Winter 1985

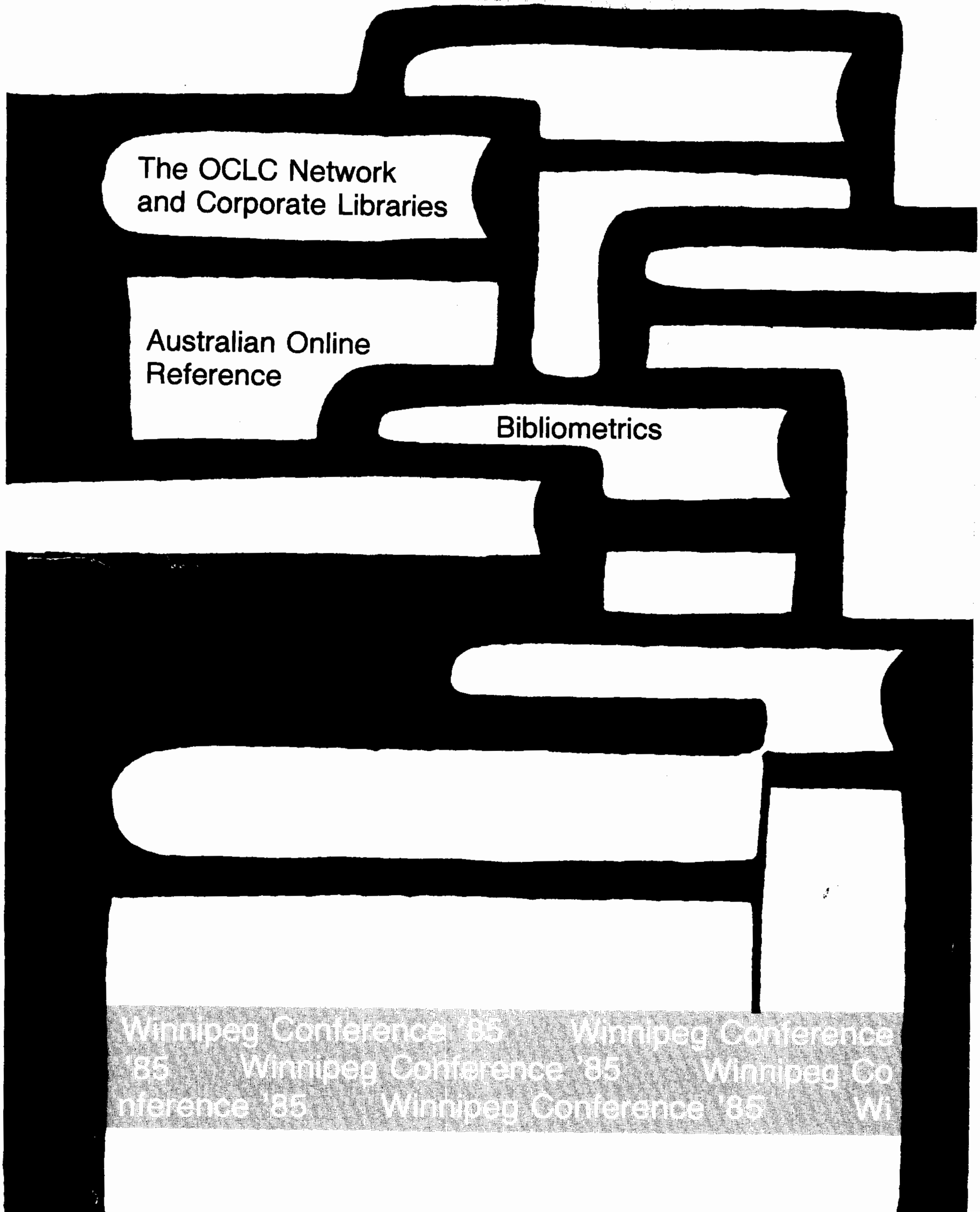
Special Libraries, Winter 1985

Special Libraries Association

special libraries

Winter 1985, vol. 76, no. 1

SPLBAN 75(3)173–262 (1985)
ISSN 0038-6723



How to research the world's most powerful city at the speed of light.

What happens in Washington, D.C. each day affects people, organizations and governments in every corner of the world.

And nowhere in the world are these important events reported more thoroughly and accurately than in *The Washington Post*.

That's why, as a researcher, you will be interested in our new Washington information data base, The Electronic Washington Post.

Because, in the time it takes you to read this ad, you could search every word in today's *Washington Post*.

And every word of every *Post* of the last six years! (Depending on which computer vendor you choose).

Not only would you be able to access information at the speed of light, but you'd be connected to one of the most extensive computerized newspaper files in the world.

Over 400,000 items. And growing by 1,200 each week. Stories, columns, sections, and reports, as far back as January 1, 1977.

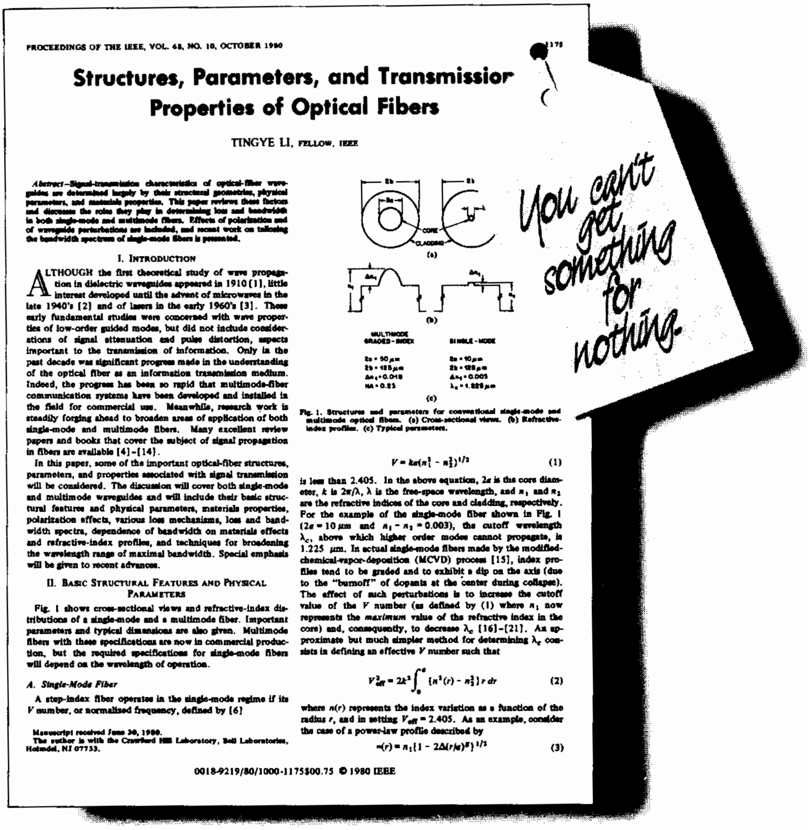
What's more, you can search through Pulitzer Prize-winning material word-by-word. Subject-by-subject. Day-by-day.

The Electronic Washington Post can feed you *Post* stories published on any topic. And every report is retrievable in its entirety or in summary form.

Imagine how much more thorough your research would be if *you could do in a minute* what is humanly impossible to do in a month!

THE ELECTRONIC WASHINGTON POST

Write for more information today. Address your requests to The Electronic Washington Post, Washington, D.C. 20071-7850.



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]

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

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

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

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

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

MULTIMODE GRADED-INDEX	SINGLE-MODE
2a = 50 μm	2a = 10 μm
2b = 125 μm	2b = 125 μm
Δn₁ = 0.018	Δn₁ = 0.003
NA = 0.23	λc = 1.225 μm

(c)

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

Manuscript received June 30, 1980.
The author is with the Crawford Hill Laboratory, Bell Laboratories, Holmdel, NJ 07733.

0018-9219/80/1000-1175$00.75 © 1980 IEEE

Reprinted with permission. © 1980 IEEE.

How much does "free" cost?

About $30 in the case of an average interlibrary loan transaction.* Recent studies break down the costs of obtaining a journal article in the following way:

Cost of borrowing	$18
Cost of lending	$13
Total cost	$31

While this includes direct costs—such as photocopying and postage—it primarily reflects the costs of your staff's time and labor. (It does not include the price of the article, although a growing number of libraries now charge up to $15 to process a loan.)

An article supplied by the UMI Article Clearinghouse, on the other hand, costs a total of $4 to $8. That's right. You'll never pay more than $8 per article when you place your order online through DIALOG's Dialorder, OCLC's ILL Subsystem, OnTyme, or ITT Dialcom which offers a gateway to ALANET. Price variation depends on your method of payment, not on the article length. (Online system charges are not included and vary from vendor to vendor.)

Your biggest savings, however, is in time. Online ordering is fast; availability of more than 8,000 titles from 1978 forward is guaranteed; and your article is on the way to you within 48 hours or you don't pay anything at all.

If "free" interlibrary loans are costing you more than you bargained for, then it's time you started saving your money *and* your valuable time, by using the UMI Article Clearinghouse.

For more information and a copy of our current title catalog, call us toll-free at 1-800-732-0616. In Michigan, Alaska, and Hawaii, call collect at 313-761-4700.

*King, Donald W. et al. *Scientific Journals in the United States: Their Production, Use, and Economics.* 1981 Hutchinson Ross Publishing Co., p. 271. (Figures adjusted for inflation.)

UMI Article Clearinghouse

University Microfilms International
A Xerox Company
300 North Zeeb Road
Ann Arbor, Michigan 48106

—special libraries—

Winter 1985 Vol. 76, No. 1 SPLBAN 75(4)263-362 ISSN 0038-6723

Editor: GRACEANNE A. DECANDIDO

Publisher: DAVID R. BENDER
Director, Information Services: RENÉE L. GOLD
Advertising: ANNE D. BONNER
Circulation: FRED BAUM

Special Libraries is published by Special Libraries Association, 235 Park Avenue South, New York, N.Y. 10003 (212/477-9250). Quarterly: Winter, Spring, Summer, Fall. Annual index in Fall Issue.

Second class postage paid at New York, N.Y., and at additional offices. POSTMASTER. Send address changes to Special Libraries Association, 235 Park Avenue South, New York, New York 10003.

Subscription Rates: Nonmembers, USA $36.00 per calendar year includes the quarterly journal, *Special Libraries,* and the monthly newsletter, the *SpeciaList;* add $5.00 postage for other countries including Canada. *Special Libraries* is $12.00 to members, the *SpeciaList* is $3.00 to members, included in member dues. Single copies of *Special Libraries* (1981-) $9.00; single copies of *SpeciaList* $1.00. Membership Directory (not a part of a subscription) is $25.00.

Back Issues & Hard Cover Reprints (1910–39, 1959–68): Inquire Kraus Reprint Corp., Rte. 100, Millwood, NY 10546. **Hardcopy, Microfilm & Microfiche Editions (1910 to date):** Inquire University Microfilms, Ann Arbor, Michigan. Microforms of the current year are available only to current subscribers to the original.

Changes of Address: Allow six weeks for all changes to become effective. All communications should include both old and new addresses (with ZIP Codes) and should be accompanied by a mailing label from a recent issue.

Members should send their communications to the SLA Membership Department, 235 Park Avenue South, New York, N.Y. 10003.

Nonmember Subscribers should send their communications to the SLA Circulation Department, 235 Park Avenue South, New York, N.Y. 10003.

Claims for missing issues will not be allowed if received more than 90 days from date of mailing plus the time normally required for postal delivery of the issue and the claim. No claims are allowed because of failure to notify the Membership Department or the Circulation Department (see above) of a change of address, or because copy is "missing from files."

Special Libraries Association assumes no responsibility for the statements and opinions advanced by the contributors to the Association's publications. Instructions for Contributors appears in *Special Libraries 75* (no. 4): 341–342 (Oct 1984). A publications catalog is available from the Association's New York offices. Editorial views do not necessarily represent the official position of Special Libraries Association. Acceptance of an advertisement does not imply endorsement of the product by Special Libraries Association.

Indexed in: *Book Review Index, Computer Contents, Cumulative Index to Nursing and Allied Health Literature, Historical Abstracts, Hospital Literature Index, International Bibliography of Book Reviews, International Bibliography of Periodical Literature, Library Literature, Management Index, and Science Citation Index.*

Abstracted in: *Cambridge Scientific Abstracts, Inc., Information Science Abstracts, INSPEC, Library & Information Science Abstracts,* and *Public Affairs Information Service.*

Membership

DUES. Member or Associate Member $55; Student Member $12.00; Retired Member $10; Sustaining Member $250; Sponsor $500; Patron $1,000.

ONLINE '85

New Databases from Bowker

• Associations' Publications in Print

Here is an invaluable source for information on 100,000 pamphlets, journals, newsletters, bulletins, books, and other printed materials published by national, state, regional, local and trade associations in the United States and Canada. This database is the perfect complement to the *Books in Print* database, as some 80% of the data provided does not fall within the scope of *Books in Print.* Information can be retrieved by title, alternate title, subject, publisher, association, status, frequency, country, format, special features, and circulation.
Available Via BRS

• Publishers, Distributors, and Wholesalers

This new online database is a continuously updated source of information representing virtually the entire U.S. publisher, distributor, and wholesaler marketplace. Each name/address entry provides full ordering and editorial access complete with Standard Address Number (SAN) and ISBN prefix. Input data is derived from information provided directly by more than 47,000 active U.S. publishers, distributors, and wholesalers, some 19,000 U.S. and Canadian associations, 6,100 legal publishers, 10,000 international museums, more than 7,100 software producers and others. Information can be retrieved by company name, geographical location, ISBN prefix, and SAN.
Available Via BRS

Available via BRS and Dialog–

• Books in Print

• Ulrich's International Periodicals Directory (Including Irregular Serials and Annuals)

• American Men and Women of Science

To subscribe through BRS (Bibliographic Retrieval Services) call (800) 553-5566 in New York State, or (800) 833-4707, toll-free, elsewhere. To subscribe through Dialog Information Services, call (800) 982-5838 in California, or (800) 227-1960 elsewhere. For additional information (U.S. & Canada), contact Debra K. Brown, Manager, Online and Database Services, R.R. Bowker Co., 205 E. 42 St., New York, NY 10017. Telephone in New York State: (212) 916-1758. Outside New York State call (800) 323-3288. *Customized Search Service: These databases can also be searched by special request for those customers who are seeking information but do not have direct online access in their organization. For further information, contact Debra K. Brown at the address above.

An editorial

In 1981 I was the manager of a university retrospective conversion project. It was not an easy time, as we were changing from the OCLC database to RLIN. Our work lives, beleaguered by problems large and small, were hampered further by the persistent annoyance of static electricity around the terminals. We called OCLC. The OCLC people suggested plants. Honest. So we potted philodendrons and geraniums and hung and set them around the workstations—not where they would be knocked over or cause difficulties in watering—and the problem ceased.

That simple, homely solution to a technological problem is an example of one direction we hope to see in this journal. In my career I have dealt with three automated cataloging systems and two automated circulation systems. I am just beginning to pluck the editorial fruits of word processing, and so I bow to no one in my devotion to technology. Indeed, technology can be seductive and even charming.

But that is not all there is. Librarianship is surely one of the most humane of disciplines, a conduit between the person and the fact, the matrix of communication and the last best hope of those who wish to keep in touch with everything. I would like to hear that particular voice. I would like some philosophical leavening in the proliferation of high-tech articles. Ethical issues are weighed every day: how do you balance them? Librarians must make hard choices: what do you use for guidance?

One of SLA's great strengths is the richness of its diversity. To make this journal more reflective of that diversity, I would especially like to hear more from the smaller sections. Sometimes the narrower focus of a subject area can make a clearer picture for us all.

I want to hear a great deal more about social concerns and political realities. Librarians supply information, and one can hardly get closer to the heart of social concerns than that. Politics, according to my dictionary, is the total complex of interacting and usually conflicting relations among people in society. Let us talk to each other about that.

I believe that our future lies in the wedding of technology and the renaissance spirit. Let me know what you think.

GraceAnne A. DeCandido

Issues in Network Participation for Corporate Librarians

Linda L. Hill

Cities Service Oil and Gas Corporation, Tulsa, Oklahoma

■ Review of the benefits and problems of network participation, specifically OCLC participation, by libraries within profit-making, tax-paying organizations. Many of the problems of corporate libraries are really "small library" problems while others result from the profit-making status of the organization and the corporate structure. The time seems to be right for corporate libraries to join networks in greater numbers. Or will they opt for simply shopping for products and services?

NETWORK refers specifically to the OCLC regional network systems. There are other computer-based networks and there are groups that are called networks but are not formalized, computer-based organizations. I am not addressing them at all. Also, I am not specifically addressing the non-OCLC services of the regional networks. However, this article has general applicability to corporate libraries in other network situations.

Corporate librarians are those librarians who work in library operations within profit-making, tax-paying organizations. However, some of the issues discussed here also affect library operations in non-profit corporations as well as other special libraries.

The distinction between network participation by profit or non-profit libraries is an important consideration, because we are talking about networks that are themselves either non-profit cooperative entities with staff, income and expenses, and assets or that are departments of state government.

In acknowledgement of the IRS 501(c)(3) requirements for non-profit organizations, many networks have bylaws statements that require that they have a majority of non-profit members or no more than a certain percentage of for-profit members. If the network is a state agency, it has state funding that subsidizes network services and products, and so may not be able to offer services and products to for-profit organizations through regular channels.

Corporate libraries are different in ways that are significant for attracting them into networking in the first place,

This paper is adapted from a talk presented at the 1984 SLA Conference in New York.

primarily in funding and management. With corporate libraries we are not dealing with federal or state funding but with an annual budget for information or library services. The management hierarchy directing corporate libraries does not comprehend OCLC, MARC, and ILL. Rather, management is familiar with cost centers, overhead, contribution to income, and support of research or marketing or manufacturing activity.

OCLC estimates that 8.8 percent of its holding codes are full participants from corporate libraries. For every two corporate libraries, there are 23 other libraries, mostly academic and public. Corporate libraries account for an estimated 2.5 percent of OCLC's billable activity: this is less than three cents on the dollar. Individual networks, according to OCLC, may include up to 23 percent for-profit OCLC members billing up to 12 percent in dollar volume. Estimates received from fourteen out of seventeen network directors differed from OCLC's figures, because they offer services other than OCLC and therefore have more members than are counted by OCLC. These estimates were therefore lower than those estimated by OCLC.

Corporate libraries have not joined OCLC as a matter of course.

We would have to do a more careful analysis to have a firm set of figures here. Differences in interpretation of what constitutes a "corporate library" and the existence of consortia or subgroups of libraries hide the actual number of corporate libraries from the network's usual counting methods. It is clear that the income now derived from the for-profit sector is minimal.

Corporate libraries have not joined OCLC as a matter of course. We can surmise that there are many who simply cannot participate because they do not have even the minimum management support for such a step. But there are many corporate librarians who could join networks but choose not to do so. They fit into the following categories:

(1) Not yet using automation, this librarian is still waiting for the right system to come along and make it easy or is still not convinced that automation is worth the effort and expense.

(2) Short on knowledge of how to go about automating, this librarian is at a loss as to where to begin.

(3) The reinventing-the-wheel enthusiast, with inhouse programming and home-grown record formats that require direct entry for all titles, is so busy that he or she has no time to investigate networks.

(4) The before-his-or-her-time librarian, who started automation so long ago and has so much invested in the present system, believes that converting it to another system would be a wrenching and expensive move.

(5) The under-the-thumb librarian, whose automated life is controlled by the Data Processing Department which has all library problems under control—if they can ever get around to it and if the librarians would quit insisting on variable element sizes in a variable number of variably sized records that somehow have to be nested together.

(6) The corporate espionage scenarist, who in a highly competitive company fears that any public knowledge of book purchasing might tip his or her hand to the competition.

The Specter of IRS 501(c)(3)

There is another group of corporate libraries that would like to take advantage of the products and services that networks and OCLC have to offer but run into another sort of barrier, which can be labeled the IRS 501(c)(3) specter. This section of the tax code is very worrisome to tax-exempt organizations, and it is all the more worrisome because it is vague. There is a history of widely varying rulings as it applies to library networks.

Paul Schrank, Vice President for Membership and Corporate Relations for OCLC, stated:

> We have been told that there is no problem with the IRS so long as our for-profit business is *de minimus,* but no one has defined *de minimus* for us. SOLINET and MIDLNET obtained somewhat more specific rulings that said that, as I remember, in the case of SOLINET, 6 percent was the limit; MIDLNET was given a 15 percent limit. But in neither case could we determine whether the percentage referred to number of members or proportion of revenue or net income. We continue to work with the vague *de minimus* and hope it refers to revenue, rather than number of members.

OCLC and the networks have been engaged in developing a new core contract to set the business relationship between OCLC and each network. This stormy process started with several drafts of the new contract developed by OCLC, which were countered by a draft prepared by legal counsel engaged by the networks, and finally resolved into intensive negotiations between the two groups.

The earlier drafts said that libraries in for-profit organizations could become participants in OCLC only with OCLC's specific approval. Corporate libraries were the only group so limited. Some of the other categories of participants (such as library schools, consortia, and tape loading members) also caused some concern, but only the for-profit institutions were told, "You ask us and we'll tell you whether or not you can join."

The network directors' counter draft proposed that the signing of participants be totally their concern, in conformance with limits or parameters set by OCLC in consultation with the networks. They, as a whole, saw no reason to discriminate against corporate libraries in this contract.

It appears that negotiations are moving in this direction. OCLC would design and modify the categories of participants; the definition of a category could include a limit on the number of members. Modifications or changes in categories would be discussed with the network directors but would be the unilateral prerogative of OCLC.

The IRS 501(c)(3) definition has been variously interpreted to those networks that have sought an opinion. For example, for-profit members can generate no more than 15 percent of revenue; they can represent no more than 5 percent of total membership and no more than 10 percent of voting membership.

At least one network does not admit corporate library members as voting members. They cannot vote for board members or fee schedules; they cannot hold office. Supposedly, this is for IRS purposes. But other networks do take corporate members as regular voting members or at least involve them in advisory committees that have some control over their destinies. One network even has a specific corporate library seat on its advisory board, and another has a permanent special library seat on its board.

De minimus must be defined as to whether it refers to revenue or members. At the same time, OCLC and the networks must avoid jeopardizing their non-profit status by maintaining their membership or cooperative basis instead of operating like vendors.

Dominance of Academic and Public Libraries

An intrinsic barrier of sorts that will take time and effort to balance is the dominance of networking by academic and public libraries. They started these networks, they dominate them today, they provide the major funding, and they will see to it that the networks function as they need them to function. It is up to special librarians to promote our value and to prove by our participation that we can contribute significantly to the network. If we can do our part in sharing the burden—financial, labor, and participation in governance—we will be worth attracting into the network. We must take an interest in networking, particularly in our own network. We must make our needs known and share our expertise and resources as much as possible. Beyond this, we need to keep the cataloging of large libraries flowing into OCLC and keep their commitment to it. It won't do us any good if we join and they go off to some other system.

The final section of the NCLIS/SLA Task Force report (11th draft, "The Role of the Special Library in Networks and Cooperatives") talks about the "invisibility" of special libraries, which tend to take on the "coloration" of their parent institution rather than become visible and vocal elements in library organizations. I have a slightly different view of this. Special librarians, especially corporate librarians, are closer to their users perhaps than other types of librarians. We tend to identify with our users and consider ourselves primarily part of their team. We can bring this point of view to networking. Certainly the world of information provision and use is shifting to the end user. Special librarians need to be active in networks, promoting our user-oriented point of view.

Corporate Library/Small Library Problems

Many of the problems corporate libraries face when participating in networks are really "small library" problems. They are shared by any library with a small staff:

Cataloging: The ability to do original cataloging often rests with one person on a small staff. If that person leaves, a retraining process usually must be gone through after a replacement is found. In the interim, original cataloging just doesn't get done.

Dial access: Low volume makes it hard to justify a dedicated terminal, so many small libraries use dial access. This is time consuming, awkward, and requires another level of training over and above the basics of OCLC. The new M300 OCLC terminal will change this limitation, since it can function both as a dedicated terminal for OCLC processes and as a local terminal and microcomputer.

Limited staff: Joe Ford, Executive Director of CAPCON, notes: "The issue of small staff . . . is one of the best arguments *for* using OCLC that I know." Several librarians agree that they are able to accomplish more in a more timely fashion and at a higher quality than they could ever hope to do without OCLC. But network participation does require an expediture of time and effort to keep up with the system and the standards. This requires a certain critical mass of staff.

Some librarians recommend that a library have at least the equivalent of a full time person (50 percent professional and 50 percent clerical) devoted to OCLC processes to participate in cataloging and ILL. Even at this level, the "volume of documentation is horrendous," to quote one. Another librarian comments that she had learned enough since starting to use OCLC to earn at least one Ph.D.

The problem strikes first in original cataloging: "We have had great problems in maintaining enough proficiency in cataloging to input original cataloging for the use of others. The vast array of OCLC formats and cataloging standards has been intimidating. [My network's] suggestion that we keep up by reading (and perhaps annotating) LC's Cataloging Service Bulletin seems quaint and ignorant of our eternally understaffed situation."

Another point of view was stated as follows: "I have not found learning the nuances of OCLC or the application of AACR2 standards to have been a major problem. Since the volume of work which can be accomplished has increased so measurably, more time can be afforded to individual titles to create cataloging records which conform to higher standards. This also permits the addition of many uncommon records to the database for titles which otherwise might never be cataloged." I suspect the difference between these two statements can be traced to the size of the two staffs.

In addition to the system documentation, there are membership obligations such as participating in elections, budget hearings, and meetings. Attending membership meetings and training sessions is very important but almost impossible if staff support is not available to the library.

Explaining Networking to Management

To quote one corporate librarian: "A proposal to use OCLC was not required by [my company]. This was most fortunate, as I would have found it difficult to describe OCLC's services and advantages in terms management could understand. Even if I had been able to communicate the nature of OCLC, I have found that bibliographic functions are in general underappreciated—cataloging, classification and document delivery seem simple to those who have not worked in those fields."

Says a network director: "The management commitment is clearly one of the critical steps in automation, and we've found that, more and more, corporate managers are willing to listen to a discussion of automated support for their libraries and information centers. One of the most effective arguments for networks is the extension of available resources. We've found that our corporate librarians who have a prominent place in the corporate structure have little trouble persuading their management of the value of extended resources.

"It is a truism that the thrust of information handling, whether library, bank, or petroleum engineering, is toward increasing automation. The inventory in many libraries is high-cost, high-value, and too frequently, low-use. We sell OCLC as a file-building service, one which will prepare the library for the next round of automation."

Some librarians do not have to justify the use of OCLC beyond stating that it will help the library or information center do its job better. These are the ones in "prominent places," to use the network director's phrase.

Many of us justify OCLC participation to ourselves and to our management almost solely on the product basis: it will buy us machine-readable catalog records or cards and interlibrary loans. This argument is a mistake, because it contributes to the tendency of OCLC and networks to think of themselves as vendors and not as cooperative ventures. We must sell ourselves and our management on other aspects of OCLC and network activities as well. We are contributing to a shared database that benefits everyone.

Proprietary Materials

There is no requirement to add proprietary materials to OCLC. The present working definition of "all current cataloging" for OCLC excludes proprietary material and material to which a library customarily gives less than minimum level cataloging. OCLC participants are required to do all current cataloging if they are cataloging participants on OCLC, but the company reports, government documents, and special collections that get an indexing treatment instead of being fully cataloged do not have to go on OCLC. If, however, OCLC were to decide to require members to obtain formal approval to exclude a set of materials, problems would arise. This was discussed as a possibility during the negotiations.

There is another internal problem connected with these various types of material, only some of which get full cataloging. How does one decide what gets full MARC cataloging and what doesn't? How can one integrate access to the MARC/OCLC cataloged items and the other material? If you have or are planning to have an online catalog, can it accommodate different record types? The existence of this "other material" that requires inhouse treatment (e.g. indexing) means that there is even less work time available for cataloging.

This concern with proprietary material and the fear that OCLC will be used for spying on the competition is farfetched. Access to records is limited to search keys; there is no retrieval by holding code. However, OCLC is in the process of completing contractual arrangements with BRS to mount a subset of the Online Union Catalog on BRS for searching. This will give subject access to the database, and there are some legitimate concerns about this. The records mounted on BRS will not include holdings codes. However, OCLC plans to develop subject access to the Online Union Catalog eventually. Subject access might encourage fishing expeditions to find who is collecting in a certain field.

Another current development in which special librarians should be involved, or at least consulted, is the development of standards for less-than-full cataloging (that is, below level K) by a task force of the Research Libraries Advisory Committee (RLAC), an OCLC group, and other groups. This format is being developed, cautiously, for ephemeral and difficult to catalog items. How and when it could be used is under discussion. Such a format might be very useful to special libraries.

Branch Offices

Corporate libraries often participate in OCLC through their parent companies. Often the headquarters office is located in a different geographic area—in another network's service area. This arrangement confuses training and support and obtaining dedicated terminals.

There may be a problem for network directors in dealing with special libraries in this regard, because librarians within a company do not necessarily communicate with one another but instead go to the network as independent operations. This is another indication that we think of OCLC and networks as vendors rather than as resource-sharing networks.

Contractual Agreements

Contractual agreements between network and library are sometimes a problem. Corporate legal officers may require significant changes in the basic agreement because they see the network purely as a vendor rather than as a cooperative organization.

With the development of the new contracts between OCLC and the networks, it will probably be necessary for existing agreements between networks and members to be rewritten or amended. If this requires another trip through the legal department, which it probably will, it will be a headache for all concerned. The ownership of records and the "Code of Responsible Use" will be part of the contract, which will raise many legitimate questions all around.

ILL Use Only

Some corporate libraries want access to the ILL system and see no need to do any cataloging, particularly if their collections are small and loosely organized. OCLC recently made this an option, but the cost is dear. As a contributor, I approve of this high price for partial users, assuming that the income will keep my costs down. However, we do not loan freely to noncontributing libraries. It is not acceptable to us to have other corporate libraries—particularly other petroleum company libraries—benefit from our OCLC cataloging while their own collections are kept off the system.

This "always a borrower but never a lender" attitude also contributes to the undesirable reputation of special libraries for not doing our part in sharing resources. I would like to convince all corporate librarians that they can lend and provide photocopies without compromising their own internal services.

Special Problems

Interfacing with local software: Interfacing the OCLC system with local inhouse computer facilities is an area where many corporate libraries turn to the network office to provide assistance, sometimes with disappointing results. This sort of need is spreading now to other types of libraries, but corporate libraries have a greater variety of situations and have had them longer. Often the software available is atypical in the library world and the network office has no experience with it.

Disappearing libraries: Mergers and closings plague corporate libraries in particular. As more corporate libraries join OCLC and other networks, this will be an increasingly difficult problem. How do you remove or transfer holdings information when the library ceases to exist?

Special subject heading schemes: The need to edit and modify the records found on OCLC exists for all participants, but special libraries often have unique subject headings that must be added to meet local access needs or to match schemes already in place. LC subject headings were not designed with our in-depth special collections in mind. For libraries without an online catalog and free text access, almost every record will have to have subject headings added or modified.

Of course, libraries *can* modify the records. As we have found in automation in general, modification increases our capabilities to control the action, with a cost in time, effort, and money.

Start-up delays: There is a substantial lag between joining and being able to use OCLC. To quote one new participant: "So far, we have been quite frustrated. The time lag between joining the network and being able to use OCLC is unreasonable. The fact that the network buries us in documentation hinders rather than helps matters." This lag is caused by profiling and scheduling the installation of the terminal. Typically, corporate libraries want to get on with it after they have finally made the decision and signed all the papers.

Cost: A couple of network directors cite cost as a significant barrier; others say that corporate libraries are good members because they have the ability to pay. Cost is a barrier only when the benefits can't be identified. In other words, businesses are used to paying for what they need to get their business done. The cost of networking will be too high if corporations don't see its value or if they have a cheaper alternative that does the job. That alternative does not really exist, in my opinion, but a local solution might appear to be doing the job.

One network director notes that corporate libraries are the worst group by far in terms of paying their bills. Maybe there is a problem here that makes us less than ideal network participants. To quote another network director: "Most requests for information, especially for OCLC, do not result in contracts. Corporate librarians in particular feel cataloging data should be free; [they] seek technological means to acquire OCLC information without charge. Not so for database searching, which they perceive as worth paying for!"

As a minority group, our reputations are easily damaged by the misdeeds of one or two.

Benefits of Network Participation

Interlibrary loan is the most frequently and enthusiastically cited benefit. It makes very efficient and successful document delivery possible at a much lower cost than using document delivery services. Says one corporate library member: "The value of OCLC's ILL network is immeasurable for me. It has really broadened my resources for the people I serve. When I do a literature search, I don't worry about where I'm going to find all the sources that result from the search."

Verification of partially remembered or cited items is possible even with the limitation of search keys rather than full-text access.

Participation in the regional network and OCLC permits libraries to enjoy the benefits of OCLC's and the network's leadership and their research and development in library automation. Corporate librarians can often take advantage of the computer power and expertise within their corporations, but typically there will not be any knowledge of library automation. Network participation brings a library to the forefront of library automation and makes the efforts of OCLC and the network available. Such areas as retrospective conversion options, microcomputer applications, MARC tape processing, COM catalogs, and local systems are the daily fare of network staffs. They can advise, refer, direct, or even provide these things to you.

Reference value: One librarian called OCLC a "fantastic reference tool." If there are other libraries with similar collections on OCLC, especially the major libraries in your subject field, OCLC becomes a specialized resource of even greater value.

Cataloging value: Another librarian reports: "The proportions of materials already online, which need only be edited for compliance with our needs and standards, permits us to employ a clerical assistant for record retrieval and data input and utilize a professional librarian to compose new records and approve editing for others. Manual cataloging of the same detail could employ easily two professionals, and that would be their major effort. Automation of this one aspect of technical services permits one professional to oversee interlibrary loan, serials control, and acquisitions as well, which entails the supervision of as many clerical assistants. Therefore, essentially the employment of OCLC has a major impact on departmental productivity."

Issues for Future Action

Just as the time seems right for corporate libraries to join networking in greater numbers, the situation is changing. The trend toward shared cataloging and processes is breaking up (or breaking down, perhaps) into the micro or mini computer-based local systems. We all want to do our own thing, perchance to save money and to get a home-tailored product. We want to get cheaper cataloging records and to load them inhouse. There is movement toward forming smaller consortia and sharing records within that group.

We must provide for a shared catalog somehow in the face of these trends. And small libraries, including corporate libraries, that need to depend on the cataloging of others and need to extend their resources through ILL are the ones that are going to suffer the most if the shared database is not encouraged to grow through the contribution of current cataloging by OCLC participants. We can apply our weight to the side that seeks to maintain and continue building the shared catalog.

Another development of concern to special libraries is OCLC's attempt, through the new contract, to turn our networks into brokers with no rights to provide services of their own based on our OCLC records. OCLC would like to control the use of OCLC records very closely. They have registered a copyright on the compilation of the database, and they intend to control through contract what we can and cannot do with our records. When that control extends to telling us that we cannot undertake cooperative resource-sharing projects based on our records through our networks without their express approval (and probably an additional charge), then our networks are no longer our cooperative institutions through which we develop automation products and services of value to us. And our records are not to be used as we wish for resource-sharing purposes. OCLC wants to prevent competition, but should OCLC control all developments based on our records?

Possible Solutions

To end this discussion of corporate libraries and networking, let's look at possible solutions to some of these problems and ways to deal with the issues.

The NCLIS/SLA Taskforce recommended thirteen actions which were reviewed by NCLIS and SLA and NAC. Recommendation 7a was for the SLA staff and legal counsel to be available to consult with any non-profit network or cooperative which needs assistance in obtaining IRS clarification concerning the appropriate percentage of for-profit member libraries in the network. The SLA Board rejected this recommendation, and the NAC Subcommittee rejected it as not practical.

This issue should be put to rest. It must be done carefully, for we do not want to jeopardize the non-profit status of the networks or SLA. Even so, I urge SLA to take whatever steps it can: we need our association to take a leadership role here.

SLA should call for the holding of sessions in each network area, addressing what special libraries need from their networks. These sessions would be planned and implemented by the network offices and the SLA chapters in their regions. A model session could be developed and held in one region to start, with the proceedings and methods made available to all other network groups. As the sessions are held, the proceedings would be distributed so that subsequent sessions could benefit from previous sessions.

The results of each session could be a planning document to feed into the planning process of each network. Topics such as those discussed here would be addressed, with local application including but not limited to OCLC services. The actual topics discussed would be developed by the networks and their governing bodies and the chapter officers, including the network liaison officers.

The expected outcomes, besides the planning document, would be: (1) Increased awareness of special library needs and service opportunities by network staff and OCLC; (2) Increased awareness of network capabilities in helping special librarians do their jobs and prepare for the future; (3) Modification of network structure and plans, if necessary, to acknowledge needs of the SLA community; and (4) A set of proceedings and recommendations that would be eventually published by SLA.

Among the possibilities that could be explored at these meetings are cataloging services to help staff-poor libraries; consortia formation so that equipment could be shared and costs minimized; retrospective conversion options; micro and mini computer options; and future directions for OCLC. Accurate analysis of participation and non-participation in networking could be obtained with this approach by including SLA Networking Committee members in the planning and implementation of the sessions. Additionally, through its publications and programming, SLA should continue to promote continuing education in the technical aspects of cataloging on a shared database; to promote good citizenship in networking; and to encourage members to take leadership roles in network decision-making.

We are in the midst of an explosion in the information world—an explosion in slow motion. We are moving and changing while none of the other elements in our environment is standing still. We can only seek to understand and plan for the future. Perhaps the central question to be answered by special librarians is whether we will participate in networking organizations and influence the shape and options of the future or simply shop for products and services.

Manuscript received for review July 3, 1984. Accepted for publication October 17, 1984.

Linda L. Hill is Technical Information Services Manager, Exploration and Production, at Cities Service Oil and Gas Corporation, Tulsa, Oklahoma.

Low Cost Organization of a Mental Retardation Facility Staff Library

Ed Payne

North Mississippi Retardation Center
Oxford, Mississippi

■ A mental retardation facility staff library of 700 volumes required complete organization. Two restraining factors were lack of personnel and limited funds. A plan was developed to classify titles according to Library of Congress, with the subject heading catalog predominantly based on Medical Subject Headings (MeSH). A cataloging service was located which produced custom card sets and book labels from CATLINE and MARC computer databases. Where necessary, MARC records were edited to alter LC subject headings to MeSH terminology. Organization was accomplished at an average cost per title of less than $1.50.

THE Staff Development library of the North Mississippi Retardation Center is typical of smaller institutional libraries. It presently houses approximately 700 volumes, and in recent years has been growing at a rate of 50 to 75 volumes per year. Eighty percent of the collection deals with topics related to developmental disabilities and special education. Unfortunately, the size and rate of utilization of the library are not sufficient to justify a full-time staff librarian. For this reason, the status of the library three years ago could be described as one of benign neglect.

Over a seven-year period during which the library collection had been developing, rudimentary attempts at a classification system had been made. The system which evolved placed books in any of nine locations. Because books had been placed in general areas rather than in any specific shelf order, locating a title required scanning the shelves. Staff making regular use of the library resorted to searching out books according to the color of the binding. The card catalog consisted of an incomplete title file, with no author or subject access to the collection. User frustration with this lack of organization resulted in under-utilization of the collection, since few staff had the time or patience it took to browse around for a volume that might suit their needs.

The decision to undertake a complete organization of the collection was made with some trepidation. Although the author has a graduate degree in library science, his primary job function is audiovisual production and training. Even with assistance from other staff members, the time which could be devoted to the organizational effort was limited. A further restraint was funding: outlay for library organization would come out of the department's normal operating budget. The money available for the project had to be measured in hundreds rather than thousands of dollars. It was also apparent that we had to find an outside library support service which could produce our catalog cards and book labels. Whether such services were available within the limitations of our budget was an open question.

Organization Plan

The two fundamental keys to effective organization of any library are a unified classification system and the development of a complete card catalog. Of particular importance to us was an effective subject card index to the collection. As with most libraries, the majority of our users' requests are subject-related rather than requests for a specific title or author. The first task we set was to determine what the best system for our collection would be. At the outset we did not want to limit ourselves with self-imposed ideas about what we might or might not be able to do. It was felt that if we later found our plans were not practical, necessary compromises could be made.

The question of a classification scheme was easiest to resolve. The North Mississippi Retardation Center is located in Oxford, which is also the home of the University of Mississippi. There is a great deal of interaction between the university and our facility. Students from the university take part in practica at our center, and many of our professional staff either teach or attend classes at the university. This link made Library of Congress our prime candidate for a classification scheme. We wanted a classification system with which most of our staff would be familiar. Since the university library uses Library of Congress classification, it was a natural choice.

Unfortunately, adopting Library of Congress subject headings posed real problems, given the specialized nature of our collection. Other writers have noted the deficiencies of LC subject headings when applied to collections specializing in the areas of public health and developmental disabilities. It is unreasonable to expect a subject heading list designed for general use to be able to cover these specialized fields with completely satisfactory results. To cite one obvious shortcoming, we estimated that if LC subject headings were used, nearly 30 percent of our collection would fall under the single broad heading of "Mentally Handicapped"—a term out of favor in our field for many years.

Subject Heading List

We wanted a subject headings list which offered greater specificity and made use of terminology current in the field of mental retardation. Efforts to locate such a list took several months. We began by checking various thesauri and searching for any subject heading lists that might deal with developmental disabilities. This produced no satisfactory results. Several librarians working with larger institutional libraries in the area of developmental disabilities responded to our queries by recommending the Medical Subject Headings (MeSH) of the National Library of Medicine (NLM). We had initially rejected MeSH as being too technical, which was an overhasty judgment. An examination of several volumes in our collection which had MeSH subject headings listed as part of their cataloging-in-publication data revealed that the terminology related to developmental disabilities was very consistent with that used by our professional staff. A close examination of the *Medical Subject Headings Annotated Alphabetic List* confirmed this.

But MeSH could not solve all our subject heading needs. Although the majority of our collection deals with the area of developmental disabilities, there is a significant amount of material which falls outside the scope of MeSH, including works dealing with special education, arts instruction, and personnel management. In these areas LC subject headings offered adequate coverage for our needs. Drawing on two sources would require us to have some type of subject heading review procedure if consistency was to be maintained. This was a major goal, even though we were unsure whether it could be practically implemented.

At the end of the planning process, we had determined what we felt was the best possible approach for the organization of our materials:

- The collection would be organized by Library of Congress classification.
- All volumes dealing with subject matter within the scope of MeSH (all areas of developmental disabilities, communicative disorders, behavior therapy, and medical reference) would draw subject headings from that source.
- Volumes with subject matter outside the domain of MeSH (general education, special education, management, recreation, music, and arts and crafts) would use LC subject headings.

Cataloging Services

The next task was to try to locate a card cataloging service which had the capability and willingness to work with us on our organizational plan. We use several reference sources, including Bowker's *Library Resources Market Place.* Letters were sent to over one dozen companies outlining what we sought to do. Most responded that they could provide services to meet our requirements. Price quotations, however, ranged from $3.50 to $5.50 per title, a level of cost that was beyond our means unless we were willing to spread the organizational effort over several years. Fortunately, one service—Marcive, Inc. of San Antonio, Texas—offered us a less expensive alternative. Marcive suggested that if we were willing to do the work of dividing the collection into NLM and non-NLM cataloged titles, they could produce custom card sets and book labels to our specifications for less than $1.50 per title.

Marcive, as its name suggests, makes use of the MARC computer records of the LC catalog. Marcive is also able to access the CATLINE database of NLM cataloged titles. Each library working with Marcive fills out its own profile sheet indicating the format desired for catalog cards and book labels. These cards and labels are custom printed from information contained in the computer databases. Because the records of each library's acquisitions are maintained in a separate database, they can be edited according to specific needs. This means that customers willing to provide editing instructions in the proper form have the flexibility of assigning their own subject headings.

It was decided that the best procedure for our library would be to develop two separate profiles. One would cover titles cataloged by the National Library of Medicine. We were to supply the NLM number and the LC classification for the titles. A separate profile would be developed for books not cataloged by NLM. We would supply either the LC card number or International Standard Book Number (ISBN). Marcive would run these against the MARC database and send us a computer printout of the results. This printout would allow us to examine the LC subject headings and, if necessary, edit them to conform to MeSH. Because of the flexibility of the computer program, all subject heading changes would be reflected in the card tracings as well.

The first task was to determine how much of the material in our collection was in fact NLM cataloged. This would be the material easiest to catalog, since the appropriate MeSH headings for each title would already exist in the CATLINE database. We purchased from Marcive the NLM CATLINE database on microfiche. The University of Mississippi Library allowed us to borrow a microfiche reader during their Christmas break. Over a two-week period six hundred titles were compared with the NLM database. Approximately 60 percent of our collection appeared in the database. The microfiche supplied us with the necessary NLM number for each title. The next task was to provide Marcive with LC classification for the NLM titles. More recent volumes in our collection contained this information as part of their cataloging-in-publication data.

The University of Mississippi Law Library made it possible for us to obtain LC classification for the remainder of the collection by providing guest access to their OCLC terminal. In March 1983 our first batch of 322 NLM cataloged titles was sent for processing. Within a month cards and labels were back. As specified in our profile, the catalog cards were in file order. In one operation we had an author/title, subject, and shelflist index, and 60 percent of our collection on the shelves in LC classification order. The cost to complete this first major step in organizing our library was less than $400.

Non-NLM Materials

The remaining 40 percent of our collection required more complex handling. These were titles which were not cataloged by NLM. Our profile with Marcive called for batches of these titles to be searched against MARC records according to the LC card number or ISBN. Printouts of the resultant "hits" were returned to us. We had sixty days to examine the printout of each set of records and determine what changes we wanted made in the subject headings. The deadline was because these records had to be held in temporary storage on the Marcive computer until the edit changes were made.

A large portion of this remaining material, although not cataloged by NLM, still fell within the subject areas covered by MeSH. Edit lists were drawn up to conform subject headings for these titles to MeSH terminology. To do this required learning how to code our changes for entry by a keypunch operator. An example of a list of such changes is shown in Figure 1. Because of the deadline, we limited the number of titles in any one batch to from thirty to fifty. The subject heading changes were sent to Marcive, which made the alterations to the records in our database. Card sets and labels were then printed and shipped back to us.

Figure 1

```
BATCH 0008
LIBRARY ID:  NMRC

ACCESSION NO.      CODE CHANGE
8300502            R.SUT.Ø.A.'YHANDICAPPED'.X.'- EDUCATION'
                   R.SUT.1.A.'YPARENT-YCHILD YRELATIONS'
                   A.SUT.2.A.'YEDUCATION OF YMENTALLY YRETARDED'
8300503            R.SUT.Ø.A.'YLEARNING YDISORDERS'
                   D.SUT.1
8300504            R.SUT.Ø.A.'YBENDER-YGESTALT YTEST'
8300505            R.SUT.Ø.A.'YMENTAL YRETARDATION'.A.'- IN
                      ADULTHOOD'
                   R.SUT.1.A.'YMENTAL YRETARDATION'.A.'- REHAB-
                      ILITATION'
```

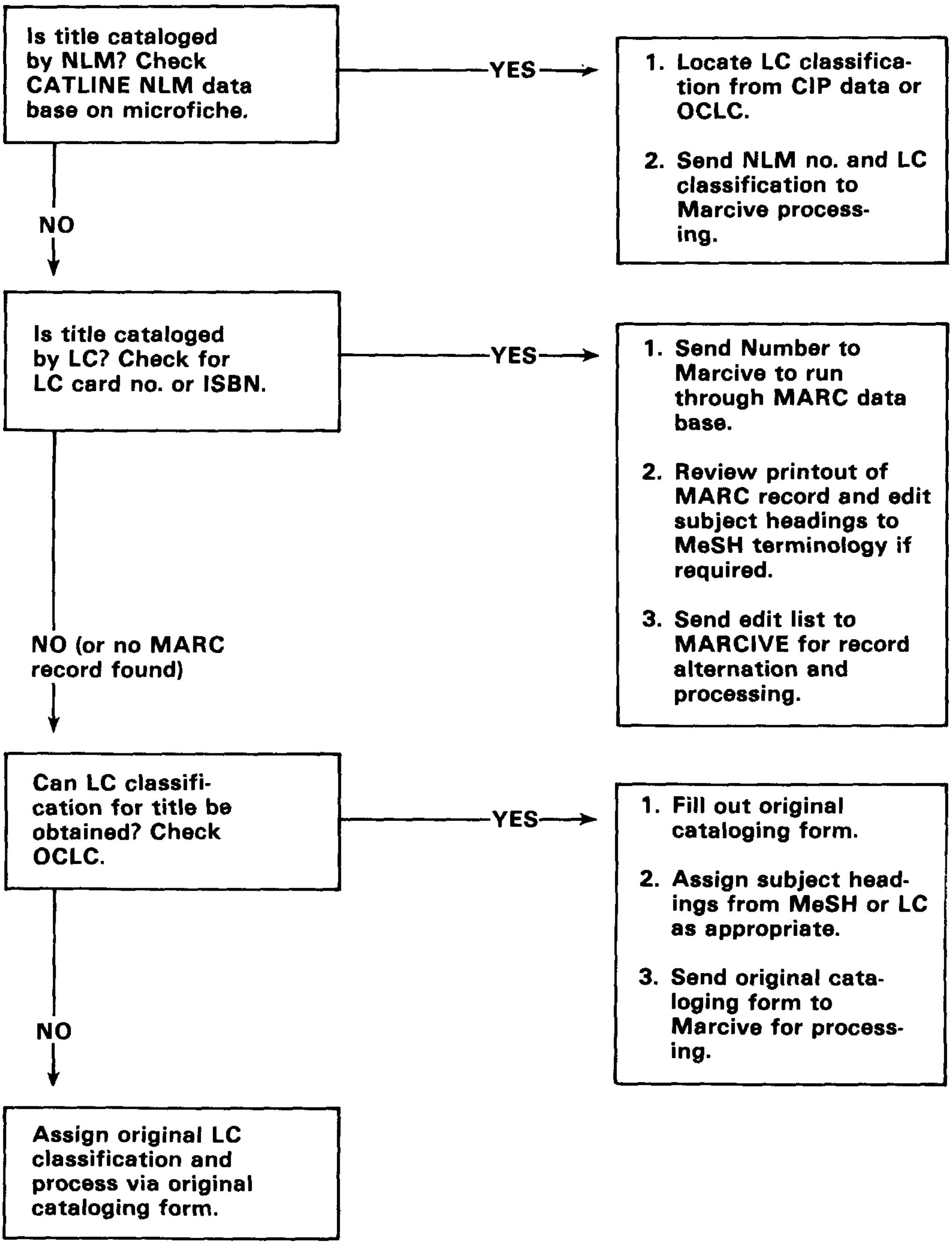
A third category of books were those for which no MARC record could be found. Many of these are books which were never cataloged by the Library of Congress. This group of materials comprised about 15 percent of our collection. When an LC classification could be located for these titles, they were processed through Marcive's original cataloging system. Compared to the other processes, filling out an original cataloging form requires a much greater amount of time, ten to thirty minutes per title. For this reason each title that was a candidate for original cataloging was carefully scrutinized to determine if it deserved permanent inclusion in the collection. Some outdated materials were discarded, but the majority were cataloged.

Out of our total original collection, only about forty titles remain uncataloged. These are titles not found in either the NLM or LC databases and for which no LC classification could be obtained. As time allows, we plan to supply our own LC classification to these titles and process them through original cataloging.

Conclusions

It took a year of preplanning before organization of our collection could begin. Much of this time was spent search-

Figure 2. BOOK PROCESSING FLOW CHART FOR STAFF LIBRARY AT NORTH MISSISSIPPI RETARDATION CENTER.



ing out possibilities and pursuing more than a few dead ends. The project would never have gotten past the planning stage without the willingness of librarians across the country to respond to our queries and, in the case of the University of Mississippi Library, share resources. Once our goals were finalized and our contact with Marcive established, another year and a half was required to complete the organizational effort. During this period, about 10 percent of the author's total work time has been devoted to the project.

The per title cost of generating catalog card sets and book labels for LC and NLM materials has been less than $1.25; materials processed through original cataloging average about $1.70 per title. Costs have totaled just under $1,000. Staff utilization of the library has increased significantly and, as a result, funds for book purchases have been increased. As new books arrive they are processed in the same manner applied to the original collection. (This procedure is outlined in Figure 2.)

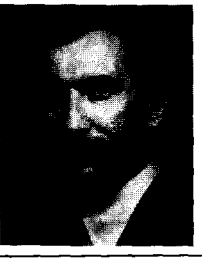
Our experience proves that, with persistence, a smaller specialized collection can be organized to professional standards, even when time and funds are limited. We have achieved all of our original goals, including a high level of consistency in our subject catalog. This was possible only through careful preplanning and close cooperation with an outside cataloging service. The staff library of the North Mississippi Retardation Center represents a total outlay well in excess of $10,000. For less than a tenth of that amount, we have been able to provide effective access to the collection. Seen in this light, the money and time expended on our organizational effort have been modest compared to the benefits derived.

References

Leigtag, Susan. "Subject Heading Revision." *Special Libraries* 73 (no. 2):147-150 (April 1982).

Weber, Sandra J. "Information Resources in Mental Retardation." *Special Libraries* 69 (no. 1):7-12 (Jan. 1978).

Received for review June 25, 1984. Manuscript accepted for publication Oct. 18, 1984.



Ed Payne is a Training Specialist in the Staff Development Department of the North Mississippi Retardation Center, Oxford, MS.

Microcomputer Software Collections

Samuel Demas

Albert R. Mann Library
Cornell University, Ithaca, New York

■ An overview of the special considerations in developing collections of microcomputer software, a review of recent developments in standardizing cataloging practices and a discussion of the problems of selection and acquisitions of software. Policies governing loan procedures for microcomputer software must take into account four different bodies of law applied to software: patent, trade secret, contract and copyright. Each type of copy protection is briefly treated and suggested loan policies are outlined which are consistent with intellectual property law and which have proven effective in microcomputer centers.

LIBRARIES have crossed the barrier of formats based on the printed word and have begun collecting as well as accessing information in electromanetic form. The special problems related to selecting, acquiring, cataloging and loaning microcomputer software present a new challenge.

The Albert R. Mann Library at Cornell University recently opened a microcomputer center with 32 micros for student and faculty use. We are developing a sizeable collection of microcomputer software to support both our own instructional programs for faculty and students and general research and instruction needs. The literature did not provide a complete overview of the basic issues in developing collections of microcomputer software. In reviewing what was available, we managed to piece together a picture of the state of the art in several specific areas. By consulting colleagues across the country as questions and problems arose, we came to an understanding of the major problems and issues librarians face in developing collections of software.

Although there is enormous interest in collecting software in libraries, most librarians are not sure how to get started and where to turn for guidance. While we do not have all the answers, our experience in establishing a microcomputer center and software collection provided us with an overview of the special considerations in developing software collections.

This paper is adapted from a talk presented at the 1984 SLA Conference in New York.

Selection and Acquisitions

The first challenge, and perhaps the most difficult, is deciding what software to buy. The demand for software of all types is enormous, and thousands of entrepreneurs are claiming their share of the market. Software quality and prices are uneven. The publishing industry is producing a great deal of software. But the majority of programs are generated and marketed by the computer industry *per se,* and there are no real industry standards. Acquisitions procedures and pricing structures for the library market are still evolving. Prices are high and libraries find it difficult to determine the quality of the programs available.

The reviewing media for microcomputer software are undergoing rapid growth and change. Although the library media do not yet review a significant amount of software, this will certainly change as the software industry matures and library demand increases. A relatively new periodical, *Library Software Review,* has appeared and *Booklist* reviews some software. But most software reviews are published from within the microcomputer industry itself, with publications like *InfoWorld* setting the standard for good critical and comparative reviewing.

In general, the reviews published in the popular computer magazines are far more descriptive than evaluative and consequently are of limited value to the selector. However, comparative reviews are increasingly popular and appear in periodicals such as *PC* and *Byte* and in book-length treatments like *The Ratings Book—IBM PC Spreadsheet Programs,* published by Software Digest. But librarians still must scan many different journals to determine the best reviewing sources for their selection purposes.

Identifying software to purchase for a particular application is becoming easier as many microcomputer software directories are being published annually. Some directories are devoted to software which runs on a particular machine (such as the *Book of IBM Software* published by Addison-Wesley) while others (like the *Directory of Microcomputer Software* by Datapro) cover many types of hardware and offer user ratings and warranty information in addition to descriptive entries and the usual acquisitions information. Patrick R. Dewey recently compiled a checklist of software directories which provides a good starting point for selectors.

Most producers will not permit previewing of their software packages. So, in addition to reviews and directories, selectors must rely heavily on the recommendations of patrons who have actually used the programs. Ironically, software libraries are becoming popular with individuals who want to try a variety of programs before they select one to purchase. Thus software libraries may become an important marketing device for software producers.

As a library begins to build a software collection, it is important to have a clear statement of collection scope and policy. A collection development policy helps to focus the coverage of the collection and serves as a guide in spending limited resources on expensive materials. Some considerations in software collection policy are programming languages supported, multiple copies, collecting locally produced and/or public domain software, and hardware compatibility with other units in the organization. Limiting the number of kinds of hardware you support is a critical factor in maximizing the purchasing power of software acquisitions funds.

Software prices are negotiable, and some vendors will supply programs to libraries at a large discount in recognition of the visibility it gives their products. Negotiating separate deals for each item acquired is inefficient for both vendors and buyers, and standardization of pricing structures and acquisitions practices is probably inevitable. Acquiring programs will become easier as major library bookdealers, such as Blackwell North America and Baker and Taylor, begin to supply software.

Libraries, publishers and dealers will

all benefit by efforts of a subcommittee of the National Information Standards Organization to develop a Standard Computer Software Number (SCSN). Like the ISBN, this system for numbering software packages will facilitate inventory control, ordering, royalty payments and sales tracking. This standard, which should be adopted by NISO late in 1984, is just the beginning of a long process of integrating software into the library and information market.

Cataloging

Special librarians have recognized the need to gain bibliographic and management control over corporate inventories of software. In a 1973 article in *Special Libraries,* Karl M. Pearson described a cataloging system developed for the Systems Development Corporation and outlined the objectives of a software catalog: "to provide an adequate description of each program so the user could decide . . . whether or not the program might fit his requirements; and to furnish an array of access points to the collection so that the user would be able to select alternative search strategies. . ." (Pearson p. 546).

These are essentially the same objectives we have in developing card catalogs, but the nature of microcomputer software presents a challenge to the ingenuity of catalog librarians. For example, does a new "version," "level" or "release" of a program constitute a new edition? Or, how do you describe a software package with several data files or several program files on the same diskette? What access points do you provide, and how do you indicate programming languages and compatible hardware?

The point of departure for standardization efforts is Chapter 9 of AACR2, which covers the description of machine-readable files of all types and their accompanying documentation.

Since the rules in Chapter 9 have proven inadequate for the cataloging of microcomputer software, ALA's Resources and Technical Services Division (RSTD) Committee on Cataloging Description and Access established a task force last year to address problems in applying AACR2. The task force's recommendations, "Guidelines for the Descriptive Cataloging of Microcomputer Software," were approved in January 1984 and will be published later this year. These guidelines are an interpretation of Chapter 9 and are designed to assist librarians in the application of AACR2 in descriptive cataloging of microcomputer software. They do not address questions of choice and form of headings, nor do they cover subject cataloging or classification.

A subcommiteee of the RTSD Subject Analysis Committee was established in January 1984, with Joan Mitchell of AT&T Bell Labs as chair, to examine problems of providing subject access to microcomputer software.

In addition to these efforts at developing accepted interpretations of AACR2, several cataloging manuals are available. Sue A. Dodd's publication *Cataloging Machine-Readable Data Files: An Interpretive Manual* (ALA, 1982) will be followed in the next year with *Microcomputer Programs: A Cataloger's Handbook* which Dodd is writing with Ann M. Fox of the Library of Congress.

Another important guidepost is the MARC format for machine-readable data files, which was approved by MARBI (Machine-Readable Form of Bibliographic Information Commiteee) in January 1982. All the networks intend to support this MARC format, but at this time only UTLAS has implemented a file for online shared cataloging of computer programs. OCLC hopes to bring up its file in the fall of 1984 and reports considerable demand for the service, particularly from libraries with COM or online catalogs that are no longer manually cataloged. And there is talk at the Library of Congress about including the cataloging of software in the CIP program.

Many libraries which have software collections are not waiting for these national standardization efforts to bear fruit. A number of school and community college libraries have developed their own cataloging and classification systems. Some special libraries, such as the Bechtel Data Processing Library, have developed their own methods and procedures to catalog machine-readable formats. Since our constituents are clamoring to use the software we own, we must make these disks available to the public in a timely and equitable manner. Even before we solve the problems of bibliographic access, we must face the challenge of providing physical access to software collections.

Copyright and Loan Policies

In formulating policies and procedures for loaning software, we must strike a balance between providing effective access for users and reasonable protection to the owners of intellectual property. The legal questions surrounding copyright and other forms of copy protection for software are complex and have not yet been refined through a body of case law. Rather than attempt to address the legal intricacies, what follows is an overview of the copy protection laws applied to computer programs and an outline of some typical loan policies that take these factors into account.

The primary source of revenue for the computer industry has shifted from hardware to software. It has been estimated that the proportion of computer expenditures world wide is rapidly approaching 90 percent for software and personnel and 10 percent for hardware. Indeed, some predict that access to mainframe computing time will eventually be provided free of charge with the purchase of software programs. At any rate, it is costly to produce high quality software programs, and producers are concerned about protecting their investments.

Software differs from other types of library materials in that copyright is not the only or necessarily the most effective means by which software authors and publishers can protect their rights of ownership. Four different bodies of law are potentially applicable: patent, trade secret, contract and copyright. Since the U.S. Patent Office has been reluctant to grant patent rights on software so far, this form of protection is not currently of great significance to libraries. Copyright and contract law are the most commonly used methods of copy protection for software.

Librarians and publishers have an enormous stake in the copyright laws and their interpretation, so it is not surprising that more has been written on this aspect of software than any other considered in this paper. Laura N. Gasaway's recent article, "Nonprint Works and Copyright in Special Libraries," provides an excellent overview of copyright law and detailed treatment of its application to computer programs, databases and electronic publishing.

Although the owner of a disk does not have the right to make copies to give or sell to anyone else, there is nothing in the copyright law which prohibits a library (or an individual) from lending a program.

The Copyright Act of 1976 did not specifically address computer programs and was subsequently amended with the introduction of Section 117, the "Computer Software Copyright Act of 1980." Although it is not entirely clear how the concept of "fair use" in Section 107 of the Copyright Act applies to software, it seems that making multiple copies for educational use is not permitted. The "fair use" doctrine of Section 107 prohibits copying substantial portions of a copyrighted work, and most computer programs are virtually useless unless the entire program is copied. Section 117 clarified the situation somewhat by giving the owner of a program the right to make as many copies as are needed to use the program or to store it for archival purposes.

Although the owner of a disk does not have the right to make copies to give or sell to anyone else, there is nothing in the copyright law which prohibits a library (or an individual) from lending a program. In fact, commercial rental libraries are springing up which offer the opportunity to preview a program for a fee. Software producers rankle at the rental concept, but libraries are in a good position since we do not charge a loan fee and our purpose is educational. As long as we make a good faith effort to prevent illegal copying (e.g., by displaying copyright notices), we are protected from liability by Section 504(c) of the Copyright Act.

The situation is complicated by the fact that many software publishers are not satisfied with the copyright law and seek protection of their software under trade secret or contract law. In such cases one is, legally speaking, leasing rather than purchasing software programs and use is restricted by the terms of the license accompanying the disk. This is a new legal arena for librarians and is particularly problematic since the laws are not uniform from state to state.

In insisting, as many vendors do in their licenses, that one can only use a specific copy of a software package on a specific machine, software producers are taking a hard line in protecting their property rights. Not surprisingly, a survey of software producers by David Walch of California Polytechnic University revealed that 45 percent are not in favor of libraries circulating software. However, the same survey indicated that 41 percent provide for multiple copy licensing. In another survey, 82.5 percent of educational software producers surveyed said they were willing to negotiate special prices for purchase of multiple copies.

This flux and reliance on individual negotiations will settle out as both sides gain more experience, as industry standards develop, and as the laws are interpreted in the courts. But meanwhile it is extremely time-consuming to negotiate price and loan agreements for each specific software package when you are trying to build a sizable software collection.

It is critical that librarians be closely involved in the development of these agreements, for the stakes are high. As Jennifer Daryl Slack points out in her 1981 article, "Programming Protection: The Problem of Software," patterns of power, control, dependency, and domination are being forged right now in the establishment of institutional structures to accommodate the transfer and control of computer hardware and software. Slack goes on to emphasize the importance of these decisions concerning information transfer in a dramatic and compelling analogy:

> The question of who owns the software—if indeed it is to be owned at all—is as crucial as who owns the hardware. Just as Marx saw the question of the ownership of capital as the primary factor in the dynamics of the emerging industrial society of the nineteenth century, the question of the ownership of software which controls the information communicated by computers may well be a decisive factor in defining the dynamics of the emerging information society of the late twentieth century. The industrial revolution of the nineteenth century was born and shaped quietly not only in the small shops and factories of England, but in its courts of common law. In a similar fashion, the birth and shaping of the information age may be taking place not only in the research laboratories, but in the complex legal arrangements that are quietly defining new concepts, structures, and tools for the control and exploitation of information resources. (Slack p. 161)

Where does this leave us regarding loan policies for software collections? Software producers want to sell or lease to libraries—it gives their products excellent exposure—but they are fearful of illegal copying and of borrowing as a substitute for buying. Librarians must convince this emerging branch of the publishing industry that we are sensitive to intellectual property concerns and that our loan policies are designed to enforce compliance with copy protection laws. This will strengthen the case of libraries in negotiating site licenses and influencing industry standards in relation to libraries. At the same time we must not hesitate to use our full rights under the law. Each library should establish a procedure for reviewing contracts and site licenses to assure that the library does not agree to unnecessarily restrictive terms.

In setting loan policies, we must strive to protect rights of publishers while making software readily available to our constituents. The following loan policies and procedures are consistent with copy protection laws and have proven effective in several microcomputer centers:

1. In general the library will not purchase for loan purposes any program for which it cannot negotiate an exemption from the provision that a particular copy of a program may only be used with a particular machine.
2. Software is only loaned for use in the microcomputer center, though printed documentation may be borrowed for use outside the library.
3. Patrons must acknowledge a statement on copy protection when borrowing software.
4. Copyright warning notices are posted at every work station.
5. The original diskette is stored as a backup and a working copy is loaned; unless a special arrangement is made with a vendor, there is an original in storage for every circulating copy.
6. The use of programs designed to unscramble copy protection codes on disks is not permitted in the center.

These straightforward procedures seem acceptable to software publishers and reassure them that illegal copying is minimized in microcomputer centers. The only way to eliminate unauthorized copying is through innovations in the hardware and disk technology. Until this occurs, we will continue to build on these basic procedures to assure access to the collections while protecting copy rights.

Conclusion

School and special libraries were the first to begin collecting software, but libraries of all types will soon include microcomputer software in their collections along with books and audiovisual materials. The special problems attendant to developing software collections are eminently solvable, and the profession is already hard at work on the task.

The standards and procedures for software marketing, distribution, pricing, reviewing, storage, cataloging, control and access are now being determined in a variety of forums. Active, informed involvement in shaping the patterns of information transfer through microcomputer software is both an opportunity and a professional obligation for librarians. Educational institutions, corporations and governmental bodies are looking to their libraries for assistance in developing rational and affordable plans for acquiring, storing and disseminating information in machine-readable form. This presents us with both a challenge to build on our traditional skills and experience as librarians and an opportunity to incorporate them in our new role as information managers.

Sources

Bell, Trudy E. "Copying Computer Software For Educational Purposes: Is It Allowed?" *Personal Computing* November 1983, pp. 236–239, 242.

Bell, Trudy E. "Copying Computer Software: What Risks, What Penalties? *Personal Computing* May 1983, pp. 131–134.

Chin, Kathy. "The Software License Quagmire: The Irony of Unenforceable Contracts." *InfoWorld* 6(no. 26):34–35 (June 25, 1984).

Dewey, Patrick R. "Searching For Software: A Checklist of Microcomputer Software Directories." *Library Journal* 109(no. 5):544–546 (March 15, 1984).

Dumlao, Mercedes and Sherry Cook. "Cataloging Software." *Special Libraries* 74(no. 3): 240–245 (July 1983).

Gasaway, Laura N. "Non-Print Works and Copyright in Special Libraries." *Special Libraries* 74(no. 2):156–170 (April 1983).

Gorman, Michael and Winkler, Paul W., editors "Anglo-American Cataloging Rules." (Chapter 9 concerns cataloging of machine-readable data files.) Chicago: American Library Association, 1978.

Hoover, Todd and Gould, Sandra. "The Pirating of Computer Program: A survey of Software Producers." *Educational Technology* 22(no. 10):23–26 (October 1982).

Intner, Sheila S. "Suggestions for the Cataloging of Machine-Readable Materials." *Library Resources and Technical Services* 27(no. 4): 366–370 (October/December 1983). The RTSD/CRG Nonbook Institutes offered throughout the country over the next two years offer sessions on cataloging microcomputer software.

Jones, Henry W. "Software: Looking at the Law." *Desktop Computing 3,* June 1983, pp. 28–31.

Kuhn, Janet K. and Leslie D. Ball. "Protecting Software with Copyrights, Patents and Trade Secrets." *Journal of Systems Management* 29(no. 12):28–31 (December 1978).

Pearson, Karl M. "A System for Cataloging Computer Software." *Special Libraries* 64(no. 12):545–554 (December 1973).

Saltman, Roy G. *Computer Science and Technology: Copyright in Computer-Readable Works: Policy Impacts of Technological Change.* Washington, D. C.: U.S. Government Printing Office, 1977.

17 U.S.C. § 101, *et seq.* (976).

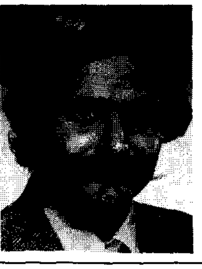
17 U.S.C. § 117 (1976), as amended by Public Law No. 96-517, Dec. 12, 1980, 94 Stat. 3028, codified as amended at 17 U.S.C. § 117 (Supp. V, 1981).

Slack, Jennifer Daryl. "Programming Protection: The Problem of Software." *Journal of Communication* 31(no. 1):151–163 (Winter 1981).

Stern, Richard H. "What Should be Done About Software Protection? An Attorney's Opinion." In *80-US* 5(no. 7):16–19 (July 1982) Richard H. Stern's series "Microlaw" in *IEEE Micro.*

Walch, David B. "The Circulation of Microcomputer Software in Academic Libraries and Copyright Implications." Unpublished manuscript of a paper delivered at the April 1984 ACRL Conference.

Received for review May 7, 1984. Revised manuscript accepted for publication October 17, 1984.



Samuel Demas is Associate Director, Albert R. Mann Library, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York.

The Online Revolution and the Reference Desk: the Australian Experience

Ray Choate

The Borchardt Library
La Trobe University
Bundoora, Victoria, Australia

■ **Libraries in Australia, as they attempt to come to terms with computers and related technology, must also deal with "the tyranny of distance," their physical isolation from the rest of the world. Various Australian networks and databases are discussed, as well as their interaction with foreign online networks.**

GEOFFREY BLAINEY, professor of history at the University of Melbourne, wrote in 1966 a history of Australia entitled *The Tyranny of Distance,* in which he attributed part of the special Australian character and development to our geographical isolation from the rest of the world. Even today, in spite of technological advances, we are physically at the "end of the run," and most aspects of commerce, industry, and life must take the distance factor into account. A further aspect of this "tyranny of distance" is also domestic isolation. Our two major cities, Melbourne and Sydney, are over 700 kilometers apart, and Sydney, on the eastern seaboard, is over 3,200 kilometers from Perth on the west coast.

This paper is adapted from a talk given at the 1984 SLA Conference in New York.

Over the two centuries since settlement, however, there has been a steady erosion of the distance factor. The completion of the overland telegraph line in 1872 between the populated east coast and Darwin on the north coast put the majority of Australians in fairly close contact with the rest of the world, especially as Darwin was linked to Europe by cable. While messages were not instantaneous and had to be forwarded by repeater stations through the interior of the continent, Australian business leaders could have information on commodity prices and other information only a few hours old. Another notable advance was the telephone, and local systems were in operation in the late 1870s. Today, thanks to satellites, we can be in nearly instant touch with the "outside" world. We are able to link our computer terminals by telephone directly with those in the United States and Europe, which has been a great boon to the business community and to libraries.

The principal objective of this paper is to survey the impact of computers and related technology on reference work in Australia. Most observations will be based on the situation as it applies to reference sections in university libraries, and to some extent to other major research libraries.

There are nineteen universities in Australia, all federally funded. All but five are in capital cities—Melbourne and Sydney have three each. There are about sixty tertiary colleges, many of which are degree granting institutions, but most with a bias to vocational training. Each state has its state library, some of which have great and valuable research collections, not only in Australiana. The Commonwealth Scientific and Industrial Research Organization (CSIRO) has a complex system of over seventy divisional and field station collections (libraries) scattered throughout the nation, with the central library and union catalog of holdings in Melbourne. The CSIRO library system has the largest holdings of science material in Australia.

The National Library of Australia (NLA) is located in Canberra, the national capital, and serves all sections of the library community. It is fairly catholic in its collecting areas and is developing many important research collections. The National Library is also instrumental in several bibliographical publishing efforts, including the *Australian National Bibliography (ANB)* and the *Australian Public Affairs Information Service (APAIS)*, the latter being the national social sciences and humanities index. The NLA also co-ordinates the Australian Bibliographic Network (ABN) and the MEDLINE database.

Online Information Retrieval

Computerization first began to have its impact on Australian reference services in the early 1970s, when the NLA and the CSIRO began to offer offline bibliographic current awareness services to the library community. Although somewhat awkward, this searching by remote control was fairly popular and the advantages of selective dissemination of information were appreciated. Only MEDLARS at that stage offered retrospective searches. (The offline services, now both SDI and retrospective, are still being used, mainly by institutions and indiiduals without access to a terminal.) The databases covered included major American ones, for example, ERIC, CA CONDENSATES, INSPEC, MEDLARS and BIOSIS. By the mid-1970s, the number of databases which could be accessed had increased, and both retrospective and current awareness search facilities were available.

The National Library made MEDLINE available online to libraries in 1976, and at about the same time interest in online access to other databases was growing. In 1977, the Australian Information Network (AUSINET) was founded by a consortium consisting of the National Library, several universities, and a business corporation, Australian Consolidated Industries (ACI), all of whom were willing to assist with the financial support of such an enterprise. Although most of its online databases were of U.S. origin (e.g. ERIC, COMPENDEX, CA CONDENSATES, INSPEC, SCI, SSCI), they were available in Australia from a local supplier. At one time, ISI's *Arts and Humanities Index* was also available online. AUSINET was grafted onto the computer network of ACI, which has branch offices and computer access in most major cities. STAIRS was selected as the search language.

From the beginning, there was interest in and experimentation with locally produced databases. The NLA soon mounted its *Australian National Bibliography* and *APAIS*, and the CSIRO put up its *Australian Science Index.* Other institutions began to submit data files of Australian material, many based on inhouse computerized files designed for publications or for information control.

In 1979 the Australian Overseas Telecommunications Commission (OTC) provided access to the large information systems overseas via MIDAS (Multimode International Data Acquisition Service), which uses satellite and domestic toll-free telephone links. Costs, now based on volume rather than distance, were reduced substantially. It became not only easier but relatively inexpensive to interrogate databases in the DIALOG, ESA and other systems. It was at this time that most of the overseas databases were removed from AUSINET, leaving it largely with Australian-content databases.

As of January 1984 there were twenty-four databases (with 448,640 records) on the network, mostly bibliographic, although the Australian Bureau of Statistics has mounted some of its major time series. Subject coverage of Australian material has increased through the years with databases on education, transportation, earth sciences, agriculture, theses, business, art and several others. There is an increasing number of highly specialized databases being mounted on AUSINET, for example data on oil well drilling and exploration within Australia.

The original AUSINET consortium ended in 1980, and AUSINET is now firmly within the private enterprise sector as a subsidiary of the host corporation, Australian Consolidated Industries. At the same time, it relies heavily upon publicly-funded institutions; NLA, CSIRO and several colleges and universities, for some of its major databases.

While the subject coverage of Australian material within AUSINET has broadened, that has not always been the case. Most contain bibliographic references only since 1978 (the ANB covers material since 1972) and, regrettably, there are not enough financial resources within most parent institutions to add retrospectively to their databases. Tragically, the *Australian Science Index* ceased only this past year for financial reasons. However, it is hoped that some similar index (and database) can be established to take its place in the coverage of the sciences.

Many of the databases are really a labour of love and are heavily subsidized by the parent organization. In the case of recently mounted *Australian Art Index*, from the Australian National Gallery (ANG), the indexing is done by art librarians throughout Australia with quality control at the ANG Library. Such cooperative exercises do much to bring the users/contributors together and to ease the burdens on a single institution. There have been several attempts to create a national newspaper index, but as yet all efforts have been abortive.

We certainly are proud of our national network, and many of us strive to increase its usage and to promote it. With time, as the breadth and depth of its databases increase, its value will be even more appreciated by the local community and, one hopes, by librarians from outside Australia. AUSINET can be accessed from overseas by using TYMNET, TELENET, or the equivalent. Alternatively, overseas users can arrange to have an Australian information broker perform the searching for them.

Australian Material Online

Many Australian librarians are concerned about the coverage of Australian material, both in local databases and overseas. A colleague, Alex Byrne (*1*) of James Cook University of North Queensland, recently undertook a study published in the journal *Database* on Australian content of some major American databases. The results, from an Australian point of view, are not encouraging and serve as an impetus for us to demand even more activity on the local scene. Byrne compiled two lists of major Australian journals, one for the sciences and one for the social sciences. These lists were matched against the serials lists of major U.S. databases. The coverage ranged from a maximum of 50 percent in one science database (BIOSIS) to a maximum of 15 percent in a social science database (SSCI); the usual coverage is much less.

Even more worrying is the Australian content in these overseas databases. Byrne analysed the results of some representative searches, which showed only about 2 percent of the citations of general searches related to Australia. Search topics which were more specifically Australian, e.g. marsupials, had results up to 13 percent. Such results indicate the need for more Australian content overseas and more local coverage at home. Steps are being taken by the CSIRO and other organizations to increase the Australian content in overseas databases by inputting more material. The sooner that our local databases have more current as well as more retrospective coverage, the more valuable they will be for Australian and for overseas researchers.

Late in 1982, several Australian database producers and users organized the Australian Database Development Association (ADDA) as an independent organization with the objective "to represent and promote the interest of organizations and individuals concerned with the development, production and provision of access to public Australian databases." This association, still a fledgling, has the difficult and delicate task of working between the public and private sectors concerning the development of national databases. If ADDA succeeds, the result should be better coverage of national bibliographic resources.

The Australian Libraries and Information Council (ALIC) instituted a dialogue in 1983 on a national information policy. Many individuals and organizations, such as ADDA, have responded. One hopes that a result of this dialogue will be a national information policy which will make one of its concerns the provision of Australian material online.

The use of overseas databases continues to grow, but no nationwide records or statistics are maintained encompassing all sectors of the library community. An annual survey of university use and practice was introduced in 1982 at the Australian National University. (*2*) All university libraries access overseas databases, and DIALOG received the most use in 1982 with 1,445 hours. The total would be much higher if the use was known at special, public and college libraries. At least ten other overseas systems are in use.

Peter Judge, (*3*) a senior executive of the CSIRO, speaking to the V.A.L.A. conference in 1981, produced interesting data which may give some idea of the usage of online bibliographic retrieval in Australia. Judge suggested there were at that time an estimated 160,000 online searches performed annually in Australia (on MEDLINE, AUSINET and from the U.S.A. via MIDAS), which compared to an estimated 125,000 in the U.K. and about four million in the U.S. He further noted that MEDLINE usage in Australia grew from 1,000 connect hours in 1977 to approximately 15,000 in 1981. Further, in 1981 1,000 users registered to use MIDAS, and at least half of them were using it for information retrieval. It is unlikely that the present day figures are less than those reported by Judge in 1981; the rate of growth is, however, probably less spectacular.

Most of our books and journals are carried by seamail. That means most print information is six weeks to three months old when it is received in Australia.

Although there has been some attempt to use online order facilities, the experience to date has not encouraged much use, at least in the tertiary sector, because of the cost. There also does not appear to be an appreciable savings in time over normal interlibrary loan by airmail or Telex. Australian special librarians tend to use online ordering more, especially in libraries without budgetary constraints.

Unless we are prepared to pay expensive surcharges for airmail or air freight, most of our books and journals are carried by seamail. That means most print information is six weeks to three months old when it is received in Australia. We look forward to full-text transmission, if we can afford it (the present charges for satellite transmission are twenty cents per minute and sixty cents per thousand characters).

The Australian Bibliographic Network (ABN)

In the early 1980s the ANL established the Australian Bibliographic Network. Based on the Washington Library Network (WLN) from the U.S., the network serves as a cataloging tool. With the increasing number of participants, its holding records are also becoming a valuable resource for ILL activities. The bibliographic file, as of March 1984, contains over three million records, and there are over 1.75 million holdings statements. Dial-up access is now available, and several reference departments are using this facility to complement normal reference services in a way similar to RLIN users in America. As more entries are added, ABN will eventually replace, to a large extent, the microform version of the National Union Catalogue.

ABN is slowly expanding; the union lists of serials, heretofore inprint or microfiche format, are gradually being added to ABN as NUCOS (the National Union Catalogue of Serials). The ANL is also entering records for its pictorial collection with the intention that it should serve as a database for the nation's pictorial resources if and when other art galleries and libraries add their pictorial holdings.

A research project is being undertaken at the present time to ascertain the feasibility of an ILL software package to be built into the network. Such a package would have a dramatic effect on ILL practices. At present, several libraries have experimented with downloading records and sending them, complete with classification number, to lending libraries by electronic mail.

Electronic Mail

An electronic mail system, called ACIMAIL, has been introduced by ACI; it is based on the Hewlett Packard HPMAIL system in the U.S. In late 1982, fifteen of the nineteen Australian university libraries participated in a two-month trial of the ACIMAIL system. During that time it was mainly used for ILL, although other messages were sent as part of the trial. Telex is used extensively by Australian university libraries because Telex charges are distance based. Electronic mail is less expensive over great distances, although its financial advantage decreases over shorter distances. The greatest handicap to electronic mail (especially compared to Telex) is the need to have an operator to read incoming messages.

Five of the universities have continued with the ACIMAIL electronic mail system, including two of the more remote ones, the University of Tasmania and the University of Queensland. The National Library and the CSIRO Central Library have joined the system, as have several college and special libraries. Electronic mail, as we now know it, is still in its early stages, and its use is likely to grow.

Australian Consortium for Social and Political Research Incorporated (ACSPRI) and Social Science Data Archives

ACSPRI was founded in 1976, and there are now twenty-one members of this national consortium. It was initially established in order to make the resources of the International Consortium for Political and Social Research (ICPSR) at Ann Arbor, Michigan available to Australian researchers who are interested in using machine-readable social science data. Data sets are brought to Australia from ICPSR and other overseas sources, and copies are made for the requesting member and the ACSPRI office at the Australian National University. The consortium keeps close contact with the Social Science Data Archives (also at the Australian National University) which was established in 1981 as a clearinghouse and collecting agency for similar Australian-produced machine-readable data sets. It now has over one hundred Australian data sets, including census material. As ACSPRI and SSDA accumulate more data sets, both overseas and domestic, their importance as a national resource will increase not only for Australia but also for foreign researchers.

Other Uses of Technology

Several university libraries are now in the process of establishing online public access catalogs and beginning a retrospective conversion of their book stock. Reference librarians have had very little experience to date in using an online catalog for reference service or with education of readers concerning online public access catalogs. It is an area of interest; local surveys of user reaction to and interaction with OPAC's are being organized in several institutions, and most reference staff are also monitoring the situation in the U.S., where there has been more experience with online catalogs.

Australian reader education librarians are keen to experiment with computer assisted instruction packages. The reference staff at the Australian National University undergraduate library has developed a computer program for introducing users to the card catalog. It is likely, however, that the use of computer assisted instruction packages will increase as reference staff become more familiar with computers, as computing equipment becomes more commonplace in reference sections, and as software packages become more readily available commercially.

The use of microcomputers will certainly change the patterns of reference service, but, as with computer assisted instruction packages, the use of them is still in its early stages. Like our reference colleagues the world over, we can imagine many uses covering ILL, statistics keeping, indexing, bibliographic compilation, organizing pamphlet collections, etc.

Videotex and similar electronic systems for telereferencing are still new and relatively untried in Australia. There has been some experimentation in the agricultural sector by the Department of Agriculture in the State of Victoria with videotex systems. To date there has been little impact on the libraries by any videotex system, but the situation and the possibilities are being closely observed, and it would appear that there are opportunities for a variety of cooperative projects using such an interactive system. Some libraries are experimenting with a localized interactive public information system to be used for directional and basic information inquiries at their information points. There are possibilities in linking these to online circulation systems or online catalogs; if successful, one can imagine that the mix of questions will change, allowing reference staff more time for non-directional inquiries.

Summary

Certainly Australian reference librarians have been affected by technological change, and online bibliographic retrieval has been the area which has had the most impact to date. Online services are being integrated, albeit slowly and carefully, with traditional reference services. This had led to an increase in subject specialization on the part of reference librarians. Most staff are willing and able to cope with technological advances, even prepared to embrace them enthusiastically, but like our colleagues overseas, actual advancements and enhancements have been hampered by the lack of generous funding for experimentation, training (and retraining), and additional staffing. This is a mixed blessing.

A delay means we can take advantage of overseas experience and, in many instances, lower costs for equipment. But much more needs to be done on the local scene, especially online bibliographic coverage, and delay only exacerbates the situation. Many special libraries, particularly those in the private sector, are able to participate more actively in the online revolution; they are not as likely to be handicapped by the financial constraints which operate on public and tertiary librarians, who also have the added burdens of cost recovery and implementing services to a wide variety of users.

Many Australian library projects and applications involving computers are still in their infancy: ABN, electronic mail, videotex all hold promise for easier and even more rapid communication in the years to come. Thanks to technology, the tyranny of distance in the information sector is becoming less and less a negative factor to national development.

Received for review May 8, 1984. Manuscript accepted for publication October 22, 1984.

Ray Choate is senior reference librarian, the Borchardt Library, La Trobe University, Victoria, Australia.

Notes

1. Byrne, Alex. "How to lose a nation's literature: database coverage of Australian research." *Database* August 1983, pp. 10–17.
2. Wood, Fiona. "Survey of Australian university libraries' online bibliographic retrieval systems, 1982." *Australian Academic & Research Libraries* 14(4):216–220, Dec. 1983. [with microfiche supplement]
3. Judge, Peter. "Information retrieval in Australia." In *Meeting the Challenge of Technology,* edited by B. J. Cheney. Melbourne, Victorian Association for Library Automation, 1981, vol. 1, pp. 86–89. [Proceedings of the National Conference on Library Automation, 16–18 November 1981]

Moving a Medical Center Library

Britain G. Roth

Geisinger Medical Center
Danville, Pennsylvania

■ The relocation of a medical center library collection of 30,000 book and journal volumes and 600 audiovisuals is described. The planning and moving procedures which facilitated the move are detailed. A bibliography of the library literature concerning library moves is attached.

GEISINGER MEDICAL CENTER, a 556-bed tertiary care center located in Danville, Pennsylvania, recently completed a major building project and physical reorganization. The library of the medical center was scheduled to move twice in one year, first to temporary quarters for eight months and then to a newly constructed, centrally-located space. This paper outlines our planning procedures and execution of the two moves.

Planning to move 30,000 book and journal volumes, 600 audiovisuals, and our entire physical plant twice within one year caused a number of problems. The first step toward solving them was to see how others had handled the space allocation and moving procedures for special libraries. Unfortunately, the library literature primarily addresses moving and space planning of university collections which have larger budgets for moving, more personnel, and a slack time in which moves are planned. The literature did not provide information pertinent to a smaller library's needs.

Our analysis showed that four issues needed to be addressed: space planning, avoidance of service disruptions, library staff morale, and physical handling of materials.

Space Planning

The need to function efficiently in our temporary quarters and to provide for adequate growth for our collection in the second relocation were primary concerns. Before we defined space requirements for the future collection, a weeding of the journal and book collection was undertaken. We informed department heads of the relocation plans and asked if they would help us to weed the book collection. The journal collection was reviewed for duplicates to be placed on exchange and for titles to be dropped or added. The periodicals holdings list for the library was completely revised and updated and became an important tool in our move.

Facilities which would provide educational space for studying and the growth of our collection were designed in close cooperation with the facilities planning department of the medical center. The 1980 *Planning Criteria for VAH Hospitals* became a key document in justifying space requests and describing functional relationships within the library. Temporary space was designed with minimal renovations and somewhat resembled a rabbit warren. The newly constructed facilities were designed with functional relations and traffic flow as a primary consideration to provide space for four to five years of expansion. The layout of the library was aided by the construction of quarter-inch to a foot scale cutouts for every piece of equipment which was to be moved, including photocopy machines, desks, chairs, carrels, files and shelving stacks. The cutouts allowed repeated rearrangement of the library on the architectural blueprints.

Service disruptions

The library, which opened in 1927, has enjoyed an excellent reputation for providing service to medical center patrons. The medical center staff of 3,500 FTEs includes 187 full-time physicians; 190 residents and fellows; RNs, and administrative and allied health personnel. In addition, the library serves a school of nursing and nine allied health schools on campus. There was no possibility of closing the library for any length of time. The need to reduce services was recognized, however, and we began a program to alert library patrons. We sent notices of the planned library move to department heads, the library's monthly acquisitions newsletter and the medical center's employee newsletter. Patrons were encouraged to request literature searches prior to the move's commencement and to expect some delays in document delivery.

The photocopy machines, interlibrary loan area, and the terminals for database searching were the last items moved to the new locations. This allowed patrons to continue coming to the old location and kept them out of the way while we were unpacking. The telephone system was connected to ring in both locations with no changes in library numbers. Thus communication between the library staff and patrons continued while we were moving, and service was not disrupted. Both moves began on a Saturday to reduce interruptions in service, to avoid patient traffic, and to allow volunteers to come during nonworking hours.

Staff morale

Library staff involvement is crucial to the success of any move. All employees were involved in spatial planning and in the moving of a physical facility. The cut-outs of furniture and shelving became a focal point for library staff meetings for months prior to both moves. The suggestions for redesign and rearrangement which resulted from these meetings could easily have been overlooked and would have resulted in an inferior design. During the moves, the library staff served as team leaders for volunteers and as resource people for the moving company personnel.

Each library staff member had specific areas of responsibility and specific assignments. The design of and move to the new space became a challenge to each employee and made the inevitable disruptions easier to overcome. Following the completion of our final move, an open house was planned and hosted by the library staff. This allowed the staff to present the new quarters, to orient patrons, and to celebrate the accomplishment of the move.

Physical handling

The physical handling and move was completed by salaried management/administrative volunteers from throughout the medical center, by the library staff, and by a local moving company. The moving company had no prior experience in the move of a library and were trained by the library staff, who served as resource personnel throughout the move. Multiple copies of the quarter-inch scale architectural plans were made and posted at former and future quarters for quick reference, and half-inch scale architectural plans showing the placement of furniture were posted outside each office. The general stack layout and shelving order of books, journals, and audiovisuals were shown with arrows on the scale plans and key areas were labelled as to where a certain title should start or end. Collections and furniture were carefully measured to ensure that each item would fit in its designated area.

Each move day was planned to be about 14 hours long. The process and work teams were assigned to three major areas: furniture, journals, and books or audiovisuals.

Each piece of furniture was given a label with an area number noted on it. The area numbers corresponded to the half-inch scale architectural plans posted in the various areas or offices. Furniture misplaced during transit could then easily be directed to the correct area for placement.

Most of any medical library's collection consists of journals. Our primary concerns were to keep the collection in proper alphabetical and chronological order and to allow for adequate growth space. The periodical holdings list, which had just been revised, was annotated with the shelf measurements in linear feet for each title held and with the space needed for four years' growth. Total linear footage for journals was compiled from this list and exact locations for journal runs were designated on the architectural drawings. Empty shelves were assigned to allow for unexpected growth of a journal title, additions of new titles, and as a margin for error. Multiple copies were made of the annotated holdings list and used as guides for the unpacking crew.

As with the journals, the book and audiovisual collection was measured, empty shelves for future growth designated, and the linear footage was determined. Layout of call numbers was noted on the quarter-inch scale plans for reference by the reshelving crew.

Heavy duty cardboard moving boxes, originally designed to move legal files, were purchased for the move of the books, audiovisuals and journals. The boxes were broken down (folded up and stored) for reuse during the second move. Materials were placed in the box spine up, in the same order as they had been on the shelves, allowing for easy reshelving by the unpacking crew. The moving crew had to be continually reminded that completely filling the boxes was not desired. Rolls of consecutive colored numbers were purchased for each of the three types of material (audiovisuals, books, journals) and affixed to each box as it was loaded. Boxes were then stacked on moving dolleys in reverse order to allow for proper stacking at the receiving end. The unpacking crew could easily tell by referring to the numbered labels if they were reshelving in the correct order, thus eliminating some potential catastrophes. This allowed for easy resolution of any problems.

We wish to stress, however, that library personnel are needed to supervise very closely the packing and unpacking of all boxes and the reloading of shelves. Even the most conscientious moving crew prefers to move as quickly as possible, which can contribute to error. A library supervisor posted at each end is a great remedy against potential disaster.

Each move took four 14-hour days, with minimal disruption to service and to the overall library operations. Careful planning, involvement, and communication with all medical center personnel increased the visibility of the library and resulted in an increased awareness of the library and its collection.

Conclusion

The library manager must measure, plan, involve all personnel, and keep in mind that no matter how much advance preparation takes place, mistakes and crises are an inevitable part of the process. However, potential problems can be minimized if the procedures discussed are enacted.

Acknowledgments

I would like to thank Raissa Maurin, Chief, Library Service, Miami, Florida, Veterans Administration Medical Center and Selma Etter, Reference Librarian, Geisinger Medical Center, for their review of this paper.

Bibliography

Brogan, L. L., Lipscomb, C. E. "Moving the Collections of an Academic Health Sciences Library." *Bulletin of the Medical Library Association* 70(4):374–379 (October 1982).

Cohen, A. and Cohen, E. *Designing and Space Planning for Libraries.* New York: Bunker, 1979.

Kurkul, D. L. "The Planning, Implementation, and Movement of an Academic Library Collection." *College and Research Libraries* 44(4):220–234 (July 1983).

Lumb, A. E. "Moving an Academic Library: A Case Study." *Journal of Librarianship* 4(4):253–271 (October 1972).

Martin, J. A. "Planning the New NIH Research Library." *Special Libraries* 59(1):30–38 (January 1968).

Moran, R. F. "Moving a Large Library." *Special Libraries* 63(4):163–171 (April 1972).

Schuyler, J. A. "Library Moving Procedure." In Mount, E. (ed). *Planning the Special Library.* New York: Special Libraries Association, 1972, pp. 52–54.

Spyers-Duran, P. *Moving Library Materials.* Rev. ed. Chicago: American Library Association, 1965.

Received for review April 17, 1984. Manuscript accepted for publication Oct. 18, 1984.

Britain G. Roth is Director, Learning Resources, Geisinger Medical Center, Danville, Pennsylvania.

Bibliometrics: From Curiosity to Convention

Emilie C. White

Mississippi State University Libraries
Mississippi State, Mississippi

■ Bibliometrics is the measurement of books or compositional entities according to methods that yield comparable results. Bibliometrics has led to the formulation of several specific empirical laws, such as Bradford's Law of Scattering, that are mathematically cogent but practically problematic. Theories and applications of bibliometrics have particular appeal to the fields of bibliography and indexing, and hence librarianship, because of the persistent need to substantiate the identification and retention of authors' works most frequently cited. Citation analysis with computer-produced indexes may be currently the most successful use of bibliometrics, but the continual refinement of computer capability promises the emergence of bibliometrics from peripheral areas of library research to a point of primary consideration in collection management.

BIBLIOMETRICS, the quantification of bibliographical data, evolved from the efforts of early twentieth-century documentalists to apply mathematical and statistical analyses to bibliographical units. The validity of data obtained through bibliometric studies continues to be debated despite general acceptance of the accuracy and objectivity of bibliometric techniques.

The most basic bibliometric technique still in use involves counting and categorizing publications by country of origin and by field. Such a study was first presented in 1917 by F. J. Cole and Nellie B. Eales in *Science Progress.* Their project analyzes publications in comparative anatomy from 1543 to 1860 by simply counting the number of titles, both books and journal articles, and grouping them by country. (*1*)

In 1923, E. W. Hulme introduced the term *statistical bibliography.* (*2*) He justified his counting of journal articles and ranking of countries by their productivity with the explanation, "To shed light on the processes of written communication and of the nature and course of development of a discipline (in so far as this is displayed through written communication), by means of counting and analyzing the various facets of written communication." (*3*) British librarian Alan Pritchard is generally credited with creating the term *bibliometrics* in 1969 to replace *statistical bibliography*. (*4*) He broadens Hulme's definition with the explanation offered by L. M. Raisig in the *Bulletin of the Medical Library Association:* "[T]he assembling and interpretation of statistics relating to books and periodicals . . . to demonstrate historical movements, to determine the national and universal research use of books and journals, and to ascertain in many local situations the general use of books and journals." (*5*) For the historical record, G. R. Wittig documents nine uses of the designation *bibliometrics* prior to Pritchard's article to identify this relatively recent area of research.

Quantification and Qualification

After Pritchard's initial work, bibliometrics expanded in two dimensions, quantitative and qualitative. Quantitative analyses of literature are exemplified by the early statistical studies (Cole and Eales, Hulme) culminating in the emergence of three basic bibliometric laws: Lotka's Law (1926) predicting the productivity distribution of various authors; Zipf's Law (1933) describing word-frequency rankings; and Bradford's Law of Scattering (1934) describing the "distribution of documents (usually journals) in a specific discipline or problem area." (*6*) Qualitative applications of bibliometrics emphasize practical utilization of research findings, five of which are especially useful for libraries:

- Identifying a "core" literature;
- Ranking publications in zones of diminishing importance;
- Establishing "a transition point between zones of higher and lower utility";
- Tracing the spread of ideas as a study of epidemics; and
- Classifying segments of a literature through interconnections of citations.

Susan Artandi includes two additional qualitative functions: determining the impact value of a given document and locating criticisms of published results of research and experiments. (*7*) Donohue suggests that bibliometrics "may be pursued as a means of doing history" or it may be used for direct application to reduce "the quantitative untidiness of scientific documentation, information systems and library service to a more orderly state of affairs capable of being rationally and economically planned and organized." (*8*)

In the area of quantitative analysis of a literature, B. C. Brookes states that the numerical aspects of bibliography have five general objectives:

- Design of more economic information systems and networks;
- Improvement of efficiency rates of information handling processes;
- Identification and measurement of deficiencies in present bibliographical services;
- Prediction of publishing trends; and
- Discovery and elucidation of empirical laws that can provide a basis for developing a theory of information science. (*9*)

The discovery of the empirical laws of bibliometrics has resulted in a combination of the quantitative and qualitative dimensions that has satisfied research needs in both areas. Lotka's Law of Scientific Productivity was theorized first. Based on the examination of two populations of chemists, the law states that "the number of chemists publishing n papers is proportional to $1/n^2$ in each, . . ." resulting in the authorship of a large number of documents by a small number of writers. (*10*) Extending the "success breeds success" theory, Derek de Solla Price developed his own theory that "half of the scientific papers are contributed by the square root of the total number of scientific authors." (*11*) Price asserts further that "future citation successes [are] determined statistically by the past history of the cited paper; . . . A paper that has been often cited is more likely to be cited again." (*12*)

Zipf's Law of the distribution of word frequency is often linked with Bradford's Law, and both together have been linked to Lotka's Law. The Zipf Law describes the occurrence of words in text by a distribution similar to Lotka's: "[I]f words are ranked according to their frequency of occurrence, the *rth* ranking word will appear approximately *a/r* times, for some constant A. . . . [T]he number of occurrences of the *r* most frequent words in text is proportional to 1n *r*." (*13*) Zipf offers his own mathematical explanation of his theory, which he reduces to the simple suggestion that "the entire phenomenon of speech is presumably subject to the Principle of Least Effort." It is interesting to note that Zipf's examples for his study include Joyce's *Ulysses, Beowulf,* and the *Iliad,* for which indexes and concordances are available. (*14*)

Bradford's Law

Bradford's Law of Scattering has received the greatest attention in library literature. Its promulgator was British bibliographer S. C. Bradford, interpreter of the Universal Decimal Classification, who projected his theory of the scattering of the literature of a discipline and its consequences in a chapter entitled "Documentary Chaos" in his treatise on documentation. Bradford established the fact that at that time (early 1930s) "less than half the useful scientific papers published are abstracted in the abstracting periodicals." (*15*) This statement was corroborated in 1965 by Price, who hypothesized that in any given year 35 percent of all existing papers are not cited at all and that 49 percent are cited only once, for reasons such as inadequate indexing and abstracting, and unavailability. (*16*)

The obvious deficiencies in bibliographic control, the limited scope and capabilities of abstracting agencies of that time, and the reliance of one indexing group upon another to catch articles that have fallen through the net prompted Bradford to "examine the extent to which articles on a given subject actually occur in periodicals devoted to quite other subjects." The breadth of the scattering intrigued Bradford, who finally reduced his theory to a "law of distribution":

> [I]f scientific journals are arranged in order of decreasing productivity of articles on a given subject, they may be divided into a nucleus of periodicals more particularly devoted to the subject and several groups or zones containing the same number of articles as the nucleus, when the numbers of periodicals in the nucleus and succeeding zones will be as *: n: n^2* . . . .

Bradford's initial research was in the subject areas of applied geophysics and lubrication, fields selected because bibliographies on these subjects were compiled in the Science Library at South Kensington, of which Bradford was Keeper. Bradford concluded that in a given subject area, periodicals can be categorized in three separate groups: those producing more than four references a year, those producing between two and four references a year, and those producing one or fewer references a year. The first group forms the nucleus of periodicals in a subject field and necessarily contains more articles on that subject than periodicals that include articles on related subjects. Bradford himself provides the least complicated explanation: "The whole range of periodicals thus acts as a family of successive generations of diminishing kinship, each generation being greater in number than the preceding, and each constituent of a generation producing inversely according to its degree of remoteness." (*17*)

Reaction to Bradford's Law came slowly after the publication of his research. Saracevik comments that the law was a "curiosity" until the late 1960s, when experimental observations revealed its stability, flexibility, and relationship to other laws of communication. Although Bradford completed his research in the 1930s, apparently he did not present his findings as formulations until 1948. The initial problem with Bradford's Law was explained late in the same year by B. C. Vickery, who pointed out that Bradford identified his theory with an algebraic expression that "only predicts the upper straight line portion of the observed curves." The misunderstanding of Bradford produced a slightly different result when using Bradford's graph or his formula, although overall results are approximately the same.

A similar complaint was published in 1972 by Elizabeth Wilkinson. She clarifies the problem through her own research, which demonstrates that Bradford's formulations are not mathematically equivalent: "In theory Bradford predicted the verbal formulation; in practice he observed the graphical formulation." (*18*) The difficulties inherent in a purely mathematical confinement of Bradford's Law may result from the uniqueness of the law itself, which stands apart from conventional mathematical or statistical ideas. B. C. Brookes suggests that Bradford "may have initiated a new branch of statistics—the statistics of individuality—which may also lead to an extension of fundamental mathematical ideas . . . in the social sciences." (*19*)

Applications of Bibliometrics

The described empirical laws have at least three characteristics in common: They are distributions that describe complex situations; the distributions persist in all kinds of testing circumstances; and all the distributions are almost equivalent. Combinations of the laws have also presented opportunities for research. Brookes established for the Bradford distribution a closer connection with the Zipf distribution. The superimposition of the Bradford distribution over the linear Zipf distribution, which demonstrates the emergence of more used and popular items, may yield a technique to describe the pattern of book use by library patrons. Applied to circulation data, these formulations can support such policies as shortened loan periods for heavily used titles and the identification of a core collection. Brookes attests to the close adherence of documentation to Bradford's Law as the method by which bibliographic control may be regained in research areas that are so random as to be considered outside the scope of documentation.

At the basis of all bibliometric research there is a collection of "document representations," usually in the form of references to previous works or citations from later publications. The compilation, arrangement, tabulation, and analysis of these document representations provide the framework for the bibliometric study. According to Narin and Moll, "The most active area of modern bibliometrics is concerned with citations." Boosted by the computer with its data storage capabilities and the successful marketing of citation indexes, research has proliferated concerning the use and nature of citations.

Citation Analysis

Citations have their own origins in the referencing pratices of researchers and writers. The concept of identification of the source of an idea or quotation developed during the Renaissance after the invention of printing. In England, the Copyright Act of 1709 provided protection of literary property and established a precedent for the enactment of copyright laws in all countries, culminating in 1886 in the development of the principles of international copyright. The precise origin of the use of footnotes or references is obscure. The earliest example provided in the *Oxford English Dictionary* is William Savage's *A Dictionary of the Art of Printing* (1841), containing eighty-eight "Bottom notes . . . also termed Footnotes." Earlier examples of notes resembling footnotes are the Rheims–Douai Version of the Bible (1582); the English translation of Pierre Bayle's *Dictionary* (1734–1741); and the Baskerville Bible (1763). Notes in the margins function as references in John Wolfe's 1582 printing of Thomas Watson's *Hekatompathia; or Passionate Centurie of Love.* (*20*)

From these earliest known references to previous works, the practice of bibliographic citation has progressed to the current uniform standards of providing references and bibliographies for all recorded research. The primary function of citation is to provide "a connection between two documents, one which cites and the other which is cited. . . ." (*21*)

Networks develop as half of the references in papers produced in a year refer to recently published papers and half refer to much earlier papers. This characteristic demonstrates two different "literature practices" and two different needs of the researchers, a research front depending upon the most recent works and a separate dependence upon the "totality of the previous work."

Besides satisfying the exigencies of copyright laws designed to assure appropriate credit assigned to the creator of any work, citations are provided for ethical and other reasons. Their dominant role is the identification of earlier research, but peripheral reasons include the following functions: recognizing pioneers; crediting related work; identifying methodology; providing background reading; substantiating claims; providing leads to poorly indexed work; and authenticating data.

Applications of Citation Analysis:

The utility of citation indexing became apparent in 1873 with the first publication of *Shepherd's Citations,* which presented a "citator system" for listing of legal precedents. The twentieth-century standardization of bibliographic practices has enhanced significantly the objectivity and reliability of citation indexing. Since the early 1960s, Eugene Garfield and others have seen great promise for the future of citation indexing to show journal use and impact, to organize collections of frequently used papers, to evaluate "milestone" papers, to perform historical and sociological studies, and to obtain "definitive information" on the growth of a literature. (*22*) Garfield's persistence in his concept of the feasibility of analyzing and indexing citations in all subject areas culminated in the 1961 publication of an experimental *Science Citation Index* by the Institute for Scientific Information. ISI has since published *Social Sciences Citation Index* (1973) and *Arts and Humanities Citation Index* (1978). (*23*)

Basic concepts of citation analysis that provide for study and research include: direct citation, which establishes the relationship between documents and the researchers who use them; bibliographic coupling, "the relation of two documents by virtue of their joint descent from the third"; and co-citation, which occurs when two citations are cited together. The first recorded citation analysis was a study by P. L. K. Gross and E. M. Gross published in 1927. The researchers tabulated the references in *The Journal of the American Chemical Society* to establish citation frequency for other publications and to determine journal subscription and backfile purchase for the library at Pomona College.

In the early 1960s, M. M. Kessler of the Massachusetts Institute of Technology introduced the term *bibliographic coupling.* Kessler demonstrated coupling in a computerized study of the references in thirty-six volumes of the *Physical Review.* This research emphasizes the advantage of coupling units used as a retrieval tool "independent of words and language" and requiring no expertise or prior knowledge for comprehension. H. G. Small presents co-citation as a "form of document coupling which shows the frequency with which two documents are cited together." Significant differences exist in patterns of co-citation and patterns of coupling. Citation patterns can change over a period of time because of dependence upon the citing authors. Bibliographic coupling is a "fixed and permanent relationship." The usefulness of co-citation studies is evinced by the development of secondary indexes of highly co-cited papers and the establishment of a "cluster" or core of earlier literature in a field, contributing to a profile of the literature. (*24*)

Classifications of Citation Analysis.

Practical applications of citation analysis may be variously classified. Gupta and Nagpal suggest three divisions: information and library-oriented studies, such as rank order listings of journals, use rates of library materials, and titles to include in indexes, abstracts, and current awareness services; science-oriented studies, including the half-life (calculable obsolescence) of a literature, network determination through co-citation and clustering, and the informal communication system ("invisible college") in the scientific disciplines; and management-oriented studies that pertain to the evaluation of productivity in terms of citation analysis.

The third division, which concerns the use of bibliometric analysis for evaluative purposes, is probably the most controversial issue in the field. Evaluation can take place at three levels: evaluation of authors or institutions, evaluation of journals, and evaluation of countries. Warnings persist throughout the literature that citation frequency or any other bibliometric measure should not be used alone for evaluative purposes. Nevertheless, as Garfield points out, the necessity for evaluation at all levels, despite the difficulty and expense involved, and the objective nature of citation analysis contribute to the growing interest in bibliometrics as an instrument of evaluation.

Although the validity of judgment at the first level is an unsettled issue of disagreement and dispute, the acceptance of the bibliometric method for evaluation at the second and third levels is reflected in the multitude of published studies on a variety of literatures. On the second level, evaluation of journals, the 1927 study of Gross and Gross initiated the application of bibliometric techniques to library acquisitions when they questioned the adequacy of the chemical library collection at Pomona College. The correlation of high citation counts and frequent use of journals continues to provide information to support the inclusion of journal titles in a library collection. Translated in terms of cost effectiveness, data may indicate which journals, evaluated by their use, provide the best value for the money, which journals may be discarded, and which journals justify the purchase of back runs. Use of the Bradford distribution has assisted in the construction of lists of core journals and in selection decisions for journal subscriptions.

Beyond these primary functions, practical application of Bradford's Law has been demonstrated in measuring areas such as circulation of materials and composition of library patrons, as well as the monograph-publisher relationship for a subject literature. Collection development librarians are warned continuously against the over-zealous use of Bradford's Law to evaluate quality for selection purposes. Dependence upon Bradford's Law alone as a criterion may result in cost-effective acquisition in a subject area, in terms of frequency of book and journal use, but not necessarily in the best coverage of the subject area from all viewpoints.

Nevertheless, Robert Broadus addresses the question of quality and its positive correlation to high citation counts, noting that "over the last two decades, tabulations of citations have been used to measure the importance of academic departments, but especially of individual scholars and the contributions they have made to their respective fields." (*25*) On the third level, evaluation of countries, the appearance of computer-produced citation indexes assists in the assessment of productivity over a range of years and on an international scale. One step beyond this third stage is the "ultimate level of aggregation," at which all publications are included in the study of a specific discipline. (*26*)

Bibliometrics in Library Research

The most comprehensible research studies involving the use of bibliometric techniques have appeared as theses, dissertations, and journal articles on subjects such as collection building, bibliographic control, growth and maturity of a discipline reflected in its literature, and characteristics of the literature of a specific discipline. The literature of librarianship has been investigated with some surprising results. Tefko Saracevic surveyed library literature to discover that it has been largely self-contained. His report published in 1973 reveals a low rate of interaction with the literatures of other disciplines, except for the field of education. William Brace studied citations in 202 doctoral dissertations from ALA-accredited library schools, 1961 to 1970, and observed five major characteristics of the terminal degree literature:

- Absence of a core literature or a core group of authors;
- Absence of a "middle core" in terms of the Bradfordian distribution;
- Frequency of appearance of titles outside the discipline;
- Correlations that suggest "a kind of specialization among the several library schools"; and
- An almost even division between monographic and journal literature.

As with any statistics producing technique, the accuracy of the bibliometric analysis is closely related to the integrity of the interpretation.

Problems of Bibliometric Techniques: As with any statistics-producing technique, the accuracy of the bibliometric analysis is closely related to the integrity of the interpretation. The degree of subjectivity in the researcher's choice of supporting documentation may vary, but is usually influenced both by personal preference and availability of source material. Accessibility of documents for research is an undisputed advantage in the selection and use of titles, regardless of their inclusion in bibliographies and indexes. However, the secondary role of efficient indexing services for any field cannot be overlooked. The researcher's dependence upon guides to a literature may result in a high demand for some titles while other titles of equal merit are not used because they are unindexed and thus inaccessible.

Reliance upon bibliometric data alone for evaluative purposes without consideration of the bibliographic control of a discipline may indeed yield accurate statistics regarding the use of documents, but could produce misleading or erroneous judgments of the comprehensiveness of quality of the data collected. Following the development of any new statistical technique there is the tendency to attempt universal application. For example, the proliferation of specialized citation indexes has encouraged the application of citation analysis in more general situations, sometimes with disappointing results. A small-scale online bibliometrics project at the University of South Dakota library in 1981–1982 assisted in the identification of periodical titles for cancellation. Although three methods were selected to produce supporting data, the success of the project was marginal when compared to the time consuming and costly computer manipulations that were required. (*27*)

Problems inherent in citation analysis include multiple authorship and the identification and listing of authors that are not primary; self-citations, especially in cases of multiple authorship; specific identification of authors having the same last names and initials; standard names for authors with consistent use of given names and intitials; different citation patterns in different types of sources, such as journals and monographs; implicit citations, where a major work may be discussed in an article but not cited; numerical variations from year to year; varying rates of citations per publication in different disciplines; and errors in the citations themselves.

Conclusion

The complexities of bibliometrics have become apparent as there have been practical applications of the theories advanced by Bradford, Zipf, and Lotka. The perfection of a testing situation seems unlikely, even when retrieval and counting are computerized. The initial simplicity of the principles of bibliometrics is complicated by variables that result from traditional publication practices which may change in the future but cannot be altered for historical analysis. Because of its primary application in the library field, bibliometrics has generated more interest in the fields of librarianship and information science. The diversity of academic backgrounds in these areas promises research and application of bibliometrics to satisfy a wide range of possibilities of use.

Literature Cited

1. Narin, Francis and Joy K. Moll. "Bibliometrics" in *Annual Review of Information Science and Technology,* vol. 12. White Plains, New York, Knowledge Industry Publications, 1977.
2. Pritchard, Alan. "Statistical Bibliography or Bibliometrics?" *Journal of Documentation* 25 (no. 4): 348–349 (Dec 1969).
3. Ferrante, Barbara Kopelock. "Bibliometrica: Access in the Library Literature." *Collection Management* 2 (no. 3): 199–204 (Fall 1978).
4. Hjerppe, Roland. *An Outline of Bibliometrics and Citation Analysis,* Stockholm, Royal Institute of Technology, 1978. 82p.
5. Pritchard, "Statistical Bibliography or Bibliometrics?"
6. Witting, G. R. "Statistical Bibliography—A Historical Footnote." *Journal of Documentation 34* (no. 3): 240–241 (September 1978).
7. Ferrante, "Bibliometrics."
8. Donohue, J. C. "Bibliometric Analysis of Certain Information Science Literature." *Journal of the American Society for Information Science* 23 (no. 5): 313–317 (September 1972).
9. Brookes, B. C. "Numerical Methods of Bibliographic Analysis." *Library Trends* 22 (no. 1): 18–43 (July 1973).
10. Bookstein, Abraham. "Bibliometric Distributions." *Library Quarterly* 46 (no. 4): 416–423 (October 1976).
11. Narin and Moll.
12. Price, Derek de Solla. "General Theory of Bibliometric and Other Cumulative Advantage Processes." *American Society for Information Science Journal* 27 (no. 5): 292–306 (Sept 1976).
13. Bookstein, "Bibliometric Distributions."
14. Zipf, George Kingsly. *Human Behavior and the Principle of Least Effort.* Cambridge, Massachusetts, Addison-Wesley, 1949.
15. Bradford, S. C. *Documentation.* Washington, D. C., Public Affairs Press, 1950.
16. Price, Derek de Solla. "Networks of Scientific Papers." *Science* 149 (no. 3679): 510–515 (July 1965).
17. Bradford, *Documentation.*
18. Wilkinson, Elizabeth A. "The Ambiguity of Bradford's Law." *Journal of Documentation* 28 (no. 2): 122–130 (June 1972).
19. Brookes, B. C. "Theory of the Bradford Law." *Journal of Documentation* 33 (no. 3): 180–209 (Sept 1977).
20. Barr, Larry Joe. "Origin of Footnotes." *RQ* 5 (no. 3): 16–17 (Spring 1966).
21. Martyn, J. "Citation Analysis." *Journal of Documentation* 31 (no. 4): 290–297 (Dec 1975).
22. Garfield, Eugene and I. H. Sher. "New Factors in the Evaluation of Scientific Literature through Citation Indexing." *American Documentation* 14 (no. 4): 195–201 (July 3 1963).
23. Gupta, B. M. and M. P. K. Nagpal. "Citation Analysis and its Applications: A Review." *Herald of Library Science* 18 (no. 1): 86–93 (Jan–April 1949).
24. Small, Henry "Co-Citation in the Scientific Literature: A New Measure of the Relationship Between Two Documents." *Journal of the American Society for Information Science* 24 (no. 4): 265–269 (July 1973).
25. Broadus, Robert N. "The Applications of Citation Analyses to Collection Building" in *Advances in Librarianship,* vol. 7. New York, Academic Press, 1977.
26. Hjerppe, *An Outline of Bibliometrics.*
27. Sprules, Marcia L. "Online Bibliometrics in an Academic Library." *Online* 7 (no. 1): 25–34 (January 1983).

Received for review Nov. 3, 1983. Manuscript accepted for publication Oct. 17, 1983.

Emilie C. White is Government Documents Librarian of the Mississippi State University Libraries, Mississippi State, Mississippi.

Characteristics of Corporations that Founded Libraries: 1910–1921

Carol Tenopir

University of Hawaii at Manoa
Honolulu, Hawaii

■ **Eighteen corporations which founded special libraries are examined. Factors such as incorporation date, net income, comments in *Moody's Industrials* and changes in management are analyzed in order to isolate factors which led the corporations to establish libraries. An extensive bibliography is appended.**

THE DECADE between the founding of the Special Libraries Association in 1909 and the recovery after World War I saw a tremendous growth in industry in the United States, with a concomitant growth and development of the corporate special library. Anthony Kruzas' 1961 doctoral dissertation (*Development of Special Libraries for Business and Industry,* University of Michigan) provides a comprehensive history of the founding of all types of U.S. business and industrial special libraries. He traced in detail how these libraries were formed and did extensive research to identify all company libraries founded in the U.S. prior to 1940.

Kruzas identified 114 company libraries which were founded prior to 1910, 50 percent of which were founded between 1905 and 1909. Only 14 libraries associated with profit-seeking business were listed in the *Directory of Special Libraries* in 1910, representing just 13 percent of the directory listings. By 1921 there were 307 of these commercial or industrial libraries, constituting nearly 24 percent of the listings in the new *Special Libraries Directory.* These 307 special libraries included libraries in banks, consulting firms, public utilities, accounting firms, and business services, as well as industrial manufacturing firms.

If the manufacturing firms are separated from other commercial firms with special libraries, a similar dramatic increase is found. The 1910 directory lists only four libraries which are associated with industrial firms (General Electric Company, Stone and Webster, Arthur D.

This paper is adapted from a presentation at the 1984 SLA Conference in New York.

Little, and Franklin Manufacturing Company)—less than 4 percent of the total listings. By 1921 the directory lists 77 libraries in 64 industrial firms—nearly 6 percent of the total 1,288 listings.

What Kruzas and other special library historians do not address in detail is why so many industrial libraries started during the period of 1910–1921, what led certain companies to found libraries, and what common characteristics were held by these companies. Certain external factors such as the rise of literacy, the growth of complex technical literature, the impetus for industrial expansion during World War I, the principles of scientific management, and the birth of research and development are cited as obvious reasons for the great increase in all types of corporate special libraries.

These external factors are non-quantifiable, however, and are difficult to trace. This paper examines several internal factors within some manufacturing corporations which formed special libraries between 1910 and 1921. These internal factors allow a profile to be drawn of the parent company and serve to identify conditions in manufacturing firms which are favorable for forming a special library.

Scope

This study covers the decade 1910 through 1921, the period of initial rapid growth of company libraries after the Special Libraries Association was founded. 1910 was chosen as the beginning date rather than 1909 (when the Special Libraries Association was started) because the first national directory of special libraries was published and SLA's journal *Special Libraries* began in 1910. The closing date was chosen because the second national directory of special libraries was published in 1921. The period encompasses several economic and social trends including slow but steady growth before the war, rapid industrial expansion during World War I, a short period of slight depression after the war, and economic and social recovery.

Only those libraries listed in the 1921 national *Special Libraries Directory* were considered for inclusion in the study, which has the advantage of avoiding the problem of defining what constitutes a special library. All libraries in the study had a designated librarian and were established libraries rather than merely a room full of books. Inclusion in the directory implied a certain level of professional awareness in the corporation.

All libraries in the study had a designated librarian and were established libraries rather than merely a room full of books.

Since the purpose of this study is to examine the phenomenon of the growth of libraries in industrial firms by examining quantifiable factors within companies which formed libraries, only manufacturing or industrial company libraries listed in the directory were considered. Seventy-seven libraries of the 1,288 in the 1921 directory (6 percent) were in manufacturing or industrial companies. Selection of these company libraries was further narrowed by eliminating those libraries founded prior to 1910. Two libraries were eliminated from the study because their collections were primarily fiction for leisure reading by company workers (Gorham Manufacturing Company and Yale and Towne Manufacturing Company). Several companies had two or more separate libraries listed in the directory. Only the earliest established library was considered in this study because the existence of one successful library in a company might have an effect on the founding of subsequent libraries.

Companies for which financial data were not available were also eliminated. This redefined the scope of the study to be an examination of publicly held corporate industrial libraries, rather than any kind of company industrial libraries. Even in the pertinent time period, pub-

Table 1.

Corporations in Study	Net Income or Profits in Year Library Founded
American Agricultural Chemical Co.	7,300,000
American Cotton Oil Co.	1,500,000*
American Writing Paper Co.	55,400,000
Atlantic Refining Co.	6,800,000*
Armour and Co.	27,000,000
Barrett Co. (American Coal Products Co.)	9,500,000
California Associated Raisin Co.	796,100
E.I. Du Pont de Nemours and Co.	49,300,000
Eastman Kodak Co.	14,000,000
Fleischmann Co.	33,000,000
General Motors Corporation	567,300,000
Goodyear Tire and Rubber Co.	3,400,000
Ingersoll-Rand Co.	3,100,000
Keith, George E. Co.	26,000,000
Republic Iron and Steel Co.	13,800,000
Scovill Manufacturing Co.	2,000,000
Texas Co.	7,800,000

* PROFITS

licly held corporations were required to issue financial reports. Unincorporated or privately held firms did not have to disclose any financial data and therefore could not be included.

Finally, the remaining corporations were narrowed down to those for which enough financial information was available. Net income, sales or revenues, or net profits for the year the company library was founded and up to four preceding years was the minimum amount of data needed. If exact dollar figures could not be found, the company was not included.

The study is thus an examination of internal factors in manufacturing or industrial corporations which founded research libraries between 1910 and 1921, which are listed in the 1921 *Directory of Special Libraries,* and for which financial information is available. This study group contained eighteen corporate libraries.

Study Group

The eighteen corporations in the study group vary greatly in size and in what they manufacture. Table 1 lists the eighteen and shows their net income (or net profits when net income was not available) in the year in which the corporate library was founded. The figures are valuable by themselves only as an illustration of the variety in size of corporation.

Table 2 is a distribution of the corporations by subject headings assigned in the 1921 *Special Libraries Directory.* This information is interesting only to illustrate the variety of libraries in the study. These subjects assignments are, according to the directory, "somewhat arbitrary, some titles refering [sic] to library subject matter

TABLE 2

Subject	Number of Libraries
Agriculture and Food Products	3
Arts and Crafts	1
Automotive Industry	1
Chemistry	3
Manufacturing	5
Oil and Oil Products	3
Rubber	1
Science and Technology	1

and some to the type of institution maintaining the collection."

Consistent with the overall trend in special libraries, a majority of the libraries in the study group were founded in the later years of the time period. One half of the libraries were founded between 1919 and 1921, after the close of World War I. This seems either to lend credence to the external causal element mentioned by so many writers of the time or merely to reflect the corresponding increase in the number of manufacturing firms. An examination of the founding dates of the corporations which formed libraries will help resolve this issue.

Profiling the Corporations:

In order to draw a meaningful profile of each parent corporation, certain internal factors needed to be selected. The selection had to be based in part on the practical constraints of what data were available for the time period and what data could be collected consistently for all eighteen corporations. Chosen factors needed to reveal the economic situation and financial health of each corporation at the time the library was formed and show if any major changes preceded the formation of the library.

The following internal factors were chosen for analysis:

1. Incorporation date of company: if the assumption is correct that more libraries were founded after World War I merely because more corporations were begun, it might follow that a majority of the new libraries were founded in newly formed companies. Age of the study group companies at the time they formed libraries was examined to test this assumption and to establish a profile of mean age of corporations when they formed libraries. Incorporation date rather than actual founding date was used because only incorporation data was consistently available.
2. Net income (sales or revenues) or net profit: net income is the most meaningful economic figure available for companies because it is less susceptible to adjustment than is net profit and because it more accurately reflects usable economic resources and financial health than does gross income.

A meaningful comparison can be made of each company's increase or decrease in net income over a period of time prior to the founding of the library. This provides an indication of relative corporate economic health at the time of library formation. It also allows a profile to be drawn of mean increase or decrease in income when corporations decide to form a library. It would be expected that an increase in income usually precedes library founding, but the size of that increase cannot be hypothesized.

A five-year period was examined which included the year each library was founded and four years prior. Although this time period is arbitrary, it should be sufficient to trace patterns in net income changes which occurred before a company formed a library. It is purposely longer than the duration of the war to account for inconsistent fluctuations caused by the unusual wartime economy.

Net income figures were not available for two corporations in the study group. It was decided to use net profits for these companies. Although this figure is a more subjective one, the increase or decrease in net profits can still provide valuable data comparable to increase or decrease in net income.

3. Moody's comments: *Moody's Industrials* often included additional comments on a corporation if, in the opinion of Moody's analysts, it posed a notable risk or opportunity to investors. Fluctuations in a company's net income or profits do not always reflect the stock potential of that company, and these comments serve to alert potential investors to situations which may not be obvious from the financial information. These comments were a valuable part of a company's profile and reflect the perceived potential for growth in a company which forms a library.

4. Changes in upper management: It is often speculated that a sympathetic president or vice-president will establish a library where none existed before. If this is true, a change in upper-level management should usually precede the formation of a library.

In order to test this hypothesis changes in chairman of the board, president or vice-president in each corporation were monitored for the five-year period. Also, the addition of upper-level managers was checked. Unfortunately, it was impossible to obtain data on what officers had control over the library, but any changes in upper level management could be expected to change some conditions in a corporation.

An examination of these four factors provides at least a beginning of a profile of corporations at the time they formed libraries and may help to explain why a corporation begins a library when it does.

Methodology

Moody's Analyses of Investments and Security Rating Books, Part II commonly called *Moody's Industrials,* was used as the primary source for all four factors. In some cases when *Moody's Industrials* did not have the complete data needed, annual reports were available. Pergamon Press, Inc. publishes complete runs of annual reports on microfilm for the current top 500 corporations in the United States. Annual reports were especially useful for those corporations which had early library founding dates. Although in many cases the 1914 *Moody's* includes financial data several years prior to 1914, the annual reports often go all the way back to the company's incorporation date. Annual reports were available for nine of the eighteen corporations.

Net income or profit figures were recorded for each appropriate year for each corporation. The first year in the five-year cycle became the base (year one) figure. Percent of fluctuation from this base figure was then calculated for each succeeding year and averaged to provide a mean increase or decrease in net income at the time the library was founded.

Names of upper level management (chairman of the board, president, vice-president) were recorded for all companies in their base year. Changes in personnel or addition or deletion of officers were noted for the next four years. These were available for only ten of the eighteen corporations in the study.

Analysis

Age of Corporation: Only one company (the California Associated Raisin Company incorporated in 1912) was incorporated within the study period of 1910–1921. All other firms were in existence before the study period, and all firms existed prior to the increase in the number of companies brought about by World War I. The assumption that more libraries were founded merely because more companies were founded is therefore not supported. More complex reasons for library beginnings must be sought.

Changes in Net Income: Changes in net income (or net profits) occurring for the five-year period ending when the corporate library was founded ranged from a drop of 64 percent to an increase of 1,580 percent, for a range of 1,644 percent. This extreme range can be explained in part by the effects of World War I on one company. The Scovill Manufacturing Company, a brass manufacturing firm, saw an increase of 2,833 percent in their earnings in 1916, when the war began in force in Europe. For the period 1914–1918, Scovill had an overall increase of 1,580 percent. (Their earnings dropped again dramatically after the war was over, when brass shell casings were no longer in demand.) This figure skewed all of the net income mean figures, as the next highest increase was only 567 percent (enjoyed by another war industry—E.I. Dupont de Nemours Company). Modal and median figures are therefore more meaningful than mean figures throughout.

Interestingly, five of the corporations showed a net decrease in income or profits. Of these five, the median decrease was 30 percent, illustrating that although significant economic prosperity was likely to occur before a company formed a library, moderate economic problems did not necessarily preclude formation of a library.

Of the thirteen libraries which showed an increase in net income or profits, the median increase was 75 percent.

The majority of *Moody's* comments are positive but, they are not overwhelmingly positive or negative. Many of these companies apparently did not undergo any change in their value as an investment.

Changes in Management: Although names of upper level management were not available for eight corporations in the study group, changes were analyzed for the remaining ten.

Seventy percent of the firms had some change in upper level management prior to the formation of the corporate library. One firm (E.I. Dupont de Nemours) increased and decreased the number of its vice-presidents several times prior to the year the corporate library was formed, ending with an increase to twelve vice-presidents.

These findings support the idea that corporate libraries were founded when there were upper level management changes, but it is difficult to judge how direct the relationship was.

Summary of Findings: The historical profile of a corporation when it founded a library during the period between 1910 and 1921 can now be drawn. The average company had been incorporated for 21 years before starting its library, suggesting a certain level of maturity. It had been enjoying a substantial, but not tremendous, increase in net income or profits of approximately 70 percent in the years when the decision to form a corporate library was probably made.

Moody's Industrials analyzed the investment potential of the average corporation as slightly better than neutral. Perhaps the average corporation forming a library was experiencing no substantial changes in its stock potential because it was in a prolonged period of relative stability.

Finally, there is a 70 percent chance that the corporation made a change in upper level management prior to the formation of the library, probably at the level of vice-president.

Table 3 summarizes this profile of an industrial corporation founding a library during the period of 1910–1921.

Conclusion and Suggestions for Further Study

The historical corporate profile which has been drawn in this study shows that economic growth and change in upper level management usually occurred in corporations prior to the formation of a corporate library. The corporations were generally not newly formed, and probably the need for a library arose over a period of time. Research which examines the development of modern special libraries, such as that reported in *New Special Libraries,* suggests that these factors are still present when a new business library is formed.

It would be valuable to carry this historical study further in time, doing the economic research necessary to draw a profile of corporations founding libraries from 1921 to the present. Financial information is more readily available in more recent years, and a study of this sort over an extended period of time would allow a definitive profile of cor-

TABLE 3

Typical Corporate Profile When Library Founded	
Age	21 years (mean) 16 years (median)
Change in income over last four years	69.5% (median increase) 73% (modal increase)
Moody's Comments	3.25 (slightly positive)
Change in management	Yes, probably at Vice-President level
Addition of officers	Yes, added Vice-President

porations when they found libraries to be drawn. Beginning in the early 1950s, research and development expenditures are also available, allowing an historical comparison to be made between library development and research and development expenditures, similar to that done for modern corporations by the Jacksons.

If changes in economic profiles over time are found, those changes could perhaps be correlated with the fluctuations in the U.S. economy. Such a pattern would reveal how the economic condition of the country affects the formation of corporate libraries and could be valuable in predicting future library development.

Once this enlarged historical profile is complete, or now that a preliminary profile has been drawn for the period of 1910–1921, an obvious question is, how do these corporations differ from corporations which did not form libraries? This study does not attempt to create a comparative profile of sample corporations without libraries. This is a logical and relatively straightforward next step.

Research can help to answer what types of corporations form libraries and why libraries are formed when they are. Such research will provide valuable insights into corporate library development and will help predict further development of libraries within corporations.

Bibliography

Secondary Sources and Historical Research

Bedsole, Dan T. "A Library Survey of 117 Corporations." *Special Libraries* 54 (December 1963): 615–622.

———. "Library Systems in Large Industrial Corporations." Ph.D. dissertation, University of Michigan, 1961.

Christianson, Elin B. *New Special Libraries: A Summary of Research.* New York: Special Libraries Association, Illinois Chapter, 1980.

Christianson, Elin B. and Ahrensfeld, Janet L. "Toward a Better Understanding of New Special Libraries." *Special Libraries* 71 (March 1980): 146–153.

Jackson, Eugene B. and Jackson, Ruth L. "Characterizing the Industrial Special Library Universe." *Journal of the American Society for Information Science* 31 (May 1980): 208–214.

———. *Industrial Information Systems.* Stroudsburg, Pa.: Dowden, Hutchinson and Ross, Inc., 1978.

———. "The Industrial Special Library Universe—A 'Base Line' Study of its Extent and Characteristics." *Journal of the American Society for Information Science* 28 (May 1977): 135–152.

———. "The Personnel, Material and Financial Resources of the Library Systems of 311 Industrial Corporations." Bethesda, Md.: ERIC Document Reproduction Center, R005-222, 1977.

Johns, Ada Winifred. *Special Libraries: Development of the Concept, Their Organizations and Their Services.* Metuchen, N.J.: Scarecrow Press, Inc., 1968.

Kruzas, Anthony Thomas. *Business and Industrial Libraries in the United States, 1820–1940.* New York: Special Libraries Association, 1965.

———. "Development of Special Libraries for Business and Industry." Ph.D. dissertation, University of Michigan, 1961.

Musiker, Reuben. *Special Libraries: A General Survey.* Metuchen, N.J.: Scarecrow Press, Inc., 1970.

Shera, Jesse H. "Special Librarianship and Documentation." *Library Trends* 1 (October 1952): 189–199.

Williams, Robert V. "Sources in the Variability in Level of Public Library Development in the United States: A Comparative Analysis." *Library Research* 2 (Winter 1980–81): 157–176.

———. "Sources of the Variability in Level of Public Library Development in the United States." Ph.D. dissertation, University of Wisconsin-Madison, 1978.

Contemporary Articles and Books

Abbot, Elizabeth. "The Studebaker Library and its Work." *Special Libraries* 1 (November 1910):66–68.

"Annual Meeting of the Special Libraries Association: New York City, September 27–28, 1911—General Discussions." *Special Libraries* 2 (September 1911):65–66.

"Bibliography of Articles Relating to Industrial Libraries." *Special Libraries* 2 (February 1910):12–13.

"Books for Business Preparedness." *Special Libraries* 8* (June 1917):92–93.

* Volume 8, 1917 was mistakenly labeled volume 9 for part of the year. The mistake was discovered and these erroneously numbered volumes are generally bound with the rest of volume 8.

Bostwick, A. E. "The Library and the Business Man." *Library Journal* 42 (April 1917):259.
"Bringing Together Business Men and Library Service." *Public Libraries* 21 (July 1916):312.
Brush, Matthew C. "The So-Called Librarian's Real Duties." *Special Libraries* 8* (June 1917):83–84.
Buell, D. C. "The Library as an Efficiency Tool." *Special Libraries* 6 (June 1915):105–108.
_____. "Sources of Information or Business Men." *Special Libraries* 7 (August 1916):142–144.
"Business Libraries." *Special Libraries* 1 (February 1910: 1–2.
"The Business Value of a Special Library." *Special Libraries* 3 (October 1912):161–162.
Collins, James H. "Literature on the Job." *Saturday Evening Post* (January 15, 1916).
Dana, John Cotton. "The Business Man and the Special Library." *Special Libraries* 10 (January-February 1919):1–2.
_____. "The Evolution of the Special Library." *Special Libraries* 5 (May 1914):70–76.
_____. "Live and Learn." *Newarker* (January 1914). Reprinted in *Special Libraries* 5 (April 1914):53.
Day, Mary Bostwick. "Why the Business Library Pays." *Special Libraries* 12 (January 1921): 10–11.†
Dudgeon, M. S. "The Scope and Purpose of Special Libraries." *Special Libraries* 3 (June 1912):129–133.
Field, Pearl I. "Libraries in Business." *Wisconsin Library Bulletin* 11 (June 1915):183–186.
Fitzpatrick, Edward A. "The Special Library and Public Efficiency." *Special Libraries* 5 (June 1914):89–92.
Fricker, F. "The Library of the Chemical Laboratories of the B.F. Goodrich Co., Akron, Ohio." *Special Libraries* 6 (May 1915):82–83.
Gallup, F. L. "Library Service in the Chemical Department Laboratories of the Du Pont Company." *Special Libraries* 10 (May 1919):98–100.
Gifford, W. S. "Suggestions for Making a Business Library Practical." *Special Libraries* 6 (June 1915):100–104.

* Volume 8, 1917 was mistakenly labeled volume 9 for part of the year. The mistake was discovered and these erroneously numbered volumes are generally bound with the rest of volume 8.

† Pagination for volume 11 was erroneously continued in number 1, volume 12. This mistake was discovered and the editor asked everyone to renumber the pages correctly. The page numbers given here are the corrected page numbers.

Greenman, Edward D. "The Chemist and His Library." *Special Libraries* 9 (November 1918): 194–195.
_____. "The Functions of the Industrial Library: That of Arthur D. Little, Inc., a Type." *Special Libraries* 10 (October 1919): 189–191.
_____. "Housing an Industrial Library." *Special Libraries* 9 (June 1918):138–141.
Handy, Daniel N. "The Earning Power of Special Libraries." *Special Libraries* 2 (January 1911):5–6.
_____. "How Business and Technical Executives Obtain Information and What it Means to the Special Librarian." *Special Libraries* 12 (September-October 1921):162–164.
_____. "The Library as a Business Asset—When and How." *Special Libraries* 3 (October 1912):162–167.
Hosmer, Helen R. "Library of the Research Laboratory [sic] of the General Electric Company at Schenectady, New York." *Special Libraries* 4 (September-October 1913):169–171.
Hyde, Dorsey W., Jr. *Workshops for Assembling Business Facts.* Chicago: American Library Association, 1921.
Johnston, W. Dawson. "Business Libraries." *Credit World* (April 1915):26–27.
Kingsbury, N.C. "The Library, a Necessity in Modern Business." *Library Journal* 38 (August 1913):442–449.
Krause, Louise B. *Better Business Libraries: Talks With Executives.* Chicago: The Indexers Press, 1922.
_____. *The Business Library: What it is and What it Does.* 2nd ed. San Francisco: Journal of Electricity, 1921.
_____. "The Contribution of Library Science to Efficiency in Modern Business—Outline of Two Lectures, Illinois State Library School." May 9–10, 1912.
_____. "The Contribution of Library Science to Efficiency in Modern Business." *Public Libraries* 17 (July and November 1912):247–251; 357–360.
_____. "Technical Information Bureaus." *Engineering Record* (June 22, 1912):690.
_____. "What are Special Libraries?" *Public Libraries* 15 (December 1910).
Lapp, John A. "The Growth of a Big Idea." *Special Libraries* 9 (July-August 1918):157–159.
_____. "Organized Information in the Use of Business." *Special Libraries* 6 (April 1915):57–61.
Lee, G.W. *The Library and the Business Man.* For the 29th Annual Meeting of the ALA at

Ashevill, N.C., May, 1907. Boston: Lincoln and Smith Press, 1907.
———. "Library of Stone and Webster, Boston." *Special Libraries* 1 (June 1910):44–47.
———. "Special Library Service." *Stone and Webster Public Service Journal* (June 1913):1–8.
Lewis, St. Elmo. "The Value of the Specialized Library for the Business Man, the Salesman, or the Shop Expert." *Special Libraries* 4 (May 1913):69–72.
"Library Service to Business Men." *Seattle Library Poster* (September 11, 1916). Reprinted in *Special Libraries* 7 (August 1916):141.
"Library Service to the Business Man." *Library Journal* 42 (April 1917):273–275.
Little, Arthur D. "Chemistry and the Special Library—A Foreward." *Special Libraries* 10 (May 1919):85–86.
———. Introduction to "A Reading List on Industrial Research", by Clarence J. West and Edward D. Greenman. *Special Libraries* 11 (January 1920):19–28.
———. "The Special Library for Industrial Research." *Special Libraries* 4 (December 1913):189.
Marion, Guy E. "Interpreting the Library Movement." *Special Libraries* 10 (September 1919):154–157.
———. "The Library as an Adjunct to Industrial Laboratories." *Library Journal* 35 (September 1910):400–404.
———. "Resume of the Association's Activities, 1910–1915." *Special Libraries* 6 (September 1915):143–146.
———. "The Special Library Field." *Special Libraries* 9 (March 1918):59–64.
McPike, Eugene F. "Specialists and Special Collections." *Illinois Central Magazine* (July 1917):27–30.
"Mobilizing the Power of the Nation." *Special Libraries* 8* (May 1917):73.
Mowry, D. E. "The Trade Library." *Business World* (December 1909).
Murray, E. M. "The Earning Power of a Special Reference Library on Retail Distribution." *Special Libraries* 3 (October 1912):167–169.
Nystrom, Paul H. "The Relation of the Public Library to the Private Business Libraries." *Special Libraries* 9 (February 1918):35–37.
Peavey, Leroy D. "How Business Men Get Facts and Figures." *Special Libraries* 12 (September-October 1921):159–162.

* Volume 8, 1917 was mistakenly labeled volume 9 for part of the year. The mistake was discovered and these erroneously numbered volumes are generally bound with the rest of volume 8.

Peck, Eunice E. "Library of the Winchester Repeating Arms Company." *Special Libraries* 9 (February 1918):41.
Perkins, Agnes. "The Libraries and the Manufacturers." *American Industries* (Circa 1925):3–7.
Redfield, William C. "Where the Special Library is a Necessity." *Special Libraries* 5 (January 1914):1.
Reissmann, Gertrude. "The Kodak Park Library." *Special Libraries* 10 (May 1919):94–97.
———. "The Room that Makes an American Dye Industry a Fact." *Special Libraries* 11 (December 1920):209.
Scott, William A. "Business Research—A Necessity Born of Competition." *Banker-Manufacturer* (February 1921). Reprinted in *Special Libraries* 12 (March 1921):47–49.
Snyder, Mary B. "The Business Library." *Purchasing Agent* (October 1917). Reprinted in *Special Libraries* 9 (March 1918):65–67.
"Some Representative Business Libraries Described by Their Librarians." *Library Journal* 42 (April 1917):290.
"The Special Libraries Association." *Special Libraries* 4 (June 1913):111–112.
Spencer, Florence. "What a Public Library Cannot Do for the Business Man." *Special Libraries* 8* (October 1917):117–118.
Tafel, L. A. "The Library Service of the New Jersey Zinc Company." *Special Libraries* 10 (May 1919):97–98.
Taylor, E. Mae. "The Library of the Philadelphia Electric Company." *Special Libraries* 12 (January 1921):4–5.†
Tilton, Francis Theodore. "A Good Banking Asset—The Financial Library." *Special Libraries* 4 (June 1913):113–115.
Winton, Grace E. "Business Libraries of Detroit." *Special Libraries* 10 (October 1919):181–185.
"What is a Special Library?—Discussion S.L.A. Ottawa, Canada, June 27, 1912." *Special Libraries* 3 (September 1912):145–149.
Wheeler, Joseph L. "Industrial Libraries." *Special Libraries* 2 (February 1911):10–12.
"Works Libraries." *Gas Age* (July 15, 1915). Reprinted in *Special Libraries* 6 (August 1915):128–129.

† Pagination for volume 11 was erroneously continued in number 1, volume 12. This mistake was discovered and the editor asked everyone to renumber the pages correctly. The page numbers given here are the corrected page numbers.

Directories and Reference Works

Annual Reports. Elmsford, N.Y.: Pergamon Press, Inc., 1978.
- Atlantic Richfield Company, 1912–1978.
- E.I. Du Pont de Nemours and Company, 1907–1978.
- Eastman Kodak Company, 1902–1978.
- General Motors Corporation, 1911–1960.
- Goodyear Tire and Rubber Company, 1909–1978.
- Ingersoll Rand Company, 1906–1978.
- International Harvester Company, 1907–1978.
- Republic Steel Corporation, 1900–1978.
- Scovill Manufacturing Company, 1915–1978.

"Directory of Special Libraries." *Special Libraries* 1 (April 1910): 27–32.

Moody, John. *Moody's Analyses of Investments. Part II: Public Utilities and Industrials.* New York: Analyses Publishing Company, 1914–1919.

______. *Moody's Analyses of Investments and Security Rating Books. Part II: Industrial Investments.* New York: Moody's Investors Service, 1920–.

Special Libraries Directory. Washington, D.C.: Special Libraries Association, 1921.

Special Libraries Directory. New York: Special Libraries Association, 1925, 1935.

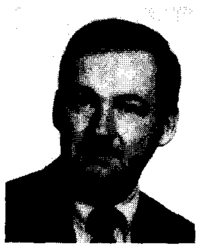
Received for review May 8, 1984.
Manuscript accepted for publication October 22, 1984.

Carol Tenopir is assistant professor at the Graduate School of Library Studies, University of Hawaii at Manoa.

1985 Candidates for SLA Office

For President-Elect

LEISTER



SPAULDING

Ballots and voting instructions will be mailed from the Association Office in early April.

• **Jack Leister** is Head Librarian, Institute of Governmental Studies, University of California, Berkeley. He received his BA (1979) and MLS (1960) degrees from the University of California, Berkeley.

He was an interpreter for the U.S. Army (1953/56); a business credit analyst, Dun & Bradstreet (1956/57); and joined the Library of the Bureau of Public Administration, University of California, Berkeley in 1960. He was appointed to his present position as Head Librarian of the Institute of Governmental Studies in 1973.

SLA Chapter Activities: In the San Francisco Bay Region Chapter he was treasurer (1971); member, Education Committee (1971/73); member, Ad Hoc Finance Committee (1973); chairman, Membership Committee (1975/76); president-elect (1975/76); president (1976/77); member, Board of Directors (1977/78); chairman, Bylaws and Procedures Committee (1977/78); and chairman, Finance Committee (1984/85).

SLA Division Activities: In the Social Science Division he was chairman, Local Arrangements, San Francisco Conference (1971); chairman-elect (1973/74) and chairman (1974/75); chairman, Bylaws Committee (1975/76); chairman, Nominating Committee (1976/77). He is also a member of the Library Management and Publishing Divisions.

Association-Level Activities: He was a member, Advisory Committee for "Special Libraries in Commerce and Industry" under the SLA/National Center for Education Statistics Contract (1976/78); Conference Program chairman, Honolulu Conference, (1978/79); member, Board of Directors (1979/84); member, Social Committee on Development of Guidelines for Participation in the SLA Electronic Mail Project (1982/83); and member, Committee on Committees (1984/86). **Member of SLA since: 1967.**

Other Professional Activities: In the Librarians Association of the University of California (a 9-campus statewide professional organization) he was chairman, Ad Hoc Committee on Inter-Series Movement and Retreat Rights (1979/80); chairman, Ad Hoc Committee on Regional Storage Facilities (1979/

80); president-elect (1979/80); and president (1980/81).

In CLASS (Cooperative Library Agency for Systems and Services) he was a member, Authority Advisory Council (1981/83); chairman, Membership Recruitment Advisory Committee (1983).

He is a member of the Editorial Board, *Index to Current Urban Documents* (Greenwood Press); and was vice-chairman, Library Task Force, Association of Bay Area Governments (1979/80). He is a member of the American Library Association, California Library Association, Council on Planning Librarians, Northern California Association of Law Libraries, and the California Academic and Research Librarians.

He has taught classes at the School of Library and Information Studies, University of California, Berkeley and the University of California Extension in government information resources. He is a life member of the honorary fraternity, Beta Phi Mu.

He is co-author of *California Information Sources* (Institute of Governmental Studies, Berkeley, 1982) and the forthcoming *California Politics and Government* (Institute of Governmental Studies, Berkeley, 1984).

• **Frank H. Spaulding** is Manager, Library Services, AT&T Bell Laboratories Library Network, AT&T Bell Laboratories. He was disbursing/financial officer, U.S. Navy (1957–59), and supply officer, U.S. Navy Civil Engineers Corps (1960). He began his professional library career as supervisor, Information Services, Colgate-Palmolive Co. (1961/65). In 1964 he was adjunct instructor, Graduate School of Library Service, Drexel Univesity. He joined AT&T Bell Laboratories as group supervisor, Library Technical Processes in 1965 and assumed his present position in 1970.

Member of SLA since: 1961.

SLA Chapter(s) and Offices and Committee Chairmanships held: He was chairman, Membership Committee, Sci-Tech Group, New York Chapter (1969/70). As a member of the New Jersey Chapter, he was president-elect (1967/77) and president (1977/78); delegate, New Jersey Governor's Conference on Library and Information Services (1978); and chairman, Nominating Committee (1979/80); editor of Chapter Manual and Directory (1976/).

SLA Division(s) and Offices and Committee Chairmanships held: Currently a member of the Information Technology and Library Management Divisions, he has participated in many Division projects and activities. He was a member, Special Projects Committee, Engineering Division (1969/70); member, Bylaws Committee, Sci-Tech Division (1975/76); member, Special Projects Committee, Documentation Division (1977/78); chairman, Special Projects Committee, Information Technology Division (1978/79) and chairman of the Division's Planning Committee (1979/80). As a member of the Library Management Division, he was contributing editor to the Division's bulletin (1978/79), chairman-elect (1980/81), and chairman (1981/82); chairman, Nominating Committee (1983/84).

SLA Association level activities: During 1980/81, he served on the Special Committee on SLA Division Structure; Director 1982/85); Board Proctor, Professional Development (Education) Committee (1982/85); Board Proctor, Standards Committee (1982/85); member, Finance Committee (1982/83); Board Proctor, Committee on Committees (1982/85); member, Association Office Operations Committee (1984/85) and Secretary to the Board of Directors.

Education: He received a BA from Brown University (1957) and an MSLS from Case Western Reserve University (1961).

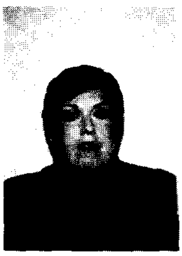
Other Professional Memberships—International, National, or Statewide (Provincewide: He is a member of American Library Association (ALA), American Society for Information Science (ASIS), and Associated Information Managers (AIM). He is also a member of the Advisory Council, Brookdale College, Lincroft, N.J. (1973–) and a member of the Advisory Associates, School of Communication, Information and Library Studies (SCILS), Rutgers University, New Brunswick, NJ (1980–). As a member of SCILS he served as President (1982/84) and as a member of the Dean Search Committee (1982/83). He was a member of: PALINET/ULC Board of Trustees (1979/81); member, Library Advisory Board, New Jersey County and Municipal Government Study Commission (1977/80). As a member of ASIS, he served on the Education Committee (1975/76); Treasurer (1983/86). He is a member of the Board of Directors, USBE (1984/85); member (1979/85), Vice President (1981/83) President (1983/85) of Documentation Abstracts representing ASIS.

Honors: His name has appeared in *Who's Who in the East, Men of Achievement, Dictionary of International Biography, Notable Americans* and *Internation Scholars Directory.*

Publications: Prepared publication *Managing the Electronic Library,* M. Koenig, ed., New York, Special Libraries Association, 1983.

Has written numerous articles in journals and in Chapter/Division bulletins.

For Treasurer



MILLER

REGAN

• **Ellen L. Miller** is Manager of Research Services, Booz, Allen & Hamilton Inc., 1978 to date. 1974–1978, Head Librarian, White Weld & Co., 1968–1974, Asst. Librarian, The First Boston Corporation.

Member of SLA Since: 1970.

SLA Chapter(s) and Offices and Committee Chairmanships held: New York Chapter Audit Committee 72/73, 73/74, Chair 74/75; Arrangements Committee Chair 75/76, 76/77; Treasurer 77/78, 78/79; President-Elect 79/80, 81/82; President 80/81, 82/83; Nominating Committee Chair 84/85.

SLA Division(s) and Offices and Committee Chairmanships held: Business and Finance Division, Library Management Division, Information Technology Division.

SLA Association Level Activities: Conference Treasurer, 1977 New York Conference; Tellers Committee 73/74, 74/75, Chair 75/76; Finance Committee 81/82, 82/83, 83/84, 84/85; Instructor, "Long Range Planning Workshop"; 1982; Career Advisor 1981, 1982, 1983.

Education: B.A. Chestnut Hill College 1968; M.L.S. Columbia University, 1972.

Other Professional Memberships—International, National, or Statewide (Province-wide): Associated Information Managers, ARMA.

• **Muriel Regan** is a principal with Gossage Regan Associates, Inc. in New York City.

Past Employment: Librarian, The Rockefeller Foundation, 1956–65 and 1967–82; Librarian, Booz Allen & Hamilton, 1966–67; Deputy Chief Librarian, Borough of Manhattan Community College, 1965–66; Researcher, P. F. Collier, 1954–56; Librarian, U.S. Army, 1953–54.

Member of SLA Since: 1956.

SLA Chapter(s) and Offices and Committee Chairmanships held: NY Chapter-President, 1979/80; Treasurer, 1975/78; Social Science Group Chair, 1975/76; Union List Revision Committee Chair, 1972/74; Nominating Committee Chair, 1981/82.

SLA Division(s) and Offices and Committee Chairmanships Held: International Affairs Section, Social Science Division, Chair, 1978/79; Social Science Division Bulletin Editor, 1974/77; International Affairs Section Nominating Committee, 1984/85; member of Social Science and Library Management Divisions.

SLA Association Level Activities: Treasurer, 1982/85; Education Committee Chair, 1978/79, Member, 1979/81; 1977 SLA Conference Committee.

Education: BA, Hunter College; MSLS, Columbia University; MBA, Pace University; Doctoral candidate, School of Library Service, Columbia University.

Other Professional Memberships—International, National, or Statewide (Province-Wide): ALA, ASIS, NY Library Association.

Honors: Phi Beta Kappa; Who's Who Among American Women.

Publications: Management in special libraries: a case study approach. *Special Libraries* 75:126–30. April 1984. With Ron Coplen.

What ever happened to that kid who got the scholarship? *Special Libraries* 74:345–357. October 1983. With Vivian D. Hewitt.

For Chapter Cabinet Chairmen—Elect

JONES

MACKSEY

• **Catherine A. Jones** is Chief, Congressional Reference Division, Congressional Research Services, Library of Congress.

Past Employment: Assistant University Librarian for Reader Services–George Washington University, Washington, D.C.—Associate Director–American Library Association, Washington, D.C. Office—Library–Executive Office of the President–Office of Management and Budget.

Member of SLA Since: 1970.

SLA Chapter(s) and Offices and Committee Chairmanships Held: Chair, Hospitality Committee, President, Washington, D.C. Chapter, Member, Washington, D.C. Long-Range Planning Committee.

SLA Division(s) and Offices and Committee Chairmanships Held: Co-Chair Newspaper Division Extra-Divisional Activities Committee.

SLA Association Level Activities: Chair, Government Relations Committee.

Education: B.S. University of Alabama, MLS Catholic University of America, M.A. in Government George Washington University.

Other Professional Memberships—International, National, or Statewide (Province-Wide): President, Catholic University Alumni Assn.

Honors: In Who's Who among American Women.

• **Julie A. Macksey** is Library information scientist, Corporate Technical Library, The Upjohn Company, Kalamazoo, MI. She received her BS, in Chemistry.

Past Employment: Kaiser Aluminum & Chemical Corp., Technical Information Center, Pleasanton, CA, 1967–80, Head Librarian, information specialist. San Jose State University, Grad. School of Library Science, Instructor, evening classes, "Literature of the Sciences", 1973–76.

Member of SLA Since: 1966.

SLA Chapter(s) and Offices and Committee Chairmanships Held: Western Michigan Chapter: Program chair / President-elect, 1983–84; Co-Chaired 1-day conf., "Technology for the Electronic Library", Kalamazoo-Hilton Center, 4/15/82; Chairman, nominating committee, 1981–82; member, nominating committee 1980–81. San Francisco Bay Region Chapter: Bylaws & Procedures Chair, 1979–80; President, 1978–79; Vice President & Membership Chair, 1977–78; Program Chair, 1975–76; Hospitality Chair, 1974–75; Recruitment Chair, 1971–72, 1972–73.

SLA Division(s) and Offices and Committee Chairmanships Held: Currently member of the Pharmaceutical Division, 1980– ; Sci-Tech member, 1967– ; Chemistry division member, 1967–73; Metals / materials member, 1973–79.

SLA Association Level Activities (Specify any Committee Chairmanships): Program chairman for Metals / Materials division, 1971 Annual Conference, San Francisco Chairman, ad-hoc committee investigating membership composition of Groups within Chapters, 1978–79 for the Chapter Cabinet.

Education: Webster College, Webster Groves, MO, BS in Chemistry (1963) San Jose

State University, San Jose, CA, MS in Library Science (1969).

Other Professional Memberships—International, National, or Statwide (Province-Wide): American Chemical Society, 1960–79; American Society for Information Science, 1967–79, Chapter secretary, 1970–71; Beta Phi Mu, 1969–

For Division Cabinet Chairman-Elect

MILLER

STEININGER

• **Harold W. Miller** is manager, information services, Touche Ross & Co., New York.

Past Employment: Library Intern, Baker Library, Harvard University Libraries Intern Program (1964/65); Library Intern, School of International Affairs Library, Columbia University Libraries (1965/66); Library Assistant—Reference, Equitable Life Assurance Society (1966/67); Chief Librarian, Touche Ross & Co. (1967/82), Head, Central Files Department (1975/82), Manager, Information Services (1982 to date).

Member of SLA Since: 1967.

SLA Chapter(s) and Offices and Committee Chairmanships held: New York Chapter—Downtown Luncheon Group, chairman (1968–69); Business & Finance Group Chairman-elect (1969–70), chairman (1970–71); Business & Finance Group Nominating Committee, chairman (1972–73); New York Chapter All-day Seminar "Plus 15", program chairman, panel moderator (October, 1972); Director Awards (1984/86).

SLA Division(s) and Offices and Committee Chairmanships held: Business & Finance Division—Business Libraries Roundtable, moderator, Atlanta Conference (1981); Chairman-elect (1981/82); Chairman (1982/83); Regional Conference Planning Committee, chairman (1983/84); Nominating Committee, chairman (1984/85).

Division Cabinet—Division Cabinet Committee on Divisions, chairman (1982/83); Division Cabinet Committee on Division Cooperation (1982/83); Joint Cabinet Program Planners Manual Committee, chairman (1984/85).

Library Management Division—Member.

SLA Association Level Activities: Tellers Committee, chairman (1978–79); Copyright Law Implementation Committee, 1978/84. Council of National Library & Information Associations, Inc., Adhoc Committee on Copyright Law Practice and Implementation, SLA alternate representative, 1980/83.

Education: Bowling Green State University, B.A. (1963); University of Kentucky, M.A. (1964); Columbia University, M.L.S. (1967).

Other Professional Memberships: American Society for Information Science; Association of Records Managers and Administrators; New York Library Club.

Honors: Phi Alpha Theta (history honorary society).

Publications: "Biography and the British Royal Family in the Twentieth Century," SCEPTRE (Journal of the Royalty Collectors Association of North America), Fall, 1984.

• **Ellen Steininger** is Manager, Information Services, Burson-Marsteller, Chicago, IL.

Education: University of Illinois, Urbana, IL

M.S., 1968. Major: Library Science

Thiel College, Greenville, PA

B.A., 1966. Major: History

Experience: 1984 to date. Manager, Information Services, Burson-Marsteller, One East Wacker Drive, Chicago, IL 60601

1968–1983. Librarian, Marsteller Inc. One East Wacker Drive, Chicago, IL 60601

Professional Activities: Member, Special Libraries Association, 1968 to date.

Chairman, Illinois Chapter, Special Libraries Association—1985 IFLA Reception Committee, 1984–1985.

Member, IFLA Committee on Transportation and Tours, 1985 Conference, 1984–1985.

Instructor, Education Workshop, "Budgeting Principles for Information Services," Illinois Chapter, Special Libraries Association, 1984.

Deputy Chairman, 1983 Conference, Special Libraries Association, 1981–1983.

Chairman, Public Relations Task Force, Special Libraries Association, 1982.

Member, Advisory Board, Design Index, 1982–1983.

Chairman, Special Projects Committee, Illinois Chapter, Special Libraries Association, 1982–1983.

President-elect, President, Director, Illinois Chapter. Special Libraries Association, 1979–1981.

Member, Membership Directory Committee Illinois Chapter, Special Libraries Association, 1978–1980.

Secretary, Food and Nutrition Division, Special Libraries Association, 1977–1978.

Chairman, Nominating Committee, Illinois Chapter, Special Libraries Association, 1978 and Member, 1977.

Instructor, American Marketing Association, Workshop on Industrial Marketing, 1977 and 1978.

Member, Board of Directors, Advertising and Marketing Division, Special Libraries Association, 1976–1978.

Chairman, Advertising and Marketing Division, Special Libraries Association, 1975–1976.

Chair, Auditing Committee, Illinois Chapter, Special Libraries Association, 1976–1977.

Treasurer, Illinois Chapter, Special Libraries Association, 1973–1975.

Chairman, Membership Committee, Advertising and Marketing Division, Special Libraries Association, 1974–1975.

Program Chairman and Local Representative, Food Division, Special Libraries Association, 1975.

Chairman, Membership Committee, Illinois Chapter, Special Libraries Association, 1970–1971.

Voting Representative, Illinois Regional Library Council, 1972 to 1980.

Publications: *Illinois Libraries,* March 1980. "An Advertising and Public Relations Agency Library."

Business Marketing, January 1981. "A Do-It-Yourself Reference Library."

For Directors (1985/88)

DYSART

MATARAZZO

PANCAKE

PETRU

• **Jane I. Dysart** is manager, information resources, Royal Bank of Canada, Toronto, Ont.

Past Employment: Librarian, Canadian Standards Association; Librarian, Toronto Dominion Bank Library; Student Librarian, Canadian Imperial Bank of Commerce Information Centre.

Member of SLA Since: 1973.

SLA Chapter(s) and Offices and Committee Chairmanships held: Toronto Chapter: Student Liaison (1974–75), Program Chairman (1975–77), President (978–79), Representative to Seneca College Advisory Council since 1982.

SLA Division(s) and Offices and Committee Chairmanships held: Business & Finance Division: Membership Chairman (1979–80). Library Management Division, Information Technology—Online Section.

SLA Association Level Activities: Joint Chapter/Division Cabinets Archives Study Committee (1978–79), Chapter Cabinet Chairman Elect (1980–81), Chapter Cabinet Chairman (1981–82), Chairman, 1985 Winnipeg Conference Program Committee (1983–85).

Education: BSc (1972) University of Toronto, MLS (1974) Faculty of Library and Information Science.

Other Professional Memberships—International, National, or Statewide (Provincewide): Canadian Library Association: Representative to University of Toronto Faculty of Library and Information Science Faculty Council (1979–81) Canadian Association of Special Libraries and Information Services.

Honors: Special Libraries Association, Toronto Chapter Member of the Year Award 1981.

Publications: *Banking and Finance Collections in Canada* in Special Collections, Vol. 2 No. 3, Spring 1983.

• **James M. Matarazzo** is associate dean & professor, Simmons College Graduate School of Library and Information Science.

Past Employment: Assistant Science Librarian, Massachusetts Institute of Technology, 1965–67; Documents Librarian, Massachusetts Institute of Technology, 1967–68; Serials Librarian, Documents Librarian, and Head of Technical Reports, Massachusetts Institute of Technology, 1968–69, Simmons College Graduate School of Library and Information Science, 1969–.

Member of SLA Since: 1965.

SLA Chapter(s) and Offices and Committee Chairmanships held: Boston Chapter SLA: Chair, Membership Committee, 1967–70; Chair, Education Committee, 1970–73; Director, 1973–75; President, 1979–81.

SLA Division(s) and Offices and Committee Chairmanships held: Chairman-Elect, Chapter Cabinet, 1983-84; Chairman Chapter Cabinet, 1984–85.

SLA Association Level Activities: Student Relations Officer, 1974–76; Representative to the Library Binding Institute, 1971–74; Special Committee on Continuing Education, 1976; Faculty Advisor, Simmons, SLA Student Group, 1971–76, 1979.†

Education: Boston College, B.S., 1963, M.A., 1972; Simmons College, M.S., 1965; University of Pittsburgh, Ph.D., 1979.

Other Professional Memberships—International, National, or Statewide (Provincewide): American Library Association, Council; New England Library Association; Association of American Library Schools.

Honors: Scholarship, Boston College; Marian & Jasper Whiting Foundation Fellowship; Teaching Fellow, University of Pittsburgh, SLA Professional Award, 1983.

Publications: *Closing the Corporate Library: Case Studies in the Decision-Making Process.* New York: Special Libraries Association, 1981.

Scientific, Engineering and Medical Societies: Publications in Print. 4th ed. New York: R. R. Bowker Company, 1981.

"How to Shape the Company Library Image," *SLA Library Management Bulletin,* 7(no. 2):5–6 (Fall 1983).

• **Edwina H. (Didi) Pancake** is director, Science and Engineering Library, University of Virginia, Charlottesville, VA.

Past Employment: 1969/73 Information Specialist, 1973/74 Acting Director, Science/Technology Information Center, University of Virginia.

Member of SLA Since: 1969.

SLA Chapter(s) and Offices and Committee Chairmanships held: Virginia Chapter: 1970/71 Chairman Public Relations Committee; 1971/73 & 1975/76 Editor of *VASLA Bulletin;* 1973/74 President-Elect; 1974/75 President; 1978/79 Chairman Nominating Committee; 1979/80 Membership Committee.

SLA Division(s) and Offices and Committee Chairmanships held: Science-Technology, Information Technology, Library Management, and Publishing Divisions. Activities in Sci-Tech Division: 1976/77 Chairman Membership Committee; 1977/78 Chairman-Elect of Division; 1978/79 Chairman of Division.

SLA Association Level Activities: 1974/75 Chairman Joint Cabinets Study Committee on Subject-Oriented Groups; 1979/80 Chapter Cabinet Chairman-Elect; 1980/81 Chapter Cabinet Chairman; 1981/83 Chairman 1983 New Orleans Conference Program Committee; 1983/84 Chapter Cabinet Chairman.

Education: B.S. in biology, Baylor University, 1967.
M.L.S. University of Texas at Austin, 1969.

Other Professional Memberships—International, National, or Statewide (Provincewide): Virginia Library Association: 1976/77 Chairman Nominating Committee. Virginia Microfilm Association (1970/73): 1970/71 Secretary/Treasurer, 1971/73 Elected member of Executive Board.

Honors: 1967/68 NDEA Fellowship in Library Science.

Publications: In process, due Dec. 1984: *Index to VASLA Bulletin 1971–1976.*

• **William C. Petru** is manager of libraries, Hewlett-Packard Co., Palo Alto, CA.

Past Employment: 1956–59, Cataloger, Free Library of Philadelphia, PA; 1959–61, Technical Information Specialist, General Electric Co., Missiles and Space Vehicles Dept., Philadelphia, PA; 1961–66, Supervisor of Library Services, United Technology Center, Division of United Aircraft Corp., Sunnyvale, CA; 1966–83, Assistant Manager of Libraries, Hewlett-Packard Co., Palo Alto, CA.; 1984-to date, Manager of Libraries, Hewlett-Packard Co., Palo Alto, CA.

Member of SLA Since: 1959.

SLA Chapter Offices and Committee Chairmanships held: Currently a member of the San Francisco Bay Region Chapter and the San Andreas Chapter. In the San Francisco Bay Region Chapter, was Chair of following committees: Program, Non-Serial Publications, Consultation, Nominating, Recruitment, Publicity; Chapter President-Elect, 1971–72 and Chapter President, 1972–73.

SLA Division Offices and Committee Chairmanships held: Currently a member of Library Management Division (LMD), Information Technology Division (ITE), and Publishing Division (PUB). In PUB: Chair, Awards, Membership, Program; Chair/Elect of Division, 1981–82; Chair of Division, 1982–83. In LMD: Chair, Special Projects. In ITE: Chair, Tellers, Projects.

SLA Association Level Activities: Conference Program Committee 1979, Honolulu; Conference Program Committee 1984, New York; Nominating Committee member, 1980; H.W. Wilson Award Committee member, 1978–81 (Chair, 1980–81); Scholarship Committee member 1974–77 (Chair, 1975–76, 1976–77); Government Relations Committee member, 1981–82; Publications Committee member, 1983–85 (Chair, 1984–85).

Education: B.S., 1951, Millersville University, Millersville, PA; M.S.L.S., 1956, Drexel University, Philadelphia, PA.

Other Professional Memberships: Institute of Electrical and Electronics Engineers; Association for Computing Machinery; Cooperative Library Agency for Systems and Services (CLASS), Advisory Council Convenor, Special Libraries Segment, 1979–81.

Actions of the Board of Directors October 25-26, 1984

The Fall Meeting of the SLA Board of Directors is primarily a budgetary meeting during which the draft budget for the next fiscal year is discussed, amended, and finally adopted. In October 1984, the Board met at the Grand Hyatt Hotel in New York City. The following actions and discussions took place.

Finances—The Executive Director reported on the status of Association Finances for the 1984 fiscal year. The 1984 Annual Conference, the continuing education program, and the *Special Libraries* program are once again expected to be chiefly responsible for the generation of a surplus in the 1984 General Fund Budget.

The Board discussed a tentative list of priorities for allocation of 1984 surplus income. Foremost on the list was funding of a membership needs assessment. Other priorities are projects identified for funding in 1985 in SLA's Long-Range Plan, the Computer Fund, the Special Programs Fund, SLA support of the 1985 conference of the International Federation of Library Associations and Institutions (IFLA), the Reserve Fund, and the Building Fund. Board action on this priorities list is expected at SLA's 1985 Winter Meeting, when the extent of the projected surplus will be known.

The Executive Director brought the Board up-to-date on the annual cost of maintaining a single SLA membership. In 1984 the cost per member is $84.32, or $29.32 above the annual dues amount ($55.00) collected from each Member. The projected cost per member for FY 1985 is $90.63, or $35.52 above the annual dues. The Association relies on non-dues sources of income (e.g., Annual Conference income) to subsidize membership services. However, as the gap between dues income and expenses for membership services widens, the membership will have to consider a dues increase for the generation of the additional income needed to maintain services at their current level or to support new services.

The Board voted to appoint Weber Lipshie & Company as the Association's auditors for the 1984 fiscal year. Weber Lipshie has served as the Association's auditor since 1979.

Budget for FY 1985—The Board approved a General Fund budget for FY 1985 after a careful review of the draft budget. Budgets for the Subsidiary Funds were also approved.

The approved budget for the General Fund projects $1,300 surplus income for FY 1985 ($1,649,200 income less $1,647,900 expenses). Several Board actions of interest to the general membership are reflected in the approved budget. These are highlighted throughout the remainder of this report.

Long-Range Plan Funding—The Board discussed the action and operational plans that the Long-Range Planning Committee and the staff have developed to support the Association's Long-Range Plan. The recommendation of the Committee that $28,850 be allocated in the 1985 budget to implement 1985 long-range plan activities was approved.

Among the long-range plan activities to be funded in 1985 are: *(1)* aggressive promotion of SLA's continuing education programs, *(2)* development of a public relations program and strategy using a public relations firm as a consultant, *(3)* development of a campaign to promote the benefits of SLA membership, *(4)* participation in the library school accreditation process, and *(5)* enhancement of the training program for chapter and division officers.

The Board approved a two-part future role for the Long-Range Planning Committee: (*1*) to monitor the activities approved under the Long-Range Plan for the current year of the Plan, and (*2*) to annually revise the Plan as needed to reflect the changing environment of the library and information profession and the needs of Association members.

Chapter and Division Allotments—No change in the formulas for determining chapter and division allotments was recommended by the officers of the Chapter and Division Cabinets. Hence, the 1984 annual allotment for each chapter with more than 117 members will be $5.25 per member; chapters with 117 members or less will receive $500 plus $1.00 for each member.

Divisions will receive $4.50 per member or $500, whichever amount is greater. The 1985 allotments will be issued in mid-February. Allotments will be based on the units total membership as of December 31.

Funding Requests of SLA Committees—Each SLA committee and representative has a budget of $50.00 to cover miscellaneous expenses. At the Fall Meeting, several committees requested additional funds to support anticipated administrative costs or to underwrite special projects or activities being planned for 1985. The Board approved the following requests:

- Annual Conference Program Committee (1986, Boston)—$100 to cover administrative costs.
- Cataloging and Access Committee—$100 for miscellaneous expenses related to the Committee's conference program costs.
- Consultation Service Committee—$1,300 for preparation of a list of SLA members who are consultants and compilation of case histories of consultation experience. These funds will be available after the Committee submits for Board approval a plan and a budget for their expenditure.
- Copyright Law Implementation Committee—$450 for the Committee's administrative and travel costs.
- Finance Committee—$400 for travel expenses of Finance Committee members who must travel more than 250 miles one way to attend Committee meetings.
- Networking Committee—$1,100 to cover the costs of the program the Committee is planning for the 1985 Annual Conference.
- Positive Action Program for Minority Groups Committee—$100 to cover administrative costs.
- Scholarship Committee—$145 for the Committee's administrative costs.

Association Office Operations—The Board authorized $300 in the 1985 budget for extension of the Association's Director's and Officers liability insurance to cover the Executive Director, the Associate Executive Director, and the three staff directors.

Two actions of the Board enhanced the Association's employee benefits package: (1) Effective 1985, Martin Luther King's birthday (January 15) will be observed as an Association holiday. (2) The Association will increase its coverage of the cost of the staff long-term disability insurance plan by 25%, from 50% to 75%.

In order to balance the 1985 General Fund budget, the Board deferred a $10,000 transfer to the Computer Fund. The transfer had been mandated by a previous Board action. To complete the conversion from SLA's data processing operations from the IBM System/3 to the new IBM System/36, the Board authorized the expenditure of $25,000 from the Computer Fund.

Candidates for Association Office—The Board received the Nominating Committee's slate of candidates for the Association's 1985 election:

President-Elect	Jack Leister Frank Spaulding
Treasurer	Ellen Miller Muriel Regan
Chapter Cabinet Chair-Elect	Catherine A. Jones Julie A. Macksey
Division Cabinet Chair-Elect	Harold W. Miller Ellen Steininger
Directors	Jane I. Dysart James M. Matarazzo Edwina (Didi) Pancake William C. Petru

Biographies of the candidates appear elsewhere in this issue of *Special Libraries*.

The Board approved the membership of the Nominating Committee for the Association's 1986 Election as presented by the two senior Directors (Frank Spaulding and Mary Lou Stursa): Jean Deuss (Chair), Betty A. Bassett, Virginia N. Anderson, James L. Olsen, Jr., Marilyn Stark.

Chapter and Division Affairs—The Board rejected a proposal from the Pacific Northwest Chapter and the Western Canada Provisional Chapter for the inclusion of the province of British Columbia in geographical boundaries of both chapters. Board members, James Matarazzo, Mary Lou Stursa, and Jim Tchobanoff, were appointed to a special committee to arbitrate the boundary dispute between the two chapters.

The *Chapter Guidelines* will be revised to clarify the requirement that chapters may not have overlapping boundaries.

Two staff recommendations with implications for chapter and division finances received Board approval: the institution of midyear financial reports, and the establishment of a pooled money market fund for chapter/division surplus funds. Both topics will be discussed in the meetings of the Chapter and Division Cabinets at the Association's 1985 Winter Meeting.

Legal Concerns—The Board adopted a resolution for the indemnification of the officers and directors who serve on the SLA Board. Other legal matters discussed at the meeting were requirements for the incorporation of SLA in Canada, and a *Tax and Legal Primer* for SLA units.

Special Programs Fund Grants—The Board evaluated five project proposals for Special Programs Fund grants. A total of $2,600 was available to fund worthy submissions.

The funding of one proposal was approved: Miriam H. Tees was granted $1,465 for her project, "Graduate Education for Special Librarianship." The study will survey prominent special librarians to determine what knowledge and skills they expect recent library school graduates to have when they enter the employ of a special library.

Inter-Association Activities—The Board accepted an invitation of the President of Documentation Abstracts, Inc. (DA) to appoint one or two SLA representatives to the DA Board of Directors. The DA Board advises the publisher of *Information Science Abstracts* (ISA) as to the ISA's content and coverage and other useful services for the information profession.

Miscellaneous—A policy statement outlining goals and objectives for the Association Office Information Resources Center (IRC) was adopted. The statement will serve as a guideline for service and as an evaluative tool to measure IRC staff performance.

The Board approved the distribution of one complimentary copy of the Association's directory, *Who's Who in Special Libraries,* to each SLA Student Group faculty advisor.

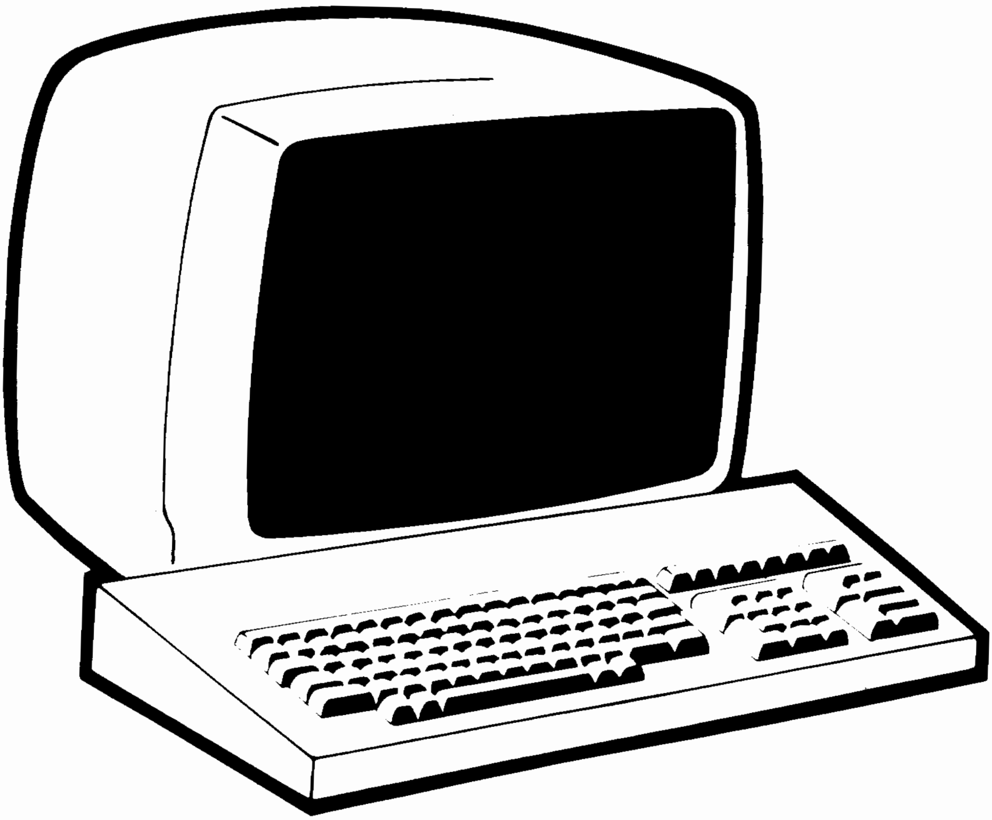
The Board approved the extension of SLA Member registration rates for the 1985 SLA/CASLIS (Canadian Association of Special Libraries and Information Services) Conference to Full and Associate Members of the Association of Canadian Map Libraries.

Winter Meeting—The next meeting of the SLA Board of Directors will be held in conjunction with the Association's 1985 Winter Meeting in Philadelphia, January 30–February 1, 1985.

NOTE: While the quarterly format for *Special Libraries* remains unchanged, we decided for the sake of clarity to rename our issues Winter (formerly January), Spring (formerly April), Summer (formerly July) and Fall (formerly October) beginning with this issue, the first of 1985.

-G.A.D.

The Information Specialist: A Bridge to the New Communications



June 8–13, 1985
Winnipeg, Canada

The 76th Annual Conference of the Special Libraries Association will take place June 8–13, 1985 in Winnipeg, Manitoba, Canada. The Canadian Association of Special Libraries and Information Services (a division of the Canadian Library Association) is the cosponsor of this conference. The major issues and trends facing the profession of librarianship in today's world will be examined from both the Canadian and the American point of view. The joint planning efforts of both SLA and CASLIS have resulted in a unique conference that will prove to be an enriching experience for all who attend.

The theme for the 76th Annual Conference is **The Information Specialist: A Bridge to the New Communications.** Librarians have always been information specialists. During the 1985 Conference the role of the information specialist as a bridge or interface with the emerging forms of communication and technology will be addressed in many ways and multiple formats.

The SLA/CASLIS conference will feature valuable continuing education seminars and workshops to enhance professional growth. Expert speakers have been scheduled to present the general and division sessions. Social events are also being scheduled to provide fun and a chance for you to relax with your colleagues at the end of a long conference day. Plan to join us next June.

CASLIS (Canadian Association of Special Libraries and Information Services) is a Division of the Canadian Library Association. CLA's divisional structure is designed to promote member participation in type-of-library activities, to provide for the exchange of ideas and experiences and to promote library service in specific fields. CASLIS is the Division which represents the concerns of the special library community as well as independent information consultants. The objectives of CASLIS are to support the objectives of the Canadian Library Association; to unite special libraries personnel, information specialists, documentalists and other interested parties in furthering and improving special library service throughout Canada; to provide for the exchange of ideas and experience among members; and to coordinate with internal and external groups and organizations in the advancement of special librarianship and special library and information services. In order to facilitate the personal contact required to meet these objectives, five local chapters have been formed. The strength of CASLIS as an organization in rooted in the membership activities of the chapters. The 1985 CLA conference will be held in Calgary, Alberta immediately following the joint SLA/CASLIS Winnipeg Conference and the members of SLA are invited to come to Calgary.

Eight Good Reasons Why You Wouldn't Want to Miss the Winnipeg Conference

Professional Development Programs. The SLA Conference features over 40 professional development programs. These programs are designed to meet the needs of both new and experienced special librarians and information managers.

The programs include 18 continuing education courses that offer something for everyone. They cover topics such as "Effective Supervisory Skills," "Marketing Management and Information Services," "Cost Benefit Analysis," "Creative Conflict Management," and "The Microcomputer and Library Operations." These courses provide the skills to assist you in effectively managing information within your organization.

Division Programs: Business and Learning. All SLA divisions will hold business meetings during the conference. This will give you the opportunity to find out what is happening within your division and to voice your opinion on future decisions. Many divisions will also sponsor educational sessions that will be technical in nature and cover areas of special interest to the division.

Product Knowledge: The Product and Service Exhibits. Like many others, your profession has changed dramatically over the past 10 years, and it probably will 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 product and service exhibits are an integral part of the SLA/CASLIS Conference. Over 200 organizations will be represented. These exhibits will help you to look ahead and to see a bit of what the future may bring.

General Sessions. The two general sessions planned for the Winnipeg Conference are entitled "The High Tech Revolution" and "The New Communications: Variety and Impact." These timely issues will be addressed by well-known experts who will provide the insight that will enable attendees to foresee how these trends will affect them in both their professional and personal lives.

Meeting Your Peers. It has been said many times that people are our greatest resource. Many excellent and practical ideas can be learned by talking with your peers. At the SLA/CASLIS Conference you will have the opportunity to meet and discuss professional matters with thousands of the best teachers in your field—your peers.

Employment Clearinghouse and Career Advisory Service. The SLA Employment Clearinghouse is a free service available to all conference registrants and employers. Through this service, prospective employees and employers are brought together to discuss future employment.

If you have any questions about the special librarianship and information management field in general, or your career in particular, take advantage of the SLA Career Advisory Service. Experienced SLA members will serve as counselors to help you find the answers you need. Both services are confidential.

Field Trips. Over 15 field trips sponsored by SLA and many of the divisions have been scheduled for this year's conference. Some will allow you to visit a place of special interest to your division. Others will allow you to learn about the geographic area and its history. And some are just for your pleasure and enjoyment.

Cost. SLA works hard to help its members get the best value for their money. Seminars, field trips, and special events are planned so that attendees receive the most for each dollar spent. SLA has used its group-buying power to arrange special low prices on hotels and airfares. Take advantage of this service by staying in a designated conference hotel and by using SLA's official travel coordinator.

Conference Programs

Continuing Education Courses

SLA Continuing Education Courses have been instrumental in providing special librarians and information managers with a wealth of knowledge. SLA's Continuing Education Program is designed to meet the changing needs of information specialists by preparing them for new duties and responsibilities in such areas as management, communication, and library automation techniques. Knowledgeable specialists have been chosen to lead the courses, basing their instruction on expertise they have acquired through personal experience and academic credentials.

This year's conference will feature 18 continuing education courses. Throughout their existence they have earned an excellent reputation, and have become a highly respected resource in the information management profession. Participants will earn 0.6 Continuing Education Units and a certificate upon completion of each course.

Middle Management Institute

The Middle Management Institute Certificate Program is the second phase of SLA's Continuing Education Program. The objectives of the Middle Management Institute Certificate Program include:

- Developing the skills and tools of management;
- Sharpening decision-making skills;
- Providing practical training in specific areas of management;
- Helping participants to understand organizational behavior, including the relationships of various departments to one another and their relationship to the corporate entity;
- Stimulating new ideas through interaction among participants representing a variety of organizational structures.

The institute is a 75-hour sequence divided into 5 programs. Each program is a 15-hour, 2½-day session. The participants will earn an SLA Management Certificate and 7.5 CEUs. In order to obtain a certificate, each participant must complete the 5 programs within the allotted 24-month period.

The framework for the 5 programs is: 1) *management skills;* 2) *analytical tools;* 3) *human resources;* 4) *marketing and public relations;* 5) *materials and machines.* Each of these units will consist of a number of related topics. Human Resources will be offered during the Winnipeg Conference.

For further details on all Conference Professional Development Activities, refer to your Conference Registration Packet which will be mailed to all SLA members in March 1985, or contact: Professional Development Specialist, Special Libraries Association, 235 Park Avenue South, New York, NY 10003 (212)477-9250.

Visit the Exhibits

Over 200 exhibits will be displayed at this year's annual conference. These exhibits will be staffed by knowledgeable people representing the manufacturers and suppliers you should know about. Each exhibit is a rich resource not only for you but for those of your colleagues for managers who are unable to come to Winnipeg themselves. Exhibitor representatives will be there to answer any questions you may have about their products or services.

The exhibits will provide you with information on such products as:

- Library software
- data processing equipment
- microforms and microform equipment
- library furniture
- information storage and retrieval equipment
- office furniture and equipment
- audiovisual materials and equipment
- copying and duplicating equipment
- specialized books and periodicals
- films

You will also learn about such services as:

- publishers
- government information services
- library binders
- subscription agencies
- book jobbers
- indexing and abstracting services
- alerting and search services
- database search services

In Winnipeg this year the Exhibit Area will be on the 3rd floor of the Winnipeg Convention Centre. The Exhibits will be open Sunday through Wednesday. Special events also are planned for the Exhibit Area, including an opening Reception. Make plans to come.

• **Remember!** The products and services displayed at the Annual Conference can enrich your educational experience ten ways. Here's how:

1. You can keep abreast of newly released information, products, and services.
2. You can increase your professional competencies and those of your staff.
3. You can improve your purchasing management and budget development.
4. You can learn of developments on the horizon.
5. You can compare products and services of various exhibitors more effectively.
6. You can develop a list of exhibitors (personal contacts are better than a letter) who supply information products in your area of specialization.
7. You can influence new applications of information technology by informing appropriate exhibitors of the needs of your clientele.
8. You can save enormous amounts of time by not having to arrange appointments with each vendor wanting to visit your library.
9. You can talk to exhibitors about their products and make suggestions for improvements or alternate uses.
10. You can help SLA keep present exhibitors happy and attract future exhibitors by filling the exhibit hall—that's good for you and good for your Association.

Do not forget to express your thanks to those who support your Association.

If you are unable to register for the program sessions of the Conference, but are interested in examining the various products and services, write for a complimentary exhibit hall pass and specify the number of persons attending. Send a self-addressed, stamped envelope to the: Manager, Conference & Exhibits, Special Libraries Association, 235 Park Avenue South, New York, NY 10003.

Winnipeg Hotels. Conference housing for the 1985 annual meeting will be a departure from our traditional pattern of using only one or two large hotels. SLA has rooms reserved in 15 hotels located throughout Winnipeg. Within this group of hotels you can find a wide variety of both hotel styles and room rates. The cost of a single room will range from 50 to 75 Canadian dollars per night. Most of these hotels are located in the downtown area within walking distance of the Winnipeg Convention Centre where the major meetings and social events will occur. Shuttle bus service will be provided for attendees utilizing the four hotels outside the downtown area.

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 save you money. The registration fees for the conference are as follows:

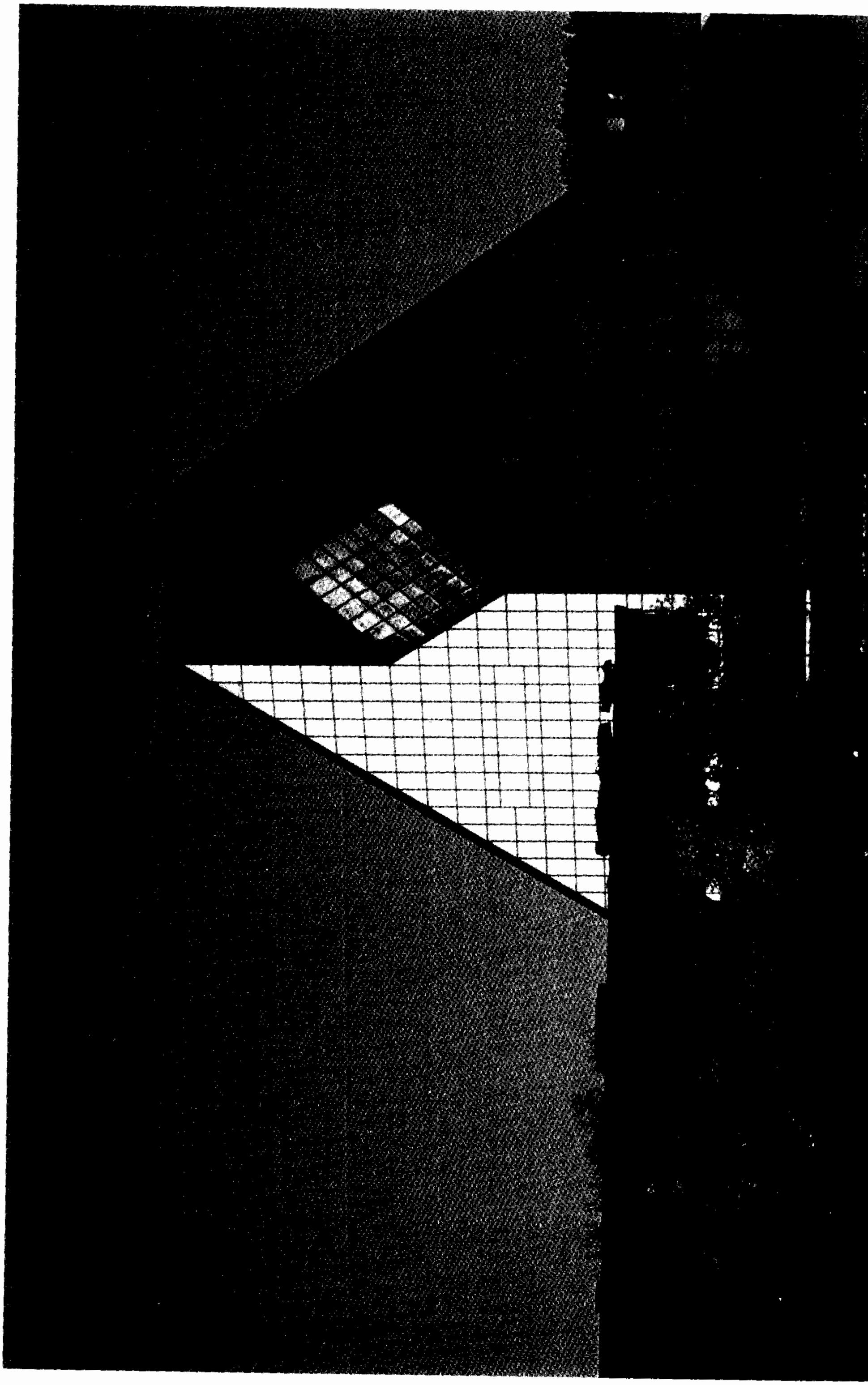
*Member Advance (by May 1)	$ 95.00
*Member One Day	65.00
*Member On Site (after May 1)	125.00
Nonmember Advance (by May 1)	110.00
Nonmember One Day	75.00
Nonmember On Site (after May 1)	145.00
Student/Retired/ Accompanying Person	45.00

* SLA member rates apply to SLA, CASLIS, ASIS, ARLIS/NA, AALL and ACML members.

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.

All CASLIS and SLA members will receive full registration and ticket informatin in the Preliminary Program which will be mailed to you in March.

JOIN US IN WINNIPEG FOR SLA's 76th ANNUAL CONFERENCE!



Manitoba Department of Tourism and Cultural Affairs

Royal Canadian Mint

Sleeper Winnipeg Wins Peg on Traveler Scoreboard

Winnipeg is hardly a household destination. Yet, snow or shine, this provincial capital of Manitoba has countless treats and surprises in store for first-time—even repeat—visitors.

Michelin's initial *Green Guide to Canada,* which came out last year, puts Winnipeg right up there with Victoria, the Gaspé Peninsula, Quebec and Toronto as 3-star ("worth the money") sights, the book's top rating.

Freewheeling with Jean Simmons

Three stars also are awarded specifically to the Manitoba Museum of Man & Nature and to its highlight exhibit, the Nonsuch, a reconstructed 2-masted ketch anchored in an also reconstructed 17th-century Thames River wharf.

The original Nonsuch sailed from England to Hudson Bay in 1668 in search of furs and led to the establishment of the Hudson's Bay Company, an important chapter in Winnipeg's history. The replica was built in England in 1969 to celebrate the 300th anniversary of the company, and she sailed 8,700 miles before berthing in Winnipeg alongside authentic-looking wooden houses and an inn. Museum goers can climb aboard to speculate on what both 17th and 20th century seamen must have experienced.

Part of the Manitoba Centennial Centre (which also includes a planetarium and a concert hall, home of the Winnipeg Symphony Orchestra), the Museum of Man and Nature is a place to spend several hours getting oriented to the city's role.

Man's relationship with his environment is examined through dioramas, reconstructions, specimens, graphics and audio-visual presentations in seven major galleries: Orientation, Earth History, Arctic-Subarctic, Grasslands, Boreal Forest, Urban and Nonsuch. Guests are met by a realistic diorama of a Metis (mixed blood) hunter closing in on a wild-eyed buffalo. Other attention getters follow in rapid order.

Known as the **Gateway to the West,** Winnipeg is 63 miles north of the United States border, equidistant from the Atlantic and Pacific oceans and on a line with the Minnesota/North Dakota line. A Winnipegger, so the story goes, once described the city as "a hundred and fifty dollars away from anything." He went on to say the town fathers figured they'd just have to build a cultural oasis of their own. And so they did, with the Royal Winnipeg Ballet as keystone.

Another cultural pride is the striking **Winnipeg Museum of Fine Arts,** founded in 1912 and housed in the Civic Auditorium before moving into its present building in 1972. Gustavo da Roza, a young Portuguese architect from Hong Kong, who was on the faculty at the University of Manitoba School of Architecture, was chosen in a competition open to all architects registered in Canada. The architect described his plans thus: "The load-bearing walls of dressed Manitoba limestone are used to affirm and crystallize the character of this northern prairie environment. The form of the building points north, inspired by the shape of the site. This affords the individual an opportunity to associate with and participate in the aspirations of our cultural development. . ."

Visitors enter a 2-story foyer of Manitoba Tyndall stone, which contains works of art (part of 26,000 square feet of display area), gift shop and auditorium. The third floor has nine galleries, and on the fourth floor is the outdoor sculpture garden. The Permanent Collection includes the Lord and Lady Gort

Reprinted with permission from the DALLAS MORNING NEWS

Room, housing fine 15th and 16th-century panel paintings, almost all of ecclesiastic origin. The overall collection of 10,000 works of art contains the largest collection of Inuit (or Eskimo) art in the Western World. Lunch is served in a pleasant rooftop restaurant or a cafeteria.

Inuit Art also plays a large role in the city's private galleries, such as the Upstairs Gallery (actually downstairs at 266 Edmonton St.) presided over by enthusiastic Faye Settler, who has been closely associated for a number of years with the work of the inland Baker Lake community to the north. She carries many examples of individual artists' creative drawings in colored pencils, wall hangings, tapestries and sculptures.

Heart of the city's recreational facilities is all-year **Assiniboine Park,** the main entrance of which is marked by a statue of a Red River Oxcart, a 2-wheeled wooden vehicle that once carried immigrants across the prairies. Strewn over the 376 acres (second in Canada only to Stanley Park in Vancouver) are lawns that in summer serve for cricket matches and other sports but in winter become cross-country ski runs; the duck pond turns into a skating rink. Other features include a photogenic British-looking Pavilion containing food stands, a free zoo, bike paths, a little train, carriage rides, an English garden and picnic areas.

Deer crossing signs attest to a herd of 200-deer in Assiniboine Forest. Golf is available just across the way.

Nearby is one of the city's finest old residential areas, treelined Wellington Crescent, which is closed off on pleasant Sundays for the exclusive use of bicyclists.

Particularly popular with visitors is **St. Boniface, the French section,** where about 60,000 of the city's 600,000 residents reside. High point is the Cathedrile de Saint Boniface, the fifth building to occupy the site. The last one was built in 1972, incorporating the previous one, which was destroyed by fire in 1972, as the facade. Joy and Light is the theme of the structure, which utilizes natural sunlight.

Next to the cathedral is the year-round St. Boniface Museum building, erected in 1846 for the Grey Nuns, first institutional establishment in Western Canada. It also is the largest oak construction in North America and the oldest building in Winnipeg. Found in the old convent are scenes of early life and a corner dedicated to Louis Riel mementos. The controversial Riel, a protector of France and Metis rights and called the father of Manitoba, led two armed rebellions and was hanged as a traitor. But his home, the Riel House, was restored to look as it did in 1886 and opened to the public by Parks Canada in 1980. It can be visited daily from mid-May to mid-October at no charge. Riel is buried in the churchyard of St. Boniface.

Striking architecture is found in many other buildings, old and new. In the suburbs is architect Etienne Gaboury's futuristic, rosy-hued **Winnipeg Mint,** where visitors can watch coins being minted.

Downtown, the Legislative Building of Classic Creek design has a dome topped by Manitoba's most prominent landmark, the naked Golden Boy. This 5-ton, 13½ ft bronze statue holds a sheaf of wheat and an eternal torch. Inside the handsome building, opened on July 15, 1920, the 50th anniversary of Manitoba's entrance to Confederation, are other sculptures and art works, including two huge bronze buffaloes flanking the main staircase.

Some other interesting structures: the VIA rail station, which had the same architects as Grand Central Station; the Federal Building, larger on top than bottom, and the 32-story Richardson Building, the city's tallest, with an observation gallery open in the summer.

Pedestrians are subject to a $56 fine for crossing the busy, wide intersection of Portage and Main, which has the dubious honor of being the windiest corner in Canada. Instead, they must take an underground concourse, a real maze of corridors, shops, restaurant and the like. The thoroughfares were supposedly designed to accommodate 10 wooden Red River carts traveling side by side.

Among other attractions are **Old Market Square Heritage District,** scene of shops, restaurants and weekend open-air markets; Dalnavert, the Sir Hugh John MacDonald House Museum, built in 1895 for the only son of Canada's first prime minister and restored by the Manitoba with its handcrafted articles on display and for sale, and the Ukrainian Cultural and Educational Centre.

Water always has played an important role in Winnipeg, whose Indian name means "muddy waters." (Manitoba also is an Indian name, "God Who Whispers & Speaks"). The city straddles two rivers, the Red and the Assiniboine. Agriculture came into its own with the first outbound shipment of wheat in 1876.

Prior to that was the fur trade era, brought

Reprinted with permission from the DALLAS MORNING NEWS

back to life in the only stone fort still intact from the period. Now Lower Fort Garry National Historic Park, it lies 19 miles to the north at Selkirk, alongside the Red River before it flows into huge Lake Winnipeg. A complex of some 20 buildings related to the provisioning of the Hudson's Bay Company trading operation has been restored to the years between 1835–1875, each one to a different date. This popular attraction is open daily from mid-May to mid-October, although the historic grounds are open all year.

A tour logically begins at the visitor reception area for an audiovisual presentation and proceeds through the East Gate to see the Big House, restored and furnished to 1852 when the company's Associate Governor Eden Colvile and his wife were in residence. Costumed animators portray the governor and his servants, greeting residents as they arrive to discuss the affairs of the settlement. Visitors are expected to play along with the conversations of yester-year. Among other highlights is the Furloft-Saleshop Building (built in 1832 of local limestone, restored to 1865, and housing a saleshop, storage room for trade goods and produce, and a well-stocked fur loft), an original York boat brought from Norway House in 1935 and once used to transport furs.

All that is left of Upper Fort Garry, the Hudson's Bay Company's earlier trading post, is a gate, now the site of a small architectural dig close to the Fort Garry Hotel. Built in 1911 by CN Railway, the latter is considered the last grand railway hotel in European chateau style. It is now owned by a Winnipeg investment firm.

Other principal hotels include the Westin Hotel Winnipeg (former Winnipeg Inn), the Holiday Inn (city's largest hotel with 410 rooms and meeting facilities handling from 40 to 1,000), the Marlborough Inn (recommended as having good food and service) and the Northstar Inn, among others. A Hilton is under construction.

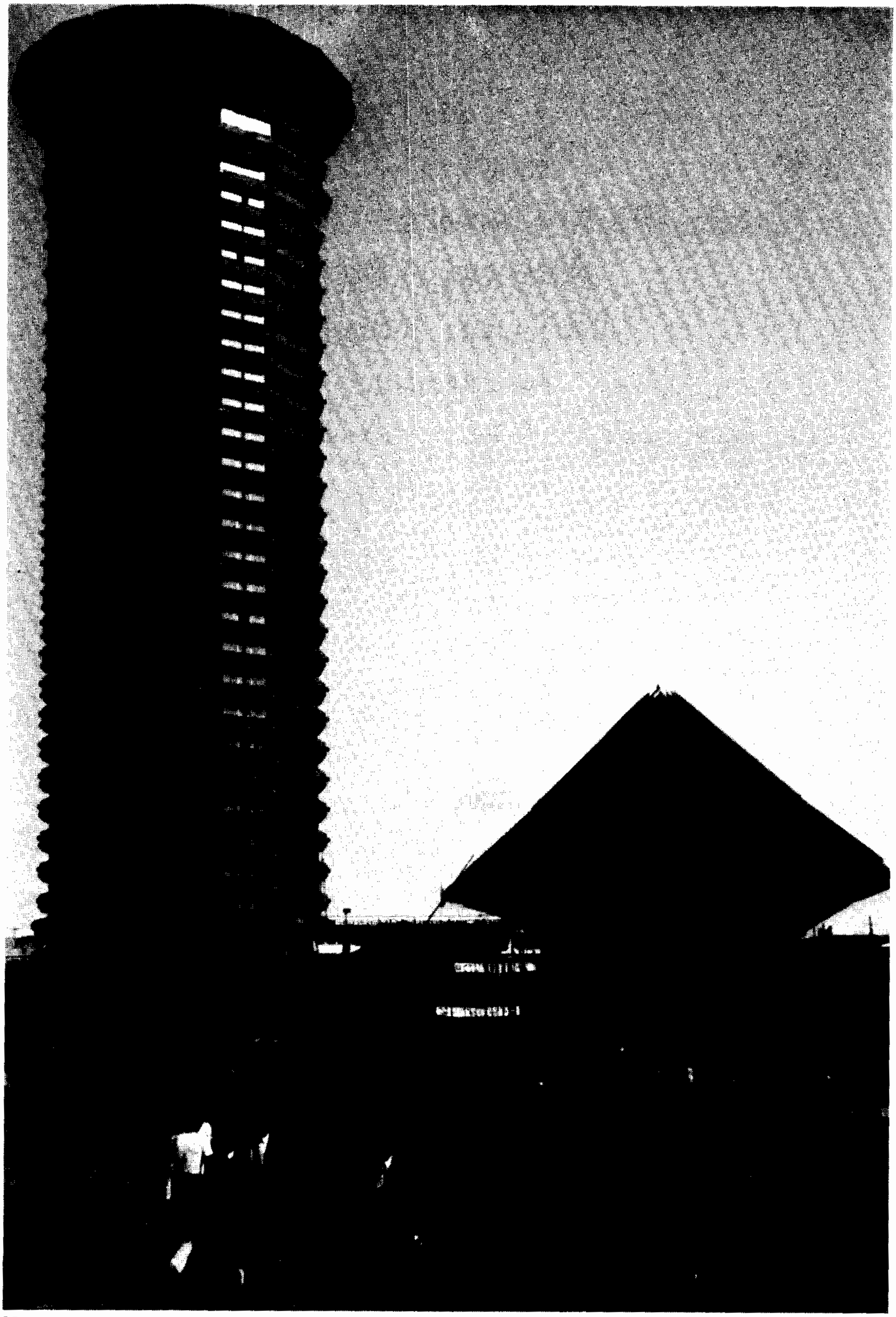
The city is a thriving center for group meetings and the Winnipeg Convention Centre can host conventions of up to 7,000 delegates.

The city has some **700 restaurants,** said to be the most per capita of any place in Canada. With 26 nationalities represented, the choice is almost unlimited. Unique rather than tasty in my opinion is Bungees, an Indian restaurant serving food prepared from recipes passed down from early days, including bannock bread, Arctic tea, a wild rice pudding, saskatoons (berries), smoked buffalo, smoked Winnipeg goldeye, buffalo, rabbit, pheasant, partridge and quail.

The best time to get a sampling of ethnic food and drink is during Folklorama, Winnipeg's Festival of Nations, held every August. A single passport ($6 in 1982), valid for the week and good for two visits to each of about 40 pavilions, is all that is needed. Awaiting at every stop are edible and potable samples, folk singers and dancers, books, pictures and crafts on display. Special buses travel between the pavilions, which are spread throughout the city.

As for regular sightseeing, two companies offer river cruises and sightseeing on British double-decker buses, generally from mid-May to October. The Rouge Line has afternoon, sunset and moonlight cruises on the M.S. River Rouge, a heritage cruise to Lower Fort Garry on the M.S. Winnipeg, combination bus and ship tour, and morning and afternoon sightseeing bus tours. Together with VIA Rail the company has an all-year tour designed especially for train passengers during their several-hour stop on the trans-Canada route. The Gray Line has similar schedules but its cruises are on the M.S. Paddlewheel Queen and M.S. Paddlewheel Princess.

Now are you ready for Winnipeg? Winnipeg is ready for you!!



Kenyatta Conference Center, Nairobi, Kenya *Pat Molholt*

50th IFLA General Conference August 1984 Nairobi, Kenya

Pat Molholt

The International Federation of Library Associations and Institutions met on the African continent last August for the first time in its conference history. A large banner stretched across Nairobi's main street welcomed IFLA participants to the city and the conference. It heralded a warm and sincere welcome to a unique and sometimes sobering conference.

The meeting, sponsored by the Kenya Library Association, was attended by some 600 representatives from 78 countries. The venue made possible participation by representatives from a number of African nations. The Kenyan press took note of the week-long event and published articles on a daily basis—treatment the conference does not often enjoy.

The theme of the conference was "The Basis of Library and Information Services for National Development," both timely and appropriate for the first meeting of IFLA on African soil. In her opening address, IFLA President Else Granheim laid out some of the challenges facing libraries and librarians in countries such as Kenya. She noted the lack of books in vernacular languages to describe the indigenous culture, the limited market for such materials due to illiteracy, and the lack of foreign currency with which to purchase sufficient quantities of paper for printing.

In a stirring speech, the Vice-President of Kenya, The Honorable Mwai Kibaki, outlined the library problems facing developing countries. He cited four major issues: the cost of production of reading materials; the cost of books from outside Africa; the complications inherent in the process of moving from an oral tradition to a print environment and on to more sophisticated storage mechanisms; and the problems associated with using traditional libraries. Regarding the last point, Mr. Kibaki pointed out that it is not useful for the vast majority of people to borrow books because there is no electricity by which to read them. Furthermore, if a book is taken home there is a 50 percent chance it will be destroyed because the physical conditions in homes are detrimental to books. How, he asked, can we hope to reach the primarily rural audience, for whom traditional library services are not useful? He characterized the Kenyan nation as being at a critical juncture, changing from an oral tradition to the need for printed history. Other countries, he lamented, have undergone this transition so long ago as to have forgotten the steps necessary to handle it smoothly. With these admonitions delivered, the participants listened to their African colleagues with renewed concern.

Virtually all divisions, sections and roundtables held the usual array of business and program meetings. In some cases the papers and topics were specifically geared to concerns of developing countries; in other cases participants' questions brought out a level of reality not usually encountered at library conferences.

There was still opportunity for celebration and relaxation. Traditional with IFLA conferences is the round of tours available to attendees. This year, of course, presented more than the normal harvest of sights. Kenya has some of the most beautiful game preserves and national park areas in Africa. Participants were able to tour both the Amboseli and the Masai-Mara Game Reserves, the latter on the border of the Serengeti Park in Tanzania. The effects of a three-year drought were evident, particularly among the herds of cattle feeding off the parched land. The native animals in the Reserves seem, thus far, to be faring somewhat better.

The conference was housed in the new Kenyatta Conference Center. The conical African hut-style roof of the amphitheatre, and the tower of office and special-purpose rooms form a striking silhouette on the Nairobi skyline. One could enjoy dinner in a revolving tower-top restaurant, viewing the city and surrounding country-side. The city has a long history of greeting visitors. Its population is diverse and its galleries of native art reflect the many facets of the country and its people. Of interest, even fascination, to many attendees were the open market and neighboring market building. Attendees practiced the art of bargaining with varying success!

IFLA will hold its next meeting August 18–24, 1985 in Chicago. The theme will be "Libraries and the Universal Availability of Information", a topic conducive to many interpretations and rich discussions.

The conference is being organized by representatives from the American library and information community. SLA's representative on U.S. Organizing Committee is Pat Molholt, immediate past-president of SLA.

STATEMENT of ownership, management and circulation (Required by 39 U.S.C. 3685)

1. Title of publication: Special Libraries.

A. Publication No.: IISN 0038-6723

2. Date of filing: October 1, 1984.

3. Frequency of issue: Quarterly.

A. No. of issues published annually: 4

B. Annual subscription price: $30.00

4. Location of known office of publication: 235 Park Avenue South, New York, New York 10003.

5. Location of the headquarters or general business offices of the publishers: 235 Park Avenue South, New York, New York 10003.

6. Names and addresses of publisher, editor, and managing editor: Publisher, David R. Bender, Special Libraries Association, 235 Park Avenue South, New York, N.Y. 10003; Editor, Renée L. Gold, Special Libraries Association, 235 Park Avenue South, New York, N.Y. 10003; Managing Editor, none.

7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. *If the publication is published by a nonprofit organization, its name and address must be stated.*): Special Libraries Association, Inc., 235 Park Avenue South, New York, N.Y. 10003.

8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: none.

9. For completion by nonprofit organizations authorized to mail at special rates. The purpose, function, and nonprofit status of Special Libraries Association and the exempt status for Federal income tax purposes have not changed during preceding 12 months.

10. Extent and nature of circulation.

	Average no. copies each issue during preceding 12 months	Actual no. copies of single issue publishes nearest to filing date
A. Total no. copies printed (net press run)	14,500	14,500
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	48	48
2. Mail subscritpions	13,525	13,393
C. Total paid circulation	13,573	13,441
D. Free distribution by mail, carrier or other means; samples, complimentary, and other free copies	63	70
E. Total distribution (sum of C and D)	13,636	13,511
F. Copies not distributed		
1. Office use, left-over, unaccounted, spoiled after printing	864	989
2. Returns from news agents	none	none
G. Total (sum of E, F1, and 2—should equal net press run shown in A)	14,500	14,500

11. I certify that the statements made by me above are correct and complete.

David R. Bender
Publisher

Reviews

Symposium on Western European Studies and North American Research Libraries (1983: University of Minnesota)

The state of western European studies: implications for collection development/ Anthony M. Angiletta, Martha L. Brogan, Clara M. Lovett, Charles S. Fineman, editors. New York: Haworth Press, c1984. xxi, 273 p. ISBN 0866563547: $29.95

The Symposium on Western European Studies and North American Research Libraries, held in Minneapolis in May 1983, was intended as a forum for scholars and librarians interested in Western Europe. Because Western European studies are less focused than other area studies and are for the most part taken for granted, the sizeable inroads made by inflation and cutbacks in library budgets in recent years have largely gone unredressed. Also perceived are a lack of interaction among librarians and researchers concerned with Western Europe, and a dearth of organizations and centers which might serve to focus and articulate concerns.

The essays in this volume, which represent about half of the papers presented at the Symposium, are divided into three groups. Papers in the first section, entitled "The State of Western European Studies", outline current research trends and give insights into the state of publishing in selected Western European countries and fields of study. The second section, on collection development, deals with questions of selection, and collection growth and evaluation. The final section concerns bibliographic control. The essays themselves range from descriptions of specific projects to surveys of current conditions in publishing and research to predictions of likely future trends. Also included are the records of the Symposium—program, participants, sponsors, and resolutions.

The emphasis is on university and research libraries, and on the humanities and social sciences. Many of the essays will be of interest and use to other types of libraries, however, particularly those papers which deal with publishing conditions, selection, and cataloging. Agnes Peterson's paper on anticipating future research needs deserves special attention. It is a brave attempt to come to grips with the crystal-ball aspect of collection building. Those essays which deal more specifically with university situations also contain information of general interest and deserve to be read by a wider public. John Turner's paper on British studies, for example, is a fascinating study of the kinds of social science topics which are likely to be addressed in the next twenty or thirty years.

This is an exceptionally well-edited volume. Both Clara Lovett's introduction and Martha Brogan's afterword show that a great deal of thought and care went into its arrangement. The papers have been shorn of the rough edges that too often mar the transition from oral to written presentation, and are lively and engrossing. Taken together, they provide an informative and thought-provoking overview of the current state of Western European studies and its possible future directions.

The material in this book was also published as *Collection Development*, v.6, no.1/2, Spring/Summer 1984.

Helga Borck
Collection Management & Development Division,
New York Public Library (Research Libraries)

Accounting for Librarians: and other not-for-profit managers by G. Stevenson Smith; Chicago, American Library Association, 1984. ISBN 0-8389-0385-1. ix, 470 p. LC83-11896. $50 cloth

Charles Meadow of Dialog Information Services makes the observation that the professions of librarianship and accounting are really very similar. Central to each is the assigning of funny little numbers, L.C. or U.D.C. class numbers in one case; budget or ledger codes in the other, to chunks of information so that like things will group together and so that information can be retrieved. The intriguing phenomenon, he muses, is that each profession finds the comparison odious.

Would that the latter point be not so, and would that there be better communications between the two fields. Business information systems whose primary customers are typically accountants are frequently reinventing wheels that (to mix metaphors) have long been in the armamentarium of librarianship, and librarians in turn are far too often unsophisticated financially. This book is a very useful contribution toward ameliorating the second problem.

It is principally the vocabulary and the conventions of accounting that are alien. Smith's book is an excellent exposition of that vocabulary and those conventions in the not-for-profit context. This book is not a review of how to read a balance sheet, nor how to compute a quick ratio; it is just what it says it is—accounting for not-for-profit managers.

This book is thorough, careful, and methodical, in the classic tradition of accounting/librarianship. The examples are excellent, and there are very useful question/answer sections and exercises to test your comprehension as you proceed through the book. Anyone who goes through this book carefully should feel very much at ease with accounting in a not-for-profit environment.

The only non-trivial quibble this reviewer had is that, as in so many accounting text books, the author introduces debits and credits in the context of the firm's assets, which is of course thoroughly logical from an accountant's point of view, but it is also quite opposite to the sense in which the lay person perceives those terms, as in: "Your credit rating is . . ." or "I'll credit your account . . ." Debits increase asset accounts and decrease liability accounts, while credits decrease asset accounts and increase liability accounts. The mirror imagery of debit/credit terminology should be explained clearly, and unfortunately the book fails to do so.

With that one exception, the book is very well written. This reviewer recommends it enthusiastically to all not-for-profit managers.

Michael E.D. Koenig
Columbia University School of Library Service

Hospital Library Management, edited by Jana Bradley, Ruth Holst, and Judith Messerle. Chicago, Medical Library Association, 1983, xiii, 412 pages. $67.50. ISBN: 0-912176-15-6.

The effective administration of a hospital library requires an understanding of the issues and skills involved in providing biomedical information. The hospital librarian performs many functions: serving the institution's information needs, applying technology, communicating with the hospital administration, and working within regional and national networks of information centers. The era when a hospital library was used exclusively by the physician and staffed by an individual trained in-house has passed. The scientific, technological, and sociopolitical developments that have enabled the librarian to provide this wide range of services have also placed greater demands on managerial skills. *Hospital Library Management* provides a comprehensive and practical guide to these issues and practices involved in hospital librarianship today.

The book is organized into four sections: the role and function of the hospital library, provision of library services, management issues, and special types of services. In a typical section, "Managing Library Services," there are chapters on the librarian's administrative role, planning and evaluation, budgeting, promoting the library, and cooperation among libraries. Each chapter begins with a brief outline that allows the practitioner to scan the contents for areas of interest. This is followed by a general orientation statement and practical step-by-step advice on how to perform specific functions. Thus, the chapter on "Planning and Evaluating Library Services" gives instructions on how to assess needs, set objectives, determine priorities, establish policy, and conduct long-range plans and evaluations. The book covers just about everything that one would want to know about managing a hospital library in a systematic way.

Hospital Library Management is a practical guide for the hospital librarian, is a sequel to Bloomquist's *Library Practice in Hospitals* (1972). The updated version reflects several recent developments: establishment of the library as an integral part of the hospital, adaptation of some new technologies by health science libraries, and participation in large cooperative networks. In reviewing Bradley's edition, one has the feeling that while the basic functions of hospital libraries have not changed during the past ten years, they have become more complex, e.g. the use of the MEDLARS system and its subsets along with the number and variety of other databases. *Hospital Library Management* does an admirable job in bringing us up-to-date.

Bradley indicates in the Introduction that her goal is to "provide specific ideas on what to do and how to do it." As a practical guide to daily operations *Hospital Library Management* is an invaluable tool for hospital libraries of all sizes. It is comprehensive and it is indexed, illustrated, and documented with care. The editors are to be commended for their excellent work and for organizing chapters of diverse material into a cohesive publication.

Linda Salisbury, Reference Librarian
Washington University
School of Medicine Library
St. Louis, MO.

Managing the Special Library: Strategies for Success Within the Larger Organization. By Herbert S. White. Knowledge Industry Publications, Inc., 1984. 152p. $36.50 hardcover, $27.50 paperback.

There are many good qualities and many points well-taken in this book. There are also many problems.

I am uncertain what the purpose or focus of the book is intended to be. In the preface White indicates that the book is "aimed primarily at individuals who are already special librarians and who have not had the opportunity to contemplate what they do and why they do it . . . [and] other librarians who are interested in this field and might want to consider making a lateral career change. Finally it is aimed at library and information science school students, particularly those at the master's level. It represents the curriculum developed over a period of eight years of teaching a course in special libraries and information centers, and it should prove useful as a textbook."

I'm confused already. How do you propose to write one book that will be so many diverse things for so many different people? How can it address at once working professional librarians, other librarians wanting to know about special libraries, and students? White's text attempts to cover too many things for too many persons for too many reasons. There are probably three books (or possibly articles) that could evolve from these goals, but to satisfy all three in one book creates too many problems for the reader. Why would an already practicing librarian need to read a book to "know what they do and why they do it"? For definition purposes I am more comfortable with its usefulness as a "textbook."

In the preface White also indicates that "the book makes no attempt at bibliographic completeness or even bibliographic adequacy." Truer words do not exist. Time and again White makes such statements as "as Matarazzo has pointed out," "Edward Strables reports that," "Bradford . . . postulated in the 1930's that, "a number of independent studies" and "operations research studies tell us that. . . ."

How can this important leader in our field prepare a textbook in such a sloppy and shoddy manner? The haphazard and off-the-cuff presentation of some of the material certainly gives credence to the fact that "it represents the curriculum developed over a period of eight years of teaching."

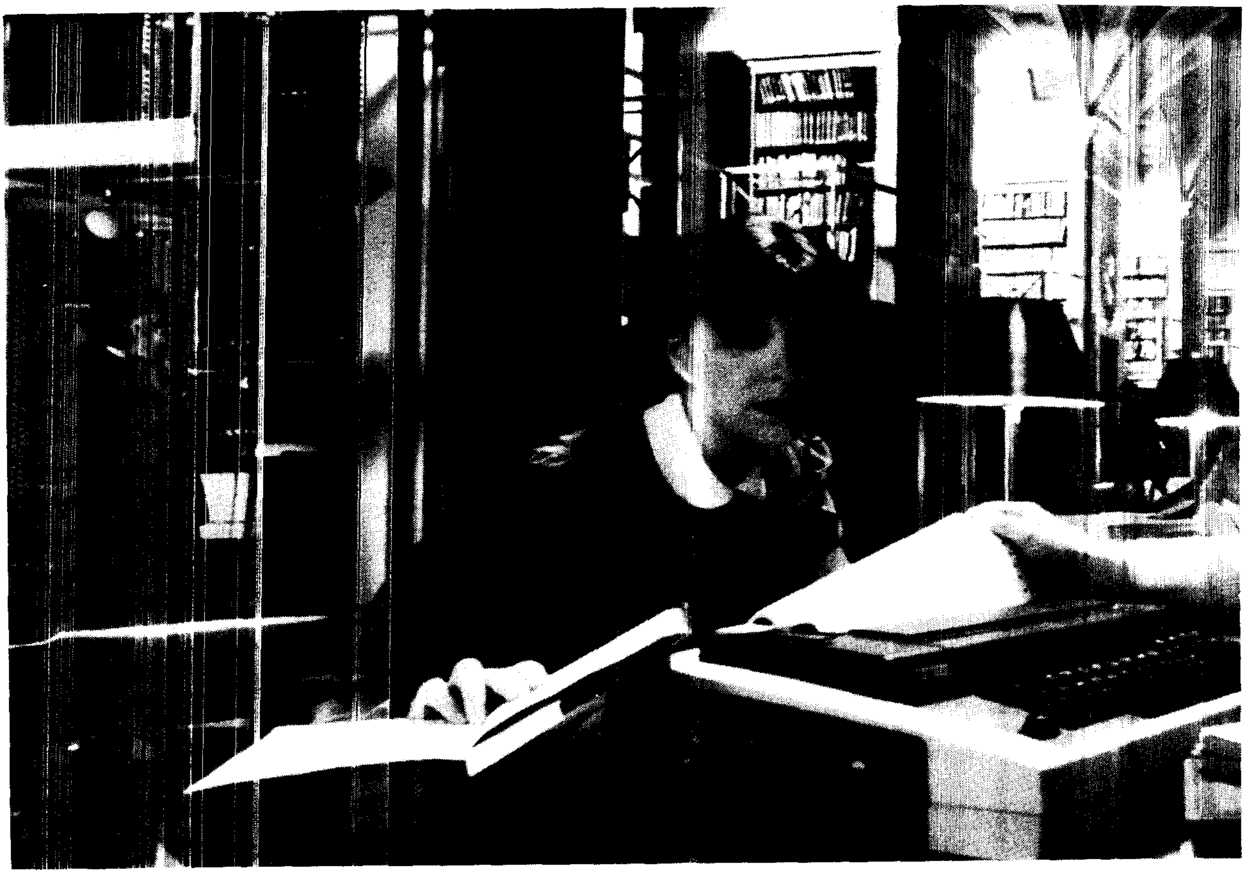
Editorial style (or the lack of it) aside, what of the content? The twelve chapters cover basic information in such areas as "What are Special Libraries and Information Centers?" "Evolution and Development," "Acquiring and Distributing Library Materials." "The Budget Process," "Management Communication," "Technology and Special Libraries of the Future," and others. Yet White does not include bibliographies at the end of chapters but rather "suggested additional readings." Sometimes the reports or outside sources mentioned are in the reading list, sometimes they are not. There is also a selected bibliography at the end of the book.

The volume's subtitle (Strategies for Success Within the Larger Organization) helps the reader understand where the text is going. White comes down hard on special librarians for being indifferent. He does, in each chapter, give indications of how this indifference might be handled, but this reader was very concerned with so many negative comments about the profession (e.g., "low levels of service," "passive and reactive libraries"). White attempts to show ways of resolving these problems, but I would have hoped for a more positive attitude about our profession. While there will always be some persons in any profession who do not fit what we would hope to be our standard, most of the librarians this writer has known have been positive, active (not reactive) and resourceful.

There is much basic information here. For the beginner, this book presents good background information. For the recent library school graduate, it might be helpful as a textbook. For the librarian considering a lateral move, the book has some basic and historical information, but I am not sure that if I were contemplating a lateral move I would read a book to help get there.

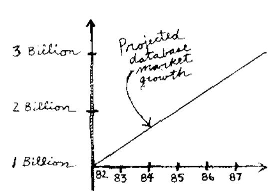
Every librarian understands the necessity of learning good bibliographic citations. If we do not know them, how can we help others? In the end this failing bothers me enough to not recommend the book. Why would a person of such high caliber and recognition be so careless in putting out what should have been a much better documented book?

Ron Coplen,
New York City



YOUR SEARCH FOR THE BEST ENGINEERED DATABASE TERMINAL ENDS HERE. DIGITAL'S CORRESPONDENT.

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.

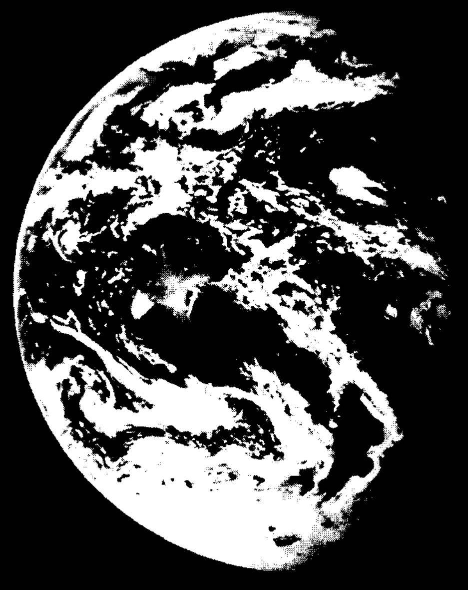
THE QUALITY OF THE ENGINEERING DETERMINES THE QUALITY OF THE PERFORMANCE.

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-

INFORMATION

Broaden Your Horizons.



INFO/DOC conquers a world of information.

Write, Phone, Telex or Online *Order INFODOC* . . . and you're on your way. Light years in advance of most search companies, INFO/DOC offers a range of unique, invaluable services at down-to-earth fees. As our name implies, we research, retrieve and deliver both information *and* documents. And we do it at speeds you may find close to cosmic. Thanks to our location, computers and expertise, the countless resources of Washington, D.C. are available to us immediately. Additionally, through our satellite communication link, the rest of the world is quickly at our fingertips.

We furnish U.S. government publications, documents, Freedom of Information items, domestic and foreign patents and literature. We are authorized distributors for National Technical Information Service products and Government Printing Office publications. We can provide military, federal and industrial specifications and standards dating back to 1946. And, needless to say, we enjoy access to the Library of Congress, National Library of Medicine, government agencies, and departments, business organizations, trade associations, and professional societies.

Call us for further information. We welcome all inquiries and accept VISA, Mastercard and American Express. Investigate the advantages of INFO/DOC. And take a giant step toward a new horizon.

INFORMATION DOCUMENTATION

Box 17109 •Dulles International Airport •Washington, D.C. 20041
Tel: 800-336-0800 or (703) 979-5363
Telex: 90-3042 (INFO DOC) Online: *ORDER INFODOC*

LETTERS

OCLC/CONSER

Those of us who work with serials at OCLC appreciate Mr. Terrence J. O'Malley's article (Union Listing Via OCLC's Serials Control Subsystem" (*Special Libraries,* April 1984). I think that readers of *Special Libraries* would be interested in recent changes in CONSER and OCLC activities that have occurred since Mr. O'Malley's article and that improve both the quality of serials cataloging and increase the effectiveness of the Union List component of the Serials Control Subsystem.

Improvement in the quality of serials cataloging results in part from new CONSER procedures that enable participants to authenticate serial records in the OLUC. Like records authenticated by the Library of Congress (LC), CONSER authenticated records meet the national and international standards and practices agreed upon by CONSER participants and documented in the *CONSER Manual* and the *MARC Serial Editing Guide.* This procedure allows for the input of more authenticated records and the authentication of previously unauthenticated records.

CONSER has also implemented a procedure allowing CONSER participants to modify LC authenticated records, which heretofore were locked to participants. Using a CONSER editing authorization issued by OCLC, participants can modify fields to reflect changes to a serial; e.g., adding a closing date and linking note to a title that has ceased publication. Those participants who elect to participate in this activity can update serial records in a more timely fashion.

The improved quality of serial records is also due to the many OCLC member libraries who submit Change Requests. By implementing the new CONSER procedures and by using Change Requests and documentation supplied by users, the Online Data Quality Control Section (ODQCS) at OCLC can now modify authenticated records. ODQCS need no longer submit these requests to LC. Special projects by member libraries also play an important role. For example, within the past year ODQCS has worked closely with the University of Maryland at Baltimore Health Sciences Library in its efforts to enhance hundreds of health and science serial records, many of which were unmodified, tape-loaded records.

OCLC has implemented new system software that enables ODQCS to delete duplicate records and to move holdings from the duplicate to the retained record. Using this program, ODQCS deleted approximately 15,000 duplicate records from September 1983 to August 1984. Duplicate reports are received from both CONSER and member libraries and are processed within a week of receipt at OCLC. Special projects like the Pittsburgh Regional Library Center (PRLC) project that identified duplicate QPR records and the ongoing ARL/NFAIS Abstracting and Indexing Project enable OCLC to systematically delete many duplicate records.

OCLC has categorized several types of duplicates that result from CONSER activity or member requests to modify serial records. When modifications to records result in the collapsing of several records onto one or the splitting of one record into several, OCLC reports these modifications in a new online Union List Change Report. Any user with a serials control authorization may access this report by searching OCLC no. 10258107.

The older Union List Change Report, OCLC no. 2500016, is reserved exclusively for reporting title cessation. Reports are compiled from change requests processed within ODQCS and reports submitted by union list members. Both online reports are updated weekly.

These activities have resulted in an increase in the number of authenticated serial records, and improvement in the quality of serial records, a more timely updating of records, a decrease in the number of duplicates, and an improved link between serials cataloging and union listing. With the cooperation of CONSER participants and member libraries, OCLC will continue to strive to improve both the quality of serials cataloging and the effectiveness of Union List component of the Serial Control Subsystem.

Todd Butler
CONSER Liaison
Online Data Quality Control Section
Marketing & User Services Division

Professional Tone

Today I received my October 1984 issue of *Special Libraries.* It contained such a fabulous collection of appropriate articles that I did something I had never done before: I sat down and read (yes, I mean read, not scanned) each article completely! That sets a record for me in my 35 years of special librarianship. Of course I realize that in the future there may be articles which hold minimum to me and thus will not read them too carefully, but this one (this issue) had a professional tone I had rarely experienced before. In fact, the articles generated three letters to authors, which too is a record for me. Keep up the good work!

Robert G. Krupp
Maplewood, N.J.

SLA Anniversary Paperweight

I'm eagerly awaiting the arrival of my SLA Anniversary Paperweight, which I intend to display proudly on my desk. For to me, SLA represents both a personal and professional bond. It was to SLA that I turned, soon out of Columbia in wartime New York City, and was warmly welcomed into the fold by SLA's first paid Executive Secretary, Mrs. Kathleen Stebbins. It was through her good graces that I was guided from academic librarianship to special librarianship as a specialist in the Office of War Information. No challenge was too great for SLA, Mrs. Stebbins stressed to me when she helped me transfer from the East Coast to the West with all kinds of leads to the wonderful SLA Southern California Chapter. I was immediately put to work preparing for SLA's fortieth [anniversary] in 1949 handling publicity for the conference in LA. And it was as an SLAer that I transferred my industrial experiences back to academia almost a quarter of a century ago when I came to UCLA.

SLA has been an important part of my life these many years; I feel that I shall be coming full circle with the 75th anniversary paperweight—the symbol of professionalism as we know it in SLA!

Sherry Terzian
Director, Mental Health
Information Service
Neuropsychiatric Institute
UCLA

INDEX TO ADVERTISERS