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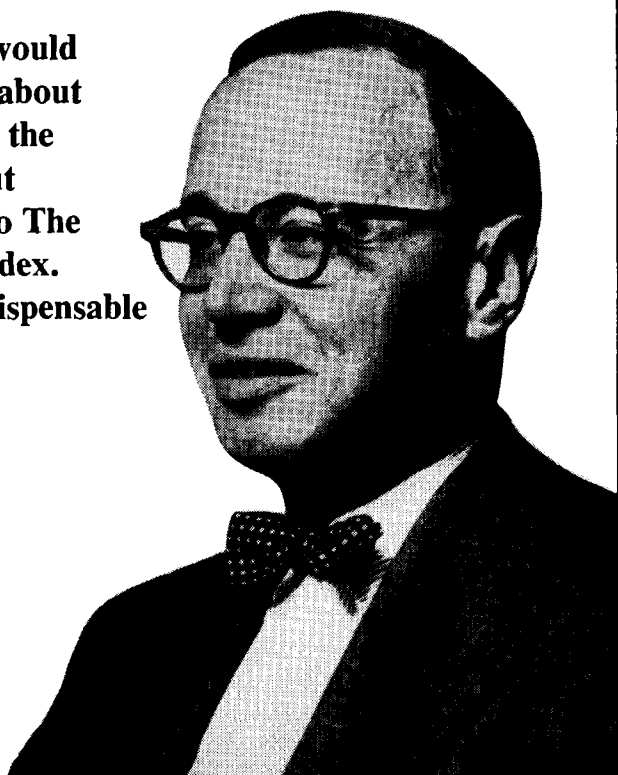
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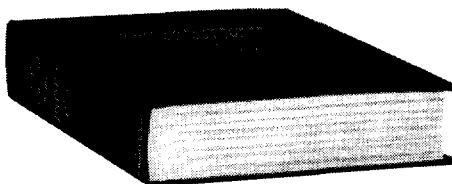
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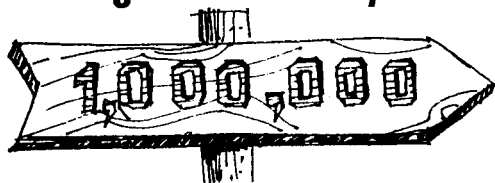
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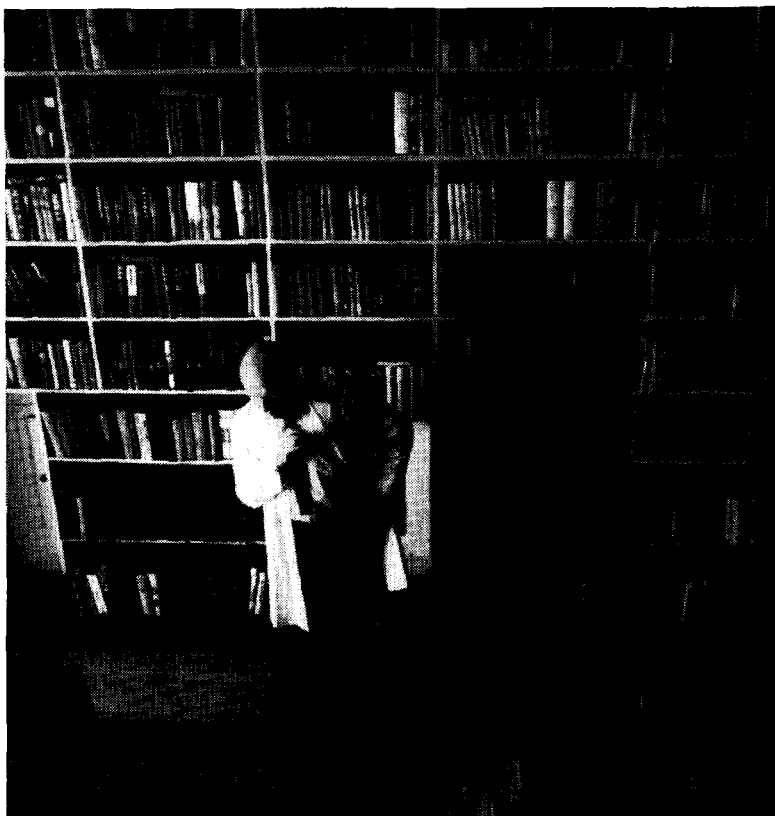
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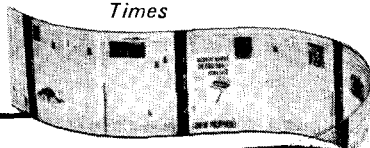
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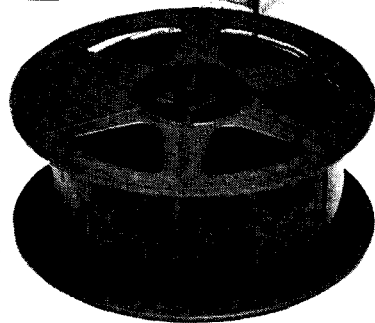


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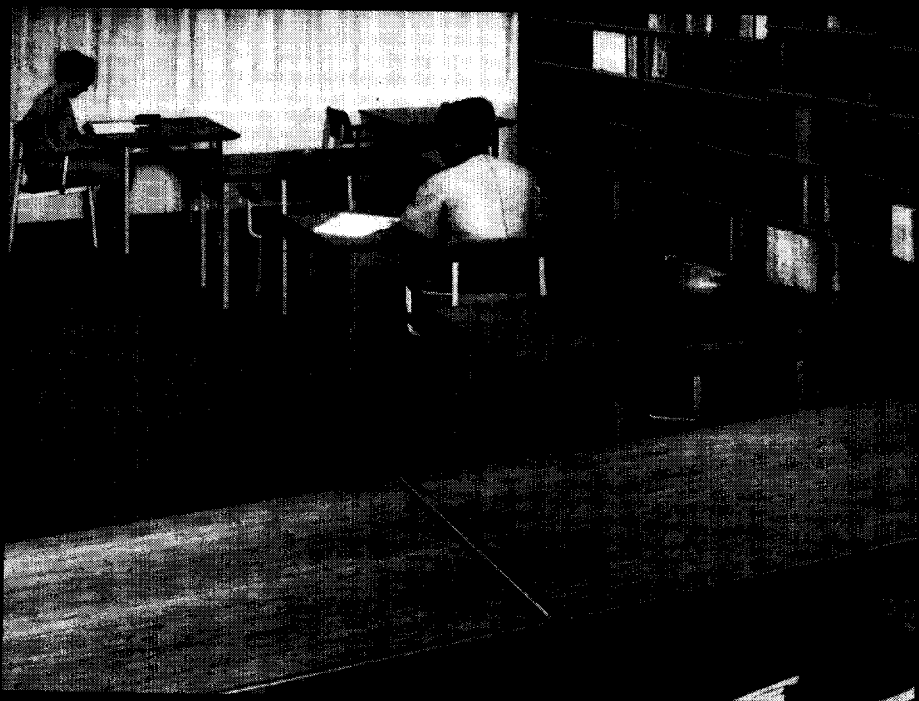


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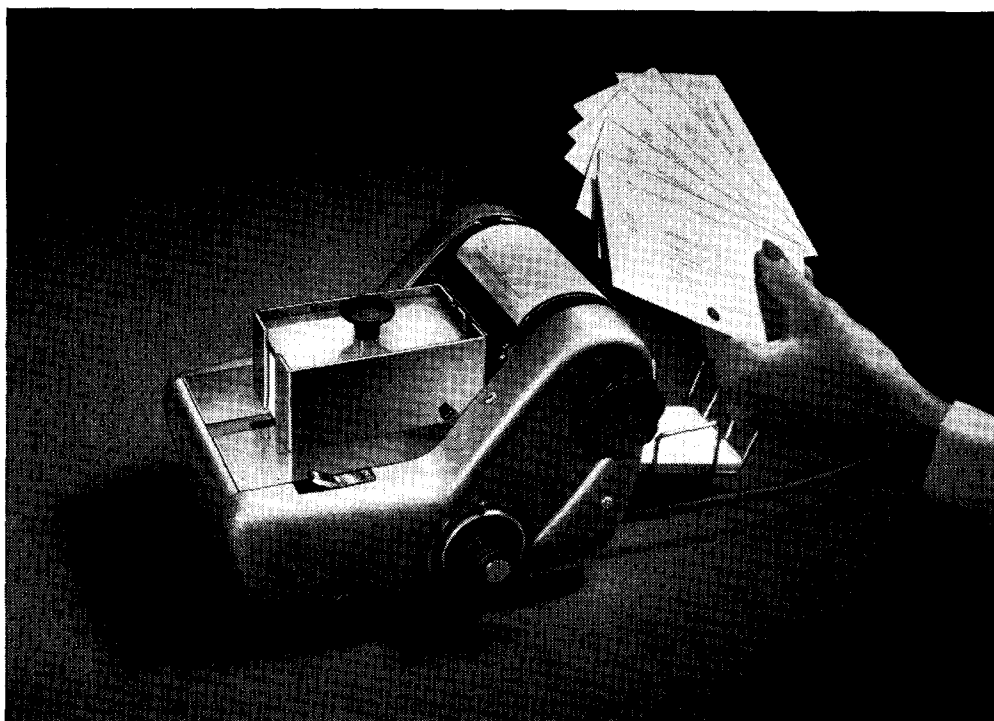
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The evolution of a random access information retrieval system is presented. In 1959 the Missile & Space Division Library of the General Electric Company began to feel the effects of the information explosion and started a study of existing systems and library practices. Management approved automation of many clerical functions that electronic data-processing equipment could accomplish more efficiently. Mechanization included document circulation and recall, the preparation of a descriptor thesaurus, and random access information retrieval—wherein the GE/MSD Library had its own computer—utilizing the time-sharing concept. Future plans call for incorporation of NASA search tapes in the GE random access system.

## Information Retrieval Systems and Technology in an Aerospace Library

LAWRENCE I. CHASEN

### Phase I: History and First Steps Toward Mechanization

The General Electric Company Missile & Space Division was organized in Schenectady, New York, in 1945 and was then known as the Guided Missile Department. The first major task of the young library was to translate for the U.S. Army Ordnance Corps the captured German war documents dealing with the V-2 guided missile, which Hitler hoped would win the war.

GE was one of the first large industrial concerns in the United States to pioneer guided missile research and development. During the early fifties, General Electric successfully launched such "birds" as the Bumper and Hermes. As guided missile technology grew, so did the size of the Document Library. By 1956, the Library had a collection of over 73,000 documents. In that year the Department moved to Philadelphia to begin working on a crash project—the

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*Mr. Chasen has been Manager of the General Electric Co. Missile & Space Division Library since 1956. During World War II, he pioneered in electronics and communication indexing for the U. S. Army Signal Corps. In 1962 the author and the Franklin Institute Library successfully implemented the first electronic facsimile communication system between both libraries on a highly successful experimental basis. His paper was originally presented at the Aerospace Division technical meeting at the SLA Annual Convention in Minneapolis, May 30, 1966.*

Atlas and Thor re-entry vehicles for the then Western Development Division, ARDC. Since 1956 the size, services, and volume of the MSD Library expanded many times, as did many similar libraries and information centers.

The problems of handling an ever-increasing work load challenged the staff, who felt like the legendary Sisyphus. By 1959 the size of the collection reached 109,000 documents. We began microfilming large masses of our unclassified collection to solve the space and storage problem. Later that year, the MSD Business Systems Operation and the Library staff began an intensive study to determine:

1. Is the present conventional library methodology the most efficient?
2. Can the present manual system be made more efficient (and less costly) by the use of data-processing equipment?
3. Can data-processing equipment be used not only for information retrieval purposes but also as a means to handle a massive circulation program averaging well over 27,000 per year?

Our joint study disclosed that:

1. Document circulation and recall as practiced in the conventional library—requiring many repetitious clerical operations—was not only drudgery for the library clerks, but meant that documents were held up for days at a time so that they could not be charged out to other borrowers.
2. Mechanization was the only answer to a problem which could not be solved by practicing *laissez faire*.
3. Data-processing systems would lead to eventual total subject heading or "descriptor" mechanization, thereby reducing search time radically.

In September 1961 the MSD Library acquired an IBM-026 keypunch machine, an IBM Series 50 collator and IBM Series 50 sorter. Three files necessary to automatic circulation were created: a document accession number file, an employee number file (every MSD employee has a pay number) and a reserve card file (to handle requests for documents in circulation).

Last but not least, a trained data-process-

ing equipment operator was hired by the Library. Given the three types of punched card files outlined, when a request for a library loan document is received, the document accession number file is examined to determine if the document is available for loan. If it is, the document is immediately loaned to the borrower (save for classified documents, where a "need-to-know" must be established). If not, the request is placed on reserve. Since all requests from library borrowers must be submitted on the standard Library Service Request Form designed by the Library with necessary information such as the borrower's name, pay number, work location, and the accession number thereon, this form can go directly to the operator for processing. In essence, the borrower need no longer wait to have posting and charge-out take place before he can have the document. For phone requests for document library loan services, a "loading" sheet is used to obtain the information; the operator includes this in his daily transactions.

For each document, the accession number, due date, and employee number are punched on an IBM card. If the document is classified, the security classification and security control number are also punched. The cards are sorted on the last date due column. If a date due has been punched, the document is now in circulation. If the date due has not been punched, the document was not available and a reserve card has been created. The reserve cards are mechanically sorted by accession number and field. The loan cards are duplicated on the keypunch machine; the original cards are sorted by employee number and merged into the employee file, and the duplicates are sorted by accession number and merged into the accession number file. When borrowed documents are returned to the Library, the reserve file is checked. If another employee is waiting for the document, the reserve card is pulled and the date due is punched on it. The card is then duplicated—one filed by accession number and the other by employee number. The cards for the previous loan are destroyed.

The employee number file is essential in processing terminating employees. Twice a month the employee number file is used to prepare overdue notices mechanically. At

one time, it took the Library over four weeks of work to issue ten thousand overdue notices. This process is now done in thirty to forty-five minutes! Biannually, the document number file is used to inventory mechanically the large holdings of classified documents in the collection.

### Advantages of Mechanized Circulation

*Better utilization of library personnel:* Prior to mechanization three record clerks spent 120 hours a week manually creating and maintaining the Library's circulation files. The automation system eliminates 95 of these 120 hours. The record clerks are now assigned to service Library customers, where their knowledge is put to good advantage.

*Faster dissemination of newly arrived documents:* Formerly 76 hours a week were spent on preparing circulation cards and pockets for new documents. This meant that there was a corresponding delay in getting the document into the hands of the scientist or engineer. There was also a delay in generating the Library's Technical Abstract Bulletin of New Acquisitions. Because of the automation program, conventional circulation cards and book pockets have been eliminated.

*Improved control of classified documents:* Previously each classified document received two numbers—a library accession number and a security control number. The accession number is used for circulation and permanent identification. The security control number is used for accountability in the Document Control program. Relating the two different numbers (for the same document) at any given point in time was a time-consuming procedure involving the classified Document Log Book, the circulation card file, the originating agency file, and, if necessary, the subject heading file. Under the new system, the security control number and accession number are on the same punched card. For purposes of document inventory, it is now possible to obtain a listing of five to six thousand classified documents out in circulation in less than thirty minutes. At one time inventory took hundreds of hours.

The benefits derived by circulation and recall mechanization include not only man-hours saved, but also the elimination of

many library practices that may have stood the test of time in the ante-space age, but cannot compete in today's literal surge of technical information. Phase one enabled us to steer directly into phase two.

### Phase II: Information Retrieval

Utilizing the existing data-processing equipment, a series of experiments were undertaken—to determine feasibility of key punching, subject headings or descriptors, transferring this information to a magnetic tape, and attempting to use the GE-225 computer to retrieve technical information. Briefly, the retrieval system is based on the mathematical theory of sets.

Since the computer is mathematically oriented, it follows that a solution to retrieval problems should have a foundation in mathematics. By using set theory, we took advantage of its basic flexibility, which provides alternatives to the searcher while remaining sufficiently restrictive to minimize the "noise" factor. It has been our experience, in the past four years, that even with a computer system, the value of the information retrieved is directly dependent on the indexing of the information. At the present time, close to 80,000 descriptors are on magnetic cores, and the thesaurus created by the indexes has grown to 9,000 descriptors. A search will yield a listing of accession numbers in the Library's file that may answer the requester's need.

A configuration given to the computer for searching is composed of descriptors and set theoretical relationships. We consider all those accession numbers that meet the condition specified by a search request to be a set. We term this set of accession numbers as the solution set. The elements of a solution set are always determined by the relationship between the descriptors. In essence, search strategy and results are concerned with three set theoretical relationships: intersection, union, and negation.

Prior to programming the computer for a search, the librarian has a choice of the following three conditions:

1. The intersection of two sets, A and B, is the set of all elements common to both set A and set B. We use an asterisk to symbolize intersection:  $A * B$

2. The union of two sets, A and B, is the set of all elements which belong to either set A, or to set B, or to both sets A and B. We employ a slash to symbolize union: A/B  
3. The negation of set A by set B is the set of all elements which belong to set A but not to set B. We symbolize negation by a title: A B

Essentially, the aforementioned series of possible configuration is the key for information retrieval on the GE-225 computer as designed for our Library.

### **Phase III: Random Access Information Retrieval**

In January 1964 the MSD Library magnetic tape holdings were transferred to the GE disc storage subsystem and an AT&T teletypewriter was installed in the Library, thereby eliminating the prior requirement to key punch a search program directly into the GE-225 computer memory system.

The disc storage unit subsystem is a large-capacity, fast-random access storage device for information-processing systems. It is a new and vastly flexible filing medium that stores information so that data so recorded in a random location can be immediately returned for further processing.

The DSU subsystem makes it feasible to maintain virtually any business or information file on a current basis, transaction by transaction. The method of random filing and updating records has advantages over the necessity of sequencing or batching in order to update records. For example, transactions effecting library inventory records can be processed as they are received. An item is added, or withdrawn and the record is updated, thus helping control inventory at the most economical levels.

The Library can make unbelievably rapid retrieval and, while the engineer waits, the search query is typed on the teletypewriter, and within thirty to forty-five seconds the reply is received, citing the following basic data: 1) our Library computer code number, 2) total number of documents satisfying the request which meet the search parameters, and 3) a chronological listing by document accession number of data desired in the search query.

Management can make expedient and

rapid decisions from current reports and statements that are easily produced by a GE data-processing system featuring DSU subsystem: the most economical factors that can be determined for thousands of different items that can be obtained with controlling production lot sizes, keeping inventory at optimum levels, and being able to set reorder points automatically, all of the accurate and timely information that management needs for rapid decision-making in today's fast moving information climate.

The General Electric DATANET-15 was designed specifically to enable the GE-225 computer automatically to receive and process information originated at locations remote from the computer center and also automatically to send information (replies, results, etc.) to the remote locations.

The DATANET-15 serves as the primary control and connecting link between the GE-225 Information Processing System and the transmission line and remote data-originating and -receiving equipment. Broadly speaking, the unit functions as a buffer and conversion device, that is, it accepts information in bit-serial form from the transmission lines and converts it into the computer. It also receives information from the computer and conditions it for release on the outgoing transmission lines.

Remote stations may be connected to the DATANET-15 through a variety of transmission facilities. These include leased or public telephone and telegraph lines and privately owned two-wire cables. The DATANET-15 can also be used to connect the GE-225 computer to public message networks, such as AT&T's Teletypewriter Exchange Service (TWX), or Western Union's TELEX service. A number of other special communications services now being offered by the telecommunication companies may also be used.

The sequential scan counter of the DATANET-15 is designed for connection to up to fifteen transmission facilities, thus enabling it to accommodate fifteen directly connected remote stations. However, additional remote locations can be accommodated by adding regular dial-up telephone or teletype party line configurations to any or all of the fifteen channels. The teletype party line, for example, allows several input-output devices

to share the same teletype channel to the DATANET-15. The remote terminal devices can be located within a single building or within a given city, or they can be scattered throughout the nation.

The DATANET-15 will accept serial data at speeds ranging from 60 to 2,400 baud (bits per second). Changes in data speed may be made by replacing the data speed or timing plug with one corresponding to the rate of speed desired. The unit is designed for use with any serial five; six; seven; or eight-channel code structure using start-stop synchronizing bits to indicate the beginning and end of each transmitted or received character. Start-stop bits are stripped off and added by the DATANET-15 for each character, as needed.

Data transfers to and from the DATANET-15 are validity-checked and tested for end-of-message signals. Validity errors light the appropriate check indicator on the operator display panel, indicating that corrective action must be taken.

Operation of the DATANET-15 is automatic under supervisory control of an executive program stored in the GE-225 computer memory. Like other input-output units associated with the GE-225 computer, the DATANET-15 communicates with the central processor via the controller selector, a feature which enables it, as well as other GE-225 peripheral units, automatically to time-share the core memory. With this feature the DATANET-15 can automatically interrupt the main computer program to process data received from the transmission lines. Between data transfers, as well as after servicing automatic program interrupts, normal processing of instructions continue in the computer program. These features allow the DATANET-15 to use less than 2 per cent of computer time for normal communications and permit all GE-225 peripherals to operate concurrently.

1. Data arriving at the DATANET-15 from the transmission lines are in serial form, that is, bit by bit in line sequence. The DATANET-15 assembles all bits belonging to a particular character into a single unit for parallel input into the computer.

2. The term remote station is here used to mean the outlying branch offices, warehouses,

etc., of an organization from and to which data will be transmitted.

3. Use of the term speed refers to the amount of the information a circuit may handle in a given period of time. It has no connection with the speed at which electrical signals travel.

4. At the time of writing, the term baud is being used interchangeably with "bits per second" as the unit of measure of data flow. The term was derived from the name Baudot, after whom the widely used five-channel Baudot code was named.

### Future Plans and Program

Current plans for the next two years include conversion of the NASA search tapes for the GE-225/625 computer program, and incorporation of this file on the random access equipment.

This would enable the GE/MSD Library to interrogate virtually the entire aerospace literature. As a recipient of NASA microfiche collection, the search tapes would result in a speedy and dynamic marriage of both bibliographic retrieval and the end product—the needed data packaged and available to the Library's customer.

The open literature would be solved by subscribing to the AIAA microfiche collection, which utilizes the same indexing classification as NASA.

The information explosion need not be explosive if we make optimal use and plan ahead, with the computer to solve retrieval and the microformat as the logical adjunct.

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The NASA Manned Spacecraft Center Library has had computerized library procedures in operation for circulation, acquisition, and reference functions for approximately four years. Separate circulation programs are in effect for books, technical reports, and periodicals. While these systems are similar in many ways, detailed description shows distinct differences governed by the different circulation policies for these materials. Periodicals acquisition, renewal, and circulation have been enhanced by computerized procedures as described. Full use is being made of the magnetic tapes concerning aerospace citations, abstracted from STAR, C-STAR, and the IAA journals. These tapes are furnished by the NASA Scientific and Technical Information Facility. While present automatic data-processing systems have proved to be successful in the NASA Manned Spacecraft Center Technical Library, continued efforts are being made to refine these systems.

## The NASA Manned Spacecraft Center Library— Practical Mechanization of Library Functions on a Daily Basis

ALBERT P. BRADLEY

THE MAIN reason why the NASA Manned Spacecraft Center Technical Library may be of interest is that, for about four years now, it has been operating under circulation procedures that make use of automatic data-processing techniques, and it has been doing this very successfully. Furthermore, some phases of the Library's reference and acquisition work also make use of machine methods.

### Circulation Procedures

Unlike most libraries, the circulation procedures for books, technical reports, and unbound periodicals for the MSC Library were planned, from its inception, with an automatic data-processing system in mind. Therefore, there were no conventional procedures to be replaced.

The clientele consists of approximately 4,500 MSC employees, plus approximately 1,800 NASA contractor employees in the greater Houston area. The monthly circulation averages 6,000 items, of which about 3,200 are books, 2,700 technical reports, and approximately 100 unbound journals. Requests for library materials are received by telephone, by the Center's mail service, and in person at the circulation desk.

Separate computer programs are written for books, reports, and unbound periodicals. The operation of these programs, however, is basically the same, with variations due to

different circulation policies for the materials. Both the book and report programs were written in COBOL language for use with the IBM 7094. Within the past year these programs have been rewritten, still using COBOL, but for use with the Sperry Rand UNIVAC 1107. This change was made to take advantage of certain system characteristics of the UNIVAC 1107 that are better adapted to the circulation program. Also, the scheduling of the computer for library work was easier to achieve on a regular basis because of the heavier demand for the IBM 7094.

The computer input for books differs from that of technical reports and periodicals in that considerable citation information, such as accession number, author, title, call number, and copy number, is placed on magnetic tape for every book during the initial processing procedure. This is not done for the technical report. Input to the computer for technical reports awaits the actual charge-out of material because of the heavy influx of technical reports into the Library collection as compared to books, precluding the possibility of placing citations for this type of document into the computer system as it is received into the collection.

Placing the citation for each book on magnetic tape as the book is received has made the resulting book record more than just a

circulation record, since it lists all books whether they are charged out or on the shelves. A typical book printout is in order by the accession number of each book. Blank spaces in the name column indicate that a book is not charged out but is available on the shelves. The computer is programmed to compare and update the book circulation record by accession number first. Then the *updated* information is re-sorted to achieve additional printouts by call number and borrower's name in standard 11 x 15-inch size. Thus the book record from the computer provides three approaches for the location of material. These cumulated book printouts are updated once each week. However, for efficient operation, this weekly cumulative list is supplemented by a daily printout by accession number and borrower's name, described below.

The actual book circulation procedure is as follows: The initial chargeout, whether the book is requested by telephone, in writing, or over the counter, is made by a simple inked entry into a daily log book kept at the circulation desk. This brief entry is made by the circulation attendant and consists of the borrower's name, mail code, accession number of the book, and the date due. The normal circulation of books is fourteen days, with one renewal period of seven days. For over-the-counter transactions, after the brief entry into the log book, a prepared book-mark, predated with the due date, is inserted into the book and handed to the borrower. For transactions which require mailing the material, a circulation label is prepared and affixed to the front of the book, identifying the borrower, mail code, and date due. The book is then placed into a routing envelope, addressed, and sent through the Center mail service. These charge-out transactions take no more than half a minute per book for the

over-the-counter transactions and no more than one minute per book for mailing transactions. Up to this point, the circulation procedure is a manual operation.

From this point, the records of charge-outs and returns must be put into a suitable input form for the computer. Circulation input is by use of data cards. For charge-outs, these data cards are key-punched to record the information from the daily log book. Each morning, an average of 150 book transactions are key-punched from the daily log book on to the data cards in a twenty- to twenty-five-minute period. Books being returned are stored behind the circulation desk for processing the next morning. During the first few hours of each working day, the returns are recorded by placing the accession number of each book, and a date called the computer return date into a returns log book. This record from the returns log book is then key-punched on the data cards. The computer return date is the date of entry of the return plus two weeks. For example, if a book was charged out and returned on May 1, it would be recorded in the returns log book on May 2, but the date recorded would be May 16. Since the computer accepts the latest date for record, this artificial date is used to prevent the computer from rejecting the returns because the date is earlier than the due date.

After the keypunching operation, the data cards for the charge-outs and the returns are merged into one deck. Usually, within the first three hours of every normal working day, the charge-out and returns data cards have been merged and sorted and submitted to the 1107 computer, and the daily book charge-out record is available at the circulation desk. The special program for a daily book circulation printout reproduces a daily record by accession number and by borrower's name in 11 x 15-inch printout form. This daily record by accessions number is programmed to be cumulative during the week and to show both charge-outs and returns on the same printout.

Once each week the cumulated daily circulation deck, containing the records of both the charge-outs and returns for the week, is submitted to the UNIVAC 1107 computer, along with the magnetic tape of the cumulated record of all the books in the collection.



*Mr. Bradley is Chief of the Technical Information Dissemination Branch, NASA Manned Spacecraft Center, Houston, Texas. His paper was originally presented at the Aerospace Division session at the 57th Special Libraries Association Convention in Minneapolis, May 30, 1966.*

*session at the 57th Special Libraries Association Convention in Minneapolis, May 30, 1966.*



The computer records the new charge-outs and erases the records of charge-outs for books returned. The end result is the updated cumulated record of the books in the MSC Technical Library.

As a supplement to the book circulation system, an automatic overdue program was begun in September 1964. Once each week, a data card keypunched for a specific date, usually the date of the run, is submitted with the cumulated book record on magnetic tape to the 1107 computer. The computer compares the due date of each book against the date of the run. If the due date of the book is earlier than the date of the run, the citation and charge-out information concerning the book is printed out on magnetic tape. This tape then serves as input to an IBM 1401 computer, and a printout is achieved on a special 8 x 5-inch card format. The result is an automatic date due card that serves as first overdue notice. If there is no response to the notice during the week, the borrower receives a second overdue notice with slightly different wording obtained in a similar procedure. If these two notices bring no response, the same procedure is used to print out, in regular 11 x 15-inch format, a delinquent list used by the Library to contact each delinquent borrower to learn the reason for his not responding to the notices.

The 8 x 5-inch format on card stock can go through the Center mail service without an envelope. The big advantage of this automatic overdue system is that clerical work for the Library is reduced to a few minutes each week. The 8 x 5-inch printouts are first forwarded to the Library from the computer area and, aside from an occasional spot check, the cards are separated and sent through the mails without further work.

### **Circulation of Technical Reports and Periodicals**

The circulation procedure for technical reports is very similar to that of the books, therefore, only differences between the two systems are indicated. There is no daily printout made for the technical report circulation, since the frequency of returns is much smaller than for books. Whereas the books are placed on a fourteen-day circulation policy, the technical reports are charged out on an indefinite loan policy. This means

that the report is out to the borrower until it is either recalled for another borrower, returned voluntarily, or returned upon termination so there is no need for an overdue system for the technical report. Again, entries into a log book for both charge-outs and returns are made as the initial charge-out step. Also, data cards are keypunched each afternoon to record the daily circulation as input to the UNIVAC 1107 computer. Once each week, the data cards are submitted to the computer to achieve the updated cumulated circulation record of technical reports.

The periodicals circulation program was a direct result of a previous development concerning the periodicals. Early in 1964, all periodicals in the collection were listed on magnetic tape mainly to provide a list which could easily be updated for acquisition purposes and as a locating tool. This created a master list on regular 11 x 15-inch printout format. Each periodical on this list is assigned an accession number, and the numbering scheme allows for insertion of new journals into the collection without disturbing the alphabetical arrangement of the list. In this way a sorting of data cards by accession number simultaneously sorts them alphabetically.

Use is made of the basic accession number assigned to each journal on the master list to facilitate the periodical circulation system. The accession number also is marked on the shelves in the Library storage area, where each unbound journal is filed, with removable embossing tape. This provides the circulation desk attendant with the number as the requested unbound journal is taken from the shelves for charge-out. If the unbound journal has not been charged out previously, the accession number is copied from the shelves and written on the cover page near the top of the journal, obviating the need for writing the accession number on each current journal as it is received and processed for the collection.

The actual charge-out procedure for periodicals is similar in most respects to the book and technical report procedures. Again, a log book scheme is employed to record each charge-out. Both the charge-outs and turn-ins are recorded on this sheet. The accession, volume, issue, and copy numbers are copied in the log sheet. Also shown are the

name of the borrower, his mail code, and the date due. The charge-out transaction is completed by stapling a circulation label to the front of the journal, and printing in the name of borrower, mail code, and date due. Journals are charged out for a period of fourteen days, with a seven-day renewal. Returns are identified on the log sheet by the absence of the borrower's name. Also, the date of return is listed in place of the mail code.

The computer program for unbound periodicals circulation is a COBOL program adapted to the IBM 7094 computer. The input to the computer is by data card, and the resulting output is again the 11 x 15-inch printouts. One printout is by the name of the journal, and the second is by borrower's name.

Once each two-week period, the charge-out and return information on the daily log sheet is keypunched onto data cards and submitted to the IBM 7094 computer. An automatic overdue program also supplements the periodicals circulation system, and this is submitted to the computer at the same time as the bi-weekly update is made. The overdue system is identical to the book overdue system in operation, except that the 7094 rather than the UNIVAC 1107 is used.

While the volume of circulation for unbound periodicals is not as great as for the books or technical reports, it is felt that they are just as important from the standpoint of records, because of the difficulty of replacing lost journal issues. Also, that is why an automatic overdue system has been made part of the periodicals circulation system. Although unbound periodicals are circulated on a short-loan basis, there is no daily printout program mainly because of the small volume of circulation for this type of document. We are only concerned with unbound periodicals. Our bound journals do not circulate.

The automatic data-processing circulation systems at the MSC Library have been tested daily and have proved to be successful. Problems and errors caused by bugs in the programming were detected and filtered out early in the operations. Since the MSC circulation systems just described are not fully automatic, it is in the areas of manual operation where most of the mistakes are made.

These are errors of transposition or failure to record the data. As with completely manual systems, such human errors are costly and time-consuming, and refinement of the present system will include schemes to prevent this type of error.

At the Manned Spacecraft Center, a standard rate is applied to each type of computer. The source of payment is a center-wide funding operation, plus a direct charge to each activity using the computer within the Center. Computer costs for the Library's automatic circulation processes are approximately six cents a transaction based on this Center's accounting procedure and on the average monthly circulation of six thousand items.

In comparison with a conventional manual system of circulation, the advantages of an automatic system such as described would include the capacity to handle larger quantities of transactions without overloading the system and a greater work capacity without increase in staff. Filing procedures are eliminated. As the circulation of any library increases, so does the volume of records. To a conventional library, this may mean increasing the physical space occupied by circulation operations, usually in the form of more circulation wells to accommodate the card records. With a data-processing system records can remain compact, with only a small growth of printout information. While small libraries, with a limited number of circulation transactions, may not be able to justify the automatic data-processing approach, libraries with large and growing circulation systems are justified in turning to automatic methods in preference to increasing the complexity of conventional filing, increased staffing, and a disproportionate amount of library space devoted to the circulation operation.

### Journal Renewal Program

Automatic data processing also has been used effectively for a portion of the MSC Technical Library acquisition work. The same master list of periodicals originally developed as a finding tool, and also utilized for the periodicals circulation system, has still a third development. It formed the basis for a computer program to provide an auto-

matic reminder system for the renewal of magazine subscriptions. This program is set up so that the renewal reminder is received three months in advance of the renewal date.

The journal renewal program is written in COBOL language for the IBM 7044-7094 computer, direct couple system. As a journal is first acknowledged as a new subscription, whether for the Library or for a special group, a data-processing work sheet is filled out providing all the information needed for the master list of periodicals. The information on this work sheet is keypunched onto a data card. As a master list is updated, once a month, the data cards collected during the month are submitted to the IBM 7044-7094 computer along with the magnetic tape of the master list.

In using this renewal program, a data card is keypunched for a specific date. This card is read in and compared with the renewal date of each journal record on the master list tape. If the journal renewal date is earlier than the data card date, the record is picked up and printed as output on a magnetic tape. This output tape is then printed out on the IBM 1401 computer. A new master tape also is produced as part of the renewal procedure, and each record that has been picked up as a renewal is flagged with an asterisk so that it will not be picked up on the next renewal run. This precaution is taken in case the journal master tape has not been updated between renewal runs, and guards against the same journal being ordered twice.

An interesting feature of the subscription reminder system is the format of the printout which serves as a renewal reminder. It is a facsimile of our regular order form for periodicals, and it contains most of the needed facts about the particular journal for renewal. The size of this printout is 8 x 10 inches, with an original and three carbons. The acquisition group merely has to type in the date of the order, the assigned item number, the contract identification, and the printout may be sent directly to the vendor.

However, if the journal renewal printout concerns a subscription for an individual or group, rather than the Library collection, one of the carbons is removed and stamped with a special stamp, then sent to the subscriber, and the rest of the printout is placed into a suspense file. Further action to renew

the subscription is not taken until the carbon is returned with the appropriate signature. If there is no response in three months, the subscription information is deleted from the magnetic tape, and no renewal is made. Library subscriptions do not require any approval signature, and, therefore, the order is processed without this additional step.

This renewal system has worked well. It eliminates the need to look up order information, and no periodical renewal is overlooked.

### Information Retrieval Program

The third area of MSC Technical Library activity using automatic data processing is our reference function. As a NASA Research Center Library, the MSC Technical Library in Houston is serviced from the NASA Scientific and Technical Information Facility located in College Park, Maryland. Magnetic tapes containing all of the citations published in the prime abstract NASA journals are supplied. These journals are entitled *Scientific and Technical Aerospace Report (STAR)*, *Confidential Scientific and Technical Aerospace Report (C-STAR)*, and *International Aerospace Abstracts (IAA)*. At the Manned Spacecraft Center the tapes have been programmed to operate on the IBM 7010 computer, and they are updated twice each month by adding the newest literature citations in accession number order. The MSC Library, therefore, is able to provide a major part of its bibliographic searches by machine retrieval methods. These tapes contain the information recorded in the abstract journals from April 1962 to the present time.

At MSC, the data cards for each search problem are submitted twice each week to the computer, along with the magnetic tapes containing all of the citations that have appeared in the prime NASA abstract journals mentioned. The average number of searches submitted to the computer at one time is twelve. However, the IBM 7010 computer is capable of handling fifty problems at a time. The results are received in 8 x 10-inch printout form. Search time for twelve problems usually takes about three hours on this computer. We run about a hundred machine searches each month.

MSC automatic information retrieval proc-

esses cost between 17 and 22 cents for each relevant citation, or hit. This is based on the average of ten thousand hits attained each month, i.e., one hundred machine searches each month, averaging a hundred citations per search.

Our machine retrieval program has been well received by the technical personnel at the Manned Spacecraft Center, and demands for this service are increasing.

### Future Plans

While the NASA Manned Spacecraft Center Library operates successful automatic data-processing systems for circulation, acquisition, and reference functions, it is still studying procedures to find ways and means to extend ADP profitably to other areas of library work and to refine present systems. For example, it is realized that the present written log record for circulation charge-outs and turn-ins is a source of human error, and the Library is looking into ways of accurately recording this information to eliminate the log book method. Also, methods of replacing the cumulative 11 x 15-inch printout rec-

ords with a display type system are under study. Specific circulation information then would be displayed and printed out as desired, without the need of having the cumulative printout at the circulation desk. Instead, the circulation staff would have direct access to the computer.

A program is being devised at present to convert the magnetic tape procedure for information retrieval to a random access system, with the objective of creating eventually a direct man-machine intercommunication system with display consoles and keyboard input. These display consoles would be connected directly to computers for quick access to the computer information store without need to direct the inquiries through the Library.

These, then, are just some of the plans for refining and extending the present automatic data-processing activities at the NASA Manned Spacecraft Center Technical Library. We have applied machine methods successfully to library functions on a day-to-day basis, and look forward to further refining these methods in the future.

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A semi-automated system designed to generate a dictionary catalog and shelf list is described and discussed. The system uses off-line data processing equipment (does not require a computer) and requires a minimum of personnel and equipment to handle collections with a modest growth rate. It is proposed that a system such as this offers a relatively painless means of experimenting with automation before acquiring a vast amount of equipment. The specific application described is bibliographical control of internally generated technical reports at the University of Illinois College of Engineering.

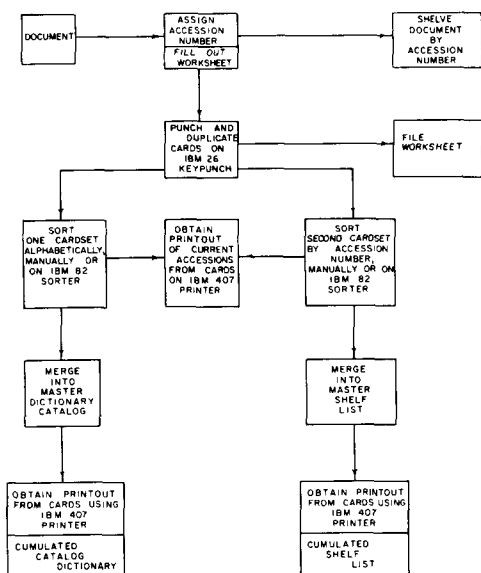
## Initiation to Automation

PAULINE LILJE and W. DAVID PENNIMAN

BY NOW most librarians are quite convinced that computers and associated data-processing techniques are here to stay. A cursory glance through the library literature shows that librarians are giving "automation" quite a bit of thought. But it is one thing to champion new techniques and quite another to have tried a machine system, even on a limited basis. It is hoped that the system presented here will allow librarians to experiment with machine techniques using a minimum of equipment and clerical help.

It was developed to solve a problem of significance to most research libraries.

The University of Illinois College of Engineering, because of its large amount of contract research, was faced with the problem of bibliographic control of contract research reports. The structure of the College is such that each department is responsible for producing and distributing its own reports. Because of this decentralized structure and because the material was government contracted with special distribution restric-



Steps in document handling system

tions, bibliographic control had to originate with the Engineering College administration rather than the University of Illinois Library.

### The Solution

Because of the ready availability of data-processing equipment within the College, it was felt that a solution could be found using machine indexing techniques. But, since there were limited funds for developing a program and no existing program satisfied the needs the College developed a machine index that does not require a computer. Instead, our system is based on the use of IBM auxiliary equipment: a 26 keypunch, an 82 sorter, and a 405 printer. The system, consequently, offers the opportunity to experiment with machine indexing techniques; but it is designed so that a computer can be incorporated in the future.

The lack of funds meant also a lack of manpower. Therefore, the system had to be primitive enough to be operated by personnel untrained in library techniques but sophisticated enough to cope with all of the bibliographic difficulties. These considerations led to a second decision, to use accession numbers rather than a subject-oriented classification system.

The processing of a document in the system requires three major steps: 1) collection

of the bibliographic information, 2) manipulation of that information, and 3) production of output. These three steps are basic concepts of any data processing system. The individual steps of processing are shown in the accompanying figure.

### Collection of Bibliographic Information

To establish consistency of entry of bibliographic information into the system, it was necessary to establish and maintain an authority file. While the nature of this authority file may vary from system to system, consistency is essential when a machine sorter is used. A human being will not file by the inconsistent placement of a period or hyphen, but the sorter will file by punctuation as well as letters causing some very strange arrangements.

In this case the authority file contained standardized entries for corporate authors, contract and project names and numbers, and sponsoring agencies. In addition format rules were established for standard entry of personal author names and report titles. Note that there was no mention of subject entry.

A work sheet filled out by the "cataloger" and from which the keypunching was done (frequently by the "cataloger") became the standardized form and served to insure consistency of entry. The work sheet has twenty-one lines, each one representing an 80-column IBM data card. The steps for filling out the work sheet are as follows: The accession number is assigned to the report at the time of filling out the work sheet. It is made up of the last two digits of the year in which the report was received followed by a hyphen and a number assigned in ascending order to each report received for that year. Each card in the set belonging to a document punched will have this call number. In addition, each card is coded as to the type of bibliographic material that card will contain. These code numbers correspond to lines on the work sheet.

Lines 1.1 through 4.1 are for the title of the report. Line 5.1 is left blank, to be used some time in the future for experimenting with a subject indexing system. Lines 1.2 through 8.2 contain the authors' names and the date. Lines 1.3 and 2.3 are for the engineering department, laboratory, and departmental series in which the report was pro-

duced. Lines 1.4 through 3.4 are for the contract number of the research project, the date of the report, and any government-assigned series number directly related to the contract number, e.g., Technical Report 10 under Contract Number 3985-08. Lines 1.5 through 3.5 are for the sponsoring agency name and their assigned series number, e.g., Chicago Operation Office report number 1198 254.

Once this work sheet is completed the information is ready to be transferred to data cards. Until the two steps of collection and manipulation are completed, this work sheet will serve as a temporary record, since the document is immediately shelved by its accession number.

### Manipulation of Bibliographic Information

The information on the work sheet is transferred to cards by keypunching, a process no more complicated than using an electric typewriter. Each card is duplicated at the time of punching, on the keypunch. The result is two identical sets of cards for each document; each set contains title, author(s), department, series, contract number, project name or number, sponsoring agency name, and series number. One set of cards is immediately filed in numerical order by the accession number forming a shelf list. By punching the cards from work sheets arranged in numerical order, this filing is greatly simplified.

The second set of cards for each document is then sorted into a master alphabetic file. This file or index is the equivalent of a dictionary catalog, minus the subject-heading approach, containing alphabetically arranged entries by title, author, sponsoring agency, contract number, and report series.

Note that there is no main entry. This eliminates one of the major problems in coping with technical report literature; a report with two or three different series or contract numbers will appear in the alpha-

betical listing several times, once in each part of the list covering the particular series or contract. Thus, the necessity for determining which of several series on a document to use is eliminated since the "cataloger" makes entry under all series in the same manner.

### Production of Output

At the end of a selected period (or on demand), all cards in the dictionary catalog and shelf list are run through the card printer. The printer produces two lists that are suitable for offset reproduction and distribution. There is an advantage to distributing copies of the lists in that all interested people can have a copy of the catalog of holdings of the document collection. It is also possible to produce lists of recent accessions by running the card sets through the printer prior to insertion into the master file.

Because reports are processed and shelved daily, any printed list is not completely up to date; but the master card file is used by the document supervisor for retrieval purposes, and cards go into this file as soon as they are punched so that the master file is extremely current.

Any specific document in the collection can be retrieved if a minimum of bibliographic information is provided by the requester. For example, if only the title is known, the dictionary catalog is referred to and the title will be found listed alphabetically with its accompanying accession number. By turning then to the shelf list and finding that accession number, all of the bibliographic information is made available.

The same process is used if the requester knows the author, sponsoring agency, contract number, report series number, etc. When an item, such as an author's name, is repeated several times in the dictionary catalog, the entries are arranged in chronological order so that the latest report by a specific author or from a specific research contract can be easily located.

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It should be noted that regardless of the type of information known by the requester, there is only one alphabetical list to which he refers (Cutter's beloved dictionary catalog). There is no separate author index or title index. This makes manipulation of the cards quite simple in that only one alphabetical sort is required. Also the users need only refer to the one basic finding list.

### Discussion of System

As in any solution to a bibliographic problem of this type, there are certain compromises that must be made. With the problem faced at Illinois, a solution that lacked the subject approach was a definite, though not too serious, compromise, since the user group generally requests by a known bibliographic term rather than by subject.

This lack of subject orientation in a system can be a serious defect since browsing is not possible. However, two possible methods of achieving subject grouping—still without using a computer—might be 1) Line 5.1 on the worksheet might be used for the classification number. Any standard classification system could be used: DDC, UDC, or LC, or 2) This classification number could be used in lieu of the accession number.

Also, since the cards can be hand filed, it would be possible to insert subject headings into the catalog if necessary or desired. Another approach would be to use the traditional KWIC index, which does require a computer, in conjunction with the system described here.

All of these possibilities, however, increase system costs because they require subject experts or additional equipment. For this situation the advantages of a non-subject oriented system far outweigh disadvantages.

Once the collection of cards has grown to a moderate size, and the insertion of new document cards has become routine, the benefits of even limited automation become evident. It is possible on demand to generate a printed list of current holdings. It is also possible to lift blocks of cards out of the dictionary catalog to print specialized lists, such as all documents with a selected corporate author or from a specific department.

Within a short time, the operator of the system (hopefully a librarian) develops an understanding of the capabilities and limita-

tions of the basic card-handling equipment. The keypunch machine will be treated as a simple tool like the typewriter. Drum cards can be developed which simplify the card punching and duplicating. Methods of doing block sorts on the card sorter can be found. Wiring variations on the control panel in the printing machine can give a printed list of any specific bibliographic item, such as an author list.

It is important to emphasize that the whole system is based on the idea that larger equipment can be incorporated when available. The cards can be sorted by computer when the collection is large enough to warrant this phase. As the collection grows, the advantages of storing information on tape for manipulation instead of working with large banks of data cards become evident.

Since there is no heavy financial commitment in undertaking the initial card system, it is possible to consider several avenues of growth rather than be restricted to one particular system. This is probably the greatest advantage in a time when there are still serious questions concerning total commitment to automated techniques.

For some applications, the limited amount of automation in this basic system may prove unsatisfactory, but the approach described here allows a basis for cost and efficiency comparisons without large initial outlay and total commitment. If the idea of automating still seems unfeasible, very little is lost in initial equipment expenditure. And, at least, it will be evident *why* automation is not immediately feasible for the operation.

What has been presented is a simple yet significant method of experimenting with automation techniques for a small library or a small selected collection within a library. Providing that the growth rate of such a collection is not horrendous and that the basic off-line punch card equipment is readily available, this system can be initiated at minimum expense.

User reaction to such automated techniques can be determined with this system, yet the master file can still be approached manually. To librarians who have an acquaintance with information retrieval, but have no ongoing system, this represents a means of making the significant step into the realm of the practical.

Centers of research in economic and social development have assumed an important role in the past decade. They are found in universities, government departments, and in some business organizations with large international interests; they differ in specific orientation but have in common a concern with government policy and a mandate to collect statistical data, economic publications, and other materials useful in analysis of the economy of a country. Such collections differ in important ways from the financial or industrial library. This paper assumes the desirability of full conventional library treatment of such collections, which thus far is the exception rather than the rule both in the United States and abroad. It discusses problems of acquisition, reviews solutions to special problems of technical services, and raises some general questions of the role of the library profession in the field of economic development.

## Economic Development Libraries: Problems and Prospects

MARY T. REYNOLDS

CENTERS of research in development economics, under a variety of titles, have assumed an important role in the past decade. Some of these, attached to university departments, are concerned with long-term work on problems of economic growth; others, with a shorter focus, are the investigative arm of some government agency—the central statistical bureau, central bank, or national planning commission. Such agencies invariably build up a collection of research materials, as do the academic institutes. Quantitative research on the economy of a country requires ready availability of statistical data and economic publications. There is a growing awareness of the difficult problems involved in acquiring and handling these materials.

The Economic Growth Center at Yale University, established in 1961, is an example of the academic type of research group. The research staff are members of the

Department of Economics, with teaching as well as research responsibilities. Visiting scholars from other institutions are in residence each year. It was decided at an early stage that the Center would support its research program by acquiring basic statistical data from all parts of the world. Already available was a small but very good collection of about four hundred monographs and documents. These had been assembled for a program, now merged with the larger effort, to give younger economists from foreign countries graduate training in economics. Since 1961 the collection of data has been extended to include all countries over two million population, of which there are now over a hundred.

The experience of the Yale Center in organizing its library may be of interest to librarians and research groups elsewhere. Moreover, in the past three years the Growth Center Library has increasingly made contact with similar libraries in Europe, Africa, and South America as well as in the United States, producing a fund of common knowledge. It can safely be said that in the field of development economics there exists a new type of special library. Its closest relative is the financial or industrial library, but the differences are very clear in three aspects: 1) the type of material collected, 2) the relation of the library to its clientele, and 3) the special problems of acquisition of documentary materials in economic development.



Rogers Studio

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*awarded her Ph.D. in Public Law by Columbia.*



## Planning the Development Library

The study of economic development overlaps at least three fields of social science: economics, political science, and social anthropology. The problems can even be said to cover the whole range of human activity; yet for systematic quantitative study a hard core of documentary sources must be defined. Thus the first step toward formal organization of the Growth Center Library was definition of the dimensions of the collection. Emphasis was to be put on government documents, on statistical source materials, and specifically on the following: population censuses, industrial and agricultural censuses, statistical yearbooks and bulletins, national accounts, government budgets and closed accounts of revenue and expenditure, development plans and associated reports, trade statistics, balance of payments data, monetary and financial statistics, investment and capital formation data, central bank reports and special studies, and annual reports of selected government departments such as agriculture, forestry, labor, and education.

Over a six-month period visits were made to the principal American libraries containing such material. The most substantial collections were found in specialized libraries: the Joint Library of the IMF-IBRD in Washington, the Department of State library, the New York Federal Reserve library, the UN Headquarters library. General libraries with outstanding documents collections were visited and also university research centers, such as the Williams College Center for Development Economics.

From the preliminary survey it became clear that certain basic decisions should be made before the doors opened: 1) To what extent would the collection be organized as a conventional library? Would the materials be fully cataloged, and if so under what system of classification? 2) What provision would be made for handling the expected heavy inflow of statistical serials? What portion of the material collected would be permanently held? What rules or guidelines could be set up to identify, as the inflow continued, non-permanent types of material—older, less substantial, or peripheral—to make way for documents of greater importance? 3) What policies of coordination with the main University Library could be

developed? Which operations of the new library could be integrated successfully? Which, on the other hand, were residual professional functions properly the responsibility of special librarianship? Advance decision on such questions, though tentative, saved months of wasted effort.

## The First Year: Organizational Stage

By the end of the first year several major decisions had been implemented.

First, it was decided to give full cataloging under ALA rules to all materials deemed of permanent value. This was partly a matter of integrating the collection with the main University Library. Many special collections have been dissipated and materials of great value lost because of inadequate cataloging. It was also a matter of extending the usefulness of the collection beyond the research needs of the Center, by interlibrary loan.

Second, it was decided to make the collection a research tool for the higher professional levels—graduate and post-doctoral study. The goal would be to assemble a small, high-quality collection for each country rather than to drive for so-called full documentation. Materials of temporary interest would be put into a pamphlet collection.

Third, at the request of the Center research staff, the Library brought together on the shelf all materials dealing exclusively with one country or one region. To do this, a classification schedule was constructed on strictly geographical principles, with numbers for the nine major regions of the world and letters assigned to countries within each region, on the pattern of the World Bank Library classification.

Fourth, the Library of Congress H class was adopted as the main subject classification. This was chosen in part because the main University Library was moving toward full use of the LC classification, partly because it offered greater potential than other systems for international cooperation and standardization. A set of selected general numbers was prepared, ignoring the geographical numbers. Although technically this constitutes a modification, in practice there is close correspondence with LC usage. No unassigned numbers have been used, and the numbers chosen are steadily checked against LC practice.

The chief innovation in this respect, and by far the most useful, has been the use of HA37 ("Statistics, by country") to bring together systematically all statistical and economic reports emanating from government and quasi-government sources under eighteen divisions from HA37.1 (Statistical abstracts and yearbooks) to HA37.18. These materials—for example, development plans and "national accounts"—are widely scattered in the present LC classification. The grouping of "standard country sources" in HA37.1–HA37.18 has proved its worth in rapid, exact classification of a very large body of difficult material, and has also been a valuable finding tool for the clientele.

Fifth, a machine charging circulation system was installed with borrowing privileges limited to faculty and graduate students, cards being held in a desk file. Otherwise the Library is an open-shelf reading room primarily for graduate students in economics but open to use by any member of the University. This double standard has been expensive in staff time but probably justified by the imperatives of faculty research on statistical documents and the necessity of safeguarding statistical documents, which are in many cases irreplaceable.

Sixth, it was decided that the publications program of the Growth Center would be closely integrated with the Library. Two types of publications were planned: a monograph series, of which eight volumes are now in print, and a reprint series, *Growth Center Papers*, of which some ninety numbers have now been produced and distributed to a world-wide list of economists. Other publications were added after the first year. The intent and also the effect of close integration was to support the library acquisitions program and to extend the influence of the Center as a research organization. Mailing lists are more accurate through being checked steadily against correspondence files. Awareness of the current work of economists in universities and in government departments around the world is improved by keeping files and records of distribution of Center publications. Plans for special censuses, preparation of national accounts, and special studies produced as internal working documents rather than for general distribution and sale are canvassed in advance to in-

crease the inflow of significant material. Exchange of publications, on a selective basis, is of course maintained with other research centers and with government departments.

### Consolidation and Forward Planning

The Center Library now has about fifteen thousand volumes of which the great bulk are serial documents useful in the analysis of national economies. The visible file approaches three thousand titles, of which all but three hundred-odd are "country materials."

The collection has been extended both geographically and in depth. Acquisitions is the number-one problem of the development library. In general, the key to success in this aspect of the work is a heavy volume of correspondence, much of it multilingual. But the bulk of significant documentary material, apart from a minority of industrialized countries, is produced under circumstances which make it a continuing problem to identify the relevant documents and acquire them on a secure year-to-year basis.

The basic documents that constitute the core of the collection, and indeed are the basic data of any development library, are constantly under review and as rapidly as possible the major statistical series are being pushed back in time. For example, the Library now has one hundred years of the budget of Peru, including the first budget produced. Danish statistics go back one hundred years, German and Belgian statistics as far as fifty.

Of equal importance to the success of the development library is the maintenance of high quality in the catalog. No single area of expenditure is more important. In the Center Library both clientele and staff are keenly aware of the necessity for precise, full, reliable and rapid bibliographic identification of every item in the collection. Coupled with an in-house binding program staffed by student help, which comes under the supervision of the catalog division, this has in effect transformed a heterogeneous mass of documents into a live, workable research collection. Growth Center Library cards are filed in the main University Library catalog and are sent to the National Union Catalog and to New Serial Titles.

Support by the main University Library and the Yale Department of Economics is of

great importance. It is probably impossible to organize an economic development library, at least on the level required at Yale, without direct, full-time scholarly supervision. Yet without guidance and assistance on all technical processes from the main University Library management the effect of the close liaison with the professional economists would be greatly diminished. The material is extremely specialized, and the demands it makes are exacting by any standards.

Microfilming was recognized at an early stage as a possible aid in controlling the volume of material, but one to be used with care. Statistical documents as such are impossible to use on microfilm; scholars who must work with censuses and foreign trade reports must be able to compare simultaneously and line by line several years or several countries or commodities. Reader-printers and hardcover reproduction by Xerox are not a satisfactory solution. Microfilming is appropriate, at the level of serious scholarly research, only for materials which can be continuously read as a running text—newspapers, economic surveys with occasional tables, journals, bulletins—and for safeguarding rare items and for interlibrary loans.

Plans are under way for computerizing the Growth Center collection. The books on reserve for graduate courses, shelved in a special section, are processed by the use of punched cards at a great saving of staff time. The technical services of the main University Library have been partially computerized and the Center Library will participate in this program, which envisages computer production of catalog cards and a bibliographic retrieval facility.

### Conclusions: Lessons of Experience

It seems clear that economic development libraries will continue to multiply rapidly; they are essential to the success of serious research. But many of the collections now attached to research centers and government agencies are in name, but not in fact, libraries. If the gap between the needs of the clientele and the deliverable reality of the collections becomes too large, what happens? On the library side the data become a disjointed assembly of items, indifferently maintained, a dead weight of paper. On the side of the scholar or administrator, the

frustrations of being unable to lay hands on the data when they are needed usually result in withdrawal of interest in the library and the building up of a documentary collection in the individual's own office.

Examples abound. In one African government office the economic planners had ignored the departmental library, though housed in the same building, finding it simpler and faster to build up their own data collection from their own and other countries. Again, in Puerto Rico a few years ago the only place where a complete range of Puerto Rican government documents could even be identified was the small library attached to the central planning office; at the university library the Puerto Rican Documents Room had at some prior time lost control of the inflow.

In part such failures result from unrealistic budget attitudes. Documentary libraries will never be inexpensive; either the budget or the goals must be adjusted. But we see here also a matter of concern to the library profession—the factor of training. This is a new field of work, the special needs of which are not yet fully identified. A background of political science or economics and ability to handle foreign languages would seem to be desirable qualifications. The profession should also be actively concerned with training economic development librarians from the non-industrialized countries.

Secondly, the librarian who relies on conventional acquisitions techniques will soon become hopelessly discouraged. Unlike other types of special libraries, these cannot depend on standard published reference sources. Yet it *is* quite possible to develop the necessary expertise for identifying and locating the sources of data. The detective instinct can usefully be cultivated; and if there is a first-rate cataloger playing Watson to the librarian's Sherlock, all will go well. The challenges are great, the satisfactions also.

Third, there is much evidence that the library profession, by determinedly asserting and strengthening conventional techniques of cataloging and classification, should counter the claims, sincere but often short-sighted, that there are easy electronic answers to all problems of controlling a documents collection. This field is particularly susceptible to such attitudes. The clientele are computer-

minded. The materials are so specialized that the librarian faces real difficulties in their management. There occurs a kind of short-circuiting of rational thought, often introduced by the phrase, "The computer will. . . ." Knowing the dependence of the computer on its human managers, we pass over the point with a smile. Yet the assertion itself tends with repetition to diminish the librarian's faith in the necessity of exact bibliographic identification—faith in the art of creating a pigeonhole which will precisely distinguish a title from a dozen other nearly identical titles. A bad system computerized will still be a bad system. Yet the opportunities for constructive librarianship with electronic aids held to their proper role are very great.

Finally, in the field of economic development there is a special need for cooperation among libraries. The supply of relevant documents is, in the nature of things, stringently limited. These libraries are policy-oriented—in governments toward the formation of policy, in universities toward basic problems which underlie policy. But very often the most significant policy documents are not produced for distribution outside the government. In time some of them do indeed appear in print, one way or another, but many do not.

One thinks of the Report of the UN/ECA/FAO Mission on the Economic Development of Zambia, prepared in 1963 at the request of the Government of Northern Rhodesia by an independent committee of experts. This was the first development plan of the new country; and it was eventually published. But some forty years ago a similar commission of experts headed by Professor Edwin Kemmerer of Princeton went to China and prepared a lengthy report on reorganization of the Chinese fiscal system which was not officially published and is not easily available. Today, a competent economic development librarian would not let such a document be lost.

In a majority of countries such documents as national plans and national accounts (the latter are now the main planning instruments of governments) become available first to alert librarians and research workers in the country; but because of unsystematic distribution the supply is rapidly exhausted. The

library profession should take just as responsible an attitude toward these documents as they now do toward the letters of James Joyce, the diaries of A. E. Housman, and the papers of a Morgenthau, a Roosevelt, or a Kennedy. No single library can possibly be aware of all the important documents being produced; but collectively these new economic development libraries constitute an unparalleled resource.

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#### MESSAGE FROM LILLIPUT

My parents were normal and fingers shouldn't be pointed in their direction because of any derelictions I may display. My father, unencumbered by more than a fourth grade education tried to teach me right from wrong by a well-targeted swat when he considered I erred; my mother rather hoped for the ministry but appeared reconciled when I decided upon librarianship.

Now that I have reached adulthood, learned to flow chart a library procedure, construct a decision table, and compute with a numeric system, base two, I have decided to transfer my allegiance to the field of information science.

There is only one reason for this professional conversion. I want to unequivocally record that I have nothing against books, card catalogs, or the people who use them. It is merely that I believe in equal opportunity for women. Recently a Mrs. Arthur Holden claimed that capable and highly qualified women were circumvented from achieving prestigious positions by the influx of males into the library profession.

Naively, I had assumed we men had always been in the profession. It was my understanding that Mr. preceded such names as Joeckel, Windsor, Cutter, Dewey, Dana, and Ryder, none of whom can be considered a recent addition. But if there is any reasonable doubt, I'll make room for me in the library profession by resigning from the old and joining the new.

Mrs. Holden, if you wish to apply for my position, there is an unwritten understanding between me and management that I don't plan to resign to have a baby nor that I plan to move should my wife be offered a new job.

B. LITTLE

#### C. Q. from Limbo

B. Little, Lilliput, where are you? So few messages come through clearly. We were receiving you well, when transmission stopped abruptly. What happens after six months?

I. B. LONG

The specialization that gave rise to Special Libraries Association has also been evident in other professional special library associations. Because of the interest in these organizations, *Special Libraries* has asked several of their officers and prominent members to make a statement of history, purpose, and scope for its readers. Below is the first in the series planned for irregular publication.

# The American Association of Law Libraries

ELIZABETH FINLEY

THE American Association of Law Libraries was conceived at the 1906 meeting of the American Library Association when ten law librarians, talking over common problems, realized that a permanent organization would be an excellent forum for their special profession. Today there are almost two thousand members in the United States, Canada, and sixteen foreign countries.

The chief classifications of membership are: Active, open to "any person officially connected with a law library, state library, or with a general library having a separately maintained law section"; Institutional, open to any law library that may designate members of its staff paying dues at the same rate as set for active members. For all practical purposes the designated members are "active" members of the Association. The ad-

vantage of this class is to simplify AALL membership as personnel changes occur in the institution. Associate membership includes "persons not connected with law libraries," e.g., publishers and dealers and former active members. Any person interested in law libraries may be elected to Sustaining membership. Life membership is extended to retired AALL members. The right to hold office is restricted to Active and Institutional members, and the right to vote to the same plus Life members.

The administrative organization of the Association has not changed materially since 1906. The president, president-elect, secretary, and treasurer are elected annually. The three additional members of the executive board are elected for a three-year term, one each year.

As might be expected, the committees, which are the backbone of the Association and perform the substantive work, have multiplied greatly since the early days. There are now thirty-two standing and special committees, and twelve joint committees with other professional organizations. In 1964 we finally were able to afford a headquarters office. Although still in the toddling stage, it has already proved to be of great help to the officers and committee chairmen.

In 1939 local or regional chapters were authorized. Nonmembers may become chapter members provided they do not exceed 50 per cent of the chapter membership. There are now ten chapters located in New York City, Upstate New York, New England, Washington, D. C., Chicago, Minnesota, Southeast, Southwest, Southern California, and Canada.

Law libraries come in all sizes and shapes, from collections of over a million volumes



Dan Brock

*Elizabeth Finley is a life member of the AALL and was for thirty years a member of the Special Libraries Association until her retirement in 1963. She was a law firm librarian for Covington and Burling, Washington,*

*D. C. from 1943-63. She served as Treasurer of the AALL from 1948-56 and as President in 1961-62. She is the author of Manual of Procedures for Private Law Libraries and a co-author of Hawaiian Citations (1924), How to Find the Law (4th ed., 1949) and a contributor to legal periodicals. Miss Finley received an AALL citation award for her contribution to the Association and to law librarianship at the 59th annual meeting in July 1966, one of three awards made for the first time in twelve years.*



Don Brock

AALL officers for 1966-67: (seated, left to right) Immediate Past-President Arthur A. Charpentier, Association of the Bar of the City of New York; President Kate Wallach, Louisiana State University; President-Elect William D. Murphy, Ellis, Hodson, Chaffetz and Masters; (back row) Earl C. Borgeson, Harvard University; Secretary Jane Hammond, Villanova University; Virginia A. Knox, Connecticut State Library; Mortimer D. Schwartz, University of California; and Robert Q. Kelly, DePaul University

and a staff of thirty, to two thousand volumes and a staff of one. Almost a third of our members are connected with law school libraries. The rest are distributed among courts, bar associations, government (federal, state, and city), and private organizations, i.e., law firms and corporations. Many librarians have law degrees as well as library science degrees; some have one or the other; some have neither. We have recently established a certification program whereby members will be grouped by education and experience and certified by the Association. We hope that prospective employers will be guided by our classification.

The shortage of librarians, which has caused a lively musical-chairs game among the limited supply of qualified law librarians, moved us to step up our recruitment efforts about five years ago. Our Recruitment Committee extends itself to interest both law and library school students in law librarianship as a career. As a corollary, we have increased our education efforts. For years we have, with limited success, been urging library schools to offer courses in law librarianship. In 1963 the Education Committee prepared detailed outlines for one-week, rotating institutes on legal research, cataloging, acquisitions, and administration to be given each year just before the convention. The second cycle will begin in 1968. Thus newcomers to the field, however well educated in law and general library science, may learn the techniques peculiar to law. We have a

grant program to assist applicants to attend either the institute or the convention. We hope that we will soon be able to offer scholarships for gaining academic credit. Our Placement Committee endeavors to bring law librarians and employers together.

One of the chief concerns of those ten founders in 1906—indeed probably the *raison d'être* of their meeting—was the need for a current index to legal periodicals, and for a journal devoted to articles of interest to law librarians. A quarterly entitled *Index to Legal Periodicals and Law Library Journal* was first issued in January 1908. The two publications were separated in 1936, and the *Index* is now published by the H. W. Wilson Company in cooperation with AALL, whose Committee on the Index supervises the selection of periodicals and subject headings. A foundation grant enabled us, in cooperation with the International Association of Law Libraries, to start publishing the *Index to Foreign Legal Periodicals* about five years ago. Approximately 90 per cent of the international law periodicals are indexed. At present the *Index* is published in the Netherlands. Although the *Index* enjoys international acceptance, the problem of becoming self-supporting remains. Annual subscription is \$30 and includes three quarterly parts, an annual bound volume, and a three-year cumulative volume. [Cumulation I, 1960-62: \$45; Cumulation II, 1963-65: \$60 (including packing and postage). Address: William D. Murphy, Co-Trustee, *Index to Foreign*

*Legal Periodicals*, 2900 Prudential Plaza, Chicago, Illinois 60601.]

The *Law Library Journal* is now a quarterly periodical in its own right and is included with AALL membership. In addition to feature articles, committee reports, and the report of the annual convention, special sections cover book appraisals, a checklist of current state, federal, and Canadian publications, membership news, questions and answers, and current comments. Price is \$10.00 per year; \$3.00 per issue, available from headquarters.

The AALL publishes a biennial directory of members and law libraries as well as a biographical directory of members, both of which are distributed to members. The *A.A.L.L. Publications Series*, dealing with topics of special concern to law librarians, is published for the Association by Fred B. Rothman & Co., 47 Leuning Street, South Hackensack, New Jersey 07606 as is the checklist, *Current Publications in Legal and*

*Related Fields*, monthly except June, July, September, with annual cumulation (\$10). The editorial work for our publications is performed voluntarily by AALL members.

The AALL cooperates on joint committees with the American Bar Association and the Association of American Law Schools and through representatives with the American Library Association, American Standards Association, Council of National Library Associations, International Association of Law Libraries, International Federation of Library Associations, Library of Congress, Union List of Serials, Inc., Committee on National Library Information Systems, and Public Law 480 Program.

We stand ready to offer advice to any organization or individual who has problems in our special field. An inquiry addressed to our headquarters at 53 West Jackson Boulevard, Chicago, Illinois 60604, will be referred, if it cannot be answered directly, to the proper official.

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## SLA 1967 Salary Survey

### *Questionnaires to be mailed in late December*

IN RESPONSE to growing needs for current salary information, Special Libraries Association has initiated a biennial salary survey. Questionnaires for the first survey will be mailed in late December and must be returned by January 25, 1967. All members are urged to cooperate by completing and returning the questionnaire promptly. The results will be reported in the April 1967 issue of *Special Libraries*.

Considerable effort has gone into selecting a survey firm and determining the information to be requested. The Personnel Committee and staff of Association Headquarters have worked cooperatively on the plans and arrangements. The Board of Directors approved the plans and established a Salary Survey Fund at its meeting on September 27, 1966.

Creative Research Services, Inc., of New York City, the firm that handled the recent SLA-LTP survey on library automation, has been selected to conduct the survey. Return envelopes will be provided, and completed

questionnaires should be returned to the offices of the survey firm. The survey is, of course, completely anonymous, and Creative Research Services will be entirely responsible for tabulating the returns and preparing the report.

The questionnaire will request standard information generally correlated with salary data such as geographic location, type of employer, industry classification, educational background, and years of experience. In addition, provision has been made to include a few questions on a special topic in each biennial survey. This year's topic is the mobility of special librarians.

SLA has taken a step forward in initiating this regular survey program, which will provide much-needed information for its members. We urge all members to watch for their questionnaires and to return them promptly.

SLA PERSONNEL COMMITTEE  
Helen Loftus, Virginia Sternberg  
Shirley F. Harper, *Chairman*

# Government and Libraries

ON SATURDAY, October 22, 1966, the Eighty-ninth Congress came to a close. During the first and second sessions more than 20,000 bills were introduced in the Senate and the House of Representatives. President Johnson signed well over 650 of these into law. Many of these bills dealt directly with libraries or had implications for

special libraries or information centers. Below are listed some of the more important bills passed in this area, with addresses of individuals and agencies to contact for further information.

ROBERT J. HAVLIK  
Research Library Specialist  
Library Services Branch, USOE  
Washington, D. C.

PUBLIC LAW	IMPLICATIONS FOR SPECIAL LIBRARIES	ADDRESS FOR FURTHER INFORMATION
PL 89-4 Appalachian Regional Development Act of 1965	This Act authorizes programs to stimulate economic development of the Appalachian region, ranging from highways to health and education, conservation, and natural resources development.	Appalachian Regional Commission 1666 Connecticut Avenue, NW Washington, D. C. 20009
PL 89-10 Elementary and Secondary Education Act of 1965, as amended Title III—Supplementary Educational Services and Centers	This Title provides grants for urgently needed supplementary educational centers and services not available in sufficient quantity or quality in elementary and secondary schools. Eligible are special instructional programs in arts and humanities areas, involving cultural resources including museums.	Bureau of Elementary and Secondary Education Division of Plans and Supplementary Centers US Office of Education Washington, D. C. 20202
Title IV—Cooperative Research	This Title authorizes grants and contracts for research and demonstrations; authorizes grants and contracts for the dissemination of information resulting from research; permits awards to be made to public or non-private agencies and to individuals; and authorizes grants for training in educational research.	Director Bureau of Research US Office of Education Washington, D. C. 20202
PL 89-73—Older Americans Act of 1965	This Act is designed to develop needed services and programs for older Americans and establishes the "Administration on Aging" within the Department of Health, Education and Welfare as a focal point and clearing house for information on Aging.	Commissioner on Aging US Welfare Administration Washington, D. C. 20202
PL 89-105 Mental Retardation Facilities and Community Mental Health Centers Construction Act Amendments of 1965	These Amendments authorize grants to meet, for temporary periods, a portion of the costs of compensation of professional and technical personnel for the initial operation of new community mental health centers or of new services in community mental health centers. This could include compensation of library staff.	Division of Community Mental Health Facilities National Institute of Mental Health Bethesda, Maryland



PUBLIC LAW	IMPLICATIONS FOR SPECIAL LIBRARIES	ADDRESS FOR FURTHER INFORMATION
PL 89-182 State Technical Services Act of 1965	This Act authorizes grants to provide a national program of incentives and support to States, individually and in cooperation with each other, in establishing and maintaining State and interstate technical service programs so that the results and benefits of modern science and technology may be effectively used by commerce and industry.	Director Office of State Technical Services US Department of Commerce Washington, D. C. 20230
PL 89-209 National Foundation on the Arts and the Humanities Act of 1965	This Act establishes a National Foundation on the Arts and Humanities for developing and promoting a policy of support for the humanities and arts. The definitions of "the arts" and "humanities" are broad and cover many areas of library interest.	Arts and Humanities Branch Bureau of Research US Office of Education Washington, D. C. 20202
PL 89-291 Medical Library Assistance Act of 1965	This Act provides for grants for construction of medical library facilities, improving and expanding basic resources, establishment and maintenance of regional medical libraries and for research, fellowships and training of health science librarians.	Associate Director for Extramural Programs National Library of Medicine Bethesda, Maryland 20014
PL 89-329 Higher Education Act of 1965, as amended Title IIA	Title IIA authorizes funds for the acquisition for library purposes of books, periodicals, documents, magnetic tapes, phonograph records, audiovisual materials and other related library materials.	Title IIA and B (Training) Library Services Branch US Office of Education Washington, D. C. 20202
Title IIB	Title IIB authorizes grants for training in librarianship, including the acquisition, organization, storage, retrieval and dissemination of information, and reference and research use of library and other information sources; and grants for research and demonstration projects.	Title IIB (Research) Bureau of Research US Office of Education Washington, D. C. 20202
Title IIC	Title IIC authorizes the US Commissioner of Education to transfer funds to the Librarian of Congress to acquire library materials and to provide catalog information for library materials and to distribute bibliographic information by printing catalog cards and by other means.	Title IIC Library of Congress Washington, D. C. 20540
PL 89-329 Higher Education Act of 1965, as amended Title VIB	Title VIB authorizes the US Commissioner of Education to arrange through grants or contracts with institutions of higher education for the operation by them of workshops or institutes for individuals who are, or are preparing to be, in institutions of higher education, as teachers or as librarians using educational media.	Title VIB Bureau of Higher Education Division of College Support US Office of Education Washington, D. C. 20202

PUBLIC LAW	IMPLICATIONS FOR SPECIAL LIBRARIES	ADDRESS FOR FURTHER INFORMATION
PL 89-404 Amendment to Water Resources Research Act of 1964	This amendment authorizes grants, contracts, and matching or other arrangements with educational institutions, private foundations and other institutions, with private firms and individuals to undertake research into any aspects of water problems related to the mission of the Department of Interior.	Director Office of Water Resources Research US Department of Interior Washington, D. C. 20240
PL 89-454 Marine Resources and Engineering Development Act of 1966	The purpose of this Act is to develop, encourage, and maintain a coordinated, comprehensive, and a long-range national program in marine science for the benefit of mankind to assist in protection of health and property, enhancement of commerce, transportation and national security, rehabilitation of our commercial fisheries, and increase the utilization of these and other resources.	National Council on Marine Resources and Engineering Development 405 Executive Office Building Washington, D. C. 20500
PL 89-511 Library Services and Construction Act Amendments of 1966 Title III  Title IV	Title III. This title authorizes grants for the establishment and maintenance of local, regional, State or interstate cooperative networks of all types of libraries.  Title IV. This title authorizes grants to States for State library service to inmates of State institutions such as penal institutions, orphanages, hospitals and residential schools for the handicapped; and grants to provide encouragement for State library services for the physically handicapped, including blind and visually handicapped.	Titles III and IV Director Library Services Branch LSCA Section US Office of Education Washington, D. C. 20202
PL 89-522 The 1966 Amendment to the Act "an Act to provide books for the adult blind."	This amendment extends and expands the Library of Congress books-for-the-blind program to include other physically handicapped readers, certified by a competent authority as unable to read normal printed material as a result of physical limitations.	Library of Congress Division for the Blind and Handicapped Washington, D. C. 20540
PL 89-634 Beirut Agreement Implementation	This Act allows for the duty-free treatment of educational motion pictures, electronic tape and other visual or auditory materials.	Mr. Frank C. Tribbe Assistant General Counsel US Information Agency Washington, D. C. 20547
PL 89-651 Florence Agreement Implementation	This Act allows for duty-free treatment of books and other educational, scientific and cultural materials, including music, maps, atlases and charts.	Mr. Frank C. Tribbe Assistant General Counsel US Information Agency Washington, D. C. 20547
PL 89-698 International Education Act of 1966	This Act authorizes a domestic program of grants to strengthen the resources and capabilities of American colleges and universities in international studies and research at the graduate and undergraduate level. The Act also provides for grants to public and private non-profit agencies and organizations, including professional and scholarly associations, when such grants will make an especially significant contribution in fulfilling the objectives of this program.	Dr. P. A. Miller Assistant Secretary for Education Department of Health, Education and Welfare 330 Independence Ave. SW Washington, D. C. 20201

# Nominating Committee Report

## 1967-68

The Nominating Committee presents to the Board of Directors the following candidates for office, all of whom have accepted nomination:

### President

Mrs. ELIZABETH R. USHER, Chief  
Art Reference Library  
Metropolitan Museum of Art  
Fifth Avenue and 82nd Street  
New York, New York

### President-Elect

JOSEPH M. SIMMONS, Librarian  
Chicago Sun-Times Daily News  
Sun Times Plaza  
401 North Wabash Avenue  
Chicago, Illinois

HERBERT S. WHITE, Executive Director  
NASA Scientific and Technical  
Information Facility  
P.O. Box 33  
College Park, Maryland

### Chairman of the Advisory Council

CHARLES H. STEVENS  
Project Intrex  
Massachusetts Institute of Technology  
77 Massachusetts Avenue  
Cambridge, Massachusetts

### Chairman-Elect of the Advisory Council

Mrs. CHARLOTTE S. MITCHELL, Librarian  
Miles Laboratories, Inc.  
Myrtle and McNaughton Streets  
Elkhart, Indiana

MARGARET L. PFLUEGER, Chief  
Information Section  
Division of Technical Information Extension  
U.S. Atomic Energy Commission  
Oak Ridge, Tennessee

### Treasurer

ALICE G. ANDERSON, Librarian  
Raytheon Company  
Boston Post Road  
Wayland, Massachusetts

JEAN DEUSS, Head Cataloger  
Reference Library  
Federal Reserve Bank of New York  
New York, New York

### Directors (Elect One)

Mrs. GLORIA EVANS, Librarian  
Production and Engineering Division  
Parke, Davis and Co.  
Detroit, Michigan

MARILYN MODERN, Librarian  
American Association of Advertising Agencies  
200 Park Avenue  
New York, New York

### (Elect One)

RICHARD C. DAVID, Research Librarian  
Liggett & Myers Tobacco Co.  
West Main Street  
Durham, North Carolina

EFREN W. GONZALEZ, Director  
Technical Communications  
Grove Laboratories, Inc.  
P.O. Box 7300  
St. Louis, Missouri

Members continuing to serve on the Board of Directors for 1967-68 will be the Immediate Past-President, Dr. F. E. McKenna; and Directors, Theodora Andrews, Charlotte Georgi, Phoebe F. Hayes, and Ruth Nielander.

Further nominations, accompanied by written acceptance of the nominee, may be entered by petition of twenty-five voting members and shall be filed with the Executive Director at least three months prior to the Annual Meeting.

Respectfully submitted,

LOIS W. BROCK, CLARA G. MILLER, PATRICIA POWELL,  
CYRIL H. SYKES, AND DR. ARCH C. GERLACH, *Chairman*

# A Dutch Treat

THIS is a report of the 32nd Session of the International Federation of Library Associations General Council at The Hague, Netherlands, September 11-16, 1966.

## The Background

The play's the thing: action, words—and sets. The latter is always interesting with IFLA and provides a special touch for the proceedings. This year's setting, The Hague, in small, densely populated, highly industrialized, international-minded Holland, contrasted sharply with the venue for 1965—Helsinki, capital of much larger Finland, harboring only four million inhabitants (one-third of Holland), preponderantly agricultural, fiercely nationalistic. But both countries have literacy rates of 100 per cent and well-stocked libraries in every city, town, and village.

The Finns' mystical and abstract approach to books and knowledge may be seen from the words of Wainamoinen, one of the heroes of the Runes of Finnish song contained in the Kalevala:

I shall never, never leave thee  
Till I learn thine incantations,  
Learn the many wisdom sayings,  
Learn the lost-words of the Master.

In contrast, the Dutch are down to earth and practical: Hugo Grotius, escaping from jail by hiding in a book-chest, is just as characteristic of their attitude as the fact that, in the seventeenth century, the Dutch managed to print and sell more books than all other countries together; international publishing is still a specialty.

Other striking differences refer to the Session itself: a small meeting in Helsinki, while the location of The Hague attracted the largest crowd ever (almost four hundred from thirty-four countries, including many sightseers).<sup>\*</sup> But, in both countries the organization was efficient, even though the Dutch had to struggle with the problems of the venerable but unsuitable Kurhaus, and

the hospitality was lavish: luncheons and receptions by the Burgomaster of The Hague and the Lord Mayor of Delft, splendid buffet suppers presented by the Technical University of Delft, and by the "exporting publishers" of the Netherlands, a reception given by the Dutch government at the fabulous Rijksmuseum at Amsterdam, and finally, on Saturday, an all-day excursion to the Kroller-Muller Museum in the Hoge Veluwe National Park to see the greatest collection of Van Goghs anywhere.

## Opening Day

A strenuous series of meetings was governed by the theme, Libraries and Documentation; Donald L. Wasson and I represented SLA and had our problems covering the wide variety of overlapping sessions. At the opening plenary session, the Minister of Social Welfare and Culture greeted the guests in the name of the Dutch Government and surprised everybody by quoting extensively from the Weinberg Report. In his welcoming address, the President of the Nederlandse Vereniging van Bibliothecarissen described librarianship as a "profession without boundaries," a statement that is not only highly quotable but also eminently fitting. He was followed by IFLA's President, Sir Frank Francis, Director of the British Museum, who reported on the state of librarianship, citing as the three decisive events of the year the completion of the British Museum Catalog, the Library of Congress' proposal for shared cataloging, and the application at several large libraries of mechanized procedures to cataloging and bibliography. The Treasurer's report, rendered by Preben Kirkegaard, demonstrated the basically sound financial condition of IFLA.

Mr. Penna's report on Unesco activities in the library field covered much ground, geographically and figuratively, but the name of the new Unesco Department of Documentation drew fire from the meeting, which accepted a resolution to the effect that a change of name into Department of Libraries and Documentation be suggested. Mr. Sviridov, Secretary-General of FID,

<sup>\*</sup> Forty-six (!) Americans attended, as many as the representatives from USSR, Canada, Australia, Poland, and Spain together.

brought the greetings of that organization and called for concerted action of all international and national organizations in the information field, so as to satisfy today's needs for easy and quick access to information.

The afternoon brought the overlap marring all meetings nowadays; your reporter joined the International Libraries Section at the Peace Palace. A spirited debate resulted in a request that a study be undertaken as to the feasibility of an index of publications and documents of intergovernmental organizations other than the United Nations, a type of material that is particularly elusive.

### Special Libraries Section

On Tuesday morning, the Special Libraries Section held its first meeting. The absence of our Secretary, Mrs. Irena Morsztynkiewicz, due to illness, proved to be a severe handicap. In her absence, the able assistance of Mrs. Galina Matveyeva was indeed invaluable. The year's events, as reported by the President, included:

1. The activation of the Sub-Section of Astronomical Libraries, established at Helsinki in 1965.
2. The temporary suspension of the work of the Committee on an International Special Libraries Directory until two publications announced in this field have appeared; the Committee will then decide whether to go ahead with plans for an international directory or to limit themselves to an attempt at establishing standards in this field.
3. The official organ of the Special Libraries Section, a quarterly called *INSPEL* (International Newsletter of Special Libraries) appeared for the first time in April 1966, under the editorship of Mrs. Morsztynkiewicz. The task of publishing a magazine in three languages, on a shoestring, has proved to be extremely challenging, to put it mildly.

The report was followed by the presentation of several papers. The first one was concerned with the contribution of academic libraries of the Soviet Union to social science information and was presented by Mrs. Inessa A. Khodosh, Director of the Social Sciences Library of Moscow University. Mrs. Khodosh described the structure of the system of university libraries and the coordina-

tion of library work achieved thereby. She stressed the particular importance of this work in the social sciences field because, in this field, "scientific literature is the only source of information and at the same time the laboratory of the investigator." Much useful detail, from acquisition to retrospective and thematic bibliographies, was contained in the paper, which closed with a call for "special attention to the international exchange of information and pooling of effort in this field."

F. P. Koumans, President, Special Libraries Section, Nederlandse Vereniging van Bibliothecarissen, and Director of the Medical and Pharmaceutical Library at The Hague, followed with a short description of the history and present state of special libraries and library organizations in the Netherlands. It was interesting to hear that the Section of Special Libraries of the NVB has been training special librarians and "literature research officers" for approximately the last twenty years.

The third speaker, Mr. Y. Ito of the University of Tokyo, who is also the President of the Japanese Pharmaceutical Libraries Association, discussed the activities of his Association, an extremely active group whose quarterly, *The Pharmaceutical Library* (1956 to date), should be of interest to his American confrères in this field. The Association has just completed an over-all survey of pharmaceutical college libraries in Japan. In addition, he stressed and described in detail the wide scope of activities of the Documentation Committee of the Japanese Pharmaceutical Society (also under his leadership).

Immediately following the meeting of the Special Libraries Section, the Sub-Section of Observatory Libraries held its first meeting. Mme. Feuillebois was able to report that the International Astronomical Union adopted a resolution at its last meeting at Hamburg, which reads as follows: "The IAU notes with approval the decision to form an association of librarians of astronomical societies and observatories with a view to facilitating the transmission, acquisition, and use of information in the field of astronomy." The Sub-Section plans to meet twice in three years, once with IFLA and once with the IAU. Alisdair Kemp had unfortunately been

prevented from coming, due to the "austerity" regulations of the British government, so that the meeting was deprived of his comments on the use of the Flexowriter in astronomical cataloging. Mrs. L. S. Muthauf of the U. S. Naval Observatory presented a report on the Library of that institution. A paper on the Library of Congress classification for the field of astronomy, by Jack W. Weigel of the University of Michigan, was read in his absence. The main part of the meeting consisted in the setting up and discussion of an ambitious program, including problems of the style of manuscripts, the proliferation of periodical publications, and the compilation of a highly detailed directory for which the President of the Sub-Section had already done a tremendous amount of preparatory work; this Sub-Section is off to an excellent start. A name change voted on at the meeting shows its expansionist tendency. It is now known as the Sub-Section of Libraries of Observatories and Astronomical Societies.

On the following day, the second plenary meeting took place, at which Messrs. I. P. Kondakov, Foster Mohrhardt, Herman Liebaers, and A. L. C. Vicentini discussed library and documentation. Mr. Mohrhardt, Director of the National Agricultural Library, viewed documentation as a development or extension of librarianship, and named fourteen specific activities that he considered to be identifiable as "documentation activities." He felt that there was a need for more cooperation between IFLA and FID and that the area of training was the most immediate and practical one to be tackled forthwith.

Mr. Kondakov, Director General of the Lenin State Library, examined the correlation not only between libraries and documentation, but also between these two fields and information. From a practical point of view, he felt that the Special Libraries Section and the Committee on Bibliography of IFLA should work out a broad program of international cooperation (including cooperation between IFLA and FID), in the library and documentation field, and they should prepare a discussion of this program for next year's session of IFLA.

Mr. Liebaers, Director of the Royal Library at Brussels, presented the European point of view in this discussion. He de-

scribed, at some length, the historical development of the relationship between IFLA and FID and declared himself unequivocally in favor of a merging of the two federations, which, he realistically stated, "will, of course, not happen overnight."

On Thursday, the Special Libraries Section held its working session; some fifteen members of the Section took an active part in the discussion, leading to the following resolutions:

1. Considering that, in view of the recent and imminent publication of important works by Unesco, FID, and private publishers directly affecting the activities of the Special Libraries Section Committee on the International Guide to Special Libraries, this Committee has suspended its activities. Be it resolved that immediately upon the publication of the titles named in the Committee's Report, its work be resumed, possibly in cooperation with ISO-TC46 and other pertinent international organizations.
2. Considering that the Plenary Session of IFLA of September 14, 1966, has shown an interest in the education of special librarians and documentalists, be it resolved that it be suggested to IFLA to establish contact and initiate cooperation with the Committee on Training Documentalists of FID through a committee consisting of the President of the Committee on Bibliography, the President of the Special Libraries Section, and the Vice-President of the Association of International Libraries.
3. Considering that the activities of the Special Libraries Section are expanding rapidly, be it resolved that a Constitution and Bylaws for Special Libraries Section be prepared for vote at the 1967 IFLA session.

The final plenary meeting of Friday afternoon was largely a routine affair, summarizing what had happened during the preceding sessions. The success of the Special Libraries Section's first Sub-Section poses the question: will one of the Divisions of SLA seriously go to work on establishing an equally successful second sub-section?

KARL A. BAER, Chief Librarian  
National Housing Center  
Washington, D. C.  
SLA Representative to IFLA  
President, SLS-IFLA

# User Reactions to Nonconventional Information Systems

A SIGNIFICANT "first" took place October 6 at the 29th annual meeting of the American Documentation Institute. A recent recommendation from JOG (Joint Operating Group, ADI/SLA), enabled SLA's Southern California Chapter to present a symposium, *User Reactions to Nonconventional Information Systems*, to an audience of SLA and ADI members, augmented by California Library Association representatives also meeting in the Los Angeles area.

Dr. Leroy Linder, Aeronutronic Division, Philco Corporation, Chapter President, opened the program, observing that while the user is important in the over-all design of an information system, it is a moot question among investigators whether the user himself is the best person to judge performance of a system.

In Users and the UCLA MEDLARS Station and Brain Information Service Louise Darling, UCLA Biomedical Library, recounted early reactions, as yet not formally or fully evaluated, to demand bibliographies and SDI service drawn from NLM's data base, which produces *Index Medicus*. BIS has built up a store of machine readable citations, and some programs have been written, but its thesaurus still is under construction, so manual search is performed.

In BIS and MEDLARS experience, SDI service is more desired than one-shot bibliographies, but both are appreciated by the scientists who are intrigued with computer potential and will devote considerable personal time to working with an information specialist in formulating computer requests. Sample user comments quoted, as with any system—manual or machine—ran the gamut, illustrating that, at this stage, over-all satisfaction is about equivalent to a manual system, although savings in search time and number of sources searched are significantly different.

Myra Grenier, Aerojet-General Corporation, speaking on Industry and the User, described a Corporate Technical Information Center of 15,000 documents, of which

slightly over half are internal reports. Coordinate indexed on Termatrix equipment to an average depth of over 40 descriptors each, abstracts of this literature are subsequently available at five Aerojet sites. Searches and SDI-type selections are handled by indexer/abstracters having science degrees and additional technical background. A staff of six (two professional) processes a minimum of 400 reports per month with additional time spent in search and SDI activities.

In this case, a sophisticated manual system offers advantages over an automated system as there is no time lost waiting for computer or programmer time. Also, by dealing directly with users, indexer/abstracters gain valuable feedback that permits easily changing direction or parameters of search if initial work indicates this necessity.

Users are interviewed regularly on performance of CTIC, which includes many of the benefits of computer systems—analysis, storage, retrieval, feedback, SDI—in its effort to close the gap between user and information specialist, rather than driving the user back to consulting a colleague.

User Reactions to a Corporation Information Network, in which a computer links information centers in nine divisions and four states, was detailed by Robert Panek, Autonetics Division, North American Aviation, Inc. In providing and widely publicizing a computer retrieval and SDI scheme, Autonetics experienced a 30 per cent increase in circulation in the eight months following program initiation. At the same time, untenable waiting lines developed once thousands of engineers were made aware of available literature resources. To solve circulation bind and save costs of conventional reproduction and of losing and re-acquisitioning documents, a microfiche dissemination pilot study was undertaken. Thirty scientists were selected to receive SDI on microfiche produced in-house. Six mission or group-oriented profiles were prepared to reflect this group's specific interests in the broad field of "physics of failure of electronics." Results

indicated the practicality, in certain subject areas of group profiles, rather than the more costly individual user profiles. A further finding illustrated that the sometimes negative attitude of users toward microfiche and readers, can be transformed to actual enthusiasm when applied to literature whose circulation otherwise is impeded by reserve lists, immobility when overdue, and document losses, all normal hazards in dealing with the human factor and single copies of file-size documents. Considerable cost data were included in this report.

Emil Shafer, Hughes Aircraft Company, presented a review of Electronic Properties Information Center's accomplishments as an information analysis center. EPIC's origin preceded the Weinberg Report recommendations on the potential of specialized information centers for improving information transfer within the scientific community. Principal services of EPIC are: 1) issuance of comprehensive data sheets on specific materials (especially semiconductors); 2) state-of-the-art reports; and 3) handling a spectrum of reference questions from users. EPIC employs a staff of scientist specialists

who locate and synthesize data for the computer store.

Early this year EPIC sent questionnaires to the 285 addressees who regularly receive its publications, seeking to clarify characteristics of the user, use made of EPIC service, and estimated savings for DOD and contractors. Half the respondents answered that 1965 savings definitely had been realized; a third of these estimated dollar savings of \$500-\$100,000. An interesting point among the few criticisms received was the complaint that machine-generated bibliographies need human review before dissemination.

This session illustrated that the optimum system within parameters of a given information situation in the present state-of-the-art may be man or man-and-machine and is moving toward the latter. It also reaffirmed the fact that the information specialist will be in continued and increasing demand at the user-machine interface.

ELIZABETH M. WALKEY, Manager  
Library Services  
Bell & Howell Research Center  
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## Library Literature Gleanings

JOURNAL OF EDUCATION FOR LIBRARIANSHIP, Summer 1966, begins with an article by Harold L. Roth on "Education for Special Librarianship" (pp. 3-20). It includes sections on "Librarianship in Art and Architecture" by Eleanor Worfolk, "Map Librarianship" by Bill Woods, "Agricultural Librarianship" by J. Richard Blanchard, "Education for Theological Librarianship (Protestant)" by Calvin Schmitt, and "Theological Librarianship (Catholic)" by Rev. James Kortendick, S.S. In the same issue is a discussion of "Industrial Corporation Libraries" (in the section "Review of Current Research") by Samuel Sass.

*Aslib Proceedings* for September 1966 devotes most of its pages to a "Working Conference on Computer Applications for Public Libraries." Articles included are: "What the Public Librarian Wants from Comput-

ers" (G. Johnson), "Book Issue Control by Computer Within a Locally Integrated System" (W. R. Maidment), "Progress in Computer Applications in Some British University Libraries" (Richard Kimber), "The Role of the British National Bibliography in the Application of Computers to Public Library Systems" (A. J. Wells), and "Organization and Practical Aspects of Computer Use" (H. J. Dive).

S. Parthasarathy writes on "Classification Research: a survey of recent developments" in the December 1965 issue of *Annals of Library Science and Documentation* (pp. 189-197). Abstract: "Surveys the work done and the trends in Classification Research during recent years. The role of the FID and some national bodies in the promotion and development of a general theory of classification is discussed. Successful design of a num-



ber of special schedules has highlighted the need for developing a general scheme of classification. Concepts like the Integrative Levels and the Inductive leap factors are some of the results of new thinking in this field." A bibliography is included.

"Teletype and the Telecode for Libraries" by L. J. van der Wolk appears in the July-August 1966 issue of *Unesco Bulletin for Libraries*, pages 170-176. A second, enlarged edition of the *IFLA/IATUL Telecode and Telex Addressbook* will stimulate the use of teletype among libraries. Correspondence, interlibrary loan and transmission of data are immediate and obvious uses.

A "Symposium on Error Control in the Chemical Literature" is a feature in the *Journal of Chemical Documentation*, August 1966.

Frederick G. Kilgour writes on "Library Catalogue Production on Small Computers" in the July 1966 issue of *American Documentation*. He discusses the production of library catalog cards, especially the Columbia-Harvard-Yale Medical Libraries Computerization Project. "The paper, also, treats of error controls, human edit procedures, and the complexity and variety of present bibliographic organization in the context of computer manipulation" (from the abstract). A short bibliography follows.

"Hospital Libraries" in the Autumn 1966 issue of *Library Review* looks at various plans in use in England, and concludes, "In the library field the paramount need is to get the basis of management right. Hospital library service is one: multi-faceted, brilliantly differentiated, but organizationally one."

Gene C. Lemmon, in an article in the October 1966 *STWP Review* (published by the Society of Technical Writers and Publishers), "Adding Literature Analysis to the Technical Writer's Skills," discusses the flow pattern of information within an organization. He surveys information sources available to scientists and engineers and "tells how the writer can combine his present skills with a knowledge of what is available today to become a technical literature analyst."

*Journal of Documentation*, September 1966, has an article by Michael F. Lynch, "Subject Indexes and Automatic Document Retrieval; The structure of entries in *Chemical Abstracts* subject indexes." Abstract:

"Index entries from the subject indexes to CA can, in general, be converted to 'normal' or title-like phrases by applying simple tests to the positions of prepositions and conjunctions in the entries. Other, more complex, entries can be transformed after somewhat deeper analysis. These manipulations are a necessary preliminary step to the use of the subject-index language in retrieval. A scheme is outlined for automatically compiling and editing subject indexes by transforming descriptive phrases with regular structure and vocabulary. These transformations, based on the formal structure of language, are shown to be admirably suited to computer manipulation."

Mike Taylor, assistant editor of *Office Administration*, writes in the August 1966 issue, "Print Shop Solves Card Problem for U of T Library; offset proves the answer to cataloguing difficulties." The University of Toronto Library has solved its card production problems with the help of offset printing. Illustrated.

Sixteen articles on "Federal, State and Local Government Publications" make up the July 1966 issue of *Library Trends*. A wide range of topics is covered, including acquisition, handling, control, and use of documents in various types of libraries. Issue editor is Thomas Shuler Shaw.

GLORIEUX RAYBURN, Librarian  
School of Library Service Library  
Columbia University, New York City

*The Institute [for Scientific Information] has a service much better designed to meet the needs of individuals. It is called Automatic Subject Citation Alert (ASCA) . . . that meet[s] citation, author, or other indexing criteria that the user has provided. An interesting by-product of the Citation Index is a new method of evaluating scientific productivity. Instead of counting a man's reprints, one counts citations of his work by others.*

From the editorial, "Coping with the Information Explosion," by Philip H. Abelson, in *Science*, vol. 154, no. 3745, October 7, 1966, page 75.

# Texas Chapter H. W. Wilson Company Award Entry 1966

IN KEEPING with the strenuous effort that is being made to up-grade higher education and attract research programs to the Southwest, in late 1965, the Texas Chapter of SLA, after a good look at the problems of communication, sponsored a symposium on the appraisal of science information resources and services. A year earlier the suggestion had been made, and as the idea gained momentum, discussion meetings were held, individuals asked to participate, and committees formed to handle various aspects of the problem.

From its initiation, there was no doubt as to the general type of program needed. This would be slanted towards the needs of the Southwest, but it should be based on nationwide interests and standards. Basically, the objectives of the symposium were: 1) to appraise the adequacy of existing science information resources and services (state, regional, and national)—what material was available in this region to support the educational, industrial, and basic research needs?; 2) to consider the role of special libraries in the over-all plan for state library development—how could we best aid and participate in the effort to develop state resources?; and 3) to identify factors and trends that might predict research and developmental expansion within the next two decades—what are the best ways and means to meet existing and anticipated needs?

The objectives of the symposium were far-reaching and obviously could not be resolved at a two-day meeting. But it could develop the basic problems, analyze them, and be the start of an educational program for scientists, industrialists, management, and librarians alike.

During the first day of the meetings, speakers concentrated on a review of national resources and services: indexing and abstracting, specialized information, and data-gathering centers, and regional cooperative programs. The second day's program was concerned with a review of emerging trends in Texas, followed by a discussion of a fu-

ture pattern of development and an evaluation of present resources and services.

One thousand preliminary announcements of the symposium and, later, an equal number of advance programs and advertising were sent to colleges and universities, chambers of commerce, professional and trade associations, public libraries, research laboratories, journals and newspapers in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. The costs (promotion \$582.69, registration and meeting details \$215.28, speakers \$472.11, and recordings and transcriptions \$193.28, making a total of \$1,463.36) contained many hidden miscellaneous expenses such as postage, xeroxing, and long-distance telephone calls. Many of these expenses were absorbed by companies and institutions in the area such as Texas Instruments, Inc.; Socony Mobil Oil Company; Lone Star Gas Company; Atlantic Refining Company; and Southern Methodist University.

Of the 102 registered participants, 10 per cent came from out-of-state. The registration fee was \$25.00, creating total receipts of \$2,470.00. The final draft of papers will cost about \$250.00 and they were published under the title *Texas Looks at Science Information*. Each participant will receive a copy and others will be sold for \$5.00 a copy.

If our prime objective has been to revitalize channels of communication between sources of material, special librarians, and the ever-increasing needs of library patrons, then our symposium was a great success. It brought into focus what is available in the Texas area.

Although the symposium was held in November, successive meetings during the balance of the year emphasized communications in specific fields—medical and chemical research, marine science, and geology. Only the future can evaluate the significance of the symposium and the meetings that followed. Of course the proceedings are a tangible product, but the crucial test will be in our perusal of what the symposium established as objectives and what is accomplished.

# *This Works For Us . . .*

## Conferences and Meetings Index

At the Library of the International Atomic Energy Agency, where information about conferences is in great demand, we have adopted an inexpensive system for quick retrieval of conference material published in various media. A 3 x 5 inch card file is used, arranged first by geographical location. For the second subdivision we have selected the date, since experience has shown that this is usually one of the items best remembered. In this index file are included books, journal articles, programs, reprints, and technical reports. The various forms of entry used for the different media are shown opposite.

The geographical entry is made by city rather than country. The English spelling is used with cross references when necessary. The date also appears on the first line. On the second line is the name of the conference, meeting, or symposium, followed by an indication of where the item is kept.

Although a number of excellent conference indexes are now available, our file has the advantages of:

1. Collecting all information in one place.
2. Locating this information in the library.
3. Being continually up-to-date.

A further possibility would be to place this file on punched-cards for retrieval of date, subject, and sponsoring body.

MRS. INGE BUCHINGER  
International Atomic Energy Agency Library  
Vienna, Austria

Rome Jun. 15-16, 1961  
NUCLEAR CONGRESS, 6th.

Reprint: Cavalloro, R.

New York Nov. 19-21, 1963  
ATOMFAIR WEEK. Program contents.

kept in: Conference Box by place and date

Ispra, Varese May 28-30, 1963  
SYMPOSIUM ON PUNCHED TAPE  
TECHNIQUES IN  
DOCUMENTATION.

see: Vertical File—  
DOCUMENTATION.

Barcelona Oct. 23-30, 1960  
CONGRES INTERNATIONAL DE  
CHIMIE INDUSTRIELLE, 32<sup>e</sup>.

in: Chime & industrie, 86: 407-  
(1961) (paper by: Morange, M.)

Bad Nauheim Apr. 2-4, 1963  
SYMPOSIUM ON REACTOR  
THEORY, 3d.

paper by: Matthes, W. EUR 309e

Athens Nov. 19-23, 1962  
SYMPOSIUM ON RADIOACTIVE  
DATING.

550.93  
.RA

## Card File Samples

### A Rose Is Not a Rose

A classical case of "reinvention," wherein perfectly valid prior work is ignored and a process repeated, frequently at considerable expense, is illustrated in your report of the "invention" at NASA Lewis Research Center of a fluid-density measurement method employing the Clausius-Mosotti relationship (ME, Feb., 1966, p. 64).

This relationship was discovered over 100 years ago. Use has been made of it for the specific purpose and with almost the identical equipment a number of times in the past.

The same process has been reported both by Honeywell and by Simmonds Precision Products with this same branch of NASA! This is obviously not invention. The question is, what

is it? It is simple ignorance, wherein the project engineer has failed to do even a cursory search of the literature so that he came to the problem fresh and uninformed, with no background or direction. Or is there another explanation?

In my view, this is the fault of the supervisory personnel in not insisting on proper literature research before instituting such projects. My guess, based on my reading, is that a significant number of similar projects would be cancelled at the outset if this were done.

ROBERT J. LEVINE, Technical Director  
Penn Meter Co., Philadelphia, Pa.

Reprinted with permission from "Mechanical Engineering," April 1966.

# Have You Heard . . .

## METRO to Study Science Libraries

The New York Metropolitan Reference and Research Library Agency (METRO) received a \$40,000 New York State Science and Technology Foundation grant to study science libraries in the area. The objectives are to determine the means by which library requirements of scientists can best be met and to develop plans for the effective sharing of technical information. Bill M. Woods, SLA Executive Director, is METRO's Secretary.

## ADI Special Interest Group and Newsletter

The American Documentation Institute has established a Special Interest Group on Education for Information Science under the chairmanship of Herbert Ohlman, Xerox Corporation, Rochester, New York. The Group publishes a newsletter, edited by Rinehart S. Potts, Assistant Professor, Library Science Department, Glassboro State College, Glassboro, New Jersey, also called *Education for Information Science*. The Group will be involved in programs for the education of those in the information science field, discussions of new methods and ideas, and exchanges of views on existing problems.

## News from MLA

The Medical Library Association, 919 North Michigan Avenue, Chicago, Illinois 60611, has recently announced several items of interest to members and students. MLA now offers a student membership, which includes all the privileges of regular active membership except voting, at \$3.00 a year. Two \$1,000 scholarships, the Paul Jolowicz and MLA-Lederle Scholarships, are available to students entering an accredited library school in the summer and fall of 1967. Application forms are available from the schools or the MLA Scholarship Committee Chairman, Mrs. Betty Manson, 6300 SW 126th Street South, Miami, Florida 33156. March 1, 1967, is the deadline. A \$500 Janet Doe Lectureship will be awarded for a lecture on the history or philosophy of medical librarianship, which will be presented during the Annual Meeting to be held at the Americana Hotel in Miami, Florida, June 11-16, 1967.

## COSATI Sponsors Two Studies

The Committee on Scientific and Technical Information (COSATI) is supporting two studies of technical data communications and handling. The first study will be carried out over a one-year period by the American Institutes of Research, Silver Spring, Maryland. The purpose is to investigate the behavior of technical people using oral/informal communications to obtain a description and definition of the role played by informal communications techniques. The second study, conducted by Science Communication, Inc., Washington, D. C., will be a preliminary census of activities in the collection, reduction, analysis, and dissemination of data in industry, the professions, and government. In addition to scientific data, the study will include technical specifications, manufacturers' catalogs, and technical operating and maintenance, instruction and training data.

## Further MEDLARS Study

The National Library of Medicine, Bethesda, Maryland, has awarded a \$54,070 contract to Auerbach Corporation, Philadelphia, for a systems study to determine specifications for enhancing and extending MEDLARS. The study will include plans for the mechanization of the Library's card catalog and serial records, feasibility of on-line indexing and citation input, development of a drug information module, storage and retrieval of graphic images, and an analysis of requirements for future decentralization of MEDLARS.

## Two CLR Grants

The American Library Association and the National League of Cities are conducting a jointly sponsored study to correct abuses in book publishing with a \$21,593 Council on Library Resources grant. The objectives are to collect information concerning certain abuses arising under the competitive systems and to provide procedures and guidelines for purchasing, bidding, contracts, forms, and qualifications.

A \$12,300 CLR grant is being used by the University of Chicago Graduate Library School for a laboratory study of non-aqueous

de-acidification treatments to improve the permanence of paper in library holdings. The Chicago Paper Testing Laboratory is providing the School with experimental facilities, and the Institute of Paper Chemistry, Appleton, Wisconsin, is serving in an advisory capacity along with the University's Department of Chemistry. A report of the initial investigations appeared in the October 1966 *Library Quarterly*.

#### **Library School Status at Kent State**

Kent State University's library science program is now being offered through the School of Library Science, not as a department in a division of the College of Education. Dr. Guy A. Marco, formerly Chairman of the Department, is now Dean of the School, which is in Kent, Ohio.

#### **Automatic Classification for Documents**

ALCAPP (Automatic List Classification and Profile Production) is a computer-based system designed by System Development Corporation for the automatic classification and retrieval of large document collections. In operation, each document is represented in computer storage by a list of its key content words. A profile, or inventory of the word content of a group of lists, is made, and ALCAPP reassigns each list to whichever profile has the greatest amount of that list's words. The run ends when the set of profiles and list-groups becomes stable and unchanging. The use of ALCAPP may lead to a more convenient means of handling natural language text on computers, making it feasible to classify a collection by book and page.

#### **Scholarships and Fellowships Available**

System Development Corporation will award, annually, up to twelve postdoctoral research fellowships in the mathematical, information processing, and social sciences. Fellowships, which will carry a \$9,000 stipend, will be awarded for full-time research at SDC with a one-year tenure. Applications and additional information can be obtained from the Information Office, Research and Technology Division, SDC, 2500 Colorado Avenue, Santa Monica, California 90406.

The University of Chicago Graduate Library School is offering approximately thirty

fellowships and scholarships for graduate study in librarianship and information science during the 1967-68 academic year. Pre-doctoral and postdoctoral fellowships for medical librarianship will also be awarded. Interested applicants should contact the Dean of Students, Graduate Library School, University of Chicago, Chicago 60637. Application deadline is January 15, 1967.

#### **Study of Print for Partially Blind**

The Library Association in Great Britain has undertaken a study of the best standards for print to help readers with defective sight. The two-year study will investigate suitable type sizes and faces, color and intensity of inks, qualities and colors of paper, and the layout of the printed page.

#### **CLA 1967 Scholarship**

The Catholic Library Association is sponsoring a \$1,000 scholarship for study at a graduate library school during the 1967 academic year. Lay people as well as members of religious orders are eligible, and scholarship and financial need are two of the basic qualifications. Applications may be obtained from CLA headquarters, 461 West Lancaster Avenue, Haverford, Pennsylvania 19041, and must be returned there by February 14.

#### **ERIC Needs Cooperation for Acquisitions**

The Educational Research Information Center (ERIC), of the United States Office of Education, which operates twelve clearinghouses throughout the country, invites researchers and others concerned with educational research to help in its search for appropriate documents by keeping the director of any clearinghouse informed of any new projects or programs and by sending two copies of every report or document to the director of the appropriate clearinghouse. Details on ERIC and its clearinghouses are available by writing to the Director of ERIC, USOE, Washington, D. C. 20202.

#### **Library Staff Training Courses**

The second staff training course at Rensselaer Polytechnic Institute's Library is now underway. RPI inaugurated the course in the spring of 1966, which was a general introduction to systems analysis and computer

programming. The second course, lasting from October 19 to December 7, provided a working knowledge of methods and standard procedures and tools that can be utilized in analyzing and evaluating operating problems. The third course, planned for the spring of 1967, will deal with the techniques of computer programming. The courses are open to RPI librarians and students. The text, *Systems Analysis and Design as Related to Library Operations* (1966: \$3.50), was written by staff members.

### Library of Presidential Papers

New York City will have a Library of Presidential Papers at 17 East 80th Street sometime early in 1967. The privately financed library will have a room for each president including memorabilia as well as letters and documents. Also planned are courses illustrated with microfilmed and xeroxed documents from the Library's collection. Henry O. Dormann is the Library's Executive Director, and while its doors are not yet open to the public or to private scholars, its office facilities are in operation.

### Coming Events

The Graduate School of Library Science, DREXEL INSTITUTE OF TECHNOLOGY, Philadelphia, is sponsoring a conference on the Library-College, A Method of Learning, December 18-21. Under discussion will be the idea of the library-college concept, new learning theories and techniques, automation, traditional academic libraries, and learning resource centers. The registration fee is \$60, and details are available from Mrs. Barrie K. Lind at Drexel.

The INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING (IFIP) and the FEDERATION INTERNATIONALE DE LA DOCUMENTATION (FID) are sponsoring a conference on Mechanized Information Storage Retrieval and Dissemination in Rome, Italy, on June 14-17, 1967. Emphasis is on topics that indicate practical and economically feasible aspects of systems based on experience gained in operation. Further information is available from Judith A. Werdel, Secretary, USNCFID, National Academy of Sciences, National Research Council, Washington, D. C.

The FOURTH ANNUAL NATIONAL COLLOQUIUM ON INFORMATION RETRIEVAL, whose theme is Information Retrieval—The User Viewpoint, will be held May 3-4, 1967, in Philadelphia. Papers are invited and details are available from Lawrence Berul, Auerbach Corporation, 121 North Broad Street, Philadelphia, Pennsylvania 19107.

### Members in the News

CHARLES K. BAUER, Manager of the Scientific and Technical Information Department of Lockheed-Georgia Company, Marietta, Georgia, is the newly elected Chairman of the National Security Industrial Association's Technical Information Advisory Committee.

ERIK I. BROMBERG, Librarian at the United States Department of the Interior's Bonneville Power Administration Library, Portland, Oregon, has been promoted to the position of Librarian of the USDI Central Library in Washington, D. C. Mr. Bromberg will assume his new duties on February 28.

DR. EUGENE GARFIELD, Director of the Institute for Scientific Information, Philadelphia, and Editor and founder of *Index Chemicus*, has been elected a Fellow of The Institute of Information Scientists, London.

RICHARD E. HARRISON of A. J. Nystrom & Co., New York, executed the prize-winning relief work on the company's Sculptural Relief Map of Asia, which was entered in the 1966 Graphic Arts Awards competition, sponsored by the Printing Industries of America.

EUGENE B. JACKSON, Director of Information Retrieval Services, IBM Corporation, Armonk, New York, was recently elected to the Board of Directors of Engineering Index, Inc. Mr. Jackson is an SLA Past-President.

THOMAS W. JOHNSTON, former Supervisor of Science Libraries at the University of Rochester, Rochester, New York, has been recently named Director of the University Library's newly established Technical Information Center.

DR. ISAAC D. WELT, Deputy Director for Information Science at the American University Center for Technology and Administration, Washington, D. C., was recently elected a Director of Drug Information Association.

## New Library Training Programs

A two- to three-year work-study program in medical rare book librarianship is being offered at the Francis A. Countway Library of Medicine and is open to candidates holding a baccalaureate degree but no library school training. For information, contact Ralph T. Esterquest, Librarian, 10 Shattuck Street, Boston, Massachusetts 02115.

Cataloging: Purposes, Problems, and Principles is the name of the four-week advanced studies course to be given at the University of Illinois Graduate School of Library Science, July 17-August 19, 1967. Additional information is available from Dr. Herbert Goldhor, Director, Graduate School of Library Science, Urbana.

## Pittsburgh to Expand Center

The University of Pittsburgh received \$66,000 to expand international programs at the International Library Information Center of the Graduate School of Library and Information Sciences. The funds will make possible additional staff and programs.

### Correction

On page 583 of Nathalie Batts' article, Data Analysis of Science Monograph Order/Cataloging Forms, in the October issue of *Special Libraries* there is an incorrect number. The second sentence under the heading Results of Study should read, "Of the 532 [not 352] items studied, 441 had LC cards and 91 represented original cataloging."

## Letters to the Editor

### COMMUNICATING MORE STATISTICS

With reference to the communication on statistics which appeared in the October 1966 issue of *Special Libraries*, at least one or two other statistics rear their heads.

The statistics reveal that only six companies felt that it was of enough importance to their upper management to learn more about how to manage a company library even though the advertising brochures distributed prior to the seminar indicated that the seminar was directed to the managers of the managers of the library. This was, in short, a way for upper management in these companies to learn something about what their librarians should

be doing. And so we might consider a statistic showing that fifty managers of managers of the library absented themselves from the seminar.

These statistics, to me, appear more important than the statistic relating to the twenty-nine of fifty possible librarians who were not SLA members, since these generate in yet another way the disturbing, disquieting nightmare that management, except in precious few instances, doesn't really care what its librarians do, surely not enough to squander three days of upper management's time in finding out what "that librarian does down there all day long."

JOHN J. MINITER  
School of Library Science  
Texas Woman's University  
Denton, Texas

### LIBRARIANS ARE TO BLAME

Mr. Bauer (*Special Libraries*, October 1966) is chagrined that so few librarians were part of his American Management Association class on company libraries. The fact that so few librarians are sent by companies, government agencies, etc., to special library and information retrieval seminars is well known. In the last three IBM Customer Executive classes on libraries and information retrieval in which I participated, the enrollment was over 125. The number of librarians in the three classes was less than ten. Mr. Bauer, in part, puts the blame on management for not recognizing the contribution which the professional librarians could make "to the success of their companies." The reason that management often does not realize the real value and utility of their librarians is that the librarians, as a rule, do not apply their skills to those informational matters which are of immediate consequence and contribute directly to the success of the companies.

I am often called to assist firms in developing what are essentially library procedures for processing their vital documents. These consist of engineering drawings, failure (reliability) data, drug reports, special medical records, parts catalogs, engineering documentation of all sorts and the like. In none of these situations does the company librarian participate. His responsibility is for books, journals and formal research reports. Too often this type of literature is considered by management as essentially archival and not really active or very pertinent to the actual operation of the company.

Twenty years ago when research reports became an important element of scientific docu-

mentation, librarians accepted the responsibility for this rather "primitive" literature and made significant contributions to its bibliographic control. Even the library schools are now beginning to recognize the librarians' involvement with this literature.

Today, the great mass of documentation which is of vital concern to business and industrial firms lies outside the formal library. These documents are very expensive to produce and have great and immediate significance to the operation of the organizations which prepare them. The methods for processing and controlling them are essentially library processes. Professional librarians, therefore, could make very important contributions to the success of their companies if they would leave their libraries and go out and help the laboratories, the drafting rooms, the manufacturing plant, the engineering documentation department and the other "paper mills" of their firms. Management would then give their libraries more recognition and we probably would see more professional librarians at AMA seminars and IBM classes where special library applications and non-traditional library methods are discussed.

I. A. WARHEIT

Program Administrator—Information Retrieval  
Data Processing Division, IBM  
San Jose, California

#### CAVEAT EMPTOR

This is to alert prospective book purchasers to yet another type of questionable advertising practice resorted to more and more frequently by some publishers of technical books and journals.

We have all received elaborate undated flyers advertising what appear to be new books, which on verification turn out to have been published several years previously. At present, though, I refer specifically to the practice of advertising as books, without qualification, complete issues of journals or collections of journal reprints.

Thus, as recent examples of duplicate material we have inadvertently purchased: *Chemistry and Physics of Interfaces* (American Chemical Society, 1965), a collection of reprints from *Industrial and Engineering Chemistry*; also, *Analysis and Fractionation of Polymers, Structure and Properties of Polymers*, and *Perspectives in Polymer Science* (Wiley/Interscience, 1965-66), which are Polymer Symposia Nos. 8, 9, and 12, all issues of Part C of the *Journal of Polymer Science*.

These can hardly be examples of oversight

on the parts of careless copy writers. Rather, they seem additional indications that we could use a good deal more "truth in advertising" here, too.

PHILLIP ROCHLIN, Head  
Library Division (Technical Library)  
U.S. Naval Propellant Plant  
Indian Head, Maryland.

#### DEPARTMENT OF AMPLIFICATION

In my article "Government and Libraries" in the October 1966 issue of *Special Libraries* brief mention was made of the Union Library Catalogue of Pennsylvania indicating that part of its support came from the state. More accurate and detailed information behind that statement shows a well-developed union catalog which includes special library holdings. This is the Union Library Catalogue of Pennsylvania which was founded in 1935. The Catalogue has included holdings of all libraries within the Philadelphia area with many special libraries among them. The Pennsylvania Statewide Library Program in 1961 established four regional resource libraries, i.e. The Free Library of Philadelphia; the Carnegie Library of Pittsburgh; the Pennsylvania State University Library and the Pennsylvania State Library. To enable each of these libraries to carry out library services to geographic areas under the state program as well as to develop their acquisition programs, each of these libraries receives funds under the state aid program.

To facilitate the program the Union Library Catalogue and the Regional Resource Libraries cooperate to include the holdings of these libraries within the Union Library Catalogue and to provide rapid location services via telecommunication. Because of the inclusion of several special libraries in its files, the Catalogue frequently reports special libraries as locations for requested titles; and many special libraries have cooperated in making their research materials available to borrowing libraries throughout the state, a practice which has been carried on since 1935. In return for these services, which now total the location of more than nine thousand titles per year, each regional resource library pays the Union Library Catalogue an annual service subscription. The total amount received from these subscriptions amounts to about thirty percent of the Catalogue's total annual income and is a payment for services rendered by the Catalogue.

PHYLLIS I. DALTON  
Assistant State Librarian  
California State Library, Sacramento



# Off the Press . . .

## Book Reviews

MARSHALL, John David, ed. *Approaches to Library History* (Proceedings of the Second Library History Seminar, Florida State University Library School, Tallahassee, March 4, 5, and 6, 1965.) Tallahassee: Journal of Library History, 1966. 183 pp. diags. bibliogs. appendix. \$7.00.

The purpose of the seminar was "to summarize the state of the library history art, to consider examples of current historical studies, to emphasize the historical background of special libraries, and to discuss communication and publication needs of researchers in library history." The papers adhered quite well to the objectives, with the exception of Budd L. Gambee's lively one on *Leslie's Illustrated Newspaper*, which would have fit better into a seminar on history of American periodicals.

Ten of the thirteen papers are by librarians, two by historians, and one by a "private researcher." The librarians include Estelle Brodman (Washington University School of Medicine), Bill M. Woods (Executive Director of SLA), Robert V. Williams (Atlanta Public Library), Hayes McMullen (Indiana University), Sister M. Constance (Marywood College), Miles M. Jackson, Jr. (Atlanta University), Roscoe Rouse, Jr. (SUNY at Stony Brook), Martha Jane K. Zachert (Florida State University), Budd L. Gambee (University of North Carolina), and Guy Marco (Kent State University). Frances Moltenberry was the "private researcher," and the two historians from FSU were Richard A. Bartlett and Donald D. Horward.

Titles of the papers are generally descriptive of their content and include *The State of the Library History Art*; *What Killed Napoleon? A Study of Historical Evidence*; *The Special Library, the Mirror of its Society*, and others. Bill M. Woods' *Library Association Archives and Library History* should be of especial interest to SLA members. He gave a detailed description of SLA archives, their organization, availability, and potential as a source for library history. An appendix to his paper inventories the archives of thirteen library associations and should be of value to library history researchers.

Williams' paper, *Document Sources for the History of Federal Government Libraries*, includes a twelve-page annotated bibliography that will be a useful guide.

The book concludes with a two-page ap-

pendix listing names, titles, and institutions of seminar participants. It is a utilitarian printing and binding job. Curiously there is no index. This is a seminal book from which many papers, articles, and books on library history may sprout. Librarianship is really coming of age when a seminar on its history can entice thirteen busy librarians to prepare such a diversity of scholarly papers for presentation and discussion. This book should be read by all practicing professionals.

FRANK J. ANDERSON, Librarian  
Wofford College  
Spartanburg, South Carolina

ASH, Lee and BRUETTE, Vernon R. *Interlibrary Request and Loan Transactions among Medical Libraries of the Greater New York Area*. New York: The Survey of Medical Library Resources of Greater New York, 1966. 199 p. \$5.00.

In 1963 a questionnaire was sent to 441 medical and paramedical libraries in a survey area centering around Metropolitan New York. Two hundred and seventy-eight libraries replied and indicated a tenfold increase of interlibrary loans during the past decade. Two hundred and twenty-four libraries agreed to submit their interlibrary loan records (both loans and requests) for one year. Finally, 217 libraries did subscribe to the study for one year, with seventy-nine libraries contributing the most useful records.

From this census of interlibrary loan activity, an enormous amount of data was collected and presented in tabular form. However, it should be pointed out the data is not homogeneous, and not every cooperating library consistently supplied all its records.

To interpret this vast body of data, Ash and Bruette used a method of deductive statistics. Their methodology—presenting data in arrays, frequency distributions, and breakdowns by categories—means that the data are meaningful for the librarian and administrator. For example, the date of publication of frequently requested serials should indicate to a borrowing library the need for a particular run of a journal (*vide* Table 31A). The rank order of serial lenders based upon borrowing records reveals the exploitation by borrowing libraries upon the larger institutions (*vide* Table 7A and Table 8A).

But whether or not this large collection of data has any statistical validity and reliability for the surveyed area or for any other geo-

graphical area, and I do not think it has, is of secondary importance. The primary consideration in this report is the high cost of interlibrary loan services.

It is an obvious conclusion that borrowing libraries receive a disproportionate amount of interlibrary loan services. And, unless these libraries, which make excessive demands upon the major resource libraries, strengthen their collections and provide additional pecuniary support for these libraries, it will become increasingly difficult to obtain needed materials through the use of interlibrary loans.

NORMAN P. ZAICHICK  
Library Services Department  
Argonne National Laboratory  
Argonne, Illinois

### Guide to Technology Transfer

The United States Department of Commerce Office of State Technical Services has just issued *Technology Transfer and Innovation, a Guide to the Literature* (PB-170 991), which is designed to assist state organizations in the implementation of the State Technical Services Act of 1965. A review section categorizes and highlights ideas contained in the literature, and a bibliography section cites and summarizes the literature. Technology transfer, or spin-off, is defined as the application of technical knowledge in an area other than its field or place of origin. Copies of the fifty-page volume are \$3.00, and microfiche is 50 cents, both forms available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

### New Name for ISA Journal

The *ISA Journal*, published by the Instrument Society of America, will be called, beginning with the January 1967 issue, *Instrumentation Technology*. This name change reflects the present scope of the journal's character and content as well as ISA's interests.

### History of Medicine Bibliography

The *Bibliography of the History of Medicine*, no. 1, 1965, is the first of a planned series of annual bibliographies of the history of medicine. The majority of citations are from the National Library of Medicine's computer-based MEDLARS. Other journals, bibliographies and lists of recent publications in classics and general history have also been reviewed for citation. The first part of the *Bibliography* lists citations dealing with biographies or

contributions of physicians with a separate listing of citations on famous nonmedical persons or their work. There are also subject and author indexes. Authors of articles not indexed in *Index Medicus* are invited to send reprints to the Chief, History of Medicine Division, NLM, Bethesda, Maryland 20014. Copies of the 299 page *Bibliography* are available from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402 at \$1.75 each.

### Special Film Issue

The *Drexel Library Quarterly*, published by the Graduate School of Library Science at Drexel Institute of Technology, devoted its current issue, vol. 2, no. 2, to Films in Public Libraries. The problems of film evaluation, utilization, and programming are discussed by contributors to the issue. The cost of an individual copy is \$3.00 and copies are available from Drexel.

### SLA Authors

BERTALAN, Frank J. Selection and Reference Use in the Special Library. *Library Trends*, vol. 15, no. 1, July 1966, p. 143-56.

CLARKE, Robert F., co-author. Repeat Photocopying of Journal Articles. *College & Research Libraries*, vol. 27, no. 5, September 1966, p. 389-92.

DOWNS, Robert B. Government Publications in American Libraries. *Library Trends*, vol. 15, no. 1, July 1966, p. 178-94.

FILBY, P. W., co-author. Manuscripts in the Maryland Historical Society, Baltimore. *Manuscripts*, vol. 18, no. 3, Summer 1966.

GOSNELL, Charles F. From the Point of View of Library Administration (The Higher Education Act of 1965: A Symposium). *College & Research Libraries*, vol. 27, no. 5, September 1966, p. 345-7.

HAYES, Robert M. Institute of Library Research. *Library Journal*, vol. 91, no. 17, October 1, 1966, p. 4579-85.

HUTCHISON, V. Vern, comp. *Selected List of Bureau of Mines Publications on Petroleum and Natural Gas*. (USDI Bureau of Mines Circular 8240 Supplement with Indexes, January 1, 1963-June 30, 1966). Available from author, P. O. Box 1398, Bartlesville, Oklahoma 74003.

KRAFT, Margit. What Would You Do with Brighter People? *Journal of Education for Librarianship*, vol. 7, no. 1, Summer 1966, p. 21-8.

MAHLER, Jeanne H. Selection and Reference Use in the Public Library. *Library Trends*, vol. 15, no. 1, July 1966, p. 93-106.

RISTOW, Walter W., comp. *Facsimiles of Rare Historical Maps, a List of Reproductions for Sale by Various Publishers and Distributors*, rev. ed., Washington, D. C.: Geography and Map Division, Library of Congress, 1966. 12p.

SASS, Samuel. A Persecuted Minority. *Library Journal*, vol. 91, no. 12, June 15, 1966, p. 3126-7.

SCHELL, Mary. Acquisition, Handling and Servicing in State Libraries. *Library Trends*, vol. 15, no. 1, July 1966, p. 135-42.

SHIPMAN, Joseph C. "Optimum Size" and the Large Science Research Library. *College & Research Libraries*, vol. 27, no. 5, September 1966, p. 354-7+.

TAUBER, Maurice F. Guidelines for the Preparation of Grant Requests and Implications for Library Education and ALA Divisions (The Higher Education Act of 1965: A Symposium). *College & Research Libraries*, vol. 27, no. 5, September 1966, p. 347-53.

### Thesis on Goodyear Library Available

Anthony E. DeStephen's master's thesis, "The Library of the Goodyear Aerospace Corporation; Operations and Procedures," written for his degree at Kent State University in 1964, is available on interlibrary loan from Association Headquarters. The history and development of the Library, its development, holdings, acquisitions, procedures, and services are reported in detail.

## RECENT REFERENCES

### Directories

*Könyvtári Minerva*, 2 vols. Budapest: Könyvtárudományi és Módszertani Központ, 1965. 684, 234 p. tables. charts. Apply.

Hungarian-language directory of information centres located throughout Hungary. Entries are numbered consecutively and arranged in alphabetical order.

LATIN AMERICAN CENTER, DOCUMENTATION SECTION. *Master Directory for Latin America*. Los Angeles: University of California, 1965. 438 p. \$15.

A significant new reference source for libraries and all who deal with or study Latin America. Contains 10 sub-directories with names and addresses of U.S., Western European, and Latin American organizations and institutions interested in Latin American agriculture, communications, government, labor cooperatives, religion, education, research, business, industry, finance, publishing, international cooperation, etc. Included also are

information-locating sources, hard-to-find-items, social and professional organizations and associations, and a very detailed table of contents and index.

NATIONAL REFERRAL CENTER FOR SCIENCE AND TECHNOLOGY. *A Directory of Information Resources in the United States: Social Sciences*. Washington, D. C.: 1965. v, 218 p. pap. \$1.50. (L. C. 65-62583) (Available from Government Printing office)

A companion volume to *A Directory of Information Resources in the United States: Physical Sciences, Biological Sciences, Engineering* (1965). Gives organizational and operative descriptions of about 900 U. S. resources in the social sciences. A more comprehensive guide may be published at a later date. The subject index ranges from administration to witchcraft. An organization index aids in locating units that are part of single organizations such as universities, state, or federal agencies.

*Vademecum Deutscher Lehr- und Forschungsstätten* (Handbook of German Institutions of Higher Education and Research), 4th ed. Essen, Germany: Stifterverband fuer die Deutsche Wissenschaft, 1966. xix, 432 p. DM 25. \$6.50 (approx.). (Available from Gemeinnuetzige Verwaltungsgesellschaft fuer Wissenschaftspflege m.b.H., P.O. Box 360, (43) Essen-Bredeney, West-Germany.)

Provides basic information on all official or semi-official scientific and academic institutions in the Federal Republic of Germany and West Berlin. Listed also are scientific archives, libraries, information centres, museums, learned societies, federal establishments under the Koenigstein agreement, and all institutes of the Max Planck Society for the advancement of science. Extensive subject, author, and place indexes. In German.

WOODMAN, V. A. and SPINK, J. E., eds. *Library Resources in South-West England and the Channel Islands*. London: Library Association, Reference, Special and Information Section, 1965. vii, 86 p. pap. 14 s. (approx. \$2).

The second in a series, this directory follows the general pattern of an earlier volume that covered the West Midlands. A standard questionnaire was used in compiling pertinent data from each library. Arranged alphabetically by institution, the book has a topographical and a general index.

*World of Learning*, 1965-66, 16th ed. London: Europa Publications Ltd., 18 Bedford Square, 1965. xiv, 1443 p. \$23.50.

Comprehensive and detailed information on the world's universities, colleges, learned societies, libraries, museums, art galleries, and research institutes. Includes names of society or institute presidents, members, curators, archivists, educators, etc., as well as year of foundation and titles of their publications. More than 1,500 institutions have been added, 625 of which are United States colleges. Alphabetical index of institutions.

## Miscellaneous

BINGLEY, Clive. *Book Publishing Practice*. Hamden, Conn.: Archon Books, The Shoestring Press, Inc., 1966. viii, 104 p. tables. \$4.

A short account of what goes on in a publishing house. Chapters on the financial aspects of publishing as well as on editorial, production, promotion, and selling provide authors, librarians, booksellers, and students with useful background information on the making of books. Bibliography and Index included.

BRITISH STANDARDS INSTITUTION. *The Metric System in the United Kingdom: the Use of SI Units* (PD5686). London: 2 Park Street, 1965. 14 p. pap. tables. 1/.

A non-technical explanation of metric system units, especially those of the newly rationalized *Système International d'Unités* (SI). Tables and definitions in the appendix are included to aid U.K. industry in conversion to metric system.

CHENG, Chu-yuan. *Scientific and Engineering Manpower in Communist China, 1949-1963* (NSF 65-14). Washington, D. C.: National Science Foundation, 1966. xx, 588 p. pap. \$2 (Available from Government Printing Office)

Based on examination of newspapers, periodicals, and scientific journals published on the Chinese mainland, plus pertinent Russian and Japanese publications. Includes not only data on training, employment, and utilization of manpower but role of women scientists, social science, foreign affairs, and Communist policy. Appendices on official documents, board members of the Chinese Academy of Sciences, officers of various Chinese scientific academies, biographical data of 1,200 prominent scientists and engineers, index.

COMMITTEE ON THE JUDICIARY, HOUSE OF REPRESENTATIVES. *How to Find U. S. Statutes and U. S. Code Citations*, rev. ed., Washington, D. C.: Government Printing Office, 1965. 8 p. pap. \$10.

Printed for the use of the Committee on the Judiciary, House of Representatives, the revised edition of this pamphlet provides quick access to information on the title material and reflects changes made in the new master table of statutes set out in the 1964 edition of the U. S. Code. Wherever quotations are incompletely quoted, the respective official published volumes are shown alongside the references for further research. A descriptive list of references is included.

*Copyright Law Revision: Hearings before Subcommittee No. 3 on the Judiciary, House of Representatives, 89th Congress, 1st Session, on H.R. 4347, H.R. 5680, H.R. 6831, H.R. 6835, Bills for the General Revision of the Copyright Law, Title 17 of the United States Code.* 3 vols., Serial No. 8. Washington, D. C.: Government Printing Office, 1966. 2056 p. (total) pap. illus. \$2 (vol. 1); \$2.25 (vol. 2); \$2 (vol. 3).

Verbatim account of the title hearings. Each volume offers a separate table of contents arranged consecutively by date of hearings, while a combined subject and name index to all three parts is appended to the last volume.

COUNCIL FOR INTERNATIONAL PROGRESS IN MANAGEMENT (USA), INC. *Proceedings, CIPM Annual Conference on International Management, January 26, 1966*. New York: 342 Madison Ave., 1966. 50 p. pap. \$3.

Four papers discuss the accelerating management revolution and project a decade of dynamic changes in international management.

GIRAGOSIAN, N. H. *Marketing Guide for the U.S. Synthetic Organic Chemicals Industry*. Stamford, Conn.: Technomic Publishing Co., Inc., 750 Summer St., 1966. 80 p. pap. illus. charts. \$16. (L.C. 65-27477)

A detailed study based on data obtained through interviews with chemical marketing executives. Explains distribution methods and marketing patterns employed by manufacturers in the field. Information on topics such as reasons for forward and backward integration, economic factors affecting choice of distribution channels, as sales trends, and future potential for chemicals in each of the markets analyzed.

LLOYD, Lewis E. *Techniques for Efficient Research*. New York: Chemical Publishing Company, Inc., 1966. 224 p. illus. charts. \$8.50.

Offers a new and different approach to solving research problems by outlining, through a six-step method, a plan for correlating technical knowledge with business psychology. Useful to scientists, technical personnel, and those who conduct in-service courses for new technical employees. Subject index.

NATIONAL ARCHIVES AND RECORDS SERVICE, GENERAL SERVICES ADMINISTRATION. *Guide to Record Retention Requirements*, Title 1, Appendix A. Washington, D. C.: 1966. 85 p. pap. \$40. (Available from Government Printing Office.)

Revised as of January 1, 1966, this annually published *Guide* is based on federal laws and on regulations issued by federal agencies. Contains over 900 digests describing types of records to be kept, by whom, and for how long. Over 2,000 index entries list categories of persons, companies, and products affected by federal record-retention requirements.

NATIONAL SCIENCE FOUNDATION. *Basic Research, Applied Research, and Development in Industry, 1962*. (NSF 65-18, Survey of Science Resources Series.) Washington, D. C.: 1965. xi, 195 p. pap. \$1. (Available from Government Printing Office)

Analysis and report on the eighth annual survey of industrial research and development, conducted in 1962 by the Bureau of the Census. Tables, letters, questionnaires, technical notes, and survey definitions are included in four appendices.

———. *Fifteenth Annual Report for the Fiscal Year Ended June 30, 1965*. Washington, D. C.: 1965. xxxiii, 203 p. charts. illus. pap. \$75. (Sold by Government Printing Office.)

An account covering events, decisions, progress, and setbacks of the Foundation during the year under review. Appendixes include NSF staff, committee, and advisory panel listings, financial

report for fiscal 1965, NSF-sponsored conferences, NSF-sponsored patents, and NSF publications.

———. *Grants and Awards for the Fiscal Year Ended June 30, 1965* (NSF-66-2). Washington, D. C.: 1965. v, 272 p. pap. \$.70.

Grants and contracts are grouped alphabetically under broad subject headings and categories such as Basic Research Support, Development and Improvement of Institutional Science Programs, Specialized Research Facilities Support, National Research Centers and Programs, Science Information Services, and Education Programs. Listing of fellowship and traineeship awards offered.

*Odyssey World Atlas*. New York: Golden Press-Odyssey Books, 1966. 317 p. \$19.95. (L.C. Map 66-4)

A most comprehensive, beautifully executed work. While predominantly a reference atlas, it also contains a wealth of useful maps depicting political, cultural, economic, and physical patterns on the surface of the earth. Arranged on a regional basis, physical and political maps are shown separately. This increases the over-all clarity and legibility and provides a maximum listing of place names. The alphabetically arranged index of more than 105,000 entries, which follows the 170 map pages, makes this atlas probably one of the most complete available in terms of place coverage. North America is treated in greatest detail in both maps and index, a feature that should prove especially helpful to reference librarians, educators, and students in the United States and Canada. Type sizes and styles have been carefully selected throughout. In general, upright styles are used for states, place names, and cultural information, while physical features are printed in italics. Cartography executed by General Drafting Co., Inc.

OFFICE OF SCIENCE AND TECHNOLOGY, EXECUTIVE OFFICE OF THE PRESIDENT. *The Role of the Federal Council for Science and Technology, Report for 1963 and 1964*. Washington, D. C.: Government Printing Office, 1965. vii, 53 p. pap. Apply.

Part I reviews the role of the Federal Council for Science and Technology and its operations; Parts II and III provide details on the work of the committees and panels of the Council.

SELECT COMMITTEE ON GOVERNMENT RESEARCH OF THE HOUSE OF REPRESENTATIVES, 88th Congress, 2d Session. *Impact of Federal Research and Development Programs* (Study No. VI, Union Calendar No. 831, House Report No. 1938). Washington, D. C.: 1964. viii, 265 p. pap. 65¢. (Available from Government Printing Office)

Examines the impact of R&D programs on communities, on higher education, on industry, and on the national economy. Maps and statistical tables. Appendix lists 300 leading federal R&D industrial contractors.

———. *Statistical Review of Research and Development* (Study No. IX, Union Calendar No. 833, House Report No. 1940). Washington, D. C.: 1964. xii, 231 p. pap. 60¢. (Available from Government Printing Office)

Reports on the over-all amount of annual expenditures on research programs; what government departments and agencies are conducting research and at what costs; the amounts being expended in grants and contracts to colleges and private industries, and in student scholarships; and facilities for coordinating various research programs. Statistical tables and distribution maps.

SOCIETY OF TECHNICAL WRITERS AND PUBLISHERS. *Proceedings: 12th Annual Convention, New York Hilton, May 19-22, 1965*. Columbus, Ohio: P. O. Box 3706, Beechwood Station, 1965. Var. pag. pap. Apply.

Fifty-five papers (in some cases only the abstract) presented at the STWP Convention.

STECKLER, Herman O. *The Structure and Performance of the Aerospace Industry*. Berkeley, Calif.: University of California Press, 1965. xvi, 223 p. \$6.50. (L. C. 65-17984)

An analysis of the aerospace industry, with particular emphasis on the relationship between the government and private firms. Numerous tables; index.

SUBCOMMITTEE ON REORGANIZATION AND INTERNATIONAL ORGANIZATIONS OF THE SENATE COMMITTEE ON GOVERNMENT OPERATIONS, 88th Congress, 1st Session. *Drug Literature: Report Prepared for the Study of "Interagency Coordination in Drug Research and Regulation": A Factual Survey on "The Nature and Magnitude of Drug Literature" by the National Library of Medicine*. Washington, D. C.: U. S. Government Printing Office, 1963. x, 171 p. pap. 65¢.

A survey carried out by Winifred Sewell of the NLM to aid the Senate Subcommittee in its operations. Reviews the complexities and sources of drug publications and points out the problems that result. Appendixes include a reprint of the *World List of Pharmacy Periodicals*, a "Composite List of Journals of Pharmaceutical Interest," and a world list of drug information sources. Index.

UNESCO. *Recommendation Concerning the International Standardization of Statistics Relating to Book Production and Periodicals Adopted by the General Conference at its Thirteenth Session, Paris, 19 November 1964*. Paris: 1964. 21 p. pap. Apply.

Standards and principles recommended to the member states of Unesco. In English, Spanish, French, and Russian.

U. S. *Deskbook of Facts and Statistics, 1964-1965*. Stamford, Conn.: Fairfield Publishers, 1964. xii, 1041 p. pap. \$2.95; cloth \$5.50. (Distr. by Horizon Press, 156 Fifth Ave., New York 10010)

Commercial edition of the Commerce Department's annual *Statistical Abstract of the United States*. Facts and statistics on population, health, immigration, education, law enforcement, employment, national defense, welfare, prices, elections, and many other topics, as supplied by over 100 government agencies and 87 non-governmental sources. 1,283 tables, 48 charts and maps. Index.

U. S. DEPARTMENT OF STATE. *Foreign Relations: Papers Relating to the Foreign Relations of the*

*United States, with the Annual Message of the President*, 208 vols. New York: Johnson Reprint Corporation, 1965. Cloth and pap. Complete clothbound set, \$6,400.

All the diplomatic correspondence between the United States and foreign countries, including treaties, the President's annual message to Congress, and additional special messages on international affairs, covering the years 1861 through 1942. Special supplements. Volumes will be available singly.

U. S. GENERAL SERVICES ADMINISTRATION, NATIONAL ARCHIVES AND RECORDS SERVICE. *United States Government Organization Manual*, 1965-66. Washington, D. C.: 1965. viii, 798 p. pap. \$1.75. (Order from Government Printing Office)

Organization, functions, and activities of the agencies in the legislative, judicial, and executive branches. Includes 45 charts showing the organization of Congress, the executive departments, and major independent agencies; list of 5,000 key officials. Index.

WALSH, S. Padraig, comp. *General Encyclopedias in Print: A Comparative Analysis*, 1965. Newark, Del.: Reference Books Research Publications, 124 South Dillwyn Road, Wingate Park, 1965. 68 p. pap. \$2. (L. C. 63-24124)

Third year of publication. Examines and evaluates 33 non-specialized encyclopedias published in the United States and retailing for \$25 or more, with a brief appendix covering smaller one-volume or cheap multivolume encyclopedias.

WOELLNER, Elizabeth H., and WOOD, M. Aurilla. *Requirements for Certification: Teachers, Counselors, Librarians, Administrators for Elementary Schools, Secondary Schools, Junior Colleges*, 30th ed. Chicago: University of Chicago Press, 1965. vi, 153 p. pap. \$3.75.

Recommendations of regional and national accrediting associations, sources of information regarding teacher applications in United States possessions, and state-by-state requirements.

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CATALOGUER—\$7,479-\$9,765. Library school graduate and experience. Apply: R. T. McMenemy, Medical Dental Library, Howard University, Washington, D. C. 20001.

CATALOGUER—With BLS or MLS and at least two years' cataloguing experience, to catalogue backlog and current accessions of monographs, reprints, periodicals, etc. Working knowledge of several languages (e.g., Russian, Scandinavian, German, French as well as English) and a science background an asset. Position open December 1, 1966. For further information: Librarian, Arctic Institute of North America, 3458 Redpath Street, Montreal 25, Quebec, Canada.

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MAP LIBRARIAN—(Librarian II. \$7,100-9,000). To select, catalog, and service extensive university map collection. Appropriate academic background, library school degree, and experience required. Academic status. Twenty-four days' vacation. Send resume to Katherine C. McNabb, Acting University Librarian, University of California, Santa Barbara 93106.

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SCIENCE AND ENGINEERING INFORMATION SPECIALIST—Position carries responsibility for operating a pilot project employing a "Researchmobile" supplied with scientific and technical materials, holding workshops throughout Western Pennsylvania for businessmen and industrialists, informing them of the availability of such material. Preferred are degrees in science and library science plus experience in working with the literature of science and technology, and a knowledge of how men in industry use information and what they require. Pleasant working conditions in an outstanding scientific and technical department in Pittsburgh's large research and industrial community. Starting salary range \$10,000 to \$12,000. Position open January 1, 1967. Application and resume should be sent in confidence to Daniel R. Pfoutz, Head, Science and Technology Department, Carnegie Library of Pittsburgh, 4400 Forbes Avenue, Pittsburgh, Pennsylvania 15213.

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**FOREIGN BOOKS**—And periodicals. Speciality: Search Service. Albert J. Phiebig, Box 352, White Plains, New York 10602.



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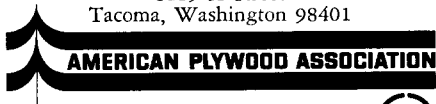
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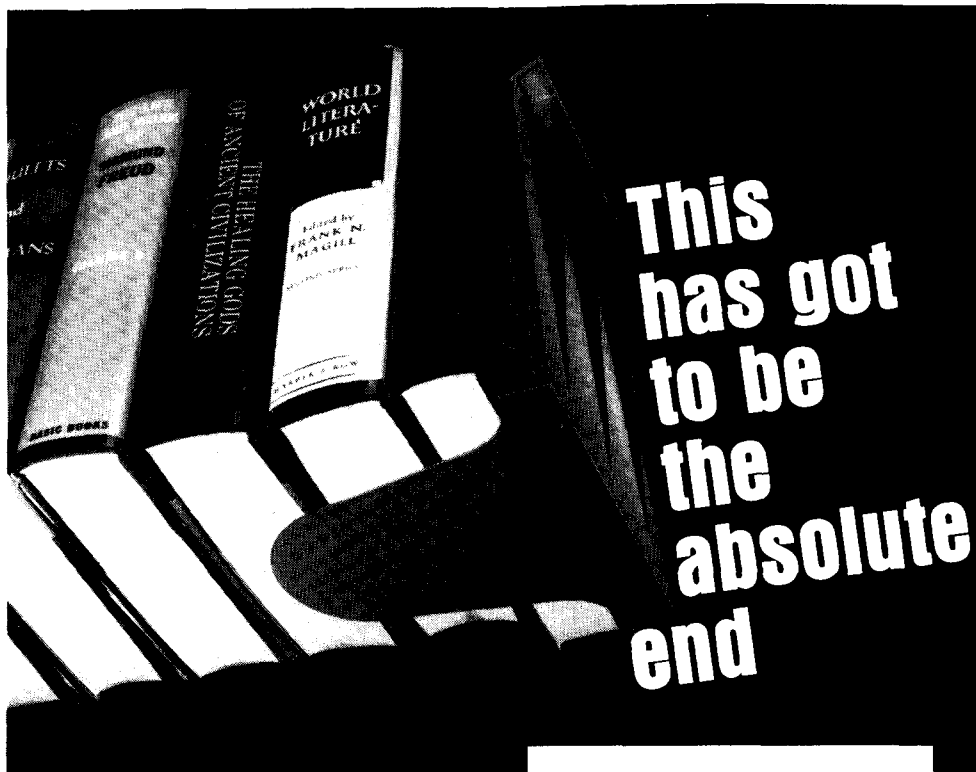
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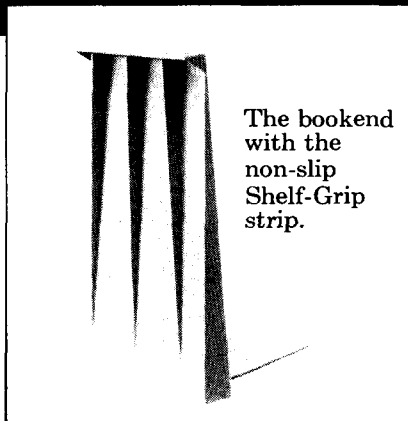
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