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Special Libraries, November 1970

Special Libraries Association

special libraries

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Spearheads Soviet research in information theory and data transmission

PROBLEMS OF INFORMATION TRANSMISSION

Problemy Peredachi Informatsii

Faraday Advisory Editor: M. Levison,
University of London

Soviet Editor: V. I. Siforov

An outstanding publication of interest to researchers in all fields concerned with the R & D of communications systems. Contents include statistical information theory; coding theory and techniques; noisy channels; error detection and correction; signal detection, extraction and analysis; analysis of communications networks; optimal processing and routing; topics in the theory of random processes; and bionics.

Prof. V. I. Siforov is well known for his research contributions in radioelectronics, signal detection and analysis, and the design of advanced communications systems. Among the notable members of the editorial board are Prof. M. A. Gavrilov of the Institute of Automation and Remote Control of the USSR Academy of Sciences, and Acad. A. N. Kolmogorov, Dean of the Mathematics and Mechanics Faculty at Moscow University and Chairman of the International Association on the Use of Statistics in the Physical Sciences. Kolmogorov has won both the Lenin and Stalin Prizes for research on the theory of functions of a real variable, and he also has recently developed a major modification of the theory of information which introduces an algorithmic approach employing recursive functions. Other members of this distinguished board include B. S. Tsybakov, R. L. Dobrushin, and M. S. Pinsker who have specialized in coding theory and problems of error detection and correction; L. M. Fink and V. N. Roginskii who have contributed significantly in the area of complex signals; M. L. Tsetlin who is renowned for his work in game theory; as well as such well-known researchers in large-scale information and communications systems as O. B. Lupanov, V. A. Uspenskii and A. M. Yaglom.

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Focuses on experimental methods of analyzing, translating, encoding, searching and correlating scientific and technical information. Covers problems in the development of information languages, classification and indexing, and automatic analysis of texts. Describes new projects in automatic documentation, mechanical translation, mathematical linguistics and information retrieval.

Academician Mikhailov, Director of the USSR Institute of Scientific and Technical Information (VINITI), is acknowledged to be one of the world's most eminent authorities in the theory and design of information systems. VINITI employs over 4,000 specialists and has been involved in countless research projects relating to the theory, methodology and automation of scientific and technical documentation. Such leading mathematical linguists as Yu. A. Shreider, G. E. Vleduts and I. A. Mel'chuk have directed in-depth research dealing with problems of generative-transformational grammar, semantic analysis and synthesis, syntactic and morphological analysis and natural-language to information-language conversion. Under the guidance of Prof. D. A. Bochvar, one of the most outstanding Soviet specialists in the field of mathematical logic, a special Semiotics Division was created at the Institute to conduct research in information analysis, logical semantics, structural linguistics and other disciplines which are designed to make available to the new science of informatics the exact methods currently employed to create automated information systems.

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1970/1971

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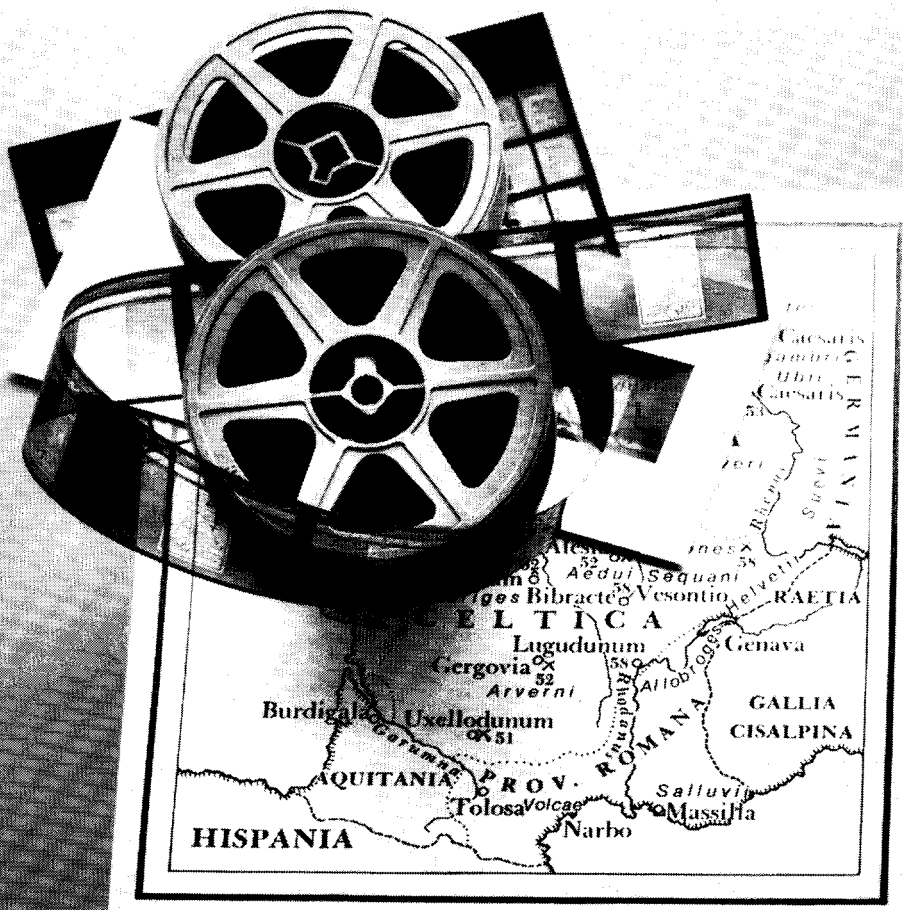

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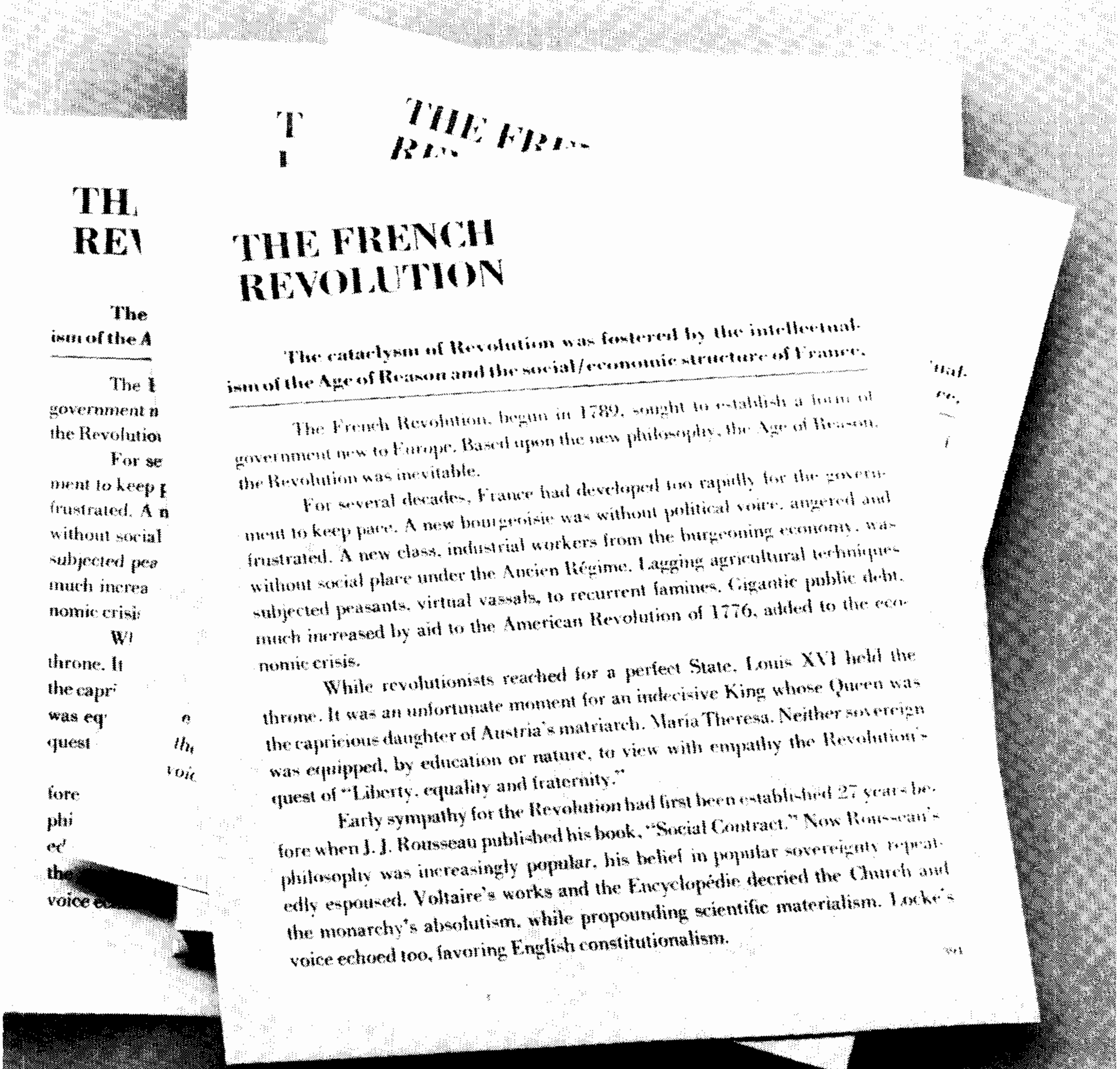

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THIRD EDITION, 1970

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Completely rewritten edition of the well known guide to medical library management. Seventeen chapters, each by a practicing librarian, present up-to-date information on all aspects of service to personnel in health science facilities — medical and paramedical schools, hospitals, research institutions. Emphasis on modern business administration, grants management, audiovisuals, automation, preservation of library materials, and library planning and equipment.

MLA Publication No. 4 *411 pages, $15.00*

Medical Reference Works, 1679-1966: A Selected Bibliography. Supplement I.

Compiled by Mary Virginia Clark. Chi., MLA, 1970

In the first biennial supplement to the comprehensive bibliography, edited by John Blake and Charles Roos, Mary Virginia Clark, National Library of Medicine, annotates 315 entries for books published in 1967 and 1968. Arranged by medical specialties and related fields such as dentistry, nursing, pharmacy, etc., it also contains a list of additions and corrections to the original publication.

MLA Publication No. 3, Supp. I *Paper, $3.75*

MEDICAL LIBRARY ASSOCIATION

919 North Michigan Ave., Chicago, Illinois 60611

LETTERS

Where Are the Facts?

I heartily concur in the thoughts expressed in the last paragraph of the editorial comment on the SLA/ASIS merger talks (*SL* Sep 1970). I found an echo of that last paragraph in an advertisement that appeared in the *Wall Street Journal* recently. It said, in part: "Bob Boone says running a business by the seat of your pants is a good way to lose your shirt. . . . I need hard facts."

This thought applies to running SLA; it applies to running ASIS; and it applies to any further discussions of merger.

We need to know what the financial facts of a merger are. Even though financially SLA is sound, it is not necessarily strong enough to assume the financial burden of a merger—in part or in whole. ASIS admittedly has been rather "free wheeling" as far as its finances are concerned. Is its financial position such as to enable it to carry its share of the cost of a merger? No matter how desirable a merger may seem, no success can come from a union of two weak or of two unequal partners.

We can't afford to conduct these merger discussions by the seat of our pants. We need facts.

Jean Deuss
Federal Reserve Bank of New York
New York, N.Y. 10045

We Are Special!

The discussions regarding a possible merger with ASIS have made me ask myself what do I mean by the term *SPECIAL LIBRARIAN*. I believe the term encompasses everything so-called information organizations include. Why am I so resentful of the time and effort going into these discussions? Am I fighting for the Status Quo? I don't think so. The *American Heritage Dictionary of the English Language* defines merge: "v.—To cause to be absorbed, so as to lose identity." This is what disturbs me.

I studied the disciplines which enabled me to become a Librarian. As a professional, I kept up with the changes from printed page to magnetic tape. It is the word *SPECIAL,* however, which has made me prosper and given enjoyment to my work. I learned our products, what it takes to make them, to sell them, who is the competition, the important people in the field and make this information known to those who need it for action.

I joined a Society, SLA, "from which emerges anything and everything applicable to the needs of a business firm" in the words of our Founder, John Cotton Dana. We were around when ASIS was formed. They must have had good and sufficient reason for not joining with us. What has changed now? SLA has not been static, there have been changes and regroupings throughout its history. The merger does not necessarily mean we will grow in numbers or prosperity. Only 12% [of SLA] hold dual membership. We have one division almost as big as ASIS. I don't believe that the majority of either Society really wants the merger.

Our private profit making businesses pay taxes and thus support the theoretical work of government and educational institutions. Knowledge is considered an important new industry, but SLA has always dealt in knowledge. The four key areas of hardware, software, applications, and people are just new businesses which soon build up enough literature in whatever form to become Special. We need a Society that has the applied approach. Perhaps, if we brought SLA back to its original concept, we would prosper.

Leola Michaels, Librarian
GE Co., Metallurgical Products Dept.
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Detroit, Michigan 48232

Is Federation the Answer?

Mr. Stanley Elman, in his letter in the September 1970 issue of *Special Libraries,* mentions *ERIC/CLIS News* and says, "Is the proposed merger of ASIS with ALA or SLA?" Perhaps we should consider a possibility suggested in that question. Does SLA have more in common with ASIS than ALA has? If SLA is merged into ASIS (as the present implementation plan would do), why shouldn't an effort be made to merge ALA into the organization, also?

There certainly exists a multiplicity of library and information organizations some of which seem to be almost identical in purpose. For example, ASIDIC, Association of Scientific Information Dissemination Cen-

ters, vs. ASIS's Special Interest Group, Selective Dissemination of Information. In SLA we have the Documentation Division which was organized when ASIS was the American Documentation Institute. The Association for Computing Machinery has a Special Interest Group on Information Retrieval. Surely, with the maturing of COM, the National Microfilm Association will be in the picture(!), too. SLA has had a Reprography Committee and ASIS has a Special Interest Group on Reprographic Technology.

Let's go now to Mr. Elman's beginning statement urging federation. In their summary of the SLA/ASIS merger discussions, the SLA members of the Merger Committee (see p.388, *Special Libraries,* Sep 1970) state that "pursuing the federation idea would not result in a viable new organization because a federation would be too loose an organization." What do we want out of this "viable new organization"? Why would federation be "too loose an organization"? Has the committee studied the American Institute of Physics, for example, which has existed successfully for a number of years and has several constituent societies, or the American Institute of Mining, Metallurgical and Petroleum Engineers?

The name, American Federation of Information Processing Societies, would indicate that there might already be an information sciences federation in existence. However, Mr. Burton Lamkin, SLA's official representative to AFIPS, states as follows, in his report on AFIPS (p.424, *Special Libraries,* Sep 1970): "At the May 4 meeting of the Board of Directors a vote was made on three applications for Member status. The Instrument Society of America, the Society for Industrial Applied Mathematics, and SLA were applicants. The Board did not approve the election of the three Societies to Member status." ASIS is a Member of AFIPS and SLA is an Affiliate. By copy of this letter to Mr. Lamkin, I am asking for the reasons for the denial of SLA's membership application. They might be of considerable interest in the merger or federation discussions. As a separate point of interest, I would also like to know who determined that SLA's membership wanted Member status for SLA in AFIPS. How many of SLA's members know what AFIPS is or what its objectives are? How many know that it sponsors the Joint Computer Conferences?

I am a member of SLA and ASIS but I am not in favor of merger, either of ASIS into SLA or vice versa, at least not at this time. In the September-October 1970 issue of the *Journal of the American Society for Information Science,* there is a page titled "Concerning Membership in the American Society for Information Science." It describes the capabilities and activities of its members. Do special librarians fit the descriptions? Partly, but certainly not completely. Nowhere on that page is there mention of service to your clientele and that's what special librarianship is all about! And why need we be concerned that ASIS is growing at a faster rate than SLA? ASIS has no membership requirements at all. Anyone can join who feels he has an interest in it. And who isn't interested in information these days? While I deplore the proliferation of information organizations that I pointed out above, I don't feel that merger is the answer for us.

Marian Wickline
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For Professional Identity

I may assume that most of our members are happy with the SLA Bylaws membership provision changes, which passed so "overwhelmingly" (2607:195), as reported in *SL* Sep 1970, p.394. As one of the small minority (7%) which had serious reservations about the merits of some of the changes, I will of course accept the vox populi, but like to point out that fully 65% of the SLA membership did not bother to vote at all. I do not feel comfortable in the thought that these rather serious changes, which "broadened" our membership base, were not considered important enough to express an opinion on by two-thirds of all SLA members. Seen in this light, the vote does not really seem evidence of overwhelming approval by the SLA membership: it rather shows a very serious lack of interest on the part of far too many members.

The Sep 1970 *SL* brings some other disturbing news. In the details concerning the SLA/ASIS merger proposal, the joint committee offers (p.393) membership requirements which seem to go far beyond (or rather below) the level which SLA has just accepted for its own association. The ex-

pression "professional librarian," or any indication of the professional status desired by librarians with a graduate degree in librarianship, seems totally absent. To me, the aspirations of SLA toward achieving and maintaining professional status for its members has always been more than just an exercise in semantics. I felt and acted as a professional librarian, and held positions in which the incumbent was required to have the graduate and postgraduate education which up to now at least was considered essential to a "professional librarian," special or otherwise. It is therefore rather difficult to understand that three of our most distinguished professional leaders in the Association would agree to membership requirements which give no consideration to professional education or standing. Anyone with "three or more years of professional experience in an information-related field" could become a member, no educational requirements of any kind being stated. I hold that any organization with membership requirements as stated in this Merger Proposal cannot claim the status of a professional association. And it is my view that none of the expected advantages (p.387–88) merit our surrender of our identity as professional librarians.

However, I do not think that the stated advantages are without merit: I merely think that some, if not all, can be obtained without the loss, on the part of special librarians, of the advantages SLA now offers them. Above all, from my own recent experience at a joint SLA/ASIS Chapter meeting, I would venture to state that a great deal more discussion seems required at the SLA Chapter level, that more information on ASIS ought to be provided our membership, before we can really make an intelligent choice. The questionnaire now being mailed constitutes a welcome start toward the discussion and should not be considered the next-to-last stage before SLA members are faced with a choice they cannot yet undertake to make.

John Henry Richter
Willow Run Laboratories
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Ann Arbor, Mich. 48107

Special Libraries on Defense

The two articles, "Fired!" and "When a Library Job Ends . . ." in the September issue call for comment. The incidents de-

scribed are not isolated; note the five-year Depression hiatus in the active history of the Stone & Webster library, mentioned in the same issue. . . .

For a long time the problem of a typically less-than-generous attitude of management toward the special library's budget, and the problem of management's lack of comprehension of the library's needs and accomplishments have been favorite topics for discussions among special librarians.

These management attitudes, in this day of automation, conglomeration, and pre-Depression retrenchment, can hardly be expected to improve without great effort on our part. The special librarian needs ways of explaining and implementing standards of library service, compensation—yes; *and* some representation to deal with management. The Special Libraries Association urgently needs to bell the cat on behalf of its members: a challenge met in other areas of the working world by labor unions (or even by AAUP). How will it respond?

Alice R. G. Jones
Apt. 519, 1455 Commonwealth Ave.
Boston, Mass. 02135

Professional Education for Professionals

I have just read Sellers' Letter to the Editor* in *Special Libraries* for September, and am pleased to see such a good and strong statement in favor of professional education as a prerequisite to holding a professional title. As you know, this is one of the major points in the policy on *Library Education and Manpower*—and one of the ones that has called forth the greatest amount of criticism. I share with her her concern about the failure of our field to distinguish training from education, and to make professional assignments such that they cannot be effectively carried out with less than the professional education we require.

Lester Asheim
Office for Library Education
American Library Association
50 East Huron St.
Chicago, Ill. 60611

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* *See letter from Rose Sellers,* SL *61 (no. 7): p.14A-15A (Sep 1970).*

FOR IMMEDIATE RELEASE

PACKAGE DEVELOPMENT
A "How To" Trade Magazine
To Debut in January, 1971

The first issue of PACKAGE DEVELOPMENT, a new bi-monthly magazine directed at package development men in high volume package-user companies, will be out on January 5, 1971, according to an announcement by its publisher, Gerry O. Manypenny.

The new, six times a year publication, he said, will be of direct interest to package development teams in user companies as well as to technical sales, and technical service men in companies supplying materials, containers, packaging machinery and services. The magazine has an initial circulation of 10,000.

A long-time professional in the packaging field, Manypenny is a packaging engineer, and co-founder and former editor of *Food & Drug Packaging* magazine. He has had extensive experience in advertising space sales with *Modern Packaging*. Earlier he compiled and edited the first *Glossary of Packaging Terms*, now a Federal Specification.

Editorial content of PACKAGE DEVELOPMENT will consist of "how to" articles in packaging development technology and methodology including exploration and testing; structural and surface design, packaging machinery systems; quality control standards for incoming packaging materials and outgoing finished goods; shipment, warehousing and distribution tests; pilot run and final packaging specifications.

Technical librarians wishing to receive this new publication free-of-charge for their packaging development team should make a request on company letterhead and list the names of those individuals—including titles and job functions—to whom the publication will be routed.

package development

M. E. McKee, Circulation Manager
169 Scarborough Road
Briarcliff Manor, New York 10510

. . . more letters

Curious Citation

I have just been reading the March issue of *Special Libraries* and am intrigued to see a new periodical cited which may prove to be a classic example of a bibliographic curiosity.

There are four citations to *This Journal* which appear on pages 135 and 136. One can picture some confused librarian in the year 2000 pondering the nature of such ephemeral publications and diligently trying to track down a copy, or to verify the citation.

Irwin H. Pizer
Lockwood Memorial Library
State University of New York at Buffalo
Buffalo, N.Y. 14214

Special Library Statistics

Although Miss Legg's letter (*SL*, Apr 1970) does not seem to have been referred on to me by the Editor, I would like to mention that the activities of the former Statistics Committee during the period of 1968-70 included close liaison with the ALA Statistics Coordinating Committee towards developing a national plan which was sponsored by the U.S. Office of Education. The report on the national plan, to be published shortly, includes state libraries in the channel for statistical reporting to the National Center for Educational Statistics.

Interested persons may wish also to write to David C. Palmer, New Jersey State Library, 105 West State Street, Trenton, N.J. 08625 for further details concerning the plan's recommendations.

If you are especially concerned with statistics, I would appreciate very much knowing whether you would be interested in the activities of the Standards Committee which now includes those of the former Statistics Committee.

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Washington, D.C. 20240

The New Look in Manuscripts

Jocelyn Cobb

Georgetown University Medical Center, McNally Memorial Library, Washington, D.C. 20007

■ The concept of electronically typesetting a non-catalog trade book is relatively new. A description is given of the process, its capabilities and advantages. The foremost advantage of electronic typesetting is speed, which can be exploited to its full advantage only when the publishers are presented with a "clean" manuscript. Comment follows on the librarian's role in manuscript revision.

THERE'S A NEW BOOK on the market, *The Devon Maze* by Jean DeWitt Fitz, which is worth a look or two, even if you're *not* among that select group—anathema of the public librarian—the murder mystery buffs!

This book, *The Devon Maze* (Geron-X, Nov 1969), is of particular interest from a typographic standpoint. For some time, directories and indices have been produced by computerized typesetting, the *Cumulated Index Medicus* being the prime example. However, the concept of electronically typesetting a non-catalog trade book is relatively new.

The new process goes something like this: The manuscript is keyboarded and the perforated paper tape is fed into a computer which is programmed to hyphenate and justify the text, then make it up into either galleys or pages. Because of the idiosyncrasies of both Arabic lettering and the English language, mechanical page make-up is no straightforward process. Even margins, for instance, are the result of some complicated manipulations. The width of every letter varies, so that spacing is irregular within a word itself. Words must be hyphenated syllabically which means, of course, that there can be no standard rule dictating the number of letters that are to precede the hyphen. For *The Devon Maze,* printed by Colonial Press, hyphenation was accomplished by means of a 20,000 "exception word" dictionary on a magnetic disk file. Whenever it was necessary to divide a word at the end of a line, the computer first read through this 20,000 word dictionary. If the word in question was not included, the computer would then employ an alternative program based on logic for standard hyphenation.

The magnetic tape that is finally produced by the computer contains a digital mirror image of the text, with hyphenation, margin justification, page and chapter divisions. In the CRT (cathode ray tube) photocomposing system, the letters themselves are not stored as physical units, but rather as information in digital form. Therefore, this magnetic tape actually carries the address or location of information stored in the CRT's memory, where the specific instructions for the formation of each character are contained. Directed by the incoming magnetic tape, an electron beam projects each character onto the surface of a cathode ray tube where they are instantaneously photographed. The manuscript is

thus transferred onto film, or photographic paper, which becomes the basis from which the actual offset printing plate is produced.

Typesetting by this new technique results in some unexpectedly versatile composition. The cathode ray that constructs each character can easily be directed to draw letters shorter, taller, wider or narrower than standard. Therefore, not only can all sorts of type be mixed within one line or page, but also the spacing between the lines can be altered. The resulting variations in type can be used for special effect, or, more practically, for such insets as tabular material and footnotes. Similarly, graphics will present no insurmountable problem to the electron beam.

However, the primary and most frequently cited advantage to electronic typesetting is its astounding speed. The common Linotype casts about five characters per second, whereas the electronic system has an output of up to 1,000 or more characters per second. This rapid rate of production will have a dramatic effect on the publishing business.

This is where the special librarian becomes involved with yet another responsibility to meet the growing technological advances. Clearly, current awareness should be facilitated by the rapid appearance of newspapers, periodicals and texts, but, unfortunately, the effect of a swiftly moving printing process is completely cancelled out by the time lag between the initial conception of a manuscript and its final appearance in print. With corrections, proofs and more corrections, it is easily six months to a year between the original delivery of a manuscript and its publication date. The printers of *The Devon Maze* are designing their automated procedures to conform as closely as possible with traditional publishing practices. This will enable the publishers to avoid drastic revision of their current editorial methods. The photographic type that emerges from the CRT system is used to make duplicate proof for printer, editor and author.

However, if the speed of this new system is to be exploited to its greatest advantage, then the whole present-day editorial process is completely incongruent with computerized typesetting. Also it is economically unfeasible since, in addition to the high cost of the new equipment, the publishers and printers must continue to bear the financial burden of an author's whimsical "creative" alterations to his manuscript.

The alternative to current editorial customs, then, must be a "clean" manuscript, ready to go to press just as it is received by the publisher. The saleability of *The Devon Maze,* by Jean DeWitt Fitz, was not the only consideration in its selection for computerized typesetting. The copy of the manuscript reportedly needed little or no revision. Indeed, this is exactly what the new system requires.

Granted, no keyboard operator is infallible and the first tape must be checked for typographic errors. However, ideally, this should be a simple technical review. The original proofs for *The Devon Maze* were checked at the plant and found to be remarkably free from typographic errors. Copies of the proofs were then sent to the editor and to the author for correction and approval before the final typing. The actual mechanics involved in correcting the master manuscript tape are certainly not prohibitive. The corrections are simply keyboarded, and the paper tape is converted into magnetic tape. The correction tape is then merged with the original text tape in the computer.

The Devon Maze is a straight literary text and it is easy to see how corrections can be kept to a minimum. However, the total process of printing a technical manuscript should not vary greatly from the manner in which *The Devon Maze* reached its final book form. Printing a technical manuscript can be more complex, since there are generally equations, charts and manifold footnotes. With increasing complexity, there is a corresponding rise in the probability of typographic error and a greater need for careful revision. Nonetheless, with care and discipline on the part of author and editor, corrections can and should be lim-

ited to a single review of the manuscript. It is only in this way that the speed of the electronic typesetting can be employed to its full advantage.

What, then, are the implications for the special librarian? Nothing irritates the librarian more than to be reminded of his public image as master clerk. The librarian aspires to professional status, speaks grandly of his intellectual challenges, and yet so often the nine-to-five day is absorbed with maintaining current records, files, paying bills, getting the fussy problems tidied away. At staff and library association meetings, he sees above these daily chores, nostalgically remembers that the primary obligation of a special library is to support the research and information needs of its clientele, and perhaps laments the intrusion of information specialists, et al., into his field.

Here, then, is another viable opportunity for a more sophisticated and valuable service. This imminent revolution in publishing will unquestionably present a real demand for assistance to researchers who hope to see their works in print. Preliminary literature searches by the reference librarian will not be enough. As authors accept their responsibility to produce more polished manuscripts, the librarian should be at hand, aiding and advising in the revision, so that the manuscript can be a *fait accompli* before it is ever sent to the publisher.

The question is, will the special librarian make himself available and provide this service, or will the organization with which he is affiliated be forced to establish an independent department for the sole purpose of editing publications?

The mystery novel, *The Devon Maze,* electronically typeset, has brought all this out before us for consideration and contemplation. This method of typesetting is no longer "something to be thought about in the future," but right here with us, and, for the special librarian, a professional challenge.

Manuscript received for review Jan 13, 1970. Revised manuscript accepted for publication Jun 3, 1970.

Miss Cobb *is public services librarian at McNally Memorial Library, Georgetown University Medical Center, Washington, D.C.*

Head Librarian and Manager

Dynamics of a Creative Relationship

Norman J. Crum

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■ This is an analysis of the relationship between the head librarian and his manager in business and industry. The nature of the relationship is first considered by looking at the organizational and library settings, manager and librarian characteristics, and the division of authority and responsibility. Concepts for making the relationship more creative are then discussed—use of perceptual filters, understanding expectations, sensitivity to organizational "climate" and "weather," and viewing the manager as the library's "best customer." The relationship is considered a special case of the librarian-customer relationship and one that should be positively nourished to benefit both company and library.

DR. WARREN G. BENNIS, Vice President for Academic Development, State University of New York at Buffalo, predicted three years ago the replacement of bureaucracy with ". . . adaptive, problem-solving, temporary systems of diverse specialists, linked together by co-ordinating executives in organic flux . . ." *(1)*. With such organizational change becoming mundane reality, it is timely to review the crucial relationship of head librarian and his manager—where success means rapport and financial support from management and failure spells discord and stunted library development.

Organizational and Library Setting

Assume the library is company-wide and large enough for specialization of the major functions. The librarian has a dynamic concept of service.

Major organizational and library characteristics which affect the relationship are shown in Figure 1. In general, the library occupies a relatively small niche within the organization while its placement varies widely. Whether the library is just being established or has a long history may be a key factor. Organizational climate and "weather" are highly important and will be discussed later.

Manager and Librarian Variables

These variables are listed in Figure 2. "People" theories refer to rational-economic man (McGregor's Theory X), social, self-actualizing man (McGregor's Theory Y), and complex man *(2)*. The last view is that people change and grow in motives as well as in knowledge and skills, and hence, must be provided varying kinds of leadership. Whether the manager is on the promotion ladder, "in limbo," or satisfied with his present position can be highly significant. The librarian's empathetic understanding of management is important—as is the manager's previous experience in using

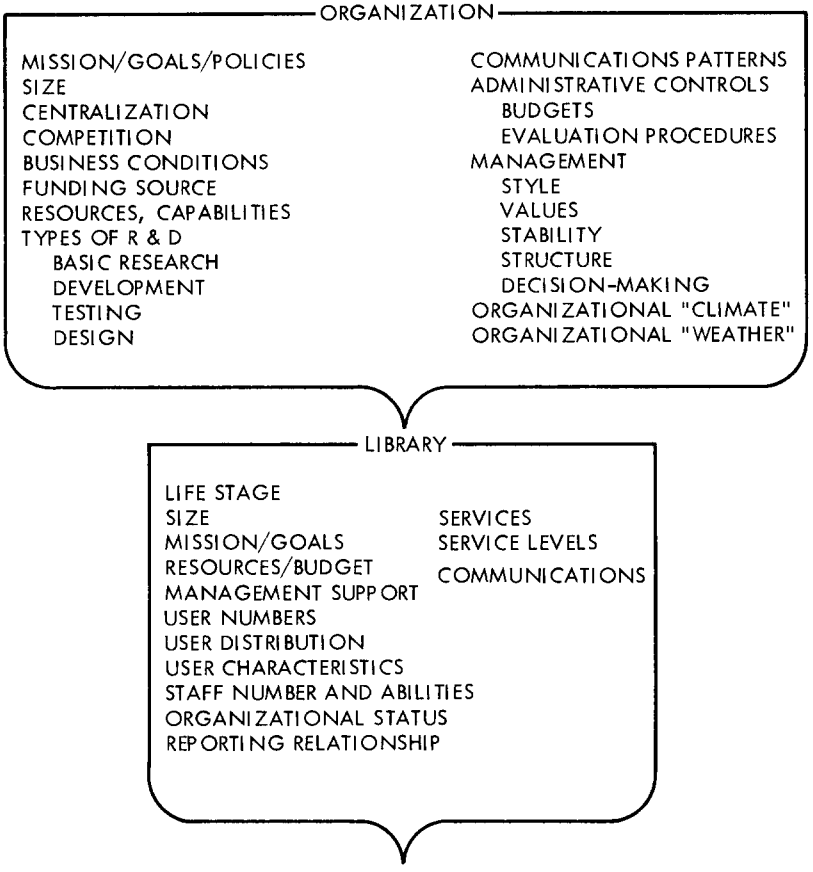

Figure 1. Organization and library variables.

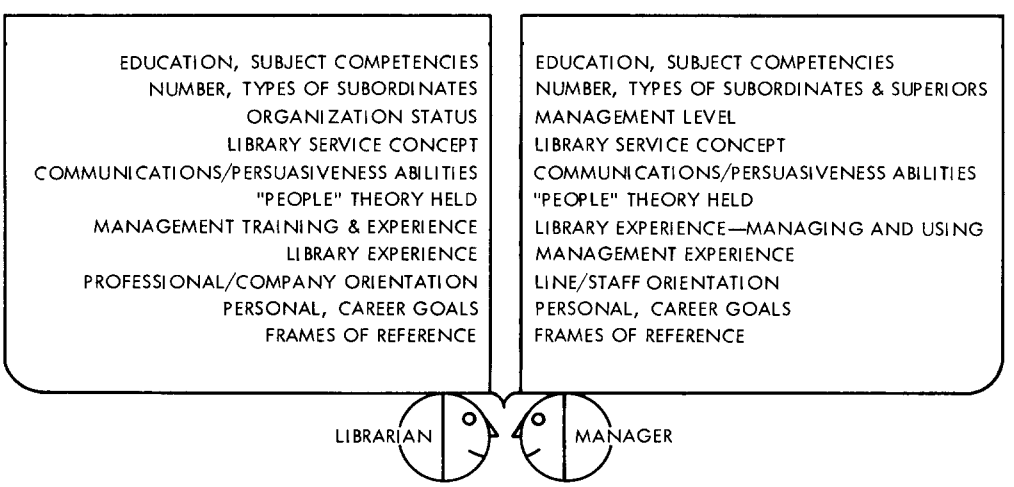

Figure 2. Librarian and manager variables.

school, public, company, or other libraries. Age *(3)*, communications patterns *(4)*, and level of management *(5)* may vitally affect the relationship.

Division of Authority and Responsibility

The librarian's dual loyalty to customers and management may create ambiguity if communications channels are not kept clear to and from both groups. At times, of course, management is the customer. Customers at all levels should feel free to have direct library access while the library staff must necessarily be able to plug into the company communications network at any specific point.

Most librarians apparently prefer clear-cut responsibility and authority. Company librarians have widely varying reporting relationships *(6)*; however, they should be at the best level and location to garner maximum support from management, and at the same time, gain recognition from customer groups. The library should never be dangerously subordinated to another company function to such an extent that it serves that function alone. In special cases, how well the librarian "gets along" with a particular manager may be the key determinant of placement.

While few, if any, librarians can dictate the scope of library operations to their managers, too many librarians meekly accept the boundaries dictated by their managers. The first case produces poor communications at the best while the second restrains the librarian from utilizing his full arsenal of professional capabilities. Usually the division of authority and responsibility rests at some point between the extremes—a point clearly understood [hopefully] by both manager and librarian.

Likert's "linking pin" concept *(7)* tells us that a manager must exert influence upward if he is to perform his own managerial functions successfully—in other words, all managers must be skilled as both superiors and subordinates. How important is the librarian's influence with his manager? The answer depends largely upon the influence which the manager has with his manager and, in turn, higher level managers on up to the top manager. The strength of this linking will vary with time—so that it may be necessary strategy to work through intermediaries or any others at all levels who may be "close" to the manager or his superiors.

With this background on the nature of the relationship, let us now examine some ways to make the interaction more creative.

Understanding Perceptual Filters

Managers and librarians, just like everyone else, act on the basis of what they think they see—rarely the way things are in the real world! How do librarians and managers really "see" each other? Perhaps the easiest way to visualize this is by imagining each wears "perceptual glasses" with various filters (Figure 3). The filters in each case determine what is sent out and what is received. This simple illustration should remind all head librarians of what the manager sees and what the librarian *must* see.

Fundamental are the images each has of himself and the other *(8)*. Although complex, these are based primarily upon feelings of self-esteem and attachment of values to the other person. Managers "talking down" to librarians "see" them as of lower status and less expert. Expectations play a key role and may be based upon experience, preconceptions, and stereotypes of each other—for example, the librarian who expects his manager to be critical will frame his points more carefully.

If the manager does not "see" the librarian in a realistic light, what can be done? Many times the manager has stereotyped concepts of libraries and librarians which may well stem from experiences with unattractive and unimaginative library service. The obvious solution in this case is for the librarian to expose the manager in every possible way to truly creative and rewarding library benefits, while at the same time, demonstrating an ability to develop and execute

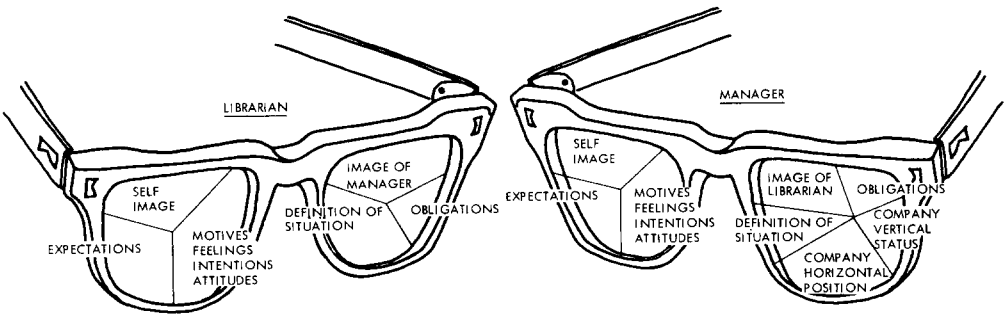

Figure 3. Perceptual filters of librarian and manager.

realistic and tangible plans for the library. In still other cases, it is possible to alleviate the perceptual difference barrier by adopting the language and methods used by management. When the manager asks for the objectives of the library, the librarian replies, "Our special library is *the* primary information source for our organization. It deals in a key *resource*—information—whose full exploitation is vital to increasing company effectiveness and profits." Systems analysis *(9)* and cost data displayed in graphs, flow charts *(10)*, decision tables, and matrices may also have high communicative value.

Understanding the Role of Expectations

Expectations play such a crucial role that they deserve further elaboration. They are vital in both initial and later encounters. Both the librarian and manager carry out organizational roles—or organized patterns of behavior in accordance with the *expectations* of the other. Although expectations of manager and librarian fluctuate with time, place, and other variables, the critical point is that each is aware of the other's *reasonable* expectations in order that misunderstandings and unproductive conflict are minimized.

The initial meeting of librarian and manager not only helps define the relationship and confirms or negates stereotyped ideas, but it often creates critical first impressions of what to expect of each other. Later encounters may further confirm or modify these impressions. The librarian *reasonably* expects adequate communications from his manager about organizational changes that may affect library service. The manager *rightfully* expects the librarian to plan for the most effective resource use in order to achieve previously agreed upon library objectives. If the librarian should expect greater prestige magically bestowed upon his head, the manager may properly question its legitimacy.

Managers may *unreasonably* expect precise qualitative evidence of the payoff from library services. Unfortunately, superb performance for customers at the operating level may not register with the manager, let alone top management who really control the corporate pocketbook.

To keep expectations in proper balance it is necessary to have adequate formal and informal encounters with the manager. All necessary preparation should be based upon a mature understanding of the problems and pressures facing most managers. Modern managers, indeed, do not have assignments with neatly defined boundaries, but often work in a network of mutually dependent and shifting relationships—dependent not only upon subordinates, but peers, superiors, and many others at various levels and locations within the organization.

The Select–Simplify–Specify formula *(11)* is useful in pre-encounter preparation. First, determine if the subject is a legitimate one for discussion and whether it is the appropriate time to mention it

to the manager. The librarian then determines his objective, the best approach, and anticipates the manager's possible objections. He strongly documents the *benefits* management will receive if his suggestions are approved. The language matches the manager's interests, attitudes, and needs. The message is specified by examples or other evidence so that the manager can more readily evaluate it. If freedom of action and immediate feedback are wanted, the librarian arranges for a face-to-face contact. During the encounter itself, the librarian hopes there will be a "give-and-take" exchange. He should not withold his convictions which are solidly based and should seek to avoid compromises that seriously undermine his fundamental concept of library service. The alternatives should be presented in such a manner that the manager shares responsibility for consequences when approval is not granted.

Understanding Organizational Climate and "Weather"

All of us operate within organizations with relatively stable "climate"—that is, ". . . distinctive patterns of collective feeling and beliefs" *(12)*. This may reflect the history of internal and external struggles, the types of people the company attracts, its work processes and physical layout, the modes of communication, and the exercise of authority within the system. The manner in which an organization handles conflict is largely a reflection of the climate.

All of us also must function during temporary phases of organizational stress. These may be termed organizational "weather" since they are of shorter duration and are superimposed upon the longer-term organizational climate. Certainly the current business recession is an example of "weather."

The alert librarian formulates goals and objectives for the library in accordance with the organizational climate. He seeks to insure survival of the library through all kinds of "weather" by creating a measure of self-identity for the library service. Somehow he must give it a thrust and purpose which help it survive the rapid changes and stresses of today's organizational life. Primarily this takes the form of exposing the key people within the company—"movers and shakers" and technological "gatekeepers" —to the full benefits of outstanding library service to fill their real information needs *(13)*.

Hopefully, during a period of cutbacks, enough key people will stand up and demand that the library not be unduly discriminated against in any reduction plan. The librarian's "barometer" is sensitive to the current organizational "weather," and he times his probes for improved library services in accordance with his previously conceived long-range and short-range plans. He constantly furnishes "feed forward" to his manager and management on the library mission and benefits from reaching it. When necessary, he is willing to take risks even in the midst of uncertainty and complexity.

The Manager as the Library's "Best Customer"

Because of the complex and demanding nature of the manager's operating context, there are many potential needs for information. The greatest problem is for the librarian and manager to feel comfortable enough with each other that they can talk informally about present and potential problem areas. In this way, the keen librarian can listen with an "information conscious" ear and follow up by anticipating many of the information needs of his manager. Much richer rewards result than if the librarian merely sits and responds to rather artificial and command-type questions (surprise vs. expected reactions). Recently, TEMPO's librarian did just this with his manager —in a casual conversation he learned of his being involved in an upcoming meeting and anticipated that the manager would need certain European salary data. The source for the data was quickly identified, and the manager gladly confirmed that this was exactly what he would need!

Handled discreetly, the librarian may also glean non-confidential information which may be useful to his manager, for example, company project changes or modifications. At still other times, it may be necessary strategy to cater to a manager's personal interests *(14)*. It should not be beneath one's professional dignity, for example, to furnish the manager unusual postage stamps if he happens to be an avid stamp collector.

Conclusions and Summary

Although the head librarian-manager relationship is highly variable and complex, it is clear that this special case of the librarian-customer relationship *(15)* can be exploited positively to produce creative and beneficial results for the library and its organization. Through a mutual education, and at times a constructive confrontation process, the librarian learns not to withhold his professional and well-founded convictions, but exerts his influence upward according to the organizational climate and "weather." He forges a measure of self-identity for the library service and, with the cooperation and guidance of his manager, carries out strategic (long-range) and tactical (short-run) plans to reach organization-worthy library objectives. The librarian, in turn, shows an adult appreciation of his manager's problems and pressures and serves him imaginatively and effectively as the library's "best customer."

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Nuclear Safety Information Center*

Its Products and Services

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■ The Nuclear Safety Information Center (NSIC) serves as a focal point for the collection, analysis, and dissemination of information related to safety problems encountered in the design, analysis, and operation of nuclear facilities. NSIC issues state-of-the-art reports, operates an SDI program, publishes indexed bibliographies, prepares retrospective bibliographies, answers technical inquiries, operates a Program and Project Information File of scope and progress information on current nuclear safety research contracts, and offers counsel and guidance on safety problems. Its reference files are stored in a central computer that is accessible by means of a telecommunications station. The various products and services are described.

THE RECENT SPECTACULAR growth of the nuclear power industry into a multi-billion-dollar enterprise and the concurrent increase in the problems and concerns regarding nuclear safety have given rise to a deluge of information in the form of progress and topical reports, journal articles, meeting papers, Preliminary and Final Safety Analysis Reports, Advisory Committee on Reactor Safeguards' letters, Regulatory questions to reactor license applicants, responses to these questions, and related material.

The Nuclear Safety Information Center (NSIC) at Oak Ridge National Laboratory (ORNL) was established in 1963 by the U.S. Atomic Energy Commission, Division of Reactor Development and Technology, to act as a focal point for the collection, evaluation and dissemination of this type of information so as to assist in defining and solving problems relevant to the design and operation of nuclear facilities *(1)*.

A staff of 30 experienced scientists and engineers work for the Center on a prearranged time basis that ranges from one-tenth to one-half depending on the level of activity in their subject area. (In the other fraction of their time, they are engaged in experimental or analytical R&D activities.) The specialists' duties for NSIC include preparing review articles and reports, answering technical inquiries, and cataloging information using a system of keywords. The storage and retrieval of this catalogued information is automated. While the first two functions are non-automated, they involve the greatest portions of the time of the tech-

* Research sponsored by the U.S. Atomic Energy Commission under contract with Union Carbide Corporation.

nical staff; but it is the conviction of NSIC that they are vital to the operation of an effective information analysis center.

NSIC has indexed over 50,000 references onto its storage files since it became operational. Pertinent abstracts are readily retrievable from the files at the central computer to serve a number of requirements enabling the staff to be responsive to many needs *(2, 3)*.

NSIC offers a variety of products and services to governmental agencies, research and educational institutions, and the nuclear industry. A list of all the services within the purview of NSIC follows:

1. Issues state-of-the-art reports
2. Cooperates in the preparation of the journal *Nuclear Safety*
3. Prepares abstracts of nuclear safety literature
4. Issues indexed bibliographies of accessions
5. Operates an SDI program
6. Answers technical inquiries
7. Prepares special retrospective bibliographies
8. Provides information on current research and development
9. Provides technical consultation
10. Makes document collections available for use by qualified visitors
11. Prepares special reviews for NSIC comment on request
12. Makes literature searches
13. Proposes experimental work
14. Prepares handbooks

The most important services provided by the Center will be discussed in some detail. Services of other federally supported information centers have been summarized by the Committee on Scientific and Technical Information of the Federal Council for Science and Technology *(4)*.

State-of-the-Art Reviews

One of the most important services of an information analysis center is the preparation of authoritative state-of-the-art reports and review articles. Each member of the NSIC technical staff is expected at one- to two-year intervals to prepare a review that will either be issued as a report in the ORNL–NSIC series or published as an article in *Nuclear Safety*. These reviews serve as vehicles for the analysis and evaluation of experimental and theoretical data and can even result in the synthesis of new data. The review articles which have appeared in *Nuclear Safety* are too numerous to tabulate, but a listing of all NSIC state-of-the-art reports published to date is available from NSIC on request. Copies of the reports are available for $3.00 each from the Clearinghouse for Federal Scientific and Technical Information (CFSTI).

Nuclear Safety

NSIC cooperates in the preparation of *Nuclear Safety*, which is separately funded by the USAEC Division of Technical Information. The journal is designed to provide a comprehensive review of recent developments, including technical details of the current pertinent literature. It highlights those points, in the literature reviewed or the developments discussed, which have a particular significance for nuclear safety. The Center furnishes reference material to journal authors for their review articles through its SDI program and retrospective search service, and, in addition, many of the review articles are prepared by members of the Center's staff.

The journal was issued quarterly from its initiation in 1959 until 1967, and has been published bimonthly since then. To facilitate access to the safety literature contained in the journal, a KWIC (Keyword-in-Context) index covering all articles through the latest volume is prepared and distributed each year. Subscriptions to *Nuclear Safety* cost $3.50 per year and may be obtained by writing the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Technical Inquiries

Requests for technical information are received from the nuclear community by

letter, telephone, or personal contact at a current rate of about 50 per month. There has been a steady growth in this type of service from a rate of five requests per month during the Center's first year of operation.

Answers to the inquiries take different forms depending on the type of question asked. Sometimes the reply will be a written discussion of the problem, while at other times it will be a bibliography or a combination of discussion and bibliography. Questions vary from very simple requests that can be answered "off the top of the head" to involved requests that could take days or weeks of technical work. However, since the number of staff members available to answer questions is fixed, and since they also perform other duties for the Center (such as the preparation of state-of-the-art reviews and indexing and abstracting), the amount of technical time allotted to any one question cannot be allowed to exceed four hours except in extreme cases. In any event, NSIC does not attempt to solve the user's problems, but to provide information and guidance that will help him define and solve his particular nuclear safety problem.

Counseling and Guidance

The NSIC staff is available to visitors for counseling and guidance on nuclear safety problems, and its shelves of safety analysis documents are available for perusal. (NSIC does not attempt to store copies of the many reports and journals that it catalogs. In general, these are returned to the ORNL libraries. The Center does, however, keep copies of all the safety analysis reports, amendments, etc., furnished it by the AEC Regulatory Staff.) Visits to the Center for staff consultation and/or use of the files now occur at the rate of about 10 per month.

Retrospective Bibliographies

Special searches for bibliographies to meet a particular need are made of NSIC's master computer reference file at a current rate of about 40 per month. Since each document that is added to our computer file is described by keywords, we are able to retrieve all documents in which a particular keyword or a combination of keywords is used. The searches are usually made on the basis of combinations of keywords, authors, or corporate authors with category or date used as a delimiter.

Selective Dissemination of Information

In a fashion similar to that above, a user's area of interest may be described by keywords to develop a "profile" that is kept in the computer system. Biweekly, in our Selective Dissemination of Information (SDI) program, this profile is compared to the most recent entries to the computer and the abstracts that satisfy the profile requirements are automatically selected and printed on continuous-form 5″ × 8″ cards for the user. Initiated in 1965, there are now over 1,800 members of the nuclear community receiving the cards selected according to the particular needs of each. Many of the selections are made on the basis of the Center's 21 subject categories. Typical categories are:

Siting of Nuclear Facilities
Reactor Transients, Kinetics, and Stability
Fission Product Release, Transport, and Removal
Operational Safety and Experience

Application forms are available on request from NSIC.

Program and Project Information File

The Program and Project Information File was developed during 1968 for computer storage and retrieval of technical and administrative information on nuclear safety R&D projects. Initiated at the request of the AEC Division of Reactor Development and Technology, it provides RDT and the AEC Regulatory Staff with a means for following current accomplishments on the safety contracts sponsored by RDT. The system has been developed so as to utilize the existing

NSIC system to the maximum extent practical. The file makes use of the same retrospective search, indexed bibliography, and SDI techniques that are utilized for the other information stored by NSIC in the computer. One significant difference is that the amount of information for each accession is much greater, since the information being handled by the file includes:

- support group and contract information,
- fund and manpower levels,
- statements of scope and state-of-the-technology,
- abstracts of the last three progress reports (the oldest one being dropped each time that a new one is added),
- projection of expected progress for the next reporting period,
- reports issued, and
- indexing terms.

Summary

NSIC serves as one of the most important means of collecting, evaluating, and disseminating information generated by the AEC's high-priority nuclear safety program and various groups actively concerned with safety.

NSIC's productivity and the demand for its services have increased significantly since its formation in 1963. The Center is currently answering technical information requests at a rate of over 600 per year. (In addition, there were 1,520 nontechnical requests during the past year usually asking for specific reports issued earlier by NSIC.) The SDI abstract service now reaches over 1,800 people. State-of-the-art reports are issued routinely.

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Courses in Map Librarianship

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■ There is no generally accepted or standardized method for training map librarians. The great variety of present methods, such as workshops, seminars, internships and relevant courses in general library science are mostly inadequate. Some suggestions and possible directions for further inquiry are discussed.

THE FIRST GENERATION of American map librarians, Walter W. Ristow once remarked, was of necessity self-trained *(1)*. Map librarianship has undergone a dramatic development since those early days, but the training of map librarians has remained pretty much the same—the majority are still virtually self-trained. I think everyone will agree that this situation is unsatisfactory, and we should seriously consider ways of improving the method of training our future colleagues.

Before examining specific proposals and recommendations, let us take a brief look at both past and present notions regarding the preparation and qualifications of map librarians. Reading the literature dealing with this problem, one is struck by the constantly changing—I hesitate to use the term evolving—philosophy. The first map librarians, as Ristow noted, had no formal training in the field. It was not until just after the first World War that it was recognized that a background in geography was necessary. At that time, geography was rated above a library school education *(2)*.

After the second World War, in 1948, Burton W. Atkinson stated that he preferred to employ someone who was interested in maps and had special training in geography *or* library science *(3)*. He also believed that the training could be obtained while on the job. A major change in this view came after 1950 when Bill M. Woods recommended training in a special field as an undergraduate requirement, coupled with formal library science education. He advocated, in other words, formal training, in both geography and library science *(4)*. Most map librarians today have either a regular library science degree without any special subject background or else formal training in a subject field like geology, geography, or history, and no supporting formal education in library science. There is a third group who have formal training in both fields, but they are a small minority. Obviously, most map librarians are not adequately prepared for their task.

Opportunities Presently Available

Map librarians can presently receive some aid to broaden their special knowledge. There are workshops, summer institutes, seminars and internships offered by libraries and some associations. The New Jersey Library Association, Western Association of Map Librarians, American Geographical Society, the University of California, Princeton University, Drexel

Institute, the U.S. Department of Agriculture Graduate School (Catherine I. Bahn) and on-the-job training offered by the Library of Congress are well known in this respect. In all these programs, librarians are either working under the direction of trained and experienced librarians or they attend lectures, demonstrations, and have a chance to discuss their problems. The purpose of all of these programs is the same—to give the librarian already working with maps the opportunity to gain more knowledge and practical know-how which he lacks. Needless to say, very few map librarians are able to attend these courses. Besides map librarians, librarians from other areas could be attracted to these programs and would find them useful in broadening their knowledge.

What about the students interested in our profession, our future map librarians? Some library schools offer formal courses specifically for map librarians or augment regular library courses with a few chapters to give information about problems related to maps. The first formal library course specializing in maps was offered at the University of Illinois Library School in 1950. The course was originally conducted by Bill M. Woods, later by Robert C. White, and recently by William W. Easton. Gradually, more and more library schools adopted the idea of offering some education for students in map librarianship. Library schools at the University of Pittsburgh (Harold Lancour), Florida State University, University of North Carolina, University of Wisconsin, Syracuse University, Case Western Reserve University, University of Washington (Seattle), Drexel Institute of Technology, University of California, Columbia University, and Western Michigan University are all working in this direction.

These courses vary greatly in content, method and credit hours (3 to 15); some are only non-credit lectures. The instructors are sometimes library science teachers, but more often teachers and lecturers are invited from subject areas such as geography. In one school the emphasis is on the cataloging of maps; another stresses cartography or bibliography of maps. In some schools, individual studies are available as an internship program; elsewhere formal class instruction is the usual method. Some schools admit only library students to their map courses; in other schools the courses are also open to students in other fields. Only the library schools at the University of Illinois, and recently Western Michigan University and Columbia University (Dr. Roman Drazniowsky), are offering courses exclusively devoted to map librarianship.

Before going into further analysis, let us see how foreign colleagues are handling problems in this area.

CANADA. Joan Winearls in 1966 made a statement that library schools in Canada offer no courses in map librarianship and make little or no effort to encourage interest in the problem *(5)*. This statement was supported by T. E. Layng during the 2nd Annual Conference of Canadian Map Librarians in 1968 *(6)*. At that time a special committee was formed to study the problem of training future map librarians, but unfortunately, I cannot find any further information on the outcome of the committee's work. According to my latest information from Joan Winearls, the University of Toronto is offering a course in map librarianship in Summer 1970.

ENGLAND. In 1969 Muriel Lock in *Modern Maps and Atlases (7)*, stated:

"In Britain there is no professional training in map librarianship and no substantial literature on the subject, as there is for other specialties, such as music, medicine, or government publications."

Helen Wallis, Superintendent of Maps in the British Museum, and other librarians support this statement by expressing the need for formal training. At present the opportunities for such training are negligible. The final examination for chartered librarians in Great Britain includes an optional paper on the "Bibliography and Librarianship of Geography" *(8)*. This paper may touch on cartography as well. Some library schools like North-

western Polytechnic, City of Birmingham College of Commerce, Ealing Technical College, Loughboro Technical College, and College of Librarianship Wales, are preparing students for the optional paper in geography. Such courses naturally give only an elementary introduction to map librarianship. In January 1969 Aslib and the British Cartographic Society ran a joint course on "Work with Maps," which drew an enthusiastic response. According to Wallis, "In the last resort long experience with maps is the best education" *(9)*.

GERMANY. Dr. H. Schamp from Germany informed me that there is no formal library education available for future librarians. Map librarians are more or less self-trained with an educational background in either library science or some other sciences *(10)*.

Unfortunately, my inquiries to other foreign countries yielded no significant information.

I realize my survey is neither systematic nor exhaustive. As a matter of fact, it is difficult to review in detail the various programs offered by the institutions because little information is available in the literature and my correspondence was limited. What is needed is a survey similar to the one conducted by Ristow in 1966. But from this brief survey one thing is obvious: There is no generally accepted method of training map librarians. We can see that a few institutions are trying to develop some methods, but their number is small, and their curriculum is not yet accepted as standard in library schools.

Proposed Education for Map Librarians

We can, of course, speculate on what would be the "ideal" map librarian. According to John A. Wolter, he should have training in geography, history, history of science, languages, and art, plus training in various aspects of librarianship *(11)*. It would be nice to see such renaissance men emerging from our library schools, but unfortunately we have to face reality. Woods, for example, has made, as I have already mentioned, a more modest recommendation: Map librarians should have formal training in both geography and library science *(12)*.

Among the sciences, geography is my preference, although in certain libraries it might be more practical to have a degree in another field such as geology or history. In the great majority of libraries, however, geography seems to be the most practical. Whatever the particular science, we still face the question of how intensive this training should be. Should we require a BA degree with a major in the field or just a few courses in a certain field? In geography, for instance, such a group of courses could include Principles of Cartography, Physical Geography, Field Mapping, and Aerial Photography. It is hard to come to any definite conclusion, but I think a person with four or five basic courses and a keen interest in geography would be able to survive.

One could likewise question the requirement of formal training in library science. In other specialized fields such as law, music or medicine, formal training in librarianship is accepted as necessary; the same should be true in map librarianship. The increasing number of maps and atlases around the world and the proliferation of map-producing agencies make the acquisition of maps much more complicated than the acquisition of conventional materials such as books. The processing, classifying, and cataloging of maps, the administration of a map library, and the operation of reference services require specific preparation provided by the courses offered by library schools. Without this basic knowledge it is difficult to believe anyone is able to manage and service a map library.

If we agree that future map librarians should have a good background in sciences and a basic formal education in librarianship, let us spend some time in examining the minimum requirements toward specialization, and the best method for library schools to introduce "map librarianship" in their curricula.

As I mentioned briefly, there are at present two ways to include this material in the program:

▶ The first is the expansion of the already existing library courses by adding a few units dealing specifically with the problem of map librarianship. For instance, the advanced cataloging course might spend a week or so on the methods of cataloging maps, the administration and acquisition course may have units on maps, and so on.

I think this method is basically wrong. Library school administrators would be trying to cover an immensely large and intricate field with a few hours of study added to the already existing general courses. Even if we agree that in the advanced cataloging course an added unit on cataloging of maps will give the student some idea of the problems he has to face, the immensely complicated problems of map sources, preservation, care, storage, and organization of map libraries cannot be adequately covered with such morsels thrown to the students. I have my doubts concerning the effectiveness of these courses, and I am not alone. Woods expressed the same feeling in a letter recently *(13)*. I think everyone will agree with us that this method is inadequate because it cannot give any deep knowledge of the problems of map librarianship.

▶ The alternative to present courses, and the method I would advocate, would be to provide one or two specific courses or an internship exclusively devoted to training map librarians. In those courses all problems connected with map librarianship should be covered, and in addition to the theoretical preparation, the students should have the opportunity of working in a map library where they will face the daily problems and see the practical solutions to them. This course or internship should aim at giving only the basic information and not attempt to delve into any highly specific area. As White has pointed out in this regard, and I think rightly so, "probably the greatest danger is devoting an excessive amount of time to an instructor's particular hobby" *(14)*.

Internship Program

In respect to classes and internships I would make one further point: I would favor stressing the internship program against a formal classroom situation in which the professor is lecturing to 15–25 students. I do not mean here to denigrate theory, which is an essential aspect of library education, but future map librarians do need, I think, more of an introduction to practical aspects. I believe that this could be performed more effectively if the teacher is a practicing map librarian conducting the course in a map library where the students are actually able to work with maps.

It might be argued, in view of the specialized nature of our field, that the one or two courses or internship I have recommended could hardly be adequate preparation. Even agreeing with this criticism I would counsel cautiousness. The curriculum in library schools is already crowded. Most library schools require students to finish 32–36 hours in the general library science field, which takes a full year of study. Theoretically, the best method would be to require library students to stay longer in library schools. In order to cover all important facets of map librarianship this could easily require 3–5 independent courses such as cataloging, acquisition, and organization of a map library. But how can we insist that students do this—spend even more time and more money in school? This is a real problem to which the only solution may be to curtail our high expectations.

There is another factor which we should take into consideration. There are relatively few map libraries and map collections. There is no present need, in other words, for a program designed to mass produce great numbers of map librarians.

One final observation should be made. Our field is still not widely known and acknowledged. It is perhaps too early to think about certification, but we must give potential map librarians systematic training for their jobs. The present practice of placing the responsibility of main-

taining a map library on the shoulders of an essentially untrained general librarian does a great disservice, both to the librarian and to the library he is expected to serve.

As I said at the beginning, this study has only scratched the surface of the problems. I had access to only a few articles, a few personal interviews and correspondence with my colleagues. It is therefore still too early to draw final conclusions. Nevertheless, I hope I have opened up a topic which will be discussed, and that our discussion will bring forth new ideas and thoughts to direct us to the proper course of action.

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Evaluation of Indexing

2. The Simulated Machine Indexing Experiments

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■ The Simulated Machine Indexing (SMI) method of generating index terms is studied in relation to the manner in which it evaluates index terms. SMI had been proposed as a means of evaluating information retrieval systems, but on a review of the method, it was found that relevance could not be assigned consistently. However, SMI can be used to measure one of the characteristics of indexing, the breadth of vocabulary, both objectively and consistently.

Simulated Machine Indexing (SMI) was first investigated early in 1964 and subsequently, a series of articles was published in *Special Libraries* during 1966 covering the data collected to that time *(1–4)*. This experiment was based on the concept of using an established subject index as a simulated computer memory. Thus the subject indexes to *Chemical Abstracts, Nuclear Science Abstracts, Physics Abstracts* and Library of Congress *Subject Headings* were used to simulate a thesaurus stored in a computer. Words from titles of articles in the abstracting journal were matched to the subject index of that abstracting journal as if the subject index were a computer memory. Those words which matched were SMI terms, and the others were discarded. Both single words and two-word combinations from the title were searched and, if found in the subject index, comprised the SMI terms *(5)*.

By using SMI procedures, it was possible to arrive at sets of index terms for many articles. At the same time the SMI terms were generated, a set of KWIC terms were also generated for the identical article. In the early phase of the study, the human indexing for those articles was also identified. Table 1 shows a citation and abstract from *Physics Abstracts* as well as three different sets of terms generated by human, KWIC and SMI methods.

The aim of the SMI Experiment was to find a means of machine indexing which would attempt to replace the kind of indexing done by journals such as *Chemical Abstracts* and *Physics Abstracts*. A second objective, once the sets of indexing terms for one article were found, was to find some quantitative

This is the second in a series of five articles by Mr. Bloomfield. Part 1, Evaluation of Indexing: Introduction, appeared in *Special Libraries* 61 (no.8): p.429–432 (Oct 1970). Parts 3–5 will appear in the December 1970, and January and February 1971 issues of *SL*.

method by which to evaluate the sets, if not the terms themselves. These two objectives were not reached in the published series of papers on SMI. Because these objectives were not met, additional data were needed to reproduce and substantiate the findings of the four published papers. The data which appear in this article will attempt to test the reliability and the validity of the SMI method of evaluation.

Data from the 1966 series of articles showed comparisons of *Physics Abstracts, Chemical Abstracts* and Library of Congress *Subject Headings*. Table 1 shows the sets of index terms generated by human indexers, a KWIC program and the SMI method for an article from *Physics Abstracts*. The 1966 series of articles on SMI also had two other methods of SMI included in their data. These SMI methods were for terms generated on a single word basis such as is done for KWIC indexing and an edited phrase method where the title was edited into either single words or phrases depending on the wording of the title. The SMI method used in this present series uses single words plus two-word combinations matched to the subject headings of the subject indexes. The matching of single words and the use of edited phrases were dropped from this study because the index sets they produced were not nearly as rich in terms as the search by both single words and two-word combinations. Also, an attempt was made to add three-word combinations to the searching in SMI, but this was dropped very early as being unrewarding.

Tukey *(6)* has suggested KWIC indexing as a base line to evaluate indexing. In the SMI method, KWIC indexing is used as a base in the attempt to evaluate critically the sets of index terms generated by SMI matchings.

The criticisms of KWIC are widespread among librarians. The system provides no references to link related terms together for a search. However, the KWIC index is in wide use because it is simple to produce and the computer does all the permutations and filing needed to print an index. KWIC, in op-

Table 1. *Physics Abstracts* Citation and the Index Terms Generated for This Article by Human, KWIC and SMI Methods *(1)*

The *Physics Abstracts* Citation

MARTIN, D. L. Specific Heats of Lithium Isotopes from 20° to 300° K. Physica, vol. 25, no. 11, November 1959, p.1193-9 (PA-63-15813)

Abstract: Measurements on lithium metal containing 99.3% Li^6 are reported. The details of the martensitic transformation appear to be very similar to those for lithium with natural isotopic composition. These measurements together with other recent results for Li^7 rich metal are analysed to give approximate values for the pure isotopes. The results are in accord with theoretical expectations.

Index Terms Generated by Human, KWIC and SMI Methods

PHYSICS ABSTRACTS TERMS

Isotopes
—$Li^{6,7}$, specific heat
Lithium
—metal containing 99.3% Li^6, sp.ht. 20–300°K
Specific heat
—Li isotopes, 20–300°K

REFERENCES

Specific heat, *see also*
Heat capacity; Thermodynamic properties

KWIC TERMS

Heats
Isotopes
Lithium
Specific

SMI TERMS

Isotopes
Lithium
Specific

DELETED

Heats
Heats of
Isotopes from
Lithium isotopes
Of lithium
Specific heats

position to SMI, uses every information carrying word in the title as an index term. SMI was an attempt to improve on KWIC by filtering the title by matching title words to a subject index and thereby eliminating all the non-information bearing words while at the same time bringing consistency to the indexing vocabulary. In SMI, when a title word is matched to a *See* reference in a subject index, then the referred word would have been the one used in the final SMI list. However, indexing should be structured with *See* and *See also* references. The use of cross references in a developed list of subject headings or a thesaurus gives organization and structure to an index. Without this organization and structure, the user must develop his own patterns when trying to find terms used by authors in a title (KWIC system) or an indexer using single words from either the title, the abstract or the complete text (Uniterm system).

The SMI method was developed to try to produce an index which would include cross references. However, as the experiment progressed, this phase was dropped. Had SMI shown itself to be equal in providing indexing to that of human indexers, cross references would have been provided for in the SMI program.

In part of the initial experiment, an attempt was made to use all the words of the title and the abstract to see if additional words would provide a better index than just words from the title. Part 2 of the 1966 series of articles on SMI describes the results of matching words from the abstract and title to a subject index *(2)*. The full abstract was searched in its natural language. In some cases it was necessary for symbols found in the text to be changed to English language words to allow for searching the subject index. Also, abbreviations were converted to full words. This portion of the SMI experiment processed only single words from the title and abstract. It was found that far too many index terms were generated and most of them were irrelevant. This approach was dropped as soon as the results were obtained.

Analysis of Simulated Machine Index Data

Additional data have been accumulated in an attempt to verify early SMI data. These new data did not confirm any of the expected conclusions. However, SMI has shown some value in indexing evaluation.

As part of the final paper of the published series on SMI *(4)*, an attempt was made to compare the results of three indexing tools in their ability to generate relevant SMI index terms. This comparison was done in such a way that an evaluation technique was proposed. This technique was based on processing 25 samples each from *Physics Abstracts, Chemical Abstracts* and the Library of Congress *Subject Headings*. Because sets of SMI terms had been processed through these three indexing tools, it was felt the comparison of the results was a measure of indexing efficiency. The relative quantitative data which were accumulated in the first tests of SMI are shown in Table 2.

A formula was devised which was intended to show the efficiency of indexing. This formula is (a) (b) ÷ (c) where "a" represents the SMI access points, "b" represents the average SMI algebraic relevancy, and "c" represents the KWIC access points. From *Chemical Abstracts,* using the data from Table 2, the following numerical values were obtained:

$$\frac{(3.0)\ (3.2)}{4.7} = 2.05$$

Using the same formula for the other data in Table 2, the additional results were obtained for the other indexing tools. These results plus the one for *Chemical Abstracts* are:

Physics Abstracts	0.96
Library of Congress *Subject Headings*	1.15
Chemical Abstracts	2.05

It was felt that when the number of SMI access points were divided by the KWIC access points for the same indexing tool, a number representing the filtering action of the index thesaurus would result.

This ratio tends to standardize the number of access points generated by SMI. Multiplying this ratio by the average algebraic relevance obtained by the SMI method gives some indication of the numerical value of the ability of the tool to generate valid index terms. The results shown above are from the published series on SMI. They show a difference among the three indexing tools, and this difference followed what intuition would have predicted.

Once these data had been obtained, it was obvious that more samples would have to be processed before the data given in the published papers could be accepted. In the last paper *(4)* of the SMI series, the following statement appears:

"It should be pointed out that the number of examples used in this study was small. Therefore the results probably will not be exactly reproducible. It is intended at a later date to use a much larger number of items and also to study many more indexes."

As an extension of the published series on SMI, this study was undertaken to try to determine if indeed the results of the first series of studies could be reproduced and standards of indexing efficiency be established.

This present study began with the evaluation of 600 sample titles from *Chemical Abstracts, Nuclear Science Abstracts* and *Physics Abstracts.* Because the number of samples used in the published series on SMI was in sets of 25 references each, this extension of the earlier study also uses sets of 25 references. Thus for the 200 samples from *Chemical Abstracts,* there are eight values for each of the variables thought to be of importance when testing with SMI.

Among the assumptions used in thinking that SMI might be used as a standard in the evaluation of indexing was the fact that the evaluator might assign relevance to each index term with an overall consistency. It was assumed that the relevance assignments to each index term would not have to be exactly consistent because when many assignments were taken, the minor inconsistencies would disappear in the averaging. It is assumed that each indexing tool has a uniform level of indexing throughout its subject indexes. There is no reason to believe that *Chemical Abstracts* indexers assign subject terms in an inconsistent manner.

Table 2. Summary of Data from the Published Series on Simulated Machine Indexing *(4)*

KWIC Indexing

	Physics Abstracts	*Chemical Abstracts*	L. C. Subject Headings
Average Number of Access Points	6.5	4.7	3.0
Average Number of Access Points Plus References	6.5	4.7	3.0
Average Relevancy Factor	17.1 (−9.7)	20.5 (+2.5)	13.6 (+1.8)
Average Number of Irrelevant Access Points	2.8	1.2	0.9

Human Indexing

	Physics Abstracts	*Chemical Abstracts*	L. C. Subject Headings
Average Number of Access Points	2.3	3.8	1.4
Average Number of Access Points Plus References	4.7	12.6	10.9
Average Relevancy Factor	18.4 (+9.2)	30.4 (+15.2)	11.2 (+5.6)
Average Number of Irrelevant Access Points	0	0	0

Simulated Machine Indexing Using Word by Word and Two-Word Matching

	Physics Abstracts	*Chemical Abstracts*	L. C. Subject Headings
Average Number of Access Points	3.3	3.0	2.3
Average Number of Access Points Plus References	6.6	12.2	26.1
Average Relevancy Factor	15.7 (+1.9)	15.0 (+3.2)	10.8 (+1.5)
Average Number of Irrelevant Access Points	0.5	0.5	0.6

Table 3. Results of the SMI Analysis Using the SMI Formula (a) (b) ÷ (c)*

200 *Chemical Abstracts* samples (v.60) given in groups of 25.

a. −3.62
b. −4.10
c. −2.56
d. −0.55
e. −1.19
f. +0.16
g. −0.15
h. −0.61

Average of the 200 items = −1.58

200 *Nuclear Science Abstracts* samples (v.19) given in groups of 25.

a. −2.36
b. −2.24
c. −1.82
d. −3.74
e. +0.13
f. −1.88
g. −1.77
h. −0.49

Average of the 200 items = −1.77

200 *Physics Abstracts* samples from various volumes (1960–1965) given in groups of 25.

a. −0.71
b. −2.48
c. +1.78
d. +0.58
e. −0.33
f. −1.35
g. −1.57
h. −1.36

Average of the 200 items = −0.68

* a = number of SMI index terms
b = algebraic relevance of SMI index terms
c = number of KWIC index terms

Once the assumption was made that one individual would be consistent in the way that he assigned relevance and that the indexing tools themselves were consistent, it should be possible for quantitative information to be developed for indexing tools which should show them to have differing quantitative characteristics.

One of the aspects of SMI which seems to have merit is that SMI attempts to use the breadth of vocabulary as the way in which it operates as an evaluation tool. That is, if the subject index of an indexing journal has many subject index terms, that subject index should provide a far greater number of SMI index terms than a subject index which uses a restricted vocabulary. It is assumed that the breadth of vocabulary is related to the depth of indexing, but is not identical to it. The breadth of vocabulary refers to the number of words used in an index to define the subjects covered by that index. The SMI definition of breadth of vocabulary includes *See* references.

The results obtained for the 200 samples from *Chemical Abstracts, Nuclear Science Abstracts* and *Physics Abstracts* are in Table 3. From an analysis of the data in Table 3, each of the eight figures given for *Chemical Abstracts* and *Physics Abstracts* should be comparable to the data presented in the earlier published papers. *Chemical Abstracts* had a comparable value of +2.05; *Physics Abstracts* had a comparable value of +0.96. These two figures were averaged from 25 samples. The range of averages of 25 samples in Table 3 for *Chemical Abstracts* is −4.10 to +0.16 and for *Physics Abstracts* is −2.48 to +1.78. These two indexing journals had a spread of about four SMI units for the eight groups of 25 samples.

There seems to be no logical pattern to the data in Table 3. The assumption for obtaining irrational data from the 600 samples shown in Table 3, is that the assignment of relevance by a single evaluator is not consistent. It is concluded that relevance assignment of indexing cannot be made consistent for SMI evaluation purposes.

Additional data were analyzed from the 600 samples which *do* give some logical pattern. Table 4 shows the ratio of a/c or the ratio of the number of SMI terms to the number of KWIC index terms. These results show that if 100 KWIC index terms are generated by a set of references and these references are processed by SMI, then *Chemical Ab-*

stracts will produce about 83 SMI index terms; *Nuclear Science Abstracts* will produce about 81 SMI index terms; and *Physics Abstracts* will produce about 58 SMI index terms.

The average number of KWIC index terms generated per 25 references are found from the data in Table 4. These values are 102.5 for *Chemical Abstracts,* 105 for *Nuclear Science Abstracts* and 102 for *Physics Abstracts,* or about four KWIC terms per title. Since these values are so uniform, it can be generalized that for 25 scientific articles, there will be a little over 100 KWIC index terms produced. These three indexing journals all had titles that produced about the same number of KWIC index terms showing consistency. This data point does have quantitative stability.

When interpreting the results shown in Table 4, it is possible to relate the breadth of vocabulary to the results. In this case, *Chemical Abstracts* generated about 83 SMI index terms per 100 KWIC index terms, *Nuclear Science Abstracts* but 81 SMI index terms, and *Physics Abstracts* generated the least number of SMI index terms with 58. This does indicate quantitatively that the vocabulary of *Physics Abstracts* is restricted. Of all the data produced in the SMI experimentation, this is the only ratio which is repeatable and which is indicative of an indexing characteristic.

Conclusions

The results of the Simulated Machine Indexing Experiment point to several generalizations:

- It has been shown that it is possible to use a thesaurus as a simulated computer memory to match words from the title and thereby produce index terms and cross references.
- It has been shown that the use of complete abstracts, in addition to the words from the title, will generate far too many irrelevant index terms for the requirements and aims of SMI.
- The efficiency ratio which was anticipated to be used as a standard to com-

Table 4. Ratio of the Number of SMI Index Terms to the Number of KWIC Index Terms*

For 200 references from *Chemical Abstracts* (v.60) given in groups of 25 references.

	Ratio (a)/(c)	*Ratio (%)*
a.	89/120	74
b.	95/125	76
c.	76/95	80
d.	81/82	99
e.	68/96	71
f.	77/97	79
g.	94/102	92
h.	91/101	90

Average of the 200 items = 83%

For 200 references from *Nuclear Science Abstracts* (v.19) given in groups of 25 references.

a.	74/93	80
b.	79/110	72
c.	84/105	78
d.	85/100	85
e.	88/106	83
f.	85/117	73
g.	91/111	82
h.	92/98	94

Average of the 200 items = 81%

For 200 references from various volumes of *Physics Abstracts* (1960–1965) given in groups of 25 references.

a.	65/117	55
b.	96/111	86
c.	54/86	63
d.	46/105	44
e.	45/92	49
f.	51/103	50
g.	52/103	51
h.	63/98	64

Average of the 200 items = 58%

* This ratio is found in the SMI formula shown in Table 3 as (a)/(c) where:

a = number of SMI index terms
b = number of KWIC index terms

pare indexing tools was found to be inconsistent. At this time, it is felt that the evaluator cannot assign numerical values of relevance in a consistent manner.

▶ SMI has been shown to measure the breadth of vocabulary used in a subject index. By using the ratio of the number of SMI index terms to the number of KWIC index terms generated for identical citations, it has been shown that a rather dramatic difference exists between *Physics Abstracts* and the two other indexing journals studied, *Chemical Abstracts* and *Nuclear Science Abstracts*. This ratio seems both valid and reproducible. It is the only measure which was found to be of value in the Simulated Machine Indexing Experiment.

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The Continuity Index of *Information Science Abstracts*

A Four-Year Progress Report

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■ The continuity index has been a feature of *Information Science Abstracts* since 1966. It is designed to lead the user from a known abstract to related abstracts which were published afterward. The continuity index is arranged chronologically by abstract number. It includes code symbols to indicate relationships between abstracts looked up and abstracts listed. With this index, *Information Science Abstracts* can be used for forward searching, as well as retrospective searching. Citation linkage is among the relationships indexed. The continuity index is very easy to compile and to manipulate by machine.

AN ABSTRACT is something like an obituary for a published work. It gives name, parentage (authorship), age, address, possibly tidbits of pedigree (cross references); and it summarizes accomplishments which readers may regard as noteworthy. However, published works are not necessarily dead when they are abstracted. Some works die very slowly, and some not at all. Noteworthy events relating to a published work may continue to occur for years after its publication and after the publication of an abstract. As an obituary, or biography, the abstract may tell only part of the story. A reader who looks up a work in an abstracts journal is likely to be very much interested in learning of any important and related events which occurred or which were discovered after the abstract was prepared. To provide such information is a legitimate function of the abstracting service.

Since its founding in 1966, *Information Science Abstracts (1)* has provided a formal mechanism to acquaint readers rapidly and conveniently with new information relating to abstracted publications. This mechanism is called a "continuity index." *Information Science Abstracts* is co-sponsored by Special Libraries Association and is intended to be useful to its members. This paper describes the continuity index concept and presents statistics on its application to date in *Information Science Abstracts.*

The Continuity Index

In concept, the continuity index (Figure 1) is essentially, but not exclusively, a forward-oriented document index. It lists abstracts in chronological order by abstract number for look-up and lists, under each of these numbers, the numbers of other (usually subsequent) abstracts which are somehow related to the first one. The nature of the relationship is shown in each case by means of a single-letter code, to help the reader decide

66-0957 Y
1117
66-0957 Y
1121
66-0957 Y
1123
67-0688 GW
1127
66-0960 V
1138
66-0957 Y
1140
66-0957 Y
1148
66-0957 Y
1151
67-0002 Y
1152
66-0957 Y

VOL. 2
1967

0002
66-1151 X
66-1192 X
66-1193 X
66-1195 X
66-1196 X
66-1197 X
66-1199 X
66-1201 X
66-1202 X
0011
67-0047 R
0025
67-0026 S
67-0031 S
0026

67-0281 S
67-0282 S
0281
67-0279 S
67-0280 S
67-0282 S
0282
67-0279 S
67-0280 S
67-0281 S
0299
68-1451 DR
0304
68-1453 R
0324
68-0810 Y
0325
68-0810 Y
0331

67-1156 R
0481
67-1156 R
0482
66-1006 M
0486
67-1156 R
0490
67-1156 R
0491
67-0189 Y
0498
68-1414 N
0503
67-0358 Y
0525
68-0796 G
0537
66-0194 M

0835
66-0567 V
67-0886 N
0836
67-0837 N
0837
67-0836 M
0844
68-0352 F
0848
68-0522 D
0851
67-0903 Y
0858
67-0883 Y
0863
67-0883 Y
0865
67-0883 Y

67-1234 X
0946
67-0937 R
0959
67-1262 Y
0964
67-0966 R
68-0189 R
0979
67-1262 Y
0984
67-0981 C
0986
67-1262 Y
0988
67-1262 Y
1003
67-0800 S
67-0801 S

Figure 1. Portion of 1966-1968 cumulated continuity index, showing the end of the chronological listing (in boldface) of 1966 abstracts and the beginning of the 1967 listing. The user looks up a known abstract number in order to identify related abstracts, which may be from any of the three years covered by the index. Letter symbols designate the relationship between the abstract looked up and the abstract identified.

• •

whether it is worth his while to look up the full details in the regular abstract pages of the journal.

This type of index has much in common with the forward-oriented citation index. In fact, it encompasses the citation index but is considerably broader, as will be seen below in the discussion of its coverage.

The physical design of the index is based on *Shepard's Citations,* the original citation index. Some of the coded relationships employed were derived from the author's earlier work on the evaluation of research *(2)* and on the improvement of citation indexes for science *(3)*. The format is highly compact and well suited for manipulation by computer.

Coverage of Continuity Data

For indexing purposes, only a rather small number of codes have been found necessary to categorize continuity events. These are shown in Figure 2. The various noteworthy events to which they refer (not in the order listed) include the following: The published work may contain other works (analytics) which are abstracted separately. It may become available from another source (as when a report is announced by the Clearinghouse for Federal Scientific and Technical Information some time after its initial direct distribution). It may be pub-

KEY

Code letters indicate relationships between lightface abstract and the boldface (left justified) abstract under which it is listed. ("AUIN" indicates annual author index, rather than an abstract.)

A — an application of (the boldface reference)
C — corroborates or affirms
D — rebuts or rejects
E — erratum, corrects the original text of
F — erratum, corrects the abstract of
G — provides availability data on
M — a work continued by
N — a continuation of
R — reviews, discusses, or compares
S — part of the same series or collection as
U — abstract is replaced by
V — a different published version of
W — a replacement or supplemental abstract of
X — a portion of
Y — a composite work containing

Figure 2. Relationship codes used in continuity index.

Continuity Data

69—1766 – **Continuity data for Information Science Abstracts.** *Information Science Abstracts* 4(3), (1969 September).

The listing below continues *ISA 69—1080*. Continuity data appearing in Volumes 1-3 (1966-1968) are indexed in the cumulative Continuity Index in Volume 3 (p. 223-227). Continuity data in Volume 4 will be indexed in the final issue of the volume.
66—047 continues 68—815; is available from G.P.O., $1.75.
66—838 is continued by 69—1588.
66—960 is continued by 67—702.
66—989 *correction:* lines 2-3, for *"Journal of Chemical Documentation"* read *"Journal of Documentation."*
67—702 continues 66—960; is continued by 69—099.
67—837 is continued by 69—1280.
67—895 is continued by 69—1361.
68 Author Index *correction:* add "Rocchio, Joseph John, 099."
68—748 is continued by 69—1358.

Figure 3. Portion of continuity data "abstract" from Volume 4, Number 3 (1969 September). Items printed here provide new information relating to abstracts in earlier numbers. All items are indexed in the annual continuity index.

lished elsewhere in a different version. A correction may be issued. A correction may be issued for the abstract. The abstract may be replaced by a new abstract. The published work may be continued in a new publication from the same activity. Other publications in a series to which it belongs may appear. It may be reviewed or discussed critically in another publication. Its method or data may be applied in another publication. Its findings or predictions may be confirmed by another publication; or they may be refuted. Information on any of these events is of interest to *Information Science Abstracts*. New facts of these kinds are reported as they are learned and are indexed in the continuity index. With regard to citations, however, the coverage is selective; only cited publications mentioned in the abstract are indexed.

If the new fact is already known at the time of writing the abstract, a suitable statement or cross reference will be included in the abstract. (For example, a cross reference from a conference paper to the proceedings in which it is included; or a cross reference from a paper to a critical review which appears in the same issue of a journal; or a reference from a paper to an abstracted earlier paper in the same series.)

If the new fact becomes known only after the printing of the abstract, however, it is essential to print this fact in association with a new abstract number so that it can be linked to the original abstract through the continuity index. When the new fact ties the older publication to a new publication which is also to be abstracted, it is included in the new abstract as a cross reference (for example, in the cases of citing papers, continuing papers, new publications in a series, replacement abstracts). However, there are numerous instances where no new publication is involved and, hence, no normal new abstract with which the continuity information can be printed. This occurs in connection with such events as the publishing of errata and the announcement of new sources of document availability. Such "continuity data" are published, as received, as brief listings at the end of each issue of *Information Science Abstracts* (Figure 3). To facilitate location through the continuity index, the list in each issue is given an abstract number in the regular series. Also included in the list is any new cross-reference information linking current abstracts to abstracts published in earlier issues; thus, one can follow-up continuously on earlier abstracts, if desired, by scanning each "continuity data" abstract as it is published, without having to scan any other abstracts and without having to wait until the end of the volume for the appearance of the continuity index.

To date, the continuity index has been published annually in the final issue of

Table 1. Statistics on Publication of Abstracts and Continuity Data in "Information Science Abstracts," 1966–1969

Year	Abstracts Published	New Data Indexed During Year	Age of Abstracts to Which New Continuity Data Pertain: Same Year	1 Year Old	2 Years Old	3 Years Old
1966	1,205	345	345	—	—	—
1967	1,327	407	353	54	—	—
1968	1,564	909	789	62	58	—
1969	2,638	1,725	1,606	93	19	7
Totals	6,734	3,386	3,093	209	77	7
Average	1,684	847	773	70	39	7
Data items per eligible abstract			0.460	0.051	0.030	0.006

each volume. In Volumes 1 and 2 (1966 and 1967), the index covered only the continuity information acquired during the volume year *(4)*. Of course, information indexed in Volume 2 could refer to abstracts published in Volume 1. In Volume 3 (1968), a cumulative continuity index was published which covered all information acquired to that date and which superseded the previous two annual indexes. In Volume 4 (1969) a one-year index was published. A five-year cumulation is planned for the end of 1970.

Statistics and Experience

Tables 1, 2, and 3 present quantitative information on the continuity data which have been published and indexed in *Information Science Abstracts* during its first four years. The figures shown may be subject to very slight revision since the final issue of 1969 was not entirely through the proofreading stage when the tables were compiled.

Table 1 gives the annual production of continuity data and relates these figures to the annual production of new abstracts. The figures are broken down to reflect the age (since printing of the abstract, *not* since original publication) of the abstracts referred to in continuity data. While it is dangerous to draw conclusions from the experience of only a few years, it appears that continuity data occur mostly in the same year that an abstract is published. Afterward, the fre-

Table 2. Trends in Publication of Continuity Data

Volume	Year	Continuity Data Items per Abstract Published: In Volume Year Only	Cumulated Through Volume Year
1	1966	0.286	0.286
2	1967	0.307	0.298
3	1968	0.581	0.406
4	1969	0.655	0.504

Table 3. Distribution of Continuity Relationships, 1966–1969

Code	Relationship	Instances	Percent
X	portion, analytic	1,027	30.3
Y	containing work	1,027	30.3
S	same series	450	13.3
M	continued by	251	7.5
N	continuation of	251	7.5
G	new availability data	88	2.6
R	review, discussion	83	2.5
V	different published version	83	2.5
F	correction of abstract	40	1.2
A	application	23	0.7
D	rebuttal, rejection	21	0.6
W	replacement or supplemental abstract	17	0.5
E	correction of original text	11	0.3
U	abstract replaced by	8	0.2
C	corroborates, affirms	6	0.2
		3,386	100.2

quency falls off rapidly, but still does not vanish after three years. It should be understood that only a rather low level of effort can be put into continuity indexing in *Information Science Abstracts* because of a shortage of editorial staff. If a professional bibliographer were available for regular follow-up of older abstracts, I feel certain that the rate of fall-off of continuity data with time would be much less rapid. To put it another way, we are probably failing to notice as many series publications and continuations as we might.

Table 2 shows ratios of continuity data to published abstracts over four years. It was prepared to help discern whether we are approaching some stable level. No stable level has yet been reached, but the suggestion is that it will be reached in a few years and that it will be in the neighborhood of 7 or 8 continuity items for each 10 abstracts.

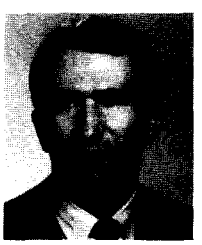
Table 3 gives, in rank order, the number of instances of each possible continuity relationship recorded during the first four years of *Information Science Abstracts*. It can be seen that the relationships for analytic works and their containers account for some 61% of the total. These relationships are typically associated with our heavy coverage of individual papers in conference proceedings. Since such relationships are known at the time of publishing the abstracts, one can understand why same-year continuity data are so dominant in Table 1. Still, the continuity index also provides significant amounts of information on continuations, series, secondary availability, reviews, corrections, and so forth.

Reactions of users of *Information Science Abstracts* to the availability of the continuity index are difficult to assess. No negative comments have ever been received. On the other hand, positive comments have not been received in great numbers. Until now, no special effort has been made to draw users' attention to this index and to offer instruction in its use. It would be helpful to know whether it has been noticed by most users. If so, is it actually being used? In theory, the continuity index should be of great value to the users of an abstracts journal. To what extent this is true in practice is not yet clear. Comments on this point from readers of this paper would be more than welcome.

References

1. *Information Science Abstracts* is published by Documentation Abstracts, Inc.; business address is P.O. Box 8510, Philadelphia, Pa. 19101. Before 1969 the journal was titled *Documentation Abstracts.*
2. B. A. Lipetz / *The Measurement of Efficiency of Scientific Research,* Carlisle, Mass., Intermedia, Inc., 1965. 262p.
3. B. A. Lipetz / Improvement of the Selectivity of Citation Indexes to Science Literature Through Inclusion of Citation Relationship Indicators. *American Documentation* 16 (no.2): p.81–90 (Apr 1965)
4. B. A. Lipetz / The Continuity Index of *Documentation Abstracts,* in International Federation for Information Processing, *Proceedings of IFIP Congress* 68. Preprints, 1968, North-Holland Publishing Co., Amsterdam, p.G10–G12.

Received for review Jun 15, 1970. Manuscript accepted for publication Oct 1, 1970.



Dr. Lipetz *is editor of* Information Science Abstracts *and head of the Research Department, Yale University Library, New Haven, Connecticut. Presented as a contributed paper on Jun 9, 1970, during SLA's 61st Annual Conference in Detroit.*

This Works For Us

Magnetic Tape Typewriter Speeds Catalog Card Production in College Library*

Donald L. Pieters

St. Norbert College, De Pere, Wisconsin 54115

LIKE MANY small college libraries across the country, St. Norbert's has been hard-hit by the long delays in receiving catalog cards from the Library of Congress.

We have experienced delays of up to two years. In the interim, the college library was forced to go to the added work and expense of making up temporary cards or preparing our own permanent cards.

This situation caused us to give up the purchase of LC catalog cards altogether. Instead, we started making our own, using a magnetic tape typewriter.

Use of the IBM Magnetic Tape "Selectric" Typewriter (MT/ST), installed in May 1968, has resulted in substantial savings in time and money. The MT/ST has helped us get more books on the shelves faster and at less expense.

Prior to its introduction, we estimated processing costs at somewhere between $5 and $10 a book, the figure for most libraries.

A time and cost study of technical services required for 100 books—from ordering to shelving—was conducted in August 1969, after introduction of the MT/ST. It revealed an average time of about 1 hour per book for processing and an average cost of about $2.10, including labor and MT/ST rental costs.

The results of the study are in Table 1.

Cost savings in new book processing are especially important in view of the fact that our library of 81,000 volumes is growing at the rate of about 10% per year.

The library has been the heart of St. Norbert since the College was founded in 1898. St. Norbert is a 4 year, coeducational liberal arts college with some 1,700 students. It is owned by the Premonstratensian Fathers and admits students of all denominations.

Processing of a newly-acquired book begins with preparation of the card. Although we no longer use LC catalog cards, we still utilize LC proof slips, which are sent to us weekly.

Our cataloger revises the proof slips as necessary and gives each book a call number. Along with the National Union Catalog (NUC), which we utilize for information on older books, the proof slips afford us professional cataloging without requiring us to maintain a full-time professional cataloger any longer. (Our cataloger works four half-days a week.)

From the cataloger, the revised proof slip or the photocopy of the NUC entry on a book goes directly to the MT/ST for card production.

The IBM MT/ST is keyboarded through a modified IBM "Selectric" Typewriter. In addition to producing ordinary "hard" copy, it stores typewritten copy on magnetic tape, along with punctuation, capital shifts and spacing.

In many ways, the MT/ST is operated the same as is a conventional electric

* See Robert I. Hirst / Adapting the IBM MT/ST for Library Applications. *Special Libraries* 59 (no.8): p.626–633 (Oct 1968)

Table 1. A Time and Cost Study of the Technical Services for a Sample of 100 Books

Technical Service	Time	Cost
1. Searching 100 order request forms	10 hr	$ 19.44
2. Typing multiple order forms	3 hr 50 min	7.16
3. Checking books received against orders	7 hr 7 min	16.17
4. Searching for catalog copy	20 hr 20 min	33.64
5. Cataloging the books	6 hr 16 min	31.66
6. Shelflisting the books	4 hr 10 min	6.67
7. Typing catalog cards with MT/ST	14 hr	42.40
8. Physical processing of books	9 hr 14 min	19.41
9. Checking all previous operations	4 hr 12 min	10.08
10. Separating & alphabetizing cards	3 hr 34 min	5.60
11. Filing catalog cards: shelflist, library catalogs	5 hr 6 min	8.27
12. Checking of filing by cataloger	1 hr 32 min	7.50
13. Shelving books in stacks	1 hr 10 min	1.69
TOTALS	98 hr 31 min	$209.69

COMMENTS: (1) Approx. 1 hr per book for technical services
(2) Approx. $2.10 per book for all technical services
(3) Item 7 includes both labor and rental costs of MT/ST. Monthly rental is $276, or about $20 for 14 hr of operation based on work month of 173 hr
(4) Cost does not include overhead items such as heat, repairs, electricity. Nor does it include materials such as date due slips, spine labels, catalog cards, etc.

typewriter. However, if the operator makes an error, she simply backspaces and types over the incorrect word or character. This automatically erases the mistake on the tape, and only the corrected copy is stored.

The MT/ST operator types at rough draft speed, much faster than the final draft speed at which other typists work on finished documents. Unlike the others, the MT/ST operator is not under pressure to keyboard mistakes as she goes along.

When the operator has finished, she simply inserts a fresh piece of paper (in our case, a blank index card) into the machine, presses a button on the console, and looks on as the MT/ST reads the magnetic tape automatically and types the recorded material perfectly at 150 words per minute, far faster than any human typist.

Because of the machine's ability to play back recorded copy, all the information needed for a set of catalog cards is keyboarded only once. The MT/ST plays it back automatically as many times as required.

It is difficult to overestimate the importance of this, especially when cataloging books with 10, 15, 20 or more tracings, in addition to the Author, Title and Shelf List cards.

The MT/ST automatically types out a series of catalog cards from information stored on magnetic tape.

Our MT/ST is a Model IV, with two tape stations, capable of merging data from two tapes onto a single card. A storage tape with all the necessary copy is placed in the right-hand tape station. A program tape containing instructions for the typing of each individual tracing is placed in the left-hand station.

The machine is then activated, via the console. Through the use of switch and reference codes, the program tape directs that the copy on the storage tape

be played out in the form desired for each individual card.

Our operator normally stores copy for nine books on a tape. This produces an average of 60 to 70 cards. No keyboarding is necessary. The operator simply removes each card as it is finished, and inserts a blank one, until the job is finished.

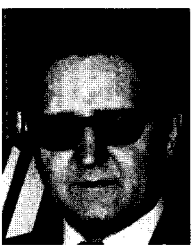
The tapes are reusable hundreds of times. We have only four. Two are program tapes, in duplicate, in case one is lost or accidentally erased. We use only a single tape for card catalog information. The second storage tape is used for correspondence.

Preparing correspondence on the MT/ST is a most satisfactory secondary usage. The machine produces multiple copies of perfectly typed originals quickly and easily. Varying names, addresses and salutations are easily entered manually by the operator.

We are also investigating the possibility of using the MT/ST to enter catalog information into a computer. The tapes may be used for later recall and printout into book catalogs and abstracts.

We find the MT/ST a most useful device. It has saved us substantial time and money and speeded our vital card-cataloging operation.

Received for review Jun 17, 1970. Manuscript accepted for publication Oct 1, 1970.



Mr. Pieters *is librarian at St. Norbert College, De Pere, Wisconsin.*

Commentary on

Book Reviewing Media

The article on "Book Reviewing Media for Technical Libraries," by Arnold Sadow in *Special Libraries* for April 1970* covers the principal points in a thoughtful discussion. The user certainly needs both detection aids and evaluation aids, and naturally wishes the evaluation aids to have a broad coverage of subjects, to have critical evaluations, and to be prompt and up-to-date.

The example in the article shows that the *Technical Book Review Index* gives the fresh, informed, critical opinions most needed in book selection. *New Technical Books* (New York Public Library) and the *Aslib Book List* cover new books in English each month over a wide range of subjects and provide valuable descriptions of them. Periodicals having book reviews regularly serve both purposes of detection and evaluation, much as the three principal aids do. Probably no two persons would name the same group of periodicals as primary book selection aids. Mr. Sadow mentions *Chemical and Engineering News, Journal of The Franklin Institute,* and *Mechanical Engineering,* all of them good. In an off-hand effort to name a few more, I came up with *The American Journal of Physics, The American Scientist, Science, Nature, London,* and the book review issues of *The Review of Scientific Instruments.* All of these are useful, and the weeklies are especially worth following.

I would include the *Publishers Weekly* as a detection aid, as Mr. Sadow did, but not for the same reasons. The weekly list is use-

* Sadow, Arnold / Book Reviewing Media for Technical Libraries. *Special Libraries* 61:194–198 (Apr 1970)

ful, but the most useful feature of *Publishers Weekly* is the advertisements. The information in the advertisements is presented in an artful and enticing manner, often in subject classified form and sometimes quoting published reviews of the older books advertised. Publishers sometimes advertise in the other journals mentioned. In acquisitions work the advertisements and the announcement brochures of publishers serve as valuable detection aids. The recommendations of subject specialists are frequently made on the basis of publishers' announcements. The specialist uses them as detection aids only. His recommendation is based upon his knowledge of the author's work and upon the suitability of the subject matter for his staff or his students. To some extent he may be influenced by the reputation of the publisher. Some specialists have direct knowledge of certain publishers from their own dealings with them, or from the experiences of colleagues with them.

These considerations play an important part in acquisitions work, but perhaps the most important factor is knowledge of the state of the literature on a subject, and of needs which a new book promises to help fulfill.

The article by Mr. Sadow is general and indicative, and does not pretend to go into detail. These are the apparent reasons for the lack of mention of the indexes and abstract journals.

For acquisitions in engineering fields and the disciplines of mathematics, physics, and physical chemistry which are fundamental to them, the abstract journals and indexes are useful detection and evaluation aids. *The Engineering Index* announces and describes many new treatises, textbooks and volumes of proceedings of conferences. *The Applied Science and Technology Index* includes books, and these two indexes are useful detection aids.

In relation to evaluation aids in engineering and the physical sciences, the indispensable aids are *Applied Mechanics Reviews* and *Mathematical Reviews*. These monthly abstract journals include signed critical book reviews which are extremely useful and are sometimes of surprising length. They usually state the strengths and weaknesses of the book and its relation to the existing literature. Frequently they supply a concise description of the state of knowledge on the subject.

In scanning a few issues in connection with the present exercise I found "Controle optimal de systèmes gouverné's par des equations aux derivées partielles," by J. L. Lions. Paris, Dunod: Gauthier-Villars, 1968. 426 pp. 96 francs (*Mathematical Reviews,* Vol. 39, May 1970, No. 5920, pp. 1075–1076).

Another find was "Stabilitate si comanda in teoria zborului," by T. Hacker. Bucharest, Academiei Republici Socialiste Romania, 1968. 322 pp., Lei 21.50 (*Applied Mechanics Reviews,* Vol. 22, Oct 1969, No. 8020). This book is described as an advance over the now-classic text by B. Etkin. The theory of stability and control of aerodynamic flight is presented, based upon the stability theory of Lyapunov, and a chapter is included on flight trajectory optimization based on Pontryagin's maximum principle. The physical problems are emphasized rather than the mathematical formulation. In the *Publishers Weekly,* Apr 13, 1970 (Scientific, Technical and Business books number), on page 3, in the advertisement of American Elsevier, is a listing of "Flight Stability and Control," Hacker, indicating that this book is available in English translation.

The user of these tools must be prepared to encounter a world literature in its original languages. The quantity may be staggering, but the manner of recording and evaluating the literature by the major societies is encouraging, and the evidence of dedicated participation by informed specialists is inspiring. Their contributions are especially valuable because they come from where the action is.

The existing complex of detection and evaluation aids for technical books emerges from the attempt to describe it above as indeed a complex. But it is a rewarding group of tools, and it can be exciting if acquisitions of books are a major interest.

The idea of a new independent book reviewing organization is briefly mentioned in Mr. Sadow's article. The key to the idea would be the participating specialists. Drastic changes in working habits and motivation would be involved in the project. Some specialists might be enticed into a different kind of occupation, but their value as subject specialists would diminish each year that they were out of the field. It sounds like a lead balloon as a practical proposition, and perhaps it should be left as an idea.

Maurice H. Smith
Forrestal Campus Library
Princeton University Library
Princeton, N.J. 08540

Actions of the Board of Directors
Oct 18–22, 1970

The Board of Directors met for five days, Oct 18–22, at the Gramercy Park Hotel in New York City. During the meeting the Board visited the Association's headquarters offices to familiarize Board members with headquarters operations and to meet with members of the staff. Ann Firelli, manager of the Membership Department, and Fred Baum, supervisor of the Order Department, reported to the Board on the current status of their operations.

New SLA Executive Director—The Board of Directors appointed Dr. Frank E. McKenna Executive Director of Special Libraries Association effective Oct 26, 1970.

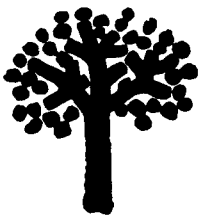
McKenna has been Editor of the Association's journal, *Special Libraries,* as well as Manager of SLA's Publications Department for the past 2½ years.

He is a graduate of the University of California, Berkeley, and received the Ph.D. from the University of Washington (Seattle).

Dr. McKenna has been an active member of the library community since he became a member of SLA in 1953. He has held many elective and appointive offices in the Association culminating with his election as President of the Association for the year 1966–1967.

After the resignation of George H. Ginader as Executive Director of SLA, McKenna had been in charge of the Association's New York offices on an interim basis.

Chapter and Division Allotments—The Board approved allotments for FY 1971 at the same rate as last year. Chapter allotments will be $3.00 per member per year and Division allotments will be $2.00 per member per year. Although the CLO recommended a Chapter allotment of $3.50, the Board approved the $3.00 allotment to maintain a balanced Association budget. Both Chapters and Divisions are reminded



that they can request additional funds from the Board if they need additional money for a specific project. Allotment payments for 1971 will be mailed about mid-February.

Scholarship Committee—The Board approved the award of three $2,500 scholarships for the academic year 1971/72. The present procedures will continue to be used in the administration of these scholarships.

1971 San Francisco Conference—Registration fees for the entire Conference were set at:

Members	
Pre-Registration	$25.00
At Conference	35.00
Daily Fee	15.00
Non-Members	
At Conference	$40.00
Daily Fee	20.00

The Conference will be held at the San Francisco Hilton Hotel, Jun 6–10, 1971.

Standards Committee—The Board approved the Committee's proposal to use mixed data sources in implementing Goal 4 (to project special library requirements through 1980). The Committee's time schedule and budget request to achieve the Goal were also approved.

Picture Division—The Board approved a joint project of the SLA Picture Division

General Fund Budget (Summary) Jan 1–Dec 31, 1971

Expenses	
Salaries & Wages	$147,000
Employee Benefits	19,700
Office Services	40,000
Occupancy Costs*	33,200
Audit, Legal, etc.	14,000
Travel†	6,400
Member Services‡	44,200
Public Relations‖	5,700
Systems Implementation	6,500
1970/71 Directory (Net)	5,500
Oral History Interviews	800
Contingency for IRS Tax on Unrelated Business Income	2,000
Miscellaneous	300
	$325,300
Less Reduction of Costs for Overhead of Funds and Programs	(—29,400)
Expenses of General Fund	$295,900

Income	
Dues and Fees	$223,000
Periodical Programs (Net Income)	
Special Libraries	(—1,300)
Scientific Meetings	6,100
Technical Book Review Index	10,000
Conference Program (Net Income)	26,000
Non-Serials Publications Fund (Transfer excess over $25,000 from NSP Fund)	17,000
Interest & Dividends	15,000
Miscellaneous	1,000
Income for General Fund	$296,800
Expenses of General Fund	(—295,900)
Anticipated Excess Income over Expenses	$ 900

* Includes rent, electricity, janitor and insurance.

† Includes travel of President and President-Elect, plus expenses for meetings of Board and Council, plus staff travel (not charged to specific program budgets).

‡ Includes Committees, ballots and services to Sustaining Members.

‖ Includes promotional materials, recruitment, consultation and scholarship programs (when not charged to program budgets).

Beginning Jan 1, 1971 the Association's Fiscal Year will coincide with the calendar year (instead of Oct 1–Sep 30). In this way the fiscal year will match the membership year and the subscription year. By Board direction, accounting will also be changed from a cash basis to an accrual basis. To accomplish the change of Fiscal Year, the 15-month period from Oct 1, 1969 to Dec 31, 1970 is a transition period. Because of the several changes in the Association's accounting base, it may be necessary for the Board to amend the FY 1971 budget as the year progresses.

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and the American Society of Picture Professionals to prepare a 3rd edition of *Picture Sources.*

The Division submitted a request to transfer publication of its *Picturescope* to a commercial publisher. By the terms of the proposal, 25% of the net profits would go to SLA. The Division will take a vote of its membership to determine interest in the transfer and, if approved, will get a draft contract to be submitted to the Association's attorney for approval.

Directory of Business and Financial Services—A proposal was presented by John Herzog of R. M. Smyth & Co., Inc. (and a member of the Business and Finance Division) to publish the *Directory* as a looseleaf updating service by contract with Smyth, a commercial publishing company. The Smyth organization would be "project manager." Since the publication of the 6th edition, the Business and Finance Division has not been able to find a committee to undertake the compilation of a 7th edition. The publication would be made available on an annual subscription basis, and the proposal suggests that the looseleaf edition would be marketed by Arno Press, a subsidiary of *The New York Times.* The Board authorized negotiations to continue and asked Mr. Herzog to draw up a contract for submission to the Board.

Headquarters Operations Committee—The Board accepted the Committee's recommendations for the installation of an IBM System/3 to replace the existing unit record equipment at Headquarters.

The Board also approved a revision of the Association's Travel and Expense Policy presented by HOC.

Williams & Wilkins—If the suit of Williams & Wilkins Co. *vs.* the New York Academy of Medicine comes to trial, the Board authorized the entry of the Association into the suit as *amicus curiae*. This legal action is similar to that of Williams & Wilkins *vs.* the National Library of Medicine which the Board had voted by mail ballot to enter as *amicus curiae* with the American Library Association.

SLA Advisory Statement—The Board approved a statement supporting ALA's advisory statement regarding the confidential nature of library circulation records with access limited to orders of a competent court.

The SLA Board statement reads:

"The Board of Directors of Special Libraries Association wishes to go on record in support of the American Library Association's Executive Board's advisory statement that U.S. libraries: (1) consider their circulation records to be confidential; (2) that such records not be made available to state, federal or local government agents unless a 'process, order or subpoena' is issued; (3) and resist the issuance or enforcement of such an order or subpoena until a 'proper showing of good cause has been made in a court of competent jurisdiction.'

"SLA recognizes that a similar statement cannot be formulated to embrace all special libraries because the policies of many special libraries are determined by their parent organizations especially when patent and proprietary rights, competitive information or security classified information is involved."

International Relations Committee

HOW WOULD YOU like to trade places for a year with a special librarian of another country? Well, you may, provided the International Relations Committee, which was almost abolished this year, receives the necessary cooperation from the general membership for such a program.

It appears that some members are unaware of the Committee's existence or know little of its purposes and activities. To refresh your memory, the objectives are repeated here:

a) Promotion of professional relationships with libraries and librarians in foreign countries;
b) Assistance to foreign visiting librarians;
c) Development of channels for the exchange of information and materials (possibly librarians!);
d) Assistance in the development of special libraries and special libraries associations in other countries.

President Florine Oltman stressed *international cooperation* in her inaugural address, and the Committee members are happy to have her full support. An all-out effort is now being made to revitalize the Committee, and your assistance is important. As a beginning, the following suggestions are made:

- that each Chapter cooperate by appointing an international coordinator whom Headquarters or the Committee members can contact when necessary;
  that each Chapter consider a two-way exchange. The Committee would arrange for a special librarian to trade places with a special librarian from a foreign country for one year. (Fresno County Library has been doing this for years.)

ALA recognized the need for international cooperation over 20 years ago, and is closely related to overseas programs such as visits, exchange, study abroad, etc. Certainly special librarians have much to contribute and should likewise play an active role in international understanding, and also should cooperate with other organizations having similar goals.

Please, let us hear from you. The Committee is soliciting your ideas and suggestions.

Herta D. Fischer, Chairman
International Relations Committee

Geography and Map Division Award 1970

At the annual business meeting of the Geography and Map Division on Jun 8, 1970 in Detroit, Charles W. Buffum was presented with the Division's 1970 Honors Award for outstanding achievement in geography and map librarianship.

Born in 1900, Mr. Buffum received a BA from Amherst College in 1922 and a BSLS from Syracuse University in 1931. For several years he was an instructor in library service. In 1935 he joined the Library of Congress and when he was appointed map cataloger in 1941, he was the first individual in the country to hold that title.

Mr. Buffum's contributions to his field include developing and formulating most of the rules for maps and atlases which were published in *Rules for Descriptive Cataloging* (Library of Congress), *Anglo-American Cataloging Rules* (American Library Association), and *Library of Congress Classification Class G.* Since 1949, he has also contributed annual listings of maps published in the United States to *Bibliographie Cartographique Internationale.*

A member of Special Libraries Association since 1943, he joined the Geography and Map Division when it was established in 1944. He was treasurer of the Division in 1961–62 and has served on various local and national committees. Since 1956, he has been an Associate Editor of the Geography and Map Division *Bulletin* and regularly contributes descriptions of selected "New Maps" to the *Bulletin.* Mr. Buffum is also a member of the American Library Association and the Association of American Geographers.

Mr. Buffum retired from his position of senior map cataloger, Library of Congress, on Jul 31, after a long and distinguished career in the field of map librarianship.

Metals / Materials Division Award 1970

The 1970 Honors Award of the Metals/Materials Division was presented to Marjorie R. Hyslop for the generous amount of time, talent and ability she has dedicated to the Division's formation and growth. The plaque was presented at the Division's Business Meeting on Jun 8, 1970, during SLA's 61st Annual Conference in Detroit.

Mrs. Hyslop graduated from Ohio State University in 1930 with a major in metallurgy. After graduation she went to work for the American Society for Metals, where she has been employed ever since. Over the years she has served as editorial assistant and managing editor of *Metal Progress,* editor of *Metals Review,* and editor of *Review of Metal Literature.* In 1960 she was appointed Manager of Documentation, later becoming Associate Director of Documentation and, in 1967, Director of Metals Information. She has been joint editor of *Metals Abstracts and Metals Abstracts Index* since its inception in 1968.

Mrs. Hyslop's contributions to her field have been extensive. A pioneer in the application of computer techniques to information, she designed and developed a literature classification scheme in the 1940's—a forerunner to the computer program. She has also published more than 50 papers in metallurgical journals and publications dealing with library and information science.

A member of SLA since 1950, Mrs. Hyslop was a charter member of the Metals/Materials Division and encouraged the Division in its formative years. Her hard work was evident at the successful Fall Programs held until recently with ASM's National Metal Congress October meeting.

Mrs. Hyslop's activities have been many. Since its origin in 1948, she has been secretary of the ASM Metals Information Committee. She has served as national secretary for ASIS, and was a member of the Board of Directors of the National Federation of Science Abstracting and Indexing Services for 12 years. She is also a member of the National Association for the Advancement of Science, the Chemical Literature Division of the American Chemical Society, and Aslib.

CHAPTERS & DIVISIONS

Baltimore—At a meeting on Oct 22 held at The Baltimore Sunpapers, the Chapter saw a movie, "Light for All," and toured the library and Sunpapers printing plant.

The meetings planned for the remainder of the year will focus on acquisition, handling, and use of non-book materials in special libraries.

Boston—Worcester Day, held Oct 21, was the scene of a full day of tours and presentations concerning the Worcester area. The schedule included visits to local libraries, lunch, and a program concerning information-related activities situated in Worcester.

Dayton—At a dinner meeting on Oct 29, the Chapter heard Dr. Charles Goldman, Manager, Education Products Dept., Industrial Products Division, National Cash Register Co., speak on "PCMI Library Collections."

Florida—At the Chapter's Fall Meeting, Oct 3, Dr. Robert E. Smith, Director of the Florida Institute of Oceanography, was the guest speaker. Also on the agenda were a luncheon, business meeting, executive board meeting, and tours of local libraries.

Illinois—Dr. Alex Ladenson, Chief Librarian of the Chicago Public Library, addressed the Chapter on Sep 22 at a dinner meeting. His topic was "The Chicago Public Library in the 1970's." Bosses' Night was held Oct 21. Studs Terkel spoke on "My Version of Oral History."

Indiana—The Chapter's first meeting was held Oct 16–17 in conjunction with the dedication of the Indiana University Indianapolis Law School Building. The dedication was on Oct 16; and on Oct 17, after business meetings and tours, Morris Cohen, president of the American Association of Law Libraries, and Professor Charles D. Kelso spoke to the members.

New York—A joint meeting of the Museum and Documentation Groups was held Sep 28. Francis Levy, an information scientist, spoke on "The Storage and Retrieval of Information About Graphic Materials and Objects."

On Oct 6, the Museum Group visited the recently organized Photographic Archives of the Institute of Fine Arts at New York University. Edith Jänike, the curator, served as guide to the collection.

The Geography and Map Group met Oct 29 at the *Casa de Portugal*. Commander José Cabral, former director of the Portuguese Information and Tourist Office, hosted the meeting. He gave a film presentation on the role of Portuguese geographers and cartographers during the Age of Discovery.

Princeton-Trenton—The Chapter held its first meeting of the season on Sep 23 at Princeton Microfilm Corporation. There was a display of microfilm and equipment and demonstrations of various items.

Southern California—Oct 22 was the date of a joint meeting of the California Library Association and SLA held in Los Angeles. Nan McCandless chaired the meeting, which considered "Special Library Implementations—Public Library Implications." The panel included Vivian Arterbery, Aerospace Corporation ("ASK CIRC—On Line Circulation System"); Harvey Hammond, UCLA Biomedical Library ("On Line Serials Systems"); Elvon Pearson, Fullerton Junior College ("Use of the MARC Tapes"); Dorothy Schweitzer, Jet Propulsion Laboratory ("RECON System"); and Sheila Thornton, Rand Corp. ("MTST System").

Texas—On Oct 3, the Chapter heard O. E. Castillon, Texas Electric Service Co., Fort Worth, speak on "Area Development Programs" and Ovid Baker, Mobil Research and Development Corp., Dallas, speak on "Technology Forecasting." After lunch, the members toured the Handley Power Plant of Texas Electric Service Co.

Toronto—Al Bowron, library consultant, addressed the Chapter's dinner meeting of Oct 16 on "Trials, tribulations and delights of being a library consultant."

Virginia—President-Elect Efren Gonzalez was the honored guest at the Chapter's wine and cheese party on Friday evening, Sep 18. He also attended the Chapter Board Meeting Saturday, Sep 18, and spoke at the breakfast which followed.

Washington Reports

THE CHAPTER cosponsored a dinner meeting with the District of Columbia Library Association on Oct 15. Following the banquet, the six SLA members who were delegates to the IFLA meeting held in Moscow and Leningrad presented a program of slides and reports of their library tours and highlights of their trip through Russia.

John G. Lorenz, Deputy Librarian of Congress, moderated the panel whose members were Lillian A. Hamrick, Department of Labor; Karl A. Baer, National Housing Center and SLA's representative to IFLA, Martin L. Loftus, Joint Bank-Fund Library; Walter W. Ristow, Chief, Geography and Map Division, Library of Congress; and Robert L. Klassen, Program Officer and Special Library Specialist, Bureau of Libraries and Education Technology, USOE.

Catherine Bahn
Arlington, Va. 22201

MEMBERS IN THE NEWS

Gilles Frappier has been named Associate Librarian of Parliament in Ottawa. He was formerly with the Université de Montréal and Canadair libraries.

Eugene B. Jackson, IBM, has been named president and director of Engineering Index, Inc. **S. Kirk Cabeen** (Engineering Societies Library) is also a director. SLA members serving as trustees of the organization are **Charles K. Bauer** (Lockheed-Georgia Co.), **Everett H. Brenner** (American Petroleum Institute), **William S. Budington** (The John Crerar Library), **Robert W. Gibson, Jr.** (General Motors Corp.), **Ralph H. Phelps,** and **Ben H. Weil** (Esso Research & Engineering Co.).

Frances B. Jenkins . . . to retire from the faculty of the Graduate School of Library Science, University of Illinois at Urbana–Champaign . . . Jan 1971.

Helen Kovacs, Downstate Medical Center, Brooklyn, is co-chairman of the Medical Library Association's 70th Annual Meeting scheduled to be held May 30–Jun 3, 1971, at the Waldorf Astoria Hotel in New York. Alfred N. Brandon, Mount Sinai School of Medicine, New York, is program chairman.

Burton Lamkin (Bureau of Library and Educational Technology) and **Margaret Sloane** (JFN Associates) were co-chairmen for the American Management Association's seminar, "Fundamentals of Company Library Management," held Aug 31–Sep 4 in New York City. Guest speakers were **Ted Slate** *(Newsweek),* **Mary A. Heneghan** (Arthur D. Little, Inc.), **Robert E. Fidoten** (PPG Industries), **Loretta J. Kiersky** (Airco), and **Robert V. Williams** (Ford Foundation).

Catherine Lukens retired on Jun 30 from General Electric Co., Syracuse, N.Y. She organized the Electronics Park Library in 1948.

Rita E. Morgan, from Avco Lycoming Division, Stratford, Conn. . . . to School of Dental Medicine, Medical University of South Carolina, Charleston.

Nina J. Root . . . appointed chief librarian at The American Museum of Natural History, New York.

William Saunders, formerly head of the Curriculum Materials Library, Cheyney State College, Cheyney, Pa. . . . to reference librarian/education bibliographer at the Samuel Paley Library, Temple University Libraries, Philadelphia.

At the annual meeting of the Hospital Librarians' Section of the Association of Western Hospitals in April, **Sherry Terzian** was announced as secretary for 1970/71. **Mrs. Elizabeth Hinkle** will continue as a liaison officer. **Mrs. Phyllis Dalton** spoke on "Creative Librarianship, 1970 Style," and **Mary Elsie Caruso** was part of a panel on library administration.

James K. Webster . . . from senior librarian to head librarian at Cornell Aeronautical Laboratory, Buffalo, N.Y.

Herbert S. White . . . from vice president for information management, Leasco, to vice president for operations, Institute for Scientific Information.

Mrs. Sally Williams, from business administration librarian, reference department . . . to head, serials department, Drexel University Libraries.

The Conference on Interlibrary Communications and Information Networks (CICIN)

Airlie Conference Center, Warrenton, Virginia
Sep 28–Oct 2, 1970

THE *Washington Post* financial page of October 3, 1970 carried a story captioned "Computer Firms Back Linkup by Microwave." American Telephone and Telegraph, it related, is engaged in a spirited contest with a group of companies led by Microwave Communications of America, Inc. (MCI) and Data Transmission Company (DATRAN), each of which is striving to build networks that would link as many as 165 cities by microwave. The salient point of the story was not the contest, for that was simply a ramification of the competition abundant in the common carrier communications field today, but rather that, whatever the outcome, a Nationwide Communications Network capable of instantaneous transmission of computerized digital data is just around the corner.

By coincidence, October 2, 1970 was the final day of the Conference on Interlibrary Communications and Information Networks (CICIN) which had convened five days earlier at the Airlie Conference Center, near Warrenton, Virginia. It was just three years since a group of prescient librarians in several ALA Divisions had first conceived of the idea for such a conclave.

To the 125 librarians, information scientists, computer specialists and knowledgeable information users gathered at Airlie House, the timing of the *Post* story was appropriate, for it dramatized perfectly the relevance of their week of debate and the reports they were about to give. Their Blue Ribbon audience included White House Assistant for Cultural Affairs, Miss Carol V. Harford, the new Associate Commissioner for Libraries and Educational Technology, SLA Board Member, Burt Lamkin, and a host of other dignitaries assembled to hear and comment on their findings.

Joseph Becker, Conference Director and Principal Investigator, had opened the invitational meeting on September 28 with a greeting from Richard Nixon which stated that:

"Those who take part in the Conference on Interlibrary Communications and Information Networks perform a vital service in our fast-moving society. In order to be of maximum benefit to our people, the achievements we realize must be constantly and efficiently passed on to those whose well-being they are designed to serve. Your part in this process is indispensable, and I welcome your continuing contributions to this increasingly important aspect of American life."

Before they knuckled down to the hard work of the week, the conferees were welcomed by the articulate USOE representative Kathleen Molz, and by Conference Advisory Board Chairman, Russell Shank, who alluded to the years of planning that preceded the Conference and emphasized that 17 professional organizations were represented on the Advisory Board.

Keynote speaker Kenneth A. Cox, a former FCC Commissioner (and recently installed vice-president of MCI), delineated the hard facts of current technological development for the attendees and sounded a clear and urgent call for a National Communications Policy whereby the gadgetry of modern rapid communications may be developed in ways totally consonant with the public good.

Thirty-one commissioned papers, copies of which were sent to all participants in advance, provided historical perspective and technical background on the important aspects of interlibrary cooperation, telecommunications and related topics. It was generally acknowledged by the conferees that the commissioned papers probably stood alone as the single most important achieve-

ment of the many efforts set in motion by the Conference sponsors.

The general Conference objective was to produce a *source* of information in the form of proceedings which would consist of the commissioned papers plus summaries of working group discussions and recommendations for further action developed and presented at the final Conference Plenary Session.

In addition, participants were charged with the responsibility of identifying and defining the basic propositions fundamental to the establishment and operation of library networks on a national scale and specifically to:

a. Study the present state of network development, identify strengths and weaknesses, and highlight potential developmental areas with respect to the needs of libraries, information centers and their users.
b. Explore the potential of meeting these identifiable needs through the adoption and expansion of present telecommunications networks throughout the United States.
c. Study the application of unused but technologically feasible methods to facilitate interlibrary communications and data distribution.
d. Pinpoint areas of conflict between the creators and owners of information and the users of this information.
e. Identify other elements of administrative, legal, fiscal, social and technical problems which must be solved prior to the establishment of national information networks.
f. Outline a specific framework for a national network, including elaboration of a practical immediate system and a phased outline of a more comprehensive system based on developing technology.

The Conference was organized into five working groups of approximately 20 members each. The groups and their leaders and associate leaders were:

GROUP A: NETWORK NEEDS AND DEVELOPMENT

Leader

John W. Bystrom
Dept. of Speech Communications
University of Hawaii

Associate Leader

Raynard Swank
School of Librarianship
University of California

GROUP B: NETWORK SERVICES

Leader

F. F. Leimkuhler
Industrial Engineering Dept.
Purdue University

Associate Leader

Pauline Atherton
School of Library Science
Syracuse University

GROUP C: NETWORK TECHNOLOGY

Leader

John Meaney
Prof. of Communication Arts
Notre Dame University

Associate Leader

Edwin Parker
Institute for Communication Research
Stanford University

GROUP D: NETWORK ORGANIZATION

Leader

Robert Heinich
Prof. of Education
Indiana University

Associate Leader

Richard Dougherty
School of Library Science
Syracuse University

GROUP E: NETWORK PLANNING

Leader

Carlos Cuadra
System Development Corp.
Santa Monica, California

Associate Leader

Calvin Mooers
Rockford Research
Cambridge, Massachusetts

At the outset the groups focused their attention on the set of papers specifically assigned them. The papers were evaluated, critiqued, set aside, but never entirely forgotten as discussions ranged over the multitude of questions the concept of networking and its related technologies have raised.

Tempers flared more than once. Nerves frazzled as sessions dragged on into evening hours, and more than one member must have regretted his involvement in what at times threatened to bog down in a morass of confusion, misunderstanding, and words.

Feedback and crosstalk between groups were limited and haphazard, a drawback that was to cause considerable overlap in the discussions and recommendations.

But thanks to some unknown chemistry—possibly a Parkinson's Law of conferences, wherein discussions expand to fill the available time and recommendations inevitably materialize—the groups presented a set of far-reaching proposals for future action to the distinguished audience that had assembled in the handsome Federal Room of Airlie House.

The edited proposals will be available as part of the Proceedings early in 1971 from ALA as *Interlibrary Communications and Information Networks.* (Pre-publication price $12.00, otherwise $15.00.) The unflappable Joe Becker and his able staff have promised quick availability of the Proceedings thanks to a computer-aided stenotype process whereby the plenary sessions are being processed into print-ready formats without much in the way of human assistance.

But one or two memorable moments of the final Plenary Session must be recorded here in the belief that they will show that some good minds spent the week dedicated to worthwhile ends, and achieved at least some of them.

First, no one who was there should be able entirely to forget the noble words of Raynard Coe Swank whose introduction for the Network Needs Report established the humanistic and user orientation of the entire Conference:

"Man is fulfilled as he shares in and enriches his cultural heritage. Through all walks of life, his survival, his self-realization, and his social development turn upon his knowledge of the concepts, habits, skills, arts, instruments and institutions of that heritage. In advanced societies his knowledge of that heritage depends increasingly upon recorded information resources. To these resources every man, according to his needs, should have sensitive, humane and realistic access."

Second, no one who was there *should* forget the one recommendation that was not only offered to the Plenary Session but passed by it as the major Conference resolution. The recommendation was offered by Dr. Carlos Cuadra, Leader of the Network Planning Group, who gathered praise from all corners for his effective leadership and editorial skills. It stated "That the National Commission on Libraries and Information Science direct the development of a comprehensive national plan to facilitate the coordinated development of the nation's libraries, information centers, and other knowledge resources."

All at once the Conference came into sharp focus. This was what it had all been about. This was what was needed. A call to action and a direction had been given to a Commission that had been wandering in the confines of the Executive Office Building waiting for its members to be named and an appropriation to be granted.

Much more in the way of reportage would exceed the purpose of this summary which is intended neither to explain nor interpret a meeting that must, by the simple fact of its occurrence, act as an end to the beginning of the Network concept, and as a prelude to the next giant step of implementing this logical development of the regional, special and general purpose cooperative systems that pre-date it. But one would be remiss to conclude without emphasizing some of the recurrent themes insisted upon by the conferees as assumptions and starting points for their deliberations.

All agreed that Network development, however it comes about, must be user-oriented.

Most felt that the standardization of machine-readable bibliographic formats is an essential and high priority goal that must be achieved early in the process of network development.

There was general agreement too that Networks will grow out of existing resource and service systems rather than be superimposed over, on or beside those systems.

It was also assumed that network development would proceed cooperatively. A creative mix of local, state and federal monies would be required, and the regular involvement of operating officials, users, and technologists would be essential to orderly, dynamic progress.

And library educators present were joined by all of the conferees in their vocal insistence upon the need for education, reeducation and continuing education for both users and purveyors of the emerging systems and their management.

In conclusion it should be noted that the conferees shared a good-natured scepticism and occasionally heavy irony (see "Hiawatha's Network" by Irwin Pizer, soon to appear in the *Bulletin of the Medical Library Association)* throughout the week. They were aware that the general tone of

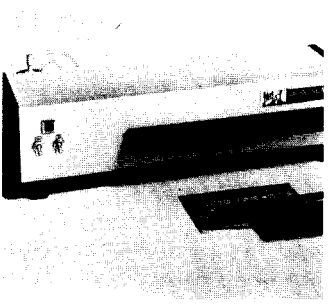
their recommendations might sound like "promises, promises" without a great deal of careful specifications regarding costs, organizations, and possible solutions to the legal and political questions that will ensue as Networks cross established boundaries.

But on balance, at least in the opinion of this observer, Network development took a giant step at Airlie House. And if the Conference resolution can be sustained and eventually implemented, then there is hope indeed that the Nationwide Communications Network adumbrated by the *Washington Post* will reserve a large and worthy place for the transmission of those information resources to which "every man, according to his needs, should have sensitive, humane and realistic access."

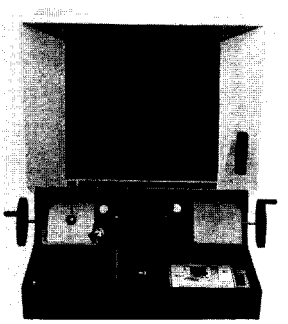
Robert B. Lane
Air University Library
Maxwell Air Force Base, Ala. 36112

HAVE YOU SEEN ?

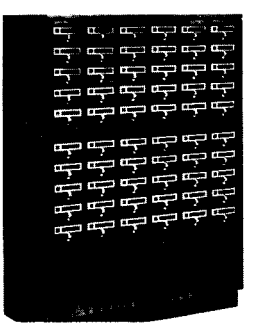
Color-coded plastic squares provide a new system for locating library subject matter. Each square is engraved with a subject and the number of the stack to which it is affixed and is keyed to a color map of the library. The squares are made by Supersign Co., Detroit, Mich.



The Micro-Scan Diazo Developer Model D-11 utilizes a new Ammonia Vaporizing Method. Requiring one pass through the developing cycle, it is said to have resolved the ammonia overload, leak, spillover and residue problems of wick-type processes, resulting in perfect developing of the diazo material with no cleaning. The model is capable of developing 9 microfiche in 30 seconds, and 4″ × 6″ microfiche may be fed 2 at a time. For details, write: Micro-Scan Systems, Inc., 54 South Main St., Pearl River, N.Y. 10965.

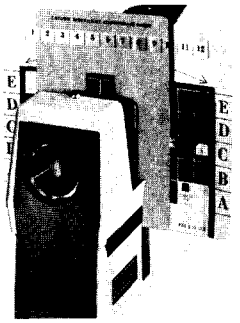


A drive train has been developed which enables the Executive I microfiche reader/printer to view and make print-outs from 16 mm and 35 mm microfilm in automatic threading cartridges. The drive train, which slides onto the reader/printer and is easily removed for viewing fiche, is priced at $325. For information, write: Information Design, Inc., 3247 Middlefield Rd., Menlo Park, Calif. 94025.

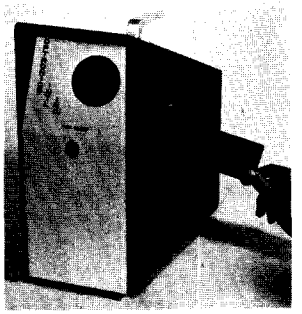


A card catalog, in walnut or maple, is part of the Bravo Collection. Components can provide almost any number of file drawers.

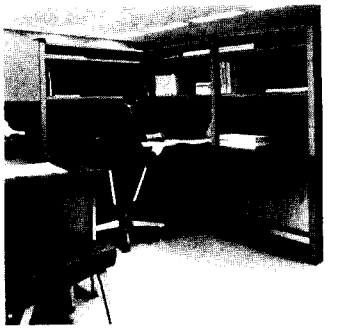
Model 560CC is of single unit construction with 60 drawers, three pull-out writing shelves, and an offset base. For information, write: Myrtle Desk Company, Box 1750, High Point, N.C. 27261.



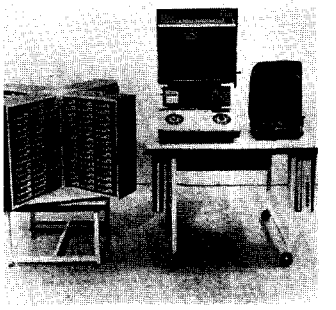
The 300XF Micro Projector weighs 3 lbs., measures 8″ × 6¼″ × 3″, and has an attache case with a built-in screen. The Coordinate Index Fiche Guide permits retrieval of any frame of a COSATI Microfiche. Adapters are available to permit use of double frame COM format, as well as standard filmstrips and slides. The projector, which lists at $69.50, is available from The Taylor-Merchant Corp., 25 W. 45th St., N.Y. 10036.



The Foolproof ID (FID) system provides a secure method of credit card identification. Since it is based on a holographic process of coded data recorded on film and embedded in a credit card, there is no visible identification on the card, thus making it impossible to use if lost or stolen. To be read, the credit card is placed in a small viewer, and the coded image appears on a screen using a small helium-neon laser. The system was developed by Optronics International Inc., 7 Stuart Rd., Chelmsford, Mass. 01824.

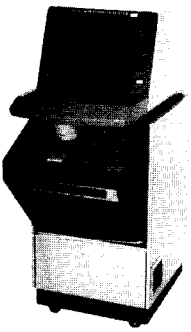


Quik-Lok Office-Wall partitions adapt large rooms to individual work stations, complete with desk and credenza. The assembly can be put together by hand, without any fasteners. For information, contact: Aurora Steel Products, 153 Third St., Aurora, Ill. 60507.

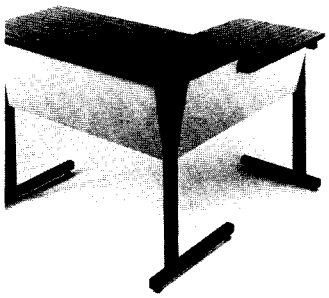


A computer-generated information retrieval system provides current building products information to users. Spec-Data II selects products by characteristic and displays them for comparison. It is available either with dry print capability or in a compact desktop unit. For information, write: Information Handling Services, Denver Technological Center, Englewood, Colo. 80110.

A microfilm printer delivers dry positive prints in varying paper sizes from either positive or negative microforms without changing toners. When the supply of paper or toner reaches replacement level, an indicator light alerts the operator. The Recordak printer, model ERG, is compatible with the entire line of Recordak Microstar and Motormatic readers. For information, write: Dept. DP-003, Eastman Kodak Co., 343 State St., Rochester, N.Y. 14650.



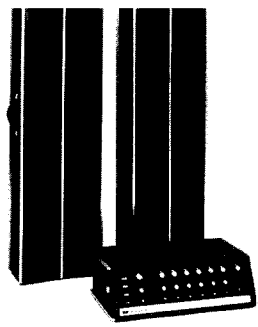
A microfilm reader/printer, capable of delivering 840 8½" × 11" or 8½" × 14" copies per hour, is available from Minolta. The Model 403 accommodates microfiche in either the COSATI or NMA format and 16 mm or 35 mm microfilm roll or strip, and is capable of projecting and printing positive or negative film on its 12¾" square screen. For information, contact: Jack Knott, Minolta Corp., 200 Park Ave. South, N.Y. 10003.



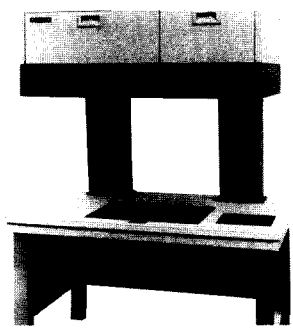
Business/education tables feature a pedestal base and a welded steel understructure to provide stability. The tables are 29" high with machine stands 26" high. Options include book box, headset storage, lock box, and multiple electric outlet box. Available from McNeff, Affiliate of the Howell Co., Division of Interlake, Inc., Chicago, Ill. 60604.

A plastic telephone message holder, to be installed on the back of desk telephones with self-adhesive tape, is available for 50 cents, postpaid, from INEX, 161 Lemoine Ave., Buffalo, N.Y. 14225.

Binding Machine—A binding machine that uses Polyethylene Tacks to bind books, magazines, documents, etc. is now available. The literature states that no special training is needed to operate the Togic system. Distributed by Pengad Companies, Inc., 55 Oak St., Bayonne, N.J. 07002.



A portable sound system is said to control feedback with four anti-feedback switches and retain voice quality with a pair of six-speaker sound columns. The VA300 System, which includes control console-amplifier and two speaker columns, is $890 and is available from Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. 60204.



Automated microfiche cameras, in three basic models each designed for a single standard microfiche format, will be available by the end of 1970. The Model 4330 cameras, which function in daylight and can be operated by nonprofessional personnel, will sell for $14,500 each. For information, write: Marketing Dept., Eugene Dietzgen Co., 2425 N. Sheffield Ave., Chicago, Ill. 60614.

HAVE YOU HEARD ?

Southeastern Special Libraries

Luther Lee is the first president of the newly established Special Libraries Section of the Southeastern Library Association (SELA). The new section was organized at the SELA meeting on Nov 6 in Atlanta.

Assistantships

Graduate assistantships for the academic year 1971/72 are available from the University of Florida Libraries. They are primarily for practicing professional librarians interested in study leading to a master's or doctoral degree in a subject field other than library science. The stipends are $2,574 for a 9-month work-study period, with 15 hours of library duty each week. Applications, due by Feb 15, 1971, are available from Director of Libraries, University of Florida, Gainesville, Fla. 32601.

Continuing Education in Librarianship

The City University of New York Graduate Center is offering five courses in the spring semester about new developments in library-information science, particularly the application of computer methods. Fees are $90 per course plus $10 registration and $25 laboratory fee where necessary. For information, contact Vivian Sessions, Director, Center for the Advancement of Library-Information Science, City University Graduate Center, 33 West 42 St., N.Y. 10036.

New Science and Medicine Library

Rutgers University opened its new Library of Science and Medicine in Piscataway, N.J. on Nov 20. The library has a visual facsimile transmission system connected to the National Agricultural Library, as well as ready access to the National Library of Medicine, and will answer requests of the public through other libraries.

Microfilm Building Opens

Microfilming Corporation of America has opened a new plant in Glen Rock, N.J. Over 100 foreign and domestic newspapers and magazines are currently microfilmed by M.C.A. The company also announced that it is beginning to index America's leading newspapers through the use of computer technology and regional selection.

Mid-Manhattan Library

The New York Public Library opened the Mid-Manhattan Library recently on the fourth and fifth floors of 8 East 40th St., N.Y. In addition to a wide range of books on open shelves, the library has the largest collection of periodicals on open shelves in New York. The library is open Mon.–Sat., 9 a.m.–10 p.m.

Acquisition and Cataloging Tool

Complete biographical information on the English-language materials that have just been received by the National Library of Medicine are being published bi-weekly in *Current Catalog Proof Sheets*. The publication costs $25 for calendar year 1971 and is available from Medical Library Association, 919 N. Michigan Ave., Chicago, Ill. 60611.

Annual Events for 1971

Approximately 1,500 holidays and special events for 1971 are compiled in the 14th edition of Chases' Calendar of Annual Events. For each event are listed the purpose, its sponsor, and the person to whom to write for additional information. The calendar is available for $3.00 from Apple Tree Press, P. O. Box 1012, Flint, Mich. 48501.

New Publication

Union List of Foreign Legal Periodicals of the American Association of Law Libraries is available for $25 from the University of Texas at Austin, Tarlton Law Library, 2500 Red River, Austin, Texas 78705.

Name Change

The Society of Technical Writers and Publishers has announced that it will change its name to the Society for Technical Communication effective July 1, 1971.

Canadian Serials

Tentatively scheduled for publication in the summer of 1971 is *Canadian Serials Directory*. The comprehensive Directory is intended to deal exclusively with Canadian publications. The list will be by both title and publisher, will be computer produced, and will be updated annually. For information, write: Canadian Serials Directory, Box 6437, Station G, Vancouver 8, B.C.

PUBS

BIBLIOGRAPHY

Africa South of the Sahara: A Resource and Curriculum Guide. Barry K. Beyer. N.Y., Crowell, 1969. ix, 138p. $6.95, cloth; $3.95, paper.

Annotated Bibliography of Bibliographies on Selected Government Publications and Supplementary Guides to the Superintendent of Documents Classification System, 2d suppl. Alexander C. Body. Kalamazoo, Mich., Western Mich. Univ., 1970. iv, 138p. pap. $2.50.

Planning — Programming — Budgeting Systems. Dean Tudor, comp. Monticello, Ill., Council of Planning Librarians, 1970. 19p. pap. $2.00. Exchange Biblio. #121.

LIBRARIES & LIBRARIANS

Knihovny v USA (with summaries in Russian, German and English). Josef Vinárek and Alois Těšitel. Prague, Orbis, 1968. 233p. Vaz. 25.

Youth Library Work, Exploratory Essays. Melvyn P. Barnes. Hamden, Conn., Archon Bks., 1969. 98p. $3.50.

LIBRARY AND INFORMATION PRACTICES

Current Information Dissemination: Ideas and Practices. Marianne Cooper. N.Y., Am. Inst. Phys., 1968. pap. approx. 25p. ID 68-15 (Dec 1968).

A Guide to a Selection of Computer-Based Science and Technology Reference Services in the U.S.A. Elsie Bergland, ed. Chicago, ALA., 1969. pap. $1.50, prepaid; $2.50, if billed.

The Regional Library Center in the Mid 1970's: A Concept Paper. Thomas Minder. Pittsburgh, Univ. of Pittsburgh. Grad. Sch. of Libr. & Info. Sci., 1968. 41p. pap. $2. Pittsburgh Studies in Libr. & Info. Sci. (Available from Univ. of Pittsburgh Book Center)

MISCELLANEOUS

Analysis of Paper. B. L. Browning. N.Y., Marcel Dekker, 1969. ix,324p. $18.75.

Bookman's Progress: The Selected Writings of Lawrence Clark Powell with an Introd. by William Targ. Los Angeles, Calif., Ward Ritchie Press, 1968. ix,246p. $6.75.

A Forum on Systems Management (Jun 21–23, 1967). Ingrid H. Rima, ed. Philadelphia, Temple Univ. School of Bus. Admin., Bur. of Econ. & Bus. Admin., 1969. viii,214p.

Handbook of Resources for Physics Departments. N.Y., Am. Inst. Phys., 1969. x,241p. pap. $2.50. *Its* Publ. R-213.

Practical Technical Writing. Ritchie R. Ward. N.Y., Alfred A. Knopf, 1968. xii,264p. $5.50. Borzoi Bk.

R & D and Small-company Growth: A Statistical Review and Company Case Studies. Wm. J. J. Smith and Daniel Creamer. N.Y., Natl. Ind. Conf. Bd., 1968. pap. $3. Studies in Bus. Econ. no. 102.

The R & D Game: Technical Men, Technical Managers, and Research Productivity. David Allison, ed. Cambridge, Mass., MIT Press, 1969. viii,322p. $12.50.

The Writer in the Market Place. Papers Delivered at a Symposium held at Liverpool School of Librarianship April 1968. Raymond Astbury, ed. Hamden, Conn., Archon Bks., 1969. 176p. $6.

RECORDS STORAGE

Microphotography for Archives. Albert H. Leisinger, Jr. Washington, D.C., Internl. Council on Archives, 1968. 34p. pap.

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Information Scientist (age 32)—M.Sc. in Geology (Geophysics); now working in U.K., 6 years experience (3 Civil Eng., 3 Metallurgy). Write: Box C-158.

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Library Director—Dynamic service minded librarian with MLS degree and at least 5 years' appropriate professional experience including at least 4 years in an administrative capacity. One of California's finest public libraries with an aggressive program of public service and outstanding collections of books and non-book materials. New library building completed in 1965. Pomona, population 87,000, is situated 30 miles east of Los Angeles in the heart of a rapidly growing area. Library collection: Books —225,000 volumes; phono recordings—12,000; 16mm films—625. 1970–71 budget—$689,000. Salary $1342-$1636, plus usual fringe benefits. Apply to: Irving Mandel, President Pomona Public Library Board of Trustees, PO TWL2271, Pomona, Calif. 91766.

Director, PNBC—Pacific Northwest Bibliographic Center (in University of Washington Library, Seattle) needs dynamic, inventive head. Required: professional librarian degree, 5 years experience (at least 2 administrative) with library center, large regional library, or large library system. Preferred: proven ability to plan, organize, and present new programs to varied clientele, sufficient knowledge of automation and electronic communications to adapt to center's needs, ability to work co-operatively with board, staff, and users. Offered: $15–20,000 salary (depending on qualifications), fringe benefits identical to generous U. of Washington benefits, lively Seattle locale. Exceptional opportunity for alert, ambitious, creative individual. Send vita to: Donald Duncan, Washington State Library, Olympia, Washington 98501.

POSITIONS OPEN

University of California Library—*Map Librarian,* Librarian III ($9,840–$11,952). In charge of map collection of 107,000 maps, aerial photography and atlases in Sciences-Engineering Library. Responsible for acquisitions and cataloging of maps. Library degree and minimum of two years professional experience in map library. Academic background in geology, geography or cartography desirable. *Government Publications Librarian,* Librarian III ($9,840–$11,952). In charge of collection of 130,600 government publications (U.S. and California State depositories, plus selected international, foreign, state and municipal documents). Coordinates collection policies and services. Library degree and substantial professional experience with government publications. Apply to Miss Katherine C. McNabb, Associate University Librarian, Library, University of California, Santa Barbara, Calif. 93106.

Assistant Head Cataloger—Biology and Agriculture. The H. W. Wilson Company in New York City has an immediate opening for a librarian with several years of cataloging and supervisory experience to assist the Editor on the Biological & Agricultural Index. B.S. or M.S. in biology or related sciences required. Excellent benefits. Salary negotiable. Direct résumé and inquiries to: Personnel Office, The H. W. Wilson Company, 950 University Avenue, Bronx, New York 10452.

Two Assistant Librarians—Needed in large and growing southern university law library. Law library experience not needed. Apply Box C-159.

The University of British Columbia Library—Invites applications for the position of Slavonics Cataloguer to prepare original catalogue copy for materials in the Slavonic languages with particular emphasis on Russian (including other Soviet languages such as Ukrainian), Polish, Czech-Slovak, and Serbo-Croatian and to supervise and revise the cataloguing by two Slavonic Library Assistants. Thorough knowledge of the above-named languages is essential and knowledge of or experience with the Library of Congress classification is required. One year's experience required. Beginning salary is open and dependent on experience but will not be less than $8,000.

The University of British Columbia is in Vancouver, a beautiful west coast city of 685,000 population. Current enrollment of the university is 22,000. The library's book collections total more than 1,200,000 and the book budget is more than one million annually. The library staff numbers 400, and 100 of these are professional librarians. There are excellent medical, disability, group insurance and superannuation benefits, and four weeks' vacation. Librarians are eligible to join the Faculty Club and Faculty Association. Apply to Mr. I. F. Bell, Associate Librarian, University of British Columbia, Vancouver 8, B.C., Canada.

POSITIONS OPEN

Acquisitions Librarian—To supervise operations of million dollar book budget. Qualifications are a forceful and decisive personality, and supervisory experience in office management. Salary will be dependent upon the capabilities and experience of the appointee. Write G. A. Rudolph, Director of Libraries, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Assistant Director. University of Texas School of Law Library—Applications are invited for the above position, which entails supervision of technical services department, as well as general duties under direction of the Director of Research. Library contains approximately 225,000 volumes and is staffed by 10 professional librarians, 18 non-professional librarians, and ample student help. Position requires an M.L.S. and five years' administrative experience in an academic library. Law degree is not required. Academic rank, salary commensurate with experience and qualifications, current salary range of $12,000 to $17,000. Apply to: Roy M. Mersky, Director of Research, University of Texas Law Library, 2500 Red River, Austin, Texas 78705.

Assistant Medical Librarian—Responsible for most of the day-to-day administration of the Medical Library under the direction of the Medical Librarian. The library has a collection of about 141,000 volumes of which over 100,000 are serials, and current journal subscriptions exceed 2,000 in number. Staff of 8 librarians and 17 library assistants. The library is a major resource for hospital libraries in the Montreal region, and other medical libraries in Quebec and Canada. Development of cooperative programs with other libraries in the region and with the National Science Library in Ottawa is an important goal. Candidates should have an accredited library degree, and preferably MLA Certification (grade 1), five or six years' experience in medical or science libraries, and demonstrated administrative ability. Salary range starts at $9,700 and allowance can be made for relevant experience. Letter of application and résumé should be sent to: Director, McGill University Libraries, 3459 McTavish Street, Montreal 112, Canada, or to: Mrs. J. Cheasley, Acting Medical Librarian, McGill University, 3655 Drummond Street, Montreal 109, Canada.

Architectural Librarian—Head Librarian for small, specialized collection in school of architecture in Boston. Responsible for administration of the library, reference services, cataloging, and acquisitions. Professional qualifications. Open Nov 1, 1970. Send résumé to Director of Education, Boston Architectural Center, 320 Newbury Street, Boston, Mass. 02115.

THE MARKET PLACE

Foreign Books and Periodicals—Specialty: Building Collections. Albert J. Phiebig Inc., Box 352, White Plains, N.Y. 10602.

Back Issue Periodicals—Scientific, Technical, Medical and Liberal Arts. Please submit want lists and lists of materials for sale or exchange. Prompt replies assured. G. H. Arrow Co., 4th & Brown Sts., Philadelphia, Pa. 19123.

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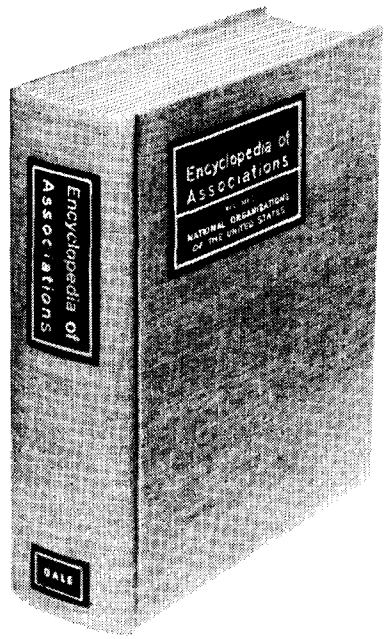

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