

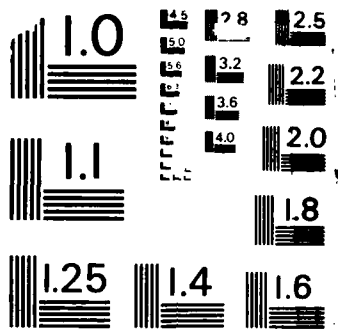
NO-A190 414 DATA BASE DESIGN AND IMPLEMENTATION(U) JAYCOR VIENNA VA 1/1  
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# DATA BASE DESIGN AND IMPLEMENTATION

16 June 1987

**DTIC**  
**ELECTE**  
JAN 14 1988  
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In Response to:

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Deliverable A005 & A006

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## 1. Database Design

JAYCOR has determined that the NCARAI Library requires a database containing the holdings of its collection in order to make more efficient use of both the Library and its resources. Bibliographic information contained in the database should conform to accepted Library procedures, namely the Library of Congress classification scheme and the AACRII cataloging. The OCLC database and LS2000 provide the resources necessary to catalog and manage the circulation of library materials. OCLC also promotes standardization in cataloging by providing LC cataloging obtained for the Library of Congress and other libraries participating in the OCLC system.

OCLC was established in 1967 to develop a cooperative, computerized regional network for its 54 Ohio member college libraries. The system has expanded since to a database containing bibliographic information created by the cooperative cataloging efforts of over 3,500 participating libraries nationwide. OCLC's database is the largest machine-readable file of bibliographic information in the world and is continually growing.

LS2000 system is an integrated online system that provides catalog access, bibliographic control and circulation control. It was installed at the main NRL Library in 1986 and obtained for the NCARAI Library through NRL at no cost. The LS2000 system will provide access to the NCARAI catalog for all researchers at the Center via terminals.

JAYCOR determined that interfacing with OCLC and LS2000 provides a fast and economical way to catalog, classify, and organize the materials currently owned by the Library. OCLC provides state-of-the-art cataloging from a database which includes the entire collection of the Library of Congress. LS2000 provides library patrons with an easy-to-use catalog, making the resources of the NCARAI Library available for their research activities.

## 2. Using the Database System

To locate a record in the OCLC Online Union Catalog, you must enter a search key which identifies a particular item and which index file to search—author, title or author-title, etc. The format of the group of characters in the search key indicates to the system which file to search. The attached list from the OCLC Manual for Searching the Online Union Catalog gives examples of search keys. The system searches the appropriate file to locate the corresponding record. Each record in the Online Union Catalog pertains to a separate bibliographic item and contains cataloging and classification information for that work—much the same as a typed or printed catalog card but in machine-readable form. Once a record has been located, the bibliographic information can be edited to reflect local needs.

Using the OCLC software version 4.0 and the M300 workstation, records can be downloaded into a SaveScreen file. These data files can be manipulated by DOS commands to create bibliographies or to add records to the local database. Complete procedures are described in the OCLC M300 Guide to Operations. This capability enables records to be downloaded from OCLC to a data diskette. Records can be edited offline and then uploaded to LS2000 thus eliminating the necessity of manually inputting individual records into the catalog.

Patrons who wish to search the online catalog are able to search from their own terminals by logging onto the LS2000 system. Patrons may search by author, title and



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subject as well as call number and corporate or conference name. The most powerful search, however, is a keyword search which searches a particular word as it is used throughout the system— author names, subject headings, titles, etc. The LS2000 system is menu driven and requires little assistance to master. For more detailed instruction in the procedures for searching LS2000 a Users' Guide to the Library System/2000 (LS2000) is available.

### **3. Database Implementation**

JAYCOR has installed and implemented OCLC and LS2000 in the NCARAI Library. OCLC searching is performed on an OCLC M300 workstation. Searching LS2000 is performed on a Televideo 950 terminal using the VAX 11/780 at the NCARAI. Each patron wishing to access the catalog must be registered and assigned a password. After that the patron may use his own terminal to access LS2000. A variety of terminals are recognized by the system using the VAX. Using the "cu" program each patron may call up the system and search both the NCARAI and NRL collections (on the VAX, use the "man cu" command for more information on the usage of this command). The Users' Guide to the Library System/2000 is available for new users.

All references are available for use in the NCARAI library.

References

Anonymous, "*OCLC MS00 Guide to Operations*", 4th Edition, Online Computer Library Center, Inc, 1987

Anonymous, "*User's Guide to the Library System/2000 (LS2000)*", Online Computer Library Center, Inc, 1987

Anonymous, "*cu -- Call Unix*", Unix Programmer's Manual, Section I, 1984 (as modified by JAYCORO).

Searching the Online Union Catalog G79-1/2  
1. Introduction

TABLE 1-1. Summary of Index Files and Search Keys

| Index File                 | Indexed Fields and Subfields   |  | Search Key Format                         | Example                              | Search Key    |
|----------------------------|--|--|---|--------------------------------------|---------------|
| LCCN                       | 010 *a   | 010 *z   | 1 or 2 digits, hyphen, 1 to 6 digits      | 72-4519                              | 72-4519       |
| ISBN                       | 020 *a   | 020 *z   | 9 or 10 digits                            | 0-87779-329-8                        | 0877793298    |
| ISSN                       | 022 *a<br>022 *z   | 022 *y   | 4 digits, hyphen, 4 digits                | 0024-2527                            | 0024-2527     |
| CODEN                      | 030 *a   | 030 *z   | 5 or 6 characters                         | AISJB 6                              | aisjb6        |
| control number             | OCLC:  | 019 *a   | number sign, 1 or more digits             | 4667162                              | #4667162      |
| Government Document Number | 086 *a   | 086 *z   | "gn:", 1 or 2 letters, 1-10 digits        | GA 1 13:MWD-76-109                   | gn:gall376109 |
| Music Publisher Number     | 028 *a   | 262 *c   | "mn:" 1 or 2 letters, 1-10 digits         | IC 063 30108                         | mn:ic0633108  |
| Title                      | 130 *a+p<br>212 *a<br>222 *a<br>240 *a+p<br>243 *a+p<br>245 *a<br>246 *a<br>247 *a   | 440 *a<br>730 *a+p<br>740 *a<br>780 *t<br>785 *t<br>830 *a+p<br>840 *a<br>873 *a+p | 3,2,2,1<br>3,2,1,1<br>3,1,2,1<br>3,1,1,1  | Speak easy,<br>speak free.           | spe,ea,sp,f   |
| Name/<br>Title             | lxx *a*b*n / 240 *a<br>lxx *a*b*n / 243 *a<br>lxx *a*b*n / 245 *a<br>lxx *a*b*n / 740 *a<br>240 *a / 245 *a<br>(if record has no lxx)<br>7xx *a*b*n / 245 *a<br>87x *a*b*n / 240 *a<br>87x *a*b*n / 243 *a<br>87x *a*b*n / 245 *a<br>87x *a*b*n / 740 *a<br>(*b applies to corporate and conference names only; *n applies to conference names only) |  | 4,4<br>4,3<br>3,4<br>3,3                  | Michener,<br>James A.<br>Centennial. | mich,cent     |
|                            | / 245 *a<br>(if record has no lxx or 240)  |  | ,4<br>,3                                  | Burnin'                              | ,burn         |
| Personal Name              | 100 *a<br>700 *a   | 705 *a<br>870 *a   | 4,3,1 4,2,1 4,1,1<br>4,3, 4,2, 4,1,       | Heinlein,<br>Robert A.               | hein,rob,a    |
| Corporate Name             | 110 *a+b<br>111 *a+b*n<br>710 *a+b<br>711 *a+b*n   | 715 *a+b<br>871 *a+b<br>872 *a+b*n   | =4,3,1 =4,2,1 =4,1,1<br>=4,3, =4,2, =4,1, | Royal Ontario<br>Museum.             | =roya,ont,m   |
| Government Document Number | 086 *a   | 086 *z   | "gn:", 1 or 2 letters, 1-10 digits        | GA 1 13:MWD-76-109                   | gn:gall376109 |



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