

# The State Library and LAMBDA

Eunice P. Drum, Joel Sigmon, and Denise Sigmon

## Introduction

From April 1 through September 30, 1982, the North Carolina State Library participated in a field test of the Southeastern Library Network's LAMBDA system. (LAMBDA is an acronym for Local Access to and Management of Bibliographic Data and Authorities.) Ten other libraries, including seven academic, one medical, one public, and one special, also participated in the test. The libraries in the test group represented a cross section of the SOLINET membership.

The State Library took part in the field test to demonstrate LAMBDA to other North Carolina libraries and to evaluate its usefulness in establishing an automated statewide network. LAMBDA has been demonstrated by the State Library staff to over one hundred librarians from twenty-one libraries in North Carolina. These demonstrations were well-received and were intended to illustrate the potential of an on-line system with capabilities similar to LAMBDA for the proposed North Carolina library network.

LAMBDA offers four distinct services: reference support (including a user friendly patron access mode), institutional bibliographic data base management, authority control, and editing of holdings information. Each of these services is discussed later in the context of its routine use by the various areas of the State Library. LAMBDA is available from 9:00 a.m. to 10:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday.

The State Library's OCLC archival tapes are loaded into LAMBDA weekly. In order to save money and computer storage space, linkage bibliographic records are used rather than the State Library's own records. Thus, if a record for a particular work already exists in the data base, the State Library's holdings are simply attached to

that record. Of course, the State Library's record is loaded when no other record for the work is already in the data base.

The following statistics show the number of records reviewed, the number of changes made, and the number of searches performed during the test period:

Total records reviewed	17,572
Bibliographic records changed	2,114
Authority records changed	1,651
Holdings records changed	287
Total records not changed	13,807
Reference searches	1,127

As indicated by the high number of records requiring no change (79 per cent), the integrity of the data base is quite good. Relatively few holdings records were changed because the capability of editing holdings information was not available at the beginning of the test period.

Since the field test, LAMBDA has been incorporated into the daily activities of the Interlibrary Services Branch, the Reference Services Branch, and the Technical Services Section of the State Library. A description of the hardware used, the training required, and the application of LAMBDA to State Library routines follows.

## Hardware

Two of OCLC's Beehive 105 terminals provided access to LAMBDA during the field test and are currently used by the Technical Services Section. Each terminal is connected to a General Electric Terminus 1232 printer. A Codex MX2400 modem links both terminals to a dedicated telephone line for data transmission. A switching mechanism allows the terminals to be connected interchangeably with OCLC or LAMBDA.

Two Burroughs ET 1100 video display terminals were installed in the fall of 1983 for use by the Interlibrary Services Branch and the Reference Services Branch. One terminal is in the INWATS office of the Interlibrary Services Branch; a second terminal is in the main reading room. Both terminals are served by a Codex MX2400 modem housed in INWATS. A dedicated tele-

Eunice P. Drum is Chief of Technical Services for the Division of State Library in Raleigh. Joel Sigmon is INWATS Librarian in Interlibrary Services for the Division of State Library. Denise Sigmon is Acquisitions Librarian in Technical Services for the Division of State Library.

phone line to SOLINET is used for data transmission. (Dial access to LAMBDA is available, but a dedicated line is more practical for the State Library's purposes.) Each terminal is connected to a NEC Spinwriter 7715 printer. Unlike the terminals now used by the Technical Services Section, the Burroughs terminals cannot be switched to OCLC.

### Training

LAMBDA is not difficult to operate, especially for those with prior experience searching other information retrieval systems. When the State Library became a participant in the field test, seven staff members from Technical Services and one from Interlibrary Services attended a SOLINET training session. These persons then trained other State Library staff.

The Interlibrary Services staff designed an in-house training program, consisting of two one-hour sessions of classroom instruction and one thirty-minute session of hands-on training. This program was used to train the other staff members of the Interlibrary Services Branch and the librarians of the Reference Services Branch.

### Use of LAMBDA by the Interlibrary Services Branch

LAMBDA's search capabilities are well suited to the routine information retrieval operations of the Interlibrary Services Branch. A unit of the Information Services Section, the branch links North Carolina's library resources to users by serving as a clearinghouse and switching center for the state's network of libraries. Materials owned by the State Library are supplied to local libraries; requests not filled from the State Library's collection are referred to other libraries or organizations in North Carolina. In carrying out its function, the branch searches for specific titles in various formats and answers a wide range of reference questions. Approximately twelve hundred requests are searched each week. LAMBDA has been integrated into the routines of the branch on an experimental basis in an effort to speed processing, improve searching efficiency, and broaden the scope of material available to its users.

The Interlibrary Services Branch began using LAMBDA routinely in the fall of 1983. Prior to that time, SOLINET did not load records weekly into the data base, retrospective conversion had not progressed sufficiently to make LAMBDA viable as an on-line catalog, and the Interlibrary Services staff shared terminals with the cataloging staff. These factors prevented the branch from fully

incorporating LAMBDA into its routines earlier. Use was thus limited initially to searching for titles not verified elsewhere and for information on topics not easily accessible by other means.

*Information retrieval functions of LAMBDA.* In reference work, LAMBDA may be used as an on-line catalog and shelflist, an on-line thesaurus of search terms, and an on-line union catalog. The system may be searched either in the inquiry mode or in the patron access mode. A few simple commands must be learned to operate the system in inquiry mode. In the patron access mode, the system supplies the commands automatically and provides help screens which give instructions for searching; the user has to enter only the search statement. The Interlibrary Services Branch operates the system using inquiry mode commands to avoid waiting for the help screens to appear. Specific capabilities of LAMBDA's information retrieval functions and their use by the Interlibrary Services Branch are summarized below. Examples of actual searches are included.

*On-line catalog/shelflist.* Because about 90 per cent of the State Library's collection is presently in the LAMBDA data base, the branch's staff searches LAMBDA rather than the card catalog whenever possible. Serials in reference and genealogical materials added to the collection prior to 1975 are not yet in the data base and are searched in the card catalog. In a typical week in January 1984, the branch searched 1,018 titles and 143 reference questions in LAMBDA.

As an on-line catalog and shelflist, LAMBDA offers a wide array of access points which are enhanced by Boolean connectors and truncation of word endings. Access points include RID (Record Identifier, which is the same as the OCLC control number), Library of Congress card number, ISBN (International Standard Book Number), ISSN (International Standard Serial Number), title keyword (as part of the title proper or added entry), author (as the main or added entry and including keywords in corporate or conference names), subject heading, series titles, and call number.

Keyword searching and truncation are particularly useful features for interlibrary loan processing. Frequently the staff searches unverified titles containing inaccurate information. The keyword searching and truncation capabilities of LAMBDA increase the likelihood that unverified titles are found. For example, a patron requested a book discussed on the "Phil Donahue Show." He remembered the author's last name was Levinson and that the book had the word *dyslexia* in the title. By entering a search into LAMBDA which

combined the author's last name (truncated) and the keyword of the title, the desired book by Harold N. Levinson entitled *Solution to the Riddle Dyslexia* was retrieved.

When searching for materials entered under a corporate or conference name, the searcher does not have to determine the established form of the name. Keywords can be entered into the system in any order to retrieve the desired item. For example, when searching for the proceedings of the 3rd Specialists' Meeting on Reactor Noise, the staff entered the keywords *3rd reactor noise* as a keyword in conference name search to retrieve the desired item. It so happened that the established form of the name (pre-AACR2) for this conference was *Tokyo (Japan). Reactor Noise, Specialists meeting (3rd : 1981)*. The advantage of keyword searching for corporate or conference names is readily apparent.

When researching a topic, keyword access offers a shortcut to retrieval of relevant items. For example, when searching for information on satellite television reception, the keywords *satellite television* entered as a title search produce relevant material instantly. A subject approach to retrieving this information is much more cumbersome because valid Library of Congress subject headings for this concept include such esoteric terms as *Earth stations (Satellite telecommunication)* and *Artificial satellites in telecommunication*. Once relevant information is retrieved by searching keywords in titles, the subject headings in the tracings are entered into the system to retrieve additional relevant items.

The ability to enter an entire word or group of words into the system, rather than being limited (as in OCLC) to a few characters, provides a more specific and direct means of retrieving the information. In OCLC, for example, the title *History of the American Theatre, 1700-1950* is entered as "his, of, th, a," resulting in a "request impossible" message from OCLC because of too many titles retrieved. In LAMBDA, the work can be retrieved by entering the title exactly as it appears or as various combinations of keywords. No additional qualifiers are needed.

Use of Boolean connectors (*and, or, not*) allows the searcher to specify relationships between or among terms, resulting in a more complete, accurate, and direct search than is possible in a card catalog or OCLC. In processing interlibrary loan requests, an author's name is frequently combined with keywords in a title to search for a particular work (e.g., the author's name *John Steinbeck* combined in an *and* relationship with the title keyword *Americans* to retrieve the book

by Steinbeck entitled *America and Americans*). Another common use of Boolean searching by the Interlibrary Services Branch is the combining of a subject heading with title keywords to retrieve relevant works on a particular subject (e.g., the subject heading *violin* combined in an *and* relationship with the title keyword *repair* # [# indicates truncation] to retrieve materials on repairing violins).

Access to the shelflist is by Record Identifier. The information contained in the shelflist record includes local notes (e.g., price of the book, date purchased) and holdings (e.g., number of copies owned, which volumes of a multivolume work are owned).

*On-line thesaurus.* The LAMBDA authority file serves as an on-line thesaurus. Not only does it include the Library of Congress subject headings and name authority file, it also includes other headings appearing in a bibliographic record. This feature increases its usefulness for reference work. For example, NLM (National Library of Medicine) headings are included when attached to bibliographic records.

The authority file is interfaced with the bibliographic file, allowing the searcher to find in the bibliographic file a term retrieved in the authority file without retyping the search statement. This feature also permits searches not otherwise possible in the bibliographic file due to system limitations. One limitation is that a maximum of ten thousand items can be retrieved. Another is that when the system searches subject terms with subheadings, it searches subdivisions separately before combining them to produce a result. For example, the subject heading *North Carolina—Description and travel* cannot be searched directly in the bibliographic file because the number of items assigned either the heading *North Carolina* or the subheading *Description and travel* exceeds the search maximum. It can, however, be searched by first locating the heading in the authority file and then retrieving those items in the bibliographic file assigned that unique heading.

The Interlibrary Services Branch generally searches the LAMBDA authority file in place of the printed Library of Congress subject headings when determining valid subject headings or cross references. In most cases using LAMBDA is faster than using the printed volumes, and the interface between the bibliographic and authority files described above makes it convenient.

Having the institution's own authority file instantly available also saves time. For example, AACR2 name changes, such as George Bernard Shaw's works being entered under *Shaw, Bernard*



rather than *Shaw, George Bernard*, are readily tracked by searching the authority file.

*On-line union catalog.* Because the State Library is one of only two North Carolina libraries using LAMBDA, this function is not yet as useful as it could be. It does, however, have potential for a statewide automated system. The on-line union catalog operates in the same manner as the on-line catalog except that local notes and holdings information (i.e., the number of copies owned, which volumes of a multivolume work are owned) cannot be accessed for other libraries.

The chief benefit of the LAMBDA union catalog at present is that it provides the Interlibrary Services Branch with a good general bibliographic source. Nearly 1,400,000 unique bibliographic records representing collections of various types of libraries are in the data base, greatly expanding the scope of easily searchable information for the branch. Once a record is retrieved, OCLC or the North Carolina Union Catalog is searched to determine North Carolina locations.

#### Use of LAMBDA by the Reference Services Branch

The Reference Services Branch of the State Library provides reference service to both state employees and other patrons visiting the main reading room. In addition, it maintains the library's circulation records. Unlike the Interlibrary Services Branch, the Reference Services Branch did not use LAMBDA until a terminal was installed in the main reading room in the fall of 1983. The reference staff shares this terminal with the Interlibrary Services staff. These two factors have prevented the reference librarians from integrating LAMBDA fully into their routine activities. Nevertheless, they find it to be a helpful tool and anticipate that it will become more valuable in the future.

The reference staff performs forty to fifty searches per week, with keyword in title searches being the most frequent type. LAMBDA is used by the reference librarians primarily to locate specific titles when partial or inaccurate citations are provided by patrons. It is not yet extensively used in answering reference questions. Occasionally the staff generates bibliographies of works by a particular author or on a given subject.

While LAMBDA is not a circulation system, it assists with routine circulation procedures because of the shelflist information provided. The on-line shelflist (called the detailed holdings file in LAMBDA) is searched to determine the price paid by the State Library for publications when billing

users for lost or damaged materials. It verifies which volumes of a serial or other multivolume work are in the State Library's collection. The number of copies owned is also indicated in the detailed holdings file. When a renewal is requested and the item is not found in the circulation file, a search by call number verifies if the State Library does indeed own the particular work.

#### Use of LAMBDA by the Technical Services Section

Regular cataloging maintenance is performed on LAMBDA by the Technical Services staff of the State Library. Errors in bibliographic, authority, and detailed holdings records are corrected when identified. Each type of record is updated and supplied with additional data when appropriate.

Changes made to bibliographic records include correcting typographical and tagging errors, filling in missing codes or fields (e.g., the MARC code 043 designating geographic area), and correcting other cataloging errors. Bibliographic records are altered automatically by the system whenever changes are made in the authority file. For example, adding a *See Twain, Mark, 1835-1910* cross reference to the name and subject authority records for Samuel Langhorne Clemens changes all *Clemens, Samuel Langhorne, 1835-1910* headings in the bibliographic records to *Twain, Mark, 1835-1910*.

Authority records are modified by updating headings to current usage, correcting typographical errors, adding death dates to personal name headings, supplying cross references to link the various forms of a heading, and adding explanatory notes (e.g., attaching brief agency histories to records for governmental bodies). If the currently accepted form of a heading does not exist in the authority file, a new authority record is created on a work form. Cross references from the incorrect or old form of the heading are included in the new record. By adding a *used for* cross reference to the new record, the system automatically supplies the corresponding *see* reference to the old record.

Detailed holdings records are reviewed systematically to verify and change as needed the call number, holding library location (i.e., reference, genealogy, oversize), local notes, and volume or copy information. Because the entire record must be re-edited on OCLC to change holdings information, the State Library does not routinely update holdings on OCLC. Thus the LAMBDA holdings records must be reviewed to make the needed changes. When errors are reported by the Reference Services Branch and the Interlibrary Services Branch, corrections are made.

SOLINET is developing a library service program for small libraries. Because many small libraries already have microcomputers, a batch process for cataloging current acquisitions with a microcomputer will be offered initially. On-line capability will be available later. The State Library Processing Center plans to investigate the feasibility of automating its cataloging operations using SOLINET's service once on-line capability is instituted.

### Recommendations and Observations

Recommendations for improving the information retrieval capabilities of LAMBDA include the following: adding the capability of specifying word order in title searches; providing a means of qualifying searches by date and by type of material; creating an index of titles, subjects, and corporate or conference names searchable by keyword; clarifying instructions in the patron access mode; and finally, expanding the system overall

to increase the number of items that can be retrieved per search.

Cataloging maintenance functions can be improved in at least two ways. First, by replacing linkage records with the State Library's own records, the number of corrections needed will automatically be reduced. Second, editing time will be saved by simplifying the protocol for making changes to the data base (e.g., two screens must now be called up when changing detailed holdings records).

As the data base grows and improvements are made in access and maintenance capabilities, LAMBDA becomes increasingly useful to the State Library. All staff members using LAMBDA evaluate it favorably and find it genuinely helpful in their work. Generally, response time is good, and the system is down rarely. The staff looks forward to the continuing use of LAMBDA and eventual implementation of an automated statewide system providing similar capabilities.



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