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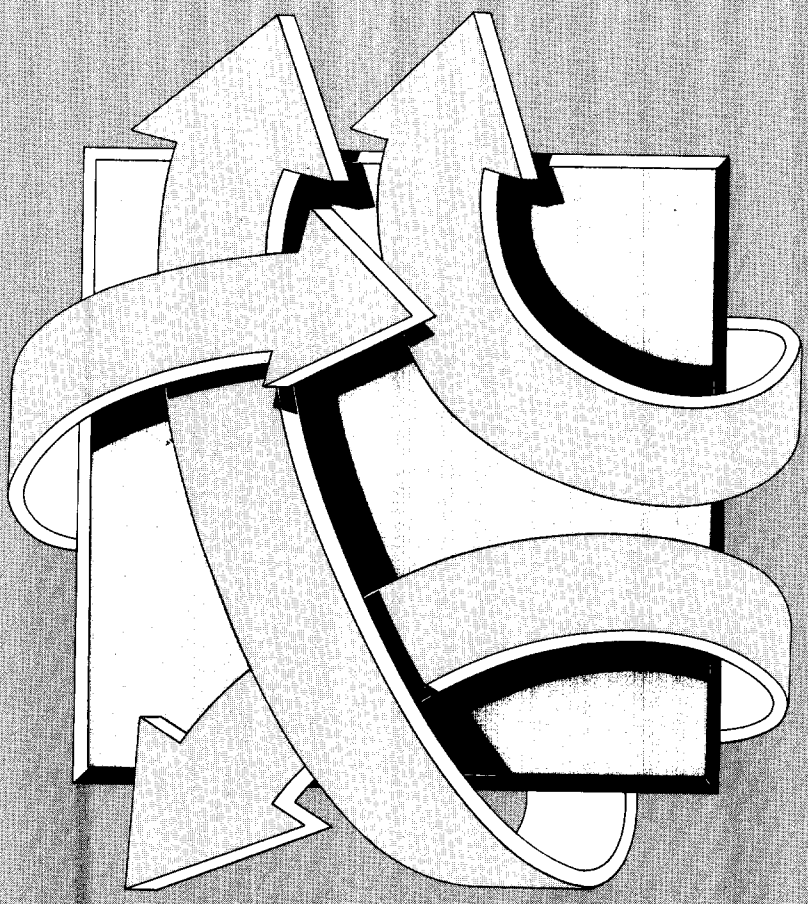

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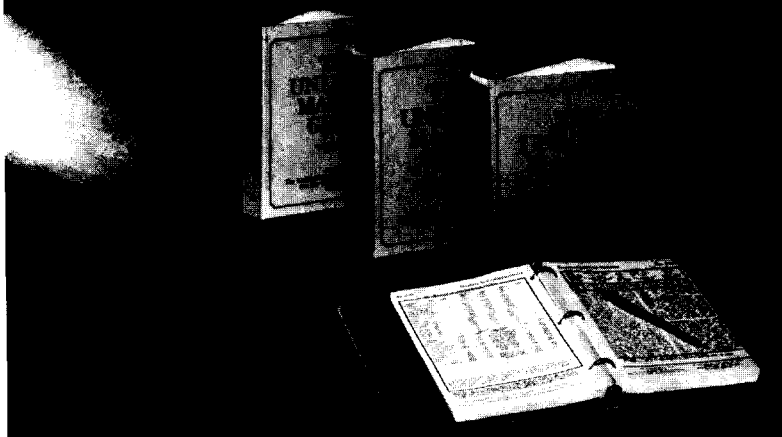

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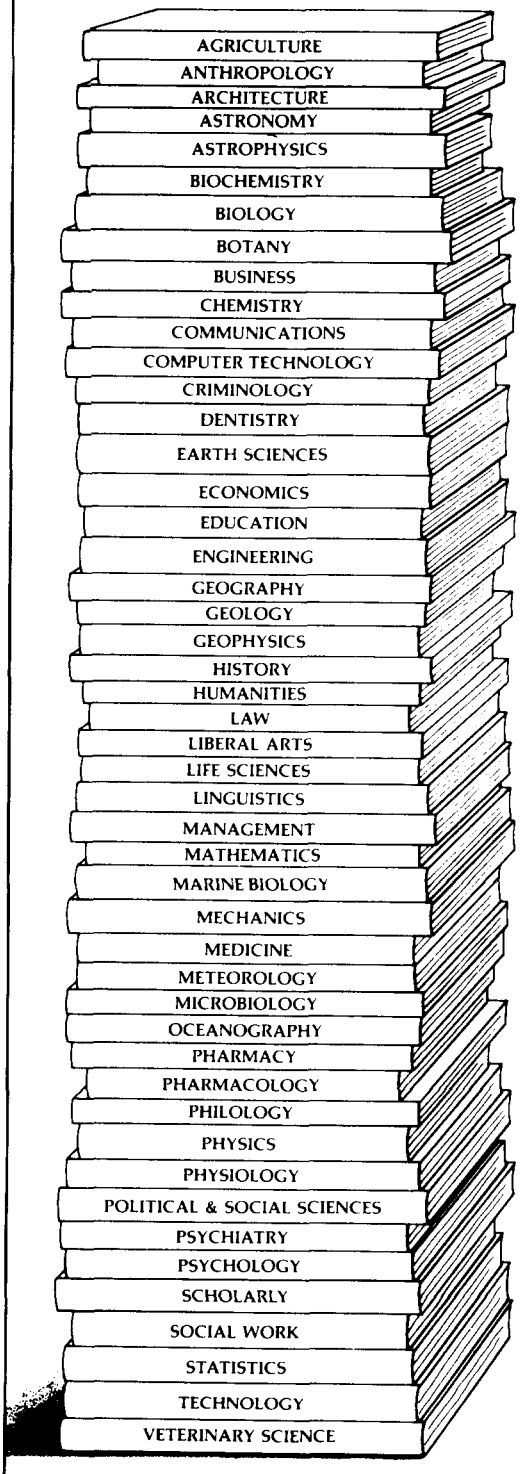

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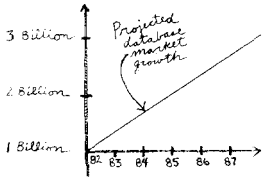
As more and more businesses rely on the immediate access to data bases for their success and growth, we are witnessing a veritable explosion in the database market. The Spring 1984 issue of the Directory of Online Databases, compiled by CUADRA Associates, reports the addition of over 2,000 new database listings between 1979 and 1983. The list of databases spans the range from ABI/INFORM for use by business executives to the ZOOLOGICAL RECORD that provides worldwide coverage of zoological literature. According to Link Data Resources, what was a 1 billion dollar industry in 1982 is projected to triple in size by 1987.



The increased demands by business for databases have placed an ever increasing demand on the terminals that access that information.

These terminals must be fast. They must be reliable. They must be flexible. And they must deliver high-quality results.

Digital's DECwriter Correspondent™ teleprinter has been so comprehensively engineered that it more than satisfies all these exacting requirements.

FASTER DATABASE SEARCHES MEAN MORE SEARCHES FOR YOUR MONEY.

If your business requires an occasional database search, and even more if you're a frequent user, cost can become a very important factor. Simple arithmetic tells you the faster you access the data, the more money you save. Put another way, with greater speed you can perform more data searches for the same amount of money.

Digital's Correspondent teleprinter features a bidirectional printhead which prints out a rapid-fire 150 characters per second for true 1200 baud performance. That's a full four times faster than what you can expect from any other portable teleprinter. All that speed means that you can save up to 75% on your dial-up phone line charges. And can save up to 75% on computer connect time as well.

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Because your data is meant to be read, shared and perhaps stored for later reference, it must be, above all else, legible.

The Correspondent tele-

printer has been engineered with exactly that in mind.

Its 9-wire printhead produces an extremely crisp, readable output that does not put a strain on your eyes. Original printouts are so clearly legible that you can run them on the copier machine with exceptional results. It prints true descenders, so a "y" will never be mistaken for a "v" or a "j" for an "i." If some of your information needs to be highlighted, you can receive correspondence quality bold print at 80 characters per second.

And it prints on plain paper, for increased legibility at a reduced cost.

PRINT THE DATA YOU WANT IN THE FORMAT YOU WANT IT.

The Correspondent teleprinter offers you a printout versatility that does not lock you into any predetermined format.

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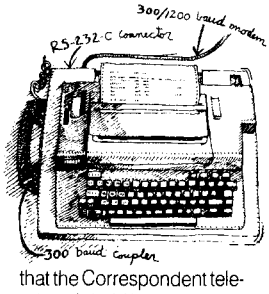
And the Correspondent teleprinter's command of the printed word doesn't stop there. There are 10 different national character sets built into it, as well as APL.

One other format is particularly helpful for presenting complex information in an easily understandable way. The Correspondent teleprinter prints bit map graphics for a high-impact visual presentation of charts, graphs and formulas.

CONDUCT DATABASE SEARCHES AT WORK, WHEREVER THAT MAY BE.

The Correspondent teleprinter's flexibility of formats is matched by its flexibility of communications options. A built-in 300/1200 baud modem lets you dial directly through the keyboard. With the modem, you can store 125 characters of your most frequently used phone numbers and dial them by simply hitting a single key. A built-in acoustic coupler can accommodate almost any phone, so you can access a database whether you're at home or on the road. And when you are on the road, you'll find the Correspondent teleprinter easy to take along. It's such a compact package that it takes up just about the same amount of space as an average typewriter and weighs under 20 lbs. Finally, there's an EIA RS232-C serial port that lets you connect directly with a host computer.

With such high-performance standards for speed, print quality and versatility of formats and communication, it is little wonder



that the Correspondent teleprinter is held in high esteem by experts in the data search field. Jeff Pemberton, editor of ON-LINE, states, "I have been doing on-line searches since 1969, and the DECwriter Correspondent is certainly at the top of the list of the printterminals I have tried."

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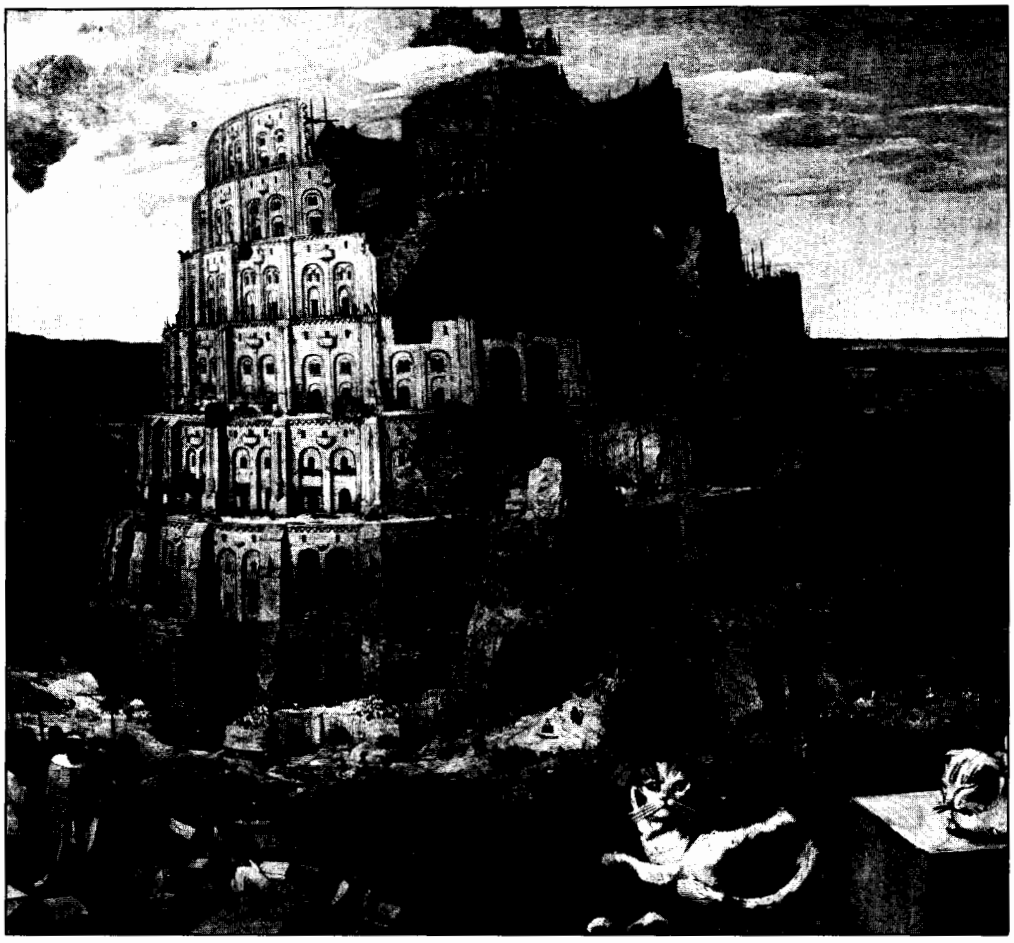

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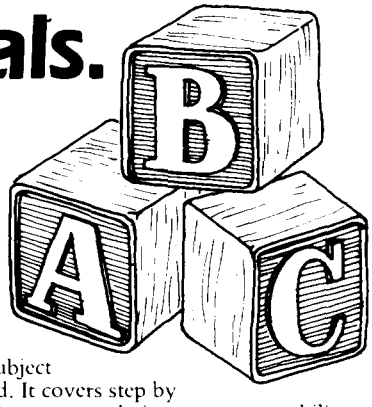
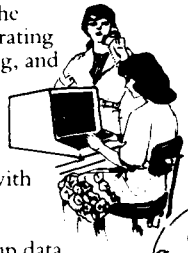


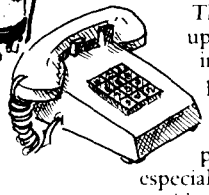
A system is only as reliable as what is behind it, and Blackwell Library Systems, Inc., backs up its PERLINE™ system with training, documentation and customer service. Plus its an intelligent system that automatically tracks errors, thereby enabling users to readily diagnose problems that might arise.

Training

Blackwell Library Systems provides three days of intensive training for three selected staff members. This course introduces the system, explains basics such as operating the computer, checking-in, ordering, and claiming, plus advanced functions such as setting up parameter files and tailoring the system for local requirements.



A training database is standard with the installed PERLINE™ system. Trained members may direct their in-house staff and practice setting up data for eventual input into the live system. Thus online experience is gained without disrupting the live system. In-depth instructional follow-up includes subjects such as Fund Accounting, Binding, and Report Writer activities. Blackwell Library Systems training is performed by librarians with serials operation experience.



Documentation

Complete software documentation is supplied with the PERLINE™ system. This consists of a "Getting Started" packet and a detailed instruction manual. The "Getting Started" information packet defines the contents of all files, spells out local control parameters, and contains samples. The all-encompassing instruction manual leaves no subject unexplained. It covers step by step operation, system design, system capability and philosophy. Also, for bundled systems, complete, detailed manuals are provided for hardware maintenance and operation.

Customer Service

The PERLINE™ system is backed up at all times. Full assistance, including software and hardware problem-solving, is provided, and all inquiries will be promptly addressed. System designers and programmers are available for especially difficult problems. A modem provides a means for Blackwell Library Systems personnel to provide remote software support.

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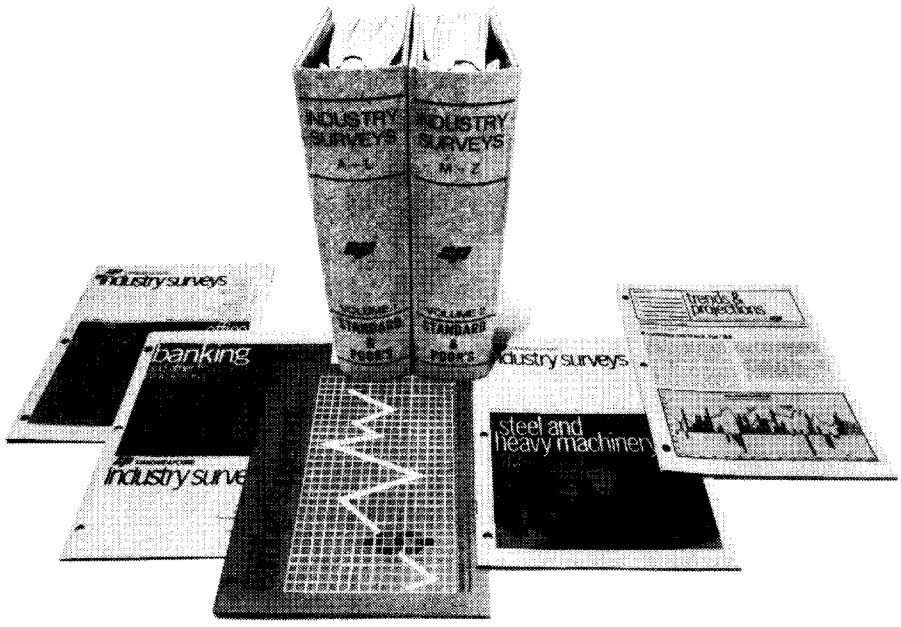

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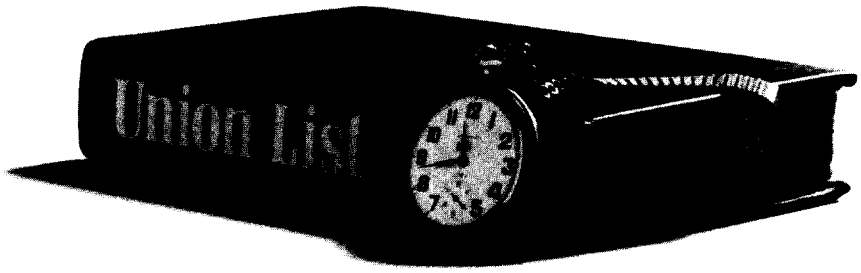

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An editorial

I wish to state my gratitude to the guest editors of *Special Libraries* "Online": Mary Corcoran, Marjorie Hlava, and Jane Kelly. They have gathered together articles that take one's breath away with the range of opportunity and the vision of possibility that they express.

But even as the Force in *Star Wars* had a dark side, so does the vision of a limitless and liberating technology. Spiraling costs and fears that end user searching will relegate the library to a storehouse role represent part of the dark side.

Another angle on the questions raised in this issue is offered by Sherry Turkle's *The Second Self: Computers and the Human Spirit* (New York, Simon and Schuster, 1984). Turkle wrestles with the sociological and philosophical aspects of how people interact with computers. She attempts to codify the vocabulary that children and adults are developing as they reconcile their image of the machine with their image of themselves. She provides an intellectual framework for the changes that have been catalyzed by the presence of the terminal.

The questions Turkle raises are fundamental and immediate. She postulates that our view of ourselves and the world is being altered by our daily encounters with "the ghost in the machine." The way we think is now different, and the way our children think may be very different indeed.

Turkle writes: "The computer stands on a border. Its evocative nature does not depend on assumptions about the eventual success of artificial intelligence researchers . . . it depends on the fact that people . . . consider the workings of [the] machine in psychological terms."

The Second Self is a disturbing book, but not a depressing one. The human spirit has always responded to change, from the invention of movable type to the automobile to spaceflight, with awe and wonder as well as fear and loathing.

As we examine the articles in this issue, and deal in our workplaces with the challenges they raise, we can use Sherry Turkle's research as a basis for studying an even larger picture. She may not provide every answer, but with her, and Rilke, we might learn to love the questions themselves.

GraceAnne A. DeCandido

A Note from the Guest Editors

We are pleased to bring members of the Association this first issue of *Special Libraries* devoted to use, applications, and trends for online technologies in special libraries.

The Information Technology Division of SLA added an Online Section in 1981, in recognition of the large percentage of our membership whose competencies include the use and promotion of online technologies. This section has grown rapidly, with a total membership of 690 today!

One of the Online Section's charges is to bring high-quality reports to the membership on online applications in special libraries. This issue, with invited and contributed papers, highlights case studies, state-of-the-art in online technologies, trends, and some exciting insights for the future.

Since so many of us in special libraries are a "one-person show," it is vital that *Special Libraries* cover the spectrum of technologies in use in libraries and information centers now. Online technology gives us the ability to locate, retrieve, and manipulate information from the masses of data out there. It is one crucial common denominator shared by information specialists in every subject specialty.

We hope that this issue is valuable to you, and we look forward to more features like this in Association publications.

- **Mary Corcoran,** Chairman, Online Section, Information Technology Division, SLA, 1983–84; Senior Marketing Representative, DIALOG Information Services, Inc.
- **Marjorie M. K. Hlava,** Chairman, Information Technology Division, SLA, 1984–85; President, Access Innovations, Inc.
- **Jane A. Kelly,** Chairman, Online Section, Information Technology Division, SLA, 1984–85; Director, Customer Relations, BRS.

The 3M Experience: Use of External Databases in a Large Diversified Company

Karen L. Flynn

201 Technical Library, 3M Center,
St. Paul, Minnesota

■ **Minnesota Mining & Manufacturing Company, headquartered in St. Paul, Minnesota, is a large, highly diversified firm employing about 85,000 employees worldwide. The company's products range from the familiar SCOTCH brand tapes to surgical drapes, optical discs, abrasives, electrical connectors, and more than forty thousand other products. Because of the broad technology base supporting development of these products, it is necessary that 3M's information access channels be able to reach an equally broad universe of information resources, and that these resources be used within the company in the most flexible, far-reaching ways possible. In this account, we describe some of the services developed at 3M, both traditional and non-traditional, that exploit the power and value of online databases.**

INFORMATION SERVICES are provided to 3M personnel by a staff of about sixty, of whom half have professional degrees. The staff of Information Services is organized into the following functions: seven technical libraries; a business information service; an engineering information service; a current awareness service; patent and technical communications services; library processing and bibliographic control; systems services; and a new Austin (Texas) information service. All of these functions use, in one way or another, externally supplied databases. There are also a number of organizations within 3M, not part of Information Services, that perform information access roles and are important present and potential users of online databases. Among these are the company marketing, purchasing, financial planning, public relations, and computer systems functions.

Acknowledgements The services and programs discussed in this paper are the result of the hard work and talent of many individuals. The author gratefully acknowledges the assistance of Barbara J. Peterson, Kristin K. Oberts, Aletta H. Moore, David B. Schrader, and Vicky K. Veach, all of whom provided input and helped in editing.

These groups use many databases. The total number of external databases to which 3M has access exceeds 600. Information Services maintains access to DIALOG, SDC, BRS, STN, INFOLINE, QUESTEL, Dow-Jones, NEXIS, TEXTLINE, TECHNOTEC, the National Library of Medicine, The Source, CompuServe, INVESTEXT, and the Official Airline Guide. There are also a small number of databases, publicly available via various vendors, that are used heavily enough to warrant being maintained in-house.

The Independent Searching Program

Over the past few years, there has been a strong need within 3M for a program that would coordinate and assist efforts of end users to learn and to use externally available online databases. The need has been especially acute recently for a number of reasons:

- users of informational services have become more sophisticated in their awareness of the sources available to them;
- 3M employees have become active and knowledgeable users of microcomputers;
- 3M employees have become aware of ways in which problems could be solved by non-traditional uses of online databases; and
- promotion by vendors on online database services to the general public has intensified.

To try to meet these needs, a support team was developed and a policy statement written. The policy statement was an important first step. It forced the team to examine what had been done by other organizations, to evaluate what was already happening at 3M, and to hazard a guess as to what kind of activity was likely to occur in the near future. It also helped to avoid some of the pitfalls which had been experienced by other organizations by ensuring that we had a clear statement of intent before presenting the program to users. Writing the policy statement also forced us to examine our mission and verify that an end-user searching assistance function was compatible with providing the best high-quality information possible. There are still unanswered questions about the quality of searching being done by end users.

Our overall policy can be stated as follows: while we neither advocate nor discourage the use of external online resources by end users, we accept the responsibility of assisting to the best of our ability those individuals who elect to perform this kind of searching in order to ensure high-quality information for the company. All of our decisions on specific aspects rest upon this basic philosophy.

While we neither advocate nor discourage the use of external online resources by end users, we accept the responsibility of assisting ... this kind of searching in order to ensure high-quality information for the company.

The costs of end-user searching are borne by the searcher's own department. We agreed that Information Services, which is itself funded through corporate recharge, should not assume responsibility for end users' online searching costs. We were also concerned at the trend in other organizations for new users to search online for only as long as the searching was supported invisibly by some other agency. We believe users ought to know the costs that are incurred. They can then make more realistic decisions about the appropriateness of online searching for themselves if these costs are presented honestly to them at the outset.

The program as it stands now has five aims:

1. To acquaint 3M personnel with the opportunity for searching online databases, and provide the basis for making well-informed decisions about them;
2. To assist the end user with search strategy;

3. To assist the end user in getting training, both initial and continuing, and in keeping up with developments in the online industry that affect his or her search capabilities;
4. To make available resources that support the search process; and
5. To provide a forum where end users may exchange information with each other and with professional search staff.

We have named this the **Independent Searching Program.** Activities that have been developed to support these goals are outlined below.

Awareness

The Independent Searching Program is considered the responsibility of the entire Information Services staff, and therefore educating users about online options is part of our routine promotional activities. Generating this awareness, without engendering more interest than we could handle, has been the most difficult task of the program. We started by offering a presentation open to the entire company that described what was available and why one might want to consider doing one's own searching. Of the more than 400 people who attended these opening sessions, about 25 percent indicated some interest.

We give presentations tailored to individual groups, include information on the Independent Searching Program in our routine Information Services tours and presentations, have exhibits which highlight online searching at company events, and prepare publications directed specifically to end users.

Though we had expected an initial burst of interest followed by a tapering-off, the response since the initial presentation has been steady. We are assured now that our program has a real future.

Set-up and Vendor Selection

Setting up for online searching consists of a number of steps: getting management approval, allocating space, acquiring hardware, and, if necessary, software, selecting vendors, obtaining passwords, and obtaining the necessary documentation. Information Services staff are able to help with all of these steps except actually approving the costs.

Our assistance is largely in the form of consultation and advice. At this time, we do not provide either hardware or software, but rather meet with interested individuals or groups to offer recommendations on which terminal, microcomputer, modem, communications package, or printer might best fill their needs.

The most important set-up activity, and the one which we try very hard to become involved with in every case, is the selection of the system or systems to be searched. People become aware of online searching opportunities in many different ways: through our program, from friends, bosses, or subordinates, through personal computer users' groups, from published media, at conferences, or from having searches conducted for them. However, as a rule their awareness is limited. Few have any conception of the amount or diversity of information available online, and fewer still of which system might best fill their needs. This is the point at which we step in to match the individual with the best system for him or her.

We have found that it pays to be pushy about having our staff be involved in vendor selection. Often people come to us with preconceived notions of what they want, but after an hour or so with a professional searcher their outlook has generally modified considerably.

Consulting on vendor selection is one of the most professional tasks that we do. It requires broad knowledge of resources coupled with a deep understanding of the way databases are structured. It also requires that one constantly update one's own knowledge. Furthermore, the kind of objective and custom-tailored opinion that we offer is something the 3M employee cannot get anywhere else; not from colleagues, not from published literature, not from sales representatives. We feel that here we can offer a valuable and truly unique service.

Consulting on hardware or software

selection is usually more straightforward. In most cases the people that come to us already have a terminal or microcomputer that can be used for searching. In fact, several managers have approached us after the purchase of a micro for their groups, and were then looking for a nonthreatening way of introducing subordinates to it. Online searching was thought to fill the bill!

Software selection generally means choosing a good communications or search interface package. We meet this need by using printed or online directories of software, by carrying out considerable software evaluation within Information Services, and when necessary referring to experts elsewhere in the company. We have also not hesitated to make use of the expertise of the database producers and vendors.

We have begun to take a serious interest in software packages designed as search interfaces. Sci-Mate was the first well-known package of this type, and In-Search is another recent release to show considerable promise of utility with end users. Some of our Information Services staff have devoted considerable time to reviewing these packages and demonstrating them for potential users.

Training and Continuing Support

There is no substitute for basic training on most of the search systems at the present time. Front-end search softwares like Sci-Mate notwithstanding, most systems are poorly adapted to use by novices. They utilize command-driven, rather than menu-driven, modes; online help is largely inadequate or poorly designed; and the software is unforgiving about spelling, spacing, or formatting errors. More flexible systems are being created all the time, but meanwhile we recommend strongly that would-be searchers receive basic system training before they start to search. Information Services staff provide very little of the training, as we believe that the best training is given by those who deliver the product. However, we do offer a three-hour mini-session, available without charge, which is designed to acquaint novice searchers with the concepts and techniques of online searching and, in addition, give them an opportunity to evaluate how online searching might fit in to their individual situations. Those who attend often go on to obtain passwords, but many decide on the basis of this class that searching is too time-consuming, too difficult, too boring, or too costly to pursue. We are not offended by our dropouts; our goal is to inform and provide a sound basis for decision, not to convince. Many persons, to our surprise, have also come to learn how to phrase search requests better. This also has our whole-hearted support.

We have been asked to help assemble peculiar assortments of hardware, debug homegrown communications software, extricate novice searchers from the clutches of tenacious and unforgiving logon protocols, and remind a forgetful user of the command to log out of BRS.

Much of the quality of a search rests on the familiarity of the searcher with the system being used. The state of the online industry today is such that system features change very rapidly and infrequent users are as likely as not to find out that the logon protocol has changed entirely, or a database been eliminated, since the last searching venture. We expect a large part of our responsibility in the future to be updating end-user searchers on the systems they have chosen to use, by means of including news of major changes in our publications, encouraging end-user searchers to participate in our online searching forums, and scheduling regular updates by major vendors in-house.

A provision of our continuing support program has been the availability of on-

the-spot search assistance for those who run into snags in the process of planning or executing a search. So far, we have been asked to help assemble peculiar assortments of hardware, debug homegrown communications software, extricate novice searchers from the clutches of tenacious and unforgiving logon protocols, and remind a forgetful user of the command to log out of BRS — as well as many other requests not so memorable. We do not try to duplicate the resources of the vendors' Search Assistance Desks — in fact, we promote them vigorously — but, on some occasions, questions arise that require knowledge of the company, or experience with searching 3M technologies, or simply a person close by.

Our program is in its early stages, and certainly we have many tasks yet to do. However, the early successes have been gratifying. Perhaps the most important feature of what we have done is our refusal to separate end-user assistance from our normal tasks. The Independent Searching Program is an important and necessary part of our service, and it would have been a grave mistake on our part to overlook the opportunity to be of service in this way, or, having observed it, to refuse. The information center which incorporates end user searching into its activity mainstream stands a good chance of playing a vital role in policy setting for some very important future issues; those that do not will almost certainly be bypassed for this activity and, in our opinion, are seriously jeopardizing their future viability.

Local Database Building

A natural outgrowth of activity for end-user searchers is the construction of local databases on topics of interest. Those who are computer-literate immediately see opportunities for performing these kind of manipulations, and beginners do not take long to catch on. Again, important policy issues are at stake here (not the least of which is copyright) and we feel we can be of far more service to the company as a whole by providing assistance in these cases rather than ignoring them or insisting that they are not proper sorts of activities for end users.

The help we supply falls into several categories: negotiation and control of downloading agreements with database producers and vendors; needs analysis; software and hardware recommendations; and some systems design. By no means are these databases limited to a certain type, or even a certain size, of hardware, and subject interests span the entire realm of human knowledge, so the assistance we give is necessarily on a case-by-case basis. We do restrict our assistance to building databases of an informational nature, as help for building other kinds of systems is available elsewhere.

We have initiated fewer contacts of this type than with Independent Searchers, but the potential of this service is almost certainly far broader. Even those who do not want to do their own searching are intrigued by the possibility of having their own database. We are not insensitive to the questions generated by this kind of consultation; for example, who decides whether a given individual or group really needs a database? How does one apply and use subject indexing in this kind of situation? Are time/money really saved by having such information available in a form that duplicates what is already online? etc. However, the ultimate response is the same: our users see the potentials, and they will pursue these goals—if not with our help, then without it.

Electronic Search Delivery

A major assistance to users, both those building local databases and those not, has been the delivery of certain search results in electronic form directly to the user's work location. Our efforts in this area have begun with the delivery of patent current awareness.

For some time, 3M has received the weekly Derwent World Patents Index file on magnetic tape and has processed in-

dividual search requests against them using inhouse software. In response to user requests, the system has recently been enhanced to permit the delivery of current awareness updates to the requestor directly via the 3M inhouse timesharing computer. The user reviews and perhaps edits these results at his or her convenience, and then has the option of performing additional manipulations on the data since it is in electronic form. Although this is quite a new service, the response has been very good. We hope to extend electronic delivery to non-patent current awareness, as well as all types of retrospective searching, in the near future.

Executive Information Service

The users who unfortunately are often overlooked by corporate information services are the company's executives. Their needs are very different from the usual day to day tasks. They need data which is often harder to identify and to obtain, requires more analysis, and must be delivered within more stringent time guidelines.

Information Services has cooperated with another part of the 3M organization to provide a battery of informational services to 3M executives. The program that has emerged, which combines access to resources of value to executives with a specially designed software that eases access, is called 3M's Executive Information Service.

The service gives executives access to the following: internal financial information and company news; electronic mail capability; and ability to log on to certain external services. At this time, these external services include NEXIS, Dow-Jones, CompuServe's Executive Information Service, and the online version of the Official Airline Guide. Ten executives, who were volunteers, were provided with equipment (IBM PC 3270) and training in each of the systems. The participants' secretaries have also received training.

Information Services representatives have served throughout the development of this service as planners and liaisons. Initially, we recommended external sources that we felt were potentially good choices for executives' needs. Part of the challenge of developing this service is that there is no precedent for this kind of selection; we are still seeking input as to whether these choices are, in fact, the best ones. In the implementation phase, we scheduled and attended all the training sessions, as well as providing some training ourselves. We have also gathered much feedback and continuously monitored the success of the program.

Users of our Executive Information Service gain a considerable amount of knowledge of the information industry. They have an opportunity to observe at first hand the high caliber of professional work that goes into information management . . . so we have had the opportunity to gain some very desirable allies.

From the enthusiasm of the participants, it is clear to us that the objectives of the program are good and viable ones. We hope that in the near future access to these services can be extended to all 3M executives. Ultimately, it may be possible to provide all 3M employees with a channel of this nature for quick, easy access to outside services.

To get needed information to executives quickly is certainly the most visible goal of the Executive Information Service. However, certain other benefits of the program deserve to be mentioned. Through their use of the service, the executives gain a considerable amount of knowledge of the information industry — its complexity, its extent, and its costs. They have an opportunity to observe at first hand the high caliber of professional work that goes into information man-

agement as well as the importance of hiring well qualified, highly trained individuals to undertake it. They see results on their terminal within seconds and cannot help but realize the value of accurate, timely information. In other words, as one result of this project, we have had an opportunity to gain some very desirable allies in the ongoing challenge to demonstrate and promote the worth of an information organization.

Summary

A company, to remain profitable, must strive constantly for innovation and improvement in its products, services, and procedures. At 3M, we have found one innovative technique to be the use of external online databases in new, more effective, or unexpected ways. Access to these external systems puts at our fingertips immense quantities of information, which can be retrieved in seconds. With the proper training and support, this information can be retrieved directly by its ultimate users, without the necessity for an intermediary.

The growth of the online industry has been phenomenal and there is no indication that it is slowing. Opportunities for making use of this information in creative ways will certainly grow along with the industry; and opportunities for people whose business it is to aid in access and use on online information have never been better.

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Emerging Trends in the Online Industry

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■ **Major trends include: more source data, greater subject variety and more retrospection (older records being added to files). Telecommunication continues to be inexpensive and grows in speed and reliability; user languages are becoming more complex and powerful, although this is counteracted by increasing automatic online user assistance and better customer support. New functions are being added to search services, making them capable of doing more than merely retrieving data; users are becoming more proficient, more demanding and more diverse; the overall cost of online services is decreasing or remaining relatively constant in the face of inflation. Finally, no reduction in the need for professional librarians is anticipated, although there will be some change in job function.**

TRENDS are best viewed long after their appearance. Cause, duration and effect can be appreciated in retrospect. But our industry has matured enough that we can now recognize some trends and we have enough experience to be able to suggest some of their causes and possible effects.

Our discussion is qualitative. We are identifying a trend, not attempting to measure it. Most trends affect one another, such as a technological development affecting, or perhaps being affected by, a user behavioral change. What we are certain of is that recognizing and understanding a trend is not simply a matter of predicting the number of personal computer sales or the baud rate of new telecommunications systems. The key is understanding such issues as what difference it makes to users whether they can get data at 300, 1200, or even 2400 baud, and what they will do with the new capability. Will they do more searching or save the money and use it for something else? If they elect to do

more searching, it will have a multiplier effect on the industry because more searching tends to expose more people to the benefits available. In the computing industry, advance after advance in speed, efficiency and effectiveness has always led to more usage, never less. This suggests that online searchers will spend their extra money doing more searching. In general, technological advances tend to enlarge the industry as a whole. Some interesting figures about growth, particularly in DIALOG, are found in Bev Smith's recent profile of the company *(1)*.

Files

Content: More Source Data: This industry started with bibliographic files. The first files consisted of single bibliographic citations and indexing, for the most part from controlled vocabulary lists. As storage costs lessened and volume of searching increased, we were able to add abstracts to several of the files offered. More and more, users are seeking the primary literature or the source information, rather than accepting surrogates.

When abstracts were added to the ERIC database, we were apprehensive about the economic viability of such a move, but additional usage more than paid for the additional storage. Today a host of full text files include Magazine ASAP (general magazine articles), Academic American Encyclopedia, Drug Information Full Text (pharmaceutical information for physicians), several news services including the Associated Press and United Press International, and such standard reference works as Physicians' Desk Reference.

The abstract can bridge the gap between citations and source documents. We will continue to see an increase in the primary information being offered online.

Particularly important consequences of this trend are twofold. First, the use of full text files generates a demand for search logic that is effective at searching text, such as proximity searching in ever more sophisticated ways, or displaying text, as by highlighting the phrase that led to a record's retrieval. Thus, more text generates better search systems which, in turn, attract both more users and more databases. The second consequence of offering primary information online is the inclusion of more tabular or statistical data, which users want to use as input to a further process. This data requires linkages to other kinds of programs or incorporation of post-processing capability in the retrieval systems, or both.

Subject variety: Increased searching makes more files and larger files possible. The existence of more files implies both more subject breadth and depth, i.e. greater variety and more specialization of files. There is more information at every level, from the general interest news and magazine files to specialized medical information, business credit files and compendia of engineering component performance information. Files as specialized as Weldasearch are now economically practical to offer. This contributes to the increase in the kinds of people who use the files.

More retrospection: Larger file capacity and more user interest also lead to more interest in retrospective files. We have found some database producers willing to make considerable investment in "putting up" older data, such as is found in REMARC (Library of Congress catalog), CLAIMS (patent claims) and SCISEARCH (scientific literature citations).

Telecommunications

Communication facilities continue to become faster, more reliable and cheaper to use. This seems to be one of the true constants of our industry. Gateways are beginning to appear, which may make the linking of a user to a particular service easier. They can serve as a giant switchboard and perform command language and format translations when needed.

The inexpensive transmission of image data, not now a component of any of the general purpose online search services,

can be expected within a few years. Another Lockheed company, Dataplan, Inc., transmits weather maps to its subscribers who have IBM PCs with appropriate software.

User Communication

Language: More powerful and easier to learn command languages are being developed. We are achieving much greater understanding of the needs and search-related behavior of users. This trend encompasses the development of more communication styles to help the user transmit commands or their equivalent, using more kinds of media and symbols — text, as we noted earlier, and graphics (of which the MacIntosh icons are a popular example), windows (found in many products now, but most notably in our industry in the IN-SEARCH search assistance software). Voice output is currently possible and may come into use either as a parallel channel for control and error information relative to a search, or for use by visually impaired searchers.

New languages, whether conventional syntactic command languages or menu- or icon-driven symbolic means of conveying the user's needs, tend to enhance user understanding, make learning easier and encourage widespread use.

Assistance: We have come a long way since the "ERROR 12345" kind of user interaction. Now we have HELP commands, online instruction, and are beginning to see many varieties of user assistance programs that operate both with the mechanics of language and with the vocabulary of records or description of information desired. The best of these facilities provide help in context. They track the logic of a search in progress and react to the user's (and retrieval system's) performance, depending on what actually happens rather than on generalizations of what might happen.

We are recognizing that different kinds of users require different kinds of system interfaces (command languages displays, etc.) and that specialized user assistance programs can provide this kind of value at an economical price.

Customer support: Communication in the educational and public relations sense includes documentation, training, conferences and telephone consulting services. At DIALOG, for example, we receive over 400 calls a day and these are responded to by professional information specialists who understand not only searching but subject specialties as well. The use of this kind of service increases with time. New users rely on it more, but all users seem to like having such a service.

Functions

We are beginning to see many more functions and capabilities. Some are enhanced retrieval functions, some relate to processing of data after retrieval.

New kinds of retrieval functions include multifile search, mapping, and ranking of output records on the basis of their content. Multifile search means that a user may ask that a search be run against a set of files, in effect simultaneously, certainly without having to repeat the search or store it. Mapping involves using the output of one search as input to a subsequent one. In DIALOG, the MAPRN command enables a user to search chemical files on the name of a substance, then ask DIALOG to retrieve the Chemical Abstracts Service registry number which uniquely identifies the substance in their files, and use this number to search for further information. All this is done without the user having to repeat a search, store it, or tediously copy registry numbers from search output to a part of a subsequent SELECT command.

Ranking, which can be done in many ways, can sort the records of a retrieved set on frequency of occurrence of some field within the records. One means of ranking uses descriptor information, which tells the requestor what descriptors occur most often within a set, that might be useful in refining the set definition. Or ranking could be used to find

which authors are most prolific in a given subject field by sorting, not on author name, but frequency of occurrence of author name.

Non-retrieval functions include sorting, formatting, calculating, word processing, and graphic display of numeric data. Their use requires expansion of the retrieval services or linkages to other programs and services. A simple example would be the transfer of a statistical record from its DIALOG output format into a format able to be used by such software as Visicalc or Lotus 1-2-3.

We may be seeing a shift of locus for the performance of some functions, from the traditional mainframe to the user's PC. We are certainly hearing about it. It remains to be seen whether users will prefer to receive data in relatively large batches for local storage, retrieval, and local file maintenance and security, or to buy this service from a central facility. We believe there will not be much shifting for some time to come.

User Roles

Personal computers: The PC or microcomputer has brought with it a sharp change in user population. The person who directly works at a terminal or PC, who enters commands and reads the output, is now far more likely to be the person who will directly use the retrieved data. Personal computer use has resulted in more users in the workplace and in the home and school as well. Largely because of PCs, users are now far more computer literate. They also know what to expect from a service, are more insistent on levels of quality and economy of performance.

Downloading, automatic telecommunications linkage, and linkage to post-retrieval processing software are the main new functions that PCs offer to the online search user. PCs now offer more than just retrieval service. They enable an information system to serve as a problem solver, not just a record retriever.

The demand by users for more service and control over their own data and its processing are a large part of the lure of PCs. This same demand may yet lead to a swing back to central computers, or at least to a different division of labor, as local files grow and as central services take the hint and provide even more service than the user can obtain locally.

User Characteristics: Users are no longer just professional information people but those professionals plus a wide variety of end users. What is an end user? The client for or consumer of the information, someone who previously relied on an intermediary for information searching and processing and is now doing more of both independently. This capability opens the use of online systems to a vast new audience.

The word *professional* has several meanings, one of which denotes a practitioner in such a field as medicine, law, accounting, librarianship or engineering. Professionals are people with special knowledge, who have devoted long study to acquiring that knowledge, and who must keep up to date with this knowledge. Online information systems are ideally suited to them in terms of service offered.

Different classes of people perceive and use information in different ways *(2).* As our understanding of the differences improves, we can use this knowledge to increase the attractiveness of online searching to end users.

Users of all classes are becoming dependent on online systems. These systems are no longer a curiosity or a resource for a select user group. This makes users more demanding of quality service and more aware of the value of the service provided.

Each of these characteristics has implications for online service design, customer support and operations. In general, it is another example of the circular effects of logical capability, databases offered, and services offered on the one hand, and user demand on the other. Each side of this equation continues to feed the other. It may someday level off, but the end is nowhere in sight.

Economics

Communication has become cheaper, currently accounting for about one tenth to one quarter of total search cost. The cost of computer use tends to go down as new advances are made in hardware and software. Essentially, each round of new computers to come on the market does the work of its predecessor for less money. This is a large part of the reason why online search costs increase only slowly, lagging far behind the general inflation rate.

Connect time remains the primary basis for billing. This cost is being effectively reduced by the factors just mentioned and by the new trend toward off-line query formulation followed by high-speed transmission, perhaps high-speed downloading of the response. The general result is lower cost to the user in terms of work accomplished.

The Role of the Professional Librarian

Given the increase in proportion of end users to professional users, combined with the other trends that accelerate this one (more assistance, better user communication, simpler languages), it is fair to consider the effect these trends will have on librarians, our original user group.

Consider subsidiary trends: enrollment in library schools; information science versus traditional library programs; and employment in the field. Over the recent history of the online industry, from the early 70s to today, enrollment in library degree programs has generally declined, having peaked at about 1975. *(3).* Library employment has grown steadily but unspectacularly over the same period. Employment in special libraries *(4)* has increased at a higher rate. In the information industry as a whole, employment is difficult to measure, since the industry itself is not easy to define, but it is hardly possible to deny the obvious explosive growth of the information industry in general. This adds up to the not surprising conclusion that the computer/communications aspect of librarianship is growing faster than the traditional service side.

In an earlier paper, Meadow *(5)* put forth a likely path of development for those librarians previously involved in reference work or search assistance: their roles, salaries and stature in society were predicted to rise, not decline, as a result of the proliferation of end user searching. There is no threat to librarianship from online information systems, but there is change coming—we think all for the better.

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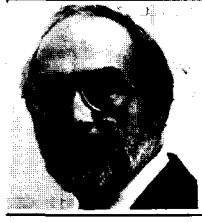

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End User Searching and its Implications for Librarians

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■ **Is end user searching a threat or a promise for corporate librarians? The trend in online searching is towards increased end user access of online systems. This may vary depending upon search system, information need of end user, and individual research characteristics. The key to survival is a clear policy toward end user searching and good management of information practices and resources. Cooperation with the end user population within a company will assure a good working relationship beneficial to the special library and to its clientele.**

END USER SEARCHING has recently attracted much attention from special librarians. The searching of online databases by end users has become such a popular topic that Janke included 79 citations in his recent bibliography. (*1*) There is no question that end user searching is growing, although the extent of growth is still speculative. What *is* in question is how librarians should manage this change in their working environment. Finding the optimal way to handle the relationship of end user searchers and special librarians is a challenge.

The reaction of librarians to end user searching varies considerably. Some view it as a threat, some as a promise. Some see it as an opportunity for growth, a way of expanding library services, and an enhancement of the librarian's role. To others, it signals the demise of corporate librarianship by diffusing the function of information gathering throughout the corporation, relegating the library to a book warehouse and interlibrary loan operation. They are disturbed that a library client can enter the library, hand a printout to a librarian, and demand copies of articles. They see a dimunition of their status within the institution, a status which was only recently in its ascendancy due to librarians' familiarity with computer terminals and technology. Those with positive views toward end user searching, whom I suspect are in the minority, foresee a collegial relationship.

Regardless of the emotional reaction, it is important to recognize that emotions make bad starting points for decisions.

End user searching is growing and, therefore, the response should be, "What shall special librarians do about it?" rather than, "How wonderful/awful!" There are policy steps which need to be taken. Should passwords be freely distributed to anyone requesting one or should they be closely controlled? Should the availability of online databases be publicized as an end user tool or should it be stressed that these are for the use of librarians only? Should librarians establish training sessions for end users? Should they start a "hotline" for searching problems encountered by end users? Should they decide that certain search systems are suitable for end user searching and others are not? Should they put barriers in the way of end user access to all databases? In other words, what practical steps by librarians are feasible in light of the coming developments in end user searching?

Recent Developments in End User Searching

A look at recent developments in end user searching suggests some future trends. These can be grouped into three categories; raw materials, marketing, and recognition. These categories are far from mutually exclusive, as each influences and is in turn influenced by the others.

The basic raw materials of end user searching are microcomputers, modems, and databases. Sales of microcomputers have been growing at a rate of 10 percent per year during the last eight years. According to a recent Bank of America study, short-term retail sales growth is expected to be 15 percent per year and long-term growth (1985-88) will be in the 10-15 percent annual range. (*2*) *Future Computing* estimates that by the late 1980s, 35-40 percent of office workers will have a personal computer and by the mid-1990s, 50-60 percent will have them. (*3*)

Not all forecasters see the same high rate of growth, but even those who feel there is a slowdown coming in microcomputer sales agree that sales of peripherals will be very strong. According to Creative Strategies International, modem sales will total 8.4 million units worth $1.5 billion in 1988. That is a 74 percent increase over 1983 sales. One reason cited for this increase is the need to access remote databases. (*4*) Another significant trend in modem growth is the recent propensity of microcomputer manufacturers to include a modem board in the machine so the purchaser need not even think about it. It is the use of modems that affects end user searching. After all, one can run spreadsheet and word processing programs without a modem, but the temptation to search, once one has a modem, can prove overwhelming. Faster speeds, made possible by more advanced modems, will also be a factor. As it becomes possible to search at 2400, 4800 or even 9600 Baud, it will be less time consuming—and more fun—for end users to access online databases.

Databases may well be the fastest growing portion of the raw materials. Cuadra, in the sixth edition of the *Directory of Online Databases,* shows that databases have grown from 400 in 1979 to 2453 in 1983, and the number of online services has grown from 59 to 362 in the same time period. Subject matter is expanding as well, a trend which will probably entice more end users to access databases.

Other raw materials, ones which are not necessary to online searching but which tend to encourage end user searching, are user friendly, simplified searching systems. Entries in this category are Knowledge Index and BRS After Dark. Also influential are the end user front ends such as Scimate Search Helper, and In/Search. As the field of artificial intelligence grows and more expert systems are developed, there is a good chance that more sophisticated front ends will appear, ones which can more readily duplicate an individual's thought processes in analyzing a search request. They will allow users to query a database using a natural language question such as a client now poses to a librarian. The expert system will translate this into a machine command, after asking for certain decisions to be made by the requestor.

Marketing

The second major trend area is marketing. As most librarians are well aware, vendors consider the library market to be saturated and so are turning their attention to the end user. This is a particularly frustrating development for those librarians who still have not been able to convince their managements that an investment in a terminal for online searching would be cost-effective. As noted under the earlier raw materials comments, the search services have created the simpler, less expensive, versions of their systems to market to the end user. They are exhibiting at non-library conferences and they are advertising in personal computer magazines as well as the trade and professional press. Mead, for example, has had full page ads in *Business Week* and the *Wall Street Journal* for its NEXIS service. Additionally, there have been a number of articles in computer journals and the business press extolling the virtues of online searching. The gist of these is that anything and everything you want to know is online. The articles are sometimes laughably inaccurate but they are incurably optimistic. They are reminiscent of the travel section of the Sunday paper which never has any derogatory comment on any potential vacation spot. Some sample acticle titles are: "Taking the Tedium out of Information Gathering" (*Infosystems,* Nov. 1984), "On-Line Data Bases: The Facts You Want Are At Your Fingertips" (*Management Technology,* November 1984), "The Fastest Information Sources in Banking" (*Computers in Banking,* September 1984), "Data Bases: Managers Go On-Line" (*Today's Office,* September 1984), and "Loading the Bases (With the Explosion of the Database Industry, Information on Practically Anything Is Only a Phone Call Away)" (*Inc.,* December 1983).

Another marketing technique is to offer free time to new buyers of microcomputers. Dow Jones, the Source, Compuserv and Knowledge Index seem to be particularly good at getting their free time offers out to the buyers of all those microcomputers. Subscribers to services such as DunsPlus also gain access to certain databases and search services through gateway agreements. Although the user does need a separate password and contract with each service, there is a menu of services like Newsnet, Dow Jones News/Retrieval and NEXIS to alert the end user to potential search vendors.

Recognition

There is much greater recognition among end users as to what an online search is. This is due, in part, to the increased use and understanding of microcomputers and to the stepped up marketing efforts of vendors. Librarians have also played a key role in educating end users. We have shown them how powerful this tool is and have created a demand for searching.

College and university students are being introduced to online searching by their libraries and by their professors. I know of graduate schools of business offering videotex courses and of libraries which supply tokens to students for use with Search Helper. When these students become employees, they bring to the corporate library a much greater knowledge of online searching and a degree of expertise previously unknown. It is even possible to be aware of online databases without ever having seen a terminal or a printout. *Planning Review* has a monthly column consisting of abstracts from the ABI/Inform database.

Librarians are not alone in having an end user dilemma. The term originated with the data processing folk. They saw an incredible backlog in applications programming and decided that end users could do their own programming. Bank of America, for example, renamed its Interactive Computer Services group. It is now called End User Computing. If employees can do their own programming, why can't they search?

The lines of distinction between online services seem to be blurring. No longer is online searching some strange function performed only by librarians at terminals.

Microcomputer users have access to very similar online delivery functions. Bulletin boards, electronic mail, home shopping, and home banking are not all that difficult to master and often use the same type of menu driven systems which some online search systems use. Punching the ticker symbol buttons at the Quotron terminal in their brokers' offices, entering page numbers into a Telerate terminal, and looking up local movie theater programs on a Viewdata screen are simple transactions that are becoming ever more common. Online searching can be perceived as just another facet of these types of electronic information delivery. The combination of Dow Jones News/Retrieval with Comp-U-Store is a perfect example of the crosscurrents emerging in online delivery. Dow Jones and Bank of America have a gateway arrangement for home banking services. It seems that before very long, end users will access bibliographic databases and pay bills using similar techniques.

for librarians to acknowledge that end user searching is an appropriate and desirable activity in many cases. Having a clear picture of what those cases are will help in establishing end user search policies and guidelines.

End users should be doing the searching under a number of circumstances:

- when there is a need for immediate information like a stock quote or a news story from Dow Jones News or Quotes,
- when the end user is going to be repeating the same search on one database, such as Commerce Business Daily,
- when the end user merely wishes to run the daily news report from Innerline or Today or Dow Jones,
- when the end user needs to search a more complex subject, but restricts all searching to one database on one search system,
- when the end user needs highly specialized searches, such as might be run in a scientific, technical, or econometric database, or ones requiring specialized knowledge,

Librarians must take the initiative to make end users aware of the dirty data dilemma. End users tend to assume that accessing a database is all they need to do... Librarians know that much information is not online, not indexed, and sometimes not in printed form. End users think that all online systems are cheap... Librarians know that there are vast discrepancies in pricing schemes.

Appropriate End User Searches

Although end user searching is growing and will continue to expand, there will still be a need for librarians. There is a good possibility that interlibrary loan operations will increase, but this will be a temporary phenomenon as more full text databases appear. Our role may indeed change from researchers and gatherers of information to teachers, trainers, and operators of "help" desks, but it is more likely to incorporate the latter roles into the former, rather than having the latter supplant the former. It is important

- when the end user needs quick and dirty searches for a few articles rather than an exhaustive survey of the literature as for an undergraduate paper or for brainstorming a topic for a corporate speechwriter.

Another consideration in regard to appropriate end user searching is the end user's own personality, ability, and reasons for wanting to search. Some end users should probably be encouraged and others discouraged, although it may not be practical or possible to do either one. End user searchers, to be effective, should have a sense of what online searching can and cannot do. They need to be willing

to spend time learning how to search. They need familiarity with an online environment. They need access to necessary hardware, be it terminal or micro. They need to be able to construct search strategies. They need to enjoy searching, rather than having it assigned to them as a job task by their supervisor. They probably also need to be willing to spend money. Library clientele not fitting this profile should be encouraged to let someone else do the searching.

Psychology of End User Searching

What are the reasons why people want to do their own searches and what are the implications of that for special librarians? Many end user searchers want to be virtuosos of the machine. They are intrigued by technology and are looking for ways to maximize their use of their microcomputer. They are the information junkies, who prefer word processing programs to secretaries and The Source to librarians. There is no way to change these peoples' minds. The best approach for the librarian, it seems to me, is to take the tack of teacher/guide/colleague, suggesting various databases and search systems to the end user and discussing the technicalities of searching.

More disturbing is the end user who exhibits an active dislike of libraries. Many of the articles in the popular press regarding online searching are praising it as a means of avoiding cumbersome card catalogs, missing issues of periodicals, and the general dreariness of using a library. Online searching, to these people, make a virtue of library antipathy. This is an image problem for librarians, a battle we have been waging for years. Winning the hearts and minds of all potential library users may never happen, but it is worthwhile to challenge their preconceptions. At the very least, whenever librarians read articles in the press demeaning to librarianship, letters to the editor should be written to counteract the negative views.

For many library clients, there is significant inconvenience involved in using a library. If they are far removed physically from the facility and its staff, speed of response is a significant factor. Now that there is available technology, people expect to receive information faster and faster. Needing information in a couple of days has been replaced by needing it in a couple of hours. Depending on the situation in a given company, downloading from databases (with permission, of course) and uploading into an electronic mail system so that the client can read the results of what the librarian has done almost as soon as it has been done may solve this problem.

Speed of response can be a factor even if the clientele is not geographically dispersed. In overworked and understaffed libraries a backlog can develop so that even simple searches get postponed. This very delay factor was the genesis of end user computing. Someone with a research question coming into the library late on Friday afternoon is willing to work that weekend if he needs the answer Monday morning, but often the librarian is not. This leads to intense frustration on the part of the client who then becomes an end user searcher.

Good use of end user searching will alleviate some of this problem. If simple searches can be delegated to the end user, the library staff may not be quite so overworked and the library not quite so understaffed. Realization of the imperative for quick response time is valuable as well, as is some recognition of when things can be postponed perhaps because of insufficient understanding on the part of the requestor as to what is truly desired or because the deadline is longer than admitted.

Library clientele whose knowledge of a subject is so intense and deep that taking the time to explain the ramifications of a search request to an intermediary is extremely frustrating are also prime candidates to become end user searchers. Many times this is an admirable development. If, however, it is grounded in the belief that the library staff is ignorant of subject areas in which they should

have expertise, there needs to be a concentrated re-education program. Library staff need to demonstrate to these end users that they are sufficiently aware of the nature of the requestor's work to understand the terminology and translate that into a useful, effective and efficient search. This implies that the library staff is keeping on top of research and development in their areas of expertise. It also means being willing to admit ignorance. As a bank librarian, for example, I expect to understand banking terminology and know the products my bank offers to its customers. I do not expect to have the scientific background to search Chemical Abstracts nor the legal expertise to do a patent search.

The Role of the Librarian

Some days it seems that everyone will be doing their own searches and there will be no role for the librarian. But not everyone wants to do their own research. Some people love remodelling and redecorating, others do not even want to change a lightbulb. So it is with online searching. All those people who do not want to look up a citation in *Business Periodicals Index* because their time is too valuable are not suddenly going to begin searching the file online. For many executives, no user friendly front end, no matter how simple, is going to be satisfactory. Then there are those who just do not trust technology. These are the people who could use an automated teller machine if they wanted to, but do not. Some feel that their high status of researcher would be compromised if they got too deeply involved in online searching. They would no longer be a guru, just a resource person.

Businesspeople have always had a need for information. That is why special libraries were created. The unique skills brought to bear in a corporate environment by special librarians are not going to be made obsolete by online searching by end users. The ability to conceptualize a research problem, to identify relevant sources quickly, and to have an organized system of materials at hand are just as important as training in how to use an online system. End user use of online databases does mean that librarians should act quickly to establish whatever guidelines they feel are appropriate to their institutions and to define their role in regard to online searching by end users.

Library Policies

Once it is assumed that end user searching is a rapidly developing phenomenon, it becomes obvious that libraries must set policies for their companies before someone else does it for them. It should be written down that it is the library's responsibility to manage contracts with search vendors and to control the passwords. By doing this, the library will know which people within their corporation are authorized users. They can cancel passwords when people terminate to prevent usage by non-employees, question the necessity of departments having passwords when no usage is recorded, and perform other control functions. Having group accounts for search services is not unlike the type of centralized ordering of subscriptions which libraries have done for years. The same benefits accrue. There are cost savings realized and the library knows where to go to find to find a searcher of a particular database. For example, if I do not search on the I.P. Sharp files, but do pay the invoice every month, I know who to ask to run a search for me when I need it.

Becoming the central focus point for online searching has other benefits. It emphasizes the special relationship librarians have with online information and raises the visibility of the library. It demonstrates the administrative functions of librarians and places the library once again in the forefront of technology.

There is a responsibility attached to this prominence. Librarians need to be able to say, "This is an appropriate end user system for you to search, but this one is not." They also need to inform end users of problems with data in some files.

Product literature from database vendors can be misleading, suggesting for instance that the information is completely up to date, when the librarian knows that the file is updated only semi-annually. Warning notices are not generally included in databases upon gaining access. Yet librarians know that data in some files is of better quality than data in others. If the media in question were a reference book, a warning could be written into it. For the online files, librarians must take the initiative to make end users aware of the dirty data dilemma. End users tend to assume that accessing a database is all they need to do to answer their questions. Yet librarians know that much information is not online, not indexed, and sometimes not even in printed form. End users need to be made aware of this too, possibly through a newsletter which would circulate to all known end users within the organization. End users think that all online systems are cheap and easy to use. Yet librarians know that there are vast discrepancies in pricing schemes and that the same information can be found in different databases for very different costs. Again, this must be communicated to end users in a systematic fashion.

Change

Change is difficult to deal with and when change brings with it a perception of diminished status, it is doubly difficult. In a very short period of time, librarians have gone from being the only people within the organization with the abstruse knowledge of online bibliographic systems, the only ones who could use the "black box" and, by stroking a few keys, produce important information. Now it is expected that librarians do this, just as it is beginning to be expected that other employees do it. Positioning the library as the premier user of online searching and the leader in understanding the complexities of the dawning information driven society will place special librarians in a visible role supporting corporate goals. End users can become persuasive library supporters if they regard the library as a help rather than a hindrance. Although librarians may not wish to give away the store by an overzealous issuance of passwords to online systems, they should not go out of their way to place barriers either. End users will only find ways around the barriers.

It seems to me that co-existence with end users is the best survival tactic. It is inevitable that end user searching will become more widespread than it is today. Practical steps need to be taken now to accommodate the influx of end users we can expect in the next few years. An aggressive posture by special librarians aimed at demonstrating their unique skills will alleviate negative emotional reactions to this change in the working environment.

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Trademark Research with the Computer

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■ **A discussion of how computers can be used to assist in the practice of trademark law. The example used is the trademark *Aspen,* to be used for a fruit juice drink. Various databases are searched to track any previous use of the mark, to trace possible conflicts, and to assist in their resolution.**

THE DATABASES used for trademark research fall into three categories. First, there are those which relate specifically to trademark practice, for example those that provide searching of federally registered marks. Second, there are databases which have general legal application, such as Lexis and Westlaw. Third, there are general information databases which cover a variety of topics including company financial information, indexing to magazine and newspaper articles as well as books, and specialized technical information. There are several vendors which offer these general databases, but I will focus on only three—Dialog, Orbit and Pergamon-Infoline. By connecting to Dialog's, Orbit's or Pergamon's computers, you can access any of the specialized databases they offer.

Most of these databases can be accessed only remotely. To determine whether or not a particular database or database service will be effective for your needs, you should consider the following. What kind of terminal or central processor is needed to access or run the database? If you are considering buying a database or accessing a system and it is not available for your equipment, a redesign may mean additional expense and possibly lengthy delays. You also need to analyze the information contained on a database. For example, in evaluating legal research capabilities of a database, consider how complete the database is, how far back it goes, and how many courts and administrative agency rulings it covers. Another consideration is how you connect to these services. Do they provide local telephone numbers, or do you have to call long distance to hook in? Finally, what is the cost? Will your usage be sufficient to justify any minimum charges? Or, even if you are paying

only for connect time, is the cost of the use of the database justified by the ease of retrieving the information electronically?

The Trademark *Aspen*

I will discuss the databases listed in the chart in relation to the adoption, filing and use of a trademark, *Aspen,* which for purposes of our example is being used on a fruit juice drink. Let's assume that you have just been contacted by your company's or client's director of marketing who wants to know whether or not the mark is available. Currently, two databases offer remote searching of federally registered trademarks, Trademarkscan and Compu-Mark. They differ substantially in the way they are used. Trademarkscan requires the searcher to request searches on differing variations of the mark which might conflict with previously registered marks. To search with Compu-Mark, you simply input the mark and the classes to be searched, and the computer program searches on predetermined variations. At the end of the search, you can conduct additional searches.

This is only a brief description of the searching process using these services. To determine which one best suits your needs, you should fully evaluate each system's capabilities and the search results obtained from them. Trademarkscan allows you to do specific searches by registration date and type of goods or owner, in addition to searching for a particular mark or letter combination. With this searching flexibility, Trademarkscan can also be used to determine use affidavit and renewal dates for a particular company's marks and also to see what marks a competitor may have recently filed. Compu-Mark, while not as flexible, searches for the mark automatically without requiring prefix and suffix variations.

You should also compare the costs of the two systems. Trademarkscan charges for connect time, Compu-Mark on a per search basis. Regardless of which search service you use, you may want to follow-up with a complete search of state registrations and common law marks before clearing the mark. At this time, state registrations and common law marks are not searchable on line, so the search must be done through a service.

You can, however, do additional preliminary clearance by searching trade names. The names of domestic companies can be searched through some of the databases which provide financial information on companies. Two are indicated in the chart, but the search could be expanded to some of the Dun & Bradstreet databases available through Dialog as well. You could also access the names of international businesses through Dialog or Pergamon, which may be of interest if your client is planning to use and register the mark outside the United States.

Let's assume that the search of federally registered marks indicated a registration for *Aspen* for use on wine as well as a registration for *Aspen* for use on beer. The registrations are held by different companies. Clearly, if one had not successfully opposed the other, the chances of either registrant's raising an objection to another use of *Aspen* are reduced. There is a possibility, however, that the marks are held by the same company, although title to one of the marks is in the name of a subsidiary. To determine if the companies are affiliated, you can search the databases indicated in the chart to see if the companies are related. If they are, use of the marks by related companies indicates they are fairly strong marks since the search did not reflect similiar uses by others.

For purposes of our example, let's assume the companies are not related. In an effort to further advise your client, you decide to check whether either registrant has ever sued another company for infringement. You can obtain this information by searching for the registrant company's name and at the same time limiting your search to only those cases involving trademark infringement or the potentially conflicting mark in particular. Be aware that the Patlaw database pro-

vides only very basic information from the U.S.P.Q., including the case name, citation and the head notes of the case. Lexis and Westlaw, of course, carry far more reported decisions and provide full text searching through the entire written opinion. Although their federal and state court decisions go back much further than Patlaw, Lexis contains TTAB cases back only a few years; Westlaw does not include TTAB decisions.

In our example, let's assume that the result of a search through Patlaw showed that the registrants had not been parties to any oppositions or lawsuits indicating either that the companies had been very fortunate in avoiding conflicts and in keeping others from using similar marks or that they are not particularly litigious in the trademark area. Bear in mind that lawsuits which are filed and then settled will not appear in any of these databases since they do not result in reported decisions reflected by written opinions. Based on this search and your analysis of the other search results, including a full search of state registrations and common law marks, let's assume *Aspen* appears to be available.

International searching is listed in the chart although it is not available online. Compu-mark in Belgium runs computer searches in Europe. Markgraaf in Holland coordinates computer searching services in several countries throughout Europe to provide search results and combines these with opinions from local counsel as to the availability of a mark.

Foreign Filing

On learning the results of the search, your client asks you to file an application for the mark in the United States and to advise what foreign countries should be considered for filing. A great deal of foreign filing information is available through Worldmark, including use requirements, the documents necessary for filing (e.g., a legalized power of attorney, labels for products, etc.) and a list of foreign associates. Worldmark also shows the estimated cost of filing for registration. With this information, you can provide your client with approximate costs, the time period in which the mark must be used, all combined with a request for the necessary documentation. Further information useful in determining specific countries for filing is available through two databases which report on U.S. exports—P.T.S. International Time Series and U.S. Exports. If the product on which the mark will be used does not appear as an export to a particular country, it may be an indication that such products cannot be easily imported into that country. You may not need this detailed information in most cases, but it is available to help in setting up filing programs.

U.S. Examiner and Possible Conflicts

You have now filed the U.S. application and you receive an office action denying registration on several grounds. First, the Examiner considers your mark likely to be confused with a previously registered mark. In addition to arguing that the words themselves are dissimilar, you may also want to explore differences in the way the products are sold. A quick reference for this type of information is through the databases which contain financial information since they also describe a company's business. You might find, for example, that the company whose mark was cited against yours is in the food service business, that is they supply their products only to restaurants, schools and hospitals. If the *Aspen* branded product will be sold only to consumers at the retail level, you can argue that there is no likelihood of confusion because of the different channels of trade. Another database, Adtrac, provides information on advertising from 150 publications, by product, manufacturer and the magazine in which the ad appeared. By searching for the mark cited against your mark, you might find that you can further distinguish your product from the other based on the type of pub-

lication in which the ad appeared. For example, if *Aspir,* a mark used on dried lemon flavoring, was cited against *Aspen,* and you find an ad for *Aspir* in a magazine called *Food Ingredient News,* you might conclude that the lemon flavoring was sold to food manufacturers for incorporation into processed foods rather than being sold to retail customers. To confirm this, you might want to obtain a copy of the ad to get a better idea of what type of customers are likely purchasers of the lemon flavoring. If it supports your differing channels of trade argument by describing its use as a flavoring for cake mixes, for example, I would include it with your response to the office action.

Adtrac provides information on advertising from 150 publications, by product, manufacturer and the magazine in which the ad appeared. By searching for the mark cited against your mark, you can further distinguish your product from the other based on the type of publication in which the ad appeared.

Another objection by the Examiner is that the mark is primarily geographically misdescriptive. Although it is true that the mark is a geographic location, it has other meanings. Under current case law, if the product on which the mark is used does not originate from the geographic location, if the mark has other connotations and if the geographic location is not known for the particular product, it is capable of functioning as a trademark and is registerable as such. To determine if Aspen, Colorado is well known for fruit drinks, I would search either the Electronic Yellow Pages or one of the other financial information databases by standard industrial classification (SIC code), a numerical indication of the type of product, and the location Aspen. The result of this type of search will be the number of companies in a particular geographic location who engage in that particular business. In our example, the search did not reveal any companies which produce fruit juice drinks in Aspen, Colorado or any other city named Aspen. You would then respond to the office action indicating that the mark is not primarily geographically misdescriptive since no companies producing fruit drinks are located in Aspen. Thus, the geographic location is not misdescriptive of the products since consumers would not associate a city named Aspen with fruit drinks. Note, however, that even if the search had shown fruit drink producers in Aspen, you are not precluded from arguing that the geographic name is not primarily geographically misdescriptive of the product. In fact, in many cases such a search would probably show a few manufacturers for the products on which the mark is used.

If the Examiner has also questioned whether the mark has any meaning in the trade, you might want to search through a database which contains the full text of articles from a variety of publications. This might indicate to you that, in fact, there is some meaning, or result in information which allows you to indicate that there is no meaning in the trade. I have listed four databases in the attachment, three of which are full text, that is they allow the entire text of an article to be searched to see if it contains a particular word or phrase. One database listed is an index. This means that usually only the title of the article and a summary of its contents can be searched, along with the name of the author. There are a number of databases which index news articles and other written publications but they may not be particularly helpful if you are looking for a word or phrase which may have appeared in the text but not in the title or the summary of the article. Therefore, in this example, I think full text searching is more effective.

Cease and Desist: *Aspanada*

While the application for *Aspen* is still pending, you receive a cease and desist letter from a company alleging that *Aspen* is likely to cause confusion with *Aspanada,* a mark the complaining company is using on a fruit flavored mineral water. The letter does not indicate that the company has a federal registration. Before you can advise your client on how to respond, you need more information on the company and its use of the mark. The most crucial piece of information is who has priority, that is who was the first user. If the other company has filed an application for registration or has obtained registration of the mark, a good indication of its first use will be the date reflected in its federal registration. This information can be easily retrieved by searching for the specific mark through Trademarkscan or Compu-Mark. If, however, the company has not filed for federal registration, it may be possible to determine when the company started using the mark by the date the company was founded. Thus, if the company was founded in 1984 and your client's first use of the mark was in 1982, it would appear that your client would have priority. To determine the date that the company was founded, I would specifically search for information relating to the company in one of the financial databases available through Dialog. If such a search reveals that the company was founded prior to your client's first use of the mark, you need to look further to investigate that company's use.

At this point, I would look to what has been publicly written about the company's product. By searching for the other company's trademark through databases containing magazine and trade publication articles, you may find information indicating when the company announced that it was introducing the *Aspanada* branded product. Of particular interest is the database Trade and Industry ASAP which contains the full text of press releases disseminated through the P.R. Newswire. If the company which has sent you the letter is large enough to maintain any public relations or advertising function, it is likely that they would be releasing information over the P.R. Newswire. Another database that might provide useful information in this situation is Adtrac. By searching on the other company's trademark, you could determine when the first ads appeared for the product. Bear in mind, however, that the information on this database goes back only a few years. As a result, if a search does reveal advertising for this particular product, additional advertising may have been run prior to the initiation of the database. Nonetheless, when companies introduce new products, they usually accompany the introduction with advertising, so in many cases searching through Adtrac will you a good indication of when a product was introduced. You could also refer to actual copies of some of the early ads to see if they discuss the product as being new.

Let's assume that our search results indicate that the company filed an application for federal registration subsequent to your client's filing alleging an earlier date of first use than the one alleged by your client. Additional searching through the magazine and newspaper indexes, however, reveals that the president of the other company was quoted in a trade publication subsequent to the alleged date of first use as saying that construction delays had prevented the completion of a factory in which the company planned to produce the *Aspanada* branded product. As a result, the company was forced to delay its product introduction by six months to a year. Based on this information, you determine that the other company's real use of the mark may have actually begun very close to that of your client. To further evaluate the rights of the other company, I would refer to the databases listed in the chart to determine the extent of advertising dollars behind the mark and also see if sales figures are available for that individual brand. You might also want to search through the company's annual report to see if it discusses the particular product. The data base P.T.S. Annual Reports Abstracts provides a condensed version of

both textual and financial information contained in the annual reports of selected publicly held companies. You might also attempt to get a feel for the extent of the company's geographic use of its mark by again referring to some of the databases which contain financial information. These might give you an indication that the company does business in only a limited geographical area of the country or, conversely, that the company's products are available nationwide. This information might be useful if, as a last resort, you decide to seek concurrent registration.

I would further look at the extent to which the mark has been enforced. This is both an indication as to how likely the other company is to sue, and also as to whether or not the company has litigated on this mark in the past, perhaps unsuccessfully. In addition, you might want to check to determine if the company produces the products itself or if it is producing the products through a licensee. Again, I would refer to the financial information on the company to see if it appears to be in the business of producing the products listed in the trademark registration. If the company has licensed the mark, the licensee may be pushing the company to enforce its rights against a potential infringer, or, the company which owns the mark may be contractually obligated to do so.

Although the preceding examples relate to how this information would be useful to the recipient of a cease and desist letter, I also would encourage you to look at this type of information before sending a cease and desist letter. The reason, of course, is that if you are actually the subsequent user and you indicate to another company that you consider there to be a likelihood of confusion between your mark and the one they are using, the only logical result is that your use should be discontinued.

Who has Priority?

Let's assume that based on the results of this further searching it is still unclear as to which company has actual priority. The other company appears to have based its initial use on a token shipment, but its subsequent use after its plant was completed may have been sufficient to support that token use. As a result, you inform your client that continued use of the mark *Aspen* may result in their being sued, although you indicate that the results of your searches show the potential plaintiff may not have actually used the mark on the date indicated in the federal registration. Your client's response is that the situation must be resolved fairly shortly, because the client is about to commit to $20,000,000 in television advertising.

At this point, perhaps your client should explore purchasing the trademark rights of the potential plaintiff. The databases discussed in relation to the purchase of a mark would also provide relevant information to a company that is planning to enter into a license to use a mark. **(see box next page)**

Let's assume in our example that the seller has done very little advertising and, since the actual date of first use of the mark by the seller appears to be close to that of your client, you know the mark has not been in use for a long period of time. Based on an evaluation of this information, you inform your client that, in your opinion, an offer to purchase the mark should reflect the cost to the seller of changing its packaging and related materials. Your client agrees and you communicate this offer to the potential plaintiff. In response to your offer, your client is served with a complaint alleging trademark infringement.

Financial and Marketing Information

In initiating any litigation, it is important to obtain as much financial information as possible about the potential plaintiff or defendant. In particular, if you are in the position of plaintiff, information relating to the defendant's financial condition may determine who you sue or whether you actually file a

suit. If a potential defendant is on the verge of bankruptcy or has actually filed for bankruptcy, the problem may resolve itself if the defendant ceases doing business. The first three databases listed in the attachment, Dun's Market Identifiers, Dun's Million Dollar Directory and Standard and Poor's News, will provide a short summary of the financial condition of a company. Disclosure II is a database containing information on a company which that company has filed with the Securities and Exchange Commission. It is more detailed than the information contained in some of the other databases and may be more indicative of a company's poor financial condition. P.T.S. Annual Reports Abstracts is, as indicated earlier, a financial and textual summary from the annual reports of a number of publicly-held companies. If the potential plaintiff's or defendant's annual report is available on this database, it might provide more of an historical look at the company's financial condition because the annual report would probably contain several years' sales and earnings figures. You could also refer to the database Investext; it contains reports from various brokerage houses on companies in which there may be interest on the part of investors. These reports typically contain an analysis of the company's potential profitability.

In addition to a company's financial condition, it is interesting to obtain information on their marketing practices. For example, you could search through Lexis and Westlaw for any misleading advertising, unfair competition or antitrust cases in which the company had been involved. Also, through Adtrac you might locate some of their advertising and evaluate it from your own perspective. As a defendant, this information might enable you to raise an unclean hands defense to the plaintiff's preliminary injunction motion.

Another important issue in trademark litigation is the similarity of the channels of trade between the plaintiff's and defendant's products. There are four databases which list studies which are available and by searching on the generic product name in these databases, you might find information that would tend to show that consumers of fruit juice drinks do not buy bottled mineral water or that such products are sold through different channels of distribution. Bear

- First, I would search the databases listed in the chart in an effort to determine what kind of an investment the seller has made in the mark. Through Adtrac, I would try to get an indication as to how extensively the trademarked products had been advertised. The less advertising, presumably the less consumer recognition the mark has and, thus, the less value.
- I would also check through the database Trade and Industry ASAP and Trade and Industry Index to see if it is possible to obtain the company's advertising expenditures and sales figures for the particular brand. If you had not already done so, I would determine how long the mark had been in use by checking the priority claimed in the federal registration. I would also run a search across all similar marks to determine if the mark is strong. If the seller has not enforced its rights against subsequent users, the value of the mark either to a prospective buyer or licensee is diminished. Also, the results of such a search will enable you to ensure that you are purchasing all similar marks held by the seller. Thus, the day after the sale is complete, the seller cannot reintroduce the products under a similar brand.
- Third, I would check through the legal databases, Lexis, Westlaw or Patlaw, to determine what enforcement activity there had been in relation to the mark. Since cases which are filed and then settled are not reported in Lexis, Westlaw or Patlaw, you might also want to search through some of the general periodical indexes to see if there are any reports of litigation which was settled before trial.

in mind that Arthur D. Little Online, Find/SVP and Harfax only index these studies and it might be necessary to purchase the actual study itself. PTS Prompt provides abstracts of this type of information from a variety of sources.

For legal research, Lexis and Westlaw provide full text searching across an almost infinite number of reported cases in both state and federal courts. Legal Resource Index, a database available through Dialog, and Nexis allow you to locate articles in legal periodicals and law reviews which deal with a topic you are researching or which discuss a particular case. If you are simply trying to check case citations, Patlaw is a quick resource; Lexis and Westlaw have case citation checks available as part of their systems. Both Lexis and Westlaw also offer versions of Shepards.

There are a number of general databases which can be used to locate expert witnesses. In an effort to select expert witnesses, you can search specialized databases available through Dialog, Orbit and Pergamon for the subject of particular expertise that you are looking for. The result will be a list of articles in publications on your particular subject; the name of the author will be indicated. With the author's name, you can then search in the specialized directories that list preeminent people in certain fields or in the general biography indexes to obtain more information on a particular author as well as information on how to contact that person. In both Dialog and the Orbit database there is a general index which allows you to search in that index and retrieve references to the appearance of a particular word or a person's name across all of the other databases. Thus, if you are searching for a particular subject or a particular author, you do not have to search individually in each database. Rather, you can search in the index database and find a reference to each occurence of that particular subject or that author's name. This is a very useful function if you are searching on a subject or a name which is not particularly common. If, on the other hand, you are attempting to find a reference to all articles written by J. Jones, without limiting your search in other ways, the results may be so inclusive that they are not useful. This is because references to many persons named J. Jones, not just the person you are looking for, will be cited.

In preparing for depositions, it is helpful to have as much information as possible on the deponent. The same is true for witnesses who will be presented by the other side at trial. One approach would be to access the general indexes for Dialog and Orbit to find an occurrence of the deponent's or witness's name. A more limited search might be through the databases listed in the attachment, the Biography Master Index and Marquis's Who's Who. It would also be interesting to find what the deponent or witness has published. Again, Dialog's and Orbit's general indexes would be helpful, or you could search by author specifically through the L Mark, ReMark or L. C. Live databases which list publications contained in the Library of Congress collection. Other databases which might contain pertinent information are Dissertation Abstracts which offers summaries of academic dissertations from most major universities, Books in Print which lists all current titles available through over 12,000 publishers and Book Review Index. Book Review Index might be useful in finding a review critical of a deponent's or witness's publications.

You can obtain information on the deponent or witness by searching through a number of the databases which contain business and general periodicals as well as the newspaper indexes. Where you are looking for a particular name, both the full text databases as well as the databases which summarize publications are helpful. And finally, to obtain information on the judge and opposing counsel, you can run their names through Lexis or Westlaw to determine what cases they have been involved in in the past. This gives you a quick indication as to the familiarity of a particular judge and also of opposing counsel with the subject matter of the litigation. In other words, how much experience has a particular

judge or attorney had in the trademark area? In an effort to determine whether or not the judge or the opposing attorneys have made public comments which might be contrary to the position they are taking at trial, I would search through Nexis and the magazine and newspaper databases listed for Dialog and Orbit on the names of the particular individuals.

Miscellaneous Uses and Conclusion

Finally, a note on some of the miscellaneous uses of the databases. Markscope and Stevenson & Schulman have databases which can be used to help develop trademarks. A number of databases which are tailored specifically to trademark maintenance are listed in the chart. There is also a database for docketing license agreements available through Computer Packages, Inc. In addition, Masterdata has a system with some agreement docketing capability. Because of the vast difference between trademark departments either within law firms or corporations, it is difficult to compare these databases since they offer different things for different applications. I would, however, stress the importance of the reporting format available on a docketing system. If the reports generated by the computer are so complicated that they cannot be interpreted by the business people who request the information, and if they have to be retyped before dissemination, the efficiency of your computer program will have been drastically reduced. For this reason I would pick a system which has a format closest to the one that you are going to be using to keep your business up to date.

If you are attempting to monitor trademark misuse, one of the most effective ways is to search through the magazine and newspaper databases available on Dialog, Orbit and Nexis for your mark. Another useful feature of the databases is to determine how your distributors are using your trademarks. You can determine if they are using your trademark as part of their company name by searching in the Electronic Yellow Pages for all listings which might include your mark. You can also search through Adtrac for advertising for your products which was placed by someone other than your company.

This concludes the discussion of the databases which I find useful in the practice of trademark law. I do not think a comparison of the use of computers to the manual retrieval of this information can be made. While all of the information covered in the databases discussed above is publicly available, no matter how logically it is referenced, a manual search for this information would, in most instances, be so inefficient that it would not be cost-effective. Even in relation to docketing which has traditionally been done manually, the computer assures greater accuracy, and also allows a variety of reports to be generated. Very few, if any, manual systems can provide a list of trademarks by product. Also, very few manual systems are arranged by country. As a result, computers are not only providing greater efficiency, they are providing information which simply was not available before.

Anne S. Jordan is Assistant General Counsel, Castle and Cooke, Inc., San Francisco, California.

Database Chart

Function	Issues	Database	Available Through
Search Availability	Similarity of searched mark with previously registered marks	Trademarkscan (Thompson & Thompson)	Dialog
		Compu-Mark	Compu-Mark
	Similarity of searched mark with trade names		
	—Domestic	EIS	Dialog
		Electronic Yellow Pages	Dialog
	—International	Dun's Principal International Businesses	Dialog
		Dun & Bradstreet's Key British Enterprises	Infoline
		Directory of Companies	Infoline
			Infoline
	Interpretation of search results		
	—Are similar marks held by the same entity	Disclosure II	Dialog
		Dun's Market Identifiers	Dialog
	—Likelihood that the owner of a similar mark will sue	Patlaw	Dialog
		Lexis	Mead Data
		Westlaw	West Publishing
	International searching	Compu-Mark	Not available online
		Markgraaf	
Filing	Determining what countries to file in	Worldmark (for filing & use requirements)	IPN
		PTS International Time Series/ Worldcast Basebooks	Dialog
		U.S. Exports	Dialog
	File mark U.S. and foreign (i.e. instruct associates)	Worldmark	IPN
Respond to Office Action	Likelihood of confusion with prior registration (argue channels of trade differ)	Adtrac	Dialog
		Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog
		PTS Annual Reports Abstracts	Dialog

Database Chart (Continued)

Function	Issues	Database	Available Through
	Primarily geographically misdescriptive, search by SIC code with geographic location	Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog
		Electronic Yellow Pages	Dialog
		EIS	Dialog
	Question meaning in trade	Trade and Industry ASAP	Dialog
		Magazine ASAP	Dialog
		National Newspaper Index	Dialog
		Nexis	Mead Data
Respond to Cease & Desist Letter	Determine who the first user was		
	—If registered mark	Trademarkscan	Dialog
		Compu-Mark	Compu-Mark
	—By date the company was founded	Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog
		Standard & Poor's	Dialog
	—By publicly disseminated information	Adtrac	Dialog
		PTS Annual Reports Abstracts	Dialog
		Nexis (has PR Newswire)	Mead Data
		National Newspaper Index	Dialog
		Newssearch	Dialog
		Magazine ASAP/ Index	Dialog
		Trade & Industry ASAP/Index (has PR Newswire)	Dialog
	Extent of use of the complainant's mark, if any	Adtrac	Dialog
		Trade & Industry ASAP/Index	Dialog
		Magazine ASAP/ Index	Dialog
		PTS Annual Reports Abstracts	Dialog
	Extent of complainant's geographic use of the mark	Disclosure II	Dialog
		Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog

Database Chart (Continued)

Function	Issues	Database	Available Through
	Enforcement of the mark by complainant	Patlaw	Dialog, Infoline
		Lexis	Mead Data
		Westlaw	West Publishing
	Is the company manufacturing the product itself or through a licensee	Dislosure II	Dialog
		Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog
		PTS Annual Reports Abstracts	Dialog
		EIS	Dialog
Purchase or License of a Trademark	Extent of seller's investment in the mark as measured by length of use and advertising expenditures	Adtrac	Dialog
		Trademarkscan	Dialog
		Compu-Mark	Compu-Mark
		Trade & Industry ASAP/Index	Dialog
		Nexis	Mead Data
	Strength of the mark, that is, how many similar uses are there; is the seller willing to sell or license all similar marks	Trademarkscan	Dialog
		Compu-Mark	Compu-Mark
	Enforcement history, has any court found no infringement by another company's use of a similar mark or was a case filed and then settled	Lexis	Mead Data
		Westlaw	West Publishing
		Magazine ASAP/ Index	Dialog
		Trade & Industry ASAP/Index	Dialog
		Nat'l Newspaper Index	Dialog
		NDEX	Orbit
		Nexis	Mead Data
Litigation	Plaintiff's or defendant's financial condition	Dun's Market Identifiers	Dialog
		Dun's Million Dollar Directory	Dialog
		Standard & Poor's News	Dialog
		Disclosure II	Dialog
		PTS Annual Reports Abstracts	Dialog
		Investext	Dialog
	Unfair competition or unclean hands	Adtrac	Dialog
		Nexis	Mead Data

Database Chart (Continued)

Function	Issues	Database	Available Through
	on the part of plaintiff or defendant (e.g. misleading advertising, antitrust violations)	Lexis Westlaw	Mead Data West Pub.
	Similarity of channels of trade	Arthur D. Little/On-line Find/SVP Harfax Industry Data Sources PTS Prompt	Dialog Dialog Dialog Dialog
	Relevant law	Lexis Westlaw Legal Resource Index	Mead Data West Publishing Dialog
	Case citations	Patlaw Autocite Insta-cite	Dialog, Infoline Lexis West Publishing
	Selection of expert witnesses	(Search specialized data bases for subject of expertise; results of search will be articles, books, etc. on a particular subject with the author indicated)	Dialog, Orbit, Infoline, Nexis
		(Based on the results, search authors' names in specialized directories or general biography)	Dialog, Orbit, Infoline, Nexis
	Preparation for depositions, examination of witnesses		
	—Biography information on deponent/ witness	Biography Master Index Marquis Who's Who	Dialog Dialog
	—Publications by the deponent/ witness	LC/Marc RE/Marc LC/Live Dissertation Abstracts	Dialog Dialog Orbit Dialog

Database Chart (Continued)

Function	Issues	Database	Available Through
		Books in Print	Dialog
		Book Review Index	Dialog
	—Information on the deponent/ witness	Management	Orbit
		Inform	Orbit
		Magazine ASAP/ Index	Dialog
		Trade & Industry ASAP/Index	Dialog
		National Newspaper Index	Dialog
		Nexis	Mead Data
		UPI	Dialog
		AP News	Dialog
	Determining prior related case experience of the judge and opposing attorneys	Lexis	Mead Data
		Westlaw	West Publishing
		Nexis	Mead Data
		Magazine and newspaper databases	Dialog, Orbit
Maintenance	Docketing renewals and other filings	CPI	Computer Packages, Inc.
		Master Data	Master Data Center
		Olcott International	Olcott International
	—and instructing associates to take action	Worldmark/ Worldpost	IPN
		Comus	Computer Patent Annuities
	—and paying renewal fees	Comus	Computer Patent Annuities
		Olcott International	Olcott International
Miscellaneous	Development of Trademarks	Markscope	Markscope
		Stevenson & Schulman	Stevenson & Schulman Software, Ltd.
	Monitoring trademark misuse	Magazine & newspaper databases	Dialog, Orbit, Nexis
		Adtrac	Dialog
	Use of marks by distributors	Electronic Yellow Pages	Dialog
		Adtrac	Dialog
	License docketing	CPI	Computer Packages, Inc.
		Master Data	Master Data Center

DATABASE VENDORS

Compu-Mark, U.S.
1333 F Street, N.W.
Washington, D.C. 20005

Compu-Mark International (see above)

Computer Packages, Inc.
414 Hungerford Drive
Rockville, Maryland 20850

Computer Patent Annuities, Inc.
Suite 901
1911 Jefferson Davis Highway
Arlington, Va 22202

Dialog Information Services, Inc.
3460 Hillview Avenue
Palo Alto, CA 94304

IPN (Intellectual Property Network)
135 South LaSalle
Chicago, IL 60603

Markgraaf
Helmholtzstraat 61
1098 LE Amsterdam
The Netherlands

Master Data Center, Inc.
29100 Northwestern Hwy.
Southfield, MI 48034

Mead Data Central
200 Park Avenue
New York, NY 10166

Olcott International
62 Hackensack Plank Road
Weehawken, NJ 07087

Orbit/SDC Information Services
2500 Colorado Avenue
Santa Monica, CA 90406

Pergamon—Infoline
1340 Old Chain Bridge Rd.
McLean, VA 22101

West Publishing Company
50 West Kellog Blvd.
St. Paul, MN 55102

A Pragmatist's Approach to Creating a Private File

James B. Tchobanoff

Technical Information Center
The Pillsbury Company
Minneapolis, Minnesota

This paper is dedicated to Fred McCarron, computer programmer extraordinaire. None of what you are about to read would be possible without Fred McCarron's expertise.

MY EXPERIENCES with a private file at The Pillsbury Company—evolution, elations, and frustrations involved in the development of the file's software and hardware over a period of approximately two decades—are presented in this paper. What The Pillsbury Company has now is a private file considerably more useful than when it was first begun.

Evolution

The Pillsbury Company file, used to index our internal technical reports, was first begun in the mid-sixties with the filling out of coding forms, a preliminary stage to keypunching and batch loading. Later, in the early seventies, we went online for input with the use of a time-sharing system and, as well, developed a crude searching program for the file. Today, The Pillsbury Company file has an online system for input, and STAIRS, a sophisticated file-management system and search program, which permits quick and easy access to technical reports.

Elation: The evolution of The Pillsbury Company file over a period of two decades was a challenge, and it led to the creation and development of new skills in the process. What we accomplished really made us feel good!

Frustration: It always seemed that as soon as one problem was solved, another took its place. Even when our file was set up and going right, the file would continue to require constant maintenance and updating. This always took an enormous amount of time and effort, and sometimes it required a lot more time than had been anticipated.

Ten years ago, the only reports we had in the Technical Information Center (TIC) on the research of The Pillsbury

Reprinted, with additional corrections, from: *Private File Creation/Database Construction*, edited by Marjorie Hlava, SLA, 1984.

Company Lab was our file of "RRs," Research Reports. At Pillsbury, an RR summarizes and reviews the technical issues at the completion of a research project, or a report concerned with a major technical development written during the course of a project.

However, RRs comprise only a small percentage of the technical reports produced in The Pillsbury Company Lab. Usually, some 30 to 50 RRs per year are written in the lab. Nonetheless, with 450 people working in the lab, this was only a small portion of the total technical output of Pillsbury's scientists.

In 1978, we convinced Pillsbury management of the need for a better way to capture and store the technical reports written in the lab. To realize our aim, we then implemented a document system for the lab which was developed from a system previously employed by colleagues in Pillsbury's Technical Services.

To begin, we had secretaries assign document numbers to all current reports as they were typed. These numbered reports were then periodically sent to TIC. Each document we received, arrived with five pieces of information: the author's name, the date when the report was written, the project number, the report title, and the document number. Figure 1 illustrates a sample report.

The document number appears in the upper-right corner of the report. Below the document number are recorded the department, author's name, mail station, and date. The preceding information is followed then by the name of the person to whom the report is addressed. Following the addressee's name is the "header." The header lists the author's last name and first two initials, the date (written as year, month, and day), the project number and the title of the report.

At the inception of this new phase in The Pillsbury Company file, we had our computer hardware and software already in place. Fred McCarron wrote INDEX for us. INDEX was written as a Key-

83-TECH-000010

TECHNICAL INFORMATION CENTER
JAMES B. TCHOBANOFF 9023

JUNE 6, 1983

TO: FOOD & NUTRITION DIVISION
SUBJECT:
000010 TCHOBANOFF, J.B./83-06-06 PROJECT 123-0000
000011 SAMPLE DOCUMENT ENTRY FOR THE PRIVATE FILE
000012 SEMINAR.

THIS IS A SAMPLE REPORT AS ENTERED INTO THE R&D DOCUMENT SYSTEM.

IT IS EASY TO REFER TO OTHER DOCUMENTS JUST BY GIVING THE DOCUMENT NUMBER, E.G., 80-DEMO-000060.

BY USING THIS FORMAT, INFORMATION CAN BE RETRIEVED QUICKLY AND EASILY.

JBT/eap

JAMES B. TCHOBANOFF

Figure 1. Sample Report

Formatted Fields:	
Document Number	83-TECH-00001
Date	830606
Paragraphs:	
Project Number	123-0000
Authors	TCHOBANOFF, J.B.
Title	SAMPLE DOCUMENT ENTRY FOR THE PRIVATE FILE SEMINAR

Figure 2. Sample Entry.

Word-In-Context (KWIC) program to index entries and generate a sequential list of the document entries. KWIC index allows a requestor to search documents by author, project number, or subject. KWIC worked really well. However, the older entries from Chemistry, Sensory, Impact, and Microbiology were in a different format that made the two files incompatible. These older entries were formatted differently, by project number, date, title, and author. FLIPPER, a short program developed by Fred McCarron, rearranged the old files into the new format of author, date, project number, and title which was compatible with KWIC.

We worked with Honeywell hardware until late 1979, when R&D at The Pillsbury Company needed more support than was available from the Corporate Computer Facility. An IBM 4331 minicomputer was therefore obtained for R&D. We were then confronted with two problems. TIC files had to be removed from the Honeywell computer and placed on the IBM computer, and we did not know how to use the new IBM system, CMS. After a crash course in the use of CMS files on the IBM, and after a few adjustments to INDEX, we were once again back in business.

We were confronted, however, with the need to search our files in ways other than that of KWIC indexes or the rudimentary SEARCH program, both of which Fred McCarron developed. Because of company restrictions, we were not able to mount a private file on an outside computer vendor, such as DIALOG, SDC, or BRS. Then, STAIRS/CMS was released in September 1981.

The key to STAIRS is the database description. When entered into the ASSEMBLE file, this key becomes the foundation for all other activities in the database. STAIRS allows for formatted fields and paragraphs. Formatted fields are record fields of fixed length that are not directly searchable, while paragraphs are text fields which are directly searchable. We set up our database as indicated in Figure 2.

The STAIRS entry for the TECH ASSEMBLE file is illustrated in Figure 3. The TECH ASSEMBLE file tells STAIRS the definition of the file as well as each field within it. For example, there is a document number field (DLNCFFLD) in the formatted fields that is 13 characters long, its paragraph code is 0A0. It begins at position 1 within that paragraph; it is an alphanumeric field (A); its privacy level is 0; and the field name is DOCNO. In the paragraph classes, (DLNCPCLS) there is a project number field that has a lowest paragraph code of 010, a highest paragraph code of 019, a privacy level of 0, and a paragraph name of PROJNO. It is also possible to restrict fields as searchable and/or displayable by specifying various STOP commands. STOP=DICT eliminates a field from the dictionary; however, it is still displayable, but not searchable. STOP=TEXT elim-

```
FORMATTED FIELDS

DLNCFFLD  13,0A0,1,A,0,'DOCNO'
DLNCFFLD  06,0B0,1,N,0,'DATE'
DLNCFFLD  TYPE=END


PARAGRAPH CLASSES

  DLNCPCLS  0A0,0A0,0,'DOCNO',STOP=BOTH
  DLNCPCLS  0B0,0B,0,'DATE',STOP=BOTH
  DLNCPCLS  010,019,0,'PROJNO'
  DLNCPCLS  020,029,0,'AUTHOR'
  DLNCPCLS  030,039,0,'TITLE'
```

Figure 3. TECH ASSEMBLE File

inates a field from the text file; it is then searchable, but not displayable. STOP=BOTH eliminates a field from the dictionary as well as the text files, but this command is used only with formatted fields.

Fortunately, STAIRS came with a dummy database, called COOK, which helped us figure out how to set up our file. The instruction manual for STAIRS was not the easiest manual to use, so COOK was essential to us in setting up our files.

By comparing the header from Figure 1 with Figure 2, it may be noted that the input file and the STAIRS database description do not match. To make it possible to load our input file, Fred McCarron developed a program for STAIRS input, called none other than STAIRSIN. With STAIRSIN, our input file could be translated into something that STAIRS could understand.

At last, we were ready to begin. The process involved calling up STAIRS, entering the administration sequence, defining and generating the database description, and then creating the database. As may be noted, everything is menu-driven; all we do is fill in the blanks. It is actually that easy, even though it sounds too good to be true.

Now a search to test the system: Enter the SEARCH sequence, and everything goes smoothly. Now for PRINT output: The PRINT subroutines are not available. In order to obtain hardcopy printout, the COPY command has to be used instead of the PRINT command.

Next, it was necessary to set up a database structure. In order to update a STAIRS database, we needed to either regenerate the entire file, or create a small file and merge it into the larger one. Regenerating a file is all right as long as the file is small, i.e., less than 1,000 documents. But, for large files, it is best to create a small file and then merge it into the large one.

The database structure is illustrated in Figure 4. TECH is the main file, TEMP is the current year's file, and EDIT is the input file for new entries, prior to their merger into TEMP. To expedite the search process, TECH and TEMP are concatenated, i.e., linked together so the searcher has to search only one file.

Nonetheless, after writing a procedure manual and training the staff, the work was not complete. IBM released a new version of STAIRS, 2.0. The big problem with STAIRS 2.0 was that, although it worked well for searching, and it even printed the output you wanted, its creation of files was not consistent. For example, if 1,000 new documents were created and merged into a file of 5,000 entries, the count of the new file was not

always 6,000. Since we were never sure that everything was being created correctly, we used STAIRS 1.0 for file administration and STAIRS 2.0 for file searching.

With these problems solved, we soon found more with file maintenance. Many of the file-maintenance issues which confronted us were caused by inconsistencies of punctuation, authors' names, dates, and typos in the database. First, it was necessary to assess the size of the problem and the level of inconsistency which was allowable without creating a lot of extra work. A good look at some of the problems follows.

Punctuation caused searching problems since STAIRS ties terms together, with the result that second words were missed in a search. For example, flour/semolina mixture, mixing/sheeting, or oil-in-water emulsions. In order to solve this problem, we changed the slashes and hyphens of multiword terms in the database to spaces.

Authors' names created problems of consistency, since two initials were necessary to differentiate between authors. The solution was to do nothing to the input file. A search with an author's truncated name picks up all of the references, whether there are one or two initials.

Dates were also a problem when they appeared in a title; for example, was May 1, 1983, entered as 5/1/83, 05/01/83, 83/05/01, or May 1, 1983? Inconsistencies in calendrical data caused searching problems with reports as, for example, in a plant trial conducted on a specific date. It is not uncommon to run from 10 to 20 trials before Pillsbury introduces a product. In such cases, if the requestor knows the date of a trial, then, the consistent entry of dates aids in the rapid retrieval of the desired document. Since we wanted all of the dates to be consistent, we chose "May 1, 1983," as the calendrical entry form. This manner of expressing dates is straightforward, and is not mitigated by special codes. Our decision was costly. Approximately 2,000 entries had to be edited. Fortunately, global changes made the editing of these entries somewhat easier.

Was STAIRS/CMS the "Knight in Shining Armor" coming to our rescue? Quite possibly it was; however, we first had to learn how to use it and, second, had to make our old files fit into the STAIRS format.

Typos are noted during searching or are identified by scanning the dictionary listing from the MERGE function. Typo corrections are made in the original data files. When the STAIRS files are reloaded quarterly, the typos are then eliminated.

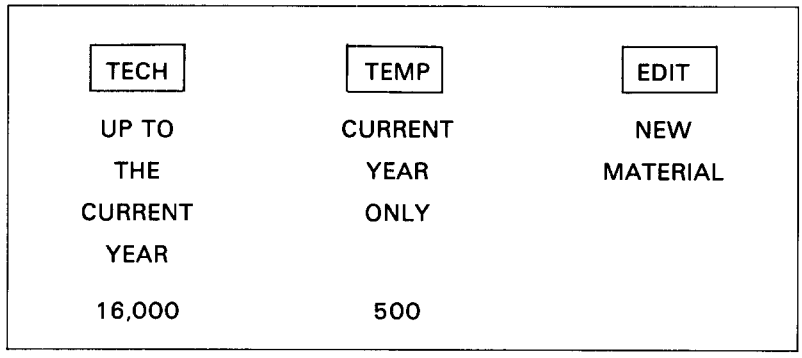


Figure 4. Database Structure

Now, we can all live happily ever after? Not yet. The story continues. In February 1983, there was a hardware upgrade on the computer, a change in the operating system, and the introduction of a new version of STAIRS. It was difficult enough with two versions of STAIRS, but now there was a third. It was even worse, since STAIRS 1.0 and 2.0 did not run under SP.

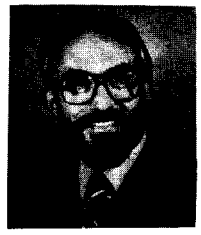
SP was being tested only on weekends, so we could have standard operating procedures at least during the week. Thank goodness! When Fred McCarron booted up SP and then mounted STAIRS 3.0 on Saturday, I was ready for battle with both of them. Much to my surprise, STAIRS 3.0 was fast, worked correctly on all functions, and was apparently bomb-proof. A miracle!

The lesson learned from using STAIRS/CMS was not to be the first to try a new, untested program. If you are the first, you do a lot of extra work finding the bugs in the program, getting rid of them, or else figuring out how to live with them.

It did not last, however. Fred McCarron was in the process of bringing SP up-to-date to the most recent version. After he added the first two updates, I was once more in on Saturday. I wanted to work on my existing files, not test STAIRS 3.0 as I had been doing earlier. When I called up STAIRS, I received an error message which said that STAIRS was unavailable. Nevertheless, STAIRS was really there; it was just inaccessible. The problem, it turned out, was with IPF (Interactive Productivity Facility). IPF is one of the support packages for much of the software we use, and it had been eliminated in the upgrading of SP. The elimination of IPF not only disabled STAIRS, it also disabled any of the programs we had which used full-screen menus. Fred McCarron was confronted with a real problem which he finally solved by reloading IPF from the VM operating system.

After Fred McCarron solved our problem with IPF, we were up and running. STAIRS now takes only ten minutes to create the TECH database of about 16,000 entries. Now, searching is very fast—STAIRS 1.0 took almost 30 minutes—and both PRINT and COPY work!

Thus is a brief history of the creation and development of an online, private file for The Pillsbury Company: the file's evolution, its challenges, and causes for elation, and, of course, its many frustrations. However, the story does not end here. Someone tells me that EDGAR, the text editor under VM, is being replaced by XEDIT, the text editor under SP. This is a story for another time, especially since I am not sure how it will end.



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State of the Art 1985: Special Libraries/Online Technologies

Marjorie M. K. Hlava

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THROUGHOUT HISTORY the library has often been at the forefront of change: an area of research and a birthplace for innovative ideas. In the mid-1970s libraries, particularly special libraries (those serving a specialized need in corporations and research centers), began extensive use of online information services. These services provided remote access to huge compilations of bibliographic citations in specialized subject areas. In the past many of these would have been produced in print copy and disseminated. But the access points were few. People are now able to delve more deeply into a question and find results more quickly using timesharing services to access this bibliographic information online.

Now, in 1985, we have an Information Technology Division of the Special Libraries Association with four very active sections. This Division of the Special Libraries Association reflects the variety and breadth of the state-of-the-art of online information services in the information industry. The organizations that we serve have a great need to be on the cutting edge of new technologies, and are aware that the best decisions are made on thorough research and sound information. We in special libraries are faced with serving an information-hungry clientele. We don't say, "Nobody comes to my library," but rather, "How can I serve them more? My clients are eager to receive every service I offer! "

Most libraries have now discovered that a combination of manual or visual scanning of hard copy or print materials and multiple online vendor services are needed in a corporate or special library to provide a full range of services. We provide our clients with up-to-date, in-depth retrospective searches as well as monthly updates, current awareness or SDI services, new technology bulletins, news digests, clipping services, and more. We receive our requests and request documents from other organizations using electronic mail or interlibrary loan services. Our comments and suggestions are being heard by those who supply these services to us. We also no longer feel as though we have a new toy which we must use, but instead know how to use electronic technologies in combination with other sources of information to give our clientele well-balanced and thorough coverage of the literature and information that they seek.

We have learned a lot recently about

presenting the information as though it was a consulting report. We take our terminals home in the evening to log into the company computer or a remote timesharing service to deal with some of the knottier search problems as well as producing letters.

We are beginning to see the image of the global village as we tap into information sources across both oceans from the United States. That gives us a balanced approach to the literature that we had not been able to cover so easily or completely in the past.

Let's look at some of these areas in a little more detail to see what kinds of services state-of-the-art special libraries are providing to their clientele.

Among ourselves we know what an online search service is, but when we talk to someone else, an accountant or computer expert for example, they think of something quite different. The fact is that any computer that you hook into remotely is an online service. Libraries are beginning to learn to use not only the large online bibliographic vendors for remote sites (DIALOG, SDC, BRS, STN, CAS-Online, Mead Data Central and others), we are also learning to hook into our own inhouse databases which may be large and have many sub-components mounted on software such as STAIRS, CAIRS, INQUIRE, etc.

Ninety-five percent of special libraries are hooked into remote online vendors.

Ninety-five percent of special libraries are hooked into remote online vendors. Most of these libraries have more than one service available to them. Learning how to manipulate these machines and ferret out the one shred of information which makes all the difference in the decision-making process has given new dimension and meaning to the old cliches, "Knowledge is power" and "He that holds the knowledge, makes the best decisions." Our members, by building new databases of corporate information, have attracted notice of those higher in the organization. The President and the Chairman of the Board have begun to recognize and praise individual library or technical information center directors, telling them what a good job has been done and how pleased they are to have such information readily available.

Thus the use of the information and applications of new technology have become a regular part of business within special libraries. Other kinds of libraries, such as academic and public libraries, are not so far along as we are in these applications but they too are beginning to use them.

Let's review how we currently use all these technologies in our libraries to give ourselves an indication of how our use of these systems has speeded up information transfer and information creation. This review will cover the online files available, the machines we use, how we package information, and what might be coming up in the near future in terms of state-of-the-art activities for special libraries in online technology.

Online Files

Online files are commercially available or are inhouse private databases of proprietary data. We can classify commercially-available files as those available from timesharing vendors and those available by tape to be mounted on inhouse computers. A number of special libraries have their data mounted on inhouse computers. Sophisticated networks are set up between geographically disparate locations to access both commercially prepared data and corporate data, providing an integrated information system within the corporation. Some of these networks include several computers merged with gateway interfaces between them, so that it is apparent to the user where the information is physically located. One of the most sophisticated of these uses satellite links among various locations in Europe, the United States, and Japan.

European online users have long been sophisticated in the use of intercontinental telecommunications and are accessing DIALOG, SDC, and BRS from Europe. Those of us in the United States are now finding that there is a vast amount of European information which we have not accessed in the past. This information includes scientific and technical reports and journal literature as well as fiscal and other sorts of business data. Now with the advent of the European Space Agency (ESA/RECON or IRS) marketing in the United States, Finsbury Telesystemes, DIMDI, and the Scientific and Technical Network (STN) available through the CAS-ONLINE interface, these links are making us more aware of worldwide information sources from all parts of the globe. National networks are now much easier to access using satellite transmissions instead of expensive leased lines. I suspect that in the next few years we will be accessing even more systems from other nations.

Now, in 1985, we have an Information Technology Division of the Special Libraries Association ... [which] reflects the variety and breadth of the state of the art of online information services in the information industry. The organizations that we serve have a great need to be on the cutting edge of new technologies.

In addition to the ever larger information networks, online vendors such as DIALOG and the ambitious plans of CAS-ONLINE, we have entry of large companies such as AT&T and CBS into the marketplace. We also have an increasing trend toward inhouse systems on small computers instead of mainframes. Microcomputer applications have come to special libraries. Library catalogs on microcomputers, online searching using micros, etc., are no longer foreign to us. A number of vendors are also offering SDI services and monthly updates on diskettes rather than online or print copy only. An increasing number of our users are building their own data files on microcomputers which we help them maintain by supplying additional information on a monthly basis. As storage becomes cheaper, we will see more of this kind of activity. We tend to use microcomputers to access our large online systems, either inhouse or out-of-house.

Machines

In the early days of online searching, we were all using 300 band dumb terminals, the Texas Instruments Silent 700 series being the main guard of most of our libraries. Now, however, the proliferation of other kinds of dumb terminals, smart terminals, and microcomputers seems to have taken libraries by storm. Although most of us are still using terminals rather than microcomputers, an increasing number of libraries are using micros or searching with telecommunications links through the mainframe computer. Whenever we acquire information on our micros, we are technically downloading the information because we are certainly storing it in machine-readable format, a necessary evil because of the way most microcomputers search.

We are now far more aware of what modems there are, 300, 1200, and some even at 2400 to 9600 baud terminal searching. Most of the online vendors support, however, is only at 300 to 1200 baud. For inhouse systems we are able to go at much higher rates.

Software packages for searching and expertise in them is a new knowledge arena for librarians.

With the use of all of these machines, our libraries have been changing to technical information centers and our professional name has changed from librarian to information scientist, information spe-

cialist, or information manager, within our corporations.

An increasing number of librarians are realizing the worth of learning about records management as an activity to bring under the auspices of the library.

As we have made rapid adaptation to online files, electronic information transfer, and the proliferation of all sorts of machines, we are now learning to adapt and vary the way that we package traditional information and deliver it to our clientele.

Packaging of Information

Most important to the online user are the search results. In the past we have taken the search results off the terminal as prints and handed them over to the requester for evaluation and checking. After they had gone through those results, they might ask us to order some articles for them to read. We would pull these articles, either from our own collection or from other sources through document delivery services or through interlibrary loan sources. It is hard for many of us to imagine that ten short years ago OCLC was hardly known and an interlibrary loan was a telephone call or a letter. Now, our request for documents from Information On Demand or FIND/SVP is an electronic activity where we dial up our local computer vendor, The Source, DIALOG, etc., and request the document directly from them. On OCLC, we put in our request and it is automatically sent from one library to another until the request is filled.

Many librarians now supply an evaluated search service. They ask the requestor to sit at the terminal while the online search is conducted. This ensures that the client understands the process and can supply additional keywords while the search is conducted. When the search is complete the client looks at the results and documents are immediately ordered or are pulled from the collection. Once the documents arrive, the articles may be scanned for the client, the material digested, and the client is given not only the search results but a summary of the information found so that he or she can get the gist of the report and delve more deeply into the areas of greatest interest.

Sometimes these results are handed to the requestor, but if they are in a geographically remote location, we will transmit it to them through one of a number of methods:

- Through printers remote from the mainframe computer. The results are printed at a location near the requestor and not in the library facility.
- Some large online search systems, such as DOE RECON, provide remote printing services through SACNET so that offline search results are printed overnight at the location of the requestor.
- Another method by which libraries send and receive search results is through electronic mail systems. Libraries are currently using approximately fifteen electronic mail vendors, although four of them are used principally by libraries: ITT DIALCOM's ALANET system, On-Tyme through Tymnet, Western Union's Easylink, and Source Mail through The Source.

In addition to all of these electronic methods of supplying and finding search results, we are finding that using word processing and editing applications through vendors and through our microcomputers enables us to print off, in letter quality, a more professional-looking report for our users and for presentation to outside clients and sales representatives. We are able to vary the formatting of our results so that the final packaging of that information is a clear, attractive document.

What's Next?

Since we are doing all of these things now, what will we be doing in the future? An increasing number of librarians are "commuting" at home, performing like a cottage industry (taking a computer home and doing their online searching or logging into the online computer, receiving their mail electronically), so that we have become information commuters. It

doesn't matter if you are in Albuquerque, Timbuktu, or New York City, you can transmit the information to your user just as rapidly. When on the road, your daily work does not suffer because you can just log into the local telephone and hook into your computer network.

The new frontiers are in areas of automatic translation of information, not only from one language to another but from one system to another, and decentralization of access to information. Librarians will not be the only way to get into the corporate information system, although we will maintain it.

We have not yet tackled the frontier of graphics in presentation of printed information. The videocassette technology is another area which we have not begun to use heavily as yet. We can use a Sony Betamax system not only to back up our microcomputer diskette or hard disk, but also for training people in how to use the online system.

We can supply graphic information in other ways such as through the videodisk technology. As the storage medium gets cheaper, this may be even a better way to store corporate patents and other items for which graphics are an important access point. Chemical information and chemical formulae also seem to lend themselves well to interactive videodisk technology.

Summary

The technical information center (formerly called the library) enables the user to find information more quickly and therefore speed the information transfer process. Information creation has also shortened in time. Having shortened the time of information transfer and speeded the process of information creation, we hope that the advance in storage technology will help us keep up with the information avalanche so that out of all that information we can gather the knowledge to help our users make better decisions for our organizations.

Marjorie M.K. Hlava is President, Access Innovations, Inc., Albuquerque, New Mexico.

Careers in Online: Varied Roles for Special Librarians

An opinion piece

This is an opinion coming from someone with a biased viewpoint. I am a trained librarian who, before joining the online information industry, worked in academic and special libraries. In asserting my opinion when I speak of online products I mean specifically textual online systems—systems of bibliographic or full-text databases—not data management systems. I am examining systems designed for search and retrieval.

What is my opinion? It is that the traditional role of the librarian as intermediary is not only *able* to be practiced as part of the development, design, production and marketing of online products but is *needed* to be part of that process. Traditionally the role of the reference librarian has been to serve as an intermediary between the information and the end user of that information. In doing so a librarian receives a user request, interprets it, finds the information by any number of means and delivers it to the end users in an understandable and usable form. An interface serving as a buffer between an end user and a system can never achieve that level of accomplishment but its goal is to emulate it as closely as possible and in doing so assist in the process as fully as possible.

Let's divide the world of textual online systems into two groups; those designed for the intermediary, and those designed for the end user. Online systems designed for the intermediary aspire to make searching as easy as possible for the intermediary while offering as many sophisticated search techniques as possible. Who know better how to shape these products than those who use them? Who knows better how to structure information within them than those who understand information, its structure and its uses?—librarians.

BRS has for years had a User Advisory Board which advises the company on technical matters and database selection. Even though BRS is well staffed with trained librarians it is refreshing to receive input from those who are practicing their profession in a more traditional way. BRS has consistently profited from their input.

Other companies without such a formal structure also benefit from librarians' input. Because the goals for an end user system are no different than those of a system designed for an intermediary (convenient searching with sophisticated capabilities) but are only superficially different, the knowledge and experience of librarians is important in end-user systems. Why not profit from the experience of those who not only know the logic of searching best but have traditionally dealt with the end users and interpreted their requests?

Many librarians fear that end-user systems diminish their traditional role. I believe that they expand it. End users are often new users. Many members of this new audience for online services come to the system via the library. The librarian is still required to interpret their request and aid the end user in a different capacity. End users do not come to the terminal intrinsically understanding what a database is and what it can do for them. Much of this educational process is handled through traditional means by the personal intervention of the librarian. But it is also built into and reinforced by the product, its documentation and marketing materials. As the librarian has stood as the intermediary between the end user and the information, who could better advise on design any part of the above?

Many companies are moving into the age of electronic information; many information producers have yet to do so. When companies first turn to online, the producers of databases or designers of systems often face the problem of not

knowing who to hire to fill the void in the organization (if they are astute enough to recognize that there is a void). To many novices in the world of electronic information, a computer is a computer and a computer person is a programmer. And granted, a company may need a programmer to accomplish certain things inhouse. But more importantly an online information project needs someone who understands information and how to structure it, so it can be retrieved easily and displayed in a meaningful format. Unfortunately this is often a difficult concept for a company to identify and an even harder function for a company to define. Even if they know the traditional role of a librarian, they are unable to extrapolate that librarian's skills are the skills they need.

Librarians know not only how to retrieve information... [but how] to retrieve more of the relevant information.

As a member of the online community, it would be inadvisable for me to cite even anonymously case histories of companies who have appeared to miss the boat in utilizing librarians' skills either in product development or marketing. I believe each of us can think of companies that have failed to maximize the value of their information or that have failed to relate their products to the market. Either a need for expertise in information has not been recognized or management did not understand what skills were needed.

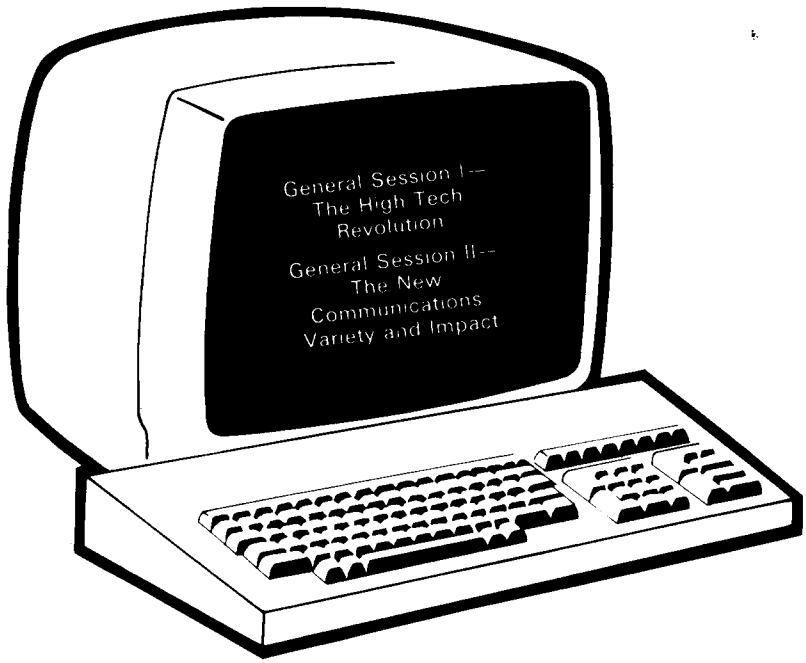
I often sigh before explaining what it is I do. My profession is not one easily recognizable by many people. That there is a profession involving online information management which is broader than records management, programming or other easily recognized professions has to be explained. This profession is practiced by librarians and too often understood and appreciated only by librarians. It is frustrating to be put into the position of having to explain what it is that you know and why this is an important link between the information and the user. Electronic display of any sort can dazzle the uninitiated. The need for more sophisticated capabilities and applications is not easily understood. The wheel gets reinvented too often and frequently in an inferior manner.

Librarians bring to the party not only special educational credentials and experience, but a conceptual grasp of the interrelationship of technology and information. This is arrived at through training and experience. It becomes so second nature to many librarians we ourselves forget the uniqueness of this skill. We forget when we did not know the basics of information retrieval. Librarians know not only how to retrieve information. Their level of understanding makes it possible for them to retrieve more of the most relevant information. Librarians need to impart this to others who have a need to learn. These include:

- those who actually create the products
- those who use the products
- those who sell and market the products
- those who instruct others in how to use the products

I intend this to be an exhortation for information producers to capitalize on the skills and talents of the traditional intermediary. I suspect I am also motivated to incite special librarians to seek a more active role in shaping online products. I suggest you do this not just by reviewing and suggesting changes although this is always valuable, but by actually considering the design, production, and marketing of electronic information products a viable career path. Many librarians do. I would like to see more librarians share this opinion.

Jane A. Kelly, Director, Customer Relations, BRS, New York City.



Winnipeg 1985

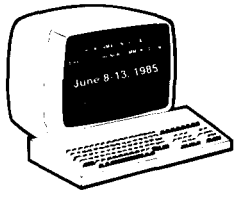
The General Sessions of the Winnipeg Conference will address various aspects of the ways in which today's technological advancements will affect our professional lives.

The 75th Conference in New York was like Janus looking both forward and backward. The 1985 Conference in Winnipeg will be looking only forward to the new exciting world that awaits the information specialist. Librarians have always been information specialists and in today's technological world this specialty is becoming increasingly important. During the 1985 Conference the role and scope of the information specialist as a bridge, link, catalyst, interface with the emerging forms of communication and technology will be stressed.

GENERAL SESSION I—THE HIGH TECH REVOLUTION
Monday, June 10, 9:00 a.m.–12:00 noon

This session features Canadian futurist, Robert Arnold Russel, who will discuss the major trends which are affecting society today and which will shape our lives over the next decade. Mr. Russel has been giving projections since the early sixties. He currently writes on the information economy, and is a senior policy advisor with the Canadian department of communications. Mr. Russel's presentation will be followed by a question period and then a panel which will describe the impact that these trends are having on special libraries in Canada, The United States, and Great Britain, and will give brief descriptions of innovative techniques/services which have been developed to meet the challenges presented by these trends.

The distinguished panel members include: Carrol Lunau, National Library of Canada, past President of CASLIS; Frank Spaulding, Bell Telephone Laboratories and director of SLA; and Dennis Lewis, Executive Director of ASLIB. This program originated from and is co-sponsored by CASLIS (Canadian Association of Special Libraries and Information Services).



Conference Agenda

SCHEDULE OF EVENTS

GENERAL SESSION II—THE NEW COMMUNICATIONS: VARIETY AND IMPACT
Tuesday, June 11, 9:00 a.m.–12:00 noon

The topics addressed during this session are as follows:

TELECOMMUNICATIONS AND THE SPECIAL LIBRARY

Richard Boss, Information Systems Consultants Inc., will discuss the technical, economic, ergonomic, organizational and psychological issues facing special librarians/information specialists who work with or anticipate working with the new communications.

THE COMPUTER IN THE ONE-PERSON LIBRARY: USEFUL TOOL OR KILLER TOY?

Katherine Kyes Leab, editor, *American Book Prices Current,* will deal with the important decision to automate the one-person library. Both pros and cons will be discussed, including advice on dissuading a management that wants to automate the library when this is not the best course of action.

SOFTWARE HANDLING IN A SPECIAL LIBRARY

Virginia Fortney, Bell Laboratories will discuss practical issues such as the care, storage and circulation of software as well as management issues such as how much support should be provided to users.

Four divisions were responsible for the initial planning of this program: Telecommunications; Social Science; Museums, Arts and Humanities; Education.

This 1985 Conference will feature over 100 exciting and educational programs. These events are the result of many months of planning by the Winnipeg Conference Program Committee, SLA divisions, and other committees. A wide range of topics will be covered and the hardest decision you might have to make is deciding which sessions to attend. These programs are open to all conference registrants at no additional cost. Below is just a sampling of these programs.

- Freedom of Information and the Information Specialist
- The Only Information You Can Use is the Information You Can Find
- Creating and Marketing a Database
- Role of the Librarian in Corporate Training
- Quality Circle Experience in Libraries

The Information Specialist as Internal Consultant on Systems, Software and Hardware

The Canadian Nuclear Industry and the Environment

Petroleum Bibliography

Serving the Needs of the Newsroom

GENERAL SESSION I—The High Tech Revolution

Canadian Advertising—Similarities and Differences with the U.S.

Growth of the "Canadian Chicago"—Winnipeg

Canadian Business Information

Panel on National & State Issues in both Canada and the U.S.

Mathematics Workshop

Food and Agriculture Databases

Acid Rain Information Resources

Information/Image Retrieval Systems for Picture Librarians

Power of the Printed Word

Training for Museum Librarianship: A Canadian Perspective

Document Delivery-Present and Future

Evaluation of Library Services

Numeric Databases: Capabilities and Caveats

Chemical Abstracts Services Panel

Critical Issues in Telecommunications Regulations-1985

Marketing Techniques for Consultants

Financial Planning for Automation

Physics Workshop

Pay Equity Act II-Getting your Just De$$ert$

Records Management in Energy Libraries

Widening Your Geographical Horizons: A Personal Approach

Fee-Based Services—Case Studies & Discussion

Legal Corporate Espionage

Automation Update

Transborder Data Flow

Information Perceptions: Can Data Processing and Information Professionals Learn to Communicate with each other?

Computer Applications & Experiences in Science & Technology Libraries

NASA Space Station Program Activities, Material Processing in Space

End User Searching in the Sciences

The Canadian Power Industry

Automation in Transportation Libraries

Picture & Photograph Reproduction for Publications

Review of CAB Database & Thesaurus

Impact of Electronic Office in Library Environment

Videotex Canada: iNET, Grassroots, Agritex

Vendor Update

Online Catalogs for Small to Medium Special Libraries

Identifying, Evaluating & Selecting Software Packages for Library Microcomputer Applications

Computer Science Workshop

The Making of An Information Manager

Darc/Questel Forum

Book & Author Luncheon

Your Image Can Be the Decisive Difference

Adapting to New Technologies: Training Your Staff to Cope

Using Microcomputers in Business Related Libraries

Using Micros to Search Chemical Toxicity Information

Geologic & Cartographic Information of Canada

The Libraries of Hudson's Bay Company

I'm on Deadline—Coping with Stress in a News Library Environment

Foreign & International Standards Roundtable

Users & New Technologies

Commodity Transportation: A Canadian Perspective

Networking for Special Libraries

Pharmaceutical Libraries & the New Technologies

Microcomputer Applications for Picture Collections

Publishing Major Reference Books in the Electronic Age

The Stereotype and other Professional Problems

Microcomputer Applications in Academic Business Libraries

Closing the Gap between Information Management & Information Processing: New Roles

Public Library Collections & Services that Aid Business

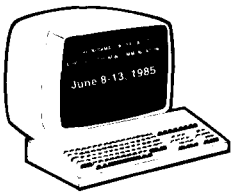
Research in Progress: G&M Contributed Papers

Microcomputers Roundtable

Marketing Internally—Waking Up Your Own Organization

Online Search Strategy Clinic

Microcomputer Applications Workshops for Business-Related Libraries



Exhibits

VISIT THE EXHIBITS

The information profession has changed dramatically during the past decade and indications are that it will probably continue to change at an increasing rate in the future. To a large extent, these changes are due to the development of new products and services.

The products and service exhibits are an integral part of the SLA Conference. In the Exhibit Hall you will find many examples of state of the art technology as it applies to today's information professional. These exhibits will also help you to look ahead to see a bit of what the future may bring.

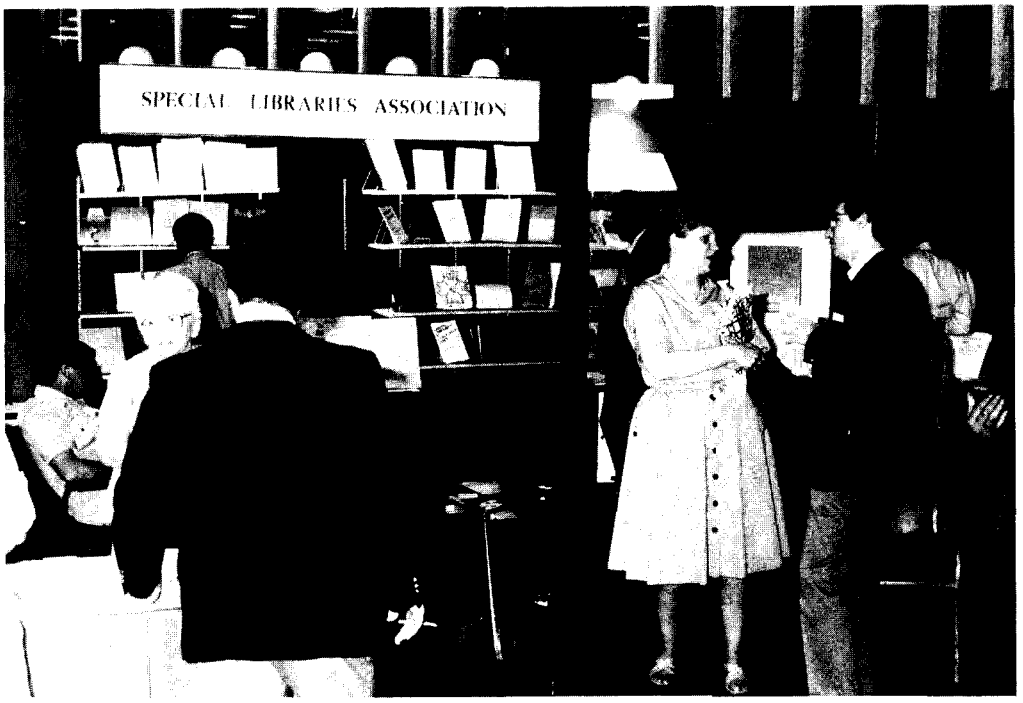
SPECIAL EXHIBIT HALL EVENTS

- Sunday, June 9—Exhibit Hall Reception
  3:00 p.m.-5:00 p.m. Free drinks for all attendees.
- Tuesday, June 11—Dessert in the Exhibit Hall
  1:30 p.m.-2:30 p.m. Complimentary goodies for all attendees.

Support These Exhibiting Companies: They Help Support SLA

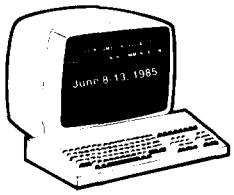
LIST OF EXHIBITORS

ADDISON-WESLEY PUBLISHING COMPANY
AMERICAN CHEMICAL SOCIETY
AMERICAN INSTITUTE OF PHYSICS
AMERICAN LIBRARY ASSOCIATION
AMERICAN MANAGEMENT ASSOCIATION
AMERICAN SOCIETY OF CIVIL ENGINEERS
AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AMERICAN SOCIETY FOR METALS
ARCTIC INSTITUTE OF NORTH AMERICA



SLA exhibits, New York 1984

BAKER & TAYLOR COMPANY
BANK MARKETING ASSOCIATION
BATTELLE MEMORIAL INSTITUTE
BIOSCIENCES INFORMATION SERVICE (BIOSIS)
BLACKWELL LIBRARY SYSTEMS, INC.
BOOK SERVICES INTERNATIONAL
BOOKLINK-SIDNEY KRAMER BOOKS, INC.
R. R. BOWKER COMPANY
BRODART COMPANY
BRS
BUREAU OF NATIONAL AFFAIRS, INC.
BURRELLE'S INFORMATION SERVICES
BUSINESS RESEARCH CORPORATION
CAMBRIDGE SCIENTIFIC ABSTRACTS
CANADA INSTITUTE FOR SCIENTIFIC AND TECHNICAL INFORMATION (CISTI)
CHARLES E. SIMON & COMPANY
CHEMICAL ABSTRACTS SERVICE
CL SYSTEMS, INC.
COLLIER MACMILLAN CANADA
COMBINED BOOK EXHIBIT
COMBINED CONSULTANTS EXHIBIT
COMMONWEALTH MICROFILM LIBRARY
COMSTOW INFORMATION SERVICES/ BIBLIOTECH
CONFERENCE BOOK SERVICE, INC.
CONGRESSIONAL INFORMATION SERVICE, INC.
COUTTS/JAMES BENNETT/JOHN MENZIES LIBRARY SERVICES
CUADRA ASSOCIATES, INC.
DATA COURIER INC.
DATATIMES
DEMCO, INC.
DIALOG INFORMATION SERVICES, INC.
DISCLOSURE
DOW JONES & COMPANY, INC.
DTI DATA TREK, INC.
DUN'S MARKETING SERVICES-USA
EBSCO SUBSCRIPTION SERVICES
THE ECONOMIST
EIC/INTELLIGENCE, INC.
ELSEVIER SCIENCE PUBLISHERS
ENGINEERING INFORMATION, INC.
EUROMONEY PUBLICATIONS
F.W. FAXON COMPANY, INC.
FINSBURY DATA SERVICES LTD.
ROBERT P. GILLOTTE COMPANY
GORDON & BREACH SCIENCE PUBLISHERS
OTTO HARRASSOWITZ
HARWOOD ACADEMIC PUBLISHERS
HEYDEN & SON, INC.
IEEE COMPUTER SOCIETY PRESS
INFO GLOBE
INFORMATICS GENERAL CORPORATION
INFORMATION HANDLING SERVICES
INFORMATION MANAGEMENT CONSULTANTS, INC.
INFORMATION MARKETING INTERNATIONAL
INFORMATION ON DEMAND
INFORONICS, INC.
INSPEC
INSTITUTE FOR SCIENTIFIC INFORMATION
INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS, INC. (IEEE)
INTERNATIONAL MONETARY FUND
IST-INFORMATHEQUE, INC.
ALFRED JAEGER, INC.
KNOWLEDGE INDUSTRY PUBLICATIONS, INC.
LEARNED INFORMATION, INC.
MARCIVE, INC.
MARKET DATA RETRIEVAL
MARTINUS NIJHOFF BOOKSELLERS & SUBSCRIPTION AGENTS
McGREGOR MAGAZINE AGENCY
MEAD DATA CENTRAL
MICROMEDIA LTD.
MINOLTA CORPORATION
MOODY'S INVESTORS SERVICE
NATIONAL AIR & SPACE MUSEUM
NCR CORPORATION
NEWSBANK, INC.
NILS PUBLISHING COMPANY
NOAA/NATIONAL OCEAN SERVICE
NORTHWEST MICROFILM
OCLC ONLINE COMPUTER LIBRARY CENTER, INC.
ORYX PRESS
OXBRIDGE COMMUNICATIONS, INC.
PERGAMON INFOLINE, INC.
PERGAMON PRESS, INC.
PLENUM PUBLISHING CORPORATION
PREDICASTS, INC.
PRINCETON MICROFILM CORPORATION
PUBLISHERS BOOK EXHIBIT, INC.
QL SYSTEMS, LTD.
READ-MORE PUBLICATIONS, INC.
RESEARCH BOOKS, INC.
RESEARCH PUBLICATIONS
RSC BOOKS & PERIODICALS, INC.
SADTLER RESEARCH LABORATORIES
SCIENTIFIC, MEDICAL PUBLICATIONS OF FRANCE, INC. (S.M.P.F.)
SDC INFORMATION SERVICES
SEDNA CORPORATION
SOCIETY OF AUTOMOTIVE ENGINEERS
SPACESAVER CORPORATION
SPRINGER-VERLAG NEW YORK, INC.
STANDARD & POORS
SWETS NORTH AMERICA, INC.
SYDNEY DATAPRODUCTS, INC./EASY DATA SYSTEMS
TAYLOR & FRANCIS
TURNER SUBSCRIPTIONS
UNITED NATIONS PUBLICATIONS
U.S. BUREAU OF THE CENSUS
U.S. PATENT & TRADEMARK OFFICE
UNIVERSAL SERIALS & BOOK EXCHANGE, INC.
UNIVERITY MICROFILM INTERNATIONAL
UTLAS
VU/TEXT INFORMATION SERVICES
WARNER-EDDISON ASSOCIATES, INC./ INMAGIC
JOHN WILEY & SONS, INC.
H. W. WILSON COMPANY
ZIFF-DAVIS PUBLISHING COMPANY



Continuing Education

CONTINUING EDUCATION

The Professional Development Department will offer a diverse program of courses designed to further the continuing education and development of both new and experienced special librarians and information specialists: participants will earn 0.6 CE Units and a certificate upon completion of each course.

CE courses will be conducted on Saturday, Sunday and Thursday, June 8, 9 and 13.

Beginning with the 1985 Conference, several courses are now offered for those information professionals with experience or advanced subject knowledge in the particular field of the course. These course numbers are preceded by an asterisk. The listing of courses is as follows:

DIVISION RELATED

CE 107 Managing the Newspaper Library and its Collections
CE 128 How To Build An Online Database

MANAGEMENT

CE 203 Management Communication in Special Libraries and Information Centers
CE 205 Marketing Management and Information Services
CE 208 Fundamentals of Finance and Budgeting for the Non-Financial Manager
*CE 232 Creative Conflict Management
CE 250 Effective Supervisory Skills
*CE 252 The Human Factor in Management
*CE 257 Organizational Development: Theory and Practice
CE 258 The Art of Managing Staff

COMMUNICATION

CE 303 User Surveys: Design, Technique, Analysis
CE 332 The Art of Interpersonal Communication: Listening, Speaking, Writing

* This course requires experience or advanced subject knowledge in the field of the course.

TECHNOLOGY

CE 405 Introduction to Microcomputers for Special Librarians
CE 477 Planning for New Technologies
*CE 481 Advanced Applications of Library Microcomputers

INFORMATION SCIENCE

CE 509 Cost Benefit Analysis for Librarians
CE 511 Corporate Library Excellence
CE 522 Establishing the Library/Information Center as a Profit Organization
CE 523 Space Planning/Evaluation for Libraries and Business Information Centers

MIDDLE MANAGEMENT INSTITUTE PROGRAM

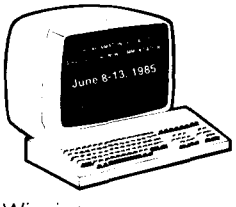
The Middle Management Institute Program was instituted in 1982 by the Special Libraries Association as special librarians and information specialists are increasingly moving into management slots, often without the benefit of formal management training. "Human Resources" is the title of the MMI program to be presented during the Winnipeg Conference. "Human Resources" assists participants in developing and refining interaction techniques utilized within an organization. Among the skills presented are: negotiation, interviewing, performance appraisal, conflict resolution, and time management. Classes for "Human Resources" will be held on Friday, June 7, 9:00 a.m.-4:00 p.m.; Saturday, June 8, 9:00 a.m.-4:00 p.m. and Sunday, June 9, 9:00 a.m.-12:00 p.m. The fee for each unit is $400 which includes course material, text and coffee breaks.

CAREER ADVISORY WORKSHOP

This workshop addresses areas of importance to all special librarians. Whether at the beginning stages of your career or at a mid-career point, this workshop is designed to help you succeed in today's job market. Topics to be discussed include effective resume preparation, interview techniques, and image preparation.

For information on any of the Professional Development Programs presented by Special Libraries Association, please contact Ellen Gerber (212/477-9250).

Winnipeg paddlewheel riverboat



Winnipeg

WINNIPEG—THE CITY

Winnipeg, referred to as the friendly city, is a city of variegated cultures, with people from many traditions, all well worth sharing. Winnipeg is a beautiful city, with an abundance of spacious green parks, many examples of both modern and historical architecture, and virtually unlimited recreational, cultural and business opportunities. The weather in June is a delight—ranging from a low of 52° to a high of 73°F.

An assortment of conference-wide field trips has been planned to acquaint you with many of the delightful aspects of this historic Canadian city. A listing of these field trip follows:

EVENING CRUISE, WINNIPEG

(Saturday, June 8, 6:00-10:00 p.m.)

Come aboard a paddlewheel riverboat for an enjoyable journey around Winnipeg. The Saturday evening cruise will combine city and country sightseeing to acquaint you with this lovely city while you are enjoying the river breezes. Live music will entertain you and a tasty buffet dinner will be served on board the riverboat. English doubledecker buses will transport you to and from the docking facilities. Come and relax for a while before the pace of "conference week" begins. Limited to 375 attendees.

RURAL MANITOBA EXCURSION

(Thursday, June 13, 9:00 a.m.-5:00 p.m.)

The first stop your bus will make on this full day will find you at the Royal Canadian Mint, the most modern in North America. After a guided tour of the facility you will continue on to the Steinbach Mennonite Museum, home of one of Canada's few wind-powered grist mills. The museum portrays the early life of the Mennonite community in Manitoba and Western canada. A luncheon, featuring typical Mennonite food, will be served in the museum. The final stop of your tour will bring you to the St. Boniface area of Winnipeg, the location of a large French speaking community. Time will be allowed for you to savor the different flavor of this area before touring the St. Boniface Basilica, the oldest cathedral in Western Canada.

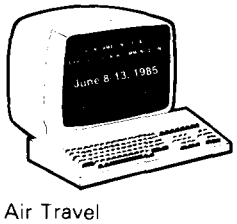
ASSINIBOINE PARK AND OSBORNE VILLAGE

(Thursday, June 13, 9:30 a.m.-1:30 p.m.)

A pleasant bus ride will bring you to Assiniboine Park, 360 acres of greenery on the outskirts of Winnipeg. There you will be on your own to tour the beautiful English Gardens and Conservatory as well as the zoo—one of the largest in North America. On the way back to the Convention Centre, the bus will stop at Osborne Village, a local shopping centre. You will be able to spend an hour shopping in Winnipeg's most unusual boutiques and specialty shops for that perfect souvenir to bring back home. In addition, division-planned field trips are scheduled to go to a variety of places, including:

- Symington Railroad Yards
- Oak Hammock Marsh
- Dalnavert
- University of Manitoba
- Whiteshell Nuclear Research Establishment
- Industrial Technology Centre

If you have any free time during Conference week and wish to tour Winnipeg on your own, a pamphlet containing a walking tour of downtown Winnipeg will be available in the registration area. Full details on any of the above can be found in the *Preliminary Conference Program.*



Air Travel

HOW TO TRAVEL TO WINNIPEG

Karson Travel has been appointed travel coordinator for the SPECIAL LIBRARIES ASSOCIATION/CASLIS 76th ANNUAL CONFERENCE to be held in Winnipeg, Canada from June 8–13, 1985. They have made special arrangements to offer discounted airfares on AIR CANADA for our attendees and exhibitors. Additionally, they have reserved large allotments of seats from many Northeast, Midwest and Western states. The airlines providing service from these areas are AIR CANADA & NORTHWEST AIRLINES.

For delegates travelling roundtrip on Air Canada flights from their home city to Winnipeg during the dates of June 5–8, 1985 with a return date of no later than 15 days after departure, SAVE 25% off the roundtrip day coach airfare. If you are attending the Canadian Libraries Association meeting, the Air Canada discount will include travel to Calgary. Some restrictions may apply.

Although Air Canada and Northwest Airlines are the major participating carriers, Karson Travel's computerized reservations system can arrange air transportation to the Special Libraries Association 76th Annual Conference from any city on all airlines at the lowest applicable airfare.

SPECIAL 76TH ANNUAL CONFERENCE AIRFARES are available through Karson Travel. Ask for the special fare from your home city! Just call either of the Karson Travel reservation numbers between 9:00 AM–5:00 PM, Monday through Friday.

NATIONWIDE (US except NY)	800 645-2182
NEW YORK	516 764-5300

In Canada, please call Air Canada directly at 800-361-7585.

CONTRIBUTED PAPERS

Contributed Papers Sessions will be held on Monday, Tuesday, and Wednesday afternoons during the 1985 Conference. Knowledgeable speakers, addressing subjects relating to their own area of expertise, will provide the attendees with the most up-to-date information available in the information field.

Monday's sessions is titled "Software: Uses and Applications" and the titles and authors of the papers to be presented are as follows:

- "Aerospace Information: Old Sources, New Technology"
  Scott and Martha Brackett, Lear Siegler, Inc.
- "Packaging and Transmitting Search Output"
  Judy A. Hedden, Predicasts, Inc.
- "Development of Library Request Forms Online to Service Needs of Peripheral Locations"
  Kurt O. Baumgartner, International Minerals and Chemical Corp.
- "The Role of the Librarian in the Implementation of an Automated Information System"

Nancy E. Wikholm, United Technologies Library System.

- "Library Automation and the Information Specialist"
  Susan Crawford, Washington University.

"Marketing: A Bridge to Cross" is the title of Tuesday's session. The topics to be covered and the authors of the papers are:

- "Are We Building the Bridge? Adoption and Use of Marketing Methodology by the Information Specialist"
  Steven L. Sowell, Indiana University.
- "Human Aspects of High Tech in Special Libraries"
  Julie Bichteler, University of Texas at Austin.
- "The Librarian as Group Facilitator in an Organizational Setting"
  Sara Galligan, Minnesota Dept. of Transportation.
- "Marketing Measures for Information Services"
  Robert V. Williams and Martha Jane K. Zachert, University of South Carolina.
- "Information Specialist as Simultaneous Translator"
  Jo Allen Bradham, Hayes Microcomputer.

On Wednesday afternoon, the final Contributed Papers Session, "Creativity and the Information Specialist," will take place. The papers to be presented and their authors are:

- "The Information Scientist as a Database Manager in a Corporate Environment"
  Janet L. Chapman, Exxon Corporation.
- "Integrated Access to Resources"
  Bonnie Hohhof, Motorola Inc.
- "Training New Physicians for Online Database Retrieval: An End-User Education Experience"
  Judith F. Bendersky, Peat Marwick Mitchell.
- "Teaching Management Strategies for Personal Files"
  Camille Wanat, Univerity of California-Berkeley.
- "Librarian-Researcher Cooperation with a Liaison Program"
  Allen E. Ekkebus, Oak Ridge National Laboratory.
- "Organizing the Library for Effective Service: the Role of the Liaison Librarian"
  Betty J. Fisher and David E. Shumaker, Mitre Corporation.
- "Making High Technology Appropriate: How to Interface with a Developing Clientele"
  Donna Schenck-Hamlin, Post Harvest Documentation Service—Food and Feed Grain Institute, and Paulette Foss George, Post Harvest Institute for Perishables.

MANAGEMENT CINEMA

The Management Cinema will feature a variety of films of interest to the special librarian. Budgeting, human relations, supervisory techniques and communication skills are among the topics which will be presented in an entertaining format. Be sure to check the Final Conference Program for titles, descriptions and scheduling.

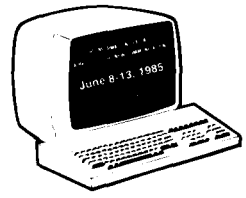
POSTER SESSION

A new feature planned for the Winnipeg Conference will be the Poster Session to be held on Tuesday, June 11, 3:00-5:00 p.m. Six authors will be available to discuss the subject of their poster papers with all interested participants. The authors and their poster papers are as follows:

- "Roles of the Information Specialist in a Special Library"
  Edna W. Paulson, National Research Council.
- "Have Computer, will Travel: The Impact of Portable Computers on the Information Specialist"
  Phoebe F. Phillips, Ohio State University.
- "International Biographical Information"
  Priscilla N. Ratliff and Kay A. Landis, Ashland Chemical Company.
- "DAVEX-DOF: an Automated and Adaptive Serials Information Communication System"
  Gary Wolfe, Serials Management Systems Canada, and Trent Reid, Canada Department of Finance/Treasury Board.

SLA FUNDRAISING EVENT

On Sunday night, June 10, 1985, the annual SLA Fundraising Event will take place. Your evening of entertainment will begin with a full-course dinner after which you can relax and enjoy the performances of some of Manitoba's finest musicians, singers and dancers. This variety show, featuring ethnic and cultural artists, has been produced especially for this Special Libraries Association fundraising event. Scheduled to appear are an orchestra, a swinging piper, a pas de deux, Ukranian dancers, a baritone duet, French dancers, a major singing group, and championship fiddlers. The entertainment portion of this event has been sponsored in part by Information Handling Services. Since $4 of the ticket price will be donated to the SLA Building Fund, your attendance at this event will accomplish two things—an enjoyable evening for you and a donation to worthwhile cause. (It may be necessary to make substitutions for some of the entertainers due to unforeseen circumstances).



REGISTRATION

Registration will take place in the Winnipeg Convention Centre. Advance registration for the SLA/CASLIS Conference is strongly encouraged to avoid long, time-consuming lines and to save you money. Be sure to send your housing form to the Winnipeg Housing Bureau as quickly as possile as room space is limited. Please note that all advance registration payments must be in US dollars only. However, *during* the Winnipeg Conference both Canadian and US dollars will be accepted for payment at the then-prevailing exchange rate.

If you wish to receive a copy of the *Preliminary Conference Program* or if you have any questions regarding information contained in this article, please contact the Manager, Conference and Exhibits, Special Libraries Association, 235 Park Avenue South, New York, NY 10003 (212/477-9250).

LESS ACCESS TO LESS INFORMATION BY AND ABOUT THE U.S. GOVERNMENT

A 1981-84 Chronology: April 1981—December 1984

What was first seen as an emerging trend in April 1981 when the American Library Association Washington Office first started this chronology of items which came to our attention, has by December 1984 become a continuing pattern of the federal government to restrict government publications and information dissemination activities. A policy has emerged which is less than sympathetic to the principles of freedom of access to information as librarians advocate them. A combination of specific policy decisions, the current Administration's interpretations and implementation of the 1980 Paperwork Reduction Act (PL 96-511), implementation of the Grace Commission recommendations and agency budget cuts significantly limit access to public documents and statistics.

The accelerating tendency of federal agencies to use computer and telecommunications technologies for data collection, storage, retrieval and dissemination has major implications for public access. To identify a few: contractual arrangements with commercial firms to disseminate information collected at taxpayer expense, increased user charges for government information, the trend toward having increasing amounts of government information available in electronic format only and eliminating the printed version. While automation clearly offers promises of savings, will public access to government information be further restricted for people who cannot afford computers or cannot pay for computer time?

ALA reaffirmed its long standing conviction that open government is vital to a democracy in a resolution passed by Council in January 1984 which stated that "there should be equal and ready access to data collected, compiled, produced, and published in any format by the government of the United States." In his inaugural speech, ALA President E.J. Josey asserted: "Again, nobody would deny the utility of many of these services provided by the private sector, but are not available to all of the American people; their purpose is to yield a profit, and they are designed only for those who can pay for them. Nor do they have any obligation to provide access to all or any information; only that information which the suppliers deem profitable or potentially so. Only the preservation of *public* services, publicly supported, can assure that each individual has equal and ready access to information, . . ."

With access to information a major ALA priority, members should be concerned about the following series of actions which create a climate in which government information activities are suspect. The April 1981 through June 1984 items are a compilation of four previous chronologies prepared on the same topic; the July to December 1984 items are an update.

April 1981 — President Reagan imposed a moratorium on the production and procurement of new audiovisual aids and government publications using the rationale that the federal government is spending too much money on public relations, publicity, and advertising. "Much of this waste consists of unnecessary and expensive films, magazines, and pamphlets." (*Weekly Compilation of Presidential Documents,* April 27, 1981)

April 1981 — The Office of Management and Budget (OMB) issued Bulletin No. 81-16 which provided procedures and guidelines for the moratorium. All agencies were required to review and reduce planned or proposed publications and to develop a management control plan to curtail future spending on periodicals, pamphlets and audiovisual materials.

June 1981 — OMB issued a model control plan to assist agencies in developing new or improved control systems to carry out the policies and guidelines in Bulletin No. 81-16, "Elimination of Wasteful Spending on Government Periodicals, Pamphlets, and Audiovisual Products."

June 1981 — OMB Bulletin 81-21 required each federal agency to submit its plan for reviewing its information activities by September 1, 1981. The objective was to establish a process ". . . which forces agencies to focus on and allows us (OMB) to influence decisions on how they process, maintain, and disseminate information." Bulletin No. 81-21 also required the designation of the single official in each federal agency in the executive branch who will be responsible for information resources management as required by the Paperwork Reduction Act of 1980.

September 1981 — David Stockman, Director of OMB, issued Memorandum 81-14, requiring heads of executive departments and agencies to pay special attention to the major information centers operated or sponsored by their agency. Among the types of information centers to be evaluated are clearinghouses, information analysis centers and resource centers. Evaluation criteria included these questions: Could the private sector provide the same or similar information services? Is the information service provided on a full-cost recovery basis?

October 1981 — OMB Bulletin 81-16, Supplement No. 1, required agency review of all existing periodicals and recurring pamphlets to reevaluate their necessity and cost-effectiveness using OMB-approved control systems. Agencies must submit a new request for all series to be continued after January 15, 1982.

October 1981 — Public Printer Danford Sawyer, Jr. proposed to close all Government Printing Office bookstores outside of Washington, D.C. plus a few Washington locations. Approximately 24 of the 27 GPO bookstores would be closed, because, it is claimed, they compete with the private sector and are losing money. (Letter to Sen. Mathias, Chairman of the Joint Committee on Printing, Oct. 9, 1981)

October 1981 — The Justice Department submitted to Congress the Administration's proposal to severely limit the applicability of the Freedom of Information Act. (*Washington Post,* November 28, 1981)

November 1981 — According to the *Washington Post* (November 9, 1981) over 900 government publications have been or will be eliminated and the government claims that millions of dollars will be saved as a result.

November 1981 — The *Washington Post* (November 20, 1981) also reported that the Commerce Department was considering replacing the National Technical Information Service with contracts to private firms. NTIS indexes and distributes at cost thousands of federally funded technical reports and research studies.

November 1981 — One example of a discontinued publication is the Securities and Exchange Commission *News Digest,* hardly an ephemeral public relations piece. The SEC will continue to print it for internal use, but will no longer offer subscriptions or make it available for depository library distribution. Instead, a private firm will public it at a 50 percent increase in price (from $100 to $150 per year). (Security and Exchange Commission *News Digest,* November 10, 1981)

December 1981 — Citing budget cuts, the National Archives discontinued the interlibrary loan of microfilm publications from the Fort Worth Federal Archives and Records Center. About 400,000 reels of census, diplomatic, pension and other records used heavily by genealogists were lent to libraries annually. (Letter sent from the National Archives to "All Librarians," November 30, 1981) [Note: In July 1983, NARS began a rental program for census microfilm through a contractor.]

January 1982 — The free Government Printing Office pamphlet *Selected U.S. Government Publications* used for years to alert readers to new general interest and consumer oriented government documents will no longer be mailed to the public because GPO says it is too expensive to mail out every month. GPO suggests that readers subscribe to the comprehensive bibliography the *Monthly Catalog of U.S. Government Publications* which costs $90 a year. (*Washington Post,* January 22)

February 1982 — The President's FY 1983 budget requested zero funding for the Library Services and Construction Act: Titles II A, B and C of the Higher Education Act which provide funds for college library resources, research and training programs and research libraries; and the National Commission on Libraries and Information Science. Less money was proposed for the state block grant which contains funding for school library resources and for the U.S. Postal Service subsidy which supports the fourth class library rate and other nonprofit mailing rates. (Office of Management and Budget, *Budget of the U.S. Government FY 1983*)

March 1982 — A 300 percent increase in the cost of an annual subscription to the *Federal Register*—from $75 to $300—went into effect. (February

25 *Federal Register,* p. 8151). In 1981, the price of a year's subscription to the *Congressional Record* increased from $75 to $208. Sen. Charles Mathias (R-MD) stated that circulation of the *CR* declined almost 20 percent in the last three years as the price increased (*New York Times,* June 2)

March 1982 — Many publications formerly distributed free are now available only for a fee and government agencies are urged by OMB to start charging prices high enough to recover their costs. For example, because of budget cuts, Agriculture Departments Economic Research Service will stop free distribution of its publications and make these reports available only on a paid subscription basis. The alternative was to curtail basic research activities. (March 29 *FR,* p. 13178)

March 1982 — A reference collection standby, the *Dictionary of Occupational Titles,* is threatened because 87 of the 97 jobs remaining in the Labor Department's occupational analysis division are being eliminated. (*Washington Post,* March 2)

April 1982 — The President signed Executive Order 12356, National Security Information, which substantially increases the amount of information that can be classified. (April 6, *FR,* pp. 14873-14884). Critics see the Executive Order as a reversal of a 30-year government policy of automatic declassification of government documents. Although the National Archives still has the authority to review classified documents, budget cuts are likely to limit the ability of Archives to carry out this function effectively. (*Chronicle of Higher Education,* April 14)

May 1982 — The Administration supports Senate amendments to the Freedom of Information Act to restrict the type and amount of government material available to the public. (*Washington Post,* May 4).

May 1982 — The government's two biggest collectors of statistics, the Census Bureau and the Bureau of Labor Statistics, have cut programs because of budget reductions. The Census Bureau has dropped numerous studies and the Bureau of Labor Statistics has asked Congress for an emergency $5.6 million appropriation "to maintain the accuracy" of such key economic indicators as the Consumer Price Index. According to a May 4 *Washington Post* article, "Many of the programs being trimmed helped the government monitor how its programs were being used. Others helped policy makers predict economic trends." The article also quoted a business leader testifying at a congressional subcommittee hearing in March: "A million dollars saved today through short-sighted reductions in the budgets for statistical programs could lead to erroneous decisions that would cost the private and public sectors billions of dollars over the long run."

May 1982 — The Office of Management and Budget has agreed to make available a complete list of discontinued government publications as a way ". . . to assure an orderly and equitable transfer of discon-

tinued government publications to the private sector." The list, which should be available in mid-July, can be obtained from OMB's Bill McQuaid (202/395-5193). (Association of American Publishers *Capital Letter,* May)

May 1982 — In April, the General Services Administration closed the Washington, D.C. Federal Information Center, leaving the 40 information centers in other parts of the country still operating. However, citing budget cuts, walk-in services have now been eliminated, leaving only the telephone numbers and people to answer them. A saving of $260,000 of the centers' $4 million annual budget is anticipated. (*Washington Post,* May 25)

May 1982 — The *New York Times* (May 10) reported that GPO destroyed $11 million worth of government publications that were not selling more than 50 copies a year or earning more than $1,000 in sales a year. The millions of documents were sold as wastepaper for $760,000. Although a few copies of most titles have been kept in stock, generally people looking for one of the destroyed publications will be told to find it in one of the depository libraries.

June 1982 — In keeping with its policy to refuse to offer for public sale anything that won't yield $1,000 a year in sales, GPO has selected only 25 of the 69 publications which the National Bureau of Standards wanted to offer for public sale. As a result, the rejected publications are available to the public only through the National Technical Information Service whose prices for NBS publications are generally two to three times higher than GPO's for the same document. (Memo from NBS official, June 14)

June 1982 — Continued cutbacks on free publications result in the Health and Human Services Department no longer distributing copies of *Infant Care* without charge as it has for 58 years. (*New York Times,* June 2)

June 1982 — The Office of Management and Budget permited federal agencies to begin putting out new publications and films, but OMB will keep a close eye on costs and top agency officials will monitor content. According to a preliminary count, the Administration has eliminated about 2,000 of the 13,000 to 15,000 publications distributed before the President's April 1981 moratorium on government books, periodicals and audiovisuals. (*Washington Post,* June 11)

September 1982 — In response to a September 8 *Federal Register* (pp. 39515-39530) notice by the Office of Management and Budget (OMB) regarding proposed regulations for the information collection provisions of the Paperwork Reduction Act of 1980, Washington Office Director Eileen Cooke sent OMB the resolution on federal government statistical activities passed by Council at the 1982 annual conference. Her letter sent with the resolution expressed ALA's concern with the assumption throughout the proposed regulations that federal government data collection is a burden on the public,

with little recognition given to the benefits to the public which are derived from accurate, nonbiased and timely statistics. She stressed that the Association would like to see more safeguards for public access in the regulations.

October 1982 — On October 6, 1982, OMB released a list of more than 2,000 government publications—one out of every six—targeted for termination or consolidation into other publications. This initiative, together with 4,500 other cost reductions proposed for an additional 2,300 publications, is expected to produce cost savings "of more than one-third of all federal publications." According to OMB 82-25, "Reform '88: Elimination, Consolidation and Cost Reduction of Government Publications," sixteen percent of all government publications will be discontinued. This amounts to 70 million copies, 1/12 of the 850 million copies printed, and is part of ". . . the Reagan Administration's continuing drive to eliminate costly, redundant and superfluous publications . . ." Each federal agency will be reviewing its publications for increased user fees. Similar savings are expected during 1983 to 1985.

January 1983 — OMB published the draft of the revision of its Circular A-76 "Performance of Commercial Activities" in the January 12 *Federal Register,* pp. 1376-1379. Library services and facility operation and cataloging were listed as examples of commercial activities. The supplement to the circular sets forth procedures for determining whether commercial activities should be operated under contract with private sources or in-house using government facilities and personnel. (ALA's Federal Librarians Round Table recommended many changes in the draft circular to OMB.)

January 1983 — OMB proposed amendments to its Circular A-122, "Cost Principles for Nonprofit Organizations," in the January 24 *Federal Register,* pp. 3348-3351. The proposal ". . . would have had the apparent effect of severely restricting or inhibiting an organization from engaging in protected first amendment rights with its own private assets as a condition for receiving the benefits of any federal contract or grant, unless the organization could duplicate all its facilities, equipment and personnel." ("Legal Analysis of OMB Circular A-122: Lobbying by Non-Profit Grantees of the Federal Government," Congressional Research Service, Library of Congress, December 15, 1983, p. CRS-2). The proposal was withdrawn in March after substantial congressional and public criticism. (*Chronicle of Higher Education,* March 9, 1983)

February 1983 — In a February 18 speech to the Conservative Political Action Conference, President Reagan cited ". . . reducing publication of more than 70 million copies of wasteful or unnecessary government publications" as one of the ways that his Administration is attempting to make government more efficient. (*Weekly Compilation of Presidential Documents,* February 23, 1983, p. 260)

March 1983 — Stating that additional safeguards are needed to protect classified information, the President issued a directive on safeguarding na-

tional security information on March 11. The directive mandates greater use of polygraph examinations in investigations of leaks of classified information and requires all individuals with access to certain types of classified information to sign a lifelong prepublication review agreement to submit for governmental review all writings and proposed speeches which touch upon intelligence matters. As directed by ALA Council in a resolution passed at the 1983 Annual Conference, ALA Executive Director Robert Wedgeworth wrote to the President and requested that *The Presidential Directive on Safeguarding National Security Information* be rescinded. In December, Congress added an amendment to the Department of State Authorizations (PL 98-164) prohibiting implementation of the directive until April 15, 1984.

April 1983 — The Department of Energy proposed regulations in the April 1 *Federal Register,* pp. 13988-13993, to "... describe those types of Unclassified Controlled Nuclear Information (UCNI) to be protected, establish minimum protection standards, set forth the conditions under which access to UCNI would be granted, and establish procedures for the imposition of penalties for violation of those regulations." Although libraries were not mentioned in the proposal, the scope of the documentation and information potentially covered raised concern about access to information on nuclear research in libraries which are depositories of Department of Energy nuclear materials.

August 1983 — At a public hearing at the Department of Energy on August 16, Sandra Peterson, chair of the Government Documents Round Table, testifying on behalf of ALA, concluded that the proposed DOE regulations issued in April about Unclassified Controlled Nuclear Information should be withdrawn and reevaluated. At the hearing, a DOE official recognized the concerns of academic and research institutions about the effect of the proposed rule on their libraries. Two possible solutions were suggested: 1) expressly exempt from the rule nongovernmental libraries whether operated by government contractor or not; and 2) limit the responsibility of nongovernment libraries to the protection of documents or materials specifically identified by title, if possible, to the library by DOE in writing. In an October letter to DOE on behalf of ALA, Peterson rejected both approaches as impossible and impractical. DOE plans to issue a revised proposal in January 1984 in the *Federal Register* for an additional public comment period.

August 1983 — OMB issued the revision of its Circular A-76 (see January) in the August 16 *Federal Register,* pp. 37110-37116. The impact of this circular extends to all libraries which depend on or have a service relationship with federal libraries. A contract for total library operations of the Department of Energy library was awarded to a private sector firm in August, for the Department of Housing and Urban Development in September.

September 1983 — In the September 12 *Federal Register,* pp. 40964-40965, OMB solicited public comment on the development of a policy circular on

federal information management as part of its responsibility to implement the Paperwork Reduction Act of 1980 (PL 96-511). The only underlying principle mentioned by OMB was that ". . . information is not a free good but a resource of substantial economic value. . . ." The ALA response stressed that "To participate fully in a democratic society, citizens must be informed and aware, regardless of their individual ability to pay for information." Indications are that OMB will try to establish user fees in order to recover the government's full costs of creating as well as providing information, and will try to define what constitutes unfair competition with the private sector as it relates to information issues and library operations. OMB plans to issue a proposed circular for public comment in the *Federal Register* in February 1984.

October 1983 — In contrast to other policies which restrict public access to government information, the U.S. Government Printing Office launched a national campaign to increase public awareness and use of federal depository libraries. The campaign uses public service announcements with the theme "Contact your local library" on television, radio and in print to guide the audience to all libraries, the 1,375 depositories and other non-depositories.

November 1983 — OMB issued a watered down version of its January revisions to Circular A-122: "Cost Principles for Nonprofit Organizations; Lobbying and Related Activities" in the November 3 *Federal Register,* pp. 50860-50874. In a December 19 letter, ALA urged OMB to clarify ambiguous language in the proposal and reaffirmed the Association's commitment to the principle that open government is vital to a democracy. OMB has extended their previous mid-December comment deadline to January 18, 1984. ALA chapters and state library associations may want to further analyze the OMB proposal to see if it would affect their organization's lobbying and related activities.

November 1983 — The House passed HR 2718, Paperwork Reduction Act Amendments of 1983. The bill establishes new goals for further reduction of the burden imposed by federal paperwork requirements. Federal collection of information would be reduced by 10 percent by October 1, 1984, and by an additional 5 percent by October 1, 1985. The House bill would explicitly prohibit use of funds for functions or activities not specifically authorized or required by the Paperwork Reduction Act. (November 7 *Congressional Record,* pp. H9271-9273)

December 1983 — In a December 12 letter to Rep. Augustus F. Hawkins (D-CA), Chair of the Joint Committee on Printing, OMB Director David Stockman, protested the stipulation in the proposed JCP *Government Printing, Binding and Distribution Regulations* that the Government Printing Office would be responsible for the distribution of all government publications. In her letter commenting on the proposed regulations, ALA Washington Office Director Eileen D. Cooke commended the JCP for its development of regulations

which provide for technological changes and for increased support for the depository library program. Cooke said: "The expanded definition of printing is extremely important for the continued effective operation of the depository library program. An increasing number of government agencies are creating information which is only available for distribution in an electronic format. In order for libraries, specifically depository libraries, to be able to provide information in this format to the general public, it must become a part of the depository library program." The proposed JCP regulations were printed in the November 11 *Congressional Record,* pp. H9709-9713.

December 1983 — On December 28, 1983, the United States Government gave the required one-year notice of its intention to withdraw from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) effective January 1, 1985. (Press release #98-158, "House Hearings on U.S. Participation in UNESCO," Committee on Science and Technology, U.S. House of Representatives, March 8, 1984)

NOTE: ALA Council passed a resolution in January 1984 on continued U.S. membership in UNESCO. Thomas Galvin, Chair of ALA's International Relations Committee, testified in Congress on March 15, 1984 and urged the U.S. to stay in UNESCO and continue to allow U.S. scientists "full, prompt, and ready access to . . . research results of their counterparts . . . throughout the world."

January 1984 — The *Second Annual Report on Eliminations, Consolidations, and Cost Reductions of Government Publications* reports the elimination of 3,287 publications and the proposed consolidation of another 561. The total of eliminations and consolidations equals 3,848 publications or one-fourth of the total inventory. These publications account for over 150 million copies, or 15 percent of all copies printed. In addition, federal agencies proposed 5,020 cost-reduction actions on 3,070 other publications including reducing the volume, frequency of issue, use of color, and other printing and distribution cost reductions. Meanwhile, the Office of Management and Budget is revising OMB Circular A-3, the permanent procedure for the government-wide review of publications. When the circular is revised, OMB plans to establish new publication elimination and cost reduction goals for the remaining 9,000 publications in the government inventory of 15,900 publications. (Office of Management and Budget, *Second Annual Report on Eliminations, Consolidations, and Cost Reductions of Government Publications,* released on January 6, 1984.)

January 1984 — A photograph in the *Washington Post* showed Presidential counselor Edwin Meese III and OMB Deputy Director Joseph Wright surrounded by trash bags stuffed with government documents at a White House briefing. The accompanying story said:

> Since President Reagan took office three years ago, the administration has eliminated one of every four government

publications then printed. Most of them were distributed free to the public by the Agriculture and Defense departments.

Meese ridiculed the publications, calling a pamphlet entitled "How to Control Bedbugs," for example, a real "bestseller." But the doomed publications included several offering advice about serious subjects, such as solar energy, radioactive fallout, income taxes and drug abuse. Meese said those publications are being eliminated because the information is available elsewhere. Eliminating the publications will save $85 million annually. . . . (Pete Earley, "U.S. Tightens Tourniquet on Flow of Paper," *Washington Post,* January 7, 1984, p. A5)

February 1984 — For the third year in a row the Administration proposed elimination of library grant programs. Education Department justification for the zeroes indicated no new rationale, but once again noted "the program's past success at establishing the highest practical levels of access across the country to library services . . . and at developing models of interlibrary cooperative arrangements to stimulate further expansion of the concept." In addition, "any further need for training of professional librarians can be met through State and local efforts as well as student aid programs." In the past years, Congress has continued to fund library grant programs, in some cases, at the highest-ever levels. (Department of Education, *The Fiscal Year 1985 Budget,* released February 1, 1984)

February 1984 — The Administration's FY 1985 budget request for the Consumer Information Center is $349,000, a million dollars less than the FY 1984 appropriation. The budget proposes that one-half of CIC's staff be redirected from traditional consumer information activities to undertake new marketing programs financed from increased user fees and other charges. The CIC's function is to promote greater public awareness of existing federal publications through distribution of the quarterly "Consumer Information Catalog" and various media programs.

In May, when the House Appropriations Committee recommended $1,149,000 in new budget authority for the CIC in FY 1985, it expressed concern that the recent user charge increase has substantially reduced consumer demand for publications, with the result that lower volume has raised unit distribution costs. Therefore, the committee directed that the charge to consumers not be raised above its current level of $1 and that the CIC charge other federal agencies only the actual cost of distributing publications. (H. Rept. 98-803 on the Department of Housing and Urban Development-Independent Agencies Appropriation Bill, 1985; May 23, 1984, p. 34)

February 1984 — The Administration requested for FY 1985 only $452 million of the $801 million needed to keep nonprofit and other subsidized postal rates at current levels. Under the President's proposal, a 2-lb. book package mailed at the fourth-class library rate would

increase from the current 47¢ to 66¢, a 40 percent increase. However, the House Treasury-Postal Service-General Government Appropriations Subcommittee, chaired by Rep. Edward Roybal (D-CA), recommended $801 million, the full amount needed. The full House Appropriations Committee approved that recommendation June 7 in HR 5798; the Senate subcommittee has not yet acted. (House Treasury, Postal Service and General Government Appropriations Bill, 1985 (H. Rept. 98-830))

February 1984 Following the Administration's request for substantial revisions to the Freedom of Information Act, the Senate passed S. 774 amending the FOIA. The bill would provide increased confidentiality for certain law enforcement, private business, and sensitive personal records. It promotes uniform fee schedules among agencies which could recover reasonable processing costs in addition to the current search and copying costs, and could keep half the fees to offset costs. The public interest fee waiver would be clarified. Many of the substantive and procedural changes proposed by the Senate to the FOIA are controversial. Rep. Glenn English (D-OK), Chair of the House Government Operations Subcommittee on Government Information, Justice, and Agriculture, has indicated that the Subcommittee "must proceed very carefully and thoughtfully in considering amendments." (February 27 *Congressional Record,* pp. S1794-1822, and "Statement of Rep. Glenn English on the Passage by the Senate of Freedom of Information Act Amendments," News Release from the House Committee on Government Operations, February 28, 1984)

February 1984 The Department of Agriculture announced that it will issue a Request for Proposal (RFP 84-00-R-6) on March 15, seeking contractors to provide a computer-based system to support electronic dissemination of "perishable" data developed by USDA agencies. (February 28, 1984, *Commerce Business Daily*). Examples of the type of data to be disseminated in the system include: *Market News Reports* from Agricultural Marketing Service, *Outlook* and *Situation Reports* from Economic Research Service, *Weekly Export Sales Reports* from Foreign Agricultural Service, USDA press releases and crop production reports from Statistical Reporting Services. Users will pay for the direct cost of accessing the data from the computer-based system. However, USDA does not plan to exert control over the fees which contractors or subcontractors will charge the public to access the on-line data. The Office of Management and Budget considers this RFP a prototype for the federal government's distribution of electronic data.

The Patent and Trademark Office has signed agreements with private companies for the automation of agency records at no cost to the government. One aspect of these agreements requires the agency to deny Freedom of Information Act requests for the records in automated form. In a statement in the March 14 *Congressional Record* (pp. H1614-1615), Rep. Glenn English (D-OK) asked: Is the agency obtaining services at the price of limiting public access to some of its records? The Securities and Exchange Commission has issued a request for proposals for a pilot test of an

electronic filing, processing, and dissemination system. The Federal Maritime Commission is also considering an electronic filing, storage, and retrieval system for tariffs.

March 1984 — On March 15, Sen. John Danforth (R-MO) introduced S. 2433, the Senate version of the Paperwork Reduction Act Amendments of 1984. The Senate bill would require reducing the paperwork burden by 5 percent in each of the next five fiscal years, beginning in FY 1984. (March 15 *Congressional Record,* pp. S2789-2793)

April 1984 — OMB published the third and final version of its controversial "Lobbying" revision of Circular A-122, "Cost Principles for Nonprofit Organizations" in the April 27 *Federal Register,* pp. 18260-77. The revision which is scheduled to go into effect on May 29, 1984, makes unallowable the use of federal funds for the costs associated with most kinds of lobbying and political activities, but does not restrict lobbying or political activities paid for with non-federal funds. The new version is still drawing fire from some groups and from Members of Congress who contend that the bookkeeping requirement would require contractors and grantees to tell the government how much they spend on lobbying and identify those costs separately from other expenses. (*Washington Post,* April 30, 1984)

April 1984 — The Justice Department concluded in an April 11, 1984 memorandum for the Counsel to the Director of the Office of Management and Budget that the proposed regulations published by the Joint Committee on Printing in November 1983 ". . . are statutorily unsupported and constitutionally impermissible." (Memorandum for Michael J. Horowitz, Counsel to the Director, Office of Management and Budget. Re: Constitutionality of Proposed Regulations of Joint Committee on Printing under *Buckley* v. *Valeo* and *INS* v. *Chadha,* April 11, 1984)

May 1984 — When the National Farmers Union recently asked for a listing of payment-in-kind (PIK) participants and amounts of the PIK commodities they received, the U.S. Department of Agriculture responded that a printout would cost $2,284.87, with half of the money required up front. (*Washington Post,* May 25, 1984, p. A21)

June 1984 — Thousands of government employees are currently being required to sign prepublication censorship agreements and to submit to lie detector examinations despite President Reagan's suspension of these controversial programs proposed in his March 1983 National Security Decision Directive 84. According to a General Accounting Office report (GAO/NSIAD-84-134) released on June 11, 1984, every employee with access to sensitive compartmented information (SCI) is being required to sign a lifelong prepublication censorship agreement, Form 4193. In March 1984, the President had promised Congress he would suspend the censorship and polygraph provisions of his directive for the duration of this session of Congress. The President's censorship contract and Form 4193 are virtually identical. Since the issuance of Form 4193 in 1981, approximately 156,000 military and civilian employees have

been required to sign such agreements at the Department of Defense alone. The GAO reports that employees in 22 other federal agencies have also signed these agreements. (U.S. House of Representatives, news release, "GAO Update on Administration Lie Detector/Censorship Status Reveals Reagan Promise of Suspension Has Little Effect: Brooks Calls for End to Programs, Prohibition by Law," released June 13, 1984)

July 1984

For the first time in 45 years, the *Federal Statistical Directory* has been published by a private publisher—at nearly three times the price. Previously, the directory was created by the Commerce Department's Office of Federal Statistical Policy and Standards and sold through the Government Printing Office. After the statistical office was transferred to the Office of Management and Budget, OMB killed the book as part of its drive to scrap unnecessary publications. When GPO sold the 1979 edition, the most recent available from the government, it charged $5. The private publisher has updated the 1979 version, added an index and appendix and set his price at $14.95. ("U.S. Statistics Go Up in Private Printing," *Washington Post,* July 24, 1984)

July 1984

Three years after the Reagan Administration began slashing the budgets of federal statistical agencies, the General Accounting Office has concluded that most major studies were not jeopardized, in part because the cuts generally have been restored by Congress. According to the report, "Status of the Statistical Community After Sustaining Budget Reductions" (GAO/IMTEC-84-17), the National Center for Education Statistics, similar to other statistical agencies, protected its core survey programs when budget cuts were required. The Center also considered whether programs were necessary because of congressional mandates or because of Departmental requirements. As a result of applying these two criteria, the Center made most of its reductions in the areas of technical assistance to states and library services. Program initiatives that were put on hold included obtaining data on international education and measuring adult functional literacy. (*Washington Post,* August 2, 1984)

August 1984

The Department of Energy published revised proposed regulations on identification and protection of unclassified controlled nuclear information (UCNI) in the August 3 *Federal Register,* pp. 31236-46. DOE said that the proposed regulations have been changed to clarify their intended scope, with several of the changes specifically directed at the concerns of librarians. "Other than the fact that certain documents that, in the past, would have been released to libraries no longer will be released in the future, these regulations have no direct impact on the operation of public or university libraries." The broad scope of DOE's April 1983 proposal raised concern about access to information on nuclear research in libraries which are depositories of DOE nuclear materials.

On September 13, Sandra Peterson, Documents Librarian at Yale University, testified for ALA at a DOE public hearing on

the proposed revision. While questioning the philosophy which allows an agency to restrict access to unclassified information, Peterson acknowledged DOE's congressional mandate to issue regulations under section 148 of the Atomic Energy Act, and commended DOE for responding to criticism and adopting a realistic approach.

August 1984

On August 8 the Joint Committee on Printing held an all-day informational session at which JCP staff answered questions on the revised draft of the "Government Printing, Binding, and Distribution Policies and Guidelines" published in the June 26 *Congressional Record* (pp. H7075-78). The original draft revision published in November 1983, intended to embrace new technologies and replace JCP micromanagement procedures with oversight and policy-making functions, generated hundreds of comments. ALA commented favorably on both drafts, particularly the provisions for technological change and support of the depository library program.

The JCP staff explained that the current JCP regulations were now being termed "policies and guidelines" in light of the Supreme Court's decision (*INS v. Chadha,* 102 S. Ct. 2764 (1983)) which held legislative vetoes unconstitutional unless passed by both Houses of Congress and signed by the President. The Justice Department has advised the Defense Department that it need not seek JCP approval as required under 44 *U.S.C.,* Section 501, before conducting printing activities outside the Government Printing Office. JCP staff director Tom Kleis said he would ask the Committee to hold hearings on Title 44 with an eye to revision, but felt the guidelines were needed as an interim step. JCP's interest as an oversight committee was in making sure that government information was available to the public at a fair price, and that copies were provided to depository libraries as required by law.

September 1984

The Postal Rate Commission recommended on September 7 postal rate increases of 10 percent for 1st class (a 22¢ stamp), 11 percent for 3rd class nonprofit, 8 percent for the 4th class special or book rate, and a whopping 21 percent average increase for the 4th class library rate. While in most cases the U.S. Postal Service had requested larger increases, the reverse is true for the library rate. USPS requested 12 percent; the Postal Rate Commission said 21 percent was necessary to cover recent increased transportation costs for the library rate.

The initial impact early in 1985 would be about a 15 percent increase in the library rate (from the current 47¢ for a 2-lb. package to 54¢), with the average 21 percent increase (67¢ for 2 lbs., up 42 percent over the current 47¢) over current rate at the end of the phased rate schedule for the library rate (in approximately 1986). The library rate is now in Step 14 of a 16-step phased rate schedule leading up to a rate which reflects the full attributable costs (but none of the institutional or overhead costs) of the library rate mail. (Note: At its December 12 meeting, the U.S. Postal

Service Board of Governors accepted the Postal Rate Commission's recommended rates. The new rates will take effect on February 17, 1985.) (U.S. Postal Service, *News,* General Release No. 47, December 12, 1984)

September 1984 In a September 4 letter to Donald Sowle, Administraor of OMB's Office of Federal Procurement Policy, 12 members of Congress stated that "While we believe that proper implementation of the A-76 Circular can help achieve more cost-effective performance of government activities, we oppose its application to library operations, which are inherently connected to the government's ability to make sound policy judgements." Signatories were Reps. William Ford (D-MI), Albosta (D-MI), Hawkins (D-CA), Simon (D-IL), Dymally (D-CA), Owens (D-NY), Barnes (D-MD), Schroeder (D-CO), Oakar (D-OH), Williams (D-MT), Brown (D-CA), and Walgren (D-PA).

September 1984 The National Aeronautics and Space Administration announced on September 18 that a New York firm would publish and distribute "NASA TechBriefs Journal," saving NASA $600,000 a year, enabling the publisher to make a profit selling ads, and perhaps making more free copies available to the public. But the chairman of the Congress' Joint Committee on Printing declared NASA's agreement illegal, a violation of Title 44. A NASA lawyer has issued an opinion that JCP's jurisdiction applies only to publications intended for a government audience, not to all publications containing government-gathered information. In response, a JCP attorney said: "Their interpretation . . . is totally specious. That would leave out the larger part of the universe of government publications." ("Print Deals Seen Making GPO a Paperless Tiger," *Washington Post,* October 2, 1984)

September 1984 The House Post Office and Civil Service Subcommittee on Human Resources, chaired by Rep. Don Albosta (D-MI), held oversight hearings September 20 and 25 on the implementation of OMB Circular A-76 and its effects on the federal workforce. OMB Circular A-76 sets forth executive branch policy on the performance of "commercial" activities by the federal government. At the September 25 hearing, Rep. Albosta questioned Office of Management and Budget Deputy Director Joseph R. Wright, Jr. about the appropriateness of contracting out federal libraries and said that OMB was "walking a thin line" in including the entirety of library operations in their emphasis on turning government activities over to the private sector. In his testimony, Wright listed 14 categories of activities for productivity improvement study which federal agencies will be asked to concentrate on in the near future. "Libraries" fall between "mail and file" and "laundry and dry cleaning."

Rep. Major Owens (D-NY) testified that libraries are one of the few professional functions on OMB's list and linked contracting out efforts to the Office of Personnel Management's efforts to reclassify and downgrade federal librarians. He thinks

that both these efforts have ominous implications for the future and for the age of information.

October 1984 — In the October 1 *Federal Register,* p. 38694, the Department of Commerce announced that it intends to conduct a cost comparison of its library and issue an invitation for bids under OMB Circular A-76.

October 1984 — Over the past two years, parents in a housing subdivision in Morrison, CO, have watched 12 neighborhood children die of cancer, heart disease or meningitis. Another five children are battling cancer now, residents say, and there are dozens of unexplained cases of heart, brain and lung disease. The neighborhood's 5,000 residents are blaming the problem on toxic wastes and demanding government help. The Environmental Protection Agency, after rebuffing the citizens for more than a year, recently undertook a series of surveys to search for toxic pollutants. However, EPA has warned that it may lack the funds to do much if it turns out that the health problems stem from toxic discharges in the neighborhood. A local activist recalls bitterly that EPA officials initially told residents that they knew of no sites in the area that could pose a hazard. With one call to the U.S. Geological Survey, the citizens secured a map showing that at least five uranium mines once operated in the immediate vicinity. "You just go to the library and look it up," the local activist is quoted as saying. ("12 Children Dead in 'Cancer Cluster' Community," *Washington Post,* October 4, 1984)

October 1984 — The Counterfeit Access Device and Computer Fraud and Abuse Act of 1984, now part of PL 98-473, was aimed at computer hackers but could have unintended dampening effects on the public's right to know. The legislation makes it a federal offense to knowingly use or disclose information in a government computer if the computer is accessed without authorization or if the scope of authorized access is exceeded. Sens. Mathias (R-MD) and Leahy (D-VT) pointed out that the focus of the new provision is on whether access is authorized, not on whether the use or disclosure of information is authorized. Thus even information whose release is mandated by Freedom of Information Act might not be able to be released if the authority of a particular government employee to obtain it from a computer file were in any doubt.

October 1984 — Federal agencies are publishing notices in the *Federal Register* announcing increased fees to the public for record retrieval including Freedom of Information Act requests. The increased fees implement existing policy to recover the direct costs of document search and duplication, but can be high when an individual requests information which must be retrieved by computer. For example, in the October 29 *Federal Register,* p. 43468, the U.S. Postal Service published standard charges for system utilization services which range from $189 to $1,827 per hour. Dedicated use of a 370/135 costs $15,704 per accounting period. Peripheral charges vary from

$.01 per frame for offline microfilm processing to $2,960 per accounting period for inspection service processing.

November 1984 The Office of Management and Budget issued Bulletin No. 84-17, Supplement No. 1, which provides the pro-rata reduction targets necessary for federal agencies to achieve the savings targets specified in the Deficit Reduction Act of 1984. Each of the executive agencies covered by the supplement has a pro-rata reduction target of 25.6 percent for publishing, printing, reproduction, and audiovisual activities. This percentage amounts to a $347 million cut in printing and publications in 1985. ("OMB Gets Serious on Spending Cuts," *Washington Post,* November 7, 1984, p. A13)

November 1984 The Defense Department issued one directive and prepared to issue a second that will restrict the release of unclassified and previously available information about weapons and other military systems. The new rules apply to technical information generated by the Defense Department, military contractors, research organizations, universities and anyone under contract to the Pentagon. Pentagon officials said that the directives are intended to reduce the flow of militarily useful technology to the Soviet Union. Critics said the directives are worded so broadly that they could also be used to restrict the flow of embarrassing information about weapons performance. DOD officials sought to assuage fears that the new directive would be used to cut off technical information to Congress or to hide mistakes by pointing to specific provisions forbidding such actions. (*Washington Post,* November 8, 1984; *New York Times,* November 5 and 8, 1984)

November 1984 The Chemical Information System (CIS), 20 chemical data bases with physical and regulatory data, which the Environmental Protection Agency (EPA) has operated since 1973, has been turned over to private contractors without providing any interim federal funding. Each of the two contractors who have taken over the data base has a different plan for the system's future. Users claim that this will "put the system in chaos." When there are two different data bases, users will be forced to subscribe to both to get what they could previously get from one—"twice the overhead and twice the work." Still another concern is that unprofitable but scientifically valuable components of the system are likely to be dropped. A proposal to move the system to the National Library of Medicine gained some Congressional support but was not considered before Congress adjourned. ("EPA Dumps Chemical Data System," *Science* (November 16, 1984))

December 1984 A 32-page report prepared by Harvard University asserts that federal agencies have greatly expanded their demands to see academic research before it is published. Officials on other campuses describe the report as the most comprehensive catalog yet published of restrictions on university research that the government funds, and that it marks the beginning of a concerted effort by research universities to roll back such restrictions in the Reagan

Administration's second term. ("Campuses Fear Federal Control Over Research," *New York Times,* December 18, 1984)

December 1984 — The United States cast the lone vote in the United Nations General Assembly against the continued publication and expansion of a directory listing 500 potentially dangerous products that are banned, restricted or have failed to win approval in any one of 60 countries. The Assembly vote was 147 to 1. A United States delegate said the American vote reflected the Reagan Administration's belief that the $89,000 expenditure on the publication was "wasteful" because the information was generally available elsewhere, although not all in one place. Some nations contended after the vote that the United States was not sensitive to their need for quick, easy information. A member of the Bangladesh delegation said: "It is very difficult for developing countries to collect this information on their own."

The United States voted against the initial publication of the directory in 1982 and has since declined to provide data for it. The publication's information about substances banned or restricted in the United States was compiled with the help of the Natural Resources Defense Council which filed a Freedom of Information request with federal agencies to obtain it. ("U.S. Lone Dissenter in 147-1 Vote at U.N. on Toxic-Products Book," *New York Times,* December 19, 1984)

December 1984 — The State Department announced on December 19 that it will go ahead with the announced withdrawal of the United States from the United Nations Educational, Scientific and Cultural Organization (UNESCO) on December 31, ending 38 years of membership. United States membership could be renewed if UNESCO makes certain changes in its operation, according to a State Department spokesman. (*Washington Post,* December 20, 1984)

Actions of the Board of Directors
January 30–February 1, 1985

The SLA Board of Directors met at the Franklin Plaza Hotel, Philadelphia, Pennsylvania, January 30–February 1, 1985, during the Association's 1985 Winter Meeting. Meetings of the Chapter and Division Cabinets were also held at the Winter Meeting. Actions taken, as well as important reports heard by the Board, are summarized below.

Assocation Finances—At the opening Board session on January 30, SLA Treasurer, Muriel Regan, announced that SLA's unaudited 1984 financial statement shows a year-end surplus of $181,000, due largely to income generated through record attendance, advertising, and exhibitor participation in the Association's 75th anniversary conference; advertising in Association publications; the Education Program; interest income; and the Mailing List Service. Staff efforts to reduce expenditures relating to the annual conference, the Education Program and the production of SLA publications also contributed significantly to the 1984 surplus.

The Board voted to allocate the Association's 1984 surplus income as follows: Membership Needs Assessment ($25,000); Computer Fund ($15,000); Special Programs Fund ($10,000); 1985 IFLA Conference ($5,000); and Long Range Planning Needs for 1985 ($28,000). These allocations accounted for $83,000 of the surplus. Of the remaining $98,000, 75% ($73,500) was allocated to the Building Fund, and 25% ($24,500) to the Reserve Fund.

Dues Increase Proposal—The Board approved a recommendation of the Special Committee to Study Need for Dues Increase for submission of a dues increase to the membership for approval at the Annual Business Meeting in June 1985. If approved, the dues increase will have an effective date of January 1, 1986. The proposed increase would raise dues in the following categories: Members and Associate Members, from $55 to $75; Retired Members, from $10 to $15; Student Members, from $12 to $15; and Sustaining Members, from $250 to $300. In addition the fee for each extra chapter or division affiliation would increase from $8.25 to $9.

Building Search/Building Fund—After four years of searching in the New York area for a building to purchase as a new home for the Association Office, the Board voted to extend the search to the Washington, DC area. On the evening of January 31, the Association Office Operations Committee (AOOC) travelled to Washington, DC to inspect a building located at 1700 18th Street, N.W. On the recommendation of AOOC, the Board authorized the Executive Director on February 1 to enter into negotiations for purchase of this property. The Board stipulated that the total cost for the building could not exceed $1,600,000 including renovation and moving costs. Further, the Association's offer to purchase would be contingent on completion and acceptance by SLA of an engineering report on the property and the securing of an acceptable financing package. **(Note:** At the time this report was written, the Association purchase offer had been accepted and a contract for purchase of the building had been signed by SLA and the building's current owner.)

The Executive Director reported that the allocation to the Building Fund from the 1984 surplus brought the balance of the Fund to $313,000. This is $187,000 short of the Building Fund goal of $500,000. It is anticipated that additional contributions to the Fund will be solicited beyond June 1985, the official expiration date for the Building Fund fund-raising Campaign.

Legislation and Government Relations—The Executive Director reported on the Association's ongoing government relations activities and on the status of legislation which has implications for the library and information management communities.

A Legislation Program for 1985 was considered and adopted by the Board. It was prepared by the Government Relations Committee in consultation with the Executive Director. The eleven points of the 1985 Legislative Program are:

1. Encourage enactment of legislation which advances library and information services in the public and private sectors.
2. Monitor library and information personnel standards, including wage comparability, which will have an impact on the development and delivery of library and information services.
3. Monitor developments in telecommun-

ications that are affecting the transmission of data used in education, research, and the provision of library/information services.
4. Monitor copyright legislation to ensure that libraries in the public and private sectors receive equitable treatment.
5. Encourage the enactment of legislation which will foster the uses of new information technologies.
6. Encourage the enactment of postal legislation which will allow for the exchange of information in an efficient and cost-effective manner.
7. Encourage the enactment of legislation which will foster international exchange of information, regardless of its format.
8. Seek a program whereby public documents and information are easily accessible and readily available to the special library community.
9. Encourage the collection of library statistics which reflect the needs of the special library community.
10. Support funding for library and library-related programs.
11. Monitor various government activities/regulations to ensure that the library and information services mission of each governmental agency is not adversely affected.

Without taking a formal action, the Board expressed an interest in participation in a Coalition on Government Information that has been proposed by the American Library Association.

The Board voted to press for inclusion in Senate Bill 3074 (re: copyrighted computer programs) the definition of "library" that appears in Section 108 of the U.S. Copyright Law.

Chapter and Division Activities—The Board approved the recommendation of the Special Committee to Arbitrate the Establishment of Boundaries Between the Pacific Northwest Chapter and the Western Canada Provisional Chapter for the inclusion of British Columbia within the boundaries of the Western Canada Provisional Chapter.

After having been reviewed and approved by the Division Cabinet, guidelines for the merger and dissolution of divisions were approved by the Board.

Proposed guidelines for division co-sponsored continuing education courses at annual conferences were considered. The Board deferred to its June 1985 meeting the making of a decision on the adoption of the guidelines, pending discussion of the guidelines between the Specialist, Professional Development and the Division Cabinet Chairman.

The Board received a report on electronic mail options from the chairman of the Information Technology Division. The report will be used as a resource by staff in implementing the Association's Long-Range Plan.

Membership Directory—The report and recommendations of the Joint Chapter and Division Committee on Directory Options was considered by the Board. After considering the joint committee's recommendations and the comments of members of the Chapter and Division Cabinets, the Board voted to reinstate the production and distribution of an SLA Membership Directory as a regular membership service beginning with 1985. Funding for the Directory will be accomplished by a discretionary across-the-board reduction of 2%–3% in the Association's operating budget for 1985.

Retired Members Round Table—The Board acted to establish a Retired Members Round Table as an informal unit within the Association's structure. The goal of the Round Table is to provide Retired Members with opportunities to remain active in SLA as well as to give them chances to serve in a resource capacity to the Board, Association committees, chapters and divisions.

Committee Activities—The Board approved definitions of the two newest SLA standing committees: Long-Range Planning Committee and Public Relations Committee. A definition for the Professional Development Committee (formerly the Education Committee) was also approved.

The Board referred to the Committee on Committees the request of the Cataloging and Access Committee for increasing the size of its membership.

Association Awards—The Awards Committee reported to the Board its selection of the following recipients for the Association's 1985 awards:

Hall of Fame Award—Jean Deuss, Eugene Jackson, Martha Jane Zachert.
John Cotton Dana Award—Constance Ford
Professional Award—Hubert E. Sauter
Herbert S. White

The following recommendations of the Scholarship Committee and the Positive Action Program for Minority Groups Committee for the number and amount of SLA scholarships and minority stipend awards for the 1986/87 academic year were approved:

SLA Scholarship Awards—up to two $6,000 awards.
Minority Stipend Awards—up to two $3,000 awards.

Conference Papers—The Publications Committee brought recommendations to the Board concerning the publication and distribution of papers presented at SLA annual conferences. The Board approved the Committee's recommendations (1) that the procedure for recording conference programs on audio tapes be continued, and (2) that commencing with the June 1985 annual conference, a demand publishing program be established in the Association Office, with a staff member given the responsibility to solicit as many full papers and abstracts as possible. The staff members would index the papers, announce them to the membership, and provide them on demand for a reasonable fee.

Conference and Meetings—The Board heard a report on the 1985 annual conference (Winnipeg) from Jane Dysart, chairman of the Conference Program Committee. Ruth Seidman, chairman of the Conference Program Committee for the 1986 annual conference (Boston), presented a report on preliminary planning for that conference. Throughout the Winter Meeting, there were ample opportunities for division officers to meet for discussion and coordination of their program plans for both the Winnipeg and Boston conferences.

In light of the planned move of the Association to Washington, D.C., the Board deferred taking action on a site selection proposal for its 1985 fall meeting. The Board selected San Francisco as the location of its 1988 winter meeting.

Interassociation Relations—At the request of the National Associaiton of Computer Graphics, the Board voted to endorse NACG's upcoming conference, Computer Graphics '85, Dallas, Texas, April 14–18. SLA members wishing to attend this conference will be entitled to a discount on the registration fee.

The Board approved a proposal for the establishment of a reciprocal institutional membership arrangement between SLA and the Medical Library Association.

An amount not to exceed $800 was allocated to cover the anticipated meeting attendance expenses of the SLA representative to the planning committee for the 1985 IFLA conference.

The Board voted to lend the Association's support for the nomination and election of Robert Wedgeworth, Executive Director of the American Library Association, to the IFLA Executive Board.

The next meetings of the SLA Board of Directors will be held in conjunction with the 1985 annual conference, June 8–13, in Winnipeg, Manitoba.

Reviews

Moving up: Digging in, Taking charge, Playing the Power Game and Learning to Like it by George Mazzei. New York: Poseidon Press, 1984. 255p. Index. $15.95 hardcover. LC 84 15909. ISBN 0-671-50266-2.

Mazzei uses the notion of business as a high-stakes game in describing a strategy for success. In his earlier book *The New Office Etiquette: a Guide to Getting Along in the Corporate Age,* Mazzei presented the rules for the game; in *Moving up* he shows readers how to win the game. This approach to his material establishes Mazzei as a savvy insider with all the answers. However, in sustaining this point-of-view, he introduces contradictions and double messages that undermine the sound ideas he presents.

Moving up offers some good advice to people thinking about moving to a new position or just starting out in a new job. Mazzei stresses the importance of developing a success focus: honestly assessing one's abilities and recognizing the corporate culture best suited to nurture and reward those skills. However, he undermines this sound advice about being honest with one's self when he proffers the following tip on creating a resume. "Whether or not you should keep it strictly honest is up to you, your conscience and the fact that nobody is going to spend time checking out the fine points anyway." (p. 29)

Mazzei also offers tips on using time management, developing sound work habits, and seeking information from coworkers. These ideas, though not new, are worth repeating; they are valuable not only to the novice, but also to the experienced manager and supervisor.

The material on managers and supervisors contains the most effective passages in *Moving up.* The chapters "Basic Boss: You Run The Show," and "Peering Into Peer Groups" are of particular value to special librarians; from them librarians can glean information on how to be more effective managers and how to make the information center an integral part of their organization. Mazzei discusses such topics as delegating authority, communicating with subordinates, and exercising leadership. He also describes other aspects of moving up within an organization such as building power, dealing with rivalries, and setting up new departments.

Even in this material, however, Mazzei presents some questionable advice for managers and supervisors. For instance, he discredits the putdown boss who builds up his or her self-esteem by criticizing subordinates and exhorts a manager to respect people's egos. On the other hand, he says "you must develop a sense of which spontaneous action will produce the desired response." (p. 163) This advice implies manipulation. Manipulative behavior does not indicate respect for people's egos. While Mr. Mazzei may claim "the best tool you have in dealing with peers is mutual respect and friendly cooperation," (p. 173) his implied message states exactly the opposite.

The book also conveys a confusing message about women in business. Even though Mr. Mazzei devotes an entire chapter to the changing role of women in the workplace, the demeaning and insulting remarks that appear elsewhere in the book (on secretaries who want to be sex objects to male executives and on office yentas) sabotage the sincerity of the author's observations.

Moving up: Digging in, Taking Charge, Playing the Power Game and Learning to Like it is designed to present to ambitious workers, whether newly hired or experienced, a strategy they can use to move ahead in their jobs. The book's flippant style will appeal to readers who fantasize about the power and prestige of a career in the fast track. More serious readers, however, should be circumspect in adopting the suggestions and advice.

Michael J. Esposito
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Public Access to Government Information: Issues, Trends, and Strategies. by Peter Hernon and Charles R. McClure, Norwood, N.J.: Ablex, 1984. 457p. ISBN 0-89391-100-3. LC 83-25797. $49.50.

The field of government documents has been blessed in recent years with several good bibliographic guides and textbooks. Hernon and McClure now provide a fresh approach that furthers documents librarianship by striking a balance between practical application and a potential body of theory. Spiced with frequent caveats, a general discussion is given of how libraries gather, use and make available government information. The book avoids the usual analysis of publications-by-agency approach and substitutes instead a discussion of critical issues affecting access. Numerous recommendations are made for the improvement of government information programs and an assessment is given of current library practices. Timely to the end of 1984, this book can be read with value by experienced documents librarians, library school instructors and those concerned with library management and government information. It does not pretend to be a beginning textbook or inclusive guide to the field of documents, although portions will undoubtedly find their way into supplementary reading requirements of our library schools. There is no other volume that provides the analysis found here.

Hernon and McClure show how many of our libraries, beset with budgetary and organizational problems, actually may restrict information flow, unintentionally abetting recent federal restrictions on government information. They repeat their previously voiced concern over poor reference service and poor training and they question the effectiveness of extending document service as presently organized in public institutions to include data files. The role of special libraries is rather overlooked.

The present tendency to reduce government information is seen to favor the "information rich" (those who are forceful, articulate, and able to pay). The commentary, ranging from pithy to pungent, is often critical, negative and a bit too nonstructured, perhaps, for a beginner in the field. It is always cautionary: we are asked what we are doing with documents and why, and the responses from the field are not clear. A chapter on marketing documents in libraries is positive, and a good summary is given of technical report literature. Somewhat less thorough is a chapter on the application of new technology, which lists some of the data systems, programs and equipment available without telling us how they might be linked or applied to make documents more accessible. A chapter on cataloging documents is cursory, and a section on the SUDOCS classification is perfunctory.

Much discussion is given to administrative problems and management controls. The need for data collection and sampling to support decision-making is repeatedly urged in order to evaluate alternatives rationally. An excellent chapter relates to physical facilities and space management, and should buttress the arguments of documents librarians in making the case for better quarters.

Various approaches to restructuring the federal depository library program are mentioned. A suggestion that a new bureaucracy be created with a Council of Government Publication Officers to encourage the dissemination of documents will surely lead to arguments. This reviewer is left unconvinced that any new federally-supported system will be more organized, effective, and devoid of political control than the old one. An alternative (and unlikely) depository system is also offered in this book, with fewer regional and other participating libraries that would combine the output of different levels of government, different formats and different methods of transmission. Another suggestion combining the Government Printing Office with the National Archives and Records Service will confound archivists, with a major shift towards distribution and dissemination, rather than preservation.

The difficulties in mainstreaming government information are not minimized, but the authors provide the balanced observation that the presently structured governmental information network in the United States is probably the best and least encumbered in the world. In the future they see more decentralized information, users who are more self-reliant, and the growth of home computer use to access government data, all changing the role of documents librarians. Above all, one thing becomes apparent in this book. There is a need for a growing body of theory and an advanced program of education in government documents. As future patterns do emerge Hernon and McClure will have paved the way with theory and reading material.

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The Software Catalog. Microcomputers. Winter 1985. New York, Elsevier, 1985. 1642 p. $75.00 ISBN 0-444-00883-7, ISSN 0736-2722 No. 1 (1985)

The selection of software is difficult for several reasons. Software is a relatively new product, with no established system of description. It must be compatible with machines, operating systems, and formats before it is useful. Furthermore there are great variations in its cost, with many packages three or four times the cost of an average book. But the situation is not hopeless, for guides like the *Software Catalog* are beginning to appear.

The *Software Catalog* reverses a trend of recent years; it is an offshoot of the online database, Menu/International Software Database (Menu/ISD). But this duplication is only logical since not all software users have access to online databases.

The *Catalog* is an ambitious, hefty volume listing software for microcomputers only. There are companion volumes for minicomputers and the subset subjects: business, science and engineering and health professions. The producers distinguish microcomputers from minicomputers by their cost rather than system or memory differences and there is overlap between the microcomputer and minicomputer editions. The coverage is international. But the majority of the entries are from the U.S., with Canada and Great Britain a distant second and third. The *Catalog* appears twice a year (winter and summer) with an update published in the spring. The tapes used to produce the *Catalog* are extracted from the database about two months before the *Catalog* is distributed, so there is a lag of two to eight months before a product appears in print.

The *Software Catalog* meets the challenge of matching software needs and requirements to existing packages excellently, using a descriptive paragraph, and a system of multiple indexes.

The main section of description is organized numercially by ISPN number (International Standard Program Number, where the first four digits of the number refer to software producer and the last three to the specific package.) The descriptive paragraph includes a short, producer-written description, the release date, warranty, vendors, whether the pack-

age is part of an integrated system, whether the source code is available, updates, whether reviews are on file with Menu/ISD, special configuration requirements, subjects, systems, minimum memory, distribution medium, price and compatibility. These descriptions are based on either the questionnaire distributed by Menu/ISD, or the producer's brochures and advertising. Menu/ISD requests an update from producers every six months in order to keep abreast of product changes or discontinuations.

There are separate cross indexes for the computer system (with cross reference to compatible systems), operating system, language and microprocessor, all subdivided by subject using the ISPN number. Finally there are two indexes for locating programs: subject and title/keyword.

The subject index uses the same divisions as the online database, with major sections for commercial, educational, industrial, personal, scientific, professions/industries and systems, and subdivisions within each section. The programs and the computer system they run on are listed within each section in ascending price order, a nice touch that lets users compare packages within a given price range, and choose packages to match their budget. The last index is a traditional keyword title index that gives more detailed subject access than does the subject index.

In addition the *Catalog* describes the other services that Menu/ISD provides: the online database, custom searches of the database, a software supply service, and even a desiderata service where (for a fee) customers list their unmet software needs online and are notified when a product meeting their specifications has been written. There are also three microcomputer-related articles in the front section of the *Catalog*, a feature that could be omitted in future additions without reducing the quality of the volume.

The *Software Catalog* would be of use to both software sellers and buyers. The thorough cross-indexing allows users to locate packages compatible with their systems quickly and easily. Any library that needs software, or serves patrons who do, should own this publication.

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Whole Earth Software Catalog, edited by Stewart Brand. Garden City, New York, Quantum Press/Doubleday, 1984. 208 pages. $17.50, paper. ISBN: 0-385-19166-9.

The more things stay the same the more they change. The tradition of the Whole Earth catalogs saw its sixteenth year with the completion of the *Whole Earth Software Catalog* in June 1984. Though Stewart Brand and company have tracked, and been tracked by, the same generation throughout those years, the 20-year-old of 1968 (the year of the first *Whole Earth Catalog*) is now 36, and to judge by this latest offering, more interested in spreadsheets and tax breaks than in hoes, home canning, or the geodesic dome.

The *Software Catalog* retains much of the traditional Whole Earth format and style. The idiosyncratic, fetching section headings of the old days are perpetuated with software domains. Thus, spreadsheets appear in a domain called "Analyzing." To find reviews of relational database management packages, you need go no further afield than "Organizing."

As was true of the early Whole Earth classics, the *Software Catalog* covers only products that the editors feel merit recommendation. Brand continues to insist that all reviews in the *Catalog* carry the names of their authors, so that the reader may evaluate the reviewers for consistency and dependability. Art Kleiner is still with the merry band, this time as domain editor for "Telecommunicating."

The software domains of the *Catalog* are: Playing, Writing, Analyzing, Organizing, Accounting, Managing, Drawing, Telecommunicating, Programming, Learning, and a grab-bag category called "Etc." The book covers 362 programs for microcomputers. Each entry opens with the title of the software package in red, followed by details on the vendor or author, the hardware configuration and the peripherals necessary to run the package, information on copy protection, and the price.

The discursive sections of the reviews vary in length, coverage, and usefulness. Domain editors follow Brand's maxim that a good review introduces the reader to the work and then gets out of the way. Accounts of personal experiences with software packages are numerous and illuminating, many of them including comments by more than one reviewer, thus setting up a debate about the merits of the product. Eleven people have their say about *Wordstar*, which makes for an interesting, if less than decisive, evaluation.

Though the spontaneous irregularity of the reviews in the *Software Catalog* is its greatest attraction, this may irritate users of special libraries, who often need to choose software that meets requirements imposed by a particular corporate environment. The *Catalog* will prove most valuable to the sophisticated home computer enthusiast and to the independent professional whose purchasing decisions are not constrained by complex organizational specifications.

The main index is arranged by software package title, with additional entries for corporate names and subject headings. There is also a software index arranged by computer system, and indexes to magazines and books reviewed. Introductory essays explore techniques of evaluating computer products,

given an overview of the field of computer magazines, and detail recommended "hardware tools." The material on hardware is important because it largely determines the field of software from which the *Catalog* selects its favorites. Also, a piece by Gerald Weinberg, "How Computer Professionals Buy Software," is worth a considerable portion of the price of the book.

As in the past, Brand publishes his balance sheets for the *Software Catalog.* In his background remarks on buying, Brand stresses the generous tax write-offs available for the business use of a computer and advises you to "consult your tax advisor." What is missing this time around is an estimate of how many trees were sacrificed to the cause (11,000 for the first 250,000 copies of the *New W.E.C.*)

An avowed purpose of *The Last Whole Earth Catalog* was to serve as "an evaluation and access device," providing the user with information on "what is worth getting and how to do the getting." This information was updated regularly through a massive investment of inspired human labor, based on "the experience and suggestions of *Catalog* users and staff."

Now that we have the technology to really do such a catalog right, why not mobilize that old *W.E.C.* fervor and commitment to create a database of reviews of tools, books, software—whatever—accessible nationwide, online, searchable under Boolean logic, and priced at a reasonable rate. May Brand also make a bundle on his slick new computer magazine* (accepting advertising if he has to), and roll the proceeds back into a project worthy of Whole Earth tradition.

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*Editor's Note:

The Whole Earth Software Review mentioned here and in Brand's introduction, has merged with *Co-Evolution Quarterly* under the new name, *The Whole Earth Review.* It is available from Box 27956, San Diego, CA 92128, at $18 per year (6 issues) (800) 321-3333; in California (800) 354-8400.

We are considering reviewing software in *Special Libraries.* If you would like to see such reviews, or would like to write them, send your comments, and/or a **sample 500 word review,** to GraceAnne A. DeCandido at SLA.

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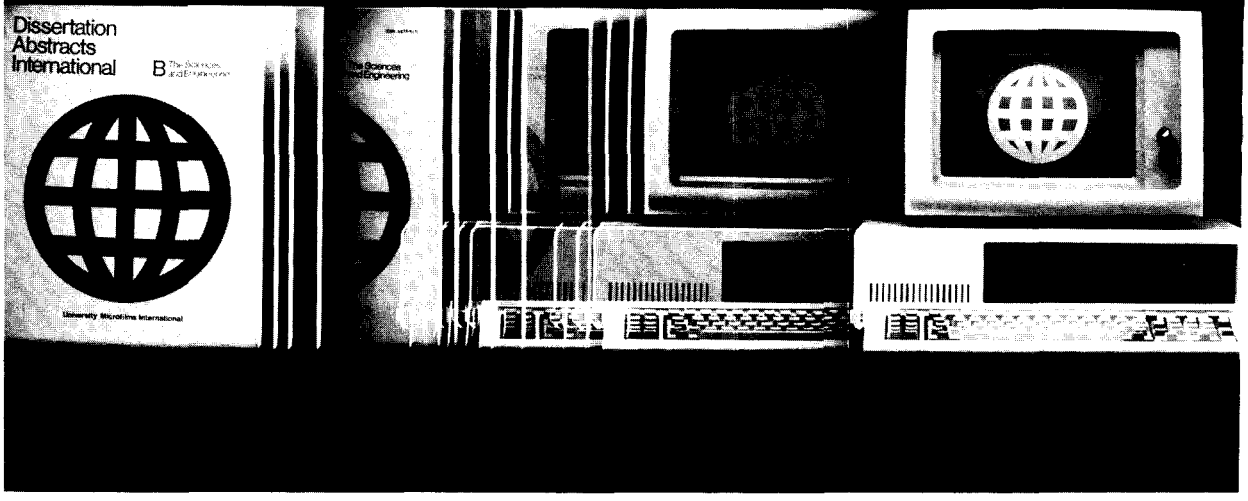

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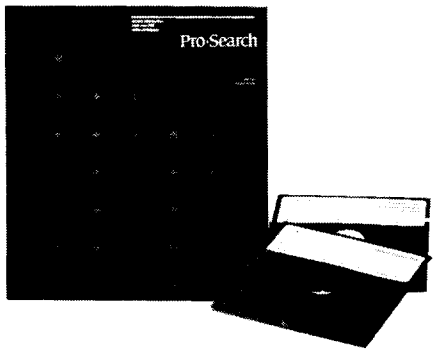

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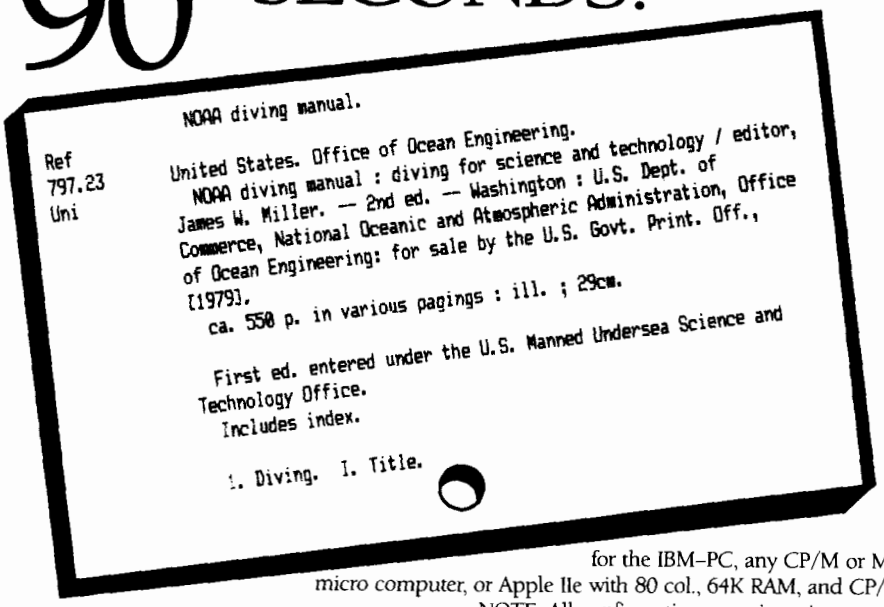

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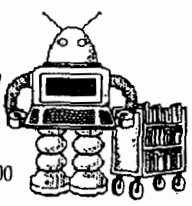

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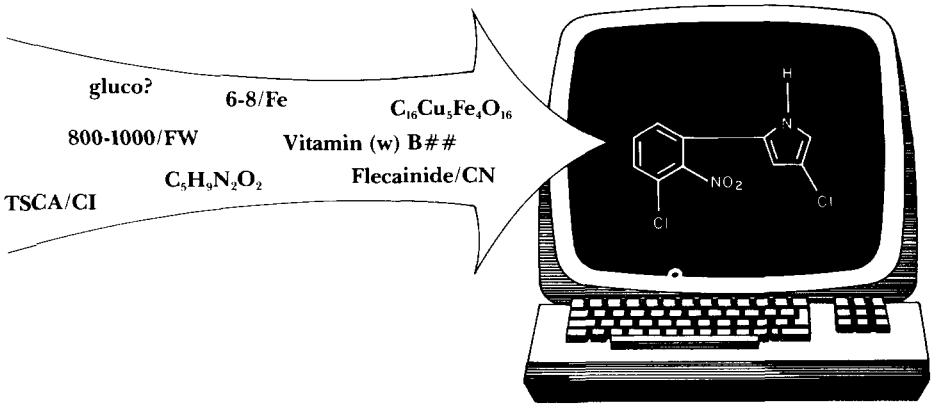

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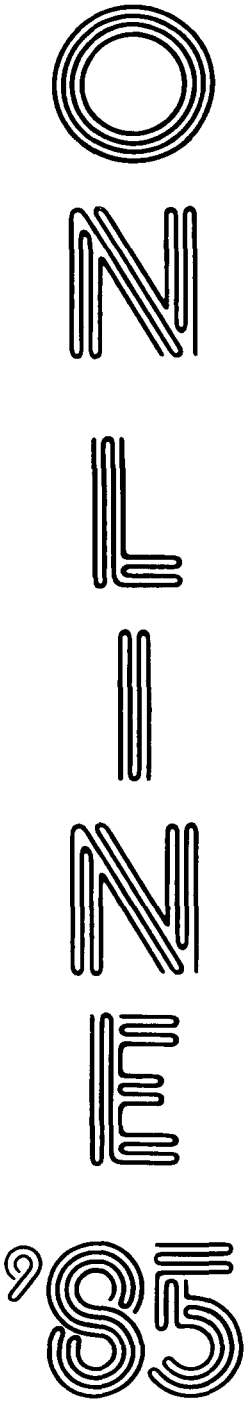

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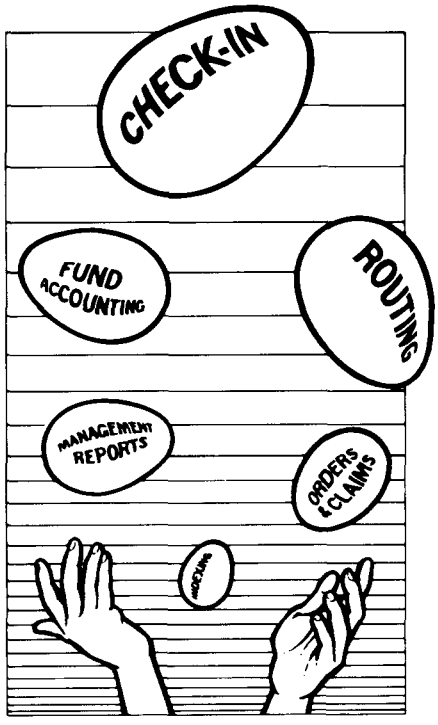

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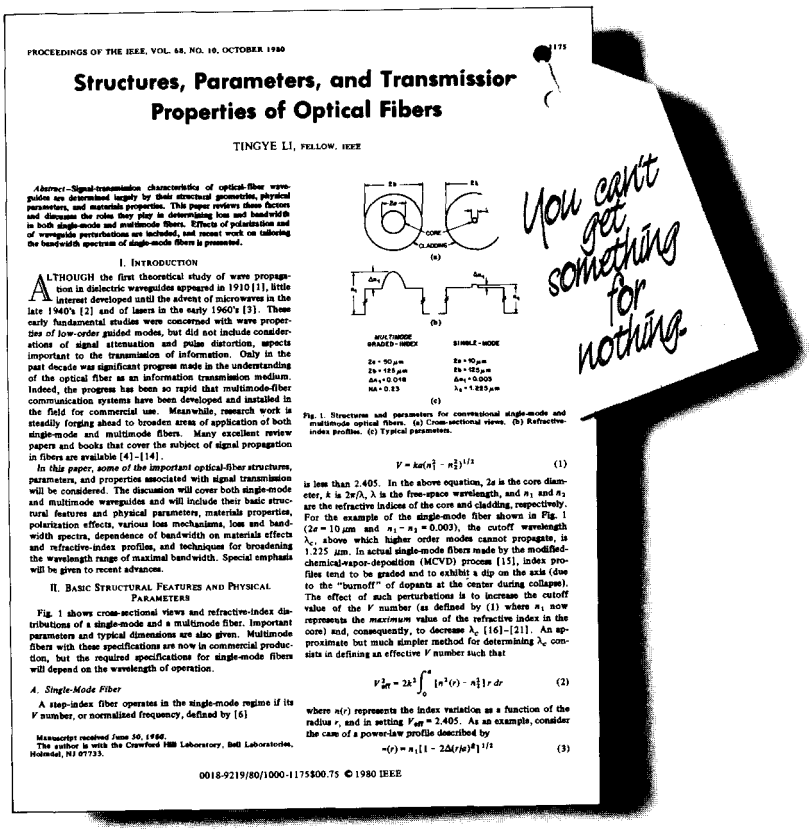

PROCEEDINGS OF THE IEEE, VOL. 68, NO. 10, OCTOBER 1980

1175

Structures, Parameters, and Transmission Properties of Optical Fibers

TINGYE LI, FELLOW, IEEE

Abstract—Signal-transmission characteristics of optical-fiber waveguides are determined largely by their structural geometries, physical parameters, and materials properties. This paper reviews these factors and discusses the roles they play in determining loss and bandwidth in both single-mode and multimode fibers. Effects of polarization and of waveguide perturbations are included, and recent work on tailoring the bandwidth spectrum of single-mode fibers is presented.

I. Introduction

ALTHOUGH the first theoretical study of wave propagation in dielectric waveguides appeared in 1910 [1], little interest developed until the advent of microwaves in the late 1940's [2] and of lasers in the early 1960's [3]. These early fundamental studies were concerned with wave properties of low-order guided modes, but did not include considerations of signal attenuation and pulse distortion, aspects important to the transmission of information. Only in the past decade was significant progress made in the understanding of the optical fiber as an information transmission medium. Indeed, the progress has been so rapid that multimode-fiber communication systems have been developed and installed in the field for commercial use. Meanwhile, research work is steadily forging ahead to broaden areas of application of both single-mode and multimode fibers. Many excellent review papers and books that cover the subject of signal propagation in fibers are available [4]–[14].

In this paper, some of the important optical-fiber structures, parameters, and properties associated with signal transmission will be considered. The discussion will cover both single-mode and multimode waveguides and will include their basic structural features and physical parameters, materials properties, polarization effects, various loss mechanisms, loss and bandwidth spectra, dependence of bandwidth on materials effects and refractive-index profiles, and techniques for broadening the wavelength range of maximal bandwidth. Special emphasis will be given to recent advances.

II. Basic Structural Features and Physical Parameters

Fig. 1 shows cross-sectional views and refractive-index distributions of a single-mode and a multimode fiber. Important parameters and typical dimensions are also given. Multimode fibers with these specifications are now in commercial production, but the required specifications for single-mode fibers will depend on the wavelength of operation.

A. Single-Mode Fiber

A step-index fiber operates in the single-mode regime if its V number, or normalized frequency, defined by [6]

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Fig. 1. Structures and parameters for conventional single-mode and multimode optical fibers. (a) Cross-sectional views. (b) Refractive-index profiles. (c) Typical parameters.

$$V = ka(n_1^2 - n_2^2)^{1/2} \tag{1}$$

is less than 2.405. In the above equation, $2a$ is the core diameter, k is $2\pi/\lambda$, λ is the free-space wavelength, and n_1 and n_2 are the refractive indices of the core and cladding, respectively. For the example of the single-mode fiber shown in Fig. 1 ($2a = 10\ \mu m$ and $n_1 - n_2 = 0.003$), the cutoff wavelength λ_c, above which higher order modes cannot propagate, is 1.225 μm. In actual single-mode fibers made by the modified-chemical-vapor-deposition (MCVD) process [15], index profiles tend to be graded and to exhibit a dip on the axis (due to the "burnoff" of dopants at the center during collapse). The effect of such perturbations is to increase the cutoff value of the V number (as defined by (1) where n_1 now represents the *maximum* value of the refractive index in the core) and, consequently, to decrease λ_c [16]–[21]. An approximate but much simpler method for determining λ_c consists in defining an effective V number such that

$$V_{\text{eff}}^2 = 2k^2 \int_0^a [n^2(r) - n_2^2]\, r\, dr \tag{2}$$

where $n(r)$ represents the index variation as a function of the radius r, and in setting $V_{\text{eff}} = 2.405$. As an example, consider the case of a power-law profile described by

$$n(r) = n_1[1 - 2\Delta(r/a)^g]^{1/2} \tag{3}$$

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I will look forward to great discussions in future issues.

Catharine Heinz,
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Moving and Preservation

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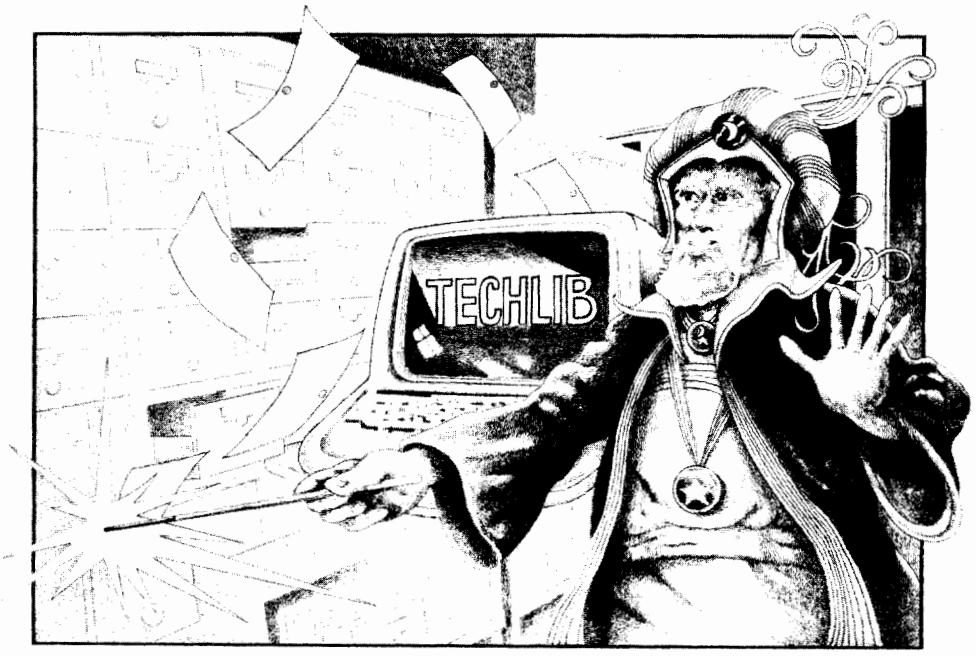

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