Microcomputer Applications in
Special Libraries

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Special libraries offer a particularly good environment for the application of microcomputers. The small size of special files makes the size limitations of floppy disk files less restrictive than they would be in academic, school or public libraries. The limitations of one user at a time and one application at a time are less likely to be unmanageable in a small special library than in a larger library. Special libraries are more likely than other types of libraries to have access to user-oriented data processing support. North Carolina's special libraries have a variety of planned and actual applications for microcomputers — many more planned than actual at this point.

Microcomputer library applications in North Carolina's special libraries are of four basic types: as a word processor; as an intelligent terminal; for the automation of library activities; and miscellaneous management and accounting applications.

Word Processing

The use of a word processor makes the preparation of text immeasurably easier. With a word processor, the text remains in memory and/or on disk and can be easily modified by inserting or deleting words, characters and paragraphs or by moving whole blocks of text. Such modifications can be made either at the time the text is being composed or later (from the disk file) to update or edit the material or merely to print a new original.

Leonard Parker, at Ciba Geigy (Greensboro), makes sophisticated use of a commercially available word processing system and an Apple microcomputer to prepare a lengthy monthly report for his management. Using this system, he can call up repetitive parts of the report for users each month. His word processor interfaces with files built using the popular spread sheet program Visicalc.

The Celanese Library (Charlotte) uses a word processor for routine typing as well as for mailing lists and printing mailing labels. Frank Freeman, at the Center for Creative Leadership (Greensboro), is using his Apple for word processing, utilizing a program which he copied from a magazine.

The Environmental Protection Agency Library in the Research Triangle Park has used both a Lexitron "dedicated word processor" and the Wordstar software package on a Northstar microcomputer. While the Lexitron was the better word processor, the additional flexibility of the Northstar microcomputer prompted the tradeoff.

Intelligent Terminal

The use of a microcomputer as an intelligent terminal is the goal of a number of special libraries. The "intelligent terminal" configuration uses the microcomputer's disk memory for transmitting, receiving, and formatting data or text in conjunction with another computer system. The microcomputer can be used as a "front end" to allow offline preparation of input to another system, usually a mainframe computer, as well as to facilitate on-line searching of the major bibliographic vendors. Offline preparation of input is less expensive, and data loss from system downtime and communications problems is avoided.

The Center for Creative Leadership's Library is using an Apple microcomputer in both these ways. Data is prepared offline for input to a data base on creativity and leadership. The data is then transmitted through a timesharing system to the Wayne State University mainframe where the data base is maintained. Data can be input at the library's convenience and then transmitted in batch mode when complete.

The Center uses the B.I.T.S. (Basic Interactive Training System) both to communicate with the Wayne State mainframe and to communicate with Dialog for online searching. A Hayes Micromodem allows the results of the Center's online searches to be saved as a text file on the Apple's disk drive. These search results can then be formatted and edited using a word processor before giving the results to the user. Since the results can also be saved longterm on a disk, periodic updating can be done.

The Duke Power Training Center (Charlotte) uses an IBM System 6 to create their catalog of training materials. Catalog records are input and edited on floppy disks. When the records are ready, they are transmitted to a mainframe for sorting and printing. Fiche output is provided to all Duke Power locations. Their circulation file is also handled on the System 6, which provides holdings information for their nineteen locations. Inventory listings for each location are provided through the System 6 printer.

At the Environmental Protection Agency Library, staff has been using a Northstar with quad density drives as an intelligent terminal in searching the major bibliographic files. The EPA Library uses a Bell 212 modem with no internal data storage, but instead receives the search results in the Northstar's internal buffer (as established by a communications protocol). When either this internal buffer or the disk is full, the communications protocol copies the data to disk. The searcher must then allow the buffer to empty or to change the disk and then restart transmission wherever it left off. Print commands must be given in groups of about twenty-five to thirty citations (with abstracts) each.

Under the EPA Library's system, it takes very little data to fill up a disk. When using a single density disk system, the staff found that a search with one hundred citations could easily fill up several disks. With the quad density disks, this is less of a problem. With the Northstar, the Environmental Protection Agency's Library staff can store about 175 citations with abstracts on a single quad density disk. Under CP/M, these citations are stored in separate files of

twenty to thirty citations each and must then be printed file by file also. After receiving the search results on disk, citations can be edited, have comments inserted, and be manipulated in other ways. This capability is used primarily to then send the search results to a mainframe computer where a requester at another EPA facility can then print a search result and have the results the same day.

Library Automation

While a number of North Carolina's special libraries are looking into automating segments of their libraries' activities on microcomputers, only a few are actually well on their way. Journal files seem to be the most commonly automated file — probably because special library journal files can be accommodated on only one disk, thus simplifying sorting, printing and searching operations.

The Library of the Center for Creative Leadership has used their Apple for mounting their journal list also. The Center uses a simple data base management system, again one copied from a magazine. The system allows alphabetical sorting, searching and the use of simple Boolean "ands" in generating responses and subsets. Keys for use in journal routing are being input.

The Lorillard Library (Greensboro) also maintains their journal listing on a microcomputer — a Radio Shack TRS-80 — which provides alphabetical listings and easy updating.

Ciba-Geigy has purchased the data base management system DB-Master, which they plan to use for automating journal holdings, journal routing and circulation. They are investigating hard disk options for use in automating these systems. Ciba-Geigy is also using Apple microcomputers to "talk" to one another in transmitting experimental data gathered in the field. This data is then down-loaded to a mainframe computer.

The Environmental Protection Agency Library began experimenting with automating circulation on a microcomputer in 1980. At that time, the Agency had access to a Lexitron, a "dedicated word processor" designed primarily for text processing. The Lexitron also had an add-on "records management system" that was considerably less successful than its text processing capabilities. As is often the case with microcomputers, the disks were only single density with fixed record lengths. Consequently, each circulation record had to be as large as the largest potential record; this resulted in a tremendous amount of wasted space. By the time the Library had one thousand items in the system, five disks had been filled. Sorting the system after updating the file and generating an alphabetical title printout, for instance, took hours. At this point, EPA continued to use the Lexitron only as an offline input device and transferred the circulation system to a mainframe computer, as is done at the Duke Power Library.

The EPA's Library is now working with a CP/M-operated Northstar with quad density disks. The staff has purchased the data base management system dBase II, which allows a flexible record structure, Boolean-like retrievals and

excellent report writing. The staff is in the process of designing an automated interlibrary loan system which will generate interlibrary loan requests, generate user and statistical information and identify titles which should be considered for acquisition. Files will be searchable by requester and by various data fields. Only the current file (about 1500 items) will be maintained online. As interlibrary loans are completed, they will be transferred to the mainframe computer for later manipulation.

Conclusion

The use of microcomputers in North Carolina's special libraries seems to be at a "jumping off" point. Many libraries are seriously investigating these systems but are discouraged by the difficulty of acquiring hardware, the incredible speed with which these systems are changing, and the limited storage available on floppy disks. Still, an update of this survey in eighteen months would probably result in much more activity.

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