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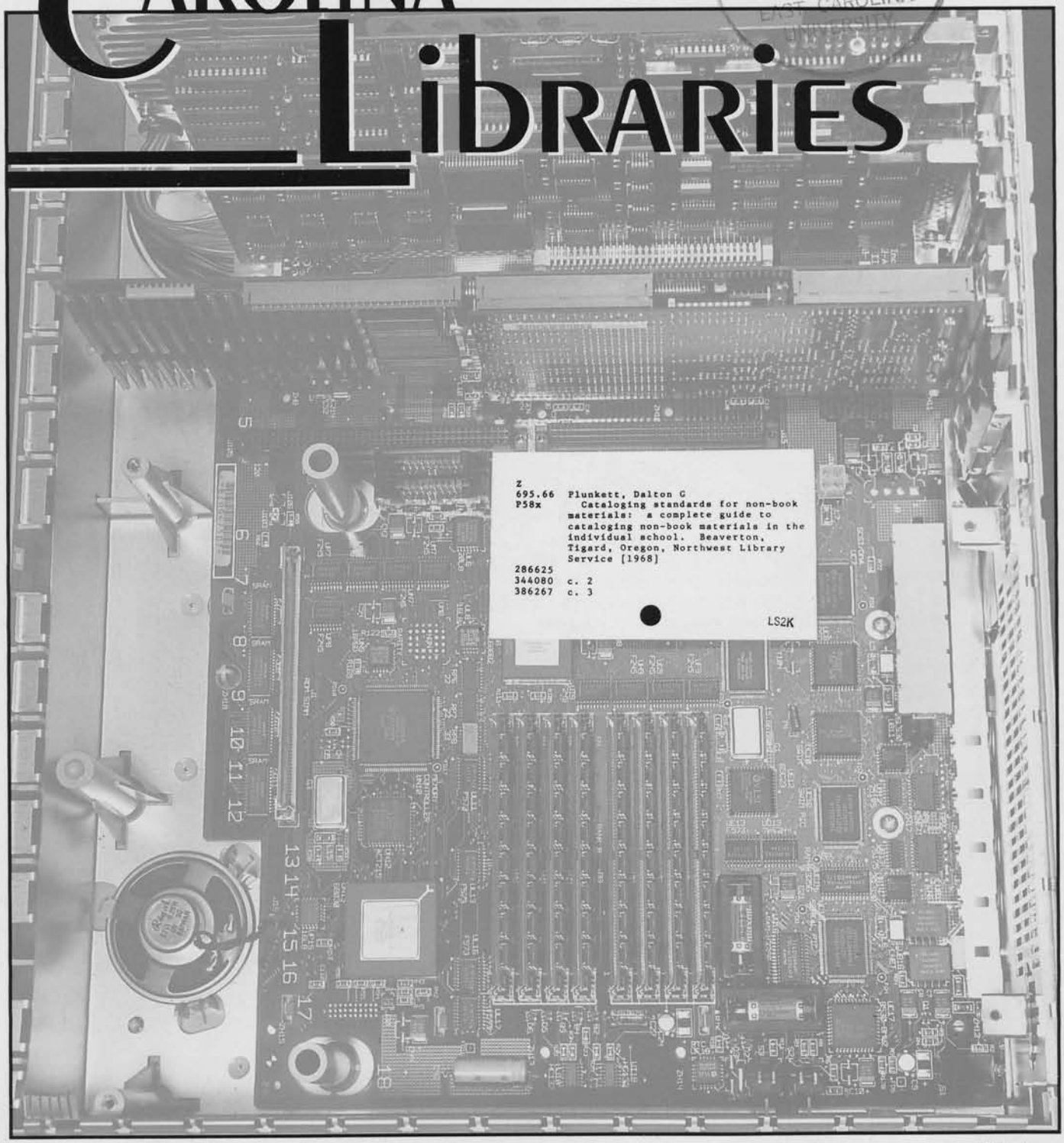
Fall 1992
Library Telecommunications

North Carolina Libraries



... never in the history of our country has there been so great a need to know and so great a need to master skills required to equip individuals for continuing self-education.

— **North Carolina Libraries**, *Fall 1961, p. 67.*

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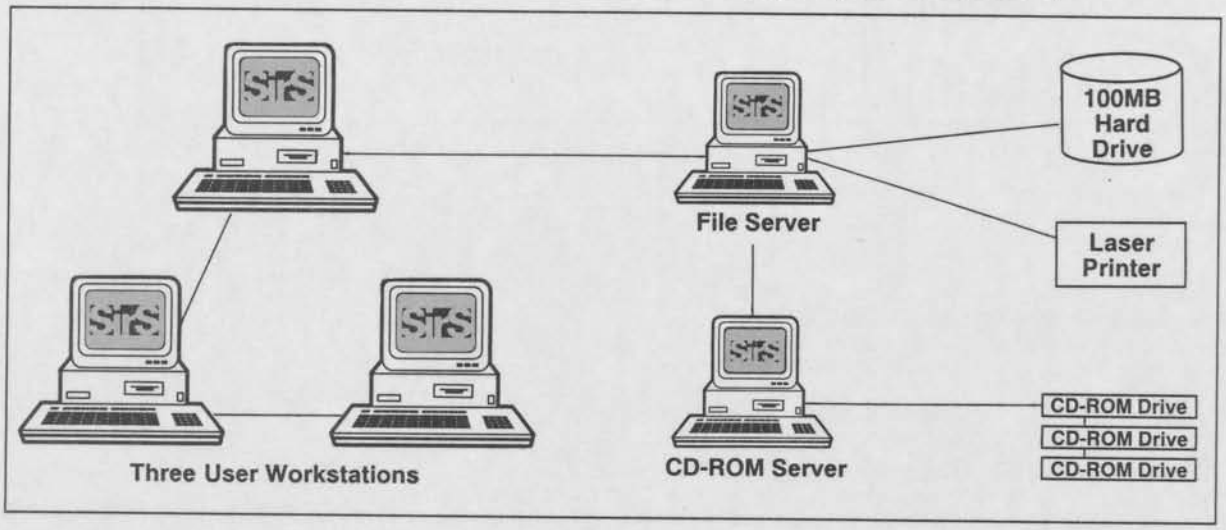

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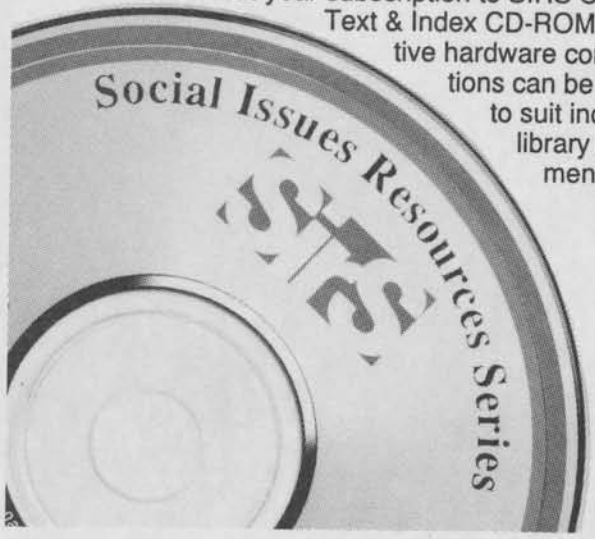

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Cover: Inside a computer: diametrical opposition. Photo courtesy of Lynette Lundin, Joyner Library, East Carolina University. Art Direction by Gary Weathersbee, TeamMedia, Greenville, NC.

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From the President

Janet Freeman, President

Hello? Are you out there?

In this column in the summer 1992 issue I made some rather harsh statements, and to be honest, I expected to receive some responses from you. I have actually been concerned that I'd gone too far. Now I think perhaps not.

A few people have told me casually that they read the column and agreed. Great. I appreciate their saying so, but what are we going to do about the problems I mentioned?

> ... the problem of misperceptions and lack of understanding each other
> ... the problem of communicating with our funding agencies (our bosses, the legislature, our boards, our county commissioners, our principals, etc.)
> ... the problem of approaching library service in a segmented way rather than with an eye for the big picture

The special issue of *North Carolina Libraries* which you received recently highlighted some of these problems as well as other crises in library service. We are in crisis or teetering on the brink of crisis as a profession.

This issue focuses on telecommunications and technology and the implications for libraries ... and those who staff and use them. First let me say, I am a computer user and e-mail user. (In fact I'm one of those strange people who will go to the mat to protect my use of WordStar instead of switching to WordPerfect.) The computer at my desk has a role in almost every task I perform.

The availability of telecommunications is revolutionizing the services libraries offer and the way library personnel provide information. I think, however, we must remind ourselves that telecommunications and technology are tools, and every tool is not appropriate for every job.

For example, an automobile is not the best tool for flattening a plastic soda bottle before recycling it. You can run over the bottle with the car, but you can more easily crush the bottle with your hands. When you need to travel several miles, a car is much more efficient and comfortable than walking on your hands.

There are problems with telecommunications. Systems go down no matter what reliability figures vendors show us. Using e-mail instead of the telephone puts a certain distance between the sender and the receiver. It is expensive. Not everyone has an affinity for keyboards. Not everyone thinks in the linear fashion often required to use a computer.

As information providers we need to be sensitive to these problems. We need to work together to see that library users learn the skills to use the most appropriate tool for accessing the information they need. We must communicate with each other and those who fund us to assure that there are not gaps in library and information services.

Again I ask ... are you out there? What do you think? How can we address these problems?

Call for Participation in Poster Session
I. T. LITTLETON SEMINAR SERIES '93
THE 4TH I. T. LITTLETON SEMINAR

FEBRUARY 19, 1993

The Libraries
North Carolina State University

The I. T. Littleton Seminar Program at NCSU is a continuing seminar series on major library issues sponsored by NCSU Libraries. The series was established 1987, to honor the contributions to North Carolina State University by Dr. I. T. Littleton, former Director of Libraries. The theme of the upcoming seminar is document delivery and cooperative information resource development.

A new feature of the seminar series is the introduction of a poster session program. The purpose of the poster session is to provide an opportunity for individual librarians or libraries to share graphic representations of current research, programs, or creative solutions to improving access to information. The planning committee invites interested librarians, public, academic, or corporate, to submit a poster session application.

Accepted presenters will be given a time block during the seminar to share their ideas. Deadline for the receipt of poster session applications is December 18, 1992. Final selections will be made by the planning committee; authors will be notified by January 4, 1993. Efforts are underway to include the poster session abstracts as part of the published seminar proceedings.

For more information, contact: Tracy M. Casorso
Library Systems
The Libraries, NCSU
P.O. Box 7111
Raleigh, NC 27695-7111
(919) 515-3339 • Tracy Casorso@NCSU.EDU • Tracy Casorso@NCSU.Bitnet

Over to You . . .

Letters to the Editor

Dear NCLA Colleagues:

June 31, 1992 was a very special night for me, as on that night I became President of the American Library Association. It was a doubly special night since all members of NCLA shared it with me. Several of you were there in person. All of you were present in the contribution of $1,500 from NCLA to the David Clift Scholarship Fund in honor of my presidency. Nothing could have pleased me more than to have your best wishes both in spirit and as a gift to the scholarship fund. But there was more.

Another surprise came via State Librarian Howard McGinn, who presented me with a letter from Governor Martin and a framed citation conferring on me The Order of the Long Leaf Pine. The letter from Governor Martin reads as follows:

> It is with great pleasure that I present to you the Order of the Long Leaf Pine of the State of North Carolina. Your inauguration as President of the American Library Association brings honor to the State of North Carolina and is a special recognition of your significant accomplishments as a librarian, educator, and advocate for children.
>
> I congratulate you and wish you success during your presidential year as you guide the important work of the association. I also congratulate the American Library Association for its work in education, combating illiteracy, defending our First Amendment constitutional rights, promoting reading, and making the nation aware of the importance of information literacy.

I know my year as President of ALA will be full of rewards, but none will be as satisfying as sharing the year with the membership of the North Carolina Library Association. Thank you.

Cordially,
Marilyn L. Miller
Professor and Chair, UNC-G, Department of Library and Information Studies
President, American Library Association

Past NCLA President Barbara Baker, President Janet Freeman, President-Elect Gwen Jackson, and State Librarian Howard McGinn celebrate with editor Frances Bradburn after she accepted the 1992 H. W. Wilson Library Periodical Award on hehalf of the North Carolina Libraries *editorial board at the 1992 American Library Association Annual Conference in San Francisco.* Photo by Diana Young.

Foreword ...

by *Bil Stahl*, Guest Editor

The evolution of information technology has been constantly accelerating and increasing in diversity over the past ten to twenty years. This evolution has not been linear, but has many branches, with new offshoots sprouting regularly. Some branches often seem to go in divergent directions from other branches, only to turn and merge with these same branches later.

The development of the personal computer was initially, and in some cases still is, feared by people responsible for operating central computing facilities. The reason for this fear centers around the fact that the personal computer enables people to create isolated islands of information. This, in actuality, has often happened. Many organizations have had to address the problem of controlling where "mission critical" information resides and how it is maintained.

Telecommunications is one of those branches that diverged from some areas of information technology only to return to those areas and play a major role in their development. The initial role of telecommunications was voice and later interconnection of interactive terminals to mainframe computers. As telecommunications speeds increased, telecommunications was used to interconnect mainframe computers to one another. As microcomputers became more common, software and hardware that allowed them to emulate terminals connected to mainframe computers became available. These telecommunications connections between microcomputers and mainframe connections developed into true networks, where the computers connected to them could do much more than simply display what was on a remote system.

Many information technologies have converged to bring us to where we are today and where we are obviously going in the near future. The major development has been the digitization of information. Today virtually all information is, or will soon be, digital. Voice, audio, image, and video are all digital or fast becoming so. One conversion to digital format that is often overlooked is that of telecommunications itself. Modems were needed to convert the digital computer information to the common analog telecommunications systems for transmission to remote computer systems, where the signals were converted back to digital information. Digital telecommunications systems can move larger amounts of information faster than their older analog counterparts. This ability of the digital systems is being enhanced almost weekly. In addition, this increase in speed (usually expressed in megabits per second) and capacity (often expressed in terms of "bandwidth") is coming at lower and lower increments of cost.

As the "highway" over which information travels, telecommunications has become one of the dominant information technologies of the 90s. Not only has it enabled computers to talk to one another faster, but it has greatly facilitated the blending of information technologies. Interactive video conferencing, coupled with collaborative computer software that allows the conference participants to simultaneously work on the same document, is happening today. As the higher speed, larger capacity digital telecommunications systems become more pervasive, this type of "long distance" interaction will become more commonplace.

Perhaps more than any other technology in the past, including the printing press, telecommunications is causing libraries to reassess what they are about. The printing press provided copies of a work to be located on the shelves of numerous libraries. Telecommunications allows for an almost infinite number of copies of a work to be located on users' desks wherever they are working — not only in libraries. While libraries struggle to maintain collection budgets to purchase materials for the library, telecommunications is causing the opposite problem for many libraries – how to keep up with an exponentially growing array of information sources available over the networks!

Computer technology has allowed libraries to perform their tasks in a more efficient and effective manner. While computer technology provided many new capabilities, the library applications were still controlled by the libraries for the most part. Telecommunications, on the other hand, challenges the basic purpose of libraries in acquiring, storing, and dispensing information, because the purpose of telecommunications is also to provide access to information in an environment not limited by space or time. Libraries can only be a participant in the overall telecommunications environment, not its controlling force. Librarians are trying to figure out what their role should be. Current library conferences and literature are filled with telecommunications–related presentations on topics such as: local area networks, distributed processing, client–server architecture, the Z39.50 standard, INTERNET access, and the National Research and Education Network (NREN).

The first part of this special issue of *North Carolina Libraries* on telecommunications addresses the challenges telecommunications presents to libraries. Alan Blatecky, Vice President of MCNC, lays out the challenge from a technological standpoint. Alan is the chief architect of the CONCERT network, which is the most sophisticated network of its kind in the nation. Alan calls for librarians to recognize the paradigm shift in the way information services will be provided in the near future, and to take a leadership role in implementing that shift.

The article by Raymond Frankle, a library director, provides an overview of the challenges many libraries face in trying to address the paradigm shift that Alan Blatecky describes. Ray agrees that this is the direction libraries need to move and that they must do so quickly. However, the ongoing expectations for existing library services, the need to retrain existing staff, and the often chronic shortage of resources are all factors many libraries will have to overcome.

Ken Marks, in his article on developing a technology plan for the library, offers a process to follow in addressing both Alan's paradigm shift and the challenges Ray outlines. This process in not a "magic bullet," but a logical way of making necessary decisions. As Ken points out, these decisions will not be easy.

The second part of the issue contains some practical examples of telecommunications in libraries. George Brett's article provides a transition into this section by describing in general terms the value of network access. George provides references for some "how to" articles, but focuses most of his comments on many considerations people do not automatically think of when they are planning to navigate the networks.

Eric Morgan provides a breezy introduction to the major commercial computer network services that are available and places a special emphasis on their usefulness to libraries. Librarians need to be aware of these resources not only for their usefulness but because a growing number of library users subscribe to one or more of these resources.

Marty Bray's article on the use of DIALOG in a secondary school provides insight to the exposure to telecommunications students in secondary education are experiencing. Marty also describes the role newer technologies such as CD-ROM bibliographic databases and local area networks are having in changing the library's use of DIALOG. In addition to providing ideas for other schools, the article should serve to alert public and academic libraries to the fact that many younger library users will be familiar with telecommunications services.

The bibliography prepared by Jessica MacPhail provides a useful starting point for a number of telecommunications related topics. The articles cited are meant to provide background and to indicate the range of telecommunications related topics. Be aware, however, that it is impossible to provide, in print, an up-to-date listing of citations on telecommunications because the field is changing too rapidly. Even the telecommunications literature, such as *Communications Week,* is often out of date by the time it appears. It is also impossible to provide a comprehensive listing of citations with any breadth of scope, because the literature on telecommunications is perhaps more pervasive than the technology itself.

The telecommunications section ends with a "Point/Counterpoint" discussion by Harry Tuchmeyer and myself on the role of librarians in providing user services for network resources. While Harry and I take very opposite positions for purposes of showing these extremes, both of us could argue any point on the spectrum between the extremes. In fact, this is an issue that every library will have to debate for itself and constantly revisit as the resources available via telecommunications systems continue to grow.

It is my earnest hope that this issue contributes to the understanding of telecommunications that librarians must have. Telecommunications is a diverse and complex field. The purpose of this issue has been, in part, to highlight this diversity and complexity. Telecommunication technologies provide libraries with what the cartoon character Pogo once described as "insurmountable opportunities." We hope this issue will help each reader rationally choose the appropriate set of opportunities.

Libraries and Networks:
An Irresistible Combination

by Alan R. Blatecky

Libraries and networking are approaching a watershed that will radically change the way we think, the way we get information, and the way we approach education, research, and business. For the last couple of decades, we have been dealing with technologies that enable us to do things faster and quicker.

Computing power continues to scale to the point where yesterday's supercomputers are today's advanced workstations. Memory, storage and networking have also scaled; instead of Kbytes (thousand bytes) of memory, we talk of Mbytes (million bytes); instead of Mbytes of storage we talk of Gbytes (giga, a billion bytes) and Tbytes (a trillion); instead of megabit networks, we talk of gigabits.[1]

In addition, there is already a great deal of effort on the next generation of capabilities that are several orders of magnitude more powerful still — 256 megabyte RAMs, Pbytes (1000 trillion bytes) of storage, Teraflops (trillion floating point operations per second) of compute power, and Terabit (trillion bits per second) networks .

Libraries will not be a major force in the developing information age if they do not aggressively adopt and adapt technology to meet the information needs of their constituents.

Information growth

- In the information arena, we see similar statistics.
- Three new accessible databases appear daily (more than five thousand currently).
- The world's amount of information doubles every five years.
- More facts and information became available in the last thirty years than in the previous five thousand years.[2]
- One day of *The New York Times* has more information than a lifetime in seventeenth century England.[3]
- Ninety percent of all information published since 1979 is/was digital.
- Fifty-six thousand new books are published each year in the US alone (worldwide the number is in excess of two hundred fifty thousand).[4]
- More than one million magazine articles are published yearly.[5]
- Forty thousand scientific articles are published each year (one every thirty seconds).
- Eight hundred new periodicals are published per year (some only digital, some with video).[6]

This means that top libraries must double in size every twelve to fourteen years just to accommodate the growth in information, to say nothing of expansion of information or libraries.[7]

Cost trends

While the unit costs of technology continue to decrease dramatically each year, library construction costs are increasing. The capital cost to accommodate one hundred volumes is approximately two hundred and fifty dollars.[8] This does not include furnishings, operational costs (HVAC, maintenance), or staffing. On the other hand, the costs of electronic mass storage, compute power, and networks continue to decrease.

For example, the cost per megabyte of storage has dramatically decreased over the last decade.

Disk Drives

Year	Cost per megabyte
1980	$625.00
1985	$125.00
1991	$6.50

By 1995 the cost per megabyte of storage is likely to be a tenth of today's cost, or around sixty cents per megabyte. However, there are alternative types of electronic storage which are much more cost effective than hard disk drives. The advances in optical and dense magnetic tapes provide per unit costs that are several orders of magnitude less expensive.

Mass Storage Costs (1990)	
Rewritable Optical	$0.39
CD-ROM	$0.008
Digital Recorder	$0.001
Magnetic Cartridge	$0.05
Optical Tape	$0.005
8mm Helical Tape	$0.005

While individual workstation costs continue to decrease each year, the more important factor is the significant accompanying increase in workstation power. Mainframe power of a few years ago is available now at the desktop; an IBM RS6000 workstation now has the power of a single processor CRAY X-MP supercomputer. Workstation displays have benefited greatly from the R&D advances increasing screen resolution and quality. High resolution screens are available now at a fraction of the cost of five years ago, and this trend will continue at an even more rapid rate as high definition television and graphics systems are developed.

Network increases

Similar cost reductions and performance increases are also taking place in networking. Where dial-up modems operating at three hundred and twelve hundred bps (bits per second) once were standard issue,

modems approaching thirty-four thousand bps in speed are now available. ***Network*** backbone link speeds of 9.6 and 19.2 Kbs (kilobits per second, e.g., 9.6 Kbs = 9,600 bits per second) are quickly being replaced by ***individual*** network speeds of 56 Kbs and T1 (1,544,000 bps) lines. T3 lines (45 Mbs) and FDDI (100 Mbs) networks are beginning to be implemented all across the country. Recent passage of the High Performance Communications and Computing (HPCC) Act of 1991 will help ensure the deployment of high-speed networks (gigabit and beyond) across the nation.

However, as network speeds move to T3 and on to gigabits, faster is no longer an adequate way to describe what is happening. Whereas a gigabit network is one thousand times faster than a megabit network, the real change is one of scope and capability. Gigabit speeds provide the capability to do things differently. The primary mode of operation is no longer limited to text (i.e., characters and symbols), but relies on visual information; images will dominate the way we use networks and interact with information.

The increases in network speeds and computer power as well as reduction in storage costs have tremendous implications for libraries and information. If technology can provide adequate digital storage, transmission and display of images in real time, then digital libraries are no longer relegated to being future images or ideals. Digital libraries themselves become the basis for library development and deployment. From this point on, it will be very difficult to justify physical library expansions based primarily on volumes and print.

New paradigms

At the same time, it is clear also that libraries must be prepared to do things differently. Libraries will not be a major force in the developing information age if they do not aggressively adopt and adapt technology to meet the information needs of their constituents. For example, the normal operating procedures of electronic document delivery associated with slow-speed networks and technology are totally inappropriate for high- speed networks. It is not adequate simply to have the card catalog online. The goal has to be to have the full text online so it can be retrieved and "browsed" over the network just as the patron would do when walking down an aisle of books and journals.

It is also important to note that the definition of information is facts, figures and images. One way to help illustrate this is the four tier model:

Raw Data
Information
Knowledge
Wisdom

Information is becoming much more interactive; users find it essential to readily navigate between raw data and information in real time in order to get the knowledge and understanding they need. This is an iterative process which becomes ever more important as the amount of available information continues to increase (e.g., how can the user quickly sift through the data to get at crucial information). In other cases, the process itself becomes part of the growing database. For example, an educator reviewing results of a survey on teaching styles would be able to add his/her experience. The result is that the database grows every time it is used; that is, the new experience is incorporated into the database.

These types of applications are already taking place through computer conferencing and promises to become a significant source of information and ex-

Text and bits

To help bridge the gap between printed text and electronic storage, it is necessary to understand how text and images translate into bits.

Text versus Storage

Document	Number of bits	abbr.
1 page of text	25,000	25 Kbs
10 pages of text	250,000	250 Kbs
1000 pages of text	25,000,000	25 Mbs
25 page article with 10 color images	900,000,000	900 Mbs
Library of Congress holdings	200 trillion	25 TBs-2 PBs (1,000 TBs)

Another way of looking at the information is to translate storage into document size;

Storage versus documents

Amount of storage	abbr.	Number of documents
1,000 KBS	1 MBS	4 high resolution images or 320 pages of text
1,000 MBS	1 GBS	4,000 images or 320,000 pages of text
1,000 GBS	1 TBS	4 million images or 320 million pages
1,000 TBS	1 PBS	4 billion images or 320 billion pages
ASCII Text	(1 TBS)	(42,500 trees)

Translating even further, the capabilities already exist in current technology to make electronic storage compellingly attractive simply in terms of cost alone. A single 19mm tape can hold 25 Gb, or more than 1,300 medium-sized books. Based on equivalent floor space, electronic storage can accommodate more than fifteen hundred times as many books and articles as does storage of the physical documents themselves.

An analysis of CD-ROM shows even larger gains. But, this overlooks perhaps the most significant values of electronic storage — remote access and shared resources. People who have access to a network that includes libraries have access to those resources without having to travel to the library to see the physical documents. The information is available to them twenty-four hours a day at their place of work, study, or home.

This same type of table can be constructed for transmission speeds.

Transmission times

	Network Speeds		
Document	9.6 Kbs	1.5 Mbs	1 Gbs
1 page	2.6 sec.	.02 sec	.00003 sec
100 pages	4.5 min	1.7 sec	.003 sec
25 page article with 10 images	28 hrs	10.8 min	.9 sec
Library of Congress			
lower limit of 25 TBS	661 yrs	1,543 days	56 hrs
upper limit of 2 PBs	52,880 yrs	338 yrs	186 days

These tables clearly illustrate the new world for information and libraries. Documents and articles can be accessed and retrieved in seconds at gigabit speeds. This is in sharp contrast to the networks and technologies that libraries typically use today (9.6 to 56 Kbs link speeds), where it can take hours to electronically retrieve a single document or article (books could take days). The result is that only selected documents are made available — usually those not containing large sets of data or images.

pertise. This points out that libraries must begin seriously to adopt several paradigm shifts in order to usher in and develop the next-generation library and information center. One of the shifts is that libraries must rapidly respond to accommodate these "new" types of information sources. Another involves navigation. On the one hand, libraries need to develop electronic navigation expertise to assist users. On the other hand, in many cases, librarians will not be intermediaries, as the users will access the information directly.

The question is not if these issues will be resolved, but when; and the more pertinent question is who is going to take leadership to provide the information for the electronic world.

The discussion so far has centered on hard copy and text. However, there are many other rapidly developing types of electronic information such as databases, electronic journals, scientific visualization, and graphics. These assume that high-performance networks will be the primary interface for the vast majority of users. The growing importance of video, moving images, and high-resolution graphics to science, education, and business will require yet other new technologies and new approaches to handle what we call "information technology." Librarians will need to become conversant with a wide variety and ever-growing array of non-bibliographic forms of information.

These same users are not only "at-home" in this electronic information world, but also are the vanguard for the future. These users depend on access to current information (discoveries and new ideas are shared within minutes) for their livelihood, and seek out those information repositories that have high-performance electronic capabilities. In many other cases, they can not wait until the information is available in print or travel to the source to get the materials. They want and need access to the video, images, and data within minutes or hours. (Interestingly, this sort of timeliness has contributed to the success of Cable Network News.)

The discussion has deliberately sidestepped many electronic information issues that are beyond the scope of this article. The topics range from copyright and publishing issues to those of technical standards for interoperability and resource sharing. While these are significant factors that involve not only economics, politics, and inertia (substantial investments and infrastructures used to doing business as they always have), the marketplace and user needs will drive the required changes over time. The question is not if these issues will be resolved, but when; and the more pertinent question is who is going to take leadership to provide the information for the electronic world. The discussion has also deliberately side-stepped many issues dealing with electronic information as these are beyond the scope of this article.

In essence, the tremendous changes in networking, communications, and computing mean that geography and time will no longer be obstacles. Where you are located will have little impact on what you can do or learn. Resources, expertise, and information will be the currency that flows on the network. You will not move people to resources, but move resources to people.

What will this mean? Faculty members, students, and information technologists (currently more than fifty percent of the population) will be using networking as part of their job. Digital libraries, with vast directories and images, will provide information to the desktop in tenths of seconds; from your office you will be able to provide yet another capability with face-to-face communications among offices, libraries, and so on. It will greatly enhance collaboration and interaction between users and information providers.

Conclusion

In conclusion, a number of factors and opportunities face libraries that must be addressed if libraries are to be viable information centers for the next century:

- The willingness of librarians to adopt a different model of what it means to be a library — that is, a digital library. How does a library begin to position itself to make the transition to a digital library? Is it necessary that all libraries become digital, or to what extent?
- A major change in the organizational structure and culture of libraries. Libraries are organized in terms of supporting a central repository; the future model is going to be much more disbursed, requiring a flattening of the hierarchy and a move toward disbursed management of resources and staff.
- A move from increased holdings to increased access; the goal is to use electronic networks to reach remote physical resources.
- Libraries will have to adapt to using a wide range of classification schemes (access strategies) rather than try to fit all information into one classification system, as they draw upon information in interactive formats and from a wide range of non-library electronic (network) resources.
- Much more emphasis upon the sharing of resources among libraries from the outset. How can each library carve out a unique niche or set of holdings that will be of use to the much larger national or global community? It will require coordinated planning, purchasing and cataloging to avoid duplication.
- The acquisition of technical knowledge and expertise for all librarians. While the goal is not to require that librarians be computer programmers, it is essential that they be technically literate and have substantial technical resources (networking, storage and computing) in residence or on call. In addition, it is essential that the technology be integrated throughout the entire organization, from top to bottom.

Libraries and networks are approaching a watershed which will radically change the role of both. New paradigms are going to be required to effect the transitions. Only through a tight coupling of strategic information resources and expertise with ubiquitous, high speed network access, will we be able to increase our productivity, remain competitive, and sustain high quality education.

References and Notes

[1] Bytes versus bits: 8 bits to every byte; bits indicated by lower case (Mbs), bytes by upper case (MBs).

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When Can I Put Down My Pen?
If I Put Down My Pen, Do I Get A Secret Decoder Ring?

by Raymond A. Frankle

TCP/IP,UNIX,LAN,WAIS,NREN, INTERNET,FDDI.

Do you remember the days when, if you ate all your cereal, your mom would save the box tops and send them in for a secret decoder ring? With this ring you could write and read messages that could only be understood by those who possessed this special piece of equipment. The rings were made of cheap plastic and never lived up to childhood expectations. As we grew up, we abandoned the childhood fanatasy of communicating secretly and relied on our pens, pencils, typewriters, and now PCs, to communicate with one another using well understood words and grammatical structure. However, the situation is changing dramatically. In order to understand the characters which appear at the beginning of this paragraph, we need more than a decoder ring.

The letters are not a secret message written in uncials, although for many of us they very well could be. Few librarians can interpret the meaning behind these characters which make up acronyms which have become commonly used in explaining ways to communicate. The library profession has developed its own set of acronyms over the decades which are used to describe bibliographic tools, associations, networks, and information resources. During our educational process to become librarians, we were trained to understand the concepts they stood for and how to use them in our libraries.

We are now confronted with a new vocabulary that is invading the profession. Trying to understand it is as difficult as trying to read classical Greek without having taken the appropriate time and energy to study the language. One of the major challenges facing the profession is the changing way in which information is stored, accessed, and retrieved. Many in the profession have the attitude similar to that of many Americans when it comes to a foreign language, "So what if it is Greek to me? If it is important, someone will translate it into English." Maybe that works for a foreign language, but it will not work for librarians who are faced with significant changes in the way information is stored and retrieved. Most librarians will have to understand not only the new vocabulary related to information and telecommunication technology but also the principles and economics behind them.

The major portion of this article deals with some of the significant areas that most librarians need to understand as they attempt to deal with technological change. It is written from the perspective of one library administrator who does not claim to know the answers, and is still struggling with the questions. It raises as many questions as answers. It is hoped that individuals will understand the importance of working together to help shape the future of the profession.

As a profession, we are woefully behind in understanding the implications of information in electronic accessible form. Unlike learning cataloging rules or Library of Congress subject headings, which represent some of the major intellectual foundations of organizing information, the new terms listed at the beginning of the article represent disciplines and knowledge that are foreign to most librarians. This situation has been compounded by the fact that since the mid-1970s, when it first began to install connections outside of Ohio, OCLC took responsibility for all the telecommunication connections. The only thing we had to know about this aspect of the system was that than if we had a problem, just call OCLC. They took care of everything that provided electronic and telecommunication access to their system. Libraries could devote their energies to learning how to catalog or do ILL using an electronic system instead of typing cards and forms. OCLC is still around and continues to provide telecommunication service for us. This may be sufficient for some libraries, but for many it is not. In order to access the database and information services which have developed in the past five to ten years, librarians must now be knowledgeable of telecommunication and computer technology. Such knowledge is required even if libraries do not wish to access external information sources. CD-ROM products have become common in most libraries. Librarians realize the limitations of having such powerful sources which can only be used by one individual at a time. In many institutions, plans are underway to network these machines. To do so requires special knowledge. Who has that knowledge? Librarians who do not have the knowledge must

As a profession, we are woefully behind in understanding the implications of information in electronic accessible form.

turn to others to provide it. This can be both good and bad. However, it is at the crux of the problem for many of us. How we resolve these will have a major influence on what the profession will be like in the next ten years or so.

In his article Alan Blateckey cites some interesting statistics such as three new accessible databases appear daily and ninety percent of all information published since 1979 is/was digital. These statistics, coupled with the technology he speaks of, lead to different ways of seeking information and creating new knowledge. It is mind boggling to think that in the emerging, high-end technologies, all information in the Library of Congress can be transmitted in fifty-six hours or a little over days. The point is not that one would want to send that much data, but that a query could search that much. At such speeds, the existing, cumbersome barriers of creating knowledge fall dramatically. The pointers and classification schemes librarians have developed to store information sources become obsolete and irrelevant. When this point is reached, and it may not be that far away, different skills are needed to mesh patrons with the information they seek.

To adapt will require resources. Unfortunately, the historical dilemma libraries have faced is under-capitalization. The recent dramatic rise in the prices of numerous serial publications, coupled with reduced fiscal resources at many institutions, has made it difficult on the one hand to consider new initiatives, while on the other hand business can not continue as usual. Some institutions have canceled subscriptions, relying on the effectiveness of electronic networks to enable them to obtain articles from other libraries. Some libraries have used a portion of the dollars saved from the cancellations to provide expanded electronic access and document delivery to certain information sources. They have seen this as a way to survive and to improve service. Are they on the right track? The decision to provide information this way certainly saves space and processing costs. However, what is the true cost of the technology? Arguments are made that technology saves time. More investigation is probably necessary to know for certain. It is true that the user can access electronic information any hour of the day or night, but what did it take to enable the individual to access and use these sources? The literature indicates that unlike traditional bibliographic instruction programs, showing individuals how to use electronic resources is more labor-intensive and requires more one-on-one interaction. Do we have the staff resources to accomplish this?

Beyond the rudiments of showing an individual how to logon and search an electronic file, many librarians are finding that the person requires additional knowledge of the hardware and software. Who should teach these skills? As an example, much of the census data is being issued in electronic form. When it was produced in printed form, a user could scan the document and ascertain that it contained the information he needed. More than likely it contained tables, charts, and graphs that were applicable to his needs. To carry the example further, the individual, if he so desired, could have purchased the document from the federal government. Now the user must have a basic knowledge of how to operate a PC, an understanding of file structure, an ability to download information, and skill to manipulate that information using a spreadsheet or database. In addition, to use it any place but the library, the patron must have access to a fairly powerful PC. Whose responsibility is it to provide such equipment? Can it be done within present resources? Will librarians provide more information, but less help? Because access is machine-intensive, librarians may be inadvertently limiting the number of individuals who can use the information.

So far we have not considered how to handle those patrons or librarians who, no matter how good the training, cannot effectively use electronic technologies. Will we create a caste system where there will be those individuals who can "navigate" the electronic networks and those who cannot? Will one individual's services be worth more than another's? What should patrons expect from a librarian regarding electronic access? If they cannot obtain what they need from a librarian, to whom will they go?

Libraries and the organizations to whom they report must seriously consider training issues. This is no small matter. Effective ongoing programs must be developed and put into place before new technology is introduced and then sustained to continually enhance skills. Libraries have depended on professional organizations and networks such as SOLINET to provide training. As good as many of these have been, each library needs to consider training and development an ongoing, supported, and rewarded activity within its own organizational structure. If it does not, there is little hope that its staff can continually keep up with the changing electronic environment. Library administors must give staff both resources and time to develop skills. One hour of training without time to experiment and make the new skill a part of the individual's knowledge base will be a failure.

On a more global scale, library education needs to consider how it is preparing graduates for the new technologies. Again, this academic preparation must go beyond learning how to operate a PC or use OCLC.

Beyond these immediate needs looms a more perplexing issue. How long will the information survive in the electronic format that it is in? It was created to be used in a certain medium with a limited range of hardware. What happens when the hardware is not produced any longer? Currently, hardware is changing every three to five years. Even OCLC has admitted this and is basing its systems on available technology. It no longer has equipment manufactured specifically for its own system. Unfortunately, the migration from one level machine to another does not assume compatibility of files or software programs. What happens then to the structures and training we put in place under the older technology?

If we do not come to grips with, and provide leadership in the area of, telecommunications and accessing information technology, the profession of librarianship will soon end.

Many libraries are canceling their subscriptions to print materials in favor of electronic alternatives. The difficulty may be that several years from now, that information may not be accessible, because in many instances libraries do not own the electronic data and, if technology changes, the information may have to be repurchased in another medium.

A similar situation exists concerning electronic media in general. As much as we complain about acidic paper and its life expectancy, we have given little thought to the preservation of information that is produced electronically. We are just assuming that it will be there. There is a growing body of evidence that it will not. At present, the federal government has records from the 1960s and 1970s in elec-

tronic form that it cannot read because of medium deterioration and because the hardware on which the information was created no longer exists. For a profession which has considered the preservation of human knowledge an important part of its responsibility, we are not doing enough in the way of considering the ramifications of immediate access and use in relationship to long-term availability.

Perhaps the most difficult area of all is dealing with the network and telecommunications component of change. For many libraries, access to any network is still a dream. For others, being a member of OCLC will satisfy their needs. However, there is an increasing number of libraries for which much more is required concerning network access. How do they meet that need? Except in rare instances, libraries cannot act by themselves. They are part of a larger organizational structure. With some exceptions, librarians have not exerted a major role in network planning within the context of their parent organizations, and even less on the national and local level. If America is a society which depends on quick access to information, then this must change.

Several times over the past couple of years, I have heard various speakers talk about networks as the highways of the future. That may be an accurate analogy, but we should stop to think about who designed those highways and who is designing the new network "highways." Have you ever noticed that the new vocabulary to describe networks and electronic media hardly ever uses words like "type," "reading," "literacy:" words librarians understand. Librarians are used to dealing with words written on paper. Many librarians have become familiar with the industry responsible for printing books and journals. In some instances, they have influenced those industries. Other librarians know how to organize these materials to keep similar items together. There are those in the profession who specialize in helping individuals locate and use the printed word. This is made somewhat easier by the fact that from childhood on, schools have stressed skills which use and manipulate the written word.

This is not dissimilar to learning to drive in high school. Most of us probably consider ourselves good drivers. However, many of us take our cars for granted. Few know anything about repairing a car if it breaks. We do not want to know how it works, just that it does. Unfortunately, the problem arises when the car breaks down and we are not only helpless, but stranded. This is how we have treated our knowledge of networks. Others of us have assumed that because we can drive a car, we can automatically drive an eighteen-wheeler. Even if we could get the truck moving, we have no concept of how heavily regulated the trucking industry is, the complexity of the freight system infrastructure, or the most cost effective means to get to point A from point B. So it is with the networks and telecommunications. Once we want to move from OCLC as our sole network connection to networking our CD ROMs on a local network to providing our users with access to sources on INTERNET, we have entered a whole new, unfamiliar arena. What does it take to get there? One can read articles, even in this issue, on some of the technical details of establishing a LAN or connecting to an external electronic source. However, little is usually said about the long term implications and commitments.

First, we must realize, which few do, that when a library decides to offer information to its users through electronic means, it has just set up a barrier between the reader and the information. I know all the arguments about how we can provide more information more quickly without regard to time or distance. But the fact remains, the reader must use a medium controlled by us or someone else to get to that information. Once a book is acquired and placed on the shelves, no further intermediary is required. In an electronic

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environment who can foretell that what may seem free today will not have a charge tomorrow? Do all readers have equal access? If not, how does that square with the mission of most libraries to provide free and equal access?

I know very few libraries that are doing analysis of the true costs involved in providing information in electronic sources. Few can determine actual costs versus benefit derived for any phase of their operation.

Unfortunately, many librarians feel competent to meet the future if they can use a PC to do wordprocessing, create a spreadsheet, do online searching, and access BITNET. However, when it comes to understanding TCP/IP or packet switching such as X.25, the numbers drop off dramatically. Not everyone needs to be an expert, but everyone needs to understand better the implications for the user. What should a library do? No matter if it is a school, public, academic, or special library, it is faced with similar problems such as constrained (if not dwindling) resources, greater demands for service, limited staff resources, and a staff whose education and training for the most part did not include such areas as telecommunications, FCC regulations, imageoriented learning, and broadband capabilities, to mention just a few. Librarians need to ask themselves whether they wish to be in control; to lead, or be led? The choice is ours, but we must act. The decisions are not easy. The resource issue is not clear. However, we have an outstanding tradition within the profession of cooperation. We need to capitalize on that more than ever.

If we do not come to grips with, and provide leadership in the area of telecommunications and accessing information technology, the profession of librarianship will soon end. Even the term itself denotes the printed sources. To give just one illustration, there are over seven hundred thousand nodes on the Internet Network and nobody knows how fast it is growing. When last I checked, more than three hundred libraries had made their OPACs available through this network. Compare seven hundred thousand nodes with OCLC's twenty-two thousand member libraries. This not a completely fair comparison, but it gives a sense of where information handling is headed. How many of those Internet nodes were developed because a librarian thought or argued that it was important to do? To whom are the users of Internet turning to learn how to use the network or "navigate" it? Whether we as a profession like the trend toward using electronic means to communicate, store, retrieve, and create information is not material. What we need to recognize is that this is what is happening. There are many problems related to electronic access and standards, but these are being addressed. In just two years, the Coalition for Networked Information has had a substantial impact in getting computing people, publishers, and librarians to work together. In addition, Congress just passed legislation to create a National Research and Education Network (NREN). Estimates are that it will receive over one hundred million dollars in funding during its first year. Although it was originally conceived to make access to networks for scientific and academic communities, the final bill states that it is to support education, and libraries of all types. Are we prepared?

Who of us is conversant enough to describe to our supervisors the resources necessary to position our library to take advantage of these new powerful tools. Many libraries now have online catalogs. If terminals are hardwired to the central mainframe, the data is possibly being sent at 9600 bits per second. If we wish to move from a hardwired environment to one where we can take advantage of the large data files and higher communication speeds which exist today, our buildings, campuses, schools, and agencies must be rewired. Who will design such a project? Who will develop the standards? How will it be paid for? Will we cancel subscriptions to invest in telecommunications? All of these are hard questions. Before we can move to the new paradigm of information access and use, these questions must be answered. If librarians do not educate themselves to address them, they will have little impact in the new electronic information environment.

In times of declining and stagnant budgets, coupled with the maintenance of traditional library services and demands which seem to grow each year, coming to grips with change and the issues surrounding it is indeed of monumental importance. Part of the answer lies in librarians taking a leadership role in articulating the value of such transmission of information to learning, research, and economic development. If we are not prepared to give a coherent and far sighted response, we may need to consider how long we are going to remain a profession. Without support of an information infrastructure, it will not just be libraries that fail, but schools, universities, businesses, and other agencies.

The writing is on the wall, but it is not in secret code. We must do everything possible to prepare ourselves and our institutions to take full advantage of the new technologies. If we do not, the task will be done by others. If we are not prepared to help individuals blend data and images and use extremely large files, or show them how to weave through the already existing one hundred thousand databases on Internet, we are going to be passed by and relegated to an archival function.

We have to put down our pens now. We cannot wait until they run out of ink. We need to learn the secret code, not to be dispensers of secrets, but to serve as facilitators to unlock the mysterious new world of information technology. We need to move from rules and regulations for organizing information in a warehouse environment to working with a variety of disciplines to create an infrastructure that embodies the principle of free and easy access to information to all citizens and to make certain those individuals are able to find and manipulate that information to create new knowledge.

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Technology Programming for Libraries

by Kenneth E. Marks

For some time librarians have struggled with the fiscal consequences of the increasing costs of personnel and materials (books and journals). Steady state budgets and diminishing purchasing power have forced a series of no-win choices that have tended to undermine the delivery of badly needed services. The search for solutions to these problems has been extensive and often has settled on technology, broadly defined not just as automation and personal computing but also as video, audio, telephonic, and other electronic equipment and services.

This technology has been offered as the panacea to a range of problems, including the fiscal challenges facing libraries. Employ technology to offset the loss of personnel. Use machines to replace the loss of years of experience and hard-to-find talent. Utilize technology to increase the formats and diversify the range of informational resources available at a distance, at no cost or minimal cost, for the public to use. There is, however, a "dark-side" to the wondrous world of technology. Years of experience have demonstrated that using technologies does not save staff; instead, more staff are needed. Efforts to access information resources located at a distance have proven far more complex, costly, and time-consuming than originally envisioned. Often, technology is little more than a band-aid solution; the deep-seated problem remains hidden.

And now, another more insidious aspect of technology is beginning to take its toll on libraries and librarians. The cost of acquiring, operating, maintaining, and upgrading various technologies has become another force competing for the ever-diminishing budget dollars available to librarians. If technologies are not acquired, it is often proclaimed that librarians are shortchanging their clientele and placing them among the information-disadvantaged.

Unless library administrators and staff are prepared to reconsider the organization and operation of their workplace, it is unlikely that technology will ever supply the solutions it is capable of providing. The fact is, there are too many librarians "...who are trying to do the same old job in the same old way, using 18th-century methods with 20th century tools..."[1] Giving up established ways and methods in our jobs is extremely difficult and should not be attempted in an unplanned, haphazard manner.

There is a term currently in vogue that describes the process of moving away from outmoded methods to using twentieth or twenty-first century methods and tools to change the workplace and work routines. It is "reengineering." "At the heart of reengineering is the notion of discontinuous thinking — of recognizing and breaking away from the outdated rules and fundamental assumptions that underlie operations."[2]

Although reengineering holds great potential for improving the integration of technologies in a library, it can wreak havoc in an organization if a proper approach is not used. Reengineering in the absence of effective planning and programming can be enormously counter-productive to the institutional health and well-being of a library.

Although most librarians have been subject to a constant barrage of advice that implores them to plan, planning all too often is a haphazard, erratic effort. Too many individuals have experiences that seem to confirm that planning is an exercise in futility. Months are spent attending meetings. Competing needs are examined in great detail. A plan is created. Then, the plan is disregarded the first time crucial decisions are made. As the platform of a new administration or new administrator, planning offers an attractive allure that promises to remedy existing and future problems. It also offers an opportunity to put distance between a new administration and the previous one.

The reader should not assume that the author is opposed to planning. Quite the contrary. Planning or programming properly carried forward is an indispensable tool for the successful operation of any organization, including libraries. Effective planning, whether it is known as strategic, long-range, or by some other name, offers a rigor that demands a thorough examination of institutional purpose and commitment.

An example of reengineering is a technology program that can provide the framework for achieving a more effective utilization of new equipment and systems and the possibility of new services. The model for creating a technology program can be found in the process known as the building program or educational specifications. Although there are many descriptions and definitions of a building program, the following statement provides the context for this article:

> "The purpose of the building program is to provide the architect and the building engineers with information about the library and the requirements that must be met in the design of the library building in order to serve your institution or community. . . .
>
> "The primary objective, as indicated above, is to describe the purpose, functions, relationships, and operations of a particular library in terms of its space needs, functional relationships, environmental requirements, and all other

Efforts to access information resources located at a distance have proven far more complex, costly, and time-consuming than originally envisioned.

characteristics. Each area of the library must be covered in detail ... emphasis ... on describing what is needed to make the area function effectively and efficiently. Although dwelling on the future, the building program should include a brief history of the library and the buildings it ... occupied as a means of providing background to design professionals who may not be acquainted with the institution or community. When completed, the building program stands as the project source book, providing all essential information and guidelines.

"The process of preparing the building program helps the library administrator to achieve a second objective, namely the identification of persistent problems and concerns in library organization and operation and working out of long-term solutions..."[3]

There are several crucial phrases in this excerpt. First, a program should describe a library's purpose, functions, relationships, and operations. Second, the program should focus on the particular library's space needs, functional relationships, environmental requirements, and other characteristics. Third, the program should aim to describe what is needed for efficient and effective functioning regardless of the cost. Reconciling the desired functions and the realities of cost will come later. Fourth, the program should provide a brief historical statement about the library.

Each of these factors can be combined to constitute a definition of a technology program for a library. One additional factor, costs, will be added to this description. The result is the following statement of a technology program:

> The purpose of the technology program is to provide the library administration, staff, and parent organization with information about the library, and define the requirements that must be met in the selection, integration, and use of technologies in the design of the library organization and its services to the institution or community.
>
> The primary objective is to describe the purpose, functions, relationships, and operations of a particular library in terms of its technology needs, functional relationships, environmental requirements, and other characteristics. Each area of the library must be covered in detail; the emphasis should be on describing what is needed to make the area function effectively and efficiently. Although dwelling on the future, the technology program should include a brief history of the library and the technologies it has used as a means of providing background to librarians, technology specialists, and budget officials who may not be acquainted with the institution or community. When completed, the technology program stands as the source book, providing all essential information and guidelines.
>
> The process of preparing the technology program helps the library administration to achieve a second objective: the identification of persistent problems and concerns in library organization and operation and the working out of long-term solutions.

There is one fundamental difference between a building program and a technology program. That difference is the timespan for which the program is applicable. A building program will be drawn in a manner that projects over a period of two decades or more. While there may be tinkering with the program, its essential characteristics remain valid over an extended period of time. The lifespan of a technology program is shorter, five years if a library is fortunate, three years realistically. The result is that a technology program should undergo almost constant revision and adaptation.

Development of the technology program requires a willingness to commit individually and organizationally to the rigor and structure of the process of self-examination. The most efficient approach may be to charge one individual with the responsibility for producing the program with the commitment of full participation by all staff. While the staff will be indispensable to the process of identifying past conditions, present circumstances, and future needs, the program will have some highly technical and/or specialized segments where a single person can resolve decisions most effectively.

The process of creating a library technology program involves gathering information and fashioning answers to a prescribed set of questions. Initially, each of the functional areas of the library must be identified in preparation for the description, analysis, assessment, and projection that follows. There may be a tendency to settle upon the traditional departments or other groupings that characterize a library. It may be that these units are too broadly-based and that smaller groupings of individuals and functions should be used as the basis for the investigation. The work group may form the logical unit in this review.

Once these functional areas have been identified, a routine can be established for assembling the needed information. The description of each functional area's present circumstance must be prepared to provide a base line for future decisions. The description will examine in detail the following items.

Purpose:
- What is the purpose of the functional unit within the context of the larger library organization?

Functions:
- What are the tasks the functional unit performs?
- Which of those tasks are dependent upon non-library units for information, assistance, or other support for their successful accomplishment?

Relationships:
- What relationships does the functional unit have with each of the other functional units in the library?
- What relationships does the functional unit have with non-library units?

Environmental Requirements:
- What are the existing environmental conditions within the functional unit? Particular attention has to be devoted to electrical capacity; heating, ventilating, and air conditioning (HVAC); telephone facilities; the condition of walls, floors, and ceilings; the location of electrical sockets; the quality of existing lighting; the types of furnishings (tables, chairs, desks) and floor coverings.
- What is the impact of the current demands of technology on existing community utility networks?

Personnel:
- What staff are assigned to the functional unit?
- What tasks are included in each individual's job description and what are his or her unique qualifications and skills?

Users:
- Are the primary users of the technology staff or clients?
- What training is required for the user population to make effective use of the technology?
- Who, if anyone, is responsible for providing training?
- What percentage of the technology's existing capacity is presently being used?

Technologies:
- What existing technologies are presently in use in the functional unit?
- How long have these technologies been used in the department?
- Which staff have been trained to use the technologies and which have the skill to use the technologies?
- What portion of the potential of the technologies is currently being used?
- What is the current inventory of equipment including the vendor, model number, date purchased, whether the item is under warranty, and how service is obtained?
- What is the inventory of applicable software available for the technology?
- What are the ergonomic strengths, weaknesses, and requirements of existing technologies?
- What specific standards for software and hardware have been adopted?
- What software and hardware compatibilities, incompatibilities, and other deficiencies have been identified?

Budget:
- What is the budget for the functional unit? It may be that the functional unit is a subset of a larger unit. This means that the operational costs of the smaller unit will have to be calculated. Special attention needs to be devoted to identifying all the costs associated with the technologies used in a unit.
- What is the library's or parent institution's stated and actual life or replacement cycle for the existing technology?

An important part of this descriptive accounting is a set of blue prints, floor plans, and area diagrams that reflect the current physical structure of the library. These plans should include the location of all utilities and HVAC. A current report of the use of existing utility capacity should be included, as well as commentary on the expandability of the various utilities.

The description of each functional area's present circumstance must be a statement of the current technological environment. All qualitative commentary should be reserved for the next two segments of the program: analysis and assessment.

The analysis and assessment phases of the technology program must present a dispassionate commentary on what has worked and what has not worked technologically. While statements regarding the "right" or "wrong" of a decision, selection, or operation are out of place, it is appropriate to review the processes that led to decisions. This is no place to second-guess earlier decisions or find fault with the roles of individuals. The goal is to identify those milestones that will permit better choices and more effective decisions to be made in the future.

Once the description of existing circumstances has been completed and an analysis and assessment of present technology has occurred, then a projection of the future library technology environment can be created. The projection phase may be the downfall of many technology programs, for there is a temptation to be carried away by the lure of new or prospective developments. While it is critical to be aware of the newest technologies and what they can do, it is equally crucial to identify the interim steps that must occur to move from the present to the future. There are few libraries that can afford the cost of being at the "bleeding-edge" of technology, but many libraries could benefit from being involved in the "beta" testing of hardware and software for new technologies.

Unlike a building program where there may be the commitment to move to a new facility, the technology program must be based on an evolutionary movement. Rarely will a library be able to afford the investment to move from one generation of technology to another throughout the entire organization. Instead, the principle of "hand-me-down" utilization has to be applied to technologies.

Again, the same categories identified earlier provide the framework for fashioning the projection of the library's technological environment.

Purpose:
- What changes or shifts will there be in the purpose, goals, objectives, etc. of the functional unit?
- Will these be the result of broader institutional changes, technological changes, or changes in the functional unit alone?

Functions:
- Will the tasks of the functional unit change?
- Will the unit become more or less dependent upon non-library units?
- Will those units be geographically proximate or remote?

Relationships:
- Will relationships with other functional units in the library change?
- What new or modified relationships with non-library units will be established?

Environmental Requirements:
- What will future environmental conditions be in the functional unit?
- How will those compare with the environmental requirements of other functional units? Special attention will need to be devoted to the forecasting of power requirements and the demand for HVAC facilities. Downsizing equipment does not necessarily minimize the demands that equipment may place on the environment.

Personnel:
- Will there be changes in job skills required of staff?
- How will staff be expected to acquire new or additional skills?
- What will the library's responsibility be to assist staff in learning those skills?
- Will these changes in job skills be reflected in job descriptions and the task statements for various positions?
- What problems will arise regarding competitive salaries for those job skills that are needed by the for-profit sector of the economy?
- How will the "graying" of the library profession affect the library's ability to migrate to future technologies?

Users:
- Will there be changes in the user population?
- Will additional training be required? If so, who provides it?
- Will the combination of improved skills among clients, decreasing cost of technology, and increasing user-friendliness minimize client dependence on the library?

Technologies:
- What technologies can be identified as potentially useful to the functional unit?
- Will these technologies be new to the library or will they represent the evolution of technologies existing in the library?
- What quantities of these technologies will be required to enable library staff to perform their jobs?
- What will the marketplace for acquiring these technologies be like? Will there be intense competition? Will the marketplace be closed?
- What will the ergonomics of these technologies be?
- Will new standards for software and hardware have to be adopted or can existing ones be modified?

Budget:
- What changes will need to be

made in the budget of the functional unit?

- What are the life-cycle costs of each technology?
- What is a realistic lifetime for the technology based upon the library's or parent institution's fiscal condition?

There are several threads running throughout the entire technology program that deserve special comment. A few of them deserve some additional examination because of their importance to the technology program.

Life Cycle Costs

Most libraries, because of their public sector affiliation, cannot amortize their equipment costs over time. The result is that there is no mechanism to provide for saving resources for future investment in replacement or new equipment. One of the consequences of this situation has been a lack of awareness of the actual or "life cycle" costs of equipment. As libraries become more technology dependent, it will be necessary to understand the life cycle costs associated with each technology and the pieces of equipment that are employed. The life cycle costs include all fixed and variable costs associated with the acquisition and use of a piece of equipment over the entire life of the item. This means that the complete cost of a piece of technology must be calculated. The purchase price of the equipment is only the first of the costs. Maintenance, training, utilities, space, etc., all contribute to the cost of using the equipment over its lifetime.

The inability of public sector organizations to amortize their equipment has meant that most libraries use equipment far beyond what is typically considered to be the normal life span of the technology. Generally, a three- to five-year life span for computer-based equipment is accepted as a standard in the for-profit sector of the economy. In the public sector the useful life span is usually five to seven years and, often, much longer. The consequence of this enforced longer technological life span is that the technology becomes increasingly less effective because of its lack of processing power or capacity to handle the newest software.

While public sector organizations probably will never be able to amortize their technologies, they should establish a more realistic life span for that equipment. Regardless of the life span settled upon, dollars equal to an appropriate percentage of the dollars invested in the technology should be allocated in each annual budget for replacement and upgrading existing technologies or the acquisition of new technologies. Unless a library can make the budgetary commitment to establish and fund an accepted life cycle replacement program, support for technology will always be haphazard. An ideal budgeting approach would be to allocate one-third of the total dollars committed to technology to an annual budgeted fund earmarked for either replacing aging technology or acquiring new technologies.

Maintenance

Although maintenance is a part of the life cycle cost of technology, it deserves special attention because its implications are underestimated all too often. Many libraries have had their first introduction to the realities of maintenance as they have acquired and operated integrated library systems. It may not be inaccurate to say that vendors will sell a technology-based system at very close to the break-even cost because they know that over time they will make a substantial return on their investment through maintenance and support charges. Even if a maintenance contract is negotiated with maintenance price increases tied to consumer price index increases, it is a given that there will be annual increases that are close to the maximum allowed. These continuing charges tend to be overlooked during the analysis of technology vendors. Even if maintenance charges are factored into the analysis, it is likely that they will be underestimated. Over the span of five to seven years, it is possible for maintenance costs to exceed the original purchase price of the original technology.

There are few libraries that can afford the cost of being at the "bleeding-edge" of technology, but many libraries could benefit from being involved in the "beta" testing of hardware and software for new technologies.

There is an associated question that larger libraries should examine. How dependent do they want to be upon an outside organization for maintenance of their various technological systems? If only one or a very few technologies are employed, it may or may not be cost-effective for library employees to do the maintenance themselves. At some point, however, in-house maintenance can become cost-effective. Budgetarily, a library may want to consider creating a pool of dollars that is used to acquire replacement parts such as monitors, keyboards, etc. A supply of these items can maintain the productivity of library personnel and minimize the frustration of library clients by reducing the amount of down time that occurs.

Supplies

Supplies are an invisible or transparent variable cost as most librarians examine technologies. The full impact of supply costs usually hits some time after staff and clients have become completely dependent upon a particular service or technology. A classic example is the cost of laser printer toner cartridges and paper. There is no question that laser printers deliver superb print quality and that they are extremely quiet. The fundamental question to be answered, however, is whether a library can afford to replace laser toner cartridges on a weekly basis and consume several cartons of paper per week, possibly per day. Unless librarians settle the issue of who bears the cost of these consumables before they are made available to the public, library personnel can have a difficult public relations dilemma to resolve if they later have to recover supply costs.

Training

Our ability as librarians to assist clients in comprehending the potential of various technological systems and then utilizing them effectively will be directly dependent upon our willingness to become more specialized. Traditionally, librarians have provided at least a minimally effective interface between the client and various information resources. If the librarian did not fully understand the organization of the resource, there was the opportunity to engage in extemporaneous and spontaneous learning with the client. That approach will become less and less appropriate as the number and variety of technologies increases in most libraries.

Another factor that should be reviewed is training for the various technologies. Although most libraries have many staff who are skilled in using technologies, there is a fundamental need for training all library staff. The budgets for staff development or training are typically given short shrift as library administrators wrestle with competing demands. Unless there is adequate budgetary support for training library staff to utilize existing and future technology, the potential of the technology will never be realized to the fullest extent possible. Although it is easy to give

"lip service" to training, it is quite another matter to adjust work schedules and make the necessary accommodations to allow for time to train staff. Whether library staff or clients are involved, training in the use of technology will always take significantly longer than planned.

Client training is something that all too often occurs after library staff has been buried beneath the clients' legitimate demands for assistance in the use of technology. Not all library patrons, and library staff for that matter, are members of the Nintendo generation, and many will require continual and extensive support and assistance in using technology. While librarians have traditionally utilized a variety of publications and handouts to assist clients in accessing and using library materials and collections, these aids will be of limited usefulness in helping individuals absorb the concepts involved in Boolean searching and the nuances that differentiate searching one database from another. Finally, training clients in the use of technology becomes a real time event driven by the immediacy of the individual's need. The perceived effectiveness of libraries in the future may be based almost entirely upon the client's assessment of that training and assistance.

Organizational Change

Another basic issue in technology programming is the effect of technology upon the library organizational structure and operations. Does the current organizational structure capitalize on available technology or does it, instead, diminish the contribution the technology could make? This may be one of the most difficult investigations to make because it requires stepping back from the environment in which most of us have spent our entire professional careers. This is where the term "reengineering" re-surfaces.

Unless there is a willingness to pursue reengineering throughout the library, the planning and programming for new technologies will be minimally successful. Typically, new technologies offer the opportunity for making fundamental changes in the way in which services can be provided. Too often, however, there is an unwillingness to cut away from the tried and true and familiar processes, procedures, and services. This reluctance may be due to the desire to avoid sharp breaks with the past and to minimize disruption.

A technology program can provide a library with the opportunity to step back and identify where it stands technologically and where it perceives itself to be moving over time. Because the program is a dynamic creation, it can be adjusted and adapted over time, facilitating an evolutionary change. In fact, if it is to serve its real function it must be reviewed and modified on a regular basis. At any point in time, the program should provide the library with a properly considered assessment of the role technology is to play in its current operation. This can be especially crucial if the library administration is faced with budget cuts or staff reductions.

The program will be only as effective as the commitment of the library administration and staff to produce an objective assessment of current conditions and a realistic projection of future opportunities. In the final analysis, the technology program can be a statement of how effectively the library is prepared to utilize technology. If the ongoing balancing act involving limited budget resources and the increasingly competitive demands for materials, personnel, and technology can be made somewhat more rational, the technology program will have served its purpose.

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Navigating the Internet: A Beginning

by George H. Brett II

"Independence of space and time is the single most valuable service and product we can provide humankind."

— N. Negroponte, *Scientific American*, 9/91

"The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it."

— M. Weiser, *Scientific American*, 9/91

I have worked with individuals who had extensive knowledge about what the Internet is, what networks can do, and/or what the technical specifications of the hardware and software were. Yet often these persons were lost when it came to finding and using resources available on the network. They could not navigate the giant network of networks, known as the Internet. The Internet connects over 750,000 computers together and is growing daily.

Finding your way around the Internet requires some help frommaps, guides, and colleagues. This paper will describe one method of how one can move from the familiar to the unknown in the world of computer networking. The following steps are suggested: (1) investigate and use paper-based resources, (2) become familiar with the computing resources you have at your desktop, (3) begin using electronic mail (email), and (4) branch out using interactive Internetworking services and resources.

Print Media Resources

"How'd I learn to swim? Why my Daddy just threw me in the water. And that was that." — anon.

There is some value to learning by doing. But people can learn even more when they have a well-developed background knowledge. Printed media is still one of the most accessible ways for us to get that knowledge. The following are items I consider to be basic reading. A more extensive bibliography is given at the end of the paper.

John Quarterman's *The Matrix: Computer Networks and Conferencing Systems Worldwide* is one of the most popular books in the field of network support. It contains extensive information about each of the major networks. This bright yellow book provides a history of networks, discusses accepted practices when using networks, and tells how to do various things, such as sending electronic mail via the Internet.

Tracy LaQuey developed a thick manual that was distributed within the University of Texas system. Her *Users' Directory of Computer Networks* from Digital Press can be compared to the white and yellow pages of a telephone book. This volume has listings of all the known computers, their addresses, and contact people at the sites. Also, there is good background on the selected networks.

!%@: : a Directory of Electronic Mail Addressing and Networks from Donalyn and Frey is now in its second edition. This is more of a road map than a phone book. Many different networks require arcane symbols to route a piece of electronic mail (email) from point A to point Z. With this book I have been able to help a professor of geography send email from Raleigh, NC to Rio de Janeiro, Brazil.

Books are helpful, but in order to get more up-to-date information we rely on journals and other periodicals. There is no lack of magazines about computers and technology in the popular press, such as *Byte*, *PC World*, *InfoWorld*, and *ComputerWorld*. Also, professional or discipline-specific journals are beginning to give more field-appropriate information about networked information. It is a good idea to keep an eye open for theme–oriented or special issues. For example, *Scientific American* recently dedicated an issue to "Computers and Networks" (Sept 1991).

Resources on Your Desktop: Your personal workstation

"A clean desk is the sign of a warped mind." — seen on a novelty sign

Before you venture out onto the network, it is advisable to know how to use your desktop computer well and how to organize the contents of your hard disk. How well do you access information on your desktop? Many of us just buy a new, larger hard disk when we run out of space. A question I would ask you is "Can you find that memo or paper you wrote last year, and the notes that went with it, on your hard disk?" Many of us would have a hard time or at least would have to spend a long time digging through directories or floppy disks. How can we cope with this? One of the usual outcomes from email and other network–related activities is increased volume of files and text to be stored on your hard disk. This can create a serious problem for the user who is not prepared for the flood of information.

A new breed of applications has been designed to help these problems, basically through two types of programs. Some were

initially designed to assist with the maintenance of hard disks. These programs usually help you keep track of directory names and disk speed and to create electronic indices of all the information on your hard disk. The other type of application is written specifically to search for data buried within files on the hard disk.

An example of the first type is Lotus' *Magellan*, for MS DOS computers, which can be used to maintain your hard disk. In addition, *Magellan* can build a variety of different indices to permit you to work with your information base in a way that is useful and easy to do. For example, you might create an index for each major research project on which you are working. Or you might just keep one very large index which includes all the files in all of the directories on your disk. When you want to know where the report on xylophones is you would begin a query by hitting the appropriate function key, typing the word you are looking for (xylophone), and wait for the program to search the index for the term. *Magellan* does three important things to assist you in your search. First, it ranks the files found by order of the probability that your term is found. So, a 99% would indicate that this term is in that file whereas a 40% would not be so promising. Second, once you choose the file you want to inspect, *Magellan* will allow you to open the file and look at the context in which the term is used. So, you might find your xylophone among items in a price list, which is not what you wanted. Third, after you find the right file, *Magellan* will permit you to launch the application that is associated with the file. Say you were looking at a word processing file: *Magellan* would then launch the word processing application so you could edit the file.

There is more information available at our fingertips during a walk in the woods than in any computer system, yet people find a walk among trees relaxing and computers frustrating.

— M. Weiser,
Scientific American, *9/91*

Gopher is the name of a program that was designed to locate text in files. Unlike *Magellan*, *Gopher* does not build indices of all the files on the disk. Instead, it looks into each of the files that you indicate by directory or specific name. One of the strengths of a program like this is that the search capacities are usually more extensive. *Gopher* will allow you to perform boolean searches, using connectors such as "and," "or," "not," and proximity. Proximity parameters can be used when searching terms that should be closely related to each other. For example, a name being within two lines of a city would help identify an address.

These types of applications are very important to know about before beginning to navigate the network.

Electronic Mail

Electronic mail, or "email," continues to be the best and most basic introduction to network computing. The ability to compose, send and receive messages via computer demonstrates various aspects of networked information. One uses the local computing resources to compose and prepare the message which may even include sound or images. Then the network is used to transmit the electronic mail to the receiver. At the other end the recipient of the package can check his or her mailbox whenever they wish. Then, if necessary, a return message can be edited and sent. Independence from time is one of the most useful aspect of email. For example, correspondents from different time zones can collaborate without regard for the time differences.

In order to get started you will need several things: a personal computer with telecommunication software and hardware, an email account on a computer system (e.g. local mainframe, CompuServe), an ID, and the email addresses of your electronic correspondents. A terminal connected to a host computer can usually be used in place of the personal computer with telecommunication software and hardware. The email account is most likely an account on a campus or departmental computer which is registered with the Internet.

Once you begin exchanging email you will gain confidence and branch out into other activities. There are a variety of activities that take place on the Internet through email. One of the most widely used applications is the mailing list, or "listserv".

The listserv is an electronic newsletter or network forum. Mailing lists focus on a particular subject or interest area. For example, I am working with the Coalition for Networked Information in the working group on directories. We have created a mailing list, CNIDIR-L, where we can continue discussion we have begun at various national meetings. In fact, because this list is open to the public, we can involve many more people in our work than just those who attended a meeting.

Mailing lists, known as moderated lists, can be controlled by an editor. An advantage of the moderated list is that it permits the moderator to collect and assemble messages into coherent groupings. Moderated lists can function in a manner similar to scholarly journals that use the process of peer review. However, unlike print journals, the time to publication is not months nor years, but hours or days.

There is one other function of electronic mail that is not well known. This is the batch mode of computing. Certain systems permit a user to send email that will actually do different applications. For example, some systems support database queries of large indices. Other systems will permit a remote user to request file transfer to be delivered to their local computer.

Interactive networking

"Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data."

— William Gibson, *Neuromancer*

After learning to manage your local system and to send and receive electronic communications via the Internet, you may have a sense that there must be more. There is. This is the interactive world of the Internet.

At this point one truly begins navigating the network. A number of different applications will help in these electronic voyages. Currently the Internet that most of us use adheres to the TCP/IP protocol. This protocol is a collection of programs that are needed to permit computers to communicate successfully over the networks. In fact TCP/IP stands for Transmission Control

Program/Internet Protocol. The major TCP/IP programs illustrate the types of applications that are done on the network: terminal emulation, file transfer, mail transfer, and news transfer.

Remote terminal login is supported by the program "telnet" which can be found as a stand alone application or within other telecommunication packages. *NCSA Telnet* is perhaps the best-known stand alone version. *Telnet* permits you to log onto a remote computer to use its resources as long as you have permission to do so. This is how many of the supercomputers are used. An account is created for the researcher on the supercomputer. From then on, wherever that person is, as long as he or she has access to a personal computer or terminal with access to the Internet, he or she can use the supercomputer resources.

Not everyone needs the ability to run programs on remote computers. Many times what is necessary is the transfer of data from one point to another. The Internet file transfer program is known as FTP (File Transfer Protocol). FTP is used to move files from system to system or from the personal workstation to other computer systems. If you have an account on the two systems you wish to work with, you can log onto each with your ID and then transfer files to and from the permitted working spaces. Another method known as "anonymous FTP" permits users without accounts on the computer where the files reside to transfer files to and from remote computers. To do an anonymous FTP session, you would log onto the remote computer as 'anonymous' and type 'anonymous' or give your email address as the password. Once on the system you will be restricted to the files you are allowed to access. Anonymous FTP is used by many users as one of the primary means for acquiring public domain software and shareware from the network.

As mentioned earlier in this paper, the files at your personal workstation are likely to increase as you use the Internet. Once you discover how to use anonymous FTP, this will be more likely. It is worth a warning at this point. There are many millions of bytes of data and programs archived all around the network. In fact many of the individual files and programs available are very large. Keep this in mind when you download to your personal workstation. Not everyone has forty or fifty megabytes of local storage available. If you plan to download files to floppy diskettes be aware of what the limits are. An 800 kilobyte file will not fit on a 360 kilobyte diskette without special file compression software.

Where are we going from here?

In hopes of making networking more acceptable to end users, organizations are trying to make the systems easier to use. In recent years the use of menus has become common. A menu system presents you with a screen of choices and letters or numbers that are used to select the specific function that you require. Recently the move has been towards the graphical user interface (GUI), also known as windows. In a window environment a user can use a pointing device such as a mouse to make selections. Once the selection has been made then the program completes whatever action is necessary.

There are a growing number of host computers that provide the user with an easy-to-use menu to navigate networked information. One of the most popular is 'libtel,' which began on computers that used the Unix operating system. This menu can be seen in use on the electronic bulletin board service (bbs) offered by UNC-Chapel Hill's Office of Information Technology. This bbs is accessible from the Internet by using the command: telnet bbs.oit.unc.edu. Follow the instructions given on the screen. Once you arrive at the main menu you can select the number for other services. This will take you to a screen that lists many of the states and other choices. From this point the bbs will telnet you to those other resources which include libraries, NSF grants information database, weather database, and more.

In addition to programs that are available on the host computer we are seeing improvements with "client" programs located on your personal workstation. The Wide Area Information Server (WAIS) from Thinking Machines, Inc., is one such program. This client software has been written for a number of different personal workstations. It is designed to permit the user to ask questions of databases that are out on the Internet. There are three basic components to the client: source, question, and response. The source list contains the electronic addresses and other information about the databases that you wish to query. The question list contains questions which are repeatedly asked. The response area is part of the individual question. In the response area you will see those files which meet the criteria of your question. Thus, WAIS permits you to build a personal reference library of questions and resources for you desktop.

More products like 'libtel' and WAIS will become available in the future. These advances will come from various sources. Software and hardware manufacturers are creating new products that make greater use of the network for productivity. Individual organizations are focusing on the needs of their constituents and creating tools for networked information. Often these tools can be useful to other groups outside the original environment.

An important organization in the development of such "client" tools is the Coalition of Networked Information (CNI). CNI was formed by CAUSE, EDUCOM, and the Association of Research Libraries to "explore the promise of high performance computers and advanced networks for enriching scholarship and enhancing intellectual productivity..." (CNI First Year (March, 1990-June, 1991) Report). Libraries interested in participating in the development of tools to allow users to utilize more effectively network resources should consider becoming involved in CNI.

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A Closing Thought

"Most important, ubiquitous computers will help overcome the problem of information overload. There is more information available at our fingertips during a walk in the woods than in any computer system, yet people find a walk among trees relaxing and computers frustrating. Machines that fit the human environment instead of forcing humans to enter theirs will make using computers as refreshing as taking a walk in the woods."

— M. Weiser, *Scientific American*, 9/91

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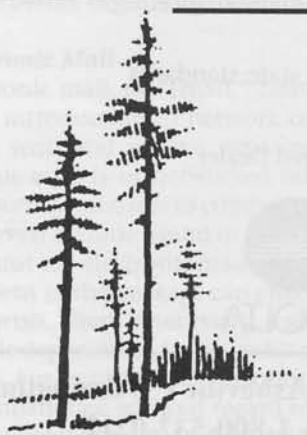

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Navigating Some of the Library Highways with Your Modem

by Eric Morgan

This article describes a myriad of non–traditional information sources accessible with your computer and modem. These descriptions proceed from the least expensive source (ISAAC) to the most expensive (CompuServe). In between are descriptions about the North Carolina Information Network, regional online catalogs, bulletin board systems, The Well, ALANet, Prodigy, and America Online. Each source is described in terms of its scope and ease of use. This paper provides brief instructions on how to access these sources. (It does not describe how to use your communications software.) It then demonstrates how these sources can be used to provide better library service and facilitate professional development. Finally, this paper encourages librarians to think of a computer as the primary tool of the profession.

ISAAC

The following quote comes directly from ISAAC. "ISAAC, the Information System for Advanced Academic Computing, provides information for IBM users about software and hardware for instruction and research in higher education. ISAAC is funded by IBM and operates at the University of Washington. Access is free to all faculty, staff, and students currently affiliated with an institution of higher education. It is possible to access ISAAC via modem or via the Internet computer network."

Using ISAAC (and many of the other services listed here) is much like going to a special–interest group meeting at ALA. It provides the means for discussing common problems; it's an incarnation of the "two heads are better than one" philosophy.

ISAAC is divided into many conferences (or discussions). Some of the conferences of particular interest to librarians include the following:

- Campus networking
- Education
- Humanities
- Institutional research
- Languages and linguistics
- Learning disabilities
- Libraries
- Multimedia technologies
- Social sciences
- Telecommunications technical exchange
- Instructional computing
- Instructional technology transfer centers

Within the Libraries section, there are a number of interesting topics being discussed:

- VTLS
- IBM librarian software
- OCLC EPIC price
- Developing library skills
- Copy of NREN BILL in HOUSE
- Mini-library needs help
- ELECTRONIC CLASSROOM
- opac
- CD-ROM Network
- Freshman year conference
- Collection development software
- Info wanted on how your library decides what to order
- NOTIS systems announcements
- 1991 ALA Annual Conference
- Dynix announces two new innovative modules
- Internet addressable journal search systems
- Computerized grant sources, Looking for

ISAAC (like the other services listed here) is an information gold mine, although it is not a traditional library information source. The information found in these discussions is the sort you encounter when talking to a person face to face. It typically contains names, addresses, telephone numbers, citations, opinions, hardware and software reviews, questions and answers, meeting announcements, calls for papers, etc.

The difficult thing about ISAAC is that it is not searchable; browsing will be the only way to retrieve something of interest. For this reason ISAAC is not a good source for reference information.

ISAAC is better suited for professional development. Visit as many conferences as you want. Pose questions to the other readers. Read what other people have to say. Offer your opinion. This process will help solidify and polish your professional goals and objectives and at the same time contribute to library/information science.

To access ISAAC, simply use your communications software and dial 1-800-237-5551. Once connected you can register by typing "register" in lower case as your access code. Contact the ISAAC office if you have questions at (206) 543-5604.

North Carolina Information Network (NCIN)

The North Carolina Information Network (NCIN) is a conduit for many of the information services that the North Carolina Division of State Library provides. It "is a link between widespread sources of information and local libraries of all types, using the latest computer telecommunication technologies."

Once logged onto NCIN you are presented with the following menu options:

- View a bulletin board on the screen
- View information stored in a data base
- State Library Dynix Catalog
- State Archives MARS finding aids
- Download a bulletin board
- Display your user information for verification
- Electronic mail system

Some of the bulletin boards contain full–text "articles," others are lists of data. These bulletin boards are not used to exchange ideas with fellow telecommunicators; they are intended to disseminate information about libraries and the state government. (See Appendix A for a detailed description of the bulletin boards.) The bulletin boards are updated regularly and at this writing include:

- State government vacancies
- Listing of all state contracts in selected areas
- Calendar of events
- Listing of state construction bids
- Statistical information in 12 general subject areas
- Listing of Department of Transportation highway contracts
- Local government programs
- Listing of professional librarian positions
- Information for children's and young adult librarians
- General summary of changing news about NC libraries
- Library management information
- Summary of events in the NC General Assembly

NCIN also hosts a state calendar database and a state job–opening database. These databases are searched by filling out an electronic form and submitting the query. The results are then displayed.

Another unique aspect of NCIN is MARS. MARS was developed by the North Carolina State Archives as an automated finding aid system to materials held by the State Archives. MARS is a system for record location and retrieval rather than information retrieval. Its purpose is to direct you to records that contain information you are seeking rather than to present the information itself. For example, when looking for information about Zebulon B. Vance, MARS will report fifty-six items in the Samuel A'Court Ashe Papers that contain references to Vance or are in some way associated with him and will indicate the locations of those items.

MARS includes archival information in the following categories:

- Account Books
- Audiovisual/Iconographic Collection
- Bible Records
- Cemetery Records
- Church Records
- County Records
- Federal Records
- Foreign Archives
- Map Collection
- Military Collection
- Miscellaneous Collection
- Municipal Records
- Newspaper Collection
- Organization Records
- Plans and Drawings
- Poster Collection

Don't forget the electronic mail capabilities of NCIN. Anyone who has used electronic mail knows its benefits: fast response time, elimination of postage costs, elimination of "telephone tag". Since every institution that uses NCIN has an electronic mailbox, you can send electronic mail to most libraries in the state.

There is no cost for most libraries to use NCIN (public school libraries are the exception). Since each institution is different, the best way to learn how to access NCIN is to contact the State Library for more information

Online catalogs within North Carolina

Besides the North Carolina Division of State Library, there are a number of other library catalogs you can access. Dialing another library's catalog has many potential uses: (1) to find the title and then look it up in your own collection; (2) to use as an alternative to OCLC for ILL purposes; (3) to use as a collection development tool; (4) to create a useful bibliography of obtainable books; and (5) to compare or resolve cataloging difficulties.

In North Carolina, there are basically two ways to connect to remote online catalogs with your modem. The least expensive is through LincNet. LincNet is a communications network run by UNC Educational Computing Services (ECS). Most, if not all, post–secondary educational institutions across the state have a LincNet node. Many institutions have their own LincNet number and many have their own policies concerning public access. Call the nearest institution and ask their computer operations center about their policies and procedures concerning LincNet. If you can gain access to LincNet this way, use the command "dir ?" to get a list of available services. Then use the command "connect" to access these services.

The other, more expensive way to connect to remote online catalogs in the state is to call them directly. Below are the telephone numbers of some online catalogs across the state and instructions on how to log on. A word of caution is in order. Use these telephone lines with discretion. The libraries have a limited number of dial–up ports which are primarily intended for the libraries' immediate clients. As a matter of courtesy, do not stay on the line too long. (Unless otherwise noted, your communications setting should be set at 8 character–bits, 1 stop–bit, and no parity.)

Triangle Research Library Network (TRLN) is made up of the libraries of Duke University, North Carolina State University, and UNC–Chapel Hill. They each maintain individual catalogs, but they are searchable simultaneously. Together, they form one of the largest collections in the nation. There are several numbers you can dial to access TRLN. Choose the one most convenient to you: (Your communications setting must be set at 7 character–bits, 1 stop–bit, and even parity; enter "bye" to exit and manually hangup.).

- dial (919) 515-3980 and at the "enter dest" prompt enter "lib*".
- dial (919) 549-8211 and at the # prompt enter "lib" press return a number of times until you get the "?" prompt and begin.
- dial (919) 962-9911 (300 or 1200 baud) or (919) 962-9921(2400 baud) or (919) 962-9931 (9600 baud) and at the # prompt enter "lib" press return a number of times until you get the "?" prompt and begin.

UNC- Charlotte is accessible only at 1200 baud. Dial (704) 547-3200 or (704) 547-3300. When asked for a connec-

tion enter "c aladdin" and you will connect to the online catalog. Enter ^b^c (control–b control–c) to exit and manually hangup.

Dial (919) 395-3700 to log onto UNC-Wilmington. At the "Select Service," prompt enter "lib". You will get a "connected" message. Enter "?" and you will be asked for a terminal type. Choosing vt100 is a safe bet.

There are other accessible catalogs across the state, including those at North Carolina A&T, the Public Library of Charlotte and Mecklenburg, and UNC-Greensboro.

Bulletin board systems (BBSs)

Bulletin board systems (BBSs) represent another fruitful and non-traditional source of information underutilized by librarians. Libraries and librarians can use BBSs to store, organize and disseminate information as well as retrieve information.

Typically, an individual or organization has set up an "electronic bulletin board" for the purposes of discussing issues related to the parent organization. This electronic bulletin board usually consists of a microcomputer, a modem, and BBS software. It is relatively inexpensive to set up. Just about any computer and modem will do, and some of the most popular BBS software programs are shareware.

There are a many BBSs sponsored by libraries, and the number is growing all the time. A good beginning source for library–oriented BBS telephone numbers is the "Directory of Electronic Bulletin Board Systems in Libraries and Related Organizations" sponsored by the American Society for Information Science and edited by Audrey N. Grosch. A few of the BBSs from this list are described below:

The first is ALF, the Agricultural Library Forum. "The National Agricultural Library Bulletin Board provides a channel of communication to librarians, technical information specialists, extension workers, researchers, scientists, and others on agricultural information activities." Call (301) 344-8510.

Another is Wellspring. "Wellspring is sponsored by the Biomedical Library of the University of California-Irvine, and is free of charge to all University of California students, staff, and faculty, and the general public. The main areas of focus are health and medicine, computer viruses and badware, personal computer education and communication." Call (714) 856-7996 or (714) 856-5087.

Wellspring and ALF both use BBSs to disseminate information about their parent institutions. They would both be good places to post reference questions. Neither is a good place to discuss librarianship.

The Library User Network BBS is sponsored by Metropolitan State University. It is "a bulletin board dedicated to the search for information in libraries, online catalogs, and other indexes of all sorts. It is intended to be an open forum for discussions, guest editorials, reviews, specialized bibliographies, and short articles or stories by BBS users." Call the Library User Network BBS at (612) 772-7635.

On the other hand, "The HI Tech Tools BBS has been established specifically for librarians who are involved in implementing current technology in their libraries. This includes, but is not limited to: automated circulation and catalog systems (particularly Follett's Circ Plus and Cat Plus), CD–ROM database applications, and online database searching (e.g. DIALOG's Knowledge Index). Portland (Oregon) metropolitan area teachers and students are also welcome, with areas established especially for them." This BBS is an excellent place to discuss library related issues especially since it "echoes" its library discussion with other BBSs across the country.

The HI Tech Tools BBS files section contains two particular categories of interest to librarians: (1) The Future of Information Access, and (2) Files for Librarians. Each of these sections contain long lists of text files (full–text articles) you can download, including the following:

- RIGHTS.ALA – Library Bill of Rights
- ACCESS.ALA – Regulations, policies, and procedures affecting access to library resources and service: An Interpretation of the Library Bill of Rights
- FAVLIB.TXT – Favorite online numbers for librarians
- OIS7.TXT0 – Online information sources
- CDROM.TXT – Networked CD-ROMS by Judy Koren
- WAIS.TXT – Wide Area Information Services interface
- NREN272.TXT – 1991 Senate Bill 272, Computing, education and libraries

To access HI Tech Tools simply use your modem to call (503) 245-4961.

The Cleveland Free–Net is a service with a lot more money and consequently offers a greater variety of services. (It isn't really a BBS, but since there is no cost to use the service except a long–distance telephone call, I put it here.) This is how Free-Net describes itself:

> "For the past five years, Case Western Reserve University has been experimenting with free, open-access, community computer systems as a new communications and information medium ... Running on the machine is a computer program that provides its users with everything from electronic mail services to information about health care, education, technology, government, recreation, or just about anything ... Anyone in the community with access to a home, office, or school computer and a modem can contact the system any time, 24 hours a day. They simply dial a central phone number, make connection, and a series of menus appears on the screen which allows them to select the information or communication services they would like. All of it is free and all of it can easily be accomplished by a first-time user ... the system is literally run by the community itself. Everything that appears on one of these machines is there because there are individuals or organizations in the community who are prepared to contribute their time, effort, and expertise to place it there and operate it over time. This, of course, is in contrast to the commercial services which have very high personnel and information–acquisition costs and must pass those costs on to the consumer ... With this in mind, in September of 1988 the Community Telecomputing Laboratory was established at Case Western Reserve University."

Once you're logged onto the Free–Net, you are provided with a number of menu choices. Of particular interest to librarians are The Library, headlines from the newspaper *USA Today*, the weather, and full–texts of a few books, poems, essays, and speeches.

The Library is a link to the the public library system around Cleveland, but it is also a link to library systems

around the country. With the Cleveland Free-Net, it is possible to access and use the online public access catalogs (OPACs) of Colorado Alliance of Research Libraries (CARL), MELVYL at the University of California, and Boston University.

You can also use The Library to choose the *Electronic Bookshelf*. It contains the full-text of the *Bible*, *Holy Koran*, *The Book of Mormon*, *The World Factbook*, and *GAO Reports*. These texts are searchable so you don't have to download the whole thing.

Other full-text sources come from a sections called the Freedom Shrine. It contains more than a few poems, essays, speeches, legal documents, and other historical documents that are not copyrighted. Again these documents are searchable so you do not have to download the entire thing.

The Cleveland Free-Net also contains news. It is supplied directly from *USA Today* in our own Greensboro, North Carolina. Each story consists of one headline and one paragraph. These services are only the tip of the iceberg. To use the Cleveland Free-Net call (216) 368-3888.

Prodigy

Prodigy is a service you have probably seen advertised on television. It is a popular service in the sense that its greatest appeal is to the public. Like AOL and CompuServe, Prodigy provides access to the latest news, weather and sports. Like AOL with its graphical user interface, Prodigy is easy to use and requires Prodigy software. It is also inexpensive; it costs $7.95 per month plus .30¢ for every message sent beyond the 30th message. It also has a copy of *Grolier's Encyclopedia* online. That is where the usefulness of Prodigy stops.

If you use Prodigy on a Macintosh, you will lose the use of Macintosh's best features. Prodigy takes over your entire computer; it eliminates the menubar. Consequently, you can not use the otherwise ever-present cut, copy, and paste functions. Nor can you use MultiFinder to switch from application to application. Be forewarned: Prodigy runs on a Macintosh but it is not a Macintosh program.

Another problem with Prodigy is there is no way to save information. It does not capture text as it scrolls off the screen. You can't even save the news articles except by doing a screen capture. To add insult to injury, just about every screen is one quarter filled with advertising.

About a year ago Prodigy was having problems because the software was inadvertently "stealing" information from users' disks. This has given Prodigy a bad name, but I believe they have cleared the problem up.

Prodigy is an "okay" service for the consumer but not particularly useful to the librarian. This is especially true when it is compared to the other resources listed in the article.

If you are interested in Prodigy then call or write:
Prodigy Services Company
P. O. Box 791
White Plains, NY 10601
1 (800) 776-3449

The Well

The Well (Whole Earth Lectronic Link) is an electronic conferencing service located in California, but accessible from just about anywhere. Like ISAAC, The Well hosts discussions on a number of topics, but The Well is closer to CompuServe in its variety. Everything from computers to gardening, sports to politics, and business to the Grateful Dead is up for discussion on the Well.

Of particular interest to librarians is Apple Library User's Group (ALUG) Online. It hosts discussions on any and all issues concerning libraries and librarianship. Some of the more interesting discussions include:

- Libraries and Internet
- Hypermedia
- True Tales From Chicago ALA
- Information about ALUG
- Apple Telecom programs
- Accessing AppleShare from remote sites
- Computer novices seeking help
- AI in Libraries
- Multi-media in libraries
- Help for teaching writing?
- Public Access Computers
- What Libraries are producing CD-ROMs
- Libraries and politics
- Librarianship in the 90's and BEYOND
- News From the Nets
- ALA in Atlanta June 1991
- Macintosh Text-Retrieval Software
- Library Automated Systems (non-Apple)
- Patron privacy versus the historian
- Checking out the FidoNet messages on K12Net - Internationally
- Copyright law and the 21st century library
- What online catalogs do you use or have created?

Another interesting discussion to visit is INFO, a conference about communication systems, communities, and tools for the information age. This conference is more active than ALUG Online. It has discussions like the future of books and publishing, online searching, expert systems, television, and the Internet.

A significant difference between The Well and most of the services previously listed is that The Well is searchable and consequently, could be used as a reference source as well as a serial. For example, I wanted to know what had been written in ALUG Online about BBSs. So I visited the conference and entered find "BBS". The Well responded with a very long list of topic, response, and line numbers containing "BBS". After perusing this pseudo-index and choosing a particular topic and response, I navigated to that topic and response, displayed the information, and logged off. The result was a clean and neat listing of BBSs across the country. The same technique could be used for many reference queries. For example, suppose you wanted to locate people's opinions about a particular software program. You could use The Well's directory listing and choose a conference. (The conference is like a database.) Navigate to the conference, issue a find command, view the results, and download individual items. The technique is the same as traditional online searching except the medium is less structured and it contains non-bibliographic information.

The best way to connect to The Well is through the CompuServe Information Network. Call (800) 848-8990 and navigate the automated answering service to retrieve a local CompuServe number. Call the retrieved number with your modem. Once connected enter "well" at the "Host Name:" prompt and follow the instructions to register. The Well charges you $10/month for membership + $2/hour for connect time + $4 to $12/hour to use the CompuServe network. (People who like long-distance bills can call The Well directly at (415) 332-6106.)

ALANet
ALANet, an electronic service no longer sponsored by ALA, is mentioned here only because you may have heard about it and didn't know what it was. ALANet's purpose was to foster electronic communication between libraries, librarians, information vendors of all types. Unfortunately it was rather expensive, and not heavily used. Because of these problems and competition from other communications links (the Internet, Bitnet, commercial information services) ALANet ceased to exist February 29, 1992.

America Online (AOL)
Of all the services described here, America Online (AOL) is by far the prettiest and easiest one to use. Like The Well and CompuServe, AOL is a commercial enterprise providing information. Its greatest strength is the ease in which a person can retrieve the latest ephemeral information: news, sports, and weather. It also hosts technical support from many software vendors and contains plenty of shareware and public domain software files.

To access AOL, you need their free communications software, available from:

America Online
8619 Westwood Center Drive
Vienna, VA 22182
(800) 827-6364

The logon procedure is simply a matter of clicking a few buttons and entering your password. It would be difficult to make a simpler interface. Once logged on, you are presented with the Welcome screen. From here you can navigate to:

- current news to create a personalized newspaper,
- textual or graphic weather forecasts,
- airline reservations,
- a simple encyclopedia
- a "post office" to mail notes and files to others subscribing to AOL,
- discussion groups on just about any topic imaginable,
- stock and business reports,
- editorials, and
- libraries of shareware, demonstration, and public domain software.

I particularly like the news and weather services. With AOL I can browse their list of news articles, download them at the speed of my modem, save them to my hard disk, and read or edit them at my leisure. The weather maps are just as easy to retrieve and are as reliable as any other published weather forecast since they all come from the same source, the National Weather Service.

AOL is fairly inexpensive. You are billed $6 every month, even if you do not use the service. Each month the first hour used is free. After that the rates are $12/hour between 7 AM to 6 PM and $6/hour between 6 PM and 7 AM. Time spent uploading files is free.

CompuServe Information Service (CIS)
The CompuServe Information Service (CIS) is the granddaddy of conferencing services. It reaches around the globe, hosts conferences on just about any topic imaginable, and is a standard location for the latest shareware and public domain software.

CIS is accessible with your simple communications software or their Information Manager programs. If you use your communications program, you will have to navigate CompuServe with its command language or menus. The command language is your best option, but learning it takes practice.

The alternative is to use their Information Manager for DOS or Macintosh computers, a graphical user interface (GUI). It does work, but it's not as elegant as AOL's and not nearly as fast. In many cases the Information Manger only adds to your online time.

CompuServe contains information not found in many other information services except DIALOG or BRS. For example, vast amounts of financial and business data can be retrieved from CompuServe at the drop of a hat. (CompuServe is owned and operated by the H&R Block Company.) For example, CompuServe can give you access to an electronic ValueLine, S&P Index, Dun & Bradstreet's Market Identifiers, InvesText, and the Thomas Register. It also offers demographic reports, reports on mutual funds, and brokerage services. All of these services are surcharged.

A unique database CompuServe provides is the PHONEFILE. This database allows you to search the white pages of almost any telephone book in the country.

CompuServe also provides a window to the databases in DIALOG, BRS, Vu/Text, and NewsNet via a service called IQuest. Through a series of menus, a search strategy is formulated. The database is searched and the first ten citations are returned. The minimum charge for these first ten citations is four dollars. The advantage of this approach is that you do not have to know searching command language, nor do you have to have an account with any of the database vendors. On the other hand, you retrieve only the last ten citations entered into the database and you have

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little control over the search strategy's details. (You do have the option to retrieve more citations for more money.) IQuest is designed for the non–expert who searches for this sort of information infrequently.

A number of Information Access Company (IAC) databases available on CompuServe: Business Database Plus™, Computer Database Plus™, Magazine Database Plus™, Health Database Plus™. Since these databases contain full–text journal articles, they can be sources for cost–effective document delivery. Searching these databases is more flexible than IQuest since you have the option of using menus to create search strategies or writing your own. The first time I tried it, I was looking for a particular citation. A few minutes and about $5 later, I had retrieved my two–page article. I tried again with a second citation and retrieved it in less time and for less money. This particular article hadn't even made it to the newsstand! This service costs at least an extra .21¢ per minute plus $2.50 for each complete article.

If used effectively, this sort of service could be a boon to the small library. Consider using this service to supplement ILL. Traditional ILL turnaround time is at least a few days. Telefacsimile will take at least an hour. At photocopy rates of .10¢ per page, a typical article will cost $1 to copy an half and hour of time. With the CompuServe service, the article request can be filled in less than 15 minutes and delivered via email. The only thing you lose are any graphics within the text. In short, electronic full–text article delivery is becoming cost–effective with a computer, communications software, modem, and access codes.

Two unique services from CompuServe are the Electronic Mall and its monthly *CompuServe Magazine*. The Electronic Mall allows you to purchase a cornucopia of merchandise including books, computers and software, foods, office supplies, and apparel. Because of the merchants' low overhead, you can purchase these things more cheaply than in retail stores.

CompuServe Magazine features articles on CompuServe's services. It also describes how other people have used CompuServe to accomplish their own specific goals. Even though *CompuServe Magazine* is loosely disguised advertising, it can help you use CompuServe more effectively.

CompuServe's pricing structure rivals DIALOG's in its complexity. It comes in three flavors. The standard pricing plan includes unlimited connect time to use a wide variety of services for a membership of $7.95 per month. The plan includes:

- the basic news, sports, and weather services
- the Reference Library (encyclopedia, Consumer Reports, Peterson's College Database and Healthnet)
- Electronic Mall
- Money Talks (Basic Current Stock Quotes, Issue/Symbol Reference, and Mortgage Calculator)
- Games & Entertainment
- Communications Exchange (limited electronic mail)
- Travel and Leisure

Notice that this plan does not include the extended services like electronic conferences. Any time you use services other than the ones listed above, you are charged for connect time ($12/hour for 1200-2400 baud users and $22.80/hour for 9600 baud users).

With the Alternative pricing plan, you are simply charged $2.00/month plus connect time (again, $12/hour for 1200-2400 baud users and $22.80/hour for 9600 baud users). If you are an infrequent user of CompuServe, then the Alternative pricing plan is for you.

The third plan is the Executive Service Option. For an extra $10/month you can receive discounts on selected CompuServe products, access more extensive financial information, and increase your personal storage area.

Lastly, you should note that many of the services you may be interested in as a librarian will incur surcharges. These surcharges have their own pricing structures ranging from flat fees to the sum of connect time and reports, citations, or full–text articles.

CompuServe has grown up. It started out as a overgrown BBS. Now it has the potential of becoming a full-blown library. Since CompuServe changes at such an alarming rate, it is a good idea to purchase a book like *CompuServe from A to Z* by Charles Bowen (Bantam Books, 1991).

For more information about CompuServe call or write:
CompuServe Information Service
P. O. Box 20212
Columbus, OH 43220
(800) 848-8990

Summary

This article has listed a host of non–traditional information resources accessible with your modem ranging from the free to the quite expensive. The only limitation you have, besides money and hardware, is your ability to navigate these resources effectively. It takes practice to use these tools, just like it took practice to learn how to use the card catalog. When you look beyond the medium of these resources, you discover that they are very similar to the resources you traditionally have been using. They have their own strengths and weaknesses just like printed materials. These resources represent the new paradigm for librarianship.

Every profession has its tools. Surgeons have scalpels. Carpenters have hammers. We have computers. Our professional skills include retrieving, organizing, storing, evaluating and disseminating information. In the not–too–distant past, this information manifested itself solely in printed form: books and magazines. Nowadays, more and more of this information is located in computers, which are extraordinarily efficient tools for retrieving, organizing, evaluating, and disseminating information. What computers lack is intelligence; they don't know how to provide these services. That is where we come in. We can (and should) combine our professional skills with the efficiency of a computer to provide more timely and complete information services.

Appendix

This is a more detailed description of some of the bulletin boards sponsored by NCIN.

NCCAL — A calendar of meetings and continuing education programs for librarians in North Carolina and nationally. TO ACCESS: TYPE NCCAL.

NCDATA — A twice a month service of NCIN and the State Data Center of North Carolina. It provides the most current, authoritative statistical information available in 12 general subject areas: Population and Housing; Vital Statistics and Health; Social and Human Services; Education; Law Enforcement, Courts and Corrections; Environment, Recreation and Resources; Energy and Utilities; State and Local Government Finances and Elections; Employment and Income; Business and Industry; Agriculture; and Transportation. Information is given for each county. This data updates the 1984 edition of the County Profile Book. Updates will be posted every other Wednesday. Large data files will be transferred on a more frequent schedule. CURRENT FILE: 1990 Census State Population Counts. The Bulletin Board will be updated twice a month on Fridays. TO ACCESS: TYPE NCDATA.

NCJOBS — Listing of professional (MLS required) librarian positions open in North Carolina. For the audiotape version, telephone 919/733-6410. To list a job vacancy, contact Vicki Wheeler at the State Library at 919/733-2570 or use Electronic Mailbox #62953518. TO ACCESS: TYPE NCJOBS.

NCKIDS — Includes information for children's and young adult librarians contained in the State Library's youth services loose-leaf service mailed to public libraries and library schools. Updated weekly. If you would like to contribute to NCKIDS, send copy to Cal Shepard at Electronic Mailbox #62957236. TO ACCESS: TYPE NCKIDS.

NCLIBS — A general summary of constantly changing news about NC libraries and/or librarians. This board is updated on Fridays. The first week of each month will contain general library news. The second week will contain network news. Periodical holdings are provided as network news in the second and sometimes as general library news in the first week of the month when available. If you would like to contribute your holdings to be uploaded, send an ASCII diskette to Diana Young at the State Library. The third week will contain information customarily found in FLASH. The fourth week will contain recent acquisitions of the State Library in the field of library and information science. Questions and/or comments should be addressed to the person listed in each heading or to Diana Young, Email #62953515. TO ACCESS: TYPE NCLIBS.

NCMGMT — (Management) provides library management information about and/or from all types of North Carolina libraries. Content depends on what you are willing to share — planning documents, polices, procedures, statistical information, articles, surveys, etc. First priority will be given to information provided in machine readable form — either through the electronic mailbox or on an IBM compatible 40 - track floppy diskette submitted as an ASCII file. The information provided will only be available through the bulletin board. The board will be changed every Friday and will begin with public library five -year plans currently being submitted to the State Library. Submit information to Diana Young, NC State Library, 109 E. Jones Street, Raleigh, NC 27611; Email # 62953515; NCDCR Prime SLAD.DJY; Fax # 919/733 - 8748. TO ACCESS: TYPE NCMGMT.

NCNEWS — A summary of events in the North Carolina General Assembly. Produced by the North Carolina Association of County Commissioners and the North Carolina Information Network. Updated by 3 pm on Tuesdays and Fridays as material is available. TO ACCESS: Type NCNEWS.

NCBUS — A listing of all State contracts in these areas: Term Contracts; Automotive, Construction Equipment; Highway Maintenance Equipment; Drugs; Hospital/Laboratory Equipment/Supplies; Fuels. Also includes State contracts in these areas: Printing Forms; Publications; Office/Educational Equipment and Supplies; Institutional Furniture/Equipment, Food, Textiles and Chemicals; Contractual Services, Electrical Equipment, Telephones; Data/Word Processing Equipment; Copiers. TO ACCESS: TYPE NCBUS.

DIALOG at McDowell High School:
Acquisition, Instruction, and Management

by Marty Bray

A fashion design student needs to obtain biographical information on American fashion design.

A student in an environmental class needs information on the effects of acid rain on Mount Mitchell.

A student in the American history class needs to know the name of the first secretary of state for the Republic of Texas and his relationship with McDowell County.

A student in the current events class needs to locate an article about the Russian coup in a magazine to which the library does not subscribe.

These and other questions have been answered using DIALOG, a telecommunications service that provides access to vast amounts of current information whenever it is needed. How this service has been and is continuing to be used, as well as how we teach our students to use it, is the subject of this article.

History:

McDowell High School, a high school with approximately fifteen hundred students, began subscribing to DIALOG as a result of a 1989 assessment of the nature of research in the library. This assessment demonstrated that a better way of accessing the periodicals collection was needed. The answer to this problem seemed to be through the use of telecommunications because "telecommunications technology enables school library media specialists to use rapid communication and shared tasking to meet users' information needs as well as to enhance library media program management capabilities."[1] In selecting a database vendor, several resources were consulted including Dorcus Hand's (1988) article in *School Library Media Annual*.[2] DIALOG was selected over other telecommunications database vendors because the information available through DIALOG was most aligned with curricular needs, educational materials support, and training available for the staff. DIALOG is a collection of more than three hundred databases from which a person with a computer, modem, and password can access a vast amount of information. In order best to balance budgetary constraints with the information needs of our students, we selected Classmate, a service that DIALOG offers to schools. Classmate is a collection of approximately one hundred twenty databases which best meets the research needs of a majority of high school students at a lower price than full DIALOG service. These databases include ERIC, Medline, and America: History & Life. By accessing Classmate students may obtain information such as magazine citations, full text articles on historical topics, and stock market analysis. While the number of databases available to students is fewer than with DIALOG, the content of the databases within Classmate has not been limited. Our students use these databases to obtain information which is not available in the school library or in other libraries in McDowell County.

When Classmate was first introduced into the school, it was used primarily as a resource for eleventh and twelfth grade advanced English classes. As services such as InfoTrac (a CD-ROM magazine index) have been added to the collection, Classmate's role has become one of acquiring specific and current information. An example of this occurred last year when a business class needed information on various industries. A search on Classmate yielded all of the information required by the class, including data regarding products manufactured and current stock exchange statistics. The use of Classmate resources provides a level of information that not only allows students to do primary research, but also more importantly motivates them to pursue levels of academic research they would not do otherwise. This was demonstrated powerfully by two students doing research on a serial killer. By using Classmate, they were able to research the topic more fully than if they had relied solely on print resources. After the assignment was completed, the teacher commented that the level of motivation demonstrated by these students was far greater than she had experienced or expected.

During the 1990-91 school year, an additional media specialist was hired to help with computer services at the high school. Since the library staff at McDowell High School views Classmate as an important resource for students conducting research, integrating the use of Classmate into the curriculum is one of the responsibilities of this new position.

Requirements For Accessing DIALOG:

In order to access Classmate, the MHS Media Center uses a Tandy 1000 SL/2 computer with an internal modem and printer as its telecommunications terminal. McDowell High School has a dedicated phone line in the media center just for Classmate. A dedicated phone line was installed for two reasons: the first was the heavy usage that our existing phone line was receiving, and the second was the anticipated heavy usage of Classmate. As the role of Classmate has changed, this second dedicated phone line is now being used for other electronic services such as a facsimile machine. The software, *DIALOG Link*, necessary to access Classmate, comes from the company and can easily be configured to the individual requirements of any media center. While other telecommunications software can be used, this particular piece of software saves a great deal of time and frustration because it performs many tasks automatically. When Classmate was first implemented, the two media coordinators attended a DIALOG Classmate "Teach the Teacher" workshop. This workshop covered setting up a telecommunications workstation, installing the software, and using the command structure of Classmate. Furthermore, the contents of each database and instructional strategies utilizing Classmate were discussed. Several manuals for use with

Classmate were given to the participants, and hands-on activities were emphasized. The cost of these seminars was approximately forty-five dollars per person. There is no annual subscription fee to Classmate and no long distance fees because it is accessed by a toll free number. The company does charge a fee of fifteen dollars per hour of connect time. Even at this rate the costs of using Classmate remain reasonable. Currently, without student limitations on usage, our library spends an average of fifty dollars a month, which translates to less than four cents per student a month. Student overdue fines are used to support the service.

Teaching:

One of the advantages of using a computer as a research tool is that it promotes a high degree of motivation among students. This holds true for Classmate as well. As mentioned before, using Classmate has encouraged several students to delve more deeply into research topics that they would not have pursued if they had used only printed reference sources. Most of the students using Classmate are juniors or seniors completing some type of English project. However, sophomore students are introduced to Classmate during general orientation to the library and made aware that the service is available when other sources have been exhausted. Later in the year, a specific orientation session is conducted regarding the use of Classmate for those students who are doing a research project.

Planning a search strategy with the teacher is the first step in actually teaching Classmate to the students. Many curricular areas use Classmate to complete research projects: English classes use the service to find criticism on literary figures and their works; current events and history classes use databases, such as UPI News, to conduct up-to-the-minute research on relevant topics; science and environmental classes use Classmate to research topics such as the effects of acid rain on Mount Mitchell; and the business classes use Classmate to track stock market data.

We prefer that students use Classmate in small groups to facilitate better the learning process. After the staff has an understanding of the types of topics that the research will cover, we do some preliminary searching on the service to ensure that the students will experience some initial success with the service. Since the session is conducted in conjunction with an actual research project, we allow students to access the full range of databases available to them through Classmate.

After introducing the concept of accessing databases via telecommunications, we work on the concept of keyword or Boolean searching. Boolean logic is an important concept for the students to grasp if they are to use Classmate effectively. Also, more and more electronic reference sources, such as InfoTrac, utilize keyword searching as a means for retrieving information. We have used several strategies for teaching Boolean logic. They usually include brainstorming for keywords, an explanation of the operators (AND, OR, and NOT), and examples of actual search strategies. These concepts are taught in small groups using other electronic resources that utilize Boolean logic such as the library's online catalog, so that students can better grasp these concepts before actually accessing Classmate. After the Boolean operators are explained, the command structure of Classmate is explained. A menuing system is available which helps the student navigate through Classmate. The command structure is not that difficult to master and actually saves the student a great deal of search time. Students are provided with a packet of information which covers these concepts (See Appendix for example) as well as the databases available. Also in the packet is a worksheet for them to plan their search strategy before accessing Classmate.

One of the advantages of using a computer as a research tool is that it promotes a high degree of motivation among students.

At this point a demonstration of Classmate is conducted. If a small group is involved, the demonstration takes place on the telecommunications terminal. If a large group is involved, then an LCD panel connected to the terminal is used. Next, students are allowed to use Classmate individually. At this point the process becomes time-consuming. A search can take up to five minutes, which when multiplied by thirty students can easily consume an entire class period or more. As a result, more than one day in the library is planned for the class. During this time, every student is taken through a session on Classmate. Finally, a follow up is done with the teacher to determine the success of the project.

Since DIALOG charges the school for the amount of time actually spent on the service rather than a flat monthly fee, we do not allow students access to Classmate unsupervised. Instead, we will either allow them to make an appointment to use the service or let them fill out a search sheet and the media coordinator will actually conduct the search for the student. The student picks up the printout of search results at a later time. This process saves the student and the media coordinator a lot of time and seems to be the more popular of the two options.

Problems:

The biggest problem with Classmate is the amount of time that it takes to supervise students while they perform searches. This problem has been addressed by allowing students to make appointments with the media staff and by the development of a system for requesting searches.

The second problem encountered with Classmate is that the cost of the service prohibits extensive use. This problem has been addressed through the acquisition of resources on CD-ROM which have a one-time fee and unlimited usage. Since other electronic resources such as the Online Catalog and CD-ROM databases have been introduced, Classmate is no longer being utilized as a primary resource. This trend does not necessarily mean that students are receiving inferior information. On the contrary, the information received though sources such as InfoTrac generally meets students' information needs quite well. These resources also allow students to learn to use electronic resources without the pressure created by limited access to the resources both in terms of time and physical accessibility. Classmate does have several advantages over these resources, both in terms of the amount of information available and the timeliness of the information; therefore, we continue to use Classmate, although to a lesser extent than before.

The final problem encountered with Classmate is the limited accessibility of the service due to the fact that the library can only maintain one dedicated phone line. While this problem has been addressed primarily though scheduling, a trend is beginning to develop where students use those resources more readily available, such as InfoTrac and SIRS, rather than request a Classmate search, even though the information in Classmate is superior.

Using DIALOG — The Future

As more and more electronic resources become available to the student, the role of Classmate in research has and will continue to change. The terminal which was once used exclusively for Classmate is now also used for FrEdMail and the TI-IN Long Distance Learning service. FrEdMail is an educational telecommunications service that allows, among other things, students to communicate with other students across the state and country. The TI-IN Long Distance Learning service allows students to participate in distance learning via satellite and computer. The dedicated phone line that was once used exclusively for Classmate will now be used to link the high school with the county's two junior high schools through fax machines. Finally, a new local area network allows multiple stations to access the library's CD-ROMs, online catalog, and the various telecommunication services. A local area network, or LAN, links the computers of the library electronically allowing patrons to access resources such as the online catalog, InfoTrac or any of the other electronic resources of the library anywhere a computer is available. It is also possible for multiple stations to access Classmate if the school has access to multiple phone lines and a modem that will meet the demands of multiple users.

This network may also be accessed via modem from computers outside of the library. Future plans for the network will take advantage of this potential and allow students to dial into the network from home. Although McDowell County is a rural county with a limited tax base, a small but growing number of students are gaining access to personal computers capable of accessing the local library and online information services such as Classmate. A far larger number of students are already familiar with computers or machines that use computers (the ubiquitous Nintendo, for instance). For those patrons who do not have access to a home computer, offering laptop computers for checkout may be a solution, especially as the price of these computers continues to fall.

Teaching students to use Classmate provides them not only with an understanding of how to access electronic resources, but also of the concept of telecommunications which students will increasingly find vital in conducting accurate and timely research. It is also important to show students how to use Classmate in the context of all of the resources available to them in the media center. At McDowell High School we have just implemented a network that brings together CD-ROM resources such as InfoTrac, The Information Finder (World Book on CD-ROM), an online catalog, and the Social Issues Resource Series (SIRS) on CD-ROM on multiple work stations. We teach the concept of Classmate as being another resource rather than the only source that students have available to them to use for research. This helps the student understand the concept that information is available from a variety of sources both in and outside of the media center.

Conclusion:

"The explosion of information and instructional technologies has formed the basis for our evolution from an industrial to an information society."[3] As this evolution continues, schools must teach students how to use services such as Classmate, as well as foster in them the critical thinking skills that they will need to survive in such a society. Services such as Classmate cultivate these critical thinking skills as the student selects appropriate databases, chooses appropriate terms to describe his/her topic, selects the appropriate information received, and incorporates the information into his/her research project.

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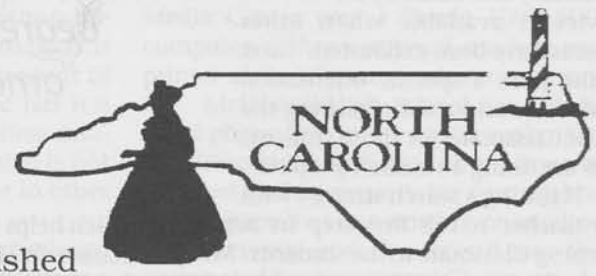

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Appendix

Steps for using DIALOG

1. Choose a topic that you will be researching.
2. Decide which databases will most likely contain the information you are looking for. (See Handout)
3. Decide what words will best describe your topic on the worksheet. These words are called concepts or descriptors. Consulting the **Readers' Guide** and **InfoTrac** will help you choose descriptors. Generate a list of as many descriptors as you can that best describe your topic.
4. Fill out the **Search Worksheet** using the descriptors you listed in step three. Put one descriptor under each concept listed on the **Search Worksheet**. **AND** and **OR** link your descriptors through the use of Boolean Logic. **AND** is used to narrow your search by more specifically describing what it is you are looking for and **OR** is used to broaden your search by creating more options in the search command.
   Be sure to include the databases that you will use to locate your information. Use the abbreviations that DIALOG uses for each database to save you time and money when conducting your search. If you are looking for a specific author, include that on the search worksheet.
5. At the bottom of the sheet is a space to write out the specific search strategy that you will be using. You may use the back of this sheet to complete this if you wish.
   Specific commands that you will need to know include the following:
   B Begin a new database.
   Example: **B NEWS1**
   This command will make the computer access Newsearch for you.
   F Find a particular term or terms linked using Boolean Logic.
   Example: **F George and Bush and Iraq**
   This command will make the computer look for any news items that have the words George, Bush and Iraq in it.
   AU= This is the author command, giving you articles written by a specific author.
   Example: **AU= Bray, Gerald**
   This will give you a number of articles written by Gerald Bray.
   D Display any citations that any search has turned up.
   Example: **D S1/L/ALL**
   When the computer finishes a search it will give you the number of citations that that particular search yielded. You may look through these citations to see which ones you want to use. **S1** is the number of the search that you have performed. **L** is the type of display that you want to see. **L** stands for long and means that you will see all of the information associated with that article. **S** will give you just a citation and is more economical to use at this point. **ALL** tells the computer to give you all of the citations included in this search. You can ask for specific citations by typing in a number such as 5 or a list of numbers such as 1-5.
   T This command will cause the computer to scroll through any citations that you tell it to. It works just like the Display command except that the information will scroll up the screen until it is all received by the computer. This command is very economical and convenient as you will see in the next step.
6. Log-on to DIALOG by pressing **F5**. The computer will go through a log-on sequence and then ask you at what level you would like to search. Type in 2 to indicate that you will be performing your search manually. Enter your begin command for the database you would like to use and then enter your search commands. After the computer has searched a database, it will tell you the number of citations that it has located. You may then use the display command to see any citations you choose. If you are sure that you would like to see all of the citations indicated, use the **T** command. The information that is sent to the computer will be saved in memory.
7. You may enter a new database at any time by typing a new begin command (**B EDUC1** for example).
8. When you are finished, hit the **F5** key and choose the log-off option from the menu. You will then be out of DIALOG. After you have left DIALOG and when you change databases, a report of how much time you have spent will be displayed. Make a note of this information on the Search Worksheet.
9. After you have performed the log-off, use the up and down arrow keys to scroll through the information that you saw during your search. Use the **F4** key to mark the beginning and end of any information that you want printed. Next, press the **F8** key to call up the print menu. From this menu choose option **2**. Press **M** for marked portions of text when prompted.
10. When you have finished, return the search worksheet to Mr. Bray and make your requests for a magazine or microfiche, if appropriate.

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Whole Language and Its Effect on the School Library Media Center

by Susan Prillaman

An educational movement, which began quietly enough in New Zealand, Australia and the United Kingdom in the 1970s under the umbrella term of "teaching language across the curriculum," became a rallying cry for educators throughout the United States and Canada in the 1980s. It will likely continue unabated in the 1990s. In North America, it is called *Whole Language*. There are literally hundreds of journal articles and many books being published to describe what it is, what it isn't, and how to do it. This paper examines the evolution of Whole Language, its current theory and practices, as well as its effect on the school library media center.

A Definition

The best working definition of Whole Language this author has come across is:

> It is not a practice. It is a set of beliefs, a perspective. Practices such as journals or thematic units become Whole Language because the teacher has a set of particular beliefs and intentions ... Just as babies learn to speak language through hearing and using it, so reading and writing in older children should be acquired in the same way, as an integral part of the functioning community.[1]

Whole Language is also the basis for a grassroots movement that has been led on the local level by teachers and librarians who have perhaps held this world-view of teaching for years and now have a support group locally, nationally, and internationally. Educators, including media specialists, who subscribe to Whole Language generally share these beliefs: children learn to read by reading; reading is part of the language acquisition process that also includes listening, writing, and speaking; and learning in any one of these areas of language assists the learner in the other two.

Evolution

In the 1960s, linguists Noam Chomsky and Michael Halliday and a reading specialist, Marie Clay, published their findings on research focused on language acquisition and use. Their conclusions, which were to shape education for decades to follow, showed that if children are immersed in significant and real language experiences, they absorb it and can use it.

In the 1970s and 1980s there was an international exchange of ideas, practices, and research bearing on the application of the linguistics research and findings. New Zealand, Australia, and Great Britain, with Canada following suit, became the acknowledged leaders in "language across the curriculum." Researchers here and abroad took Chomsky's, Halliday's, and Clay's findings and looked at reading comprehension, story grammar, and other aspects of how children learn to read. "The work of the Center for the Study of Reading, the National Assessment of Educational Progress, as well as the Wolf, Huck, & King study on critical reading, convinced us that children need ***well-constructed stories*** [emphasis mine] in order to make sense out of print."[2] The importance of the fundamental need of a well-written story, narrative, or a real language experience when working with children is underscored.

Teachers and librarians are having their long-held beliefs about the importance of early language experiences borne out by the research of people like Gordon Wells, who reported his findings in the *Meaning Makers*. He asked the questions, "What is it that is required then, for children to be able to extend their command of language to include the written mode? Are there preschool experiences that prepare some children more effectively than others to take the learning of writing in their stride? If so, what sort of experiences at school can best help children to make up for what they have missed at home?"[3] His most poignant evidence reveals that the simple act of reading aloud real literature to young children makes a significant difference in how they continue to acquire and use language in a school setting. Educator and author, Jim Trelease, has added a second volume to *The Read-Aloud Handbook* that can be used to put into practice what Wells has proven with his research.[4]

In the United States, Kenneth Goodman has been a leading proponent of the Whole Language Movement and has assisted in its adoption by teachers and librarians. His best known book, *What's Whole in Whole Language*[5] is an overly emotional and leftist political appeal for Whole Language to be adopted everywhere by everyone for everybody. However, if the reader ignores the pathos and politics and reads the text, it is easy to see how it has had its effect on spreading "the gospel." (Unfortunately, there are no footnotes or bibliography from which those interested readers could find further evidence to support his claims.) His wife, Yetta Goodman, as President of the National Council of Teachers of English (NCTE) and Dorothy Strickland, as President of the International Reading Association, were very active in organizing an effort to get the results of important research on language acquisition out to the troops in the frontlines (i.e., classroom teachers and librarians). Goodman and Strickland, who were followed by Sheila Fitzgerald (NCTE) and Bernice Cullinan (IRA), organized a group to plan Impact Conferences and to publish and distribute relevant research.[6] In California and Canada, Reading Initiatives were begun wherein teachers and librarians worked together to develop programs that were successful in bringing authentic literature into the curriculum and, perhaps, more joy into the learning environment. Of equal interest to the organized approach to disseminating information on language across the curriculum, is the development of support groups across the country. One such approach is

known as TAWL, Teachers Applying Whole Language. It began as a small San Francisco organization and has grown rapidly into an international federation. It may turn out that the TAWLs of the world will actually have a more immediate effect in changing how the educational establishment provides a satisfying learning environment.

Has there been a change already in how states are providing an "environment rich in literacy events" and teaching language across the curriculum? Is it an indication of how or if Whole Language is being applied? Information from the "Reading Initiative Survey" of 1988 shows that seven states have begun literature/literacy initiatives (***North Carolina*** is one them); sixteen report integrating language arts; fourteen states have begun local literature-based programs; and three states (Missouri, New Mexico and South Dakota) report no change in the basic skills approach.[7] The author believes that Arizona is the leader in implementing a language across the curriculum.

What isn't Whole Language? If a librarian and a teacher were to take seriously the publishers' advertisements that come across their desks, they might believe that you can buy ***It*** in a kit, workbook, or basal text. Whole Language proponents do encourage a "print rich environment" but they also encourage "authentic literacy events" rather than those contrived in programmed learning, skills sheets, or basal texts. Whole Language purists believe that basal texts would only be examined in a Whole Language classroom if the student were studying changes in school culture over time. Altwerger et al. conclude that Whole Language ***isn't:***[8]

(1) the whole-word approach that is taught as a subskill of reading. Whole Language is not another term for teaching skills in context.

(2) the Language Experience Approach where the teacher allows a student to dictate a story to her because "the implicit notion about writing...was that it amounted to taking dictation from oneself (i.e., composing occurred prior to transcribing)." Whole Language practitioners have come to believe that the act of writing and meaning making occur simultaneously.

(3) Open Classrooms or Open Education that became all the rage in the 1960s and 1970s, albeit these authors believe that Open Education was a necessary precursor to Whole Language. Both movements held that the learners should be active participants in the planning and execution of instruction.

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The Montessori Connection

As this author studied Whole Language, she observed continued evidence of a similarity between the Montessori approach to literacy and Whole Language. After re-reading some of Maria Montessori's works and those of her proponents and practitioners, these connections became obvious:

1. A belief held by both Whole Language and Montessori philosophies that a child who draws will eventually write letters; that drawing is a natural precedent to writing.

2. Whole Language proponents hold that children learn to read and write in the same way (i.e., wholistically) that they learn to speak the language. Montessori states, "As spoken language is at the same time a natural function of man and an instrument which he utilizes for social ends, so written language may be considered in itself, in its formation, as an ***organic ensemble*** of new mechanisms which are established in the nervous system and as an instrument which may be utilized for social ends."[9]

3. A Whole Language classroom and a Montessori classroom are both child-centered rather than teacher-centered. The following description, taken from a Montessori book, really describes both types of classrooms: "The teacher serves the child. She prepares the environment, creating an orderly, attractive, and interesting classroom. She establishes the structure or ground rules for behavior and sees that they are followed. She gives individual and group lessons on the use of materials. She frees the child, within the structure of the classroom, to move, to talk, to make choices, and to become interested in working with the materials."[10]

4. Learning to read in both types of classrooms depends upon the child's first learning to recognize the words for real objects in the classroom environment. Montessori states, "I do not consider as reading the test which the child makes when he verifies the word he has written ... What I understand by reading is the interpretation of an idea from the written signs ... writing aids the physiological language and reading aids the social language ... We begin then with ... the reading of names of objects which are well known and present ... Reading, if it is to teach the child to receive an idea, should be mental not vocal."[11]

5. Reading out loud daily to students from a real story as opposed to a basal text is an important part of the day for both types of classrooms.

6. Science, mathematics, geography, music, and art are taught in both types of classrooms with real materials and real experiences. Often the lessons are designed to integrate and relate them one to another.

This "cursory glance," as opposed to an in-depth study of the relationship between Whole Language and Montessori, is presented simply to show that both methods work because they respect the child's spirit, innate curiosity, and growing intellect. Practitioners of Whole Language could very well learn useful methods from studying Montessori methods that have been developed over the past ninety years.

Effect on the Library Media Center

Whole Language may be relegated to the heap of discarded educational bandwagons if it is not studied, researched, and

implemented using the basic strategies that are already known concerning successful change in the school environment. Change is a process, not an event. It can be measured through time with the involvement of people. Jean Brown states that "there are three distinct phases to planned change : ... adoption, implementation, and continuation."[12] Administrators are key elements at the adoption and continuation phase; teachers and media specialists are the key element in the implementation phase. When Whole Language is successfully adopted in a school, the media specialist can play a central role if she has substantial knowledge of Whole Language and how it is fostered in a classroom setting, and if she is able to provide instruction in specific skills either by modeling it in her own instruction or by applying it in cooperative planning sessions. In all likelihood, in a Whole Language school, the librarian-teacher will continue to be a strong advocate for literacy as well as develop a strong partnership with the teachers in planning curriculum in terms of resource-based learning.

A Whole Language Library Media Center

The media specialist can fill a unique role as instructional leader in the school. It is imperative, though, to have a clear vision of what change is desired and how to get there. Classroom teachers can be overburdened with the sheer enormity of their day-to-day tasks. The social problems of the 1980s and 1990s require the teacher to be teacher, guidance counselor, and social worker simultaneously. When teachers are given the additional goal of implementing Whole Language in their classrooms, the media specialist must be ready to help manage the change. Teachers alone cannot be expected to be aware of all the currently available learning resources, as well as what are emerging resources and technologies. Teachers can come to rely on the media specialist to locate, acquire, organize, and teach teachers how to use them, as well as to teach students the same skills within the context of Whole Language. The successful media specialist will need to be conversant in Whole Language as a philosophy and an evolving set of practices. In the past, she was looked upon as an ***isolated*** resource, rather than as a planning partner. She was someone who taught library skills and organized books and reference resources. She was the person who gave teachers a free planning period once a week. In a Whole Language school, the first change that is made is in terms of her role and responsibilities. She needs to move beyond ***isolation*** into a more central role of cooperative program planning and team teaching. The process will involve "providing personalized information for specific teachers' needs and facilitating each teacher's use of the new program by clarifying meaning and solving individual problems."[13] The media specialist will become an instructional leader if she has the vision of what Whole Language can accomplish coupled with a clear understanding of the school, the curriculum, and the community. Whole Language must be understood in the context of the correct strategies. This involves very real shifts in the perception of how children learn and how the environment for the learner is prepared, in the active observation by teachers of the learners, and in the concurrent cooperative planning among teacher, student, and librarian. When Whole Language is adopted across the curriculum and/or throughout a school, it will become necessary for the media specialist to move beyond the boundaries of her library media center into the classroom, into the community, and beyond. She will be called upon to bring the community and world into the school through knowledge of real resources, telecommunications, and emerging technology. Beyond being a coordinator of educational resources, though, she must stand as an advocate for the children in her care. She must advocate ***the children's right to real literature experiences*** as such, rather than as a mere part of a unit on a given topic. She must also help teachers remember that children have the right to a fantasy life lived through literature and that the library media center is the rightful place for a child to continue that experience. The library media center should continue to be a haven for children, where they can explore literature on their own without judgment and without pressure. It can continue to be a place where children learn that seeking and finding information for the sheer joy of it is possible.

Conclusion

The librarian-teacher can be a valuable resource person and provide the instruments for meaningful change by casting a critical eye at the professional collection she usually maintains for the other members of a school's faculty. If she is the first to decide that Whole Language is worthy of investigating for her school, she can buy and make available titles recommended in current library and reading journals. She can start a file of reprints from teaching magazines and research journals on the topic. She should visit schools that are implementing Whole Language and invite speakers to her school. She can join a TAWL and share the literature that they publish. Electronic bulletin boards, such as *Micronet* in North Carolina, are a way for media specialists to communicate with others and share ideas, ask questions and become informed on current local practices using Whole Language as the framework. Most of all, the teacher-librarian needs to understand what Whole Language is, what it isn't and, because she is the expert on her school as a community, if Whole Language would work or not.

Jeanette Veatch captures this new vision of where teacher-librarians fit into the whole language revolution: "You have a tradition of allegiance to individualized student choice and learning, to a multiplicity of information sources, viewpoints,

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and communication formats. You, among all your peers in the school, may be best equipped to understand, interpret, and model the whole language approach to teaching and learning."[14]

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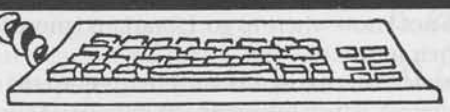

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POINT

Networked Information Resources: The Wave of the Future

by Bil Stahl

As professionals, librarians have long undervalued their knowledge and skills, or in some cases misplaced them. The bedrock of librarians' knowledge and skill is not in their knowledge of arcane classification systems, or even their ability to organize information *per se*. Their fundamental value is in being able to identify the value of various types of information resources for the "uninitiated" user. Few librarians work with experts on finding information resources of value directly related to the expert's area of expertise. (I am not talking about locating facts for researchers.) However, what every user needs from the library is help in finding information in areas with which they are not very familiar.

The librarian's knowledge and skill in connecting ordinary people with information are generally not found elsewhere. Library online catalog systems were one of the first, and still are one of the few, systems designed to be used by large numbers of non–specialists on an infrequent basis. With technological advancements, the expectations of society have risen, and many system developers, database managers, and other system administrators are faced with supporting the "library–type" user. They are looking for help and guidance. A few have identified the library profession as a source for this help. Others do not know where to go. Librarians ignore this opportunity to step forward to fill this role at the risk of their future.

Telecommunications has significantly heightened the concern over the "information explosion." The growth of the Internet, which interconnects over 750,000 systems, is occurring at the rate of more than ten resources added ***daily***. A major concern among the users of the Internet is how to keep track of all of these resources and be knowledgeable about their content. The Coalition for Network Information (CNI), which is made up primarily of library and computing professionals, is addressing this problem, but its resolution will require significantly more effort on the part of the library community. However, many librarians despair because libraries do not "own" these network resources, and they do not fit into our classification systems and service models. This despair is a waste of energy because it is apparent that libraries will no longer "own" significant numbers of the available information resources that people will routinely use. We will never have a single organizational system that can effectively accommodate the uncontrolled growth of network information sources in any acceptable or timely manner. Librarians must stop slavishly trying to protect their old modes of operations and aggressively seek ways to blend the appropriate mix of old and new operations. We also must develop the necessary processes to change this blend within days and weeks, rather than months and years.

Libraries must budget significant amounts of time and money for understanding the new resources, and the means of accessing them, that telecommunications technology has made possible. Then librarians must incorporate them into their menu of offerings to their clientele. This means that adequate equipment and telecommunications services must be acquired even at the expense of collections, the library's whole concept of collection development must change to "access development," and the scope of "BI" must broaden greatly.

While I am not suggesting the demise of the library as we know it today, our current model will account for less and less of the significant value of future libraries. Nor am I suggesting that each library must individually solve all of the problems that these new network information resources pose. Libraries have a strong and successful tradition of benefiting from collective efforts. What I am strongly recommending is that every library invest ***this year*** in the technology to provide general access to networked information resources by the reference staff and by the users of reference departments, and that these resources become part of reference services. This might require tracking down the people in your parent organization who are responsible for telecommunications and selling them on the importance of providing sufficient, not token, connectivity to the "outside" world. This will also require library staff to understand adequately concepts such as TCP/IP, TELNET and File Transfer Protocol (FTP).

Professionals are urgently needed to deal with the exploding amount of electronic information becoming available. This need must and will be met. At this juncture, it is up to us to decide if librarians will be the ones to fill the need. We will not be at this juncture long. By not deciding and not taking action soon, we will in fact have made the choice to pass our role on to someone else.

COUNTER POINT

I'm Sorry, All Circuits Are Busy Now

by Harry Tuchmayer, Column Editor

There is something terribly wrong out there. I don't know exactly what it is, but I suspect it has something to do with the fact that an average individual can't even use a telephone without getting some instruction. Thus, when I read all these wonderful articles about the vital role telecommunications will play in managing the information explosion, I am reminded about all those ads that I remember as a kid which glorified chemicals and plastics as the solution to modern life. As we now know, this revolution in our daily lives came with a heavy price — pollution. Are we now at that same point with telecommunications? Have we reached information overload?

As far as I can see, telecommunications isn't solving the problem; it's merely attempting to manage the mess. Sure, all these networks and information services sprouting up all over are causing us to rethink the way we do business, but should they? Are we to become slaves to this new industry? Are we supposed to throw away our Harlequin romances and cancel our subscriptions to newspapers in order to provide access to the multitude of information gougers?

I know I probably sound hysterical, but I'm not so sure I like the direction we are headed. I for one ***actually like paper***, and I think most other people do, too. While I agree with Bil that we must "... aggressively seek ways to blend the appropriate mix of old and new operations," I can't believe we must invest heavily in this technology. How many indexes and how many services are enough? We seriously need to look at our mission and decide just how many indexes are needed to augment our collections, but let's not lose sight of our objectives, and let's remember who our clients are. We need to help them sift through the mess of information, not overwhelm them with sources.

Perhaps it all boils down to just how much information is enough, and who is to decide. But really, folks, do we actually need 750,000 systems, growing at a rate that would put rabbits to shame? As everyone tries to cash in on this information madness, isn't it our responsibility to be a little bit more selective? After all, do you buy every new reference source that comes out, or make it your mission to purchase every title regardless of its review?

Rather than applaud this madness, shouldn't we put a stop to it? The Coalition for Network Information needs to do a lot more than merely keep track of and be knowledgeable about these resources. They need to inform the consumer about the unnecessary duplication and needless proliferation of databases, networks, and bulletin boards. Quality, not quantity, used to be a motto many libraries lived by. And while I'm not suggesting a return to those days, I am calling for a halt to the unquestioning belief that somehow this is all a good thing.

There is a silver lining. The growth of the telecommunications industry has made it painfully clear that it is time to reevaluate the whole concept of collection development. The revolution in the information industry goes far beyond the world of telecommunications; it has affected publishing and consumer attitudes about information access. Clearly, these are issues of great importance to us, and we have waited too long in considering their impact. Also, as Bil says, we need to become more knowledgeable about such concepts as File Transfer Protocol, TCP/IP and the like. Librarians cannot afford to let the high tech world of telecommunications pass them by. After all, our patrons depend on us to interpret these resources and expect us to help them through this maze of information choices.

But let's not all jump on the band wagon at once. I know that while my kids are always interested in playing with the latest toy, they often return to their old favorites. More often than once, they've discovered that this glitzy new toy is not all its cracked up to be. And even when they have discovered something new, they still can play with only one toy at a time.

Perhap it all boils down to just how much information is enough, and who is to decide.

— Tuchmayer

While I am not suggesting the demise of the library as we know it today, our current model will account for less and less of the significant value of future libraries.

— Stahl

Compiling a "Videography":

The Trials of Locating Information on a New Medium

by Charles Croissant

In late fall of 1991 the Music Library Association published my book, *Opera Performances in Video Format : a Checklist of Commercially Released Recordings*, as number 26 in their *Index and Bibliography Series*. This work had its genesis as a semester project in a seminar on bibliography at the University of Illinois; the professor was Dr. Donald Krummel, a noted music bibliographer. My interest was caught one day by a remark of Dr. Krummel's with regard to the "challenges" of dealing bibliographically with nonbook media. I was aware of the growing number of opera videos becoming available commercially, in both cassette and laser disc formats, and I decided to explore the forms of bibliographic control existing for these items. I soon realized that I was on my way to compiling something I think can be designated a videography, that is, a list of video recordings with a defined scope, exhibiting a logical organization tailored to the needs of its intended audience.

Embarking on my quest in February 1990, I discovered that there was really nothing available that contained succinct and usable lists of video recordings in a format that answered the needs of music and fine arts librarians, or even the needs of interested music lovers. All that did exist, I found, were trade publications and catalogs issued by distributors. These were marketing tools. They did not necessarily aim at comprehensiveness (the distributors' catalogs, for example, naturally contained only that particular distributor's items), and none of them were organized along the lines I was envisioning as I considered the needs of my chosen audience. Still, they provided the essential base from which to gather information.

The most important of these trade publications is *Videolog*, the video counterpart of *Phonolog*. Like *Phonolog*, it is a looseleaf publication for which update pages are produced roughly ten times a year. Many media libraries maintain a copy of *Videolog*, but it is really intended for retail stores; it is a good example of the bibliographic drawbacks that are common to all such trade publications. The publishers of *Videolog* do not actively collect information; they solicit distributors to send them copy describing that distributor's videos. In other words, they simply print whatever information a particular distributor sees fit to send them. The result is that there is no consistency from one entry to the next in terms of the information included. My goal was to create, for each video, citations containing at least a fixed minimum set of data elements. It was not often that an entry in *Videolog* provided every single element I wanted to include in a citation. *Videolog* is divided into sections devoted to feature films, foreign films, educational films, music-related video, etc. Within each section, organization is alphabetical by the title of the video. I discovered a number of problems with these title listings. Various performances of the same opera might appear under wildly different titles, and thus appear quite some distance from each other in the catalog — you might see for example, *Luciano Pavarotti sings Il Trovatore* among the L's; or *Verdi's Trovatore* among the V's; or *The Troubador* among the T's. None of these lists deals satisfactorily with foreign-language titles; (especially) foreign initial articles are a problem. Wagner's *Das Rheingold* was as likely to turn up under *D* for Das as under *R* for Rheingold.

I was convinced that a videography of opera performances, organized along traditional bibliographic lines, would be a useful enhancement of these trade publications, and that with the information I was locating, I could hope to achieve a comprehensive list of opera recordings in video format that had been commercially released up to that point in time. For operatic performances, it seemed to me that the most useful organization would be by titles entered alphabetically under their composers. I next set out to develop a citation format that would meet the needs of my audience. This was something of a challenge, as there were hardly any models to build on.

I aimed at the traditional two-fold goal of the cataloger: to identify uniquely each manifestation of a work and to collocate all the manifestations of the same work. In regard to collocation, I found that in the context of video recordings this meant identifying and collocating individual manifestations of the same performance of the same work. This emphasizes a peculiarity of the video market: once a particular performance has been recorded, the recording is frequently acquired not just by one, but by several distributors, and each releases the recording under its own name, with its own identifying number. Certain features may be present in one distributor's release that are not present in the others', as, for example, subtitles or an introductory interview with one of the starring singers. I needed to find a place in my citations for all such pieces of information.

The first level of organization for my list was by composer, in alphabetical order. Under each composer's name I used the standard collocating device of the uniform title for each opera and listed the operas alphabetically by uniform title. Under each uniform title heading, the individual performances were listed in chronological order according to the year of the performance. Performances were uniquely identified by the following sequence of information: the title used on the recording itself, the year of performance, the performing ensemble (opera house, orchestra, etc.), the conductor, the director, concluding with a list of the principal singers.

Then came the additional information: language of performance, whether in color or black and white, and citations of any reviews of the video I had been able to locate. Up to this point the information included was common to all manifestations of a given performance; now I could proceed to list each individual distributor of this recording, with the information unique to that distributor's release: catalog number, timing, presence of subtitles. The trade publications provided me with an initial list of titles. In addition to *Videolog*, I consulted *Variety's Video Directory Plus* on CD-ROM, and all the other published video catalogs I could locate. Yet another source of titles was sound recordings

catalogs such as *Opus* (the Schwann catalog), *Gramophone*, and *Fanfare*. I also set about acquiring as many distributors' catalogs as I could find; I worked from distributors' address lists in *Videolog* and from advertisements in opera magazines. I had decided that my videography should have an historical dimension; that is, it would list all the performances I could trace that had appeared in video format during the history of the medium, regardless of their current availability. This was in contrast to the trade sources, which naturally confined themselves to items "in print." I needed additional sources both for this historical dimension and for locating missing information on the currently available items. My strategy was to search the OCLC database for cataloging records of the items on my list.

Another objective of my videography was to lead users to reviews of opera videos. I went through the English-language opera magazines (*Opera News*, *Opera Quarterly*, *Opera Canada*, and the English journal *Opera*) beginning at about 1982, when the first opera recordings became available in video format. I incorporated into my entries citations for all the reviews I located in these publications and in others. The reviews themselves often supplied me with missing bits of information. I used *Music Index*, the major periodicals index in music, as well as the *Humanities Index* on CD-ROM for reviews appearing in less specialized magazines. I also visited large video stores and classical record stores in Chicago that stocked opera videos, finding it helpful to check the information on the containers of opera videos against my citations (by doing so, I also located several new releases that had not yet made it into *Videolog*). Finally, I contacted distributors directly by telephone, in an attempt to track down elusive pieces of information or confirm information. It was not always easy to describe my project exactly, and in some cases it was clear that the person on the other end of the line was not particularly interested in listening to my explanation. I am glad I took the trouble to make these phone contacts, however. In some cases, I was able to determine that a particular video, though widely listed in catalogs, had never actually been released, and I sometimes got information, such as names of performers, that was not available from any other sources.

A listing under the composer's name was inappropriate for two classes of videos I included in my videography: videos devoted to one particular artist and videos devoted to several artists or containing excerpts from several works. To encompass such performances, I created two appendices. In the first I listed (by the artist's name) videos showcasing an individual artist. The second appendix listed videos featuring excerpts from several works; these I listed under the video's title. A final set of indexes provided access to the recordings by way of the titles, performers, and ensembles involved.

In summing up, it can be said that the characteristic experience of a researcher dealing with a new medium, or even with the newest products of an established medium, is that he or she must turn to sources within the publishing industry, to publishers' lists, advertisements, distributors' catalogs and the like. I have seen my function, in common with other researchers dealing with recently produced materials, as sifting through information that exists in these disparate sources and bringing to this mass of information some degree of consistency, coherency, and ease of access.

Mr. Croissant's videography may be obtained by sending a check for $15.00 to the Business Office of the Music Library Association, P.O. Box 487, Canton MA, 02021.

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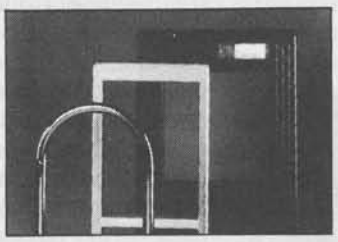

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North Carolina Books

Robert G. Anthony, Jr., Compiler

Born and educated in North Carolina and now residing near Raleigh, Margaret Maron (rhymes with baron) is a veteran mystery writer. Previous novels, most featuring New York Police Department (NYPD) smart cop Lieutenant Sigrid Harald, have been nominated for the Anthony, Agatha, Macavity, and American Mystery awards. In *Bootlegger's Daughter*, Maron forsakes the streets of New York for fictional Colleton County, North Carolina, just east of Raleigh and the setting of her earlier mystery novel *Bloody Kin* (Doubleday, 1985).

The authenticity of the setting is the strongest point of *Bootlegger's Daughter*. Wonderful, true to the ear description abounds without intruding on the plot. From Main Street to Possum Creek, Colleton County feels and smells like home. While its focus on crime weaves a darker texture, Maron's style is close kin to the humorous exaggeration in Clyde Edgerton's stories of Listre, North Carolina, and the smiling through the tears sentiment of rural Alabama in Fannie Flagg's *Fried Green Tomatoes at the Whistle Stop Cafe*.

Margaret Maron.
Bootlegger's Daughter.
New York: Mysterious Press, 1992. 261 pp. $18.95.
ISBN 0-89296-445-6.

In Colleton County nobody locks the door, at least not before dark. There are plenty of political barbecues, great fields of tobacco, ponds loaded with large-mouth bass, country stores with old-fashioned drink coolers, and a mouth-watering litany of southern home cooking. ("Supper was the usual pork barbecue, cole slaw, hush puppies, and sweet iced tea.") People read the Raleigh *News & Observer* and discuss the Jesse Helms-Harvey Gantt United States Senate race. Family is everything; who your daddy and granddaddy are determine your place in the community and the legitimacy of your actions. Yuppies from Raleigh and the Research Triangle, as well as a few damn Yankees, are gradually encroaching on the tranquility of Colleton County, but the patterns and rhythms of life are still governed by tradition.

The story opens with Deborah Knott, a young attorney, deciding to run for district judge. Deborah's family is old and well known — perhaps too much so, for her daddy, Kezzie, is notorious for his bootlegging activities. Kezzie is politically powerful, but his reputation greatly affects Deborah and her political aspirations.

At the same time Deborah is asked by Gayle Whitehead to investigate an eighteen-year-old unsolved murder. When Gayle was only a baby someone kidnapped her and her mother, Janie. Three days later the two were found in an abandoned mill. Gayle was still alive, but Janie had been killed. As Deborah campaigns across the district she questions people she has known all her life about the murder and discovers secrets long buried. The story proceeds at a good clip, intertwining campaign dirty tricks with new murders, until all is revealed in an exciting, if slightly contrived, denouement.

While Maron exhibits thorough knowledge of police procedure, she softens the edges with humor that sparkles throughout the novel. As Deborah notes, "North Carolina houses our State Bureau of Investigation in what used to be a school for the blind on Old Garner Ferry Road south of Raleigh. Some of us don't let the agents forget it either."

The book dust jacket introduces *Bootlegger's Daughter* as "A Deborah Knott Mystery." Here's hoping Deborah and her family and friends in Colleton County will be back soon. It is good to see a strong, independent, thoroughly southern woman appear on the detective scene.

This novel is recommended for all public libraries and for those academic libraries collecting North Carolina fiction.

— Suzanne Wise, Appalachian State University

Although they constituted the vast majority of the population for over two hundred years, the "common" people of North Carolina have rarely been studied in depth by historians. Travelers in the colonial period and observers before the Civil War commented that such people made a lasting impression on them. It was they who gave North Carolina its character. The planter and professional class and the very poor have been the subject of many books and articles. Now we can understand the large middle group of people who left their mark on much of the state.

Bill Cecil-Fronsman.

Common Whites: Class and Culture in Antebellum North Carolina.

Lexington: University Press of Kentucky, 1992. 274 pp. $34.00. ISBN 0-8131-1777-1.

Farmers who owned small tracts of land and artisans who provided services, most of whom rarely held public office, were numerous in all sections of North Carolina. Self-sufficient, poorly educated if educated at all, generally honest but sometimes not, law-abiding but willing to take matters into their own hands when necessary, these people made the best of the work God had called them to do. Nevertheless, they recognized the inequities that existed between themselves and the wealthy planter and slaveholding class.

Cecil-Fronsman relates the role of the common people in different sections of the state and how their "betters" managed to lull them into contentment with their status. He discusses their understanding of slavery which led them to accept it with little or no question for a long time. He also refers to the hard life they led, their limited resources, and the self-sufficient economy under which they struggled. The importance to them of honor and religion and the role of folklore and superstition are covered.

The reference to contemporary documents, particularly petitions to the legislature and letters to the governor, make this an especially moving and realistic account. In many respects it is reminiscent of Guion B. Johnson's *Ante-Bellum North Carolina*.

Although this book is the outgrowth of the author's doctoral dissertation and is carefully documented, its style no longer betrays its origin. Its detailed index will make *Common Whites* a useful reference tool. Its variety of unusual topics will surely suggest subjects for term papers or feature stories for newspapers. It will also be welcomed by any reader interested in the years before 1865.

— William S. Powell, University of North Carolina at Chapel Hill

Unruly Women begins with the premise that women whose behavior violated law in the antebellum and Civil War South are the logical focus for studying resistance to the white male domination of the political economy of that era. Like many of the new social histories written in the last twenty years, Bynum's book analyzes women's lives at the grassroots level. She has chosen to study those disorderly and discontent white and free black women whose behavior became part of the court records in three North Carolina Piedmont counties: Orange, Granville, and Montgomery.

Women who complained in court about their husbands, or, vice versa; those who broke the laws governing social and sexual behavior; and those who resisted the Confederate state are the focus of her study. This necessarily leaves out a great many women in these counties. Those who were part of the social and economic mainstream and those who were slaves do not appear often in the court records. Instead, the sources used by Bynum record episodes from the lives of women who were not usually part of the Piedmont yeomanry, the planter class, or slave society. They tended to be poor white women, single women (especially unwed mothers), and poor free black women. Bynum contends that race, class, and gender were dominant elements in the power structure that caught these women in its legal web. She argues that the need to keep women dependent on marriage for position in society, to maintain the racial purity of white womanhood, and to deny adult status to blacks were among the most important underlying assumptions of this system.

Victoria E. Bynum.

Unruly Women: The Politics of Social and Sexual Control in the Old South.

Chapel Hill: University of North Carolina Press, 1992. 233 pp. $34.95. ISBN 0-8078-2016-4 (cloth) 0-8078-4361-X (paper).

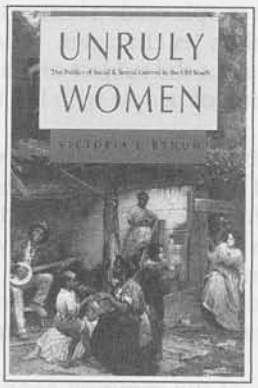
In a book whose six chapters are liberally annotated and illustrated with tables, maps, and charts, Bynum compares and contrasts the social structures of the three counties. She looks at popularly held views of black versus white womanhood and the reaction of the courts to miscegenation. She also assesses how the paternalistic court system enforced laws relating to property, divorce, and domestic relations. In the final chapters, Bynum searches court records for signs of white and black women's resistance to the Civil

War through illicit trade, rioting, and support for draft evasion.

Bynum acknowledges that the three counties she chose do not represent the traditional view of the Old South, but she sees in their economic and social structure a good example of the diversity of the South as a whole. She recognizes how thin the record is for those voiceless members of society whose point of view is represented only by what the court chose to record. Consequently, she sets up a feminist theoretical framework for these women and writes about them as if they were conscious activists in a fight against male-dominated society. Her introductory chapter is useful in explaining her premise for the book, but it is jargon-laden and assumes a modern feminist motivation for the actions of nineteenth-century women. This is otherwise a strong and well-documented piece of historical research that does reveal the types of behavior that caused women to become entangled in the court system and the responses of the judiciary to those violations. Her analysis of the motivation for the courts' handling of these cases, that is, maintenance of the political and social status quo, is borne out more clearly by the historical record than her assumption that these women were struggling "to carve out a space for themselves in a society that condemned and marginalized them."

Victoria E. Bynum is a women's history professor at Southwest Texas State University. Her bibliography, which includes primary sources (numerous manuscript collections, public records, newspapers, and books), along with about two hundred additional secondary sources, is a gold mine for anyone studying the social history of this region of Piedmont North Carolina. A detailed index also makes topical and proper name access easy. Bynum's book is of interest for academic libraries and any North Carolina library building local history or women's history collections.

— Linda McCurdy, Duke University



Jill McCorkle.

Crash Diet: Stories.

Chapel Hill, N.C.: Algonquin Books, 1992.
253 pp. $16.95. ISBN 0-945575-75-0.

Women finding strength is the unifying theme that links the eleven short stories of Jill McCorkle's *Crash Diet* into a cohesive pattern of voices.

The speakers represent variety in age and race but similarity in development of coping skills, each one facing disorienting experiences with reserves of courage and occasionally piercing insights into the human female condition. Along with the hard-earned insights come grit, determination, compassion, and irresistible doses of high good humor.

Known for her earlier novels, including *The Cheer Leader*, *July 7th*, *Tending to Virginia*, and *Ferris Beach*, McCorkle has moved into the challenging genre of short stories with confidence and agility, notwithstanding her initial hesitations about whether she could be a successful "switch hitter — able to go back and forth between novels and stories." She can.

Unlike the novels, the southern setting for most of these stories seems almost coincidental: one can easily imagine the characters doing the same things with the same motives anywhere in the United States. In the title story, a deserted wife substitutes a buying spree for food binging, charging everything on her wayward husband's MasterCard. "Migration of the Love Bugs" reviews the adjustment problems facing an older woman who has retired to Florida with her husband. The widow in "Departures" finds temporary solace in watching small family scenarios at shopping malls and airports.

In one story, however, the southern setting seems vital to characterizations and plot. "Words Gone Bad" reveals the poignant relationship of Mary and Bennie, close friends and co-workers in the custodial department at a large southern university. Both have experienced the bitter blows of racism, yet life has dealt a kinder hand to Bennie in giving him religious faith, a sunny disposition, and a supportive wife. Mary, on the other hand, has had only her repressed love for Bennie to see her through. Now, as Bennie tells Mary that he is retiring, she struggles to affirm some kind of belief in herself and her world without his daily presence. "If you throw a piece of trash to the ground then I'll do my damnedest to make you feel like a worthless pig. And all the while I'll hold my head way up high because maybe, just maybe, I ***am*** on my way to something."

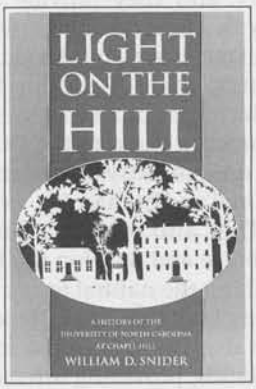
With four novels and this book of short stories on her résumé, as well as other short works that have appeared in literary journals and magazines such as the *Atlantic*, *Cosmopolitan*, and *Seventeen*, Jill McCorkle has left North Carolina to teach creative writing at Harvard University. For now, North Carolina's loss is Harvard's gain. But it is hoped she will be back, bringing with her the attention to plot detail, sensitivity to character motivation, and universality of theme that will no doubt figure in anything she writes. *Crash Diet: Stories* is highly recommended for all public libraries and for college and university libraries that feature modern fiction collections.

— Nancy Ray, Southern Pines Public Library

William D. Snider.

Light on the Hill: A History of the University of North Carolina at Chapel Hill.

Chapel Hill: University of North Carolina Press, 1992. 370 pp. $24.95. ISBN 0-8078-2023-7.



The University of North Carolina at Chapel Hill is the oldest state-sponsored university in the nation and in 1995 will celebrate the two hundredth anniversary of its opening. In recognition of its impending bicentennial, the university commissioned William D. Snider, retired editor of the Greensboro *News & Record*, to write the first comprehensive history of the institution since Kemp Battle published his magisterial two-volume account in 1912.

Snider writes fondly but objectively of the institution from which he graduated in 1941. He does not gloss over the university's low standards in its earliest years when it was barely more than an advanced academy, nor does he sugarcoat the university's poor record of opening its doors to black students after World War II. As one might expect from the author of *Helms and Hunt: The North Carolina Senate Race, 1984*, he is at his best in describing the political context in which the university first struggled and then thrived.

The excellence of Snider's analysis of the political milieu is offset by his inadequate treatment of educational issues, both within the institution and on the regional and national levels. Relying almost exclusively on secondary sources and neglecting two decades of scholarship on the history of American higher education, Snider superficially addresses or ignores altogether the kinds of questions that should receive more prominent attention in the history of any academic institution. For example, while he recounts the conflicting curricular preferences of founders William Richardson Davie and Samuel Eusebius McCorkle, he fails to carry forward the story of curriculum changes except in a cursory fashion. He identifies with brief biographical sketches some of the more prominent graduates, especially those who occupied administrative posts; but he does not investigate the social and economic background of the student body as a whole. His account of the Reconstruction university focuses entirely on its political difficulities and misses the significance of efforts by the much-reviled Solomon Pool and by Kemp Battle, first as trustee and then as president, to transform the college into a true university. More seriously, he does not explain how one of the leading universities in the South was shaped by larger societal and educational influences and how it might have been different from or similar to other institutions. Only in his description of student unrest in the 1960s and 1970s is there a sense that the university was affected by forces outside the state.

In spite of these limitations, Snider's work does have a place in the historiography of the university. It will satisfy the interest of most general readers and will stand as a thorough chronicle of the university's political fortunes within the state. For the specialist on higher education, however, the definitive history of the University of North Carolina at Chapel Hill remains to be written.

— Robin Brabham, University of North Carolina at Charlotte

Sallie Bingham.

Small Victories.

Cambridge, Mass.: Zoland Books, 1992. 298 pp. $20.95. ISBN 0-944072-20-8.

"This is what nobody in the wide world understands, she thought. This happiness. Small victories."

Louise's plaintive appeal for life's little pleasures sets the tone for Bingham's *Small Victories*, a somber story full of pathos. Set in Asheville, North Carolina, in 1958 with interludes in Kentucky and Massachusetts, the novel chronicles the lives of a southern-born and bred family, three generations linked by despair and tragedy.

Sisters Louise and Shelby Macelvene live alone in a homeplace full of memories of their mother and father running a military boarding school. Over the years after her father's death, Louise cares for the childish and childlike Shelby, mentally handicapped after an accident during childhood. Louise's responsibility to Shelby becomes her driving force when State Senator Tom, cousin to the spinster sisters, decides it is best for everyone concerned to have Shelby institutionalized.

Louise unleashes a maelstrom of family secrets in letters to Tom, Jr., away at college, as she attempts to draw ranks to persuade the elder Tom to return Shelby to her home. As young Tom absorbs the sorrows of the family's history, the heavy weight of the family's past encircles him. "What is inherited is the way we all have to stop, quit ... give up. I don't know how to put it. There isn't much sap in this family anymore."

Young Tom is the only hope for illuminating the darkness. As thin as it is, the thread for renewed, revitalized life is woven into Tom's response to the family's past and in his exodus from its stranglehold. Louise's life revolves around Shelby's, has no definition of its own outside the role of caretaker and historian. Tom's mother and father live lives of material wealth and impoverished souls. It is Tom upon whom rebirth depends.

Bingham's writing at times soars but is more often a methodical telling of a dim tale with characters and events at times so morose as to be almost unbelievable. The encompassing darkness and string of catastrophes prompt the reader to question Bingham's inspiration and motivation. How much of this reflects Bingham's own family history can be discovered in her family memoir, *Passion and Prejudice* (Knopf, 1989).

Small Victories is most appropriate for public library collections and may provide for the the academic library collection insight into the Bingham family psyche. Other writings by Bingham include the novel *After Such Knowledge* (Houghton Mifflin, 1960), as well as two collections of short stories, *The Touching Hand* (Houghton Mifflin, 1967) and *The Way It Is Now* (Viking, 1972). In 1985, Bingham established the Kentucky Foundation for Women which is the publisher of *The American Voice*, a feminist literary magazine.

— Sharon Snow, Wake Forest University

John Alexander and James Lazell.

Ribbon of Sand: The Amazing Convergence of the Ocean and the Outer Banks.

Chapel Hill, N.C.: Algonquin Books, 1992.
238 pp. $18.95. ISBN 0-945575-32-7.

Many books have been written about the Outer Banks. This latest one is a fascinating study of those famed barrier islands along the North Carolina coast. The authors are naturalists, and they provide an interesting combination of science and history in a beautifully written style. Lazell is a scientist who has published extensively and Alexander, a former English teacher and newspaper editor. Their friendship began in 1957 when they began observing and collecting animals together in Tennessee. This common interest eventually brought them to the Outer Banks.

Their goal is to describe the unique ecosystem of the Outer Banks and show how it has influenced animal and human life, exploration, and experimentation on the islands. They also present arguments for and against human intervention to stabilize and develop the islands.

The authors begin by describing the natural forces of sand, wind, and water along the coast, explaining how the Outer Banks were formed and how they have survived. Later they show how the forces of nature affected man's settlement on the islands, providing interesting accounts of the Lost Colony, Blackbeard's defeat, and the Wright Brothers' aviation experiments. They also describe the distribution of flora and fauna and the ecological balance maintained by various species on the islands. The authors conclude by discussing current controversies over oil and gas exploration, dredging and jetty construction, and the fate of the Cape Hatteras Lighthouse.

There is a bibliography for each chapter and an extensive index. Source materials include scientific articles, government documents, books, and newspapers. Drawings and maps throughout the book provide clear illustrations of coastal processes. Libraries should preserve the book jacket because it contains an aerial photograph that is referred to several times in the text.

Ribbon of Sand is a comprehensive study of the ecology of the Outer Banks from a naturalist point of view. It covers the scientific, political, and social elements that have created and sustained these barrier islands, and provides insight for their future. This informative and interesting book is appropriate for all libraries.

— Arlene Hanerfeld, University of North Carolina at Wilmington

COMPILER'S NOTE: *For the past five years, during which I have served as book review editor of this journal, many colleagues in the Tar Heel library community have cheerfully contributed book reviews to this column. Their reviewing skills, willingness to take the time to write reviews, and interest in informing fellow librarians about newly published North Caroliniana have been truly impressive and greatly appreciated. To them, and to the other readers of "North Carolina Books," thank you.*

Beginning with the next issue of North Carolina Libraries, *Dorothy D. Hodder will assume the book review editorship. She encourages comments and suggestions concerning the "North Carolina Books" column, which should be sent to her at the New Hanover County Public Library, 201 Chestnut Street, Wilmington, N.C. 28401.*

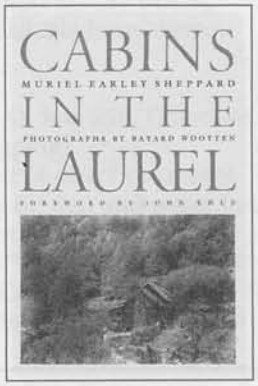
Other Publications of Interest

In 1891, the North Carolina State Normal and Industrial School was established at Greensboro to train young white women as schoolteachers. Today, one hundred years later, approximately twelve thousand women and men attend the school, now known as the University of North Carolina at Greensboro, where they pursue studies in a variety of disciplines. In ***Changing Assignments: A Pictorial History of the University of North Carolina at Greensboro***, longtime UNC-G history professor Allen W. Trelease has gathered more than five hundred photographs illustrating the development of the school. As would be expected, many of the images depict major campus events, such as the construction of buildings and the arrival of male and black students. But most show people engaged in daily collegiate life at an institution ever evolving to meet its mission. (1991; University Book Store, Elliott University Center, University of North Carolina at Greensboro, Greensboro, NC 27412-5701; 214 pp.; $29.95.)

The Historical Publications Section of the North Carolina Division of Archives and History has recently released ***Addresses and Public Papers of James Grubbs Martin, Governor of North Carolina, Volume I, 1985-1989***, edited by Jan-Michael Poff. This 1,089-page volume, the latest in the Division's series of governors' documentaries that began with Thomas W. Bickett (1917-1921), covers Martin's first term. It includes his inaugural address, messages to the General Assembly, selected speeches and statements, and a roster of executive orders. Libraries may request a copy at no charge but are asked to submit $3.00 to cover mailing costs. (1992; Historical Publications Section, Division of Archives and History, 109 E. Jones Street, Raleigh, N.C. 27601-2807; 1,089 pp.)

First published in 1955, ***North Carolina & Old Salem Cookery***, by Beth Tartan, has proved to be as much a staple in many a Tar Heel kitchen as sugar, salt, and spice. Now, several dozen new recipes are included in a new and revised edition of the book recently published by the University of North Carolina Press. Tartan not only provides several hundred recipes in all, but she also tells the significance of various foods in the culinary heritage of the Tar Heel state. (1992; University of North Carolina Press, P.O. Box 2288, Chapel Hill, N.C. 27515-2288; 382 pp.; $29.95; ISBN 0-8078-2035-0 (cloth); $16.95; 0-8078-4375-X (paper).)

North Carolina provided more troops to the Confederate cause during the American Civil War than any state. In ***Compendium of the Confederate Armies: North Carolina***, Stewart Sifakis has compiled a reference guide to facilitate research on those Tar Heels who wore the gray in that bloody conflict. This volume, one in a series on the southern states, is divided into three sections—artillery, cavalry, and infantry. Each section includes a listing of its military units, and, for each unit, official name, nicknames, and organizational details, such as date and location of creation, names of commanding officer and other field-grade officers, command assignments, and battles and campaigns in which the unit participated. Occasionally, titles of narrative histories of particular units are given. (1992; Facts on File, 460 Park Avenue South, New York, N.Y. 10016-7382; 187 pp.; $24.95; ISBN 0-8160-2289-5.)



Considered a classic description of life in the Appalachians, ***Cabins in the Laurel***, by Muriel E. Sheppard, was first published in 1935. This study of mountain folk in the Toe River Valley in North Carolina also included 128 powerful photographs by noted Chapel Hill photographer Bayard Wootten. The University of North Carolina Press has chosen ***Cabins in the Laurel*** as the inaugural volume in its Chapel Hill Books series, which will publish new editions of the best books about the South or by southerners. The new Sheppard is a large-format edition and includes Wootten photographs specially produced from the original negatives. (1991; University of North Carolina Press, P.O. Box 2288, Chapel Hill, N.C. 27515-2288; 287 pp.; $29.95; ISBN 0-8078-1986-7 (cloth); $16.95; 0-8078-4328-8 (paper).)

Lagniappe* / North Caroliniana

compiled by *Plummer Alston Jones, Jr.*

Editor's Note: "Lagniappe/North Caroliniana," the newest feature column of *North Carolina Libraries*, is envisioned as a complement to "North Carolina Books." As such, "Lagniappe/North Caroliniana" will feature reviews of materials in various non-book formats presenting fictional or nonfictional accounts on North Carolina or the Southern regions which include North Carolina (e.g., the Appalachians, the Southeast, the Old South, the New South, etc.). Publishers and creators of nonbook materials which meet these criteria should forward materials for possible review. Reviews of up to 250 words are welcomed and will be considered for publication. Send materials and reviews to Plummer Alston Jones, Jr., c/o Iris Holt McEwen Library/LaRose Resources Center, Elon College, P.O. Box 187, Elon College, NC 27244-0187.

Tell-A-Communication: Storytelling in North Carolina

by Pat Ryckman

Before fiber optics, before modems, before faxing, radio, and the Morse code, there was storytelling, the oldest form of telecommunication. The prefix *tele*, meaning "transmission over a distance," aptly describes storytelling. Traditional North Carolina stories have traveled great physical distances — the Jack tales from Europe and Brer Rabbit from Africa — as well as temporal ones. For centuries the tales have been passed down father to son, mother to daughter, generation to generation. These stories have proven to be an enduring means of communicating values and our cultural heritage; oral communication is immune to censorship, war, and mildew.

The power of storytelling lies in the unique relationship between the teller and the listener. In storytelling there is no artifact created — no book, drawing, or video. The story depends on at least two people, the teller and the listener, and the experiences each brings to the meeting. The story is never told or heard in exactly the same manner twice; it evolves from telling to telling and from generation to generation.

The best way to experience storytelling is to bring a storyteller and a group of listeners together. Many North Carolina libraries have access to a wealth of talent — excellent storytellers on their staffs or a storyteller in the community to call upon. Or one may consult the annual ***National Directory of Storytelling*** (National Association for the Preservation and Perpetuation of Storytelling, P. O. Box 309, Jonesborough, TN 37659; $7.95 plus $3.50 shipping) for names and addresses of over a dozen storytellers from this state. Second best exposure to stories is via sound recordings. Although the telling loses some of the intimacy and interaction of a face-to-face delivery, the nuances of speech are preserved and the flavor of the original story comes through in a way that no story in print can match.

The following is a selection of sound recordings of tales by North Carolina tellers recommended to complement live storytelling in the library. These recordings are recommended for all North Caroliniana collections; most of the recordings are also appropriate for children's collections (exceptions noted below).

Chase, Richard. ***Richard Chase Tells Three Jack Tales***. (197?, Folk-Legacy Records, P. O. Box 1148, Sharon, CT 06069; telephone: (203) 364-5661; LP [cassette available Fall 1992]; $9.98 plus $2.00 shipping).

Richard Chase's publication of ***The Jack Tales*** in 1943 and ***Grandfather Tales*** in 1948 helped set in motion the current interest in and revival of storytelling in this country. In this recording he recounts versions of "Jack and the King's Girl," "Jack and the Robbers," and "Jack and the Three Sillies," which he adapted from the stories collected from Roby

*La•gniappe (lăn-yăp´, lăn´ yăp´) n. An extra or unexpected gift or benefit. [Louisiana French]

Monroe Ward of Beech Creek in the late 1930s. The stories were passed down to Ward from his maternal grandfather, Council Harmon, who, according to family history, learned them from the early settlers of this country. This recording was made in a two-room schoolhouse in the Tennessee mountains with the students serving as a very appreciative audience.

Hicks, Ray. ***Ray Hicks of Beech Mountain, North Carolina, Telling Four Traditional Jack Tales.*** (1964; Folk-Legacy Records, P. O. Box 1148, Sharon, CT 06069; telephone: (203) 364-5661; LP [cassette available Fall 1992]; $9.98 plus $2.00 shipping).

Ray Hicks is a national treasure. Born on Beech Mountain in 1922, he is another member of the storytelling family first documented by Richard Chase, having learned the stories from his grandfather, John Benjamin, another grandson of Council Harmon. These four tales, "Jack and the Three Steers," "Big Man Jack, Killed Seven at a Whack," "Jack and Old Fire Dragon," and "Whickety-Whack, into My Sack," all have European roots but are throughly Americanized in Hicks's versions. Jack, a mountain farm boy, relies on his wits and a good bit of luck to overcome a giant, outfox the king, and even capture Death in a sack. The recording requires repeated careful listening to catch all the wonderful turns of phrase and mountain dialect. Ray Hicks has also been recorded by June Appal Recordings (306 Madison St., Whitesburg, KY 41858; telephone: 1-800-545-7467). ***Jack Alive!*** (compact disc or cassette, $8.98 plus $1.75 shipping) is a collection of personal anecdotes, stories, and mountain lore. A video, ***Fixin' to Tell About Jack*** (June Appal Recordings, $29.95 plus $1.75 shipping) shows Hicks in his home and fields, sharing his philosophy of life and one Jack tale, "Whickety-Whack, into My Sack." (Younger children may have difficulty understanding Hicks's speech.)

Torrence, Jackie. ***Legends From the Black Tradition.*** (1982; Weston Woods Studios, 389 Newton Turnpike, Weston, CT 06883; telephone: 1-800-243-5020; cassette; $9.00).

The story of "How Brer Rabbit Outsmarted the Frogs" begins with a magical lead-in: "Back in the days when the animals could talk . . . ." In Jackie Torrence's stories, the animals talk once more. Her voice can bring a frog, glistening and throbbing in the moonlight, to life for any listener. Torrence, a former High Point Public Library staffer, has achieved a national reputation in storytelling. This ALA Notable recording offers a sampling of her wide repertoire—an animal tale, some nature lore in "High John the Conqueror," stories based on historical figures, and her version of the classic John Henry tale. Other cassette recordings of her stories available from Weston Woods include ***Country Characters***, offering three mountain tales and two ghost stories, and ***The Story Lady***, which includes stories from Torrence's childhood.

Davis, Donald. ***Listening for the Crack of Dawn.*** (1991; August House, P. O. Box 3223, Little Rock, AR 72203; telephone: 1-800-284-8784; double cassette; $16.95).

Donald Davis's two recent books, ***Listening for the Crack of Dawn*** and ***Barking at a Fox-Fur Coat***, are truly delightful, but these stories must be listened to rather than read silently to do them full justice. ***Listening for the Crack of Dawn*** is now available on cassette, complete with Davis's gentle mountain inflections and warmth. These stories about growing up in fictional Nantahala County, North Carolina, in the 1950s and 1960s, have universal appeal and an uncanny ability to unlock memories from one's own childhood—memories of a favorite aunt, an inspired teacher, or a ten-year-old partner in devilment. The tale of a special teacher, Miss Daisy, is a story about the power of storytelling. Miss Daisy's imagination not only tames a roomful of restless fourth graders, but also has the power to overcome the near-death of a crippling stroke. Davis has many other excellent recordings in print, including ***Live and Learn***, with more family stories, and ***More Than a Beanstalk***, featuring traditional Jack tales, both available from Weston Woods Studios.

Smith, Kathi. ***Cherokee Legends I.*** (1990; Cherokee Publications, P. O. Box 256, Cherokee, NC 28719; telephone: (704) 488-2988; cassette; $9.00 plus $2.90 shipping).

Kathi Smith's opening for this recording acknowledges the power of direct communication: "We are a fortunate people in that we have never had to rely on pen and paper but rather word and deed." The Cherokee's closeness to nature is evident in these traditional myths. The stories explain phenomena in the natural world such as "How the Rabbit Lost His Tail," "How the Crow Turned Black," and "How the Milky Way Came to Be." The recording uses Native American music to set the mood and help transport the listener to a time when the world was young.

The Folktellers. ***Tales to Grow On.*** (1981; Weston Woods Studios, 389 Newton Turnpike, Weston, CT 06883; telephone: 1-800-243-5020; cassette; $9.00).

Cousins Barbara Freeman and Connie Regan-Blake left their library jobs in 1975 to tell stories full-time. Their repertoire includes songs, chants, contemporary tales, a two-act play, and creative retellings of traditional Appalachian stories. This ALA Notable recording includes two mountain stories collected by Richard Chase in the 1940s and published in ***Grandfather Tales*** (Houghton Mifflin Co., 1948). "Sody Sallyraytus" is a tale about a difficult trip to the store for some baking soda, with sound effects provided by an autoharp. The long tale, "Wicked John and the Devil," (22:30 minutes) is a hilarious encounter between a blacksmith, who was "mean, and ornery, and uppity, and bigotty, and lyin' and thievin' and carryin' on," and the Old Boy Himself—the Devil. This tale illustrates the unique power of storytelling to transmit ideas over space and time. Its roots can be traced to Hessia where it was collected by the Grimm brothers and first published in 1812 as "The Blacksmith and the Devil" (***The Complete Fairy Tales of the Brothers Grimm***, translated and with an introduction by Jack Zipes, Bantam, 1987).

Roberts, Nancy. ***Six North Carolina Ghost Stories.*** (n.d.; Broadfoot's of Wendell, 6624 Robertson Pond Rd., Wendell, NC 27591; telephone: 1-800-444-6963; cassette; $9.95).

Although Roberts reads rather than tells the stories on this recording, the six supernatural tales offered here represent an important part of the American oral tradition. Ghost stories, the offspring of European fairy stories and the forerunners of our urban myths, attempt to explain the unknown and instruct the listener on how to deal with the supernatural. Ghost stories are always closely associated with a particular place, including, for example, Maco Station, Salem Tavern, and Big Lick, some of the settings for Roberts's stories. The six legends presented here are enhanced by Roberts's somewhat breathless delivery and appropriately creepy sound effects.

Holt, David. ***Hairyman.*** (1987; High Windy Audio, P. O. Box 553, Fairview, NC 28730; telephone: (704) 254-3133; cassette; $9.98).

David Holt's music is an integral feature of his storytelling. His banjo is a blasting shotgun, his guitar a creaking door, and his harmonica a pack of running hounds. In the best storytelling tradition, Holt takes a classic tale and makes it all his own with the addition of sound effects and dialogue. "Barney McCabe," the story of a brother and sister who, with the help of their dogs, outsmart a witch, is from the black tradition of St. John's Island, South Carolina. "The Magic Fiddle" is built around a standard folktale theme—a young man's act of kindness wins him a magic instrument which saves his life at the moment of crisis. One of Holt's contemporary tales, "The Hogaphone," describes his Uncle Ike's unique method of communication, and how it saved him from a rampaging bear.

Storytelling, the most ancient form of telecommunication, is flourishing in North Carolina today. Talented professional and amateur tellers are collecting, embellishing, and transmitting traditional stories to audiences around the state, thus assuring their preservation for future generations. North Carolina storytellers also offer a wide repertoire of contemporary tales, some of which are sure to become classics. By developing a collection of recordings, North Carolina libraries can help extend this rich oral tradition to a wider audience.

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North Carolina Library Association
Minutes of the Executive Board

May 1, 1992

The Executive Board of the North Carolina Library Association met on May 1, 1992 at Carteret Community College/Crystal Coast Civic Center in Morehead City, N.C. This meeting was hosted by Ed Shearin, Director of the Learning Resources Center.

The meeting was called to order by President Janet Freeman at 10:05 a.m.

Executive Board Members and Committee Chairpersons present at the meeting included the following:

Larry Alford
Allen Antone
Barbara Baker
Waltrene Canada
Wanda Cason
John Childers
David Fergusson
Martha Fonville
Janet Freeman
Jim Govern
Benjie Hester
Gwen Jackson
John Jones
Patricia Langelier
Cheryl McLean
Meralyn Meadows
Nona Pryor
Karen Purcell
Vanessa Ramseur
Ed Shearin
Susan Squires
Steve Sumerford
Helen Tugwell
Catherine Van Hoy

Nancy Roundtree represented Alice Wilkins of the Community and Junior College Libraries Section and Rose Simon represented Frances Bradburn, editor of *North Carolina Libraries*.

Invited guests included Jacqueline Beach, President of the N.C. Public Library Directors Association and Bill Hadden who represented Jane Barringer of the North Carolina Friends of Public Libraries.

The group was greeted and welcomed by Dr. Bryant, President of Carteret Community College. President Freeman also welcomed board members and thanked Ed Shearin for making local arrangements and hosting the meeting.

John Childers was introduced as a new member of the board representing the North Carolina Public Library Trustees Association. He will replace Barbara Page who resigned.

Upon the call for approval of the minutes of the previous meeting, it was moved by Pat Langelier and seconded by Barbara Baker that the minutes of the January 17, 1992 meeting be approved as distributed. The motion carried.

Wanda Cason, treasurer, distributed several reports to the board with explanations where requested. She indicated that the basic quarterly report showed a slight change in format and reflected the total transactions from the two checking accounts only. As of March 31,1992 the balance on hand in the two checking accounts totaled $12,295.52. Individual reports were also available to section and round table chairpersons.

Martha Fonville, administrative assistant, distributed the membership report which reflected new members, the total members as of 04/28/92 and the net change by section and round table. She indicated that renewal was at approximately 56% . Discussion of the report by board members exhibited concern for a trend toward a decrease in membership renewal. Following a discussion of the duties of the membership committee, it was moved by Nona Pryer and seconded by Barbara Baker that the membership committee correspond with the former members who have not renewed their membership. The motion carried. Ed Shearin also encouraged the section and round tables to make contact with these former members to encourage renewal. President Freeman suggested that each section and round table appoint a representative to the membership committee. Ed Shearin and Helen Tugwell, membership co-chairpersons, agreed to work out the logistics of the arrangement. In closing, Ms. Fonville introduced a calendar on which board members might log dates for workshops or meetings.

Committee and Other Reports

Gwen Jackson, conference committee chairperson, distributed a report of proposals for the 1995 NCLA Biennial Conference site. Proposals were received from Charlotte, Greensboro, High Point, Raleigh and Winston-Salem. Based on space availability, costs, and convenience to participants, Ms. Jacksons moved that the proposal from Greensboro be accepted. The motion as seconded by Barbara Baker was carried.

In the absence of Doris Anne Bradley of the Constitution, Codes and Handbook Revision Committee, Martha Fonville distributed new replacement pages for the NCLA Handbook.

President Freeman, reporting for Judie Davie of the Finance Committee, asked that the board be reminded of formal requests for budget proposals and the upcoming deadline. The committee is in the process of preparing the budget for the coming two years.

The report of the Governmental Relations Committee was presented by David Fergusson, who served as coordinator of the 1992 Library Legislation Day. He indicated that packets were delivered to our congressional offices, but official visits could not be arranged for each of them. In summary Mr. Fergusson considered Legislative Day to be moderately successful and noted the success that the Kansas delegates had with a catered luncheon for the Washington Delegation.

Following the Legislative Day Report, John Jones, chairperson of the Governmental Relations Committee, informed the board that he had been asked by President Freeman to discuss lobbying. In so doing, Mr. Jones discussed types of lobbyists and the costs associated with the services they provide. Additionally, he mentioned that lobbyists usually affect matters not associated with appropriations and that they could be hired part-time or on retainer.

Gene Lanier, chairperson of the Intellectual Freedom Committee, forwarded a written report in his absence. The report noted projects and endeavors of the committee and chairperson covering the period November 1991-April 1992. The re-

port highlighted responses to in -state and out-of-state requests.

As reported by Steve Sumerford, the Literacy Committee is working on several major projects. Plans are being made to prepare a directory of literacy programs in the state. Library schools are being asked to include literacy in the curriculum and efforts are being made to develop coalitions of programs with the various counties.

Reporting for Sandra Neerman, chairperson of the Marketing and Public Relations Committee, Steve Sumerford stated that the committee met to set goals and develop strategies for marketing. One such goal is to prepare a packet to be used in marketing all types of libraries.

There were no reports from the Archives, Publications, Scholarship or Technology and Trends Committees.

Rose Simon, representing Frances Bradburn, thanked the board for the support it provides to *North Carolina Libraries*. Ms. Simon reported that *North Carolina Libraries* had won the 1992 H.W. Wilson Library Periodical Award, and that Frances Bradburn would receive the award on June 29,1992 at the American Library Association Conference in San Francisco. New manuscript guidelines have been compiled by the editorial board and were appended to the report submitted to the executive board.

Pat Langelier, ALA Councilor, reported that of major concern at the midwinter meeting in January in San Antonio, Texas was patron behavior and that ALA is developing guidelines on problem patron behavior. It was noted also that the Committee on Accreditations' proposed *Standards for Accredition* were approved by Council. Details of the 1991-92 Council Documents that were approved, adopted or accepted at the 1992 Midwinter Meeting were included in the written report distributed to board members.

SELA Representative, Dave Fergusson , reported the Southeastern Library Association, SELA/LLA Joint Conference in New Orleans March 18-21, 1992 to be quite successful. Mr. Fergusson also announced that the SELA Handbook had been revised. He indicated membership is down and encouraged recruitment from NCLA members.

Section and Round Table Reports

Children's Services Section chairperson, Benji Hester, reported that the section had two meetings since January. They are selecting a new representative to the board of NC Libraries and have plans for a seminar on statistics.

Susan Squires, chairperson of the College and University Section,reported that the section is embarking on a year of cooperation by co-sponsoring workshops with other sections or round tables of NCLA. The first such workshop is being co-sponsored with the Round Table on the Status of Women in Librarianship. The College and University Section is concerned with clarifying parts of its by-laws.

Nancy Roundtree distributed the report of Alice Wilkins, chairperson of the Community and Junior College Libraries Section. Ms. Roundtree reported that the executive board of the section met on February 27, 1992 and discussed issues such as increasing membership, sending a representative to Legislative Day and choosing a topic for the fall conference. Additionally, the board appointed Barbara Miller to serve as its representative to the *North Carolina Libraries* Editorial Board.

Araby Greene, chairperson of the Documents Section, was not present at the meeting but submitted a written report. The report outlined details of the spring seminar on the European Community scheduled for May 15, 1992. The report also conveyed appreciation for the grant received from NCLA which defrayed travel expenses for principal speakers from the European Community. The Documents Section is looking forward to a joint workshop on bibliographic instruction being scheduled for the fall.

The Library Administration and Management Section chairperson, Larry Alford, announced a spring program highlighting total quality management. He also stated that the section has discussed the issue of salaries for librarians in North Carolina. Finally, the section is concerned with changing the by-laws relative to the number of elected persons on the LAMS board.

Nona Pryor, chairperson of the North Carolina Association of School Librarians, submitted a written report. She mentioned the executive board retreat held February 14-15, 1992 at Trinity Center, Pine Knolls Shores, and indicated that goals set were quite similar to those discussed earlier by the executive board of NCLA. Finally, it was noted that NCASL was represented at Legislative Day in Washington, D.C and that plans are well underway for the September 30 - October 1, 1992 conference.

Public Library Section chairperson, Jim Govern, submitted a written report, the highlight of which was the section's planning council meeting held February 21,1992 in Albemarle. At that meeting among other things, committee charges were reviewed with some changes incorporated, committee rosters were verified and section membership renewals were discussed. The next scheduled meeting was announced to be May 15, 1992 in Walkertown.

Allen Antone, chairperson of the Reference and Adult Services Section, submitted a written report detailing the Maryland Model Training Projects and the program being scheduled for the fall focusing on Total Quality Management.

Resources and Technical Services Section chairperson, Michael Ingram, forwarded a written report in his absence. The report discussed plans for the fall conference which will focus on the current state of networking. To date, speakers have been confirmed, including Howard McGinn, who will present an overview of networking in the state of North Carolina.

Cathy Van Hoy, of the New Members Round Table, reported that their first meeting is scheduled for May 12,1992

The North Carolina Library Paraprofessional Association report, as distributed by Meralyn Meadows, reflected the results of the executive committee meeting held on February 27,1992. Additionally it included the list of action goals that were formulated at that meeting. One goal was to strengthen membership and Ms. Meadows reported that membership was expected to increase by 85 within the next two weeks.

Vanessa Ramseur, chairperson of the Round Table on Ethnic Minority Concerns, reported on the meeting of the executive board held at NC A&T in Greensboro on February 7, 1992. Fall workshop plans were formulated and the membership committee was given the charge to recruit new members and encourage membership renewal. Mrs. Ramseur informed the board of the upcoming Conference of African-American Librarians to be held in Columbus, Ohio, September 3-5, 1992 and indicated that the bus had already been secured.

The written report of the Round Table on Special Collections revealed that the executive committee met on February 7,1992 at Duke University. It was decided that the round table would cosponsor a fall program with the Society of North Carolina Archivists. The details of such a program will be forthcoming. Chairperson, Beverly Tetterton, was not present.

Karen Purcell of the Round Table on the Status of Woman in Librarianship, discussed plans for a fall program. At the conclusion of all reports, President Freeman expressed astonishment at the degree of involvement and the amount of work that is done by the various sections, round tables and committees.

Old Business

Barbara Baker again reminded the board of the upcoming Currents Conference and indicated that Evelyn Daniel was to be a keynote speaker.

New Business

Larry Alford, of the Library Administration and Management Section, asked if NCLA would consider offering some type of certification in leadership. He suggested that this certification could be offered in conjunction with a library school program, such as North Carolina Central.

Barbara Baker noted that states such as Maryland and Kentucky are on record as having library leaders programs. Discussion that followed seemed to indicate that there was a need for such a program and that it was worthwhile. Finally Mr. Alford agreed to write a proposal and investigate possibilities.

President Freeman introduced a letter from Judie Davie and Jill Locke asking that NCLA submit a letter supporting Greensboro's proposal to host the 1993 May Hill Arbuthnot Honor Lectureship. The board agreed that President Janet Freeman would write this letter of support.

Speaking on behalf of State Librarian, Howard McGinn, President Freeman noted that North Carolina is the 26th state to become a part of the Center for the Book.

In conjunction with the president's report, the board had been asked to read and be prepared to respond to the article "The Mourning After" written by Howard Mc Ginn and published in the winter 1991 issue of North Car*olina Libraries*. President Freeman distributed her summary of the article along with the reaction to the article written by Patsy Hansel and allowed time for perusal by the board.

During the general discussion such issues as empowerment of libraries, being pro-active rather than reactive and improved resource sharing were initiated. President Freeman sought answers to the following questions.

1. What is the association about?
2. Is the association about the issues brought forth in the article?
3. Where is the association headed?

Dave Fergusson pointed out that the Board had begun to chart its course at the retreat and suggested progression in that direction.

Meralyn Meadows expressed the concern of the North Carolina Library Paraprofessional Association with the suggestion that the association control access to membership and wanted to know if the NCLA executive board was in agreement with this suggestion. The board assured Ms. Meadows that it was not in agreement with excluding paraprofessionals from membership in the association.

President Freeman mentioned the following ideals:

1) talk with respective groups regarding the issues at hand
2) publish discussions of these issues in NCLA publications
3) consider appointment of another Futures Committee
4) hold an informal summit - to convene visionaries (librarians and non-librarians) to discuss the total picture and the future of libraries of all types.

The board was in agreement with these ideals.

When asked if she would respond to the article written by Howard McGinn, President Freeman said that she would prepare a response at a later date and distribute it to the board for approval.

Bill Hadden of the NC Friends of Public Libraries expressed his appreciation for being invited to the meeting.

It was moved by Barbara Baker and seconded by Pat Langlier that the meeting be adjourned. The motion carried and President Freeman declared the executive board meeting adjourned at 1:05 p.m.

Respectfully submitted,
Waltrene M. Canada
Secretary

Instructions for the Preparation of Manuscripts for *North Carolina Libraries*

1. **North Carolina Libraries** seeks to publish articles, materials reviews, and bibliographies of professional interest to librarians in North Carolina. Articles need not be necessarily of a scholarly nature, but they should address professional concerns of the library community in the state.

2. Manuscripts should be directed to Frances B. Bradburn, Editor, **North Carolina Libraries**, Joyner Library, East Carolina University, Greenville, NC 27858-4353.

3. Manuscripts should be submitted in triplicate on plain white paper measuring 8 1/2" x 11" and on computer disk.

4. Manuscripts must be double-spaced (text, references, and footnotes). Macintosh computer is the computer used by **North Carolina Libraries**. Computer disks formatted for other computers must contain a file of the document in original format and a file in ASCII. Please consult editor for further information.

5. The name, position, and professional address of the author should appear in the bottom left-hand corner of a separate title page. The author's name should not appear anywhere else on the document.

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   Keyes Metcalf, Planning Academic and Research Library Buildings (New York: McGraw, 1965), 416.

   Susan K. Martin, "The Care and Feeding of the MARC Format," American Libraries 10 (September 1970): 498.

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11. Issue deadlines are February 10, May 10, August 10, and November 10. Manuscripts for a particular issue must be submitted at least 2 months before the issue deadline.

About the Authors

Alan Blatecky

Education: B.A. Carthage College (Kenosha, WI), M.Div. Princeton Theopogical Seminary, TH.M. Princeton Theological Seminary, M.B.A. Duke University

Position: Vice President at MCNC, and, Executive Director for the Center for Communications.

Marty Bray

Education: B.S. Appalachian State University, M.L.S. Appalachian State University

Position: Media Coordinator, McDowell High School, Marion, N.C.

George H. Brett II

Education: B.A. Florida State University, M.F.A. University of Georgia, Ph.D. Candidate, School of Information and Library Science, University of North Carolina at Chapel Hill

Position: Manager for the Clearinghouse for Networked Information Discovery and Retrieval at the Center for Communications at MCNC in the Research Triangle Park, N.C. and concurrently also Consultant for Libraries and Networked Information to the University of North Carolina General Administration.

Charles Croissant

Education: MSLS, University of Illinoir Urbana-Champaign; MA in Germanic Literature, Univeristy of Michigan; BA in Music, Indian University

Position: Music Cataloger, Music Library, Univ ersity of North Carolina at Chapel Hill.

Raymond A. Frankle

Education: B.A. Concordia College, M.L.S. Long Island University

Position: Associate Vice Chancellor for Library and Information Services, The University of North Carolina Charlotte.

Kenneth Marks

Education: B.S. Iowa State University, M.L.S. University of California Berkley, Ph.D. Iowa State University

Position: Director of Academic Library Services at East Carolina University.

Jessica MacPhail

Education: B.A. Columbia College (Chicago, IL), M.L.S. Rosary College

Position: Director, Northwestern Regional Library System, Elkin, N.C.

Eric Morgan

Education: B.A. Bethany College (Bethany, WV), Master of Information Studies Drexel University

Position: Systems Librarian, North Carolina State University.

Pat Ryckman

Education: B.A. University of North Carolina at Chapel Hill; M.S.L.S., University of North Carolina at Chapel Hill

Position: Manager, Robinson-Spangler Carolina Room, Public Library of Charlotte & Mecklenburg County.

Bil Stahl

Education: B.S. Geneva College (Beaver Falls, PA), M.S. Indiana University of Pennsylvania, M.S.L.S. University of Illinois

Position: Director of Information Technology Planning, the University of North Carolina Charlotte.

North Carolina Library Association 1991-1993 Executive Board

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Janet L. Freeman
College Librarian
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Documents Department
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Fax: 919/727-2549

EDITOR, North Carolina Libraries
Frances Bradburn
Joyner Library
East Carolina University
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Telephone: 919/757-6076
Fax: 919/757-6618

PAST-PRESIDENT
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Associate Dean for Educational
Resources
Durham Technical
Community College
1637 Lawson St.
Durham, NC 27703
Telephone: 919/598-9218
Fax: 919/598-9412

ADMINISTRATIVE ASSISTANT
Martha Fonville
North Carolina Library Association
c/o State Library of North Carolina
Rm. 27 109 E. Jones St.
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Telephone: 919/839-6252
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OF SCHOOL LIBRARIANS
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Media Specialist
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Fax: 919/431-1809

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Fax: 704/983-7322

ROUND TABLE FOR ETHNIC
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7207 E. W. T. Harris Blvd.
Charlotte, NC 28227
Telephone: 919/563-9418
Fax: 919/567-9703

ROUND TABLE ON SPECIAL
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Special Collections Librarian
New Hanover Co. Public Library
201 Chestnut St.
Wilmington, NC 28401-3998
Telephone: 919/341-4394
Fax: 919/341-4388

ROUND TABLE ON THE STATUS
OF WOMEN IN LIBRARIANSHIP
Karen Seawell Purcell
Director of Information Services
Greensboro AHEC
1200 N. Elm St.
Greensboro, NC 27401
Telephone: 919/379-4483
Fax: 919/379-3591

Editorial Staff

Editor
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Joyner Library
East Carolina University
Greenville, NC 27858-4353
(919) 757-6076

Associate Editor
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Dale H. Gramley Library
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(919) 721-2649

Associate Editor
JOHN WELCH
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Raleigh, NC 27601-2807
(919) 733-2570

Book Review Editor
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CB#3930, Wilson Library
University of North Carolina
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(919) 962-1172

Lagniappe/Bibliography Coordinator
PLUMMER ALSTON JONES, JR.
Iris Holt McEwen Library
Elon College
PO Box 187
Elon College, NC 27244
(919) 584-2338

Advertising Manager
HARRY TUCHMAYER
New Hanover Co. Public Library
201 Chestnut Street
Wilmington, NC 28401
(919) 341-4036

Editorial Advisor
HOWARD F. McGINN
Division of State Library
109 East Jones Street
Raleigh, NC 27601--2807
(919) 733-2570

Trustees
JOHN CHILDERS
Department of Psychology
East Carolina University
Greenville, NC 27858
Telephone: 919/757-6280
Fax: 919/757-6283

Children's Services
LINDA HYDE
Clemmons Branch
Forsyth County Public Library
3554 Clemmons Road
Clemmons, NC 27012
(919) 766-9191

College and University
MELISSA CAIN
School of Information & Library Science
CB #3360, 100 Manning Hall
University of North Carolina
Chapel Hill, NC 27599-3360
(919) 962-8366

Community and Junior College
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Paul H. Thompson Library
Fayetteville Technical Community College
PO Box 35236
Fayetteville, NC 28303
(919) 678-8253

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(919) 962-0484

New Members Round Table
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Public Services Librarian
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Wilmington, NC 28401
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Belk Library
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(704) 262-2189

Research Column Editor
ILENE NELSON
William R. Perkins Library
Duke University
Durham, NC 27706
(919) 684-2373

Resources and Technical Services
GENE LEONARDI
Shepard Library
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Round Table for Ethnic/Minority Concerns
BELINDA DANIELS
Learning Resources Center
Guilford Technical Com. College
Jamestown, NC 27282-2309
(919) 334-4822

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