Data Base Updated in Batch Mode
- Omits Need for Input/Edit Programs

REPORT MODULE

- Permits On-Line Definition and Execution of Reports
- User Can Define Headings and Report Layout; Also can Perform Numeric Computations on Fields
- REPORTS can be Saved for Later Use
- Permits the Evaluation of Computational Expressions Over Sets of Records
- Boolean, Relational and Arithmetic Operators are Provided
- Arithmetic Functions Include AVG (Average), MIN (Minimum), MAX (Maximum), STD (Standard Deviation), SUM (Sum), Etc.
- Permits Extraction of Formatted Data for Input to Other Processing Programs - SPSS

FORMS INPUT PROCESSOR MODULE

- Permits User to Load Large Volumes of Data with Editing Performed without Writing Input/Edit Programs
- Format of Input Data and Editing Required for Each Field Defined in Data Base Definition Language (DDL)
- Complete Data Bases can be Loaded without Writing Load Programs

OWNCODE

- Give a User the Ability to Interface User Coded Programs to BASIS
- RUN Command will Execute a Users Program
- Full Support for Communications with BASIS
  - Allows Interaction with Terminal User
  - Ability to Use Search Lines
  - Ability to Access the Data Records
  - Ability to User PROFILE
- A RUN Program Name can be Declared a BASIS Command

BASIS RETRIEVAL CAPABILITIES

- Fully Interactive Query Negotiation
- Complete Prompting and Diagnostic Capability
- Keyword and Free-Text Searching via an Index
  - Single Word or Multiple Word Index Term
  - Complete Data Element, Any Part of a Data Element
  - User Defined Indexing Criteria/Algorithm
- Numeric Range Search
- Retrieval Aids
  - Adjacent Terms
  - Stem Term List (Prefix)
  - Index Browsing
  - List of Previous Retrievals
- Utilization of THESAURUS for Vocabulary Control, Multi-Lingual
- Sequential Searching
  - Ability to Retrieve on Non-Indexed Data Elements
  - Very Powerful Text Scanning
  - Distane Searching, Open Characters, Prefix, Suffix, Relational Operators, Cross Element Comparison, etc.
- Full Boolean Logic (AND, OR, and AND NOT) with Nesting
- Freedom to Dynamically Modify Search Strategy Without Loss of Previous Retrievals

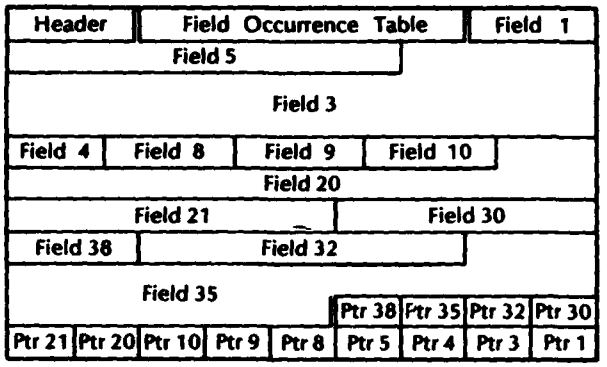
SOME BASIS SYSTEM COMMANDS

- DISPLAY, Output Information on the Terminal
  - Individual Data Elements
  - Entire Documents
- PRINT, Output Information on a High Speed Line Printer
  - Searching Modes (Hierarchical, Define a Universe)
  - Disposition of PRINT File
  - Terminal and Printer Line Length
  - Standard Output Format
- LIST, Review Various System Information
  - Previous Retrievals
  - Available Commands
  - Set Parameters Available, and the Status of Each
- ABORT, Terminate Current Function, Return to "ENTER YOUR REQUEST"
- RESTART, Start Session Over, or Change Data Bases
- QUIT or LOGOUT, Terminate a Session

DATA BASE SECURITY

- Four Separate Security Levels
- The Entire Data Base is Password Protected
  - Each User Must Supply an ID and Password
  - Each User is Assigned an Access Code
- An Authority List is Defined in the Data Base Definition
- Each Posting is Code Protected
- Each Data Record is Code Protected
- Each Data Element is Code Protected
- Every Level of Security is Optional

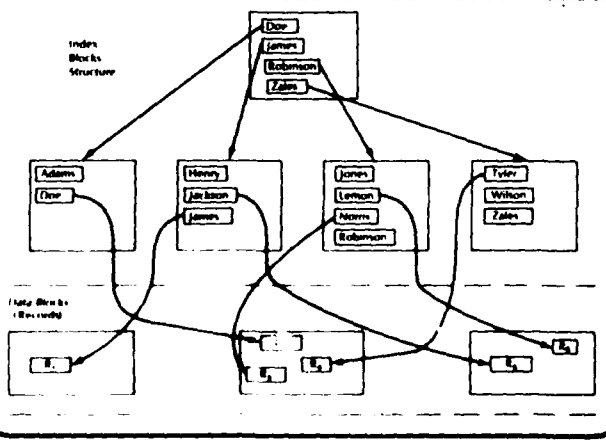
BASIS COMPRESSED RECORD FORMAT

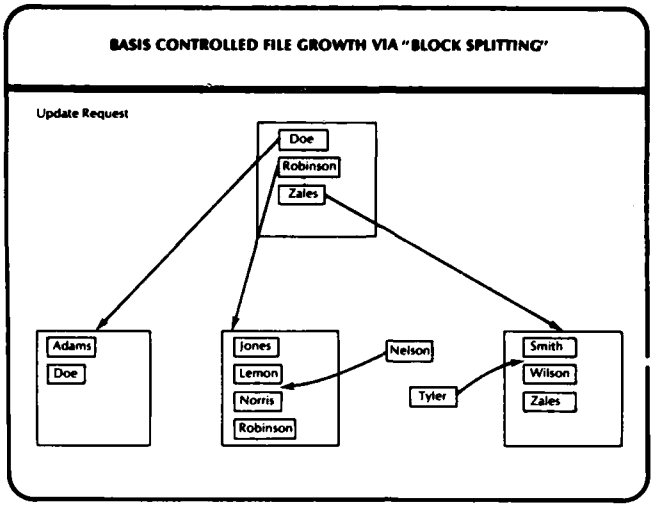


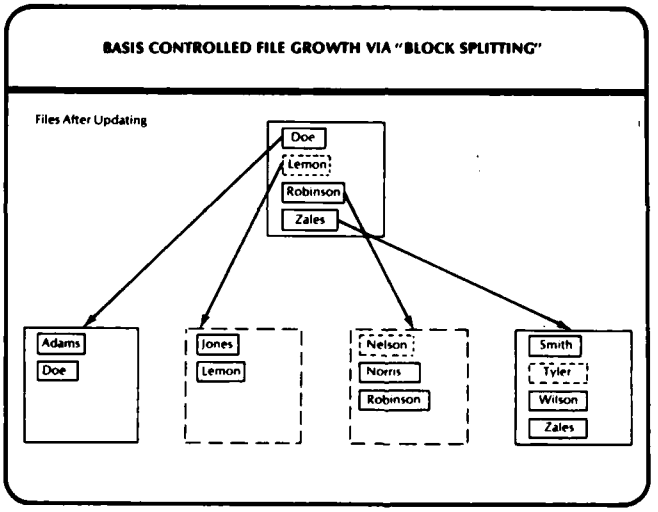
BASIS FLEXIBILITY

- Flexibility in Defining User Applications
  - DDL Features
    - Indexing Options
    - Field Labels and Mnemonics for Displays
    - Prefix Definitions
    - *Environment* Options — Terminal Line Length,
    - Adjacent Terms, etc.
    - MESSAGES to User
    - Segmentation of Files
  - Dialog File Options
    - BASIS Command Keywords
    - EXPLAIN Topics — Error Messages and Help Functions at Multiple Levels
- On-Line REPORT DEFINITION and GENERATION
- Query Language is Very Applications Oriented Since Uses Terminology of the Applications

BASIS INVERTED INDEX FILE STRUCTURE







WHY BASIS?

● Self-Contained System:	No Programming Staff Required
● User Friendly Query Facility:	Help Functions Incorporated into a Flexible and Dynamic Query Language
● Machine Independent Design:	BASIS is Very Portable Software
● Supports Textual/Numeric Applications	Broad Range of Applications can be Supported by One System
● Operates in Native Mode:	Efficient Use of Computer Resources
● Extensive Documentation and/ Training Provided:	Sponsor's Staff Will Utilize Full Capabilities of BASIS
● Source Code Provided:	BASIS can be Maintained and Modified by Sponsor's Staff
● Battelle has a Commitment to BASIS:	BASIS is a Dynamic and Evolving Data Management System

DATABASE INPUT

by

Norma Lee G. Dobay

Once the initial decisions and studies were made, software chosen, and tools created, the staff was now ready to perform the next phase of the database development -- the actual input of data to the system. The backbone of this activity was Mrs. Martin's excellent cataloging manual and the Thesaurus which she has discussed. The former is a marvelous in-house tool which describes, in great detail, the rules for cataloging and circulation record entry; as changes and refinements are recognized an update is issued to all concerned covering the new or expanded rules. Besides our in-house manual we basically follow the DTIC (previously DDC) Cataloging Guidelines and the Guidelines for Descriptive Cataloging of Reports published by the Committee on Information Hang-ups. Each physical item entering the library's permanent collection receives a record entry. Linking of parts is done via the note field (16). Periodicals are not cataloged nor are reports with "AD" or "N" numbers which are not within the Center's interests. Rather, these are kept aside for a term and then discarded after evaluation.

All those involved in the eventual growth of the database helped to create the initial group of records--a total of about 500. The pilot database served as a training device for staff and as a test of the software. The trial and error period lasted approximately 15 months. In the design of the cataloging record, many options were considered and the various necessary access points were identified. Duplication of data was reduced to the minimum on consideration of all criteria.

On 12 June 1979 all systems were ready and the database was launched as an operational reality.

Perhaps the easiest way to explain just what is entered in the cataloging record is to explain the input (see the worksheet, Figure 1) field by field. The cataloging worksheet is both physically and intellectually divided into two parts. One side is the descriptive information and the other is the subject oriented data.

Let us first look at the descriptive area which, in some ways, appears to be similar to the 3 x 5 in. catalog card, but with some pronounced changes.

The system sign # denotes the beginning and end of a record. The system sign @ denotes a new field. The letter "A" is the action code signifying a new record; "C" is used to denote a change in an already existing record; and "D" is the code for deletion of an existing record.

CATALOGING WORKSHEET
NDW-DTNSRDC 4410/2 (5-79)

EDITED _____ INPUT _____ CARD _____ FLOPPY

#A= _____ ID @2= _____ CN @3= _____ CIRCLE ONE A B DB @5= _____ CAT

@7= _____ CS ;

@7= _____ CS ;

@7= _____ CS @8= _____ AME

@9= _____ TI

@12= _____ AU ; _____ AU ; _____ AU

@13= _____ PD - YYYYMMDD @14= _____ PP @20= _____ PUB

@15= _____ SE ; _____ SE ; _____ SE

@16= _____ NT ;

@18= _____ SL @22= _____ CIRCLE ONE C C/REF LC @23= _____ CC @24= _____ CIRCLE ONE AN AN/REF LAN @25= _____ ANC @38= _____ SF

@32= _____ TYP @33 _____ WU @35= _____ CIRCLE AS NEEDED C, F, SD CR @36= _____ RD - YYYYMMDD @37= _____ SC

@34 _____ TRP ; _____ TRP ; _____ TRP

Figure 1 - Cataloging Worksheet

The first field (ID) is a unique number from 1 to 300,000 assigned by the cataloger as an accession number. This field is indexed, that is, it is directly retrievable on-line, and is ranged; indexed numerical values are grouped to allow efficient storage and retrieval.

Field 2(CN) is for the call number which can be a Library of Congress (LC) classification number (for monographs and for reference material); a "U" with the number for an unclassified report or paper; a "C" with the number for a confidential report; or an "S" with the number for a secret report. It is in this field that an alpha is added to the end of the LC call number of the primary document to indicate an analytic record for a conference. We have several listings of this field including two computer-output-microfiche (COM) shelf lists -- one for reports and one for monographs, and a post update run of an LC call number list.

Field 3 is no longer pertinent.

Field 4(RED) which does not appear on the worksheet, is the record entry date. It is computer generated and indexed, and is used as a parameter for generating the Accessions Bulletin.

Field 5(CAT), a number from 1 to 9, tells which cataloger is responsible for the primary or subject work of the record.

Field 7(CS) is the Thesaurus controlled field for the corporate source -- only three entries are allowed. This field is indexed and generates a COM.

Field 8(AME), personal author main entry, is comparable to that type of entry in the manual system. There is a character limitation of 25 -- only the last name and two initials are entered. Access to this field is via the COM.

Field 9(TI) is a required field which shows the title and, in the case of conferences, a rather intricate notation of first and second titles for the main volume and the title and source of the conference for an analysis of a paper. This field is accessible by the COM and a weekly off-line report which lists all titles entered in the database since the last issue of the COM.

Field 12(AU) shows the names of the first three authors on a report or monograph with the same limitations as field 8. There is an exception for our Center reports -- in this case all authors listed are entered.

Field 13(PD), which is indexed and ranged, gives the publication date.

Field 14(PP) is pagination with the computer supplying "P" for pages.

Field 15(SE) is for series entries -- up to three with a character limitation of 25 each. Access is by the COM.

Field 16(NT) contains what used to be called "drop notes," as well as precisely defined types of information pertaining to: related pieces in the collection, earlier editions, primary documents (for conference papers), call numbers of analytic records or parts, translation sources, and so on.

Field 18(SL) is indexed and generates the shelf list of COM's (reports and monographs) and the LC call number listing issued after each update. For inventory purposes, it separates physical pieces from analytic records by the use of an A("U" call number analytic record), CA(confidential report analytic record), SA(secret report analytic record), and MA(analytic record of a monograph).

Field 20(PUB) is for the publisher; the Center uses Books in Print abbreviations when possible.

Fields 22 and 24(LC and LAN) are indexed and denote which library (Carderock (C) or Annapolis (AN)) has the material in its collection; c/ref and an/ref are for reference materials. Fields 23 and 25 give the number of copies and any special filing locations such as Acquisitions, Aero Library, Reference Desk, and so on. This is noted by a specific alpha after the copy number.

Fields 32, 33, and 34 are used strictly for Center authored, issued, or financed materials. Fields 32 and 33 are indexed.

Field 32(TYP) designates if the record is for a formal or a departmental report or a technical memorandum; a conference paper; a patent; a ship's plans; a contractor's report, and the like.

Field 33(WU) gives the Work Unit number.

Field 34(TRP) is for the transposed number of all Center technical reports. This will be used to generate a badly needed listing in numerical order of the Center's reports since the beginning of its publishing program.

Field 35(CR) shows the circulation restriction which may be put on any report. These have been reduced to three basic notations: C denotes Official Use Only, DOD or Government only, no contractor; F is for no foreign release; and SD for special dissemination.

Field 36(RD) lists the first reclassification date given on any classified report. Once a year a listing is generated for that time frame; the appropriate action is taken in regard to the document and; if necessary, a new reclassification date is entered to the record for that document.

Field 37(SC) is the field in which is noted any security code level on a document, such as OMITs and NATO/CINWIDI.

Field 38(SF) cites any special physical feature or format the material might have. Entries could be for microfiche, oversized, viewgraphs, etc.

Having recorded the appropriate bibliographic data, the cataloger now gets down to the task of subject cataloging.

For our purposes this includes the four fields in the database shown on the reverse of the worksheet (see Figure 2).

Field 28(FG) lists the COSATI Fields and Groups which are pertinent to the document in hand. This is a most important field for it is used to flag what is to be noted in the Accessions Bulletin, by the presence or absence of a first occurrence, and then sorted by the broad subjects of the fields. We have expanded the basic list to include more specific coverage of those areas which are of importance to the Center -- marine engineering and naval architecture, energy and pollution, as well as a number for planning documents and a group for special collections such as intelligence, energy office collection, EEO material, exchange documents, and such. Possible other uses for this field would be a listing of those special collections for inventory purposes and generation of very general subject bibliographies.

Now we come to the real core of the cataloging record and the database -- the subject indexing areas -- Fields 29, 30, and 31. The principle tenet of our indexing philosophy is specificity and exhaustivity of analysis for every document.

Field 29(MDE), main descriptors, is our answer to the time-honored Subject Card Catalog. It enables the casual user to site quickly any material of interest via the COM catalog which is generated from it. This required, Thesaurus controlled field contains the major concepts of the material being analyzed -- the summarization of the document; this field must contain, as specifically and as explicitly as possible, what is in the document. Four descriptors are allowed which may be divided once, thereby allowing a real possibility of eight terms, within reason.

Field 30(DE), Descriptors, contains all other concepts which are relevant and pertinent to the document being indexed; as many as 40 descriptors are allowed, but they may not be subdivided and are retrievable only by on-line access.

Field 31(IDT), identifiers, is one of the most versatile fields. It is meant to overcome any shortcomings or impractical applications of the Thesaurus. It may include: just-coined phrases for new scientific and technical matters; acronyms; specific entities, such as a hull number, a type of alloy, or a military operation; and terms to cover concepts not yet entered into the Thesaurus or those that are too esoteric to be put into it.

●28= _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____
FG

●29= _____
MDE

●30= _____
DE

●31= _____
IDT

GPO 868-794

Figure 2 - Reverse Side of Cataloging Worksheet

The cataloging worksheet is now finished. The material is given to the editor for review and is then returned to the cataloger for correction or disposition of the material. The worksheet is ready for entry to machine readable form. We have tried many systems of initial input to the computer, including punched cards, floppy disk, tape, and on-line entry. Each method has pluses and minuses, but at the moment we are using primarily a key-to-disk and disk-to-tape operation for cataloging records. On-line input is used as a secondary method, dependent upon work load and staff availability. However, I must qualify this statement. All records generated at the circulation desks are entered on-line and input of cataloging record changes or deletions are entered to the current "next for update data file" via on-line access.

Let us assume that the data from the cataloging record is now in a file in the computer. A listing of the file is made and it is checked against the worksheets for any possible errors; a cursory review of the thesaurus controlled fields is made. Corrections to the data file are made on-line via the text editor of the CDC computer. The cleaned-up file is then sent through the BASIS Module called FORMS. This program processes data according to data format descriptions contained in the database Data Definition Language (or DDL) and it places documents and control information into the database queue file. The queue file is used to hold data in a standardized format for subsequent processing and eventual entry into the database proper. Once the data has been placed into the queue file, it is checked for correctness by the BASIS utility program VALID. It checks data according to the Validation paragraph of the database DDL. This is the point where the pertinent fields are checked against the Thesaurus. Because this can be a lengthy process, VALID is put through in batch and the resulting printout is reviewed after the job is completed. The routines of file editing and FORMS and/or VALID runs are repeated as often as necessary until the file is ready for updating the database. This usually means two to three runs. However, there are means of short cutting when only a few records are left to be corrected.

Once the data file is clean, it is a simple matter to run the update. When it is completed, a printout is generated listing the various BASIS files affected. Statistics as to term and field posting changes are given. After the update has finished, another in-house program is run automatically which generates a listing of the LC shelf list, or the "M" value in Field 18. In time this will replace the card catalog of the shelf list.

If at a future time a record must be altered (right now most changes seem to be primarily for shelf list information and for updating the note field) it is then a

simple procedure to reenter the affected field as corrected along with the proper record ID and the pertinent action code. In the validation of this data the whole record is reviewed by BASIS and any changes in Thesaurus controlled fields or changes in the DDL are noted as error messages for that record in the FORMS or VALID run. This is one way the database, in a sense, corrects and updates itself. Deletion of a record is merely the proper action code and the record ID noted in a data file.

This then is a brief survey of the process we use to input data to TITLES. I have purposefully avoided giving minute details of our procedures and methods. Much of this is system related and only of real interest if you actually have to do the specific work.

CIRCULATION SYSTEM

by

Alvetta D. Smythe
Margaret A. Bowman

One of the most important functions of the library is to circulate material. This circulation, however, creates a constantly changing inventory problem, due to the fact that holdings are continually being removed and returned.

In circulation, there is a need for the unique characteristics of each item to be recorded, as well as the frequent need for identifying it briefly with a user.

The circulation control function can be automated to eliminate the filing of book cards, to reduce errors through the automatic machine reading of book and user identification, and to speed the book back to the shelf for further circulation.

The Center expected several benefits from the automation of our circulation system. Our library did not have any means for easily compiling lists of materials charged to borrowers. One of the most needed lists is overdue notices. The Carderock Library had never generated these before. There had never been any recall of material except in specific cases on demand. Unfortunately, this resulted in many lost items. Over the years, workers would borrow material, move from project to project, sometimes office to office, and occasionally lend their books to others. When the time came to return their material, either because someone else needed it or because they were leaving the Center, they would have no idea what they owed or the whereabouts of the documents. Our new system provides an up-to-date listing for the user and for the library to be used for any necessary inventory.

In addition, our manual system provided no real way to monitor the status of documents. Material can be placed on "reserve" status to indicate that there is a wait list or that there are instructions to follow before it can be further circulated. Our new system provides us with a clear wait list field for notation for action.

The final product of the system is Computer-Output-Microfiche, or COM. Through the use of COM, multiple copies of the library catalogs, indexes, or lists can be produced or updated inexpensively. This allows easy duplication for distribution and use at other sites. A patron can consult our catalogs anytime without making a journey to the library.

Library material is circulated from several places within the library system using two types of loan periods. One type is for material bought using departmental

funds as opposed to library funds. This item is placed on "indefinite" loan and is circulated directly from the Cataloging Section. The borrower does not receive an overdue notice, but is sent an annual departmental loan list, reminding him of his charges. All other library material is charged out from the circulation desk for a three month period. When an item is removed, it is given a six digit circulation identification number. This is similar to the cataloging identification number Mrs. Dobay mentioned yesterday. The circulation number plus the date, borrower information (which is the name and code in which he works), and the cataloging identification number are later input into the data base via an on-line terminal.

A major advantage of our automated system is the check-in or return procedure. A member of the circulation staff simply keys in the circulation identification number and a "D" for delete. The item is now removed from the circulation records and can be quickly replaced on the shelf for further dissemination.

If a searcher wishes to inquire on-line whether a publication of interest is checked out, he can use two possible strategies. One is to perform a stem search on the prefix of the circulation call number. This is the same number as the cataloging record call number minus the copy number. One can also search using the cataloging record identification to trace own other circulation records.

PRESENTATION OF CIRCULATION OUTPUT

First, we should examine a circulation record as it appears when retrieved on-line. You will notice that the author, the title, and other descriptive information do not appear on the record. They are unnecessary because of the unique nature of the system, see Figure 1. The cataloging records are tied into the circulation records by the identification number. There is no need to repeat the descriptive information in the circulation record. If it's needed, the identification number can be searched and the entire record can then be seen.

CALL NUMBER LISTING

The call number listing is the most important listing for retrieval purposes, see Figure 2. When a user identifies an item of interest in the COM (Library Catalog) or new Accessions Bulletin and cannot locate it on the shelf, the call number listing is searched for the borrower's name and the due date. This listing is updated biweekly.

Example

ITEM 3

CATALOG RECORD ID 663
CIRCULATION CALL NR TJ 151.M 31975C4
BORROWER'S NAME CRAIG O E

ITEM 4

CATALOG RECORD ID 663
CIRCULATION CALL NR TJ 151.M 31975C5
BORROWER'S NAME TATUM S L

Figure 1 - Circulation Records

TH 9445.F 87.N 27 402233 B
NATIONAL FIRE PROTECTION ASSOCIATION NFPA 86A 1977
STANDARD FOR OVENS AND FURNACES. DESIGN, LOCATION, AND EQUIPMENT
BORROWER: ROYDHOUSE C E;0407
DUE:12 15 80

TH 9446.I 5H 43 406114 A
HEALTH EDUCATION/WELFARE DEPT NIOSH-78-206
WORKING SAFELY WITH FLAMMABLE AND COMBUSTIBLE LIQUIDS
BORROWER: SHIFLETT G M ;2831
DUE:

TJ 1061.A 83 ROHDE SM 403411 A
ASME. LUBRICATION DIV
TOPICS IN FLUID FILM BEARING AND ROTOR BEARING SYSTEM DESIGN AND OPTIMIZATION
BORROWER: BELT J R ;2800
DUE:

TJ 1063.F 98 406025 A
AMERICAN SOCIETY . . . MECHANICAL ENGINEERS
FUNDAMENTALS OF THE DESIGN OF FLUID FILM BEARINGS. SIX PAPERS
BORROWER: SCHWARTZ J I ;2842
DUE:

Figure 2 - Call Number Index

RECORD NUMBER INDEX

The record number index (Figure 3) lists the item identification or cataloging call number and the corresponding circulation record identification number.

This index helps us in two ways. First, it is used for deleting records for all returned material. In order to delete this record from the master file, the six digit circulation identification number must be known. This is found by searching the index under the appropriate call number.

RESERVE

A 406138 QC 145.2.T 28
A 405951 QC 174.17.P 27N 27
A 405952 QC 20.R 53V1
A 400038 QC 372.2.P 57S 67V134
A 402251 QC 453.S 91
A 406003 QC 482.D 5K 661974
A 405950 QC 528.E 4W 81
A 407016 QC 612.S 8D 13
A 405910 QC 631.B 331978

Figure 3 - Record Number Index

The second purpose of the record number index is to alert the library technician when a returned item is on the reserve list. "Reserve" in the designated column is easily noted when searching the index for the identification number. The technician can then look up the complete record for the item in the Master File Call Number Index to see the wait list or remarks.

BORROWER INDEX

The borrower index (Figure 4) is a listing of all library material charged out and is arranged alphabetically by borrower. It is used primarily for checking-out employees leaving the Center.

FIRST OVERDUE NOTICES

Overdue notices are sent each month to borrowers with overdue short term loans; see Figure 5. In order to standardize the due dates within each month; all loans are

BORROWER: DRAY J;2832 406066 A
TJ 1078.I 611978
AMERICAN SOCIETY . . . LUBRICATION ENGINEERS ASLE-SP-6-1978
INTERNATIONAL CONFERENCE ON SOLID LUBRICATION, 2ND, DENVER, 1978. ASLE PROCEEDINGS
DUE:02 15 81

BORROWER: DUNN E C;2821 400631 B
TJ 151.M 31975C11
MACHINERY'S HANDBOOK A REFERENCE BOOK FOR THE MECHANICAL ENGINEER, DRAFTSMAN, TOOLMAKER AND MACHINIST. 20TH EDITION
DUE:

BORROWER: DURBIN K A ;5210 402389 A
PE 1410.M 42 MATHES J C
DESIGNING TECHNICAL REPORTS. WRITING FOR AUDIENCES IN ORGANIZATIONS
DUE:03 15 80

BORROWER: DUVALL G ;2705 407025 A
TJ 163.25.E 85S 58 SIMEONS C
ENERGY RESEARCH AND DEVELOPMENT PROGRAMMES IN WESTERN EUROPE
DUE:

BORROWER: DYE J A;2810 409450 B
C34771C11
BATTELLE COLUMBUS LABS(OH) BCL-14128-11-1A
FINAL REPORT ON REVIEW, SUMMARY AND INTERPRETATION OF DATA ON THE HY-130 STEEL WELDMENT SYSTEM
DUE:02 15 80

Figure 4 - Borrower Index

due on the fifteenth of the third month from date of check-out. Overdue notices are issued on the thirteenth day of the third month from check-out date in order to permit a two-week "grace period."

SECOND OVERDUE NOTICES

A borrower will be sent a second overdue notice if he fails to respond to a first overdue notice; in other words, when his library material is two months plus two weeks overdue.

**THE FOLLOWING OVERDUE PUBLICATIONS
WHICH ARE CHARGED-OUT IN YOUR NAME
SHOULD BE RETURNED TO THE LIBRARY.
TO RENEW A TITLE, BRING IT TO THE CIRCULATION DESK.
IF ANY ITEMS ARE LOST, NOTE IT BELOW AND
RETURN FORM TO YOUR LIBRARY.**

BORROWER: LARDIS-A E 2863

	RECORD	DATA BASE
DUE DATE: 15 FEB 80	**408951**	**B**

TD174M68V2C2
MODERN POLLUTION CONTROL TECHNOLOGY. VOLUME 1 — AIR POLLUTION CONTROL

Figure 5 - First Overdue Notice

DELINQUENT BORROWER'S LIST

This list, which is intended for internal use, records the borrowers with overdues who had failed to respond to either the first or second overdue notices. In other words, their holdings are now three months and two weeks overdue. Each person on the list is contacted by the circulation technician and asked to either return the material, renew it, or report it as lost.

LOST LISTING

Periodically, a lost query is done. This query searches the Master File for an alphabetical listing of items designated "lost" in alphabetical order of the borrower's name. Each borrower listed is contacted to renew efforts to find the material and if not found, decisions are made as to replacement or withdrawal from the collection.

These listings can also be viewed on-line. For instance, if a searcher wishes to inquire on-line as to whether a publication is charged out, he can perform a stem search on the prefix of the circulation call number. This is the same number as the cataloging number minus the copy number. When the set formed is displayed, the circulation records are listed for review.

The purpose of overdue notices and close monitoring of circulation is not to keep items on the shelf for archival type reasons, but to improve wider dissemination and use of material. This helps the user. It is very frustrating to identify a book

Example

Who has checked out the seven copies of Machinery's Handbook?

1/CCN = TF J 151.M 31975*ALL

7 TERMS WITH YOUR STEM WERE COMBINED
7 ITEMS SAVED AS SET 1
2/DISPLAY CRS, CCN, BR FOR 1-2

ITEM 1

CATALOG RECORD ID	**663**
CIRCULATION CALL NR	**TJ 151.M 31975C2**
BORROWER'S NAME	**ALIBERTI J A**

ITEM 2

CATALOG RECORD ID	**663**
CIRCULATION CALL NR	**TJ 151.M 31975C3**
BORROWER'S NAME	**ALIBERTI J A**

Figure 6 - Example of Circulation Listing

as being useful and find that it exists in the collection and has been charged out by the same person for years and that they have no idea where it is. We want to avoid this situation as much as possible in the future.

As we have shown, the automated system allows the circulation staff to easily create a listing in whatever format or order needed to aid us in monitoring the circulation of our material. The introduction of overdue notices is viewed by our users as a necessary evil, and will certainly aid in reducing the amount of material that is lost or misplaced. It has been noticed in the Annapolis Laboratory that these reminders have raised the user's awareness of the responsibility to keep up with library material. The flow of material has also improved as items are often returned before a notice is even issued.

BIBLIOGRAPHY

1. Martin, S. L., "Library Division Circulation Manual," DTNSRDC TM-522-76-10, (Jun 1976).
2. Bolef, D., "Computer-Output Microfilm," Special Libraries, Vol. No. 4, pp. 169-175 (Apr 1974).
3. Heiliger, E. M. and P. B. Henderson, "Library Automation: Experience, Methodology and Technology of the Library as an Information System," McGraw-Hill, New York, (1971).

REPORTS SYSTEM BYPRODUCT

by

Sherry Martin

OUTPUT PRODUCTS OF THE LIBRARY SYSTEM

PUBLIC CATALOGS ON COMPUTER-OUTPUT-MICROFICHE

Subject Catalog
Personal Author Catalog
Title Catalog
Report Series Number Catalog
Corporate Source Catalog

REFERENCE PRODUCTS

Literature Search Bibliographies
Bi-Weekly New Accessions Bulletin
Tailor-Made Current-Awareness Bulletin
Center Reports Catalog and Index

OUTPUT PRODUCTS OF THE LIBRARY SYSTEM (Continued)

CIRCULATION LISTINGS

Master List of Circulating Titles by Call-Number and Library
Master List of Circulating Titles by Borrower and Library
Individual Borrower Loan Listings
Record Number/Call-Number Index for Discharging Loans
Secret Inventory Recall Notices
First and Second Overdue Notices
Annual Departmental Loan Reminder Notices

INVENTORY AND COLLECTION CONTROL REPORTS

Subject Thesaurus
Corporate Source Thesaurus
Key-Word-In-Context Index to Thesaurus
Monograph Shelf List
Reports Shelf List
Inventory Copy/Location Shelf List
Monthly Utilization/Production Statistics

REPORT CAPABILITIES

- Ability to Print-Out Search Results in Any Format either at One's Office Terminal or at a High-Speed Printer
- Ability to Create and Modify Reports Interatively Using a Report Editor
- Ability to Store a Library Pre-Defined Report Formats for Subsequent Execution by Users
- Ability to Modify Report Output and Format Based on Values in Data Base Records Using a High-Level Programming Language
- Capability for Performing Logical and Arithmetic Operations
- Reports May Use :
  - Headers and Trailers
  - Left or Right Justified Data
  - Ragged Right for Long Textual Data Elements
  - Data Wrapped Around in Columns in Specified No. of Rows
  - A Variety of Data Formats
  - Numbered Pages

REPORT PRODUCTION AND DISTRIBUTION

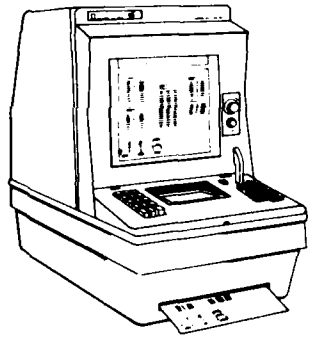
Any Library Report May be Printed:

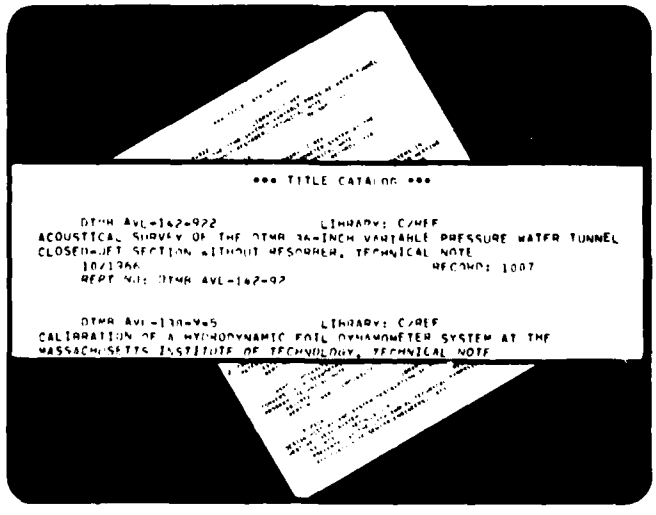
- On Computer-Output-Microfiche
- In Multiple Copy by Computer-Driven Xerox on Three-Hole Punch Paper
- On-Line at One's Office Terminal
- Off-Line at Any High-Speed Printer

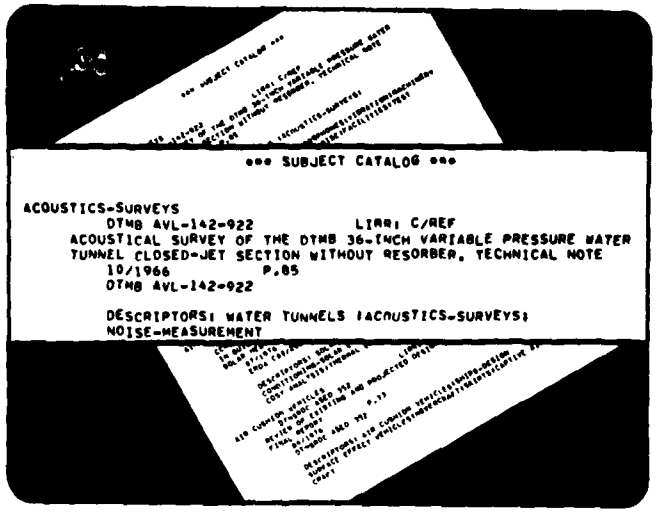
Recurring Library Reports are Produced and Distributed by Data Systems Division According to a Pre-Determined Timetable and Distribution List

AM BRUNING 96

Automated Pushbutton Page/Select Viewer



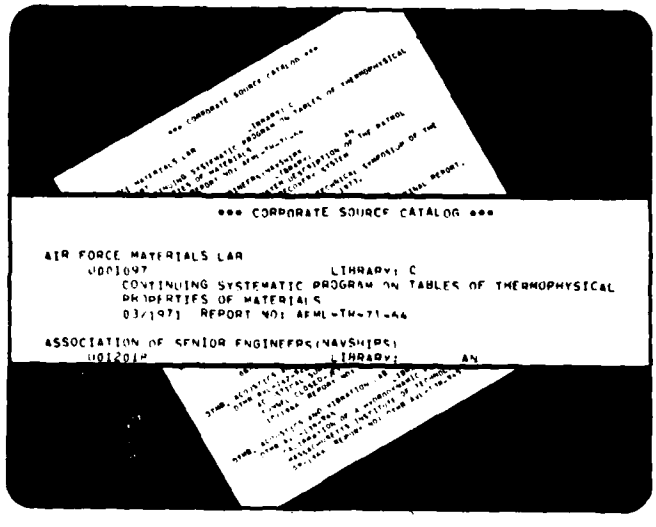




••• SUBJECT CATALOG •••

ACOUSTICS-SURVEYS
DTMB AVL-142-922 LIBR: C/REF
ACOUSTICAL SURVEY OF THE DTMB 36-INCH VARIABLE PRESSURE WATER TUNNEL CLOSED-JET SECTION WITHOUT RESORBER, TECHNICAL NOTE
10/1966 P.85
DTMB AVL-142-922

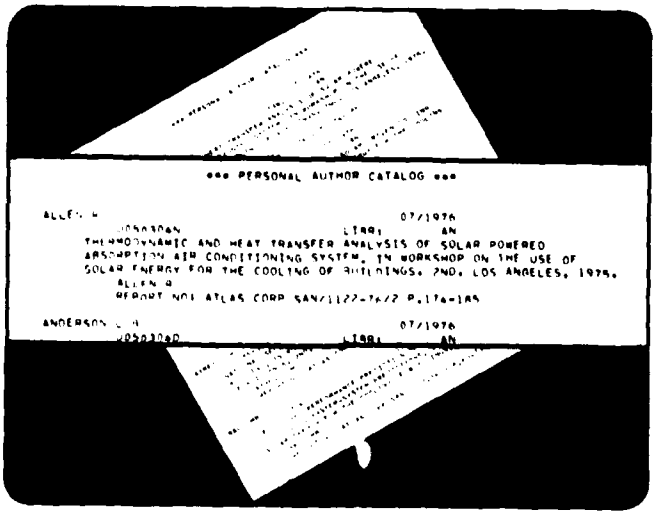
DESCRIPTORS: WATER TUNNELS !ACOUSTICS-SURVEYS: NOISE-MEASUREMENT



••• CORPORATE SOURCE CATALOG •••

AIR FORCE MATERIALS LAB
U001097 LIBRARY: C
CONTINUING SYSTEMATIC PROGRAM ON TABLES OF THERMOPHYSICAL PROPERTIES OF MATERIALS
03/1971 REPORT NO: AFML-TM-71-44

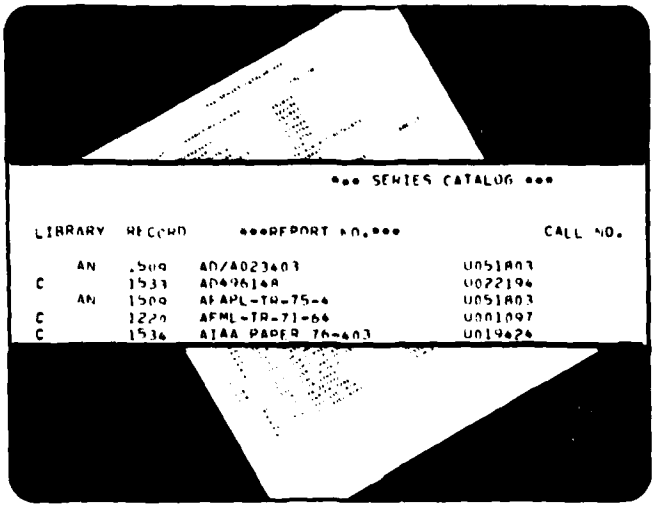
ASSOCIATION OF SENIOR ENGINEERS(NAVSHIPS)
U012014 LIBRARY: AN



••• PERSONAL AUTHOR CATALOG •••

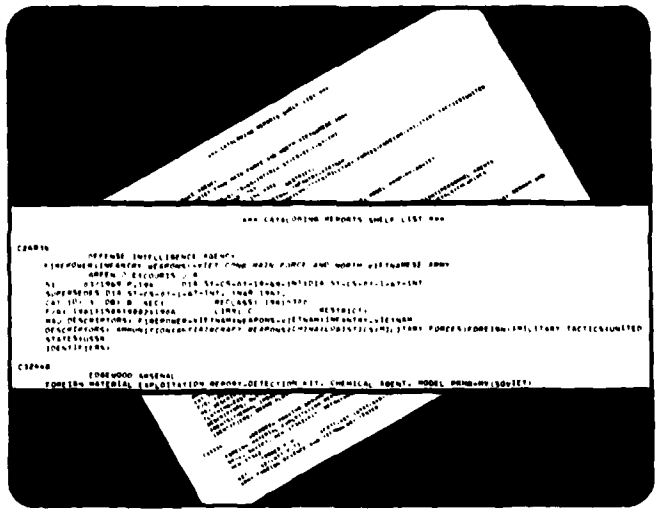
ALLEN G
U050304N 07/1976
LIBR: AN
THERMODYNAMIC AND HEAT TRANSFER ANALYSIS OF SOLAR POWERED ABSORPTION AIR CONDITIONING SYSTEM, IN WORKSHOP ON THE USE OF SOLAR ENERGY FOR THE COOLING OF BUILDINGS, 2ND, LOS ANGELES, 1976.
ALLEN G
REPORT NO: ATLAS CORP SAN/1122-76/2 P.176-185

ANDERSON L H
U050304P 07/1976
LIBR: AN

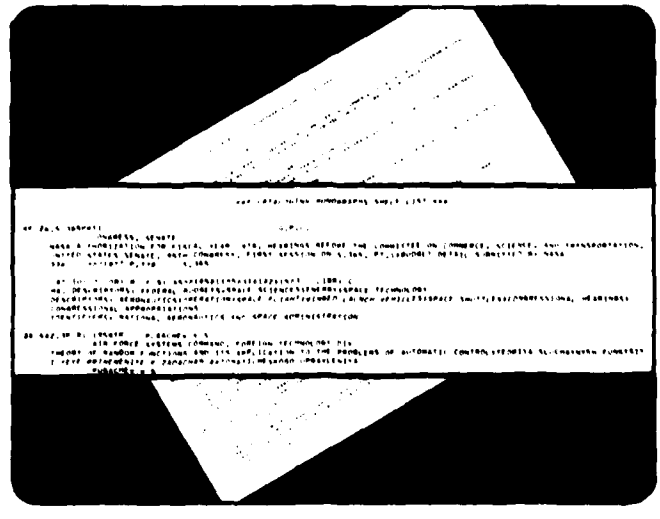


••• SERIES CATALOG •••

LIBRARY	RECORD	•••REPORT NO.•••	CALL NO.
AN	1509	AD/A023403	U051A03
C	1533	AD496148	U022194
AN	1509	AFAPL-TR-75-4	U051A03
C	1220	AFML-TR-71-64	U001097
C	1534	AIAA PAPER 76-403	U019626



••• CATALOGING REPORTS SHELF LIST •••



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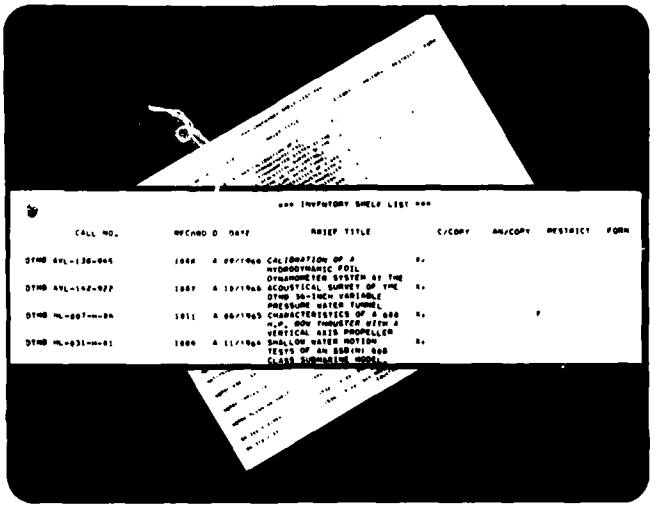
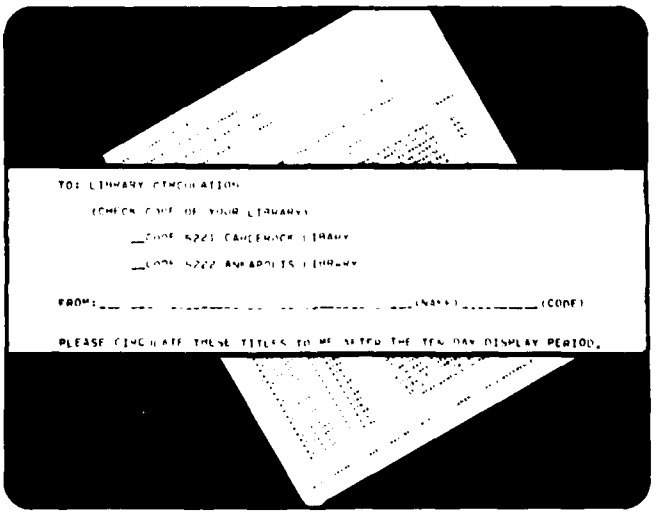


*** INVENTORY SHELF LIST ***

CALL NO.	RP/CARD	D	DATE	BRIEF TITLE	C/COPY	BK/COPY	RESTRICT	FORM
DTMB AYL-136-065	1966	A	09/1966	CALIBRATION OF A HYDRODYNAMIC FOIL DYNAMOMETER SYSTEM AT THE	1			
DTMB AYL-102-927	1967	A	10/1966	ACOUSTICAL SURVEY OF THE DTMB 36-INCH VARIABLE PRESSURE WATER TUNNEL	1			
DTMB ML-807-M-04	1811	A	06/1965	CHARACTERISTICS OF A 600 H.P. 600V THRUSTER WITH A VERTICAL AXIS PROPELLER	1		P	
DTMB ML-831-M-01	1806	A	11/1966	SHALLOW WATER MOTION TESTS OF AN ESB(M) 608 CLASS SUBMARINE MODEL.	1			



TO: LIBRARY CIRCULATION

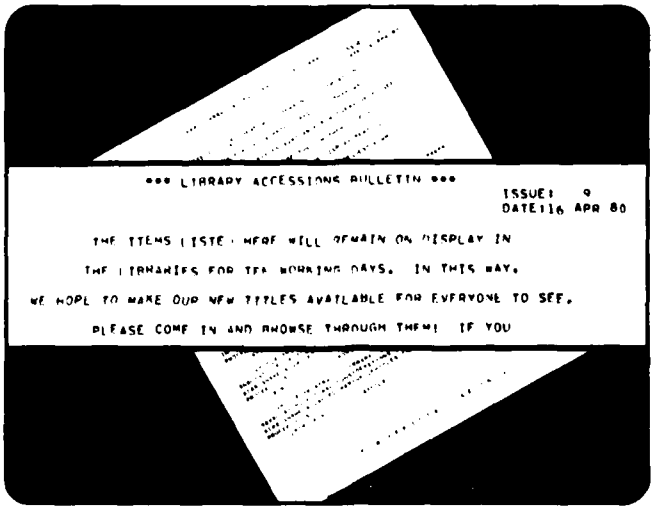
(CHECK ONE OF YOUR LIBRARY)

__CODE 5221 CARDEROCK LIBRARY

__CODE 5222 ANNAPOLIS LIBRARY

FROM:__ ___ _____ __ __ _____ _ ___(NAME)_____(CODE)

PLEASE CIRCULATE THESE TITLES TO BE VIEWED THE TEN DAY DISPLAY PERIOD.

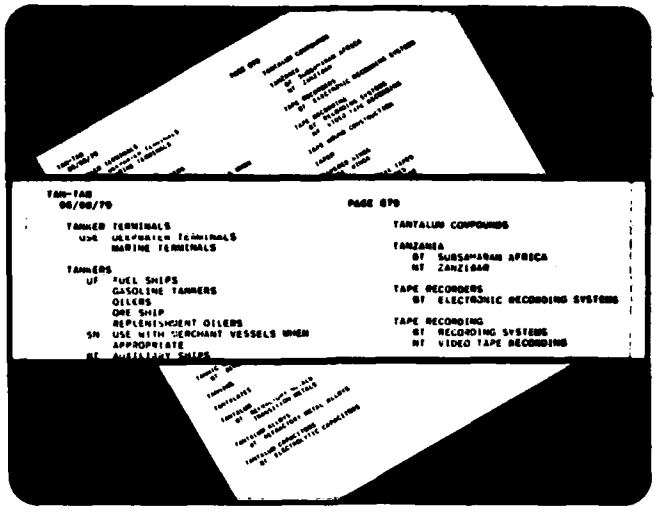


*** LIBRARY ACCESSIONS BULLETIN ***

ISSUE: 9
DATE:16 APR 80

THE ITEMS LISTED HERE WILL REMAIN ON DISPLAY IN THE LIBRARIES FOR TEN WORKING DAYS. IN THIS WAY, WE HOPE TO MAKE OUR NEW TITLES AVAILABLE FOR EVERYONE TO SEE.

PLEASE COME IN AND BROWSE THROUGH THEM! IF YOU



TAN-TAB
06/06/79 PAGE 670

TANKED TERMINALS
  USE LIQUEFIED PETROLEUM GAS TERMINALS
      MARINE TERMINALS

TANKERS
  UF FUEL SHIPS
     GASOLINE TANKERS
     OILERS
     ORE SHIP
     REPLENISHMENT OILERS
  SN USE WITH MERCHANT VESSELS WHEN APPROPRIATE
  BT Auxiliary Ships

TANTALUM COMPOUNDS

TANZANIA
  BT SUBSAHARAN AFRICA
  NT ZANZIBAR

TAPE RECORDERS
  BT ELECTRONIC RECORDING SYSTEMS

TAPE RECORDING
  BT RECORDING SYSTEMS
  NT VIDEO TAPE RECORDING

INFORMATION RETRIEVAL FEATURES

by

JoAnne Lappin

Responsive information service to our users is the ultimate test of any library system. Because that system is automated does not change good information service practices -- it enhances them by providing new approaches, and, most important of all, more timely service. What used to take the reference staff hours to perform, now takes minutes freeing the staff to provide more comprehensive service than before. The quality of the information retrieved from the library system -- or any system -- is directly proportional to the quality of the indexing. "You cannot make a silk purse out of a sow's ear."

THESAURUS

A thesaurus is important to an information system simply because different people use different terms to denote the same concept. The thesaurus tells those who are indexing documents and those who are searching for information the proper terms to use. The Center Library has developed a two-part Thesaurus for Subjects and Corporate Sources, available both on-line and in printed form. Both parts are extensive lists of thousands of terms that may be used in indexing documents for the data base and for retrieval. Yesterday Mrs. Martin explained the procedure the Library followed in developing the corporate source thesaurus and the preliminary edition of the subject thesaurus. There is still much work to be accomplished on the subject thesaurus. Although the printed version of the thesaurus will be issued annually, the on-line thesaurus will be updated as new terms are required. The subject thesaurus is available from the Defense Technical Information Center (DTIC) as AD No. A082829. The thesaurus includes broader terms, narrower terms, cross references, related terms, abbreviations, and scope notes.

The "Automated Technical Library Systems Users Manual" by Shevra L. Martin is available from DTIC as AD-A081078. This manual explains, in detail, the use of the thesaurus, system commands, and various other features of the library system. I will touch only on the most important and most often used in retrieving information from the system.

The thesaurus may be consulted on-line directly from the retrieval module by entering the term BROWSE as shown in Figures 1 and 2.

```
ENTER TERM
    /JOINING
JOINING
  UF    CONNECTING
  NT  * BONDING
  NT  * THERMAL JOINING
  NT  * WELDING

ENTER TERM
    /WELDING
WELDING
  BT    JOINING
  NT    AUTOMATIC WELDING
  NT    BUTT WELDING
  NT  * ELECTRIC WELDING
  NT  * FLOW WELDING
  NT  * FORGE WELDING
  NT  * FUSION WELDING
  NT    GAS WELDING
  NT    INDUCTION WELDING
  NT    LASER WELDING
  NT  * PRESSURE WELDING
  NT    ROLL WELDING
  NT    SEAM WELDING
  NT    STUD WELDING

ENTER TERM
    /PRESSURE WELDING
PRESSURE WELDING
  BT    JOINING
  BT    WELDING
  UF    SOLID STATE WELDING
  NT    COLD WELDING
  NT    DIFFUSION WELDING
  NT    ELECTROSLAG WELDING
  NT    EXPLOSIVE WELDING
  NT    FRICTION WELDING
  NT  * RESISTANCE WELDING
  NT    ULTRASONIC WELDING

ENTER TERM
    /RESISTANCE WELDING
RESISTANCE WELDING
  BT    ELECTRIC WELDING
  BT    JOINING
  BT    PRESSURE WELDING
  BT    WELDING
  NT    ELECTROSLAG WELDING
  NT    FLASH WELDING
  NT    PERCUSSION WELDING
  NT    UPSET WELDING
  RT    FUSION WELDING
```

Figure 1 - BROWSE - Subject Thesaurus

```
ENTER TERM
    /NAVAL RESEARCH LAB*

LEAD TERMS WITH THIS STEM ARE
 NAVAL RESEARCH LAB(DC)
 NAVAL RESEARCH LABORATORIES

ENTER TERM
    /NAVAL RESEARCH LAB(DC)

NAVAL RESEARCH LAB(DC)
  SN    FOR LOWER ORGANIZATIONAL LEVELS SEE NRL(LOWER ORG
  SN    LEVEL) EX-NRL. OPERATIONS RESEARCH BRANCH
  BT    NAVY DEPT
  BT    OFFICE OF NAVAL RESEARCH
  AB    NRL
  NT    MAURY CENTER FOR OCEAN SCIENCE
  NT    NRL. CYCLOTRON BRANCH
  NT    NRL. MATHEMATICS RESEARCH CENTER
  NT    NRL. OPERATIONS RESEARCH BRANCH
  NT *  NRL. OPTICAL SCIENCE DIV
  NT    NRL. REMOTE SENSING OCEANOGRAPHY PROJECT
  NT    NRL. SHOCK AND VIBRATION INFORMATION CENTER
  NT    NRL. SPECIAL COMMUNICATIONS BRANCH
  NT *  NRL. UNDERWATER SOUND REFERENCE DIV
  NT    ONR. ACOUSTIC ENVIRONMENTAL SUPPORT DETACHMENT

ENTER TERM
    /NRL. UNDERWATER SOUND REFERENCE DIV

NRL. UNDERWATER SOUND REFERENCE DIV
  BT    NAVAL RESEARCH LAB(DC)
  BT    NAVY DEPT
  BT    OFFICE OF NAVAL RESEARCH
  UF    NRL. UNDERWATER SOUND REFERENCE DETACHMENT
  NT    NAVY UNDERWATER SOUND REFERENCE LAB(FL)
```

Figure 2 - BROWSE - Corporate Source Thesaurus

The on-line thesaurus differs from the printed form in that every broader term (BT) for a lead term is listed so that the entire top of the hierarchy is displayed. In the printed version, only the next higher level appears. An * to the left of a term indicates that there are narrower terms (NT) available. The entire bottom of the hierarchy may be traced by entering each starred term one at a time.

Since a thesaurus term may not exceed 53 characters, abbreviations are used in the corporate source thesaurus. This not only reduces the thesaurus storage costs, but also frees the searcher from making typing errors. For example, "DTNSRDC" is so much easier to type error-free than is the full name for which it stands. Abbreviations may also be used in the subject thesaurus for long terms for which there are

common abbreviations, such as SES for surface effect ships or RPV for remotely piloted vehicles.

When a record is input to the data base the system automatically indexes that record against every term defined in the thesaurus as a broader term. For example, if the corporate author Naval Underwater Sound Reference Lab is assigned, the system will automatically up-post the document record to appear also under the index entries for NRL Underwater Sound Ref. Div., NRL, ONR, and Navy Dept. A search on a term will automatically retrieve all documents indexed with any of the narrower terms with duplicate records deleted.

While the thesaurus may be "browsed" on-line or consulted in printed form, it is not necessary to use the thesaurus directly while searching. Several synonym-switching relationships from the thesaurus are automatically duplicated in the index. These switching relationships generate messages during a retrieval session that refer the user from nonused terms to similar but permitted terms. These are the USE, USE AND, and USE OR cross references which appear in the printed thesaurus. Not only is the user referred to the proper term, but a document set will be created saving time in the search session (Figure 3).

Symbol	Meaning	
USE	USE	2/BUNKER OILS USE DE=RESIDUAL FUELS 7 ITEMS SAVED AS SET 2
USE AND	Combine all given terms	The system will automatically retrieve and combine appropriate terms. For example: 5/HIGH TEMPERATURE GAS TURBINES 74 USE DE=GAS TURBINES 33 AND DE=HIGH TEMPERATURE 7 ITEMS SAVED AS SET 5
USE OR	Select one or more of the following terms	6/ENERGY USAGE DO YOU MEAN ... .ITEMS. TERM A 80 DE=ENERGY CONSUMPTION B 23 DE=ENERGY DEMAND PICK LETTERS TO COMBINE

Figure 3 - System Generated Cross References

On-line retrieval in the Library system is performed either through searching the on-line index or through a "free-text" search of a document set, or by a combination of both methods.

The index is an alphabetical list of data elements that is created and updated with each data base update. Only data elements that are frequently requested in a reference search are pulled out and added to the index. Figure 4 shows those fields which may be searched directly on-line. Fields which are not indexed such as title, author, or report series may be scanned by free-text searching of the full record.

FIELD NO.	SEARCH MNEMONIC	NAME	RANGED FIELD
1	ID	RECORD ID	X
4	RED	RECORD ENTRY DATE	X
7	CS	CORPORATE SOURCE	
13	PD	PUBLICATION DATE	X
18	SL	SHELF LIST CODE	
22	LC	CARDEROCK OWNERSHIP	
24	LAN	ANNAPOLIS OWNERSHIP	
28	FG	FIELD/GROUP (BROAD SUBJECT AREA)	
29	DE (FOR RETRIEVAL) MDE (FOR SORT AND DISPLAY)	MAJOR DESCRIPTORS	
30	DE	SPECIFIC DESCRIPTORS	
31	DE (FOR RETRIEVAL) IDT (FOR SORT AND DISPLAY)	IDENTIFIERS (OPEN-ENDED TERMS)	
32	TYP	CENTER DOCUMENT TYPE	
33	WU	WORK UNIT NUMBER	
36	RD	RECLASSIFICATION DATE	
46	CCN	CIRCULATION CALL NUMBER	
48	CRS	CORRESPONDING CATALOGING RECORD NUMBER FOR CIRCULATION RECORDS	
49	LIB	CIRCULATING LIBRARY	
51	BR	BORROWER'S NAME AND CODE	
53	DD	DUE DATE	X
55	ILL	INTERLIBRARY LOAN	
61	LS	LOST	

RANGE	OPERATORS
EQ, IS, =	– EQUAL
GT	– GREATER THAN
LT	– LESS THAN
GE	– GREATER THAN OR EQUAL TO
LE	– LESS THAN OR EQUAL TO
NE	– NOT EQUAL TO
BT,/	– BETWEEN, ENDPOINTS INCLUDED
BX	– BETWEEN, ENDPOINTS EXCLUDED

Figure 4 - Indexed Fields

It is not necessary to precede subject queries with a field mnemonic. However, all other queries must be preceded with the field mnemonic.

Certain fields are indexed according to predefined numeric ranges. To provide more efficient retrieval these recorded fields are searched using relational operators such as GE (greater than), LE (less than), etc. The document sets are combined by enclosing, in parentheses, the set numbers with Boolean expressions.

The library data base is presently operational on the Center's CDC 6000 series computer system. In the near future it is hoped that the data base will be transferred to a minicomputer. Then response time will be faster and more economical.

Those who wish to use the Library system must obtain a Computer System USER NAME and ACCESS NUMBER, and a BASIS USER ID from the Library Data Base Administrator.

The BASIS USER ID defines which records in the data base may be seen and also provides the user with a personal "scratch pad" or "user file" for recording predesigned formats for selective dissemination of information (SDI) profiles and other commonly used search statements. This will be explained later. Figure 5 shows a typical log on and log off procedure.

```
NSRDC  6600 INTERCOM  V 4.6
DATE    04/21/80
TIME    12.04.20
LOGIN, CRPILIB09, SUP

!!!!!!!!!  ENTER ACCESS NUMBER -
COMMAND - ETL, 500

COMMAND - SCREEN, 80

COMMAND - FETCH, BASIS, BASIS

COMMAND - BASIS, ID=CRAD, DB=CRMD

BASIS   4.0  R26H  791002

WELCOME TO THE DTNSRDC LIBRARY DATA BASE
THE LAST UPDATE WAS 800409 AT 143855
ENTER YOUR REQUEST
  1/END

DTNSRDC LIBRARY DATA BASE USAGE TERMINATED

GOODBYE
COMMAND - LOGOUT

CPA      66.550 SEC
SS       80.269 SEC
EST. SYSTEM COST    $ 11.80
EST. CONNECT COST  $  6.00
CONNECT TIME   1 HRS.  12 MIN.
  04/21/80  LOGGED OUT AT 13.16.05.
```

Figure 5 - Logging On and Off

Figure 6 describes the most commonly used commands for information retrieval. There are many others, such as CLOCK, ABORT, EXPLAIN, LIST, which are described in full in the users manual.

BASIS COMMAND	FUNCTION	
BROWSE	TERM SEARCH OF ON-LINE THESAURI	
FIND	"STACKING" OF SEARCH PARAMETERS WITH BOOLEAN OPERATORS	
LOOK	LOOK (TERM)	6 ADJACENT TERMS
	LOOK*	COMMON STEM TERMS
	LOOK**	TERMS WITH SAME PREFIX (26 DISPLAYED)
SCAN	"FREE TEXT" SEARCH OF FULL RECORD	
SORT	ASCENDING/DESCENDING SORT ON ANY FIELD OR ANY OCCURENCE IN A FIELD	
SET	MODIFIES DISPLAY FORMAT, E.G., FIELD LABELS OR NUMBERS ON OR OFF	
DISPLAY	PRINTS RESULTS ON-LINE	
PRINT	PRINTS RESULTS OFF-LINE	
TITLE	TITLES ON OFF-LINE PRINT	

Figure 6 - BASIS Commands

Terms may be entered one at a time with a document set created for each term. However, it is more efficient to stack the requests in one complete Boolean expression.

The FIND command (Figure 7) allows a searcher to stack multiple requests with Boolean logic.

If the search statement is lengthy it may continue to a second line (a plus sign (+) and a carriage return are used to continue the statement). The FIND command will list all the interim sets and combine to display the final result. If you do not wish to see the interim sets, end the FIND statement with END NOLIST. Only the final results will be displayed. However, if you later decide you wish to see one or more of the interim sets, they may be recalled by "FINDING" that set number.

Many times we do not know the proper form for entering a search term. In a card catalog, it is possible to "thumb" through the cards at the approximate

```
   1/GEARS

      13 ITEMS SAVED AS SET 1

   2/PD GE 19650000

      7916 ITEMS SAVED AS SET 2

   3/FIND DEFORMATION OR HARDENED STRUCTURES OR STRESS* OR "LOADS(FORCES)"+
FIND...OR "FATIGUE(MECHANICS)" AND PD GE 19650000

*       70     3/  DEFORMATION
*        3     4/  HARDENED STRUCTURES
*      464     5/  STRESS (  27  TERMS COMBINED)
*      217     6/  LOADS(FORCES)
*      221     7/  FATIGUE(MECHANICS)
*     7916     8/  PD GE 19650000
*      757     9/  DEFORMATION OR HARDENED STRUCTURES OR STRESS* OR "LOAD+

  10/FIND DEFORMATION OR HARDENED STRUCTURES OR STRESS* OR "LOADS(FORCES)"+
FIND...OR "FATIGUE(MECHANICS)" AND PD GE 19650000 END NOLIST

*      757    16/  DEFORMATION OR HARDENED STRUCTURES OR STRESS* OR "LOAD+

  17/FIND 13

*      217    17/  13

  18/(1 AND 16)

      2 ITEMS SAVED AS SET 18
```

Figure 7 - FIND Command

alphabetic location of the desired term. It is not required for a searcher to know the precise format and spelling of a desired term. Remember that the thesaurus provides the index with a "synonym-switching" capability which directs you from an incorrect term to the preferred term.

In some cases it is helpful to browse through the on-line index to see how terms were entered as well as to see other terms with the same stem. The LOOK command (Figure 8) is used to display term lists from the data base index in three ways, showing: six adjacent terms, or terms with the same stem, or terms with the same prefix. Remember this on-line index includes terms from all indexed fields not just the subject term. For example, call numbers, corporate sources, or series numbers may appear in your stem or prefix searches.

Most search requests will be satisfied with searches through the data base index. This is an extremely efficient method because it does not look at actual data records. There are some drawbacks to this method, however.

1. Searches can be satisfied only if the document has been indexed under the entered term or

2. A search might be required on one of the data elements not picked up for indexing at all, such as limiting a search by number of pages or by personal author. A sequential search which looks at the actual bibliographic records in the master file may be used to overcome these drawbacks.

The SCAN command (Figure 9) is used to perform a "free-text" search on a document set and is used when direct index searches do not provide sufficiently specific results.

A SCAN command may be constructed in much the same way as a FIND command to form a complete search statement with Boolean logic. After the tests are performed, they will be combined. If you do not wish to combine the tests until you have seen the results of the SCAN, use ALSO instead of the Boolean expressions. Up to 5000 records may be scanned.

The command may total 1000 characters and may continue to a next line. All of the tests cited will be performed on one pass over the document set. For this reason, all desired tests on a specific set should be entered in one SCAN command.

The SCAN command can be used to do both word and character distance searching. Quite often it is useful to be able to search for any word with a given root or suffix. Special open characters to provide this capability and to allow pattern matching are used.

```
  19/LOOK GEAR

   .ITEMS.     TERMS
A         1   DE=GBU-2(GUIDANCE + CONTROL SYSTEM)
B         1   DE=GCBR
C         2   DE=GE SPE
***** YOUR TERM *****
D         1   DE=GEAR BOXES
E         3   DE=GEAR NOISE
F         5   DE=GEAR TEETH
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
  19/MORE


  19/LOOK GEAR*

   .ITEMS.     TERMS
A         1   DE=GEAR BOXES
B         3   DE=GEAR NOISE
C         5   DE=GEAR TEETH
D         1   DE=GEAR-GRINDING MACHINES
E         1   DE=GEAR-HOBBING MACHINES
F         4   DE=GEARBOXES
G        13   DE=GEARS
END OF TERMS WITH YOUR STEM
PICK LETTERS TO COMBINE


  19/LOOK GEAR**

   .ITEMS.     TERM
A         1   DE=GEAR BOXES
B         3   DE=GEAR NOISE
C         5   DE=GEAR TEETH
D         1   DE=GEAR-GRINDING MACHINES
E         1   DE=GEAR-HOBBING MACHINES
F         4   DE=GEARBOXES
G        13   DE=GEARS
H         1   DE=GEIGER COUNTERS
I         1   DE=GEL FILTRATION CHROMATOGRAPHY
J         2   DE=GEL PERMEATION CHROMATOGRAPHY
K         1   DE=GELLED ELECTROLYTE
L         3   DE=GELS
M         1   DE=GEMJR COMPUTER PROGRAM
N         1   DE=GEMS(GENERAL EQUATION MODELING SYSTEM)
O         2   DE=GEMS(MINERALS)
P         1   DE=GENDA COMPUTER PROGRAM
Q         1   DE=GENERAL AMERICAN TRANSPORTATION COMPANY
R         2   DE=GENERAL BENDING RESPONSE PROGRAM
S         1   DE=GENERAL DYNAMICS CORP(CT) ELECTRIC BOAT DIV
T         1   DE=GENERAL ELECTRIC CO(CT)
U         1   DE=GENERAL ELECTRIC CO(NY)
V         1   DE=GENERAL ELECTRIC COMPANY
W         1   DE=GENERAL ELECTRIC J79, CFG
X         1   DE=GENERAL ELECTRIC LM 2500 MARINE GAS TURBINE ENGINES
Y         1   DE=GENERAL ELECTRIC SHIPBOARD WASTE TREATMENT SYSTEM
Z         1   DE=GENERAL PURPOSE BOMBS
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
```

Figure 8 - LOOK Command

"FREE-TEXT" SEARCH OF THE FULL CATALOGING RECORD. SCAN STATEMENT MAY BE "STACKED" NOT TO EXCEED 1000 CHARACTERS.

DISTANCE SEARCH OPERATORS

W = N	THE WORDS MUST BE N WORDS APART
W < N	THE WORDS MUST BE < N WORDS APART
W > N	THE WORDS MUST BE > N WORDS APART
ADJ	THE WORDS MUST BE 0 WORDS APART
INCLUDES	INCLUDES THE WORDS OR STRINGS
INC	INCLUDES THE WORDS OR STRINGS
SS	INCLUDES THE WORDS OR STRINGS IN THE SAME SENTENCE
SF	INCLUDES THE WORDS OR STRINGS IN THE SAME FIELD
C = N	THE WORDS OR STRINGS MUST BE N CHARACTERS APART
C < N	THE WORDS OR STRINGS MUST BE < N CHARACTERS APART
C >N	THE WORDS OR STRINGS MUST BE >N CHARACTERS APART

EXISTENCE OPERATORS

PR	PRESENT
AB	ABSENT

OPEN CHARACTERS 26

*	MATCHES ANY NUMBER OF CHARACTERS OF ANY KIND
@	MATCHES ANY LETTER (A TO Z)
!	MATCHES ANY DIGIT (0 TO 9)
$	MATCHES ANY LETTER OR DIGIT
–	MATCHES ANY NON ALPHA-NUMERIC CHARACTER
?	MATCHES ANY CHARACTER

Figure 9 - SCAN Command

Figure 10 illustrates a few of the capabilities of the SCAN command, for example:

1. The * open character lets a user do suffix, prefix, and infix searches.
2. You may search for the presence or absence of a field or a particular occurrence field.
3. An equality test checks to see if the contents of a field or subfield are exactly the same as a user-supplied phrase. This differs from the simple SCAN command, which tests to see if the user-supplied phrase occurs anywhere in a given field or subfield.
4. The contents of two field elements may be compared using the relational operators.

SCAN COMMAND

AU AB	The AU field must be absent
AU=JONES	The AU field must be "JONES"
AU NE SMITH	The AU field must not be "SMITH"
ID=ABC*	The ID field must start with "ABC"
ID=*XYZ	The ID field must end with "XYZ"
ID=ABC*XYZ	The ID field must start if "ABC" and must end with "XYZ"
ID=@!!!	The ID field must be one letter followed by three digits.
II COMPUTER1@ED	Will retrieve from the TI field computerized or computerised.
DE CON*	The DE field must contain a word starting with "CON"
DE *ING	The DE field must contain a word ending with "ING"
DE CON*ING	The DE field must contain a word starting with "CON" and ending the "ING" with any number of middle characters.
TI,#AB INC COMPUT*	Either the TI field or the AB field contains a word starting with "COMPUT"
DE CON* W<6 COM*	The DE field must contain a word starting with "CON" that is followed within six words by a word starting with "COM"

```
31/SCAN=18 TI VOLATILE AND TI GEAR ADJ LUBRICANT* AND CN U !!!!!
*     1     31/     SCAN     18     TI VOLATILE
*     1     32/     SCAN     18     TI GEAR ADJ LUBRICANT*
*     1     33/     SCAN     18     CN U !!!!!!
*     1     34/     SCAN     18     TI VOLATILE AND TI GEAR ADJ LUBRICANT*
```

Figure 10 - SCAN Command Examples

For example, some records on the data base are not physically located in the library and, therefore, have no call number. The call number (CN) is the same as the record number (ID). A SCAN can be performed requesting that the ID be the same as the CN (SCAN ID=CN) to identify the number of such records in the data base.

The system generates error messages indicating where and what type of error has been made in the search statement. For example, if multiple fields are to be displayed, the fields mnemonics are separated by commas. The asterisk in Figure 11 points to the location of the error. A semicolon was used improperly in this example.

ERROR MESSAGES

```
   75/DISPLAY TI;MDE,DE,IDT
USER ERROR
DISPLAY TI;MDE,DE,IDT
          *

USER ERROR.  SYNTAX ERROR IN FIELD/MAP NAMES LIST


   26/FIND BUCKLING OR "FATIGUE(MECHANICS) OR "FRACTURE(MECHANICS)"
USER ERROR
GUE(MECHANICS) OR "FRACTURE(MECHANICS)"
                  *

USER ERROR.  EXPECTING LOGICAL OPERATOR, PARENTHESES, OR END


   62/SCAN LUBRICANT,TRANSMISSION*
           *

USER ERROR.  NO SUCH FIELD NAME/NUMBER
```

Figure 11 - Error Messages

After retrieving a document set and before reviewing the results via the DISPLAY or PRINT commands, it is sometimes helpful to first sort the document records in some meaningful order. The default order of records in a document set is numerically by record number.

With the SORT capability, a user can sort a document set defined by any previous line number in either ascending or descending order by any field, by occurrence within a field, or by any combination of fields.

The records not containing the sort key will appear first in the listing or, if sorted in descending order, will appear last.

If you do not wish to display the records that do not contain the sort key, the drop parameter may be added at the end of your SORT statement. Figure 12 shows some uses of the SORT command.

SORT Command

SORT TI	Will sort the last document set alphabetically by title
SORT Line=7 TI	Will sort the document set defined by line 7 alphabetically by title
SORT Line=2 MDE,PD,TI	Will sort line 2 by major descriptors; within major descriptors by publication date; and then by title
SORT PD/D,TI/D	Will sort the last set in descending chronological order of publication date; and within each date, in descending alphabetical order of title (Z to A)
SORT FG(1)AU(1)	Sorts on the first occurrence of the field/group and author fields
SORT DE(*)	Sorts on each subject descriptor** (a title with three subjects will appear three times)
SORT TI(1:80)	Sorts on the first 80 characters of the title (the default is the first 60 characters)
SORT CS(*)	Sorts on all corporate authors
SORT TI(1)(1:150)/D	Sorts in reverse alphabetical order on the first 150 characters of the first title
SORT FG(1) DROP	Will sort records by the first occurrence of the field/group field and will drop from the set any records for which the first FG was omitted
SORT Line=1 PD/D DROP	Will sort the first document set so that most current titles will be placed first; records showing no publication date will be dropped

Figure 12 - SORT Command

With the SET command, a searcher may change values for parameters that control the mode of the terminal session. After logging out, the values of all parameters revert to their default values set by the Data Base Administrator. For example, the default for field name or label is "on"; if you do not wish to see the labels, enter SET HEAD OFF.

It is sometimes useful to limit your search to a portion of the data base. For example, if you were interested in work sponsored or performed by the Navy, you

would form a set of all Navy-authored reports and declare that set to be the "universe." Each set selected thereafter will be effectively ANDed with the universe. Figure 13 shows the use of the SET command.

SET COMMAND

FIELD	SET FIELD NUMBERS ON/OFF
HEADINGS	SET HEADING LABELS ON/OFF
ITEMS	SET RECORD COUNT ON/OFF
TALK	TALK LEVEL: 0=EXPERT, 1=STANDARD, 2=NOVICE
UNIVERSE	SET SEARCHING TO A SUBSET OF THE DATA BASE UNIV=1 MEANS ONLY USE THE SUBSET DEFINED BY LINE 1 FOR FINDING TERMS IN THE DATA BASE INDEX

SEARCH EXAMPLE: 3/CS=NAVY DEPT

341 ITEMS SAVED AS SET 3
4/SET UNIV=3

4/ENERGY CONSERVATION
25 ITEMS SAVED AS SET 4
IN YOUR DATA BASE SUBSET, LINE=3

Figure 13 - SET Command

Six bibliographic forms (shown in Figure 14) for listing literature search results are available for display or for printing off-line. They sort records by call number rather than by record number to facilitate the physical retrieval of the desired documents. If desired, formats 5 and 6 may be sorted by publication date in descending order. Format 1 is useful to add to a lengthy literature search to provide the user with an order form for items he may wish to see.

The fastest way to review selected records at your terminal is with the DISPLAY command. The fields may be field mnemonics, or ALL. The item numbers may be ALL or a range of numbers. Another important function of DISPLAY is to print a single record from the MASTER file.

The PRINT command will print search results on an off-line high-speed printer. It allows a user to title bibliographies with the TITLE command, which should be entered before the PRINT command.

1

```
VM 753.S 671978I          LIBRARY: C/REF AN          RECORD: 4275
```

2

```
VM 753.S 671978I          LIBR: C/REF AN          00/1979 REC: 4275
     USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA,
     1978
```

3

```
VM 753.S 671978I          LIBR: C/REF AN          00/1979 REC: 4275
     USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA,
     1978

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
```

4

```
     VM 753.S 671978I          LIBRARY: C/REF AN
USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER BEARING
FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA, 1978
     00/1979          PP.20          SASAJIMA T
     SNAME-T/R-S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.
```

5

```
     VM 753.S 671978I          LIBRARY: C/REF AN
USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
BEARING
FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA, 1978
     00/1979          PP.20          SASAJIMA T
     SNAME-T/R-S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
     IDENTIFIERS: BEARING FORCES
```

6

```
     VM 753.S 671978I          LIBRARY: C/REF AN
SASAJIMA T                     SNAME
MITSUBISHI HEAVY INDUSTRIES LTD(JAPAN)
     USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF
PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH,
VA,
     1978
     00/1979 PP.20     SNAME-T/R
                       -S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
     IDENTIFIERS: BEARING FORCES
```

Figure 14 - "TITLES" Bibliographic Formats

Prints are automatically routed to the off-line printers at the computer site unless they are specifically routed to another printer. As shown in Figure 15, the printed search will include a listing of the document sets created in the search session.

Because of the recurring nature of many functions, the library system provides a capability called PROFILE which allows users to save search statements, output requests, etc., or to save a search session for later completion, for example, a demonstration.

There are two profile files available (1) the data base profile file which consists of profiles available to all searchers and may be changed only by the Data Base Administrator, and (2) the profile files associated with each BASIS USER ID. The six bibliographic formats mentioned earlier for listing literature search results are data base profiles.

Every user is provided a profile file associated with his or her BASIS ID that can be used for setting up and executing one's own profiles.

Several PROFILE commands exist to create, edit, execute, delete, and manipulate profiles.

Profiles may contain parameters that are enclosed in square brackets and a value may be supplied for these at execution time. Profiles may execute other profiles.

The MAKE command is illustrated in Figure 16 and allows a user to build a profile for later execution without actually retrieving or using any document sets. The SDI profiles or common search requests such as unclassified records only or topics such as displacement ships may be created and executed at a later date.

The "/EXECUTE" and the "Profile Name" will execute profiles that had been created. Enter "/DELETE" and the profile name will delete that profile.

Individual user ID profiles may be accessed only by logging into the Library Data Base with the appropriate user ID.

This concludes my brief survey of the retrieval feature of the Library System.

```
  19/DISPLAY CN,TI,AU FOR 1

ITEM 1

CALL NUMBER          VM 605.M 42
TITLE                MATERIALS FOR MARINE MACHINERY
PERSONAL AUTHOR      FREDERICK S H; CAPPER H


  20//5

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
LINE?18


     U059125                          LIBRARY:       AN
INVESTIGATION OF A VOLATILE ADDITIVE TO A GEAR LUBRICANT FQR HIGH
PERFORMANCE MECHANICAL POWER TRANSMISSIONS
     00/1965          PP.82                AKIN L S
     DOUGLAS-PAPER-3217
     PRESENTED AT THE AMERICAN GEAR MANUFACTURERS ASSOC ANNUAL
     CONVENTION, DENVER,CO,1965.



     40/TITLE GEAR STRESSES AND LOADS

     40/PRINT =18 BIB FOR ALL


   ORDER NUMBER 800421-120653-CRUA     -001-001 WITH 2 OF 2 ITEMS
   WILL BE PRINTED OFF-LINE

     40/ROUTE(RID="001")


   PLEASE ENTER YOUR MAILING ADDRESS TO LABEL YOUR PRINTS.
   SEPARATE EACH LINE WITH A COLON.
   ADDRESS...LARRY BECKER CODE 1720


   LARRY BECKER CODE 1720


   CORRECT ADDRESS (YES NO)?
       /YES

   ORDER NUMBER 800421-120653-CRUA     -001 ROUTED (1 PRINTS).
```

Figure 15 - DISPLAY, TITLE, and PRINT Commands

```
                              PROFILE

7/    /MAKE DISPLACEMENT SHIPS (CURRENT)

ASSUME YOU WANT TO ENTER LINES OF TEXT
ENTER = TO TERMINATE AND

100=SHIPS

110=FIND SUBMARINES OR SURFACE EFFECT SHIPS OR      ±
FINE ...HYDROFOIL*

120=PD GE  DATE

130=(1 AND 3 AND NOT 2)

140==
    -

==> EXIT

10/   /DISPLACEMENT SHIPS(CURRENT)

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
PD?   19740000

10/   SHIPS
      1040 ITEMS

11/   SUBMARINES OR SURFACE EFFECT SHIPS OR
      312 ITEMS

12/   PD GE  19740000
      48 ITEMS

13/   (10 AND 12 AND NOT 11)
      44 ITEMS

NOTE:  The profile is executed and the line numbers
are adjusted automatically.
```

Figure 16 - Profile Creation

BUSINESS SESSION

MINUTES OF THE 38TH CONSATL MEETING
23-25 APRIL 1980

The 38th workshop and meeting of the Council of Navy Scientific and Technical Librarians (CONSATL) was held on 23-25 April 1980 at the David W. Taylor Naval Ship Research and Development Center, Bethesda, Maryland. Forty-five representatives from 29 member installations were in attendance.

The workshop officially began at 0900 on Wednesday, 23 April, with welcoming remarks by the host, Michael Dankewych. The group was then officially welcomed in turn by Miss Clara Bias, Head, Technical and Administrative Services Department, and Captain M. V. Ricketts, Commander, DTNSRDC. Dr. Dankewych concluded the opening by introducing Ms. Myrtle Rhodes, CONSATL chairperson.

The technical session began with a talk by Dr. Dankewych entitled "User Needs for Library Automation." Following this, Sherry Martin spoke on the subject of library systems analysis. Ms. Martin, former librarian at the DTNSRDC Annapolis Laboratory, is the computer systems analyst who designed the DTNSRDC library's automated system. Ms. Martin then introduced Kenneth F. Szczesny of Battelle, who described BASIS, the generalized computer software package which forms the base of the DTNSRDC system. This concluded the morning technical session.

The afternoon session began with a continuation of Ms. Martin's presentation on library systems analysis, emphasizing the design and development of the system. Norma Dobay, Head, Cataloging Unit, concluded the session with a description of the database input.

The second day of the workshop began with Dr. Dankewych's introduction of James Riley, Head, Federal Library Committee, and John Cummings, Head, Naval Academy Library. The technical session began with a detailed description of the automated circulation system by Alvetta Smythe, librarian at the Annapolis Laboratory, and Margaret Bowman, Aero librarian. Ms. Martin then discussed reports generation, a byproduct of the system. She then, at Dr. Dankewych's request, presented a proposal to use the DTNSRDC automated data base as a basis for a shared Navy system. She also suggested the possibility that this could be put on the NALCON computer network. The proposal was to be discussed in the business meeting. The session continued with a talk by JoAnne Lappin, Head, Reference Unit, on the automated information retrieval features of the system. A film entitled "Research to Reality" describing the work done at DTNSRDC concluded the morning session.

A luncheon meeting was held at the DTNSRDC cafeteria. Seated at the head table were Myrtle Rhodes, Dr. Dankewych, Stanley Kalkus, Director of Navy Libraries, Richard Barrows, Head, Navy Judge Advocate General Library, Marshall Hughes, Head, Naval Surface Weapons Center Libraries, and James P. Riley.

Mr. Kalkus spoke on the feasibility of a union list of Navy periodicals, indicating his feeling that one was not needed for the Washington-Baltimore area because other such lists existed; however, he felt that a need existed for one for all major Navy libraries. Sigma Data Corp. has provided an estimate of $30,000 to $40,000 to prepare such a union list. He asked for opinions on the worth of such a project. Meanwhile, the Naval Research Laboratory will continue to maintain and possibly expand the experimental list in which six libraries presently participate.

In about a year, the Navy Department Library is expected to move into a renovated historical building at the Navy Yard. At that time the Naval Historical Foundation Library will be merged into the Navy Department Library. Mr. Kalkus hopes to host the CONSATL meeting in FY 1982.

Frances Chang, Office of Naval Research Library, raised the question of networking rather than a union list. Dr. Dankewych said that was not feasible at this stage, that too much planning would be involved for a successful tradeoff. Peter Imhof suggested that some positive discussion be held on the feasibility of the various Navy libraries maintaining certain areas of responsibility in journal holdings.

Mr. Riley said that networking was a popular subject in the Federal Library Committee. He cited the example of NOAA, which has out an RFP to develop a network of minicomputers for all NOAA libraries. He also described an online interlinked system between OCLC and GPO, the purpose of which is to establish a Federal bibliographic data base for unclassified Federal publications under their purview. This is presently in the negotiation stage.

Following the luncheon meeting and a group photograph, CONSATL members convened for the business meeting, with Myrtle Rhodes presiding. Following self introductions, Earl LaFon led a discussion on contracting out library services. The discussion revolved around the impact of OMB Circular A-76, which states that reference services are to be examined to see if it is cheaper to contract them out. The Commercial Industrial Inventory (Category T82003 -- Administrative Support Services), in which reference libraries are listed, requires all libraries to respond to the feasibility of retention in the Government or being contracted out.

Mr. LaFon attended a meeting earlier in the year which resulted in a decision to prepare a position paper on the effect of A-76 and handcarry it to the Director of Navy Laboratories. Several arguments against contracting out were advanced. Among them were the possibility of exemption if Navy libraries can prove that they are part of R and D, which is exempt; the presence of sensitive and classified information, to which contractors are not privy; and arguments related to the loss of continuity with contractors, high turnover, short range interests, and the possibility of low quality contractors; the contention that reference services are personal services; and the possibility of compromise of the contracting or bid process itself.

Dr. Hughes placed emphasis on the cost effectiveness of the operation, that it is best done in-house. He mentioned that NSWC was the first library to be reviewed for contracting out. He said that there were two processes in A-76 - review (in which a circumstance code is assigned to see if the library should be studied) and study (in which the cost comparison is performed). He stated that a prime candidate for contracting out is a general library with a budget under $100,000 if no incumbent civil servant is operating it. He cited Section 806 of the Appropriations Act of 1979, which says that RDT and E cannot be contracted out, and Section 802, which says that a civil servant's job cannot be contracted out.

Mr. Riley said that the Federal Library Committee began meeting in January 1980 on the need to have a united position on contracting out. A proposal to have a contractor do a study was felt infeasible, so they plan to ask John Lorenz to conduct a cost comparison study, as is being done by the Commerce Department.

Pearl Robinson suggested that CONSATL prepare a single position paper for all Navy Libraries and take it to Perry Newton's office. Dr. Hughes said that each activity must submit its own even though all might have a single position. A discussion followed concerning coordination of such a position paper.

Ms. Robinson moved to have CONSATL prepare and send a point paper via the Director of Navy Libraries to CNO with a copy to Perry Newton. Lois Savage seconded the motion, which was passed. Mr. Imhof will coordinate the paper. Dr. Hughes will work with Mr. Imhof and Mr. LaFon will assist as needed. The deadline for input to Mr. Imhof is 9 May 1980.

Bonnie Davis suggested that Mr. Imhof serve as a "hotline" for information related to the subject. It was agreed that Mr. Imhof (AV 297-2357, comm. (202) 767-2357) or any of the others with expertise in the area be contacted when necessary. Other DoD contacts are Ginger Olmdahl (Army) and Eleanor Driscoll (Air Force). Dr.

Hughes stressed that in the contract the level of requirement to operate properly must be spelled out clearly. In the Navy interpretation, the contracting officer is likely to be the procurement officer and the contracting officer's technical officer will probably be the librarian. In order to distinguish Navy-operated from contractor-operated libraries, Mr. Kalkus will send out his updated list of Navy libraries, which contains no contractor-run libraries, first to Mr. Imhof and subsequently to all CONSATL members.

Because this workshop and meeting concerned itself so heavily with the subject of contracting out, Dr. Dankewych raised the question of whether or not to invite contractors to the meeting. Mr. Barrows, a CONSATL legal advisor said that contractors should be invited to the workshop but not to the business meeting.

Mary Barravecchia moved to amend the charter to say that only Government employee members with the right to vote be present at planning meetings. Mr. Barrows seconded the motion. After discussion, Ms. Barravecchia amended her motion to state that it should be reviewed overnight by Mr. Barrows for proper syntax and legality.

Ms. Robinson moved to adjourn the meeting until the following morning, Mr. LaFon seconded the motion and it was passed.

The final part of the business meeting was convened on 23 April 1980 at 0800; Myrtle Rhodes, presiding. The minutes of the 37th meeting were passed on a motion by Sue Roach. The minutes of the 36th meeting were passed on a motion by Pearl Robinson and a second by Earl LaFon.

Mr. Barrows reported on his review of the bylaws and suggested the following amendment, which is a replacement of the present Chapter II.A.:

> "The Agency Representative to the Council shall be the Agency Employee responsible for the library operation or his or her designee who must be employed by the Agency. Only such representatives shall be permitted to attend a business meeting."

The motion was passed on a move by Gerald Coble and a second by Pearl Robinson.

Ms. Robinson reported that, because it was Navy's turn to host the Military Librarians Workshop, it would be held at the Naval Postgraduate School, Monterey, CA, 14-17 October 1980. Each service may send 40 representatives. Workshop committee members and those making presentations are not counted against each service's complement. The host agency is responsible for sending out the invitations.

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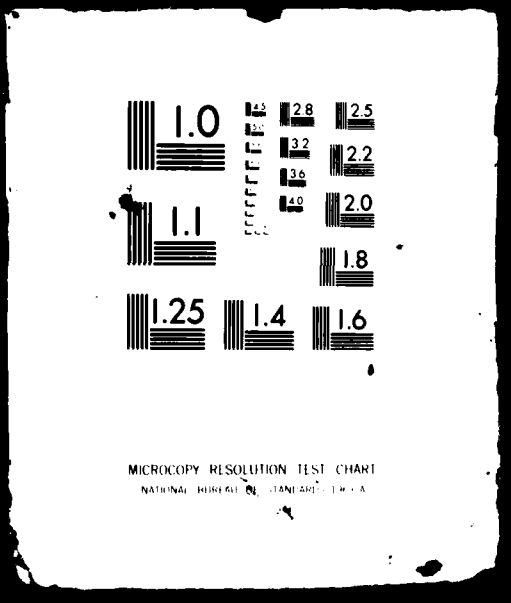

Earl LaFon reported that on 1 March 1980 eleven West Coast librarians met at the Naval Postgraduate School and decided to form their own group.

Stan Kalkus indicated that there was nothing new to report on the White House Conference.

Pete Imhof said that the SHORSTAMPS program was still bottled up, to the best of his knowledge. Gerry Coble thought that they were about ready to go out with a letter to the activities with guidelines on staffing based on last year's survey.

Ms. Rhodes opened the floor to discussion on Dr. Dankewych's networking proposal. Dr. Dankewych requested that his ad hoc committee on networking be disbanded and a formal committee be established in its stead. The purpose of the committee would be to discuss the possibility of using DTNSRDC's system for a Navy network. Any library joining the system could call DTNSRDC for assistance. Successful results should be presented to Perry Newton to show him how Navy libraries are implementing and sharing technology. Mr. Imhof suggested that the DTNSRDC system could be the basis of a union list of periodicals. It was suggested that Dr. Dankewych meet with the Long Range Planning Committee at MLA in October.

Dr. Hughes made a motion to establish a CONSATL committee to study the feasibility of a Navy network, that Dr. Dankewych chair the committee, and that any interested CONSATL member join the committee. It was seconded by Mr. Imhof and passed. Other committee members are Marshall Hughes, Frances Chang, Peter Imhof, Earl LaFon, Mary Barravecchia, and John Cummings.

Ruth Rogers, librarian of the Naval Aerospace Medical Research Laboratory in Pensacola, FL, will host the meeting next spring.

The meeting continued with reports from standing committees.

ADP and Advanced Processes: Peter Imhof said that there was a microprocessor in Perry Newton's office. It can do minor tasks only but is good for increasing productivity. The NRL has a COM union list but the problem is that participants must input in machine readable form, which introduces computer problems. Alternatives to be considered are to forget about a union list altogether, to continue the present method, to contract it out, or to use DTNSRDC's BASIS as an on-line union list. He stressed that agreements to share resources must be formal. He suggested centralized acquisitions and processing as a possibility for resource sharing. The new Networking Committee was tasked to investigate library responsibilities for certain journal holdings.

History and Archives: John Cummings reported that he had taken custody of the archival material. It was decided that CONSATL archives will be maintained at the Naval Academy for the forseeable future. Records will be organized, attempts will be made to fill in gaps, and the chair will be kept advised of the outline of the contents. Archival material should be sent to John P. Cummings, Associate Director, Nimitz Library. U. S. Naval Academy, Annapolis, MD 21402.

Long Range Planning: Pearl Robinson and Earl LaFon said that CONSATL should play a key role in finding ways to present a different image to management and also in information management itself. Ms. Robinson suggested looking into contracting, automation, and resource sharing. Mr. LaFon suggested restructuring CONSATL, reactivating the program committee, and having an active West Coast group separate from the East Coast group.

Lois Savage moved to amend the charter to lengthen the terms of the chairperson and secretary to two years beginning with the new incumbents. The motion was seconded by Dick Barrows and passed.

After some discussion, it was agreed that the West Coast group would operate independently throughout the year but remain under the "umbrella" of the formal CONSATL organization.

Bonnie Davis moved to establish a Program Planning Committee whose membership would vary from year to year. The purpose of the committee is to make long range plans for meetings and workshops. The Long Range Planning Committee will automatically be members of this committee. The motion was seconded by Sue Roach and passed.

The Long Range Planning Committee (Pearl Robinson and Earl LaFon) will take on the responsibility of the newsletter. The suggested next issue date is 15 June. Input is due to either member by 1 June. The committee will determine the frequency of issue.

Peter Imhof said that no interest has been displayed in the surplus journal list. It was decided to let the list drop.

Membership: Stan Kalkus reported that no current membership list exists. He said that Frances Rugen is to mail a copy of the list she has been updating to Myrtle Rhodes. Mr. Kalkus's roster of Navy librarians lists contract monitors but not contract librarians. Myrtle Rhodes raised the issue of proper identification of contractors at future CONSATL meetings and their access to the workshop proceedings. Bonnie Davis suggested issuing the minutes of the business meeting as a supplement to the workshop proceedings. Lois Savage suggested that the designation "Member" be put on badges issued to workshop attendees who are CONSATL members.

Microforms: Lois Savage and Carol Jacobson proposed disbanding the committee because both felt it had served its useful purpose. Nannette Pope moved to disband the committee and use other resources to pass on pertinent information. It was seconded by Marshall Hughes and passed.

Myrtle Rhodes reminded members that the publication "How to Find It" is presently being updated. Anyone with input is encouraged to submit it promptly to the contractor, the Institute for Defense Analyses (IDA), telephone (703)558-1456.

Procurement: Gerry Coble reported on GSA FSC 76, Part 1, which describes multiple award schedules for publications. His information is that all new schedules will be multiple award schedules. Background information may be found in the minutes of the 36th CONSATL meeting, held at CNETS, Pensacola, FL, 17-19 April 1979. Peter Imhof reported that NRL will be trained on OCLC procurement procedures in June and October of this year. Mr. Coble said that Key Book has a cataloging service at $0.40/book but that he has experienced long delays in getting cards. He also said that he had experienced supply problems on the Navy mandatory periodicals contract. Preparation of a directive on this subject should be discussed by NAVMAT libraries only. Earl LaFon will work on a draft directive.

Liaison to Federal Library Committee: Stan Kalkus will ask FLC to put all Navy libraries on distribution for the FLC Newsletter. He said that it is important for Navy FLC members either to attend FLC meetings or send him their vote proxies.

He also stated that a new Navy library recently opened at the Naval Weapons Station, Seal Beach, CA. An interesting note is that the Navy facility at Keyport, WA, has its librarian in the engineering series. The 1410 standards are still being worked on. There should be more information by the time MLW meets in Monterey in October.

Training: Bonnie Davis reported that the Acquisitions module of the home study training program should be out by December. Mary Jane Brewster should have the Cataloging module ready early next spring. November is the projected time for a list of courses available on cassette. She is still looking for someone to prepare the Reference module. Volunteers should call her at AV 364-4738 or (301)743-4738.

Statistics: Mary Barravecchia, reporting for David Hanna, agreed that there was a need for some new types of statistics. The committee will send out a questionnaire asking for same.

Alice Cranor reported that CONSATL funds, as of 31 March 1980, total $462.33.

Myrtle Rhodes introduced Alice Cranor, Naval Intelligence Support Center, the incoming chairperson, and Bonnie Davis, Naval Explosive Ordnance Disposal Facility, the incoming secretary. Both will serve for two years.

After a final farewell by Clare Bias, the meeting was adjourned.

Respectfully submitted,

Alice T. Cranor

ALICE T. CRANOR
Secretary

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