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Special Libraries, July-August 1963

Special Libraries Association

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SPECIAL LIBRARIES

JULY-AUGUST 1963, VOL. 54, NO. 6

The Weinberg Report—A Discussion . . .

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Business Library of Brooklyn . . . Computers

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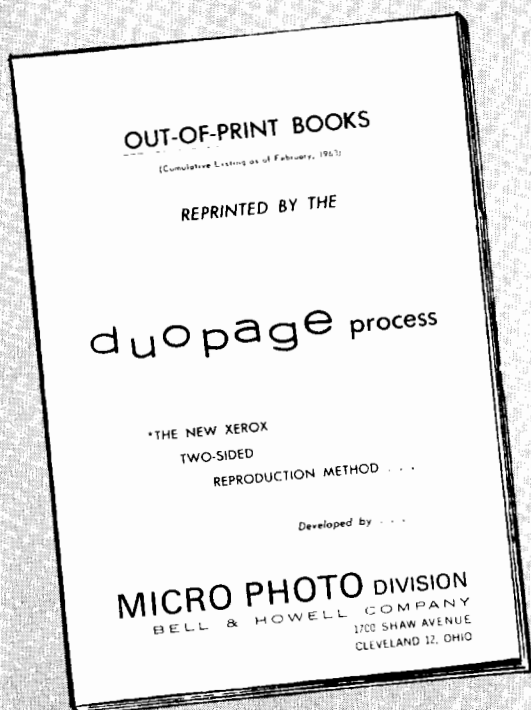
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SCIENTIFIC MEETINGS—Subscription, \$7.00; Foreign, \$8.00		U. S. sources of petroleum and natural gas statistics, 1961	6.00
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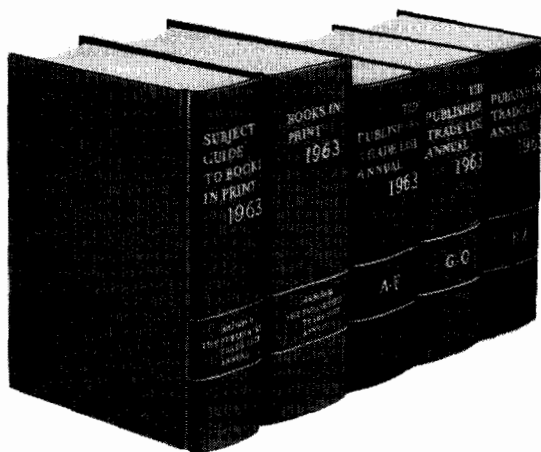
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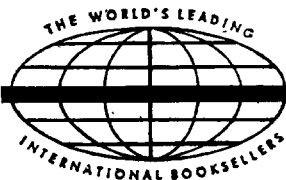
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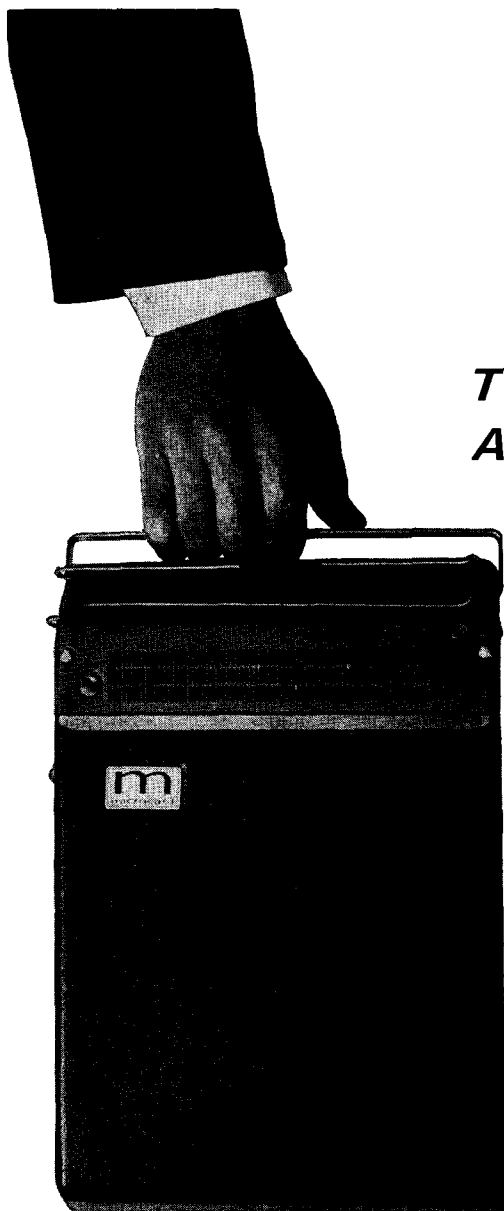
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Official Journal
Special Libraries Association

Volume 54, No. 6

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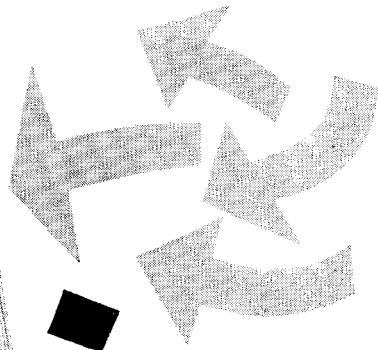
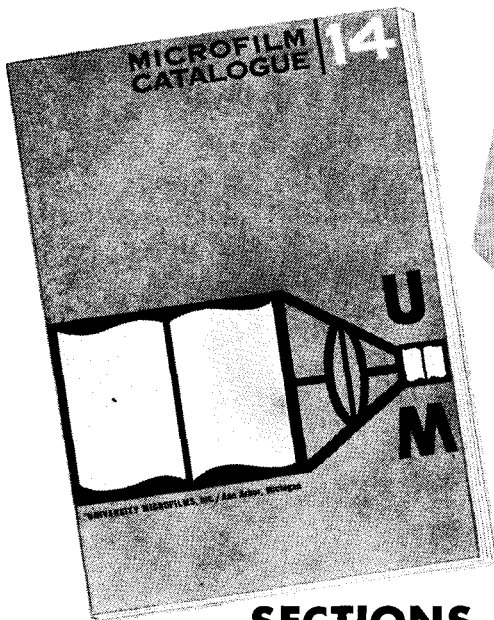
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A MOST significant accomplishment of the 1962-63 year of the Special Libraries Association has been the final definition of our Goals by the Committee and their acceptance by the Association. These Goals, basic to the over-all objectives of a professional communications and information program and service, will function as a most modern and scientific guidance system for a jet-propelled flight of our Association into Space Age Librarianship.

The Goals should be an integral part of the activities of every unit of the Association—especially its most important unit, the individual special librarian. Special librarians are in a unique position because they are so close to the research worker or user of information. In a jet age they must also be close to the rapid developments in documentation, using the products of the "information scientists," who theorize about information handling, to satisfy the needs of the research worker or the decision-making administrator, thus enabling him to move forward ever more rapidly into the space age. This is true of special librarians in advertising, finance, insurance, museum, publishing, social science, and transportation libraries as well as those closely related to science and technology, as evidenced by the fact that at the Denver Convention five non-scientific or technical Divisions built programs around mechanized methods of information retrieval.

The special librarian must be a creative catalyst, causing the desired reaction between new information techniques and the individual human being's age-old need for knowledge to make his contribution to progress; the special librarian is the key to relate the researcher and his tools.

There is ever-increasing recognition at the highest national level of the importance of information as an essential resource, of the value of its effective communication and handling, with accompanying concrete evidence that the field of information in general can expect considerably more support in the immediate future. Let our Association and each special librarian accept the challenge optimistically.

I am very conscious of the great honor you have done me in electing me to the highest office of Special Libraries Association. With the help of the Board of Directors, Committees, Special Representatives, Divisions, Chapters, Headquarters, and each member, and with the Goals as our guidance system, the aim of the Association for 1963-64 will be to strengthen our position among professional and scientific societies of similar or related interests by cooperative efforts with them; by taking an active part in developing curricula and establishing educational standards in the fields of special librarianship and information science; by promoting the publication of bibliographic tools and the formulation of new systems of information communication and use; and by conducting an active research program of analysis and evaluation of information systems and techniques to meet the needs of individual researchers and users of information.

MRS. MILDRED H. BRODE

Mrs. Mildred Hooker Brode: SLA's New President

MRS. MILDRED HOOKER BRODE brings to the Special Libraries Association a rich and varied background of the sort that makes SLA what it is—dynamic, vibrant, and keenly attuned to the needs of the time.

Long before she thought of being a librarian she laid a groundwork that could not have been better had she planned it as a prelude to her career as a technical librarian. She holds both a Bachelor's and a Master's degree in physics. Her first employment was at the National Bureau of Standards as a physicist in the Radioactivity, Atomic Structure and X-rays Division. This career came to a grinding halt as cupid's arrow shot her down. She married and for several years devoted her talents to homemaking. However, 1938 found her back on the active list preparing for her ultimate career in libraries by earning a B.S. in L.S. at Columbia University.

After a brief interlude as supervisor on a spectroscopy project for MIT, she joined the staff of the Dartmouth College library. At the beginning of World War II, Dartmouth organized a large V-12 program. They found it difficult to obtain instructors in physics and therefore organized a refresher course for prospective physics teachers. It attests to her knowledge and ability that in this nearly-all-male world at Dartmouth, she became the second woman ever to be on its faculty—the first was a teacher of Russian in World War I. Near the conclusion of World War II the U.S. Navy's David Taylor Model Basin looked for the best possible person with a science background and a library degree to organize and administer a technical library. Their search led directly to Mildred Hooker Brode. She joined the staff there in November 1944 and today is the chief librarian.

Never content with a single role, she immediately became involved in science library activities. SLA is well aware of this. Nationally she served as Second Vice-President in 1956-57. In the Washington Chapter she has been active in many capacities, which have included Chairman of the Sci-Tech Group, Chapter Treasurer, Program Chairman, and President. She has played an active part in the Military Librarians Workshops as well as in the Council of Librarians of the East Coast Naval Laboratories.

Even her hobbies are those that widen one's horizon. Highest on her list of desirable activities is travel in foreign lands, of which she has done much. Perhaps one of the most interesting was when she accompanied the Harvard-MIT Solar Eclipse Expedition in 1936, to Ak-Bulak near Orenberg, USSR, northeast of the Caspian Sea. This expedition included Russians, Czechs, and many nationalities, as astronomers from all over the world joined it. Following the official part of the expedition, they were given a six weeks tour of Russia, partly as a courtesy of the Russian Academy of Science.

When Mildred is not actively engaged in professional library work or travel, she enjoys concerts, ballet, theater, painting, and sculpture. In her spare moments she does some lovely water color painting.

Ruth H. Hooker
SPECIAL LIBRARIES

SLA Board of Directors 1963-64

President-Elect



William S. Budington feels that "SLA's particular potential lies in its members' activities at the interfaces of information transfer. Flexibility of mind and adaptability of procedure can and must be used in solving our various information crises." He has used this as a guide for his own professional life by visiting special libraries and exchanging ideas with Illinois Chapter colleagues whenever he can. Activities closely connected with this philosophy are his membership

on the Advisory Committee of Librarians for the University of Illinois Graduate School of Library Science, in the American Society for Engineering Education, and on several ALA committees. He is also a contributor to several professional publications. Mr. Budington served as SLA's Special Representative on the Joint Committee on Librarianship as a Career, Secretary and Chairman of the Advisory Council, Second Vice-President, and Chapter Liaison Officer. In 1957-59 he was at the helm of the Illinois Chapter and also has served it as Director and Bulletin Editor as well as being on the Program, Convention Executive, Publications, and Education Committees. Mr. Budington received a B.A. from Williams College, a B.S. in electrical engineering from Virginia Polytechnic Institute, and a B.S. and M.S.(L.S.) from Columbia University. He has been Associate Librarian at the John Crerar Library in Chicago since 1952. A patron of Chicago's cultural offerings, Mr. Budington also likes to pitch a tent in the Adirondacks or stay home to read and listen to his hi-fi.

Advisory Council Chairman



Charles Zerwekh, Jr. would have missed a special library career if he had not spoken to Mr. M. P. Doss of the Texas Company, whose enthusiasm for and knowledge of the field prompted him to combine his training as a chemist with special librarianship. Mr. Zerwekh has been active in fostering interest in special librarianship as a career as a John Cotton Dana lecturer at the University of Texas and through his Texas Chapter activities as Chairman of the Recruitment and Education Committee, a guest lecturer at Seminars on Special Libraries at

the University of Texas, and Chairman of the Annual Salary Survey, and President. In the Petroleum Section of the Science-Technology Division, he served as Vice-Chairman and Chairman. After receiving a B.S. in Chemistry from the University of Houston, he started work at Humble Oil & Refining Company as a research chemist. Later he became Patent Coordinator and then Head of the Library. In 1957 he became Head of the Technical Information Section, a position he held until July 1963 when he undertook new duties as manager of the records program at Standard Oil Company (New Jersey), which brought him to New York City. The lure of Egyptology, demonology, and cooking demand Mr. Zerwekh's leisure time.

Advisory Council Chairman-Elect



Mrs. Elizabeth M. Hutchins' interest in special libraries began while she was in the administrative end of the business world as an executive secretary. In 1956, after receiving her M.A. in L.S. from the University of Michigan, she began work at the advertising agency of Young & Rubicam, Inc. in New York City where she is now Assistant Librarian and where she met Hazel Conway, Head Librarian, whose "guidance, encouragement, and adherence to the principles of professional librarianship" were an important influence. Mrs.

Hutchins joined SLA the same year, and in the New York Chapter she became Directory Committee and Advertising Group Chairman, Adviser, and a member of the Hospitality and Nominating Committees. As a member of the Advertising Division, she has been Treasurer, Business Manager, and Feature Editor of "What's New in Advertising and Marketing" as well as Division Chairman. This past year Mrs. Hutchins was SLA Special Representative on the National Book Committee. She believes that "SLA, as an organization, has the responsibility to enable its members to make greater achievements in the organization and dissemination of information. Its members must be kept abreast of new techniques, and in spite of increased demands, must not yield to the pressures of quantity in lieu of quality." Theater, travel, boating, and tennis take up her spare moments.

New Directors

Helene Dechief came to the field of special librarianship after a career in the world of business and diplomacy. After receiving her B.A. from the University of Ottawa, she was social secretary for the Canadian Delegation to the United Nations in Paris and then Research Assistant to the Canadian Trade Commissioner in Brussels. Later Miss Dechief returned to school to obtain a B.L.S. from the University of Montreal Ecole des Bibliothecaires, and in 1953 she became Assistant Librarian at the Canadian National Railways in Montreal where she is now Head Librarian. Encouraged by the Vice-President of Research and Development, she was given "every opportunity to learn and develop our library." Miss Dechief's concern is for librarians to endeavor "to index in great depth and pool their resources" so that "every field of human knowledge could be covered. To find a uniform system of indexing, a group of conscientious and knowledgeable librarians and a suitable depository is all that is required. Machines will do the rest!" Miss Dechief, who is currently the President of the Montreal Chapter, has held the offices of Chapter Secretary, Treasurer, and Vice-President and as Membership Chairman, Bulletin Editor, and Chairman of the Transportation Division. When there is time to relax, it is at an easel or sewing machine.



Larin Studio

Mrs. Dorothy B. Skau, after receiving a B.A. from Newcomb College, Tulane University, and a B.S. in L.S. from Louisiana State University, worked in the New Orleans Public Library. Later she accepted the position of Librarian at the Southern Regional Laboratory of the United States Department of Agriculture. In 1944 she was taken to an SLA Science-Technology dinner where she met some special librarians from Washington "whose enthusiasm and professional zeal sparked my own." Encouraged by her husband and family and the librarians with whom she worked, Mrs. Skau joined SLA and pitched into its activities, becoming one of the founders of the Louisiana Chapter in 1946. Her energy and devotion to her career have earned for Mrs. Skau a bronze medal USDA Superior Service Award and the ALA Oberly Award for a bibliography on chemistry and technology. In SLA, Mrs. Skau was a member of the Membership and Nominating Committees and Chapter President, Bulletin Editor, Employment Chairman, and Consultant Officer. One of the things Mrs. Skau would like to see special librarians do is set up a program of co-operation in "interlibrary reference and loan and encouragement of cooperative acquisition programs." Mrs. Skau is an active thespian, reader, dancer, and collector.



EDITOR'S NOTE: For biographical sketches and photographs of Board of Director members who are continuing in office see "Special Libraries," July-August 1961, pages 292-4: Paul Riley and Edward Strable, Directors; and "Special Libraries," July-August 1962, pages 312-14: Ethel S. Klahre, Immediate Past-President, Ralph H. Phelps, Treasurer, Joan M. Hutchinson and Mrs. Elizabeth B. Roth, Directors.

Special Librarians and the Weinberg Report

AS IS HOPED FROM ALL CONVENTIONS, the recent SLA Denver meeting saw the initiation and fruition of many actions. Among these was a series of events relating to the Weinberg Report (*Science, Government, and Information: The Responsibilities of the Technical Community and the Government in the Transfer of Information*. A Report of the President's Science Advisory Committee, Washington, D. C.: Government Printing Office, January 10, 1963. 52 p. 25¢). Chaired by Dr. Alvin M. Weinberg, Director, Oak Ridge National Laboratories, the PSAC's Panel on Science Information came to far-reaching conclusions on the nation's handling of scientific and technical information. The Report is controversial in the eyes of many. More important, it presents a direct challenge to professional people engaged, at any stage and by any means, in the initiation, dissemination, storage, retrieval, and use of information. It is of primary concern to those dealing in science and technology, but its recommendations, if implemented, could not help but affect similar activities in other disciplines. These recommendations should be studied at first hand by ALL librarians.

The report is signed by the President of the United States and was sent in April to various associations with a covering letter from Dr. Jerome B. Wiesner, Special Assistant to the President for Science and Technology. Recognizing its importance, SLA President Ethel S. KJahre appointed an Ad Hoc Committee to study the Report. Its Chairman, Eugene B. Jackson, General Motors Research Laboratories, was also invited to prepare a review, which appeared in *Special Libraries*, May-June, 1963, p. 305. The Committee presented a panel discussion at the Denver meeting of the SLA Advisory Council on June 10, 1963. Mr. Jackson read the summary portion of the Report, and reactions were then stated by William S. Budington, John Crerar Library; J. Heston Heald, Defense Documentation Center; Dr. LeRoy H. Linder, Aeroneutronics; Gordon E. Randall, IBM; and Winifred H. Sewell, National Library of Medicine. Their comments and those of several others who spoke from the floor follow this summary of actions. It was apparent from audience discussion and lobby conversation that the implications and importance were of great concern to many and a certain uneasiness existed.

A number of conversations took place between key officers of SLA and the American Documentation Institute; the latter, also attending the Denver Convention, were similarly convinced of the necessity for responsive and responsible action. As a result of these conversations and the general concern, incoming SLA President Mildred H. Brode appointed a further Ad Hoc Committee (Mr. Budington and Chairman Jackson) to work with the ADI Past-President, President, and President-Elect. A letter to Dr. Wiesner was drafted, to be signed by President Brode for SLA and President Robert Hayes for ADI. This letter, approved by the SLA Board of Directors, acknowledged the penetrating observations of the Report and the urgency of the science information crisis. It informs Dr. Wiesner that SLA and ADI are studying ways and means for implementing joint action on the most pressing problems.

Such action is a potentially far-reaching development. Justification lies in the high origin of the Report, signed as it is by the President. It recognizes the necessity for positive action to preclude the by-passing of professionals in the information field, with consequent non-use of existing talents. The

breadth of such talent in the ADI-SLA spectrum is enormous and well-grounded; it must be fully exploited in the expanding scope of today's techniques. Marshalling these skills is one objective of the joint ADI-SLA study-action. Another is the identification of specific, immediate problem areas, with prompt, effective response to them. Other activities of mutual interest may also be initiated, and joint participation will be sought in future information handling studies by the government and also by and with other groups. It is anticipated that this summer the new Ad Hoc Committee will recommend to the SLA Board of Directors a plan of action, jointly evolved with ADI and possibly centering on a joint operating group. Through this medium it is hoped that ADI and SLA (and possibly other interested groups) may "jog" the information community, both within and without their own memberships.

Comments of the Panelists

WILLIAM S. BUDINGTON

I believe two points should be made at the outset concerning the Report: first, it is not a clarion call for the complete and immediate automation of our universe—though there are some pretty strong overtones—and, second, it is a real, cold-hearted, fishy-eyed, stand-back look at the entire information process. It attempts to pin down the desired results, then work back through the stages required to achieve these results. In so doing, it hits nearly everyone from originator to user and pulls few punches.

In our own context, the immediate response is likely to be defensive—what happened to the librarian? He is mentioned about six times in 52 pages and none too glowingly at that. The scientist and engineer are considered as the principal personages, for several possible reasons:

1. Several phases in the scientific information cycle require subject expertise, which librarians frequently lack. These occur in the initiation, screening, and analysis at the beginning and phases of interrogation of user and system at the end. In addition, where mechanization is appropriate, the engineer and scientist are required to give birth to and nurse the necessary gadgets.

2. By and large, many librarians have not in the past exhibited very far-reaching tendencies toward innovation and change. Once their systems have been devised, they may remain relatively static.

3. There may be a philosophy at work here implying that if the total approach to information handling is to be different, it had better be made by a different breed of cat.

4. The PSAC Panel is composed entirely of such cats.

Principal values of the Report appear to be its stimulus toward several goals. It provides and encourages attention of the most serious character to the information handling problem. It provides and encourages thorough scrutiny of existing and potential techniques. It provides and encourages wholehearted support toward bettering the situation—fiscal support, professional support, and philosophical support.

The support element also relates to the present allegedly poor situation. The Report states that administrators must now accord to information work a very much greater portion of support and status. At least some blame for past history belongs to administrators and users who attribute failure to librarians and their creaky procedures. In many cases, librarians and their techniques have been denied any opportunity for growth and development. Someone has said that the success of new systems may just be the result of using many well paid individuals who happen to be scientists rather than a few poorly paid and supported individuals who happen to be librarians. But on the other hand, librarians must certainly accept blame, if they have not pressed their case or lit the fires of imaginative progress.

The implications of the Report go far beyond its concern with science. It can be read omitting the words "science" and "technology" and lose no force whatsoever. The basic problems and possible remedies may be less pressing but are not unknown or incompatible in the social sciences nor possibly in the humanities. We exhibit unwanted provincialism if we consider this problem as strictly for the birdmen.

Thus, the Report calls for some of us to pull our heads out of the sand, others to re-

move theirs from the stratosphere. It is unlikely that we can, overnight, provide the scientific expertise called for in large degree. It is also unlikely that the engineer and scientist can acquire overnight much skill in information organization and processing. But in some matters we should already be firmly grounded, in particular the goals of the information process. This is our business. We have other skills in acquiring and manipulating materials.

But we are faced with several challenges. One is education and training. Another challenge is recruitment of persons with the talent, the curiosity, and the determination our future welfare demands. Still another challenge is the basic research needed for the very foundations of the brave new world, particularly in the transfer or communication of properly selected information and the manner of its use.

Special libraries and librarians have many things in their favor—an aggressive policy of service, closeness to their users, a history of cooperative effort, and possibly access to funds if the potential is proved. As to the special librarian's place in the Weinberg scheme of things—there are many "mansions." There seems to me to be no elements in the proposals that could not be competently provided, organized, or directed by a librarian, given certain factors: the necessary expertise at the given level, recognition for the need of specialists of many kinds, and of the interrelationships of the organizational and administrative process.

J. HESTON HEALD

For my discussion permit me to deal more specifically with recommendations A-1, A-2, A-3, and A-4 of the Report. These recommendations deal, in general, with a new concept in information handling and place a challenge directly on the technical community and the professional societies. Lead statements for these recommendations are: A-1. *The technical community must recognize that handling of technical information is a worthy and integral part of science.*

A-2. *The individual author must accept more responsibility for subsequent retrieval of what is published.*

A-3. *Techniques of handling information must be widely taught.*

A-4. *The technical community must explore and exploit new switching methods.*

Actually, under these broad headings are many recommendations and guiding concepts that definitely describe a new pattern in the conduct of handling scientific literature. For example, in discussing the specialized information center, the Weinberg Panel believes it "should be primarily a technical institute rather than a technical library." This indicates a need for something different, something new, something that exists today in only a relatively few places.

There seems to be added to the jobs of cataloging, indexing, abstracting, and bibliographic and reference functions (long the trademarks of the librarian), the arts of evaluation, synthesis, and information transfer networks, which add the skills of the scientist, the engineer, and the specialist whatever his field may be. In fact this added group has received a higher degree of emphasis, probably because the Panel would place upon the scientist a responsibility that, heretofore, he has normally left to someone else. But the Panel is telling us that times have changed and that the scientist himself *must* take an interest in what happens to the information he generates. In so doing he is to have a mixture of skills: "Familiarity with modern techniques of information processing is necessary for the modern scientist and engineer. Our colleges and universities must provide instruction in these techniques as part of the regular scientific curriculum" reads the report.

The Panel emphasizes two types of service from the world of knowledge. They are: 1) the specialized information center, and 2) the central depository. The first is likened to the retailer and the second to the wholesaler. The first would require the assistance of professional scientists and engineers who would keep abreast of their specific subject, synthesize it, and make state-of-the-art evaluations and critical reviews. The other would be the collecting point, where recorded knowledge, in whatever form of document, would be bibliographically controlled, stored, and retrieved as needed.

This concept, of course, puts these two services very close to each other, and each must know the ingredients of the other's trade.

For a number of years now we have seen this relationship growing with increasing emphasis. Actually, it has always existed to some extent, but the growing impact has now forced the scientist and the special librarian onto common grounds in a very emphatic way. The problem is that each has a shortcoming in the other's skills.

If, as Samuel Sass has said, Gresham's Law can be applied to the library profession, then I believe it is equally true that it applies to the scientist.

Today a growing number of scientists, with little or no library training, have contributed to library-type skills through the development of mechanized techniques. Mathematicians, logicians, electronic engineers, computer programmers, and systems analysts are spending considerable time in the automating, or trying to automate, such skills as cataloging, indexing, abstracting, bibliographic services, and the more sophisticated art of information retrieval.

On the other hand the special librarian, often without scientific training, is faced with the problems of dealing with science and must provide a specific service in a field for which he often has little background. More important, he is now finding himself faced with mechanical tools, capable of doing many things for him; but if he is not acquainted with those great capacities, he cannot wisely use them.

All of this—and there is much more—makes me come back to my original point. The four recommendations of the Panel that I have referred to clearly indicate that a new look is needed, and with the Weinberg Report we will soon see it take definite shape.

This amalgamation of scientist-librarian has given rise to the terms "information science" and "information scientists." Last October, long before the Weinberg Report appeared, I wrote the SLA President, Ethel Klahre, and suggested that SLA consider seriously and quickly its new role in this new field. The theme of this Convention, "Education for Special Librarianship"; the four working papers, "A Look to the Future";

the work of Winifred Sewell's Goals for 1970 Committee; and this panel discussion, all signify positive action.

SLA has a right to be concerned. It was born out of a need for specialized treatment of knowledge. The new "information science" is really only an added emphasis to the original concept. Hence, I believe it is the Association's true responsibility to change gears wherever necessary to accommodate this added emphasis. Here, then, are the more important areas that I would recommend:

1. College courses leading toward a degree in information science should be drawn and arrangements for proper accreditation made (there are already good beginnings here). This should be followed by recognition of information science graduates into active membership, if otherwise qualified.
2. Standardization or compatibility in the building of vocabularies, the writing of abstracts, the preparation of indexes, and the actual writing of technical reports need serious attention.
3. Automation and the many facets of mechanized techniques should be recognized as offering great possibilities in the information problem. Likewise, they must be understood. Both strength and weakness exist. SLA might well point up areas where development in mechanized techniques are needed. We need specialists among us to devise the "software," i.e., the methods of analyzing, indexing, and programming for successful information retrieval.
4. There is a growing requirement to more fully understand the needs of the user. This is certainly a function of "Putting Knowledge to Work."
5. An information transfer network, as recommended in the Weinberg Report (A-4), should be given continued surveillance by SLA. This is almost certain to become an integral part in the future of information science.

If these steps are taken by SLA, there will be need for considerable missionary work and advertising. Every step possible should be taken to let the world know that information science is a part of special librarianship and that the information scientist is a special librarian.

LEROY H. LINDER

As a member of the SLA Sci-Tech Committee on Government Information Services, I consider it appropriate that I restrict my concern largely to a few of the recommendations pertaining to government agencies. Our Committee is vitally interested in this Report and in developments that may occur as a result of it, but my remarks at this time are my own and do not necessarily reflect those of the other Committee members.

The portion of the Report with which I am concerned at this time is largely a reflection of the work of the Special Task Force of the President's Special Assistant for Science and Technology. This group, which is listed on page 44 of the Report, decided not to study the details of information retrieval but wisely limited its study to the over-all information systems used in the government. They worked diligently for several months, they used interviews in depth, and they sought to study information at all levels from the bench scientist on up.

Most of the recommendations of this Task Force were embodied in the final Report. These included the recommendations that: "Each Federal agency concerned with science and technology must accept its responsibility for information activities in fields that are relevant to its mission. Each agency must devote an appreciable fraction of its talent and other resources to support information activities;" ". . . each agency should establish a highly placed focal point of responsibility for information activities that is part of the research and development arm, not of some administrative arm, of the agency;" ". . . Government information systems should be kept under surveillance by the Federal Council for Science and Technology;" and "The various Government and non-Government systems must be articulated by means of . . . information clearinghouses. . . ." All of these seem to me to be recommendations worthy of our support. However, omitted from the final Report was the recommendation that "Impedances to the flow of information need to be removed." By impedances the Task Force meant specifically security and proprietary rights. The security problem has many ramifications with which I am sure

many in this audience are familiar. But regarding proprietary rights we find ourselves in the peculiar position of having the AEC take title to all information generated by its contractors while the DOD allows its contractors to exercise their full proprietary rights.

This last matter, removing impedances to the flow of information, seems to me to be a suitable topic for comment and discussion by this audience so that we may jointly achieve a better understanding of this problem and, hopefully, that we may arrive at some possible solutions, which could be forwarded to appropriate Government representatives for their consideration.

GORDON E. RANDALL

There are three aspects of the Report on which I would like to comment.

First, the imprint. This is not the report of a minor department of a government agency. This is not the report of a subcommittee of a Congressional committee. It carries the imprint of The White House and is signed by The Chief Executive Officer of the United States, The President. This is indicative of its importance and of the weight the Report should carry.

Second, I am proud to be a member of an organization whose Executive Secretary, Bill M. Woods, recognized the importance of the Report and arranged for its consideration by the membership at this meeting tonight. Except as the Report is read and discussed by the members of associations, groups, and organizations, its impact will be less than its potential.

The third point you won't like. I don't like it either. It is the image of the librarian that the Report portrays.

The first time I read the Report I was indignant. Whenever, on those rare occasions, the word "librarian" was used, it was used in the sense of the passive archivist, as a storekeeper of literature. When the literature was processed (bibliographically described, indexed, or abstracted), it was credited to the documentalist. And when there was intellectual interplay between man and the literature, as in information retrieval, it was accomplished by the literature scientist.

This is not my concept of librarianship.

And then I read the report again—and parts of it another time. I considered it more dispassionately and rationally. The image of the librarian was honestly reported as the members of the Science Advisory Committee and the writers of the Report saw us. We can't point our finger at them and derisively say it isn't so.

We, as individuals and as members of the library profession, must accept, in varying degrees, a measure of the responsibility for our image as they see it. The image is our fault, not theirs.

At the turn of the century and for the first couple of decades of this century, the leaders of our profession, for the most part innocent of the advantages of formal library school training, brought the profession to new heights. We approved of what they had done, and we enshrined the results in tradition, in library school curricula, and in our professional associations.

Even our Association became conservative, and we excluded from meaningful membership all who do not work in a library. It is only within the last year that the SLA Bylaws granted active membership to one employed not in a library but in an information center. And I still doubt that we really mean it.

Librarianship is more than the traditional work in a library—it encompasses all aspects of the information activity. We are again on the verge of the same type of achievements that our predecessors accomplished half a century ago. If we turn our eyes from the past, divorce ourselves from tradition, and become a participant in meeting the challenges implied by *Science, Government, and Information*, we will make librarianship meaningful and have no cause for concern about our image.

WINIFRED SEWELL

The Weinberg Report has buried some misconceptions, such as the idea that a machine can solve all our problems or that good scientific communication is a substitute for good management. Inevitably, through omission or commission, it has allowed some misconceptions to remain.

We applaud the recommendations of the

Committee that would have each scientist be educated in the techniques of information handling and that would have him spend half his time in creating new information and half in digesting information from others and communicating his own. But the whole theme of this SLA Convention demonstrates that we recognize that education in information handling techniques—like all other education—must be continuing. Perhaps one of the implications of the Report for librarians is that we must take an active part in providing for the continuing education of the scientist in new developments in information and communication.

Though the Report rarely mentions the library, there seems to be some confusion when it does. On page 29 there is a positive and forward-looking statement: "We also recommend that secondary school guidance officers learn more about career opportunities in modern technical librarianship. The library profession has so far given only a token nod to the challenge presented by the radically new systems of organizing, storing, and retrieving technical information. We believe this shortcoming would be overcome if more able scientists and engineers went into technical librarianship."

Yet on page 33, the Report says "knowledgeable scientific middlemen, who themselves contribute to science, are the backbone of the information center; they make an information center a technical institute rather than a technical library." The distinction is also made that the technical information center retrieves information rather than documents.

This apparent contradiction would appear to stem more from a lack of knowledge of today's special libraries than from any wish to downgrade them. Certainly virtually every special library has supplied information as well as documents, and many special librarians would qualify as "knowledgeable scientific middlemen." Any difference between the present technical library and the proposed technical information center would appear to be more quantitative than qualitative.

What directions should Special Libraries Association take in response to the Weinberg Report? I can suggest three:

1. We should send a carefully written document to the Panel emphasizing the present activities of the Association and the importance of the special library in a technical information center program.
2. As individuals we should use the technical information center concept to advance our own programs of making our libraries more closely satisfy the total information requirements of our organizations.
3. One of the areas of needed research about which we have been talking at this Convention is in the most economical use of manpower to obtain effective information consumption. We need a fresh approach to the problem, and Special Libraries Association is the logical group to provide it.

Comments from the Audience

JOAN MORRIS, Boston

According to the Weinberg Report, the present-day librarian or information specialist will have to give up his work to a scientist who will evaluate the work of other scientists while the special librarian steps down to work of a clerical order.

How such a report can be accepted so easily remains a matter of surprise. It either wholly disregards, or regards with insufficient attention, certain facts obvious to anyone who is working in the field of science—to wit, scientists capable in an area specialty have neither the time nor the interest to be information specialists for the nation.

Area specialization among eminent scientists is now so deep that "hard" scientists have become myopic in outlook, eclectic in their own reading. No really creative scientist has the time or interest to do more than explain his own work and findings in publications. With a little editorial pressure he might be induced to aid the special librarian by selecting accurate "descriptors" for each of his own articles, but beyond this he will hardly go willingly.

No one denies that scientists often read the works of other scientists avidly—but they do not read to evaluate impartially for the scientific world at large. They read with a *slanted* interest. The truly impartial evaluators are the special librarians. Not only do they evaluate a scientist's offering on the

basis of a wide acquaintance with the other offerings in the field, but they evaluate constantly on the basis of relevancy to the needs of their particular clientele. The special librarian is not only an habitual evaluator; he is a purposeful one and an impartial one.

If the people responsible for the Weinberg Report are concerned with sounder evaluation of the vast scientific information output (as I certainly believe they are), then they might well consider ways and means to enrich the subject backgrounds of those who want to do the work of evaluating this material. Assistance with graduate degrees and formation of special institutes for refresher courses or advanced study might well be undertaken by an interested government.

Better education of those interested in evaluation will help the information specialist to understand better *what* he controls. But the *how* of control—the multiple functions of selection, acquisition, classification, cataloging, announcement, and dissemination—are really *his* business. In this business, he is the specialist, not the scientist.

WILLIAM K. BEATTY, Chicago

There is nothing practicable in the current scientific information center that is not contained in modern special librarianship. The special library of today, if it is properly financed, staffed, and housed, is able to provide information service of the highest order. The Weinberg Report will, hopefully, draw attention to the past failures in giving this support to special libraries.

Most of the questions raised in the Report are answered by Ralph Shaw in an article in *Science* (May 10, 1963, p. 606-9). Mr. Shaw points out that we are equating improvement with change and emphasizing the means rather than the end. He calls for a careful and detailed study of "search strategy" and of the various methods of handling information. Answering questions by a computer "is not a miracle," it is one of many modern methods of processing information. The Weinberg Report can become a most important document if it opens the eyes of government, administration, and librarians to the most efficient methods for handling the information explosion.

CHARLES H. STEVENS, Lexington, Mass.

It is clear that there has been some misunderstanding by the participants on the nature of the Scientific Information Center as proposed in the pamphlet. These centers—and many of them are already in existence—have three interrelated functions. The first is to collect information, documents, and data on the subject of interest. The second is to analyze, correlate, and synthesize the information gathered. The third is to publish the results of the analysis, correlation, and synthesis in forms that will be most useful to the scientific community.

There is a continuing need for more of these centers, and it is obvious that librarians who understand the functions of such centers can be the prime movers in organizing and developing these centers to meet the various subject needs that become apparent. To amplify, the librarian should approach management with an understanding of the three functions of a center and request the formation of a center, utilizing the scientific personnel that would be necessary for analysis, correlation, and synthesis and seeking the support of publications personnel necessary for writing and publishing results. Such an activity would have its foundations in the library as the agency for collecting the available world literature on the subject. Taking this step of leadership should assure the librarian that he will not be left out of the picture or relegated to an unimportant position as the centers develop.

CHARLES K. BAUER, Marietta, Georgia

We have heard the criticism that the Weinberg Report mentions the librarian only about six times. Have we ever given any thought to the possibility that we are to blame ourselves? I noted with amazement, when Mr. Jackson asked for a show of hands of those not familiar with the Report, that more than one-third of those present have not familiarized themselves with the contents of this important document. This is an indication that we, who should be information minded, have not kept up with our responsibility of keeping abreast with the latest developments—not even in our own field. I agree wholeheartedly with Mr. Randall.

I feel the Weinberg Report is an excellent and true paper. It has set forth the lack of information exchange between the scientist and engineer in which we, as librarians, failed to act as the middle person. The justification for having a library or technical information center is a responsibility that rests with us. We must be the salesmen and sell ourselves, our profession, and our activities to management. The more active we are, the more successful we will be in selling the library or the technical information center to management. This is not an easy task considering that in most cases we are an overhead burden to management.

We are, therefore, lucky and fortunate that we now have at our disposal a document such as the Weinberg Report. This Report, bearing such important and official approval, is the best sales instrument we ever possessed, and it is the best tool we can and must use to sell management on the need and requirements of a library or a technical information center for the exchange of scientific data. This is what the Report spells out; this is what we should show management to buy.

For those who are responsible for an information center devoted to national defense, this Weinberg Report is another tool and blessing in disguise. As we all know, research data for national defense can only be obtained if one can prove his "need-to-know." The acquisition of classified data depends on a Field-of-Interest Register, which must be approved by the cognizant contract agency. It is here where we are occasionally faced with a road block for the release of scientific data for our scientists and engineers. Using the Weinberg Report, which spells out that a major share of the burden for avoiding a crisis in scientific and technical development and information rests on the federal government, which now supports three-fourths of all scientific and technological research in the United States, will help in many cases to overcome the reluctance of government agencies to release needed data. It is an advantageous tool for librarians to use to acquire scientific data. We could not ask for any better sales brochure, but we must use it wisely.

Circulation Control by Computer

R. W. GIBSON, JR., and G. E. RANDALL, IBM Research Library

T. J. Watson Research Center, Yorktown Heights, New York

THE APPLICATION of machine techniques to library processing promises savings in time, money, and personnel and an increased efficiency in library operations. To investigate some of the potentials of mechanization, the Thomas J. Watson Research Center Library (commonly called the Research Library) started using an IBM 1401 computer for circulation control early in the fall of 1962.

The experience of the first six months of operation not only warrants the continuation of the circulation control system but also encourages experimenting with the mechanization of other library procedures.

Like most IBM libraries, Research had used a punched card circulation system for years. The circulation card was machine produced, but the two-card circulation system was essentially a manual one. The inclination to give a complete historical resume of the development of the present system will be curtailed; it is suffice to say the original system was justified on the basis of library operations at the time it was devised. Impetus for the establishment of the computer-based system was supplied when the Research Library initiated a regular recall of overdue books and the library staff was faced with the departure of the assistant who had done the circulation work.

Data Punched into Cards

Circulation cards for both the original and the present system are a by-product of the abbreviated shelflist card that is made at the time a book is received. The complete call number, including year, volume, and copy number, is punched in columns 1 to 30 of an IBM card, the last name of the author or an abbreviated form of the corporate entry is in columns 31 to 47, and a short title is punched from columns 48 to 68.

This shelflist card is keypunched and then duplicated twice—once for the author index to the shelflist and once for the circulation card. Incidentally, the shelflist cards, in addition to being the source documents for the circu-

JULY-AUGUST 1963

RESEARCH LIBRARY
IBM RESEARCH CENTER

CALL NUMBER

AUTHOR

TITLE

794924

MAN NO.

12-240

ROOM NO.

3-5-63

DATE

990-0029-0

Figure 1: Circulation charge card.

lation charge cards, are used to print a book shelflist and an author index, which have proven useful in the cataloging activity (which has a complete, manual shelflist) as well as in the reference and order areas. While the shelflist and its author index can be printed on the IBM 407, the punched card record has been transferred to tape and the last issue of the shelflist was printed by

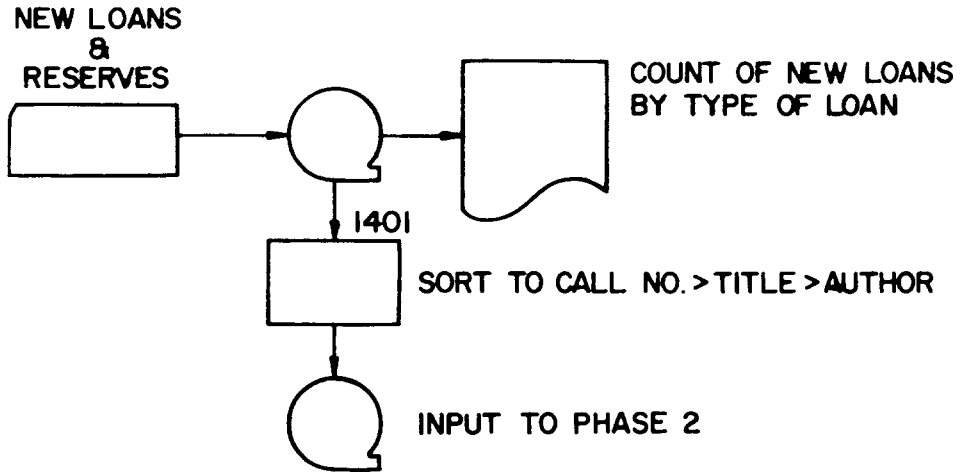


Figure 2: In phase I new loan and reserve cards are converted to tape.

the 1401. The tape was then sorted by author, the entries for added copies were erased, and an author index was printed from the shelflist record.

The record of a loan is put into the system when a borrower writes his name and identification number on a circulation charge card (Figure 1). The man number and date due code are punched into all new loan cards once a day. The date due code is a four-digit number with the first digit indicating the type of loan, the second, the year, and the third and fourth, the week the material is due.

The Research Library has several types of loans that are coded as follows:

CODE	TYPE LOAN
1	Two-week loan for new books for which there are multiple requests
2	One-month or normal loan
3	Six-month loan for books considered as office tools
4	Departmental loan
7	Renewal of one-month loan
8	Renewal of six-month loan
*	Book requested and reserved for someone.

The date due code 7312 represents a loan that is a renewal of a one-month loan (7), due in 1963 (3) during the 12th week of the year.

The system provides three basic records of items on loan: 1) the file of circulation cards arranged by author for each item on loan; 2)

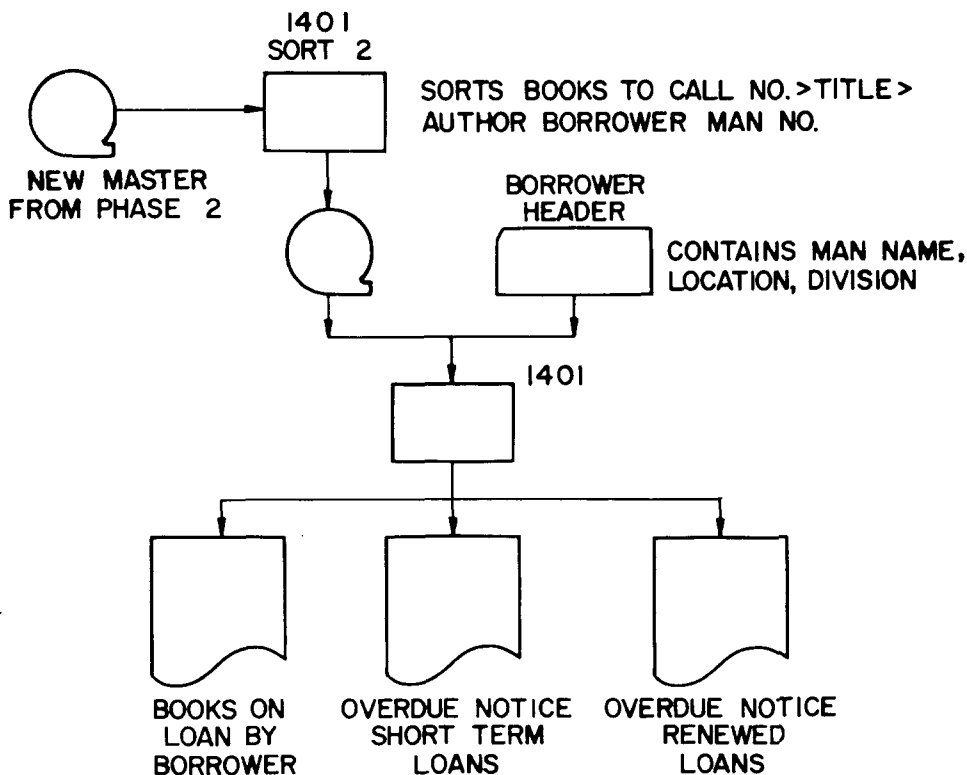
a printed list, also arranged by author, of all books on loan, which identifies the borrower by identification number and indicates the date due; and 3) a printed list, arranged by borrower, which records all of the items charged to him at one time. The circulation card has no borrower information on it; it is merely the new charge card that is slipped into a book when it is returned. More details of these records will be provided as the system is explained.

Once a week all of the new charges and the file of circulation cards (or charge deck), which represents outstanding loans, are taken to the computer room, which has on tape a complete record of all loans at the time the last circulation run was made.

Three Phases of System

In phase I (Figure 2), the new charge cards—the ones signed by the borrowers and keypunched with their identification numbers and due dates—are put on tape. The tape is sorted by author and put into exact alphabetical order to provide a tape record of new loans.

In phase II (Figure 3), the charge deck is checked by the computer to determine that it is in the exact alphabetical order. This is necessary because occasionally the wrong card is manually pulled to slip a returned book, recognized as the wrong card, and then manually refiled—out of order. This error in sequence can "confuse" a computer, so the



SENT TO BORROWER

Figure 3: In phase II new and former loan tapes are merged to produce up-to-date circulation records.

correctness of the alphabetical order is machine checked. The original tape record of loans—the one resulting from the previous computer run—is brought up to date by erasing the record for the books that have been returned. This is done by comparing the charge deck with the tape. If there is no card for a book on the tape, it means that it has been returned, and the tape record is removed for that book. The old loan tape and the new loan tape are then merged. The computer at this time has a tape record (arranged by author) of all items on loan, with

the borrower's identification number and the due date for each item on loan.

The computer then produces two of the three records that are part of the circulation system. It prints out on the high-speed 1403 printer, at a rate of 600 lines a minute, a list (Figure 4) of all books on loan, arranged by author and showing the borrower's identification, call number and the date due, just as they are recorded on the tape.

The computer also punches a new circulation or charge card for each item on loan as shown in Figure 1. The computer only

BOOKS ON LOAN-BY AUTHOR			05-07-63		PAGE 6		
AUTHOR	TITLE	CALL NUMBER	LOANED TO	DUE DATE	# LOANS		
AZAROFF	INTRO-SOLIDS	QD905.A9 1960	COP. 3	726700	8328	1	
AZAROFF	INTRO-SOLIDS	QD905.A9 1960	COP. 4	200620	8340	2	
AZAROFF	POWDER METHOD IN X-R	QD945.A9 1958		726700	8328	2	
AZAROFF	POWDER METHOD IN X-R	QD945.A9 1958	COP. 2	200620	8340	1	
BAHRITT	SEWERAGE AND SEWAGE T	T0645.B3 1958		884810	3332	2	
BABIKOV	ULTRASONICS AND ITS I	QC244.B2 1960		958364	7312	1	
BACCN	NEUTRON DIFFRACTION	QC721.B117 1955		770694	3317	1	

Figure 4: Printout of items on loan, arranged by author.

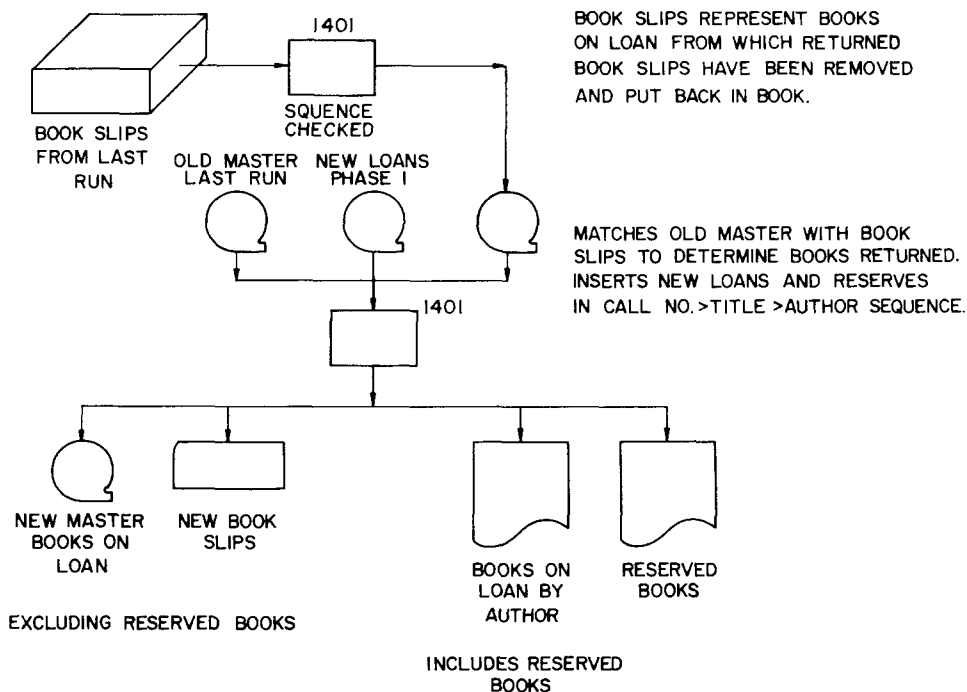


Figure 5: In phase III the loan tape and address cards are matched to produce borrower records and overdue notices.

punches the holes in the card, unlike a key-punch machine that both punches the holes and then "interprets" the holes by printing the appropriate letters or numbers at the top of the card. The computer-produced cards are subsequently interpreted by a machine designed to do this and called, strangely enough, an interpreter. It would be possible to punch cards for only the new loans and to interfile these into the outstanding loan file. However, this would slow down the computer just enough so that it is cheaper to punch a completely new deck of charge cards.

In phase III (Figure 5), a deck of address cards is put into the computer. These cards show the identification number of each Research employee, his name, and his office address. The tape of loans is then sorted by the borrower's identification number and matched with the address cards. In this sort three tapes are produced from which print-outs are made. First a list of borrowers is produced, which shows their identification numbers, names, and office addresses, plus a list of all books charged to each of them. In addition, a recall, or overdue notice (Fig-

ure 6) is printed for each employee who has overdue books charged out. These notices have only to be folded and stapled so that the borrower's name and address are showing, and they are ready for mailing.

Recent Innovations

Since its original inception, two advantageous changes have been built into the program. The first time a book is loaned, the number "1" is recorded in column 80 by the computer. Each succeeding time that same book is loaned, the number is automatically increased by one. The number in column 80, therefore, represents the number of times the book has been loaned. This record will be very meaningful in a year or two when the collection needs to be weeded.

The circulation system also shows those books that are on the reserve list or have requesters waiting for them. New books are displayed in the Research Library for a week before they can be borrowed. During this period a number of requests are made. Each request is registered on a circulation card with the identification number of the bor-

118890

CONNELL

RA

473

25-1

IF YOU STILL NEED ANY ITEM LISTED BELOW WRITE
 RENEW AFTER THE ITEM AND RETURN THIS NOTICE
 TO THE RESEARCH LIBRARY. PLEASE RETURN ALL OVERDUE
 ITEMS PROMPTLY AS THERE MAY BE OTHERS WAITING FOR
 THE ITEM. THANK YOU FOR YOUR COOPERATION.

LINHART

PLASMA PHYSICS

QC711.L35 1960

2316

Figure 6: A typical overdue-renewal notice printed by the 1401 computer and sent to borrowers.

rower in the proper place. At the time a book is sent to the first requester, a duplicate card is made for each other requester. Instead of a date due, an asterisk and the sequence number of the request is punched in the card. The circulation record, arranged by author and produced on the 1403, prints a record of the requests for the book just in advance of the record of the loan of the book.

During phase I, a separate record of all requested books is printed, which shows all of the requesters for that book. This is an excellent guide for determining the number of additional copies, if any, that should be purchased.

Borrowers note on the overdue notice their request to renew titles they desire to retain. The computer prints "Not to be renewed" at the end of the line for each type "1" loan, thereby alerting the borrower that that book cannot be renewed since others are waiting for it.

Advantages of Machine-System

The advantages of the system are manifold. First, it reduces human error. All cards are arranged and put into the proper order by the computer; consequently, there just aren't human filing errors. Most snags in a circulation system are caused by misfiling of the original charge card or by pulling the wrong card when the book is returned. There isn't any misfiling in the computer system.

In organizations where the books charged out to any one individual must be readily found, a two-card charging system is common. When a book is returned, the records for it must first be pulled from one file, then the second. There are frequent errors in pulling the second card.

In a manual system, some method of flagging requested books must be found so that

follow-up action to route the book to the next requester is possible. The machine system can make these items obvious.

Recalling overdue is a process that also invites human error. In reviewing charge cards to determine which items are overdue, dates, names, and addresses can be misread. To prepare an overdue notice in a manual system requires that information be reviewed, read, and copied by error-prone humans, but in a machine system, the procedure is automatic and a by-product of circulation record maintenance. And overdue notices are written at a rate of 600 lines—not words—per minute.

One of the more onerous library chores is counting. Recording circulation figures in the various categories into which librarians subdivide them can be boring and subject to gross errors of accident or intent. The machine doesn't get tired, nor does it subconsciously strive to better last week's figures.

To give the reader some basis for evaluating the system employed by the Research Library, a few numbers may be helpful. Only books are loaned; the journal collection is kept intact for use solely within the library. Of the 20,000 books in the collection, the number on loan has consistently run between 4,300 and 4,500 for the past several months. The weekly circulation averages 500, of which 300 are new loans and 200 are renewals.

The Research Library is a service organization and exercises no disciplinary control over its borrowers. It imposes neither fines nor threats of recrimination. Recall of books is not done to enhance the library collection but to improve the services and resources available to other members of the Research staff. We elicit but don't demand cooperation.

In spite of this, or perhaps because of it, the overdue recall system has been successful.

Recalling loans on a regular basis was initiated at the time of an inventory two years ago. The immediate result was an increase of 25 per cent in the library resources readily available to library users. The fact that the total number of outstanding loans has remained relatively constant does indicate that loaned books are returned. This should not be construed to mean that all borrowers dash to the library with the evidences of their delinquency whenever an overdue notice is dropped into their in-boxes. Every other week we send out about 350 notices covering 1400 overdue books.

Future Improvements and Modifications

Were we to start the system anew with the benefit of our present hindsight, we would make some changes in the present system, just as we found that we had to make changes in the system with which we started.

The 80 columns of an IBM card impose a limitation on the amount of information that can be recorded. The original charge card and shelflist system set aside 30 columns for the call number, which is the unique identification for each copy of a book in the collection. The components of the call number are not relegated to specific columns. This makes it extremely difficult to machine sort by the Library of Congress classification number. When appropriate, the system will be revised so that the various elements of the call number will be recorded in specific columns of the card.

To squeeze the maximum amount of information into the limited area, words were abbreviated. In spite of the inclination to abbreviate American as "A" in ASTM, or "Am" in Amer. Inst. Pub. Health, "Amer" in Amer. Hospital Assn., or write it out as in *American Men of Science*, if the entries are to be sorted by machine, abbreviations must all be identical. Furthermore, abbreviation must put the word in the same order that it would be in if it were spelled out. This requires the use of some rather unusual forms, which would hardly be countenanced by a dictionary, i.e., "British" must be abbreviated "Brits."

The computer is more demanding of exactness than the most rigorous of cataloging

instructors in library school. One of the by-products of the use of machines has been a considerable improvement in the accuracy and exactness of library records.

In addition to the changes that will be made, experience with mechanization has provoked consideration of other possible deviations from accepted library practice. Using the call number as the unique identification of a book may be an expensive luxury in a machine system. The Research Library has set aside 30 columns for the call number. Probably 14 numbers would be quite adequate to indicate shelving order, and a six-digit identification or accession number (adequate for a million volume library) would still leave an additional ten spaces for recording information.

The use of a rigid Cutter number system would permit a rough alphabetic sort to be made on a four- or five-digit basis rather than on the 17 digits reserved for the author entry. This modification is not necessary if all sorting is to be done on a computer but would offer savings if any alphabetization were to be done on EAM equipment.

We have learned much from our six months' experience with the computer. Some of the lessons are being applied to the production of a holding list of journals. We are looking forward to experimenting with other applications of the record we now have, such as printing the call number on a label to replace hand lettering, and printing rather than typing a label for the charge card pocket. A future goal is the initiation of a complete machine record at the time of acquisition so that the purchase order and the catalog cards would be produced from the same source deck of punched cards.

The activities of the Research Library in mechanizing the circulation system have been made possible through the cooperation of Mr. A. L. Bochner, Systems Analyst for IBM Management Analysis and Planning System (Project MAPS). The circulation system is an integral and operating part of Project MAPS in its role of performing systems analysis, programming, and data processing functions for all administrative areas in IBM Research.

Brooklyn's Business Library— 20 Years Old

SYLVIA MECHANIC, Business Librarian

Brooklyn Public Library, Business Library, Brooklyn, New York



THIS YEAR OF 1963 marks a number of anniversaries for the Brooklyn Heights Branch (formerly the Montague Branch), which for the past 20 years has housed the Business Library, a specialized unit of the Brooklyn Public Library system. Exactly 140 years ago, in 1823, a William Wood thought a library should be provided for working boys, and so the Brooklyn Apprentice's Library Association was formed. Books were donated and gathered together from house to house in a wheelbarrow. The following year the cornerstone for this library was laid by General Lafayette, and Walt Whitman records that he, as a child of six, was present at the ceremonies.

The library made several moves and underwent at least four name changes in its first 80 years. Finally, in 1903, it joined the Brooklyn Public Library. In its multi-storied building on Montague Street, it continued to expand and serve as the reference center for the whole library system. However, as the borough grew, as population shifted, and as more and more Carnegie units were erected, it was evident that a new, larger, better located Central Building was needed—a need that was fulfilled in 1941 with the opening of the Ingersoll Building at Grand Army Plaza. No longer did the Montague Branch head the list of libraries. Books, periodicals, newspapers, and serials that had accumulated for over a hundred years were transferred to the new Ingersoll Building, where they still serve as the nucleus for the entire reference collection.

It soon became apparent, however, that the fine resources in the area of business must remain in the downtown Montague Branch since the bulk of Brooklyn's business

and financial firms are concentrated here. In 1943, exactly 20 years ago, the Business Library was opened on the second floor of the Montague Branch. Here it continued to grow and to serve an ever increasing public until old age finally condemned an outmoded, inefficient building. In 1960 this Brooklyn landmark was demolished, and construction started on a new building. For two years each unit operated in separate temporary quarters until, on June 1, 1962, the new library was opened to the public. Once more these two units are again under the same roof—the Business Library operating as a self-contained unit serving the specialized needs of its patrons, and the Brooklyn Heights Branch, also a self-contained unit serving the general needs of the community.

Location, Building, and Staff

The Business Library, at 280 Fulton Street, part of the new Brooklyn Civic Center complex, is in the downtown business and financial area, across the street from the main Post Office and Supreme Court Building and in the general vicinity of most of the borough and state governmental buildings. Three subways and several bus lines discharge their passengers a short walk from the building. Borrowers from the Wall Street area have a five-minute subway ride and find it more convenient to travel to Brooklyn than to mid-town Manhattan. Municipal parking facilities and a commercial parking lot in back of the library further contribute to its general accessibility.

The new, two story, \$2,500,000 granite and limestone air-conditioned building has been designed to incorporate the latest ideas in equipment and efficient service. The Business Library is located on the left wing of the first floor; the Brooklyn Heights Branch on the right. Near the main entrance is the

charge desk, which handles the book charging and discharging for both units.

As books are returned, they are dropped into a specially constructed chute that conveys them to the sorting area on one of two stack levels that houses the stack reference books for the Business Library. Once the books have been checked for reserves and have been sorted by unit, they can be returned to their respective shelves by elevator or book lift. Stack reference books needed by the Business Library borrowers are speeded to their destination at the information desk by four Lamson conveyors located at each end of the two stack levels.

The second floor contains the children's room, various staff rooms and offices, and an auditorium seating 250 people, which can be subdivided into three smaller rooms through the use of folding doors.

Seven professionally trained librarians, three full-time appointed clerks, and eight part-time substitutes comprise the Business Library's personnel. The professional staff is charged with manning the two reference desks, three telephones and the information desk during the busiest time of the day, 12 noon-2:30 p.m. The appointed clerks and specially trained substitutes are scheduled at the information desk during the remainder of the Library's schedule of 9 a.m.-9 p.m. on Monday, Wednesday, and Friday; 9 a.m.-6 p.m. on Tuesday and Thursday; and 9 a.m.-1 p.m. on Saturday.

Collection

The book stock of over 50,000 volumes includes some 13,000 titles in all areas of business and finance, which may be borrowed for home use. The remainder of the collection includes basic single reference titles as well as the following categories:

The importance of the *annual report* to the businessman and investor can not be minimized nor can the difficulty of servicing the original be discounted. The library maintains, on Microcard, all reports for companies listed on the American and New York Stock Exchanges from 1952 to date. Available, too, are hundreds of organization and government reports bound for permanent reference use.

In addition to standard commercial and trade *atlases* and very old real estate folio volumes for all the boroughs of New York, there are two titles of special importance: the 19 volume set of Sanborn Fire Insurance maps for Brooklyn, which are constantly revised to show existing buildings and give some detail about their construction, and the Nirenstein National Realty maps in 14 folio volumes, which show the main business sections of the largest cities throughout the United States, including basic statistics for each area.

Perhaps the most unique collection, certainly one of the heaviest used, consists of about 1,500 *directory volumes* arranged on open shelves. These books, while cataloged, are not filed by call number but by a very simple colored tape scheme that enables borrowers to use any of the four categories of directories without resorting to the card catalog or call slips. If a directory is an industrial guide for any of the 50 states of the United States or its larger cities, a piece of red tape is placed over the call number and the name of the area is lettered on the tape. These directories are then alphabetized by state and by city within the state. If a directory is an industrial guide for any other area of the world, a piece of blue tape is placed over the call number, the name of the country printed on the tape and again alphabetized. Green tape indicates trades and professional services, i.e., accountants, booksellers, museums, etc. The last group is identified by buff tape and denotes products, i.e., chemicals, plastics, shoes, textiles, etc. If a directory is a slight one, it is enclosed in one of a half dozen different sized rod binders, labeled, and shelved in its appropriate alphabetical order, by color.

Because of the need to receive directories as quickly as possible, standing orders have been placed with all publishers, which will accept them. Upon receipt in the book order department, these directories are sent immediately to the Business Library, bypassing the catalog department. Here they are processed by stamping ownership, updating the specially printed serials record card, and removing the tape of the earlier edition and very often using the same tape for the latest



A portion of the new Brooklyn Public Library's Brooklyn Heights Branch, located at 280 Fulton Street in downtown Brooklyn.

volume. It is not at all unusual for a directory to be received in the noon interchange and be on the shelves by the next morning. By and large, only the latest issue of most directories is kept; earlier ones are sent for duplicate exchange.

Since currency is so important a factor in the use of all directories, a special system has been set up for the expeditious handling of new titles. When these are ordered a special note, DIRECTORY—DO NOT PROCESS OR CATALOG, is typed at the bottom of the order slip. On receipt in the book order department, these titles are sent directly to the Business Library where they are processed as usual, and the serials record card completed with all the pertinent information except the call number. The next year when the later edition comes in, the earlier one is sent to the catalog department and when it finally comes back cataloged, there is a full set of cards, including the call number, which is transferred to our serials record card. With this very workable system, no directory is withheld from use for more than the limited time it takes to process a new item.

The Business Library acts as a deposit for the New York Telephone Company and as

such maintains the latest issue of about 800 alphabetical and classified telephone books for United States cities and over 300 volumes covering major foreign cities throughout the world. For greater New York and the periphery area, bound volumes are available from 1940 to date and microfilm volumes from 1878 to date.

Polk city directories for the 125 largest canvassed cities in the United States are readily available in book form. Available too are the Brooklyn City Directories on microfilm from 1796 to 1933/34 and New York City Directories from 1786 to 1933/34.

As a selective depository of both United States and New York State *documents*, files of the publications of all agencies relating to business in its broadest application are maintained. Of unique interest should be mentioned a complete file of the *Federal Register* in its original form, all bills and resolutions introduced into Congress and into the New York State Senate and Assembly, a complete file of *Federal Specifications*, *Current Industrial Reports*, *Mineral Industry Reports*, and others too numerous to mention. The Library is unusually strong in U. S. Census publications and in the statistical

yearbooks and reports issued by governmental agencies throughout the world. The document collection has been further strengthened by the microprint edition of the deposit and non-deposit publications of some 15 agencies concerned with the business picture of the economy.

Without doubt the heaviest used section in the Business Library is the stack that holds the standard *investment advisory, reporting, and newsletter services* relating to United States and foreign stocks and bonds. One would be hard put to name a type of investment about which we could not supply information. Complete runs of all the basic financial periodicals, financial and business periodical indices, and a complete run of the *Wall Street Journal* on microfilm from 1899 to date round out one of the most comprehensive investment collections to be found in any public library in the United States.

The most time-consuming single task in the whole Business Library is the maintenance of countless *loose-leaf services*. It would be difficult indeed to mention any area of business in which currency is a factor, where we do not have a basic title that is kept up to date by filing. Suffice it to say, the CCH titles run from *Accounting* to *U. S. Supreme Court Reports*. Available too are the selected services of the Bureau of National Affairs, Institute of Business Planning, Prentice-Hall, and many others. One of the most recent acquisitions is the five volume set published in Chicago, the EBPR (*Employee Benefit Plan Review*), which gives the actual pension, welfare, and profit sharing plans of many of the largest organizations in the country.

The newspaper and periodical mail received each morning in the Business Library is a librarian's nightmare and a philatelist's delight. Each day some 21 dailies are received, and microfilm is maintained for the *Brooklyn Daily Eagle* from 1841 until 1955, the *New York Times*, from 1851 to date, and the *Wall Street Journal* from 1899 to date. Periodicals received number about 1,500 titles, of which 202 are bound for permanent reference use and 94 received on microfilm. Every standard periodical index

is available for use in conjunction with these basic resources.

Backing up the whole book collection are some 78 files of *non-book materials*. The geography file, housed in 39 of these drawers, is most outstanding. Folders for every country and the largest cities of the world are filled with the latest basic economic, financial, statistical, employment, and cost of living data. Material from banks, chambers of commerce, consular offices, labor departments, stock exchanges, and so on swell each day's mail and make this file absolutely distinctive. Market surveys, vertical file pamphlets, and government documents fill the remainder of the 39 files.

Special Equipment

To facilitate use of the extensive collection of micro materials, four microfilm readers, three reader-printers, two Microcard readers, and one microprint reader are located on the main floor of the Library. The reader-printers have three different magnification lenses capable of reproducing needed frames of film at a charge of 25 cents a frame. All seven machines rest on matching metal cabinets, which contain the bulk of the film collection. An additional film reader is located in the stack area for use by research workers in conjunction with special study carrels, which should be available shortly. A coin-operated Docustat machine reproduces a printed page at 25 cents a sheet and completes the array of duplicating facilities.

Who Uses the Library and Why

Based on statistics kept while in temporary quarters and gauging the steady increase in borrower use, it would be fair to estimate that some 60,000 to 65,000 business men, company executives, investors, research workers, students, and general borrowers made use of the Library's facilities this past year. Telephone calls, especially from business firms, are constantly increasing, and in 1962, of the 11,921 calls received in the Business Library, 5,516 came from commercial organizations. The largest number of these came from Manhattan, then from Brooklyn, Nassau County, New Jersey, and Connecti-



News and Notes

July 1963, No. 3

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Special Libraries Association held its 54th Annual Convention at the Denver Hilton Hotel, Denver, Colorado, during June 9-13. Phoebe F. Hayes, Convention Chairman, and her staff handled the tour and meeting requests for 1,124 registrants with a semi-automated system of punched cards. The first all-Convention reception Sunday evening brought members together in the Exhibit Area, where 72 booths displayed publications, supplies, and machine demonstrations. The booths were placed near the entrances to the Grand Ballroom where many of the sessions were held. The Scholarship and Student Loan Fund's "Wishing Well" stood near the registration area. The keynote address, "The Pierian Spring," was delivered at Monday's opening session by Dr. Estelle Brodman, Librarian and Associate Professor of Medical History, School of Medicine, Washington University. She reminded the librarians that in the age of automation, machines were a means, not an end, and that librarians themselves must make the judgments of quality and usefulness of change while continuing to master new techniques and new knowledge. Many Section and Division agendas were concerned with the Convention theme, "Start Learning Again." The Documentation Division set up a suite where publications and films were available. The Division also arranged for several workshops during the week at the Denver IBM offices where librarians were given a three-hour demonstration lecture on the applications of electronic data processing techniques for libraries. At the Tuesday afternoon General Session, Grieg Aspnes moderated a panel discussion on "Library Education: A License to Learn." The speakers were from the academic and business fields. The Science-Technology Division's panel explored the question, "Is Library Education Meeting the Challenges of a Changing World?" Directing their discussion on a specific problem, the Metals Division's speakers commented on "The Metals Librarian: How Did He Get Here? Where Is He Going?" At the Book and Author Luncheon, sponsored by the Publishing Division, Marshall Sprague, author of several books on Colorado and the West, told of local lore. Luncheons and tours in and around Denver gave members a chance to see local libraries and business operations and scenery.

The focal point of discussion at the Advisory Council meeting was The President's Science Advisory Committee Report, *Science, Government and Information*, referred to as the "Weinberg Report." Moderated by Eugene B. Jackson, thoughtful interpretations of the Report were given by William S. Budington; J. Heston Heald, whose comments were read in his absence; Dr. LeRoy H. Linder; Gordon E. Randall; and Winifred Sewell. Though their emphasis was different, they felt that the Report should be a challenge to the librarians. (Explanation and discussion of the Report are on pages 325-32 of this issue.) Robert Gibson, Chairman of the Council, then called on committee chairmen and special representatives for their reports.

Banquet-goers were treated to "Ragtime Revisited" by Max Morath, television entertainer. Mr. Morath, sometimes accompanied by a piano and sometimes by slides, sang and spoke of the music of the turn of the century. Ethel S. Klahre, President, presented the Association awards. Hall of Fame medallions went to Betty Joy Cole (New Jersey Chapter President Mrs. Mary S. McDermott accepted for her); Josephine I. Greenwood; Mrs. Lucile L. Keck; Mrs. Kathleen B. Stebbins, posthumously (Jeanette Sledge accepted); and Rose L. Vormelker.

The dues increase for Active Members was passed unanimously at the Annual Business Meeting, and the increase for Associate members was passed with a clear majority of two-thirds of the members voting. The dues for both grades of membership are \$20, effective January 1964. Also accepted was the assessment of a fee of 20 per cent of the Active dues for additional Chapter and Division affiliation. Committee reports and the reports of the President and Treasurer were given.

Winners of the 1963 scholarships were announced by Gertrude Bloomer, Chairman of the Scholarship and Student Loan Fund Committee: Michael Borowyk, Ottawa, Canada; Robert W. Culp, New York City; Patricia Ann Huggins, Selma, Alabama; Louise Mary Orr, Montreal, Canada; Anita Louise Pope, Cincinnati, Ohio; Mrs. Judith Atkinson Scull, Altadena, California; and Richard Edmund Wallace, East Lansing, Michigan.

SLA officers for 1963-64 were installed at the Annual Business Meeting: President, Mildred H. Brode, Chief Librarian, David Taylor Model Basin; President-Elect, William S. Budington, Associate Librarian, John Crerar Library; Advisory Council Chairman, Charles Zerwekh, Jr., Manager of the Records Program, Standard Oil Company (New Jersey); Advisory Council Chairman-Elect, Mrs. Elizabeth M. Hutchins, Assistant Librarian, Young & Rubicam, Inc.; and two new Directors, Helene Dechief, Head Librarian, Canadian National Railways, and Mrs. Dorothy B. Skau, Librarian, Southern Regional Laboratory, United States Department of Agriculture. Miss Dechief will also serve as Secretary of the Board of Directors.

The Denver Public Library opened its doors to the conventioners at a Wednesday evening reception. Librarians were on hand to answer questions on special collections, paintings, and furnishings of the recently constructed modern building.

The \$75 first prize for the SLA National Library Week Publicity Award went to Margaret C. Madden, Chief Librarian, Technical Information Center, Monsanto Chemical Company; second prize of \$25 was presented to Paul J. Burnette, Director, The Army Library, Washington, D. C. The prize money will go to the Greater St. Louis and Washington Chapters respectively. The H. W. Wilson Company Chapter Award was won by the San Francisco Bay Region Chapter. Roger M. Martin, a member of the Chapter's Education Committee accepted the scroll and \$100 from Howard Haycraft, President of the H. W. Wilson Company. The Colorado Chapter, SLA's Convention host, received the Membership Gavel Award for the second consecutive time for having the largest paid-up percentage increase in membership. Mrs. Maxine B. Beaton, Chapter President, accepted the gavel on behalf of the Chapter.

The Geography and Map and the Science-Technology Divisions presented awards at their Business Meetings. Walter W. Ristow received the former's 1963 Award for Outstanding Achievement; and the Rio Grande Chapter and Mrs. Helen F. Redman and Mrs. Lois E. Godfrey were honored with the Sci-Tech Publications Award for work on the *Dictionary of Report Series Codes*.

Bill M. Woods now has the title of Executive Director, which replaces his former title of Executive Secretary of SLA.

A policy for Placement Service has been set forward by the Placement Policy Committee in a 13-point report, based on a survey of Chapter Presidents and discussions at meetings held during the San Francisco and Washington, D. C. Conventions. The Committee recommended that: placement service be continued as a free service to members of the Association; there be cooperation with other agencies whenever possible; a semi-monthly list be used to note vacant positions; when a position requires unique qualifications, direct personal service will be provided, and vacancies will be called to the attention of members not registered when appropriate; it pro-

vide full interview and referral service at Annual Conventions; interviews be scheduled by appointment at Association Headquarters; the names of applicants generally will not be given to employers without permission; after one year, an applicant will be removed from the active list; members shall notify Association Headquarters and the local Chapter Employment Chairman when accepting a new position; part-time, low-paying, nonprofessional, and other positions requiring some library skills will be listed for the information of Student and Emeritus Members; the Service will attempt to acquire information about positions not listed with the Service; and Chapter Employment Chairmen receive copies of the lists, and they, in turn, will keep Association Headquarters informed of their activities.

The Puget Sound Chapter has changed its name to Pacific Northwest to more accurately describe its geographical area of membership.

A survey will be conducted by the Professional Standards Committee to draft standards for special librarianship, define special libraries, and categorize and list types of special libraries. Ruth Leonard, on leave from Simmons College School of Library Science, will be consultant to the Committee. Publication in *Special Libraries* and reprints of the standards are contemplated.

The SLA Professional Award has been redefined so that the contribution to the field of special librarianship can be honored for past achievement and not necessarily for work done during the year the award is presented.

The Goals Committee for 1970 has been given the status of a standing committee and as such will serve as a goals committee on a continuing basis.

A new seal for the Association is under consideration by the Public Relations Committee, which will also draw up a procedure for the proper use of the seal on Association stationery and documents.

Approval has been given by the Board of Directors to the extension of the statement on the fair use in photocopying: "Before making a photocopy of an entire work, a library should make an effort by consulting standard sources to determine whether or not a copy is available through normal trade channels."

Members of the Science-Technology Division at their Annual Business Meeting, June 13, 1963, voted to establish two new Sections, Aerospace and Nuclear Physics. At the same meeting it was also voted to restrict membership to one Section within the Division. All Science-Technology Division members who held 1963 membership in more than one Section of the Division must indicate their choice of a single section on the invoice returned with the payment of 1964 dues. Unless a choice of Section is indicated, it will be assumed that membership in the Division only is desired. Association Headquarters has no authority to allow membership in more than one Section of the Division.

The Chairman for the St. Louis SLA Convention in 1964 is James Jones, Director of University Libraries, St. Louis University. Keynote speaker at the opening session will be Dr. Don R. Swanson, Dean of the Graduate Library School of the University of Chicago. "The Special Librarian as a Creative Catalyst" will be the Convention theme.

Eight to ten scholarships will be awarded by the Scholarship and Student Loan Fund Committee during 1964-65. Applications will be accepted until February 1, 1964.

Seven John Cotton Dana lectures will be given by prominent special librarians during 1963-64 at accredited library schools.

SLA Sustaining Members

The following organizations are supporting the activities and objectives of the Special Libraries Association by becoming Sustaining Members for 1963.
This list includes all applicants processed through June 19, 1963.

ABBOTT LABORATORIES LIBRARY
 AEROJET-GENERAL CORPORATION
 AETNA STEEL PRODUCTS CORPORATION
 ALLIED RESEARCH ASSOCIATES, INCORPORATED
 AMERICAN CAN COMPANY
 AMERICAN CANCER SOCIETY
 AMERICAN CYANAMID COMPANY
 AMERICAN ELECTRIC POWER SERVICE CORP.
 AMERICAN GAS ASSOCIATION
 AMERICAN HERITAGE PUBLISHING COMPANY
 AMERICAN IRON AND STEEL INSTITUTE
 AMERICAN TOBACCO COMPANY
 AMPLEX CORPORATION
 ARGONNE NATIONAL LABORATORY
 ARMED SERVICES TECHNICAL INFORMATION AGENCY
 ATLAS CHEMICAL INDUSTRIES, INC.
 BELL & HOWELL RESEARCH CENTER
 BELL TELEPHONE LABORATORIES
 BETHLEHEM STEEL COMPANY
 BOEING COMPANY
 R. R. BOWKER COMPANY
 BRIDGEPORT PUBLIC LIBRARY
 BUSINESS AND PROFESSIONAL WOMEN'S FOUNDATION
 LIBRARY
 CARRIER CORPORATION
 CHEMCELL LIMITED
 CHIVERS BOOKBINDING COMPANY
 CIBA PHARMACEUTICAL PRODUCTS INC.
 COLORADO STATE UNIVERSITY LIBRARIES
 CONSOLIDATED BOOK SERVICE, INC.
 CONSOLIDATED EDISON COMPANY OF NEW YORK
 CONSOLIDATION COAL COMPANY
 CONTINENTAL CARBON COMPANY
 CORNELL UNIVERSITY LIBRARY
 CORNING GLASS WORKS
 CROWN ZELLERBACH CORPORATION
 DALLAS PUBLIC LIBRARY
 DOW CHEMICAL COMPANY
 DOW CHEMICAL LIBRARY
 E. I. DU PONT DE NEMOURS & COMPANY
 Lavoisier Library
 E. I. DU PONT DE NEMOURS & COMPANY
 Technical Library
 EASTMAN KODAK COMPANY
 ESSO RESEARCH & ENGINEERING COMPANY
 F. W. FAXON COMPANY, INC.
 FEDERAL RESERVE BANK OF NEW YORK
 FIRST NATIONAL BANK OF BOSTON
 FIRST NATIONAL BANK OF CHICAGO
 FORD FOUNDATION
 FORD MOTOR COMPANY
 GENERAL ELECTRIC COMPANY
 GENERAL FOODS CORPORATION
 GENERAL MOTORS CORPORATION
 Public Relations Library
 GENERAL MOTORS CORPORATION
 Research Laboratories
 GLICK BOOKBINDING CORPORATION
 B. F. GOODRICH RESEARCH CENTER
 HARVARD GRADUATE SCHOOL OF BUSINESS
 ADMINISTRATION
 IBM, THOMAS J. WATSON RESEARCH CENTER
 IDAHO STATE COLLEGE LIBRARY
 INDIANA STATE LIBRARY
 INTERCONTINENTAL MEDICAL BOOK
 CORPORATION
 JOHNS-MANVILLE RESEARCH & ENGINEERING
 CENTER
 WALTER J. JOHNSON, INC.
 KAISER ALUMINUM & CHEMICAL CORPORATION
 LIBRARY AFL 5643-62-119, APO 238, NEW
 YORK
 ELI LILLY AND COMPANY
 LOCKHEED MISSILES & SPACE COMPANY
 LYBRAND, ROSS BROTHERS & MONTGOMERY
 MCGRAW-HILL PUBLISHING COMPANY, INC.
 MARATHON OIL COMPANY
 MARQUETTE UNIVERSITY MEMORIAL LIBRARY
 MAXWELL SCIENTIFIC INTERNATIONAL
 MELLON NATIONAL BANK AND TRUST COMPANY
 MINNEAPOLIS-HONEYWELL REGULATOR
 COMPANY
 MINNESOTA MINING & MANUFACTURING
 COMPANY
 NATIONAL BANK OF DETROIT
 NATIONAL CASH REGISTER COMPANY
 NATIONAL LEAD COMPANY
 NEW YORK LIFE INSURANCE COMPANY
 NEW YORK PUBLIC LIBRARY
 NEW YORK TIMES
 PACIFIC LIBRARY BINDING COMPANY
 PENNSYLVANIA STATE LIBRARY
 PENNSYLVANIA STATE UNIVERSITY
 PEOPLES GAS LIGHT & COKE COMPANY
 PITTSBURGH PLATE GLASS COMPANY
 (Chemical Division, Barberton, Ohio)
 PITTSBURGH PLATE GLASS COMPANY
 (New Martinsville, West Virginia)
 PORT OF NEW YORK AUTHORITY
 PRENTICE-HALL, INC.
 PROCTER & GAMBLE COMPANY
 PUBLIC SERVICE ELECTRIC & GAS COMPANY
 PURE OIL COMPANY
 RADIO CORPORATION OF AMERICA LABORATORIES
 RAND CORPORATION
 REPUBLIC AVIATION CORPORATION
 ROCKEFELLER OFFICE LIBRARY
 ROHM & HAAS COMPANY
 ROYAL BANK OF CANADA
 ST. JOHN'S UNIVERSITY LIBRARY
 SHAWINGAN CHEMICALS LTD.
 SHELL DEVELOPMENT COMPANY
 SPACE TECHNOLOGY LABORATORIES, INC.
 SQUIBB INSTITUTE FOR MEDICAL RESEARCH
 J. W. STACEY, INCORPORATED
 STANDARD OIL COMPANY OF CALIFORNIA LIBRARY
 STANDARD OIL COMPANY (New Jersey)
 STECHERT-HAFNER, INC.
 STERLING-WINTHROP RESEARCH INSTITUTE
 SUFFOLK COOPERATIVE LIBRARY SYSTEM
 SUN OIL COMPANY
 SYSTEMS DEVELOPMENT CORPORATION
 TEXAS GAS TRANSMISSION CORPORATION
 J. WALTER THOMPSON COMPANY
 TIME INCORPORATED
 UNION ELECTRIC COMPANY
 UNITED AIRCRAFT CORPORATION
 UNITED COMMUNITY FUNDS & COUNCILS OF
 AMERICA, INC.
 UNITED STATES AIR FORCE ACADEMY
 UNITED STATES STEEL CORPORATION
 UNITED STATES TESTING COMPANY
 UNIVERSITY OF CONNECTICUT
 UNIVERSITY OF MARYLAND
 UNIVERSITY OF MINNESOTA LIBRARY
 UNIVERSITY OF OKLAHOMA LIBRARY
 UNIVERSITY OF TEXAS
 UNIVERSITY OF WASHINGTON LIBRARY
 UNIVERSAL OIL PRODUCTS COMPANY
 UPJOHN COMPANY
 WAYNE STATE UNIVERSITY
 H. W. WILSON COMPANY
 WORCESTER FREE PUBLIC LIBRARY
 WYETH LABORATORIES, INCORPORATED

cut. While not an everyday event, it is no longer unusual to receive a phone inquiry from Wilmington, Washington, D. C., or Tulsa. Letter inquiries from Philadelphia, Chicago, Los Angeles, or even Seoul, Korea, are an accepted part of the everyday reference service of the Library.

Taken at random from the daily listing of telephone calls received from various organizations, these are typical:

- WHO: is the president of the Bank of California in Portland, Oregon?
manufactures "cool-ray" sun glasses?
is the transfer agent for the International Nickel Company?
- WHAT: was the address of the Astor House located in New York City about 1890?
are existing comparative salaries for typists and clerks in larger cities?
- WHEN: did IBM last split?
was primary day in New York City in 1962?
was the Common Market started?
who were the subscribing members?
- WHERE: is the Goddard Space Flight Center?
are the areas of largest income in Brooklyn, Manhattan, Queens, Bronx?
is there a town called Tomahawk?
what large area is it near?

In addition to this simple type of question, which is answered easily, each day brings the more difficult, more time-consuming inquiry that taxes the combined reference knowledge and ingenuity of the staff.

Public Relations

Although it is true that 20 years of specialized service to a wide segment of the Greater New York business world has made the Library's existence well known, there is still a tremendous potential for further extending services and facilities. The one best method of publicity continues to be the satisfied borrower who tells his friends and associates about the collection.

We have found that talks accompanied by tours of the building do much to make for a better understanding of what the Library can provide to fill certain specific reference needs. In September 1962, the Business and

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Finance Group of SLA's New York Chapter met here for one of its regular meetings, which proved most successful based on the continuous follow-up of telephone inquiries. Library school students from Pratt and Columbia and business students from the nearby colleges also find it advantageous to see a business library in action. Local business and professional organizations are encouraged to visit the Library, and by this time the whole staff is adept in talking to groups large and small and touring them from 20-60 minutes.

This year the entire professional staff of the Brooklyn Public Library was divided into four groups and scheduled on different days for an hour's talk in the auditorium and an hour's tour of the Business Library. On April 23, during National Library Week, a special program was held in the auditorium attended by many of the leading business executives of Brooklyn. Among the speakers were the Chief Librarian, Francis R. St. John; the Borough President, the Honorable Abe Stark; and guest speaker, Austin Tobin, Executive Director of the Port of New York Authority. After the program, the guests were divided into small groups and toured through the Library. Each guest was also given a special kit filled with lists of our special services and facilities. After the tour, guests reassembled in the auditorium for cocktails and refreshments. An unusually good program, it was the result of the combined efforts of the Junior Chamber of Commerce of Brooklyn, which underwrote all expenses, and the National Library Week Committee of the Brooklyn Public Library.

To further make known our special facilities, a monthly publication, *Service to Business and Industry*, is prepared alternately by the Business Library and the Science and Industry Division of the Ingersoll Building. A free mailing list is maintained for individuals and corporations in New York City; there is a fee of \$1 a year for mailing outside the city.

In connection with the investment programs held by the New York Stock Exchange, the Business Library revises each year the original reading list it prepared some time ago. Requests for copies of this publication reach us from all over the United

States, and this year one was received from Switzerland.

Articles in the December issue of *Library Journal*, in the *Dime Saver* (the house organ of the Dime Savings Bank of Brooklyn), in *GHQ* (the house organ of the Western Electric Company), and in the local newspapers all helped to publicize the facilities of the library during its first year of service.

Under consideration now is a series of film programs to be held this fall during the lunch hour, a time that attracts so many

borrowers who work in the nearby area. Also being considered is inviting Brooklyn business and professional organizations to hold one of their regularly scheduled meetings in our auditorium, after which a talk and tour would be forthcoming.

This first year in the new building has been a truly exciting one and in retrospect one in which much was accomplished to lay an even more sound foundation for expanded Brooklyn Business Library service in the years ahead.

Elements of Computer Systems for Librarians

THIS TITLE DOES NOT refer to a college course nor is it the title of a book. It is the writer's subtitle for a special course of instruction offered recently to SLA San Francisco Bay Area Chapter members by the IBM Data Processing Division, San Francisco, California. Forty Bay Area librarians completed the latest course, which was given in five Tuesday evening sessions (two and one-half hours each) in October and November 1962. The classes were held at the IBM Education Center in San Francisco and were taught by four instructors of the Education Center staff.

The content of the course was in six main areas: 1) computer components, what they are, and how they work; 2) magnetic core storage of information and instructions in the memory and logic parts of the computer; 3) the elements of instructing the computer (programming), scheduling the manipulation of input data to produce desired output; 4) codes and symbols for computer instructions (these together with programming and computer "languages" are known as "software"); 5) features of serial versus random searching of information stored in the computer's "memory"; and 6) machine "languages," sub-routine programs, and teleprocessing, a telephone line hook-up of computers (employing dataphones) for automatic placing and processing of orders, etc.

The systems and equipment given primary consideration were the ones in common use in business offices and scientific laboratories,

such as the IBM 1401 binary coded decimal digital computer system. The lectures were supplemented by a comprehensive IBM manual entitled *Introduction to IBM Data Processing Systems*.

The librarians learned much that was new to them and gained a more complete understanding of the means, methods, and inner workings of computers. Perhaps the most important lesson learned, from the application standpoint, was that computers are *not* the answer to every library problem. They are wonderful tools and can perform a variety of tasks at fantastic speeds, but they are designed for specific objectives that make them, in some ways, not well suited to certain library objectives. And, of course, such proficiency doesn't come cheap.

Factors to study before deciding to "computerize" any library department are:

1. Volume of information or data.
2. Complexity of calculation and manipulation of data and information.
3. Speed of service required.
4. Nature and extent of logic decisions involved.
5. Activity or traffic level (frequency of output requirement).

If one or more of these indicate a computer operation is in order, then the librarian considers the cost element, i.e., would the benefit be worth the cost?

ROY NIELSEN, Assistant Librarian
University of California, Lawrence
Radiation Laboratory, Berkeley, California

SPECIAL LIBRARIES

A Computer Library's Approach To Information Retrieval

SOPHIA P. WHITE, Technical Librarian, and
JOSEPHINE WALSH, Assistant Technical Librarian
Burroughs Corporation, ElectroData Division, Pasadena, California*

THE ELECTRODATA Manufacturing and Engineering Division of the Burroughs Corporation manufactures high speed digital computer systems such as the B200 series and the B5000. Consequently, the library has been fortunate in being able to apply the computer to library operations.

Working in an environment of computers, there is a strong temptation to use a computer experimentally. To counteract the tendency to automate for the sake of automating, the library staff made a feasibility study to determine which library operations could be improved through mechanization. This procedure is usually followed by computer customers before a decision is made to mechanize internal operations.

In our preliminary investigation, we discarded two applications currently used by a small number of industrial libraries: 1) the preparation of a printed book catalog and 2) a permuted title index to periodical articles. A total book volume of 9,000 titles and a subscription list of 400 periodicals are too small to warrant even the use of tabulating equipment for these applications.

Abstract Service

However, we found that one important service of this library—the indexing of the library publication, *Abstracts of Computer Literature*—could be improved measurably through mechanization. This bimonthly abstract service was started in 1957 with the primary objective of keeping all Burroughs personnel involved in the engineering, production, and marketing aspects of computers,

informed on current developments in computer technology. This publication, issued in two editions, the Marketing edition and Engineering edition, is distributed to company personnel in the United States and in 48 foreign countries.

Despite the subsequent publication of commercial abstracting services in the data processing field, the ElectroData Library continued its tailor-made publication covering journals and ephemeral material not abstracted by the commercial services whose abstracts are often too general for Burroughs' needs. For example, an abstract of a general review article on digital computers would not bring out such specific items as the cost of programming or the number of people in the computer industry, two facts of particular interest to our personnel. Furthermore, the commercial services do not note news items or advertisements of new products, which are extremely important to our marketing personnel.

In addition to keeping company personnel aware of progress in the computer field, the abstracting service keeps the two librarians informed, thus increasing their effectiveness in retrieving information that has not yet been indexed and in anticipating requests for literature searches. Abstracting by librarians is also one of the most effective practical methods of minimizing the current problem of the accelerated growth of the published literature. Since the difficulties connected with controlling publications at the source are being compounded by the recent increase in literature generated by government contractors, it is extremely urgent that librarians know their specialized subjects so they can select and abstract only that which has both current and future value to their company's technical staff. After six years of abstracting,

* The authors acknowledge the cooperation of Gordon Barrett of the Data Processing Department and Joseph Sharp, formerly a member of the Automatic Programming Department, now at University of California, Berkeley.

we have concluded that 50 per cent of the literature published in the computer field is redundant and that a high percentage of the exponential growth could be reduced if the practice of publishing the same paper in slightly different versions in various journals could be eliminated.

Due to workload pressures on the library staff, we were never able to supply an annual index to the *Abstracts of Computer Literature*, which thus was limited in value as a current awareness tool only. Both the librarians and Burroughs employees on the distribution list were handicapped in retrospective searching. This year, however, with the cooperation of the Data Processing and Automatic Programming Departments, the library has a subject and author index to the 1962 issues. Eventually, we hope to publish a cumulative index from 1957-1961.

Concepts of Indexing

The easiest way to index the abstracts from the librarian's viewpoint was to write the computer routine for permuting the key words in the title. Being aware that this easy road in the input meant an agonizing and time-consuming struggle with the output, we discarded this method. Any reference librarian who has to depend on a permuted index for searching knows the deficiencies of this type of machine indexing.

From the limited experiment on methods of indexing the 1962 issues of the *Abstracts of Computer Literature*, the permuted title indexing retrieved only 52 per cent of the information. This low percentage may be attributed to the changing and not yet uniformly standardized terminology existing in computer technology. For example, a request for information on multi-computer systems would retrieve very little information from a key-word-in-title-index, since this information is found under such titles as multi-programming, multiprocessing, polymorphic systems, satellite computers, parallel processing, simultaneous processing, sympathetically programmed computers, and under the names of individual computers. Even though the word computer may be used in the titles of all these papers, the ElectroData Library

would never commit the folly of using that term as a main entry (a different concept from that of keyword) in any indexing method since this library's main subject is computers. In fact, our one general rule in cataloging and indexing is to avoid the use of the terms computer and digital computer.

The greatest disadvantage of the permuted index, however, is the time expended searching through the large number of irrelevant references. This is true not only when specific information is requested but also when a thorough search is required.

The next easiest approach to indexing the abstracts was to treat the words in the abstract quantitatively and then match the significant words against a list of terms previously stored in computer memory. This essentially statistical approach does not solve the qualitative aspects of information retrieval. The user is neglected as an integral factor. Even the most logically devised index has little value if the language used is not the language of the users. Consequently, we decided to index the *Abstracts of Computer Literature* by specific concepts, the most difficult method of indexing, since this approach necessitated building a subject authority of terms acceptable to salesmen, engineers and the production staff.

In the absence of heuristic computers, indexing is still a human function and perhaps one of the most creative functions of librarians. Librarians have not always accepted indexing as a creative function, but rather as an imitative one. Recognition of the difficulty of standardizing and mechanizing language for the needs of specialized personnel on the part of librarians as well as the new "information retrieval specialist" is perhaps the reason that there has been an increasing tendency to use words rather than concepts and to assign a fantastic number of headings to each document with the illusive hope of obtaining maximum retrieval. Overwhelmed by the deluge of reports and words accepted as subject headings, gadgets have been resorted to as a possible panacea, only to discover that if the input is wrong, no existing machine will produce an improved output.

We decided that indexing by concepts can best be done by librarians with a knowledge

TITLE Failsafe circuits. Discusses individual circuits and their lifetime extension. Compares the
lifetime of an ordinary computer with that of a computer with failsafe elements.

AUTHOR Hill, J.

SUBJECTS

NUMBER 1518

AFFILIATION

Reliability. Circuits. Life Testing

Emitter Followers. Life Testing

Logic Circuits. Life Testing

Oscillators. Life Testing

Amplifiers, Life Testing

Delay Lines. Life Testing

Adder Circuits. Life Testing

Transistor Circuits, Life Testing

Resistors. Life Testing

Capacitors. Life Testing

Inductors. Life Testing

Failsafe see **Reliability**

and subheading Life Testing

under individual circuits and components.

U Illinois Digital Computer
Lab Rept No. 120 J

June	22	'62	34p
MONTH	DAY	YEAR	PAGES

MAGAZINE TITLE

MONTH	DAY	YEAR	PAGES
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Figure 1: Sample abstract with list of subject headings. Author, subject headings and abstract number are key punched for computer input.

of the subject and a great deal of experience in answering questions asked by personnel with varying perspectives on multiple subjects. The computer would be used for the functions requiring less judgment and decision making—for sorting information, alphabetizing, accepting new information, changing subject headings when the librarians decided a more specific heading was needed, searching for well-defined information, and in controlling the print-out of the final cumulative index.

Indexing Procedures

The present procedure is to 1) assign main entries with subheadings, as needed, at the time of abstracting and 2) to index from the original article rather than the abstract. In indexing we constantly question whether

Burroughs' employees would approach this information under the headings prescribed. Indexing from the original article is extremely important, since we try to be as specific as possible and the format limitations of the abstract often necessitate the use of more general terms than required for indexing. This is especially true of the articles abstracted in the Marketing edition of the *Abstracts of Computer Literature*. For example, recent articles emphasizing cost control would be of specific interest to Burroughs' managerial staff, while statements in these articles recommending the use of computers to cut costs would be of vital interest to the sales force.

After each issue is published, the abstracts with the list of concepts and the abstract reference number are sent to the Data Proc-

```

0203      ARRAY          REF(80), LINE(80), CARD(80) $
0203      INPUT  C ( FOR X = (1, 1, 44)$ CARD( X ) )$
0224      FORMAT          LINEF ( 44 A1, W0)$
0228      OUTPUT  LINEO
0246
0266      FORMAT  SPACE
0269      FORMAT  PAGEF ( B 44, *PAGE *, I4, W3,W2)$
0277      OUTPUT  PAGEO ( PAGE
                                ) $
0284      EXTERNAL  PROCEDURE  FORMATREAD ($$ C, FF,LLL )$
0284      FORMAT  FF ( B15, 44A1, C )$
0289      LINECOUNT  =  0  $
0290      PAGE      =  1  $
0292      WRITE( $$ PAGEO, PAGEF ) $

```

I N S T R U C T I O N S

Figure 2: Instructions written in ALGOL, a language that tells the computer what procedures to follow in preparing the indexes.

essing Department for keypunching, as shown in Figure 1. The Data Processing Department is responsible for providing a cumulative author and subject list with the references to the abstract number with each issue. This subject list becomes the subject authority for indexing the next issue of ElectroData's abstract publication. The author list is used to eliminate duplication of abstracting the same article appearing in several forms in both society and trade magazines as well as in conference proceedings.

The annual cumulative index is sent to all recipients of the *Abstracts of Computer Literature*. Retrospective searches may be made

by using the printed index or by specifying a search by computer. Since we have only one annual index, retrospective searching by the Burroughs B5000 will only be justified when the staff has completed the indexing back to the 1957 issues. This is our objective. The computer is being used at present to prepare the final author and subject index only. The instructions for this routine are written in ALGOL (ALGOritmic Language), Figure 2. The operator is instructed to make a normal "compile and run" ALGOL run, with column 1 selected during the compilation and with "format" selected during the run. The result is the required listing, Figure 3.

Figure 3: Print-out of author and subject indexes to the "Abstracts of Computer Literature."

AUTHOR		
BAMBAH R	CODES.BINARY.PARAMETERS	0677
BAND I	RECTIFIERS.SILICON	1119
BANERJI R	LIST STRUCTURES	1075
BARDEEN J	SUPERCONDUCTIVITY	0385
BARLOW E	APPLICATIONS.GAS DIFFUSION	1042
SUBJECT		
THIN FILM MEMORIES		1193
THIN FILM MEMORIES.MANUFACTURE		1190
THIN FILM MEMORIES.MANUFACTURE		1192
THIN FILM MEMORIES.SWITCHING		1114
THIN FILM MEMORIES.TESTING		1190

The library staff experimented with a small number of schemes on mechanizing library operations and concluded that the most effective approach was to use a man-machine system in preparing an index to the *Abstracts of Computer Literature*. When our volume becomes significantly larger, retrospective computer searches can also be made.

Being computer-oriented, the ElectroData librarians continue to be alert to new library applications, especially in the area of information retrieval. The published literature in

this field to date has led us to agree with Harold Bergstein, who wrote in an editorial in *Datamation* (October, 1961, p. 17)—“grand information retrieval projects such as storing the Library of Congress in a memory the size of a homogenized milk container may be practical next week except that automatic indexing is still a matter for grey haired ladies wearing green eyeshades, bifocal lenses and working at old wooden desks flooded with eagerly prepared technical reports possibly on this very subject.”

Literature Search on Thorium Breeding and Thorium Breeder Reactors

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Oak Ridge, Tennessee

THIS PAPER DEALS WITH a specific example of a search to prepare a formal bibliography encompassing the subjects of thorium technology, conversion of thorium-232 to uranium-233, nuclear reactors used for this conversion, and reactors designed to use uranium-233 as fuel. The primary purpose was to provide background material for the Thorium Utilization Program presently underway at the Oak Ridge National Laboratory. The bibliography itself is scheduled for publication in 1963. At first glance, the subject appeared to be straightforward and fairly simple. However, there were a number of complicating ramifications involved.

In advance of the literature search, an administrative decision was made to prepare a formal bibliography, because of the nature of the program to be supported by the infor-

mation gathered. The work to be described was the initial step in the preparation of a compilation that, unlike the usual search, was to be fully annotated and indexed prior to publication. However, the techniques and mechanisms involved do not vary in any way from any other examination of technical literature made to provide a scientist with specific types of references.

Pre-searching Procedures

First the parameters must be determined to ensure efficiency and effectiveness. In the case of thorium, I met with scientists from both Oak Ridge Operations Office and Oak Ridge National Laboratory to ascertain precisely what was wanted. We discussed the scope involved and decided that information on the prospecting for, mining, extractive metallurgy, and analytical chemistry of thorium was outside the scope of interest. On the other hand, fuel element fabrication methods, purity requirements, radio-chemical reprocessing of irradiated fuel and blanket materials, irradiated fuel element handling,

Talk given at the Conference on the Literature of Nuclear Science; Its Management and Use, held at Division of Technical Information Extension, Atomic Energy Commission, Oak Ridge, Tennessee, September 11-13, 1962.

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corrosion, thermal properties, nuclear properties, and cost studies were definitely of interest as were breeding ratios and reactor design. As a result of these discussions, I was familiar with the subject matter that should be covered.

Next, we discussed the distribution of the finished bibliography—who was going to be able to receive or see it. Since the program is unclassified, the bibliography would be unclassified. It was decided that the bibliography would be offered for sale through the Office of Technical Services and that it would be deposited at the domestic and foreign depository libraries. This portion of the discussion accomplished more than just arriving at an administrative decision on how to distribute the final product; it told me that I would be limited to unclassified sources.

It was also determined that no limit would be placed on original sources of information. "Include all the information regardless of who developed it, what country it was developed in, or what organization did the work," I was told. However, since *Nuclear Science Abstracts* is generally accepted to be the leading abstract journal in this field, it was felt that use of secondary sources other than *NSA* would yield meager additional information and would be uneconomical.

Another parameter established concerned the dates of coverage. It was decided that the most useful work in this area was reviewed in the last five years, and 1957 to 1962 was established as the period to be explored. This was certainly agreeable to me, because it meant that I would have to examine only two *NSA* cumulative indexes.

Before a searcher can go into the details, he has to determine his goals first. Too much emphasis cannot be placed on making these determinations. It helps both him and the user. For the searcher, it cuts down working time and permits the job to be done more efficiently. For the user, it gives him what he wants, promotes relative assurance that what is wanted is not being overlooked, and insures him that he will not receive a multitude of references in which he has no interest. No one will thank the searcher for irrelevant literature.

Determining Subject Headings

Off hand, the thorium breeding and thorium breeders search appeared to be simple in scope. First, it was necessary to determine what subject headings in the *NSA* index might refer to pertinent information. TID-5001, *Subject Headings Used by the USAEC Technical Information Service*, provides the key to the manner in which information is subject indexed in *NSA*. In addition to main headings, cross references are included, which are necessary to develop a complete survey. The value of consulting TID-5001 when using the *NSA* indexes cannot be overemphasized. In fact, we at DTIE do not think that a truly complete literature search in *NSA* can be performed without it.

I began with obvious headings like thorium, thorium isotopes Th-232, uranium, uranium isotopes U-233, thorex process, breeder reactors, power breeder reactors, and so forth. Next, I went to general headings like reactor fuel elements, reactor breeding blankets, and slug elements. These headings led to some information in the *NSA* indexes; in addition, scanning this portion of TID-5001 led to more specific subject entries such as reactor fuel disks, reactor fuel spheres, reactor breeding elements, and slug elements (Th-U). Each of these headings, which might have led to references containing needed information, were reviewed in the *NSA* indexes.

The next step was to turn to specific fuel and breeding materials: alloys, ceramics, salts, and so on, which might be used in reactors. This was a lot of work but was unavoidable; and yet there was one more area that had to be developed—reactors. It was necessary to look for references to pertinent reports on all reactors that use thorium-232 in the fuel or blanket, or are fueled with uranium-233. Unfortunately, TID-5001 could not be used for this. I went to several of the reactor survey charts published in journals in the nuclear engineering field and checked off the fissile and fertile materials used in each reactor. When I had identified each of the reactors that use uranium-233 or thorium-232, I then returned to TID-5001 to determine the proper heading for each reactor under which to search in *NSA*.

To properly perform a survey of literature, the subject must be approached from all conceivable directions. The thorium-thorium breeder case I have just described illustrates this idea of a multi-directional approach. I determined a total of 154 different headings to be applicable.

Conducting the Search

At this point, it was possible to begin the search itself. There is no need to delve too deeply into this operation, because it is rather routine. The main headings selected were arranged alphabetically and, using them as a guide, the index was entered. The modifier for each entry probably indicated whether that particular reference was pertinent. If there was doubt as to the applicability of a particular entry, it was included at this stage.

While there undoubtedly are a number of methods by which reference citations may be noted from the index, the method used at DTIE has proven to be both simple and efficient. A 3 x 5 inch paper slip is prepared for each citation. On it, the abstract number and the report number, if the citation is to a report, is noted. This allows for certain manipulations when this phase is completed.

When the indexes have been reviewed, the paper slips are arranged by abstract number. This arrangement serves two purposes: 1) it permits immediate elimination of duplicate citations, and 2) it creates an easy method of entering the abstract journal. There will be a large number of duplicates, but they are eliminated during this first collation.

When the slips have been arranged in abstract number order, the abstracts are then reviewed for pertinency. The complete descriptive cataloging from the abstracts selected are copied onto 3 x 5 slips or cards. This allows for a final arrangement of these references in any order desired—by subject, author, corporate author or title.

In some cases, it will not be possible to make a selection from the abstracts; for such references, the report or journal article itself must be consulted.

After the final arrangement of slips is completed, the literature search is essentially finished. All that remains is to transcribe the results into whatever form is needed.

JULY-AUGUST 1963

1964 SLA Professional Award

The SLA Professional Award is the highest recognition granted by this Association. It is awarded only after considering all significant contributions made to librarianship and information science. The physical form taken by the Award is that of a highly treasured sterling silver serving piece.

Considering the foment in which modern day information handling finds itself, it would seem that the Committee would have numerous nominations to consider. Actually, in two of the last three years, no nomination meeting the Committee's standards has been received and no awards were made.

Taking recognition of this situation, the Board of Directors approved in Denver the following revised and clarified definition of the SLA Professional Award:

The SLA Professional Award is given to an individual or group, who may or may not hold membership in the Association, in recognition of major achievement in, or significant contribution to, the field of librarianship or information science, which advances the stated objectives of the Special Libraries Association. The timing of the Award shall follow as soon as practicable the recognized fruition of the contribution.

It also noted the Committee's intention to begin consideration of nominees at the time of the Fall Board meeting, instead of waiting for the Spring meeting as in the past. Accordingly, Association units or individual members should be certain that their nominations for the SLA Professional Award be made with justification to Chairman Eugene B. Jackson, SLA Professional Award and Hall of Fame Committee, Library, General Motors Research Laboratories, 12 Mile and Mound Roads, Warren, Michigan, ON OR BEFORE SEPTEMBER 16.

Where exceptional circumstances delay the submittal of names, the Committee will consider requests for deferment of the closing date.

Toward the History of Documentation

THEODOR B. YERKE, Librarian, Special Technical Services
Forest & Range Experiment Station, Berkeley, California

This important despatch was received at Bibliopolis-on-the-Potomac on January 7, 18,963 A.D. It was transmitted by the Archaeodocument Retrieval Expedition in Upper New York

THE DISCOVERY in Holocene sedimentary beds near the proto-historic Lake Placid of a miraculously-preserved document entitled *Simplified Library School Rules* pushes certain knowledge of the history of documentation almost back to the inceptions. The document (or "book" as its contemporaries would have called it) is dated 1904 A.D. That places it clearly before the onset of the Fifth Ice Age. The author of the work is Melvil Dewey. Now for the first time we have conclusive indication of the famous Admiral's first name! That he was also, as were so many in primitive times, a self-educated man is evident from his deficient spelling. And of course, in those early, generalized ages, it was not unusual for a military man to dabble in documentation.

We were particularly anxious to see if this document contained any reference to the almost-mythical Hollerith, whom we have long regarded as the true founder of documentation. It was always presumed that Hollerith lived near the beginning of the 20th Christian century. The Admiral does not mention Hollerith in this work! Some scholars hold that Dewey stole the idea of information cards from Hollerith and changed the size of them to cover his tracks. But others believe the Admiral invented decimal classification and 3x5 inch cards independently of Hollerith and that the two men never even knew each other! Communication was unbelievably bad in those days.

The most exciting thing in the ancient document occurs on page 15, where a list of "special classes of people" appears. The list is as follows:

Heliand	Merlin
Hitopadesa	Niebelungenlied
Kabala	Renard the fox
Kalevala	Roland
Koran	Talmud
Mabinogion	Upanishads
Mahabharata	

Linguists point out that these are nearly all European or Aryan names. Further, the names in the first column are all feminine, or seem to be, and those in the second are masculine. We conclude that this is a list of wives and husbands—the true antedeluvian founders of documentation! (Except for Miss Mahabharata, the only name not linked to a man. We suspect here a prominent county librarian who remained unwed.) This list must date back almost to the Fourth Ice Age, since documentation was discovered during the recently ended interglacial epoch. Thus these hoary figures were almost mythical to documentalists of Dewey's age, which was right in the middle of the interglacial period.

The only name that can be identified with any historical event in documentation is the entry "Renard the fox." A man named Renard was leader of a library school on the western shore of the North American continent at about the time of the Admiral. We cannot explain this late-comer to the list of special persons, nor can we explain the epithet "the fox," except to note that in those ancient times persons are known to have taken a second name at maturity, usually of an animal deity or geographic feature. Another possibly recent name is Niebelungenlied. Professor Ixbitl believes that Niebelungenlied, the husband of Hitopadesa, may have been a German bibliographer.

Simplified Library School Rules contains other striking evidence of the closeness of those times to archaic thought. The instruc-

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tions to documentalists include elaborate rules for the entry of noblemen and other special types of humans! Anthropomorphisms abound, in that cities, industries, and organized groups are all treated as *persons*! Slavery had also persisted longer than we had imagined, for there is an entry to a Sir Walter Scott's Black Dwarf. Perhaps because he belonged to a special class of persons, he was allowed to keep a slave.

Principles for primitive coding are laid down. The chief figure in this work was apparently not Hollerith but a Charles Ami Cutter. We presume "Ami" to be a transcription of the Southern dialect corruption of the word "Army." Again the military motif! The Admiral apparently felt more comfortable with his own class of people. In those days persons also took the name of their craft—Cutter no doubt descended from a line of sawyers, tailors, or harvesters. This early background of cutting things to size and purpose may have inspired him in his attempts to cut or code information to size.

Much of the instruction given in *Simplified Library School Rules* is almost meaningless to us now. It requires considerable

effort for us really to understand that documents in these early epochs occupied considerable *spatial extensions*. We understand from other fragments that some of the larger libraries were thousands of square feet in extent. None of these survived the Fifth Ice Age, most having become peat deposits. The document *Simplified Library School Rules* itself takes up as much physical space as 1,000 years of the legislative proceedings of a major metropolitan area in a contemporary library. Professor Ixbitl has calculated that if the present totality of recorded knowledge were in macroform, as in the Admiral's day, all of our libraries would have to be removed to the moon, which same satellite they would cover to a depth of at least two miles!

As we excavate around the edges of ancient Lake Placid, it is almost certain that other valuable material about the Admiral, his life, and accomplishments will be unearthed. We are particularly anxious to find something definitive about his famous Manila folder, which is belived to be the code name of his battle plan for occupation of that former Spanish harbor.

Summary of Symposium on the Diffusion of Technological Change*

THE IDEA for a symposium devoted to the subject, diffusion of technological change, came from a study by Dr. Edwin Mansfield, Director, Carnegie Research Project on Technical Change and Economic Growth, Carnegie Institute of Technology, financed by the National Science Foundation, the Ford Foundation, and the Cowles Foundation. Dr. Mansfield graciously consented to the use of the title for the symposium, of which Dr. Luther H. Evans was moderator.

Dr. Mansfield's paper summarized some of the findings to date of the continuing study into the way in which new processes

and products are invented, developed, commercialized, and accepted. He discussed four subjects under his over-all topic, "The Process of Technical Change":

1. Research and Development and Inventive Output. A detailed study of the chemical, petroleum and steel industries suggested four conclusions. 1) There appeared to be a close relationship over the long-run between the amount a firm spent on research and development and the total number of important inventions it produced. 2) Increases in research and development expenditures at a given time seemed to result in more than proportional increase in inventive output in the chemical industry. The steel industry's extra inventive output was less than proportional to the spending increase, and the petroleum industry produced no indication

* Joint meeting of the Metals Division and the New York Group of the Sci-Tech Division during the Metals Division Fall Meeting, held in conjunction with the World Metal Show, New York, November 1, 1962.

either way. 3) Productivity of research and development on a given scale was lower in larger than in medium-sized firms. 4) The cost of producing a major innovation seemed to have increased considerably in all industries included.

2. Size of Innovators. Petroleum, iron and steel, and bituminous coal industries were studied in an effort to discover some relationship between size of firm and the number of important new processes and products developed. In petroleum refining and bituminous coal it was found that the largest firms accounted for a larger share of the innovations than they did of the market. In iron and steel the situation was reversed. The evidence indicated a direct relationship between the amount of innovating done by the largest firms and the cost of the innovation.

3. Innovation and Firm Growth. Iron and steel and petroleum industries were studied to determine how much of an impact innovation had exerted on a firm's growth rate. The result showed that, "in every time interval and in both industries, the successful innovators grew much more rapidly than the other firms, their average growth rate being in some cases more than twice that of the others." The smaller the firm, the greater was the impact of a successful innovation.

4. Diffusion of Technological Change. The spread of a dozen major innovations in the railroad, brewing, steel, and bituminous coal industries was studied. This revealed a "bandwagon" effect, but with no clear indication that the same firms were the first to introduce different innovations.

In conclusion, Dr. Mansfield stressed that the findings presented in his paper represented only a small part of the entire study. He sees a wide application of these findings, particularly in accelerating the rate of economic growth in the United States.

R. Ned Landon, Research Information, General Electric Research Laboratory, discussed how one industrial research laboratory attempts to bridge the gap between new knowledge and its application in his paper, "Innovation in Industry." In his view, the greatest stimulus to speeding the diffusion of technological change is competition and that competition in science, as in anything else,

"makes things happen."

General Electric is deeply concerned with spreading new knowledge from the laboratory to the widely scattered and widely diversified operations of the company. Although convinced that competition is the main incentive for doing this, some other conclusions have been drawn: 1) application of his work motivates the scientist; 2) the inventor's enthusiasm speeds application; 3) research cannot be sold with a report; ideas must be reduced to a demonstrable form; and 4) resistance to change is mostly fiction. A recent study by Dr. Leslie Cook of General Electric of 66 major technological innovations of the past two centuries showed that only three met with any significant opposition. The conclusion was drawn that any resistance to new ideas had resulted largely from the fact that a real need for the new idea had not been felt or did not exist or because the concept was not, or was not recognized as being, "technically feasible or adequate, or economically attractive.

A study was made by General Electric a few years ago to try to determine the factors that influence the success or failure of transitions from laboratory to product department. Five broad observations resulted from the study: 1) The more profitable an operation is, the more receptive its managers are to accepting and considering innovative opportunities. 2) Ideas that require the least change and least expenditure are more readily accepted than those requiring drastic changes and large expenditure. 3) The more familiar the device or material, the easier the transition. 4) The availability of technical skills required for the innovation may influence its acceptability. 5) The attitude of the "man at the top can make a striking difference in the speed and effectiveness of transitions."

Having studied "the pattern of the flow of technical innovations and organized for it," Mr. Landon offered three recommendations for helping "bridge the gap between scientific research and application in practical products": 1) Research people should constantly appraise the factors that influence the transition. 2) These factors should be evaluated when determining how far research

projects should be carried. 3) Laboratory-trained personnel should also be used in the application of research to bring about more effective communication "between the laboratory and those who support it."

Mr. Knoerr's paper, "The Role of the Literature in the Diffusion of Technological Change" was published in May-June 1963 issue of *Special Libraries* and will not be mentioned here.

Mrs. Virginia Seidel, Librarian, International Nickel Company, said in her paper, "The Role of the Librarian in the Diffusion of Technological Change," that "for diffusion to take place there must be interchange between two members, and there must be energy or motivation to bring about the change." For her discussion she considered management as one of the members and the librarian as the other.

She described management's primary role as that of defining the library's field of activity and responsibility and that of opening the channels of communication to the library. To fulfill this role she described in detail six things that management should do: 1) Instruct the librarian in company fields of interest and apprise company personnel of the scope and function of the library. 2) Keep the librarian informed of company plans and problems and encourage participation in them. 3) Advise the li-

brarian of changes in personnel and fields of interest. 4) Provide an adequate budget and the authority to use it. 5) Encourage professional activities. 6) Use the library's resources in the solution of problems.

The librarian's role is to use these channels, and Mrs. Seidel made nine suggestions for successfully achieving this goal: 1) Know the company, its operations and its people. 2) Be in accord with management's objectives. 3) Know the literature of the industry and its technology. 4) Exercise the authority granted in determining the library's course and keep it current. 5) Cooperate with the technical staff. 6) The library staff should appreciate the importance of each job and its relation to the whole. 7) Innovate, be versatile, use imagination. 8) Translate pertinent literature to the company's use. 9) Remember that availability of information is one key to diffusion.

With the channels of communication open, a good library and a good library staff are very effective means for increasing the diffusion of technological change. The librarian may be considered the catalyst for the change.

DR. LUTHER H. EVANS, Director
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Columbia University, New York City

ELSIE RAY, Librarian
The Anaconda Company, New York City

Conference on Libraries and Automation

WITH THE COMPLETION of the automation study of the Library of Congress and the increasing interest of major libraries in the possible application of electronic equipment to library procedures, the Council on Library Resources, the National Science Foundation, and the Library of Congress called a meeting of approximately 100 librarians and authorities in information processing to review the state of the art, at the Airlie Foundation, Warrenton, Virginia, May 26-29, 1963.

Conferees were given advance copies of the following papers:

"The Current Status of Graphic Storage Techniques: Their Potential Application

to Library Mechanization" by Samuel Alexander, National Bureau of Standards.

"Index Files: Their Loading and Organization for Use" by R. L. Patrick and D. V. Black, Planning Research Corporation.

"Library Communications" by J. W. Emling, et al., Bell Telephone Laboratories, Inc.

"The Automation of Library Systems" by Gilbert W. King, Itek Corporation.

"Automated Storage and Access of Bibliographic Information for Libraries" by Richard L. Libby, Itek Corporation.

"Output Printing for Library Mechanization" by David E. Sparks, et al., Information Dynamics Corporation.

The papers were not read at the meeting,

but the discussion leaders for each session (Joseph Becker, I. A. Warheit, Henry Dubester, Foster Mohrhardt, Mortimer Taube, and Frank B. Rogers) presented their views of the topics and presided at the subsequent discussions. The author of each paper answered specific inquiries and expanded the topics of interest to the audience.

One-fourth of the audience represented the major university libraries; another quarter were the representatives of information processing organizations. The remaining half were from government organizations, public, special and state libraries, library schools, and library organizations.

The library of the future was hypothesized by Don R. Swanson, Dean of the Graduate School of Library Science, University of Chicago. During the course of his talk he stated that those library procedures that could be mechanized could be considered clerical. In the subsequent discussion, the use of computers to solve equations and for medical diagnosis resulted in the statement being changed to indicate that those library procedures that could be formalized could be performed on a computer.

The implication for library education in this conclusion is quite portentous. To the extent that formalization of library procedures, from acquisition to information retrieval, permits their being accomplished on a computer, the work previously done by library school trained personnel can be accomplished by machine alleviate the affects of the shortage of trained librarians.

The work of Heiliger has intrigued the interest of librarians, and there was widespread acceptance of the concept that computers could be used for technical processing. The allegiance of the librarian to traditional methods has encouraged at least some of the university librarians to retain a conservative attitude. They wanted to be assured that mechanization would give them at least the same resources they now have at no greater cost.

Could they obtain their catalog cards quicker and for more of their books if the National Catalog were mechanized? How could machines, with their limited type font, accommodate the many alphabets now required for bibliographic entries? Would the modern high-speed, low-cost data transmissions systems diminish the time cycle now required to obtain LC cards and would the format be acceptable? Questions such as these inspired the machine people to repeatedly remind the librarians they must reach a consensus of what they wanted in procedures and products and what they were willing to pay for it.

While the full implication of the machine potential was not realized by some of the librarians, reluctance to accept the promise of future mechanization is noticeably less at each succeeding meeting of this type.

G. E. RANDALL, SLA Representative
Manager, IBM Research Library
Thomas J. Watson Research Center
Yorktown Heights, New York

"Implications of the New Media for the Teaching of Library Science"

THE ABOVE IS the impressive title of an impressive three-day workshop that met in Chicago, May 27-29. The shoe was somewhat on the other foot as representative faculty members from each graduate library school in the United States and Canada met "in class" at the Sheraton-Chicago Hotel to increase their knowledge and understanding of the new media as well as to draw implications that are likely to affect the form and

the content of library education. Representatives of selected organizations (SLA, ADI, ALA, MLA, NEA, and others) were also enrolled in the workshop, but professors of library science were the principal and most active participants.

Content can be most briefly covered by noting the four major objectives of the workshop conference—objectives which *were* met before adjournment: 1) To demonstrate and

orient library educators to the kinds and uses of new educational media—prints, films, filmstrips, transparencies, closed-circuit and educational television, overlays, recordings, etc.—relevant for specific library science course content; 2) To acquaint library educators with the present scope of the field of programmed learning and to demonstrate and review the use of programmed learning devices in specific course content; 3) To provide a valid and useful body of content for library science educators on the theories, kinds, and uses of information retrieval systems that presently are being demonstrated in limited form in some libraries and to demonstrate a systems concept of library machine applications; 4) To report the recommendations of workshop attendees to the library education field as the bases for guidelines for revised curricula at both graduate and undergraduate levels.

The participants found themselves questioning the new media from two points of view: First, where and how can they be put to use in improving the teaching of the core curricula of library science, and, second, how can techniques of effective media use best be taught to library science students? Since this important conference intended to raise more questions than answers, its affects are not likely to be felt until the representatives have had an opportunity to report to their faculties, and the proceedings, which will be published, have been studied.

The roster of speaker-demonstrators—so called here because many made extensive use of visuals and recordings in their presenta-

tions of information—consisted of educators, librarians, and media-producers. It included Dr. Ray Carpenter, Pennsylvania State University; Dr. C. Walter Stone, Director, Center for Education and Media Studies, University of Pittsburgh; William Prigge, Director of Audio-Visual Instruction, Indiana State Department of Instruction; Weldon Johnson, Production Department, Encyclopedia Britannica Films; Dr. Lawrence Stolurow, Director, Training Research Laboratory, University of Illinois; Dr. Paul R. Wendt, Head, Instructional Materials Department, Southern Illinois University; Donald H. Kraft, IBM; Dr. Ralph Parker, Librarian, University of Missouri; and Sarah Rebecca Reed, Library Education Specialist, Library Services Branch, U.S. Office of Education.

The workshop grew out of a proposal prepared by the Media Research and Development Committee of the Library Education Division of ALA. The Education Media Branch of the U.S. Office of Education undertook support of the workshop and awarded a contract for its implementation to the University of Illinois. The able Project Director was Harold Goldstein of the U. of I.'s Graduate School of Library Science and Chairman of the aforementioned LED-ALA committee. He was aided in conducting the workshop by Carolyn Whitenack of Purdue University and Irving Lieberman of the University of Washington.

EDWARD G. STRABLE, Librarian
J. Walter Thompson Company, Chicago

Conference on the NASA Scientific and Technical Information Program

APPROXIMATELY 150 representatives of libraries receiving NASA services attending the Conference on the NASA Scientific and Technical Information Program held at the Georgia Institute of Technology, Atlanta, Georgia, on May 2 and 3, 1963, chiefly from the Eastern and Southeastern areas of the country. A team of knowledgeable and skilled representatives from NASA

presented an excellent program, providing insight into the philosophy, operations, planned programs, and problems of NASA's informational activities. Prepared lectures, accompanied by a set of working papers plus individual subject seminars, allowed detailed communication between the producers and the recipients of NASA services—an information system that is complex enough to

warrant this type of conference.

Melvin S. Day, Director of NASA's information program, introduced the conference with an overview of NASA's broad Scientific and Technical Information Program with specific emphasis on "Local Access to the Aerospace Technical Literature"; Van A. Wente, Director of the Documentation Division, presented in lay terms "The Utilization of Machines in NASA's Information System"; Paul S. Feinstein presented some interesting material concerning "The Generation and Dissemination of Industrial Information"; Frank Rowsome, Director, Technical Information Division, discussed the problems of "The Packaging and Re-packaging of Technical Information"; and Hubert E. Sauter, Director, Technical Services Division, covered in detail "NASA's Information Tools and Services for the Aerospace Community."

Group seminars in the above areas followed the presentations to allow detailed exploration into the various aspects of NASA's information program. These sessions provided an excellent opportunity for the informal exchange and development of ideas and problems (both special and mutual). The people from NASA sincerely encouraged the feedback of ideas concerning

the problems and procedures necessary to improve the quality of their program. Standardization procedures, projected plans for such items as correlation indexes of NASA, Defense Documentation Center, and Atomic Energy Reports, and possibly Publication Board Accessions, were discussed from various points of view.

During the second day of the Conference, the activities centered around informal open discussion of the more important items resulting from the seminars' interaction. Mr. Day, in this connection, succinctly developed and summarized the informational programs of other government sponsored agencies.

Looking back on the Conference I personally feel that the efforts of the NASA representatives demonstrates a tremendous stride forward during the past year and one-half. Much has and can be gained by the liaison and rapport developed as the result of such sessions. The sole purpose of NASA's informational program can be summed up as follows: to present in one "package" the world's literature (research reports plus published material) in the aerospace area—indeed a brave and mighty challenge.

LAYNE H. KROGER, Director
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Burlington, Massachusetts

International Congress on Medical Librarianship

AN ANIMATED SPANISH conversation in the registration waiting line, name badges identifying their wearers as citizens of Nigeria, Arabia, Japan, or Yugoslavia, snatches of German overheard in the exhibit booths of German and Dutch publishers, and the wireless head set receivers and ear phones for multiple language simultaneous interpretation that were handed out to everyone attending the general sessions all testified to the truly international flavor and composition of the Second International Congress on Medical Librarianship. The Congress, held in Washington, D. C., June 16-22, in conjunction with the 62nd Annual Meeting of the Medical Library Association, attracted more than 900 hospital, dental, veterinary, medical society, pharmacy, nurs-

ing, and other medical librarians, 150 of whom came from 60 nations other than the United States and Canada. A full schedule of programs featuring multi-language papers, receptions, exhibits, tours, and MLA business meetings was planned around the theme, "Libraries in the Advancement of Medicine."

Dr. Frank B. Rogers, Director of the National Library of Medicine and outgoing MLA President, acted as general chairman of the Congress and presided at the opening welcoming session. Other sessions were devoted to "Utilization of Machines for Bibliographic Purposes," "Problems of Library Organization," "Some Aspects of Library Management," "Interlibrary Cooperation," and "Special Problems of Historical Libraries."

Coming on the heels of SLA's deliberations in Denver on ways and means of continuing the education of a special librarian, the Monday morning session on "Education and Training for Medical Librarianship" was of particular interest. Gertrude Annan spoke on "Library Technicians: Need, Training, Potential" and pointed out that with 18,000 librarians currently needed in the United States alone, it is essential that professionals establish curricula and develop short courses or on-the-spot training programs for clerical and subprofessional staff. She cited the SLA Boston and San Francisco Chapters' workshops for library assistants as concrete examples of what could be accomplished and dispelled fears that subprofessional training might jeopardize standards by making an analogy with professional nurses who, when hard pressed for adequate help, took the lead in organizing training programs and schools for practical nurses with the result that nursing standards at all levels improved. Helen Yast followed up Miss Annan's account of training programs that are already in existence in the United States by reporting on the Institutes on Hospital Librarianship, which have been conducted for subprofessionals by the American Hospital Association since 1959. Margaret P. Russell then described educational programs in Great Britain, and Dr. Estelle Brodman surveyed medical library education in other parts of the world. All the speakers agreed that library associations should take an active part in setting standards and initiating training programs for library technicians, and it was repeatedly suggested that a certification or licensing system would further help ensure the quality and status of subprofessional staff.

A second session of special interest was the "Progress Report on the MEDLARS Project," in which key staff at the National Library of Medicine discussed the historical, bibliographic, data processing, subject heading, and service aspects of the in-process Medical Literature Analysis and Retrieval System. A well-conducted, informative tour of the new NLM building the next afternoon gave listeners an opportunity to see the MEDLARS and *Index Medicus* opera-



M. L. Allison

Dr. Frank B. Rogers, retiring President of the Medical Library Association and Director of the National Library of Medicine, enjoys refreshments at the Congress' picnic supper at the National Naval Medical Center's Stone Lake with Louise Darling, 1963-64 MLA President and Librarian, Biomedical Library, University of California at Los Angeles.

tions in action to ask questions and to examine the collections and catalogs.

A highlight of the Congress was an early morning visit to the White House where President Kennedy greeted delegates on the lawn and assured them of his appreciation of their skills in making medical knowledge readily available to doctors, scientists, and others who needed to be well informed. He said he felt "Librarian is a title to be proud of" before he left his rostrum to shake hands with a number of overseas librarians. Unexpectedly but appropriately, the United States Ambassador to the United Nations, Adlai Stevenson, arrived as the ceremonies were ending, and he made some impromptu remarks on the importance of libraries to the advancement of medical science.

The proceedings of the Congress will be published in the January 1964 *Bulletin of the Medical Library Association*.

MARY L. ALLISON
SLA Publications and
Public Relations Director

CURRENT CONCENTRATES Of The Library World

CLR Sixth Annual Report, 1962

THE METHODS employed by libraries from earliest times for organizing their collections have been basically inventorial in character. . . . It has been increasingly clear to some observers that these methods are inadequate to the purpose intended—that of making the collections useful.

"Even the modern great library," said Dr. Vannevar Bush in 1945, "is not generally consulted; it is nibbled at by a few. . . . But," he added, "The world has arrived at an age of cheap complex devices of great reliability; and something is bound to come of it." . . .

From these and similar observations has come the quest for the "push-button library," and much effort and intelligence has been devoted to it. Progress has been slow but has taken place, and there are numerous operating systems in which "push-button" machine selection has replaced manual selection. . . . Even for the more traditional methods of library work, automata have speeded up the making of indexes and concordances. Meanwhile, copious research is under way looking to the development of devices for reading printed text; for converting oral to graphic systems of communication and vice versa, for indexing, abstracting and interlingual translation; for spatial compression of records; and for improved methods of classification and indexing.

Few of these developments have as yet affected any but clerical operations in general libraries. For one thing . . . the service provided by the new mechanisms cannot yet compete either in cost or convenience with the traditional methods; for the purposes which most libraries serve, the book still provides the least expensive and most convenient form of storage of information, and the card catalog and the book-index the most flexible and effective instruments for reaching

it. . . . Even were techniques and devices developed which would enable a mechanized service to rival or even to exceed the satisfactoriness of traditional methods, the new mechanisms would require an expensive conversion of records to machine-readable form—typically microtext, punched cards or computer tape. It may be foreseen that records will eventually be initially published in such forms (and indeed, there are harbingers of this). . . .

In making a new grant to the Council . . . the Trustees of the Ford Foundation made provision for the Council to "concentrate its work in the field of technical storage and retrieval of information through the creation of a laboratory or center involving the activities of specialized personnel. . . ."

The first year's work accordingly proposed to develop the agenda for further research through a number of preliminary inquiries, including the preparation of a quantitative, functional description of libraries as they now operate; formulation of a statement of the functions that should be fulfilled by library systems; the examination of related sciences and technologies for their potential support of library operations; an analysis of aims, methods and problems in information storage and retrieval and in memory organization; and the performance of research on specific problems of man-machine communication and "artificial intelligence." It is proposed to publish the results of these studies as completed.

Forty grants, contracts and other allocations, representing a somewhat larger number of projects . . . were made by the Council during 1962. These totalled \$961,128. . . .

Extracted from the introduction to the *6th Annual Report for the Period Ending June 30, 1962* of the Council on Library Resources, Inc., by Verner W. Clapp, President.

Have You Heard . . .

AEC & NASA Standard Size Microcopy

The Atomic Energy Commission and the National Aeronautics and Space Administration have adopted a standard reduction ratio and frame size for microcopy of the information sent out by both agencies. One of the advantages will be that the microfilmed information can be viewed and reproduced in full size copy on identical equipment. The standard reduction ratio is 18 to 1, and the standard frame size, which contains two normal pages of copy, will be 16mm vertically and 23mm horizontally. Separation between frames will be 0.5mm. Further information may be obtained from either of the agencies at Washington 25, D. C.

Punched Card Retrieval System

Using the basic Peek-a-boo principle for retrieving filed information, the Find-It company has assembled a kit with pre-scored, pre-punched cards for use in small document files. The kit also includes 25 index guide cards, a metal file desk tray, correction seals, a special punch, instructions for use, and a short course in indexing. The kits are priced at \$9.95 each and are available from Find-It, P.O. Box 36074, Wilshire-La Brea Station, Los Angeles 36.

Six New CLR Grants

Almost \$1 million in grants and contracts has been granted recently by the Council on Library Resources, Inc. The AMERICAN LIBRARY ASSOCIATION received \$18,686 for the continuation of a Library Technology Project on the study of performance standards for library binding. Examples of publishers' edition binding and library class A binding are being investigated. COLUMBIA UNIVERSITY will use its \$7,200 for an operations analysis of research library administration. A \$42,190 grant for the preparation of a manual on work simplification in small public libraries has been given to DREXEL INSTITUTE OF TECHNOLOGY. Several independent libraries serving 25,000 or fewer persons will be studied in the New Jersey

and Philadelphia areas. All steps connected with the selection, acquisition, cataloging and classification, processing, circulation, and mending of books and related materials will be investigated. Completion of the study is expected in 18 months. JONKER BUSINESS MACHINES, INC. has been awarded a \$14,000 contract for the construction of a production model of a Minimatrex camera (Termatrex to Minimatrex converter). It is expected that the model will serve as a basic mechanism in an information retrieval system using the coordinate indexing principle. PHOTOGRAMMETRY, INC. received a \$8,626 contract for the design of a camera prototype, which will make microcopies of books and other material using available light, and for the production of microcopies without laboratory processing. A monocular viewer will be part of the equipment. A \$3,750 grant has been made to SYRACUSE UNIVERSITY to develop programs of instruction and research in the field of electronic information storage and retrieval for its School of Library Science.

IBM Micro-processing Cards

Micro-processing units and materials have been developed by International Business Machines Corporation as an aid to the storage and retrieval of documents by the miniaturization of information on film mounted in aperture cards. The first step in the process is photographing the original materials and reproducing it in miniature. This image is then copied from the microfilm to thermal film mounted in aperture cards, which are made for handling by data processing equipment. The IBM Micro-Copier I reproduces an aperture card copy of the master card in about 15 seconds. The copy card is then inserted in a portable IBM Micro-Viewer, which magnifies either the whole or parts of the image 15 times. Micro-Copier II makes an aperture card copy directly from microfilm. The price of the aperture cards with thermal or diazo film is \$35 for 1,000 cards. Micro-Copier I is \$825,

and the viewer is \$175. Micro-Copier II will cost \$925 and will be on the market during the first quarter of 1964.

British Librarians to Visit U.S.

A welcome invasion by air of approximately 137 British librarians on United States shores is expected on October 9. After conquering the sights and libraries in Boston, Washington, D. C., and New York, they will depart October 23. To ease the way and to act as hosts for this whirlwind tour, SLA Chapters from the areas in and around the three cities will cooperate with the Association of Assistant Librarians, a section of the Library Association in England. Visits to school, special, college, public and county libraries are planned along with sightseeing and social activities. Bill M. Woods, SLA Executive Secretary, is on the committee for arrangements on this side of the Atlantic along with Jack Dalton, Dean, School of Library Service, Columbia University, and Eric Moon, Editor, *Library Journal*. Rice Estes, Librarian at Pratt Institute Library in Brooklyn, and Mrs. Elaine A. Kurtz, Associate Executive Director of the United States Book Exchange, Washington, D. C., are regional chairmen assisting the Tour Committee. Individual librarians will be asked to be hosts to one or two British librarians.

Miracode System of Information Retrieval

Recordak's new Miracode principle helps retrieve and print information filed on specially encoded microfilm. The system works by coding a 16mm microfilm image of an original document at the same time the document is being microfilmed. To locate information, the record file is scanned by the Lodestar Reader-Printer, central unit of the Miracode High Speed Reference Station. Documents answering the index description are flashed on the screen for reference and then automatically enlarged to paper facsimile form, one after the other, if the automatic print order has been given when the index codes were keyed into the system. Average retrieval time is eight seconds. The microfilm files are encoded either manually or automatically by the Miracode Microfilmer. Electronics systems specialists are available for consultation.

Members in the News

ROBERT J. HAVLIK, former Librarian at Linde Company, Tonawanda, New York, has accepted a position with the U.S. Office of Education, Library Services Branch, in Washington, D. C. RALPH SWINBURNE, former Librarian at Union Carbide Metals Company, succeeds Mr. Havlik at Linde.

ALLEN KENT, former Associate Director of the Center for Documentation and Communication Research at Western Reserve University, has been appointed Director of a new University of Pittsburgh center dealing with teaching, technology, and research related to knowledge availability systems.

MRS. CONSTANCE MOORE has been chosen to direct the five libraries operated by United Air Lines in Chicago and San Francisco for internal use. She succeeds MRS. MARION HERZOG, who retired after 19 years.

GERALD J. OPPENHEIMER, former Manager of Information Services at Boeing Scientific Research Laboratories, recently became Director of the Health Sciences Library at the University of Washington, Seattle.

JOHN SHERROD, former Chief, Science and Technology Division, Library of Congress, has been named Chief, Information Services and Systems Branch, Division of Technical Information, U.S. Atomic Energy Commission.

Coming Events

The 29th session of the INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS (IFLA) COUNCIL will convene in Sofia, Bulgaria, September 1-6, 1963. All meetings will be held at the National Library Vassil Kolarov, Boulevard Tolbuhin 11.

PACIFIC NORTHWEST LIBRARY ASSOCIATION will hold its 1963 conference during August 28-30 at Yakima, Washington.

The Graduate School of Library Science and the Division of University Extension of the UNIVERSITY OF ILLINOIS will sponsor two Allerton Park conferences. "Research Methods in Librarianship," the conference which will be held September 8-11, is open to those engaged in teaching or sponsoring

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research. For further information write to the Graduate School of Library Science, 331 Library, University of Illinois, Urbana. From November 3-6 the topic discussed will be "The School Library Materials Center: Its Resources and Their Utilization."

Library Services Branch Appointments

The Library Services Branch of the Department of Health, Education, and Welfare's Office of Education has appointed Sarah Rebecca Reed, former Executive Secretary of ALA's Library Education Division, as Library Education Specialist, and Dorothy A. Kittel, former Adult Services Consultant at North Carolina State Library, as Public Library Specialist for Adult Services.

British Recruitment Brochure

The Library Association, Chaucer House, Malet Place, London W.C. 1, has recently published *Become a Librarian*. This 12-page illustrated brochure covers all branches of librarianship and is geared for high school and advanced level students. Copies are 6d each, depending upon quantity, and are supplied free to guidance counselors and employment personnel from the Association.

Letters to the Editor

EDUCATION AND TECHNICAL REPORTS

Mr. Stevenson's article, "Library Education: the Shape of the Future," in the May-June issue of *Special Libraries*, is the most concisely intelligent statement I have seen of the need for library schools to recognize the existence of the whole new literature of government and company generated technical reports and the fact that it is only through librarians trained to their use that the contents of these reports can be made available for the vital use of scientists and engineers.

Four years ago, I brought up this matter in a class I was then taking in the extension division of one of the leading library schools of the country and was soundly squelched for my pains and for suggesting that library schools should include courses about such things. If I remember correctly, the teacher declared that this would be the equivalent of "turning library schools into trade schools." (*Quelle horreur!*)

Granting the "inborn tendency to resist change," as Mr. Stevenson so temperately puts it, is it not also probable that much of the resistance that directors of library schools show to the claims of this new type of material to be included in their curricula stems from the fact that they have never seen a technical report and have no idea what on

earth it is? And let us consider that the word "report"—so familiar and so meaningful to those of us who have worked in the libraries of industrial plants or scientific laboratories—is not in itself particularly descriptive to a person who has not.

Would it not be feasible—and sensible—for a committee of the SLA to make an official effort to introduce this kind of material to the directors of the leading library schools and to educate the latter in an understanding of the important place these reports have in our national technical and scientific effort?

MRS. CHARLOTTE WILCOXEN, Librarian
Brown Pulliam, Bedford, Massachusetts

MICROFILM SERVICE TO SUBSCRIBERS

If I understand Mr. Asero correctly (see *Special Libraries*, May-June, 1963, page 300), the service, which he desires, already exists. University Microfilms, Inc. of Ann Arbor, Michigan will sell him positive microfilm of the annual volumes of any of some 1,200 current journals at an announced price of approximately three-tenths of a cent per page with a minimum of \$2.75 per annual volume, spooled, boxed, and labeled, and with the index for the year, when available, at the beginning of the reel. In order to qualify for the service, the purchaser must be a subscriber to the journal in original form. The microfilm makes it possible for him to discard the originals, thereby avoiding costs of binding and reducing storage requirements. University Microfilms, Inc.'s current catalog contains a study of the economics of periodical storage, which Mr. Asero will find interesting.

VERNER W. CLAPP, President
Council on Library Resources, Inc.
Washington, D. C.

DUPLICATING ADVICE FROM ENGLAND

The article by H. Rupert Theobald, "Mechanical Reproduction of Library Cards in a Special Library" (*Special Libraries*, March 1963), is of interest to us as we have been using the method he describes, with some modifications, for over two years. The difficulties being experienced with 5 x 3 inch master sets can be overcome by the following method.

Separate 11 x 8½ inch masters and carbons are purchased. One master is ruled to give three 5 x 3 inch frames, using one of the carbons. This master is placed on the duplicator, and the remaining masters are fed into the duplicator, matt face uppermost. The result is a quantity of framed masters, which are then ready for typing. After typing the catalogue entries, the frames can be cut, leaving the space at the edges of the frames to attach to the drum of the duplicator. The method works very satisfactorily and eliminates the need for special 5 x 3 inch masters.

R. SWEENEY, Librarian
United Kingdom Atomic Energy Authority
Wantage, Berkshire, England

Off the Press . . .

Book Reviews

INFORMATION RETRIEVAL MANAGEMENT. *Lowell H. Hattery and Edward M. McCormick*, eds. Detroit, Michigan: American Data Processing, Inc., 1962, 151 p. \$13.50.

The papers are adapted from the proceedings of the Fourth Institute on Information Storage and Retrieval, presented February 1962 at the Center for Technology and Administration, School of Government and Public Administration, The American University.

Although the intent of this volume is to present to all levels of management the different approaches to be considered in information retrieval systems and to emphasize the responsibilities of management, it will serve as an excellent guide for those at the operating level and as a checklist for those who need to evaluate present systems. It will be a useful tool in any library, whether the interest is in mechanization or not, for every reader will have a better understanding of the communication problems in the essential steps of gathering, analyzing, and disseminating technical information.

The book has been well edited—the papers written by well-known leaders in scientific communication who have a lucid style. The volume contains an index, an extensive bibliography, and some informative graphs.

The 18 chapters have a logical sequence of interest, from the basic systems concept in communicating technical information, through experiences operating single information centers, to the broad international interest in documentation. There are five major areas of management concern:

1. General problem: Chauncey D. Leake, Lowell H. Hattery, Karl F. Heumann, and Saul Gorn discuss the systems concept, the handling of information in the documentation crisis, the international trends in documentation and computers, and communications and science inter-relationship.
2. Management problem: Julius N. Cahn discusses the national goal of a compatible information system with collaboration between federal and private groups; Paul W. Howerton the hierarchical position of technical information centers; and James Hillier the evaluation of an information center from a manager's point of view.
3. Communications aspect: H. P. Luhn considers the general business intelligence system; Helen L. Brownson the information needs of the scientist; William B. Kehl communication between computer and user in information searching; and Hattie T. Anderson should management try to build compatible, integrated, company-wide data systems.
4. Problem definition: DeWitt O. Myatt discusses survey technique to determine design information

for an information center; Simon M. Newman criteria for establishing system costs; and C. Dake Gull guidelines for the decision to mechanize information systems.

5. Systems experience: W. C. Asbury and J. E. Moise describe the Technical Information Center of Esso Research and Engineering Company; Bernard K. Dennis the Technical Information Center of the General Electric Company, emphasizing the services offered and the problems in financing; John Sherrod the functions of a technical information center.

Edward M. McCormick summarizes the phases of the management control cycle and science information center.

MARJORIE GRIFFIN, Librarian
Advanced Systems Development Division, IBM
San Jose, California

AMERICAN LIBRARY RESOURCES: A BIBLIOGRAPHICAL GUIDE; SUPPLEMENT 1950-1961. *Robert B. Downs*, ed. Chicago: American Library Association, 1962. 226 p. \$9. (L.C. No. 61-11156)

Cooperation between libraries has been on an expanding basis during the past 20 years, and the library world has seen the increasing number of union lists of books and periodicals, printed library catalogs, surveys of library holdings, calendars of archives and manuscripts, descriptions of special collections, and library reports and bulletins. Dr. Downs recorded the growth of bibliographic resources for the period 1875 to 1950 in his original book *American Library Resources: A Bibliographical Guide*. Now in his *Supplement* to the original publication he covers the materials produced from 1950 through 1961.

This valuable tool for the special librarian will help him locate many of the specialized sources needed in his literature searches. Some of the catalogs and union lists of materials referred to in the *Supplement* should also prove valuable as checklists in developing his collection.

The guide is arranged by broad Dewey classification and includes an index to authors, compilers, editors, types of material, subjects, and to some titles. Each entry is numbered and listed only once.

Most major libraries of the United States are represented by entries in this publication, and particularly gratifying is the number of special libraries in universities and governmental agencies which have published listings of their special collections or catalogs of their book and periodical holdings. As a result of their efforts in the area of publication of union lists of periodicals, many Special Libraries Association local Chapters also appear in Dr. Downs' compilation. However, there seems to be a large gap in the listings of holdings, descriptions of collections, and library reports from

business and industrial libraries. It may be that no such material is published or that it did not come to the editor's attention. In either case, special libraries in business and industry are hiding their light under a bushel and not receiving a proper share of attention. This is not meant to deprecate a fine job done by the compiler of *American Library Resources* but merely to suggest an untapped area.

The *Supplement* (and the original publication) are both highly recommended for inclusion in any special library reference collection.

RICHARD A. DAVIS, Assistant Professor
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Drexel Institute of Technology
Philadelphia, Pennsylvania

MODERN DOCUMENTATION AND INFORMATION PRACTICES: A BASIC MANUAL (FID Publ. 334). Dr. Otto Frank, ed. The Hague: International Federation for Documentation, 1961. x, 225 p. \$4.50. Published with the assistance of UNESCO.

Recently I read a bit of advice to those who find it difficult to stay with a book and read it through. The gist of this advice was: start in the middle, start at the end—start any place, but find something that interests you and permits you to get into the book. Put it down if it defeats you or bores you, and then keep coming back to it. Eventually it will yield. This rather accurately describes my own progress through *Modern Documentation and Information Practices* and, since it was ultimately a successful method, I recommend the following order of reading.

Chapter 13, "Human Factors," and Chapter 14, "Cooperation and Coordination," both by Dr. Josef Koblitz, might be read first. These two chapters, the last in the book and confined to a mere 25 pages, including their lists of references, serve to carry out the objectives of a "basic manual," which the subtitle promises the book is to be. In his statement of the problems of training for documentation ("it is the least systematized factor of all") and in his presentation of staff requirements and qualifications, Dr. Koblitz succeeds in outlining the principal functions of a special library or documentation center. Chapter 13 provides useful guides for staff organization and realistic recommendations for preparatory education, on-the-job training, and individual self-study. Chapter 14 is a discussion of operational problems, which might be met successfully through various methods of organization for cooperation. It is brief but thorough.

Chapter 7, "Information Retrieval," by Dr. J. Edwin Holmstrom is the next point of attack (or was for me). Retrieval techniques are systematically organized, and Dr. Holmstrom has even prepared a chart with various types of documents (cuttings from newspapers, pamphlets, reference books, etc.) arranged vertically, and techniques for retrieval (alphabetical arrangement, subject classification, punch cards, computers, etc.) arranged horizontally. Within this matrix, and for each

of the various types of documents, he determines with a + (or, "where eminently well suited" a ++) the appropriate retrieval techniques to be used for achieving direct or indirect retrieval. "Direct" and "indirect" here refer to the distinction between data-providing and reference-providing information retrieval techniques.

Of course there really is no universal agreement on the question of appropriate or "eminently" appropriate retrieval techniques with regard to various types of documentary materials. Until there is a sufficiently large body of experimental evidence to go on, we are all working somewhat intuitively. Dr. Holmstrom's peremptory presentation indicates no such lack of decision on his part.

The same decisive attitude is brought to bear on his discussion of the various classification systems in this chapter. According to Dr. Holmstrom, there is the Universal Decimal Classification with its many enthusiasts and there are those other classifications, which, one gathers from the author's presentation, were concocted by disgruntled anti-UDCers to display their lack of enthusiasm for decimal classification.

Chapter 10 on reproduction is a contribution by the general editor, Dr. Frank. This is a fair presentation of photocopying methods and devices, microfilming, microfilm readers, and other reproduction methods and machines. It is well illustrated with photographs of many of the devices discussed. Most of the illustrations display European equipment, but some United States manufacturers are also represented.

For progress through the rest of the book, I have no special recommendations. There are chapters on processing, bibliographic methods, mechanization, and translation. Some, if not novel, are at least readable and useful. Others are intolerably dull and cumbersome, with quarter-page, one-sentence paragraphs abounding.

The lack of a subject index might be considered a serious omission. In this case the annoyance is less severe because, for such a small book, the rather well organized "List of Contents," which appears at the front, serves well enough to find things.

Appendix 1 contains a listing of all of the references cited in the chapters, appropriately numbered to refer back to the chapters in which they were cited. Appendix 2 is a list of "Organizations Concerned in the Promotion and Improvement of Documentation and Related Practices."

I was led, for purposes of comparison, to reread various parts of an earlier book, which had many of the same objectives as this one. Lucille Jackson's *Technical Libraries: Their Organization and Management*, although some ten years older than the book edited by Dr. Frank, is still far superior as a basic manual. When I require such a reference (as I often do) I will still have Jackson on my desk. One really doesn't need both.

R. E. DURKIN, Manager, Laboratory Library
IBM Data Systems Division, Kingston, N. Y.

Cleveland Chapter Membership Directory

A *Directory of Members* 1963 has recently been published by the Cleveland Chapter. Student members from the Western Reserve School of Library Science are listed, and there is also a classified index of libraries in the area. Copies may be obtained gratis from Rose J. Nadas, Librarian, Lamp Division, General Electric Company, Nela Park, Cleveland 12, Ohio.

Philadelphia Chapter Union List

A union list of serials for the Philadelphia area is in preparation by the SLA Philadelphia Chapter in conjunction with Literature Service Associates, who will publish the list. LSA has already published union lists for the New Jersey and Maryland areas.

Southern California Union List

The Southern California SLA Chapter has compiled and edited the fourth edition of the *Union List of Periodicals in Libraries of Southern California*, which includes the holdings of 113 libraries, a total of over 16,000 entries. The computer-produced *Union List* is \$5 each to contributing libraries and \$20 (plus 80 cents sales tax for California residents) to others and may be ordered from Central Magazine Company, Box 863, Riverside, California.

Chapter Award Projects Summary

The San Francisco Bay Region Chapter, winner of the 1963 H. W. Wilson Chapter Award, has made available a summary of its prize-winning projects. Guided by the theme, "Put MORE Knowledge to Work—Continuing Education for Chapter Members," the summary contains descriptions of two development courses for professional librarians, two machines and systems courses, one workshop for library assistants, and one invitational forum on educational needs and future programs. Copies are free from Association Headquarters.

SLA Authors

ADKINSON, Burton W. The Role of Scientific Societies Today. *American Council of Learned Societies*, vol. 14, no. 1, January 1963, p. 1-9.

ANDREWS, Mrs. Theodora and SEWELL, Winifred. World List of Pharmacy Periodicals. *American Journal of Hospital Pharmacy*, vol. 20, no. 2, February 1963, p. 42-83.

ASH, Lee. The Question of Definition. *Library Journal*, vol. 88, no. 8, April 15, 1963, p. 1617-20.

BENTLEY, Howard B. City Planning and Urban Renewal. *Library Journal*, vol. 88, no. 8, April 15, 1963, p. 1621-4.

BRYAN, James E. The Needs of Libraries and What ALA Is Doing About Them. *ALA Bulletin*, vol. 57, no. 4, April 1963, p. 319-21.

DOWNES, Robert B. Decline and Fall. *Wilson Library Bulletin*, vol. 37, no. 9, May 1963, p. 772-4.

DUNKIN, Paul S. 1962: On the Road. *Library*

Resources and Technical Services, vol. 7, no. 2, Spring 1963, p. 156-60.

JAHOBA, Gerald. Special Libraries and Information Centres in Industry in the United States. *Unesco Bulletin for Libraries*, vol. 17, no. 2, March-April 1963, p. 70-6.

ORNE, Jerrold. Newspapers: A Regional Resource. *Library Journal*, vol. 88, no. 8, April 15, 1963, p. 1612-4.

SHARP, Harold S. What Are You Trying to Say? *Trained Men*, vol. 43, no. 2, 1963, p. 17-20.

SHERA, Jesse H. Toward a New Dimension for Library Education. *ALA Bulletin*, vol. 57, no. 4, April 1963, p. 313-8.

TAUBER, Maurice F. Technical Services in 1962. *Library Resources and Technical Services*, vol. 7, no. 2, Spring 1963, p. 133-41.

YERKE, Theodor B., co-author. The Oxford System: A Study of Its Uses at a Forest Experiment Station. *Journal of Forestry*, vol. 61, no. 4, p. 295-6.

ZIPIN, Lynn P. The Westchester Academy of Medicine Library. *The Westchester Medical Bulletin*, vol. 31, no. 3, March 1963, p. 9-12.

New Serials

ADVANCES IN CHILD DEVELOPMENT BEHAVIOR has a proposed publication date of Winter 1963. The journal, which will be published by Academic Press, will present articles on developments and methods in the field, including biological and physiological research as well as social factors, perception, and motivation and learning.

DATA PROCESSING FOR EDUCATION, a monthly publication of American Data Processing Inc., Book Tower, Detroit 26, Michigan, is devoted to articles concerning school administration, teaching, and guidance in all levels and types of educational institutions. A four-month trial subscription is \$9; the regular rate is \$24 a year.

EVALUATION, published quarterly by Nationwide Consumer Testing Institute, Hoboken, New Jersey, was first published in April. The scope of the journal at present is product evaluation of interest to manufacturer and consumer. Eventually articles will cover design, testing, production, and marketing. Subscriptions available free upon request.

INDEX OF THE CHRISTIAN SCIENCE MONITOR is published monthly, including the western and mid-western editions as well as the eastern edition, by Mrs. Helen M. Cropsey, 1725 Kings Road, Corvallis, Oregon. Yearly subscription price is \$10 with an additional \$10 for a six-month and annual cumulated index.

JOURNAL OF EXPERIMENTAL CHILD PSYCHOLOGY will make its first appearance with the Spring 1964 issue. The quarterly, to be published by Academic Press, will contain papers investigating the factors that determine the behavior and development of children. Discussion will be on theoretical aspects of experiments, developmental studies on infra-human subjects, new apparatus or techniques, new

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material, circuits, and other information valuable to investigators in the field.

JOURNAL OF HYDROLOGY is published quarterly mainly in English by North-Holland Publishing Company, P.O. Box 103, Amsterdam, The Netherlands. The international journal publishes papers on all aspects of surface and ground waters, hydrological phenomena and engineering, and meteorology and climatology. Subscription is \$15 for each volume, postage free, available from the publisher. Up to 25 reprints of an article may be ordered free of charge.

JOURNAL OF MATHEMATICAL PSYCHOLOGY will be published semi-annually, beginning January 1964. Research papers will be devoted to mathematical developments in learning theory, perception, psychophysics, cognitive processes, psycholinguistics, and social behavior. Institutional subscriptions are \$20, and the \$10 private subscriptions, which are only valid when ordered directly from the publisher, are available from Academic Press.

JOURNAL OF VERBAL LEARNING AND VERBAL BEHAVIOR, appearing six times a year, publishes research reports on experimental, empirical, and theoretical investigations. Institutional subscriptions are \$15 a volume. Private subscriptions cost \$8.50 a volume and are only available from the publishers, Academic Press.

MEDICAL ELECTRONICS AND BIOLOGICAL ENGINEERING, the official journal of the International Federation for Medical Electronics, began its quarterly publication with the January-March 1963 issue. Articles, published in English, French, German, or Russian, cover instrumentation, data analysis, computer and new materials applications and present related information between the medical and biological sciences and the engineering and physical sciences. The annual subscription price to libraries is \$20; to individuals for private use, \$10; and to members of the Biological Engineering Society and the IFME, \$6; available from Pergamon Press.

NAUCHNAYA I TEKHNIЧЕСКАЯ ИНФОРМАЦИЯ (*Scientific and Technical Information*) is a bi-monthly section of the Russian language abstract journal, *Referativnyi zhurnal*, published in Moscow by the All-Union Institute of Scientific and Technical Information. Topics abstracted include information retrieval and data processing, cataloging and classification, translation programs, reproduction, organization of information services, and related library and science-technology information subjects. Subscription to the journal is available from dealers specializing in Russian publications.

RADIOISOTOPE REPORT, a biweekly information service published by Trends Publishing, Inc., 998 National Press Building, Washington 4, D. C., will provide coverage on the use of radioisotopes and applied radiation in manufacturing and research, a checklist of source material, patent information, and a free subscriber inquiry service. Annual subscription price is \$72.

JULY-AUGUST 1963

Grolier International Encyclopedia

A 20-volume *Encyclopedia International* was recently published by Grolier Inc. at the cost of \$4 million. The work contains 36,000 articles written by 1,780 contributors, including 10 Nobel Prize winners. The index volume has over 100,000 entries, and the 18,500 illustrations were designed to add understanding to the text. The complete set sells for \$199.50 and is available from Spencer International Press, Chicago.

RECENT REFERENCES

Librarianship

CANADIAN LIBRARY ASSOCIATION. *16th Annual Conference Proceedings*. Ottawa: n.d. 101 p. mimeo. pap. Apply.

Proceedings of the general sessions, committees, and projects given at the Algonquin Hotel, St. Andrews, New Brunswick, June 16-23, 1961. Conference theme was Rx: Inquiry—Consultation—Action. In English.

KENNON, Mary F. and DOYLE, Leila A. *Planning School Library Development*. Chicago: American Library Association, 1962. 89 p. pap. \$1.

A report of the School Library Development Project of the American Association of School Librarians, February 1, 1961—July 31, 1962, based on the work of the national project, 21 grant projects, and other state and local groups to which consultant service was given. Appendices include "SLDP Publications and Materials" and "Directory of Grant Projects."

LAND, Brian. *Avenues of Research*. Montreal: Canadian Chamber of Commerce [1962]. 40 p. pap. \$2.

A businessman's guide to sources of business information. Chapters cover "The Importance of Research," "The Library as an Information Centre," "Reference Books as Sources of Information," "Periodicals and Pamphlets as Sources of Information," "Government as a Source of Information," "Sources of Statistical Information," "Associations and Chambers of Commerce as Sources of Information," and "How to Conduct a Research Project." Appendices list library classification systems, Canadian indexes, depository libraries, offices of the Dominion Bureau of Statistics, and provincial statistical and economic agencies.

Mechanized Library Procedures (General Information Manual. White Plains, N. Y.: International Business Machines Corp., Technical Publications Dept. [1963]. 19 p. pap. Apply.

Describes methods by which IBM data processing machines can be utilized for such library applications as book ordering, shelf listing, cataloging, indexing, and related procedures. Appendix. MOSELEY, Elizabeth and HAWKINS, Miriam. *Basic Reference Aids for Small Medical Libraries*, rev. Washington, D. C.: National Library of Medicine, 1962. ii, 24 p. pap. Apply.

Includes bibliographies, dictionaries, histories,

catalogs, drug lists, reviews, audio-visual aids, and other basic references. Essential titles are starred. Arrangement is by type of reference, and titles are chiefly in English, with citations to the latest editions available. Sources and prices are given for most entries. Texts in subject fields have been omitted.

Proceedings of the Joint Conference of Canadian Library Association and the Ontario Library Association. Ottawa: [1963]. 120 p. pap. Apply.

Proceedings of the 17th CLA and the 60th OLA conferences at the Chateau Laurier Hotel, Ottawa, June 22-29, 1962. Includes speeches, section, committee, and workshop sessions, plus directory of conference committees.

SHEEHAN, Sister Helen, S.N.D. *The Small College Library.* Westminster, Md.: The Newman Press, 1963. ix, 216 p. \$3.50 (20% discount to schools and libraries) (L.C. 62-21495).

The staffing, financing, services, and operation of a small college library. Appendices include bibliography, budget, sample forms and notices, addresses of suppliers, publishers, and distributors, ALA standards for college and junior college libraries, and evaluating the library. Index.

SLAMECKA, Vladimir. *Final Report Indexing Aids (RADCTDR-62-579).* Bethesda, Maryland: Documentation Inc., January 1963. vii, 33 p. pap. (For Sale from Office of Technical Services, U.S. Department of Commerce, Washington 25, D. C.)

A discussion of various indexing aids from the viewpoint of their use for circumventing memory limitation of indexers and for providing a feedback relative to the usefulness of indexing operations. Includes proposed methodology and bibliography. Study prepared for the Rome Air Development Center, Griffiss Air Force Base, New York.

STECKLER, Phyllis B., ed. *The Bowker Annual of Library and Book Trade Information*, 8th ed. New York: R. R. Bowker, 1963. 375 p. \$7.50. (L.C. 55-12434)

New sections in Part 1 include Foreign Antiquarian, Booksellers, and Publishers Associations; Guide to National Bibliographic Centres; Basic Books for Librarians and the Book Trade; Consumer Expenditures; American Book Publication Figures, 1961-62; Subscription Reference Net Sales Retail; and State Public Library Agencies. Also new is the Activities Index. Regular features include Chart of National Library Associations, 1962, and the Library Buying Guide. Index.

Bibliographic Tools

BOGARDUS, Janet. *Outline for the Course in Business and Economics Literature* (Library Service s8552G), rev. New York: School of Library Service, Columbia University, 1962. 48 p. pap. \$1.60.

Annotated bibliography of general reference books, basic statistical sources, periodicals and newspapers, U.S. government publications, asso-

ciations and organizations, business and economic activity, industries and commodities, and financial information. Includes eight pages of work sheets.

CHESIRE, Esther. *Review of Iron and Steel Literature for 1961.* Pittsburgh, Pa.: Carnegie Library of Pittsburgh, 1962. 62 p. pap. Apply.

This listing is the 45th annual review compiled for the *Blast Furnace and Steel Plant*. Includes publications issued earlier than 1961 but not previously listed.

LIBRARY OF CONGRESS, Science and Technology Division, Reference Department. *Aeronautical and Space Serial Publications: A World List.* Washington, D. C.: 1962. ix, 255 p. \$1. (Sold by Government Printing Office.)

Bibliography of 4,551 titles from 76 countries arranged alphabetically by country. Title index with cross references. United States has 1,630 titles; Germany 426; Great Britain 418; France 394; and Russia 157.

PARK, Iris M. *New Zealand Periodicals of Literary Interest* (Bibliographical Series No. 6). Wellington, New Zealand: National Library Service, 1962. iii, 55 p. pap. Apply.

Compiled by the author as part of her studies at the Wellington Library School. Periodicals selected to indicate the development of the literary magazine in New Zealand and where New Zealand fiction of an individual author can be found. Author and periodical title indexes. Appendix for marginal items.

SCHUTZE, Gertrude. *Bibliography of Guides to the S-T-M Literature: Scientific-Technical-Medical, Supplement, 1958-1962.* New York: 1963. 39 p. pap. \$2. (Sold by the author, 801 Crotona Park North, New York 60.)

395 books, papers, and periodicals arranged by broad subjects. Foreign literature section and listing of guides to S-T-M books, periodicals, and abstracting and indexing services included.

U.S. NAVAL SCHOOL, Civil Engineer Corps Officers, Academic Department. *Bibliography: Behavioral Research and Associated Studies.* Port Huene, Calif.: Technical Library Division, January 1963. iii, 31 p. pap. Apply.

Based on work done over the past several years under the auspices of the Department of Defense. Prepared by the faculty of the Engineering Management Division and the librarian of the school.

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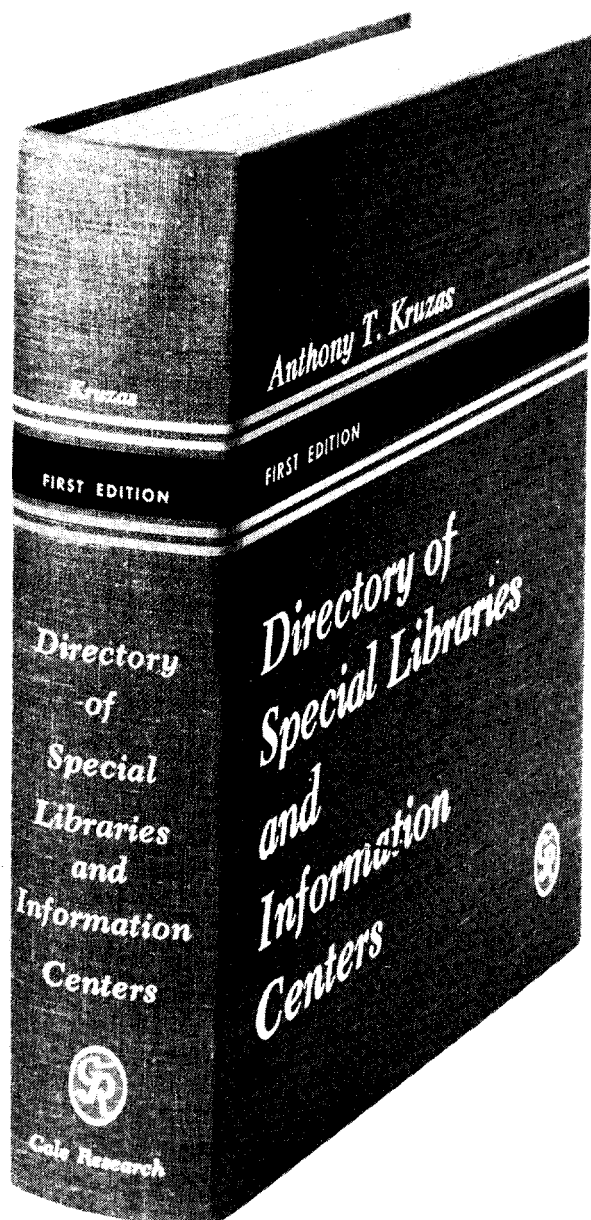
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