

# Mechanization in a New Medical School Library

## I. Acquisitions and Cataloging

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### ABSTRACT

The organization of a new medical school library offered a unique opportunity to develop machine methods of bibliographic control and to use electronic data processing for library routines. The development of the program and an analysis of major problems is reported. The program uses IBM record unit, punched card equipment: the IBM 407 Model E8 Accounting Machine, the IBM 26 Printing Card Punch, the IBM 82 Sorter, and the IBM 85 Collator. The total machine rental, with educational discount, for the program is \$506.50 per month. A specific report is given of the ordering, receiving, and processing (including cataloging) procedures.

**T**HE organization of the University of New Mexico Library of the Medical Sciences at a time of revolution in library techniques presented a unique opportunity to install from the very beginning advanced methods of bibliographic control. In selecting the Librarian for the new library one of the prerequisites was that he be qualified and willing to institute machine methods. When the Librarian arrived on campus in January 1963, he was given only twenty months to organize a collection of sufficient quality and quantity to serve the needs of a two-year medical school which it was anticipated would become a four-year school within a relatively short time.

The most nearly complete medical libraries in the region at the time of the organization of the new library were the one at Los Alamos Scientific Laboratory (approximately 35,000 volumes), the Lovelace Foundation Medical Library (15,000 volumes), the Veterans Administration Library (8,000 volumes), and the Bernalillo County Medical Society Library (6,000 volumes). The Bernalillo County Medical Society Library was housed in the hospital that was soon to become the teaching hospital for the Medical School, and a merger agreement between the two libraries was negotiated.

The planned extension program of the School directly influenced the new library's development. The School of Medicine at the University of

New Mexico was conceived as not only a training ground for new physicians, but also as a support for the entire medical profession of New Mexico and the surrounding region. This program included postgraduate training, library services for the profession, and support of research and medical services. It would be necessary for the School to provide services to government agencies such as the Public Health Service Indian program, Kirtland Air Force Base Air Force Special Weapons Program, and Holloman Air Force Base Aerospace Medical Program and to government contractors such as Los Alamos Scientific Laboratories and Sandia Corporation. It would also be necessary to service outlying communities where there may be only one doctor in an entire county or large metropolises of over 300,000 population with many doctors. The Library's program therefore had to provide for the probability of expansion to serve these groups.

Another rather unique factor influenced the organization of the machine program for the Library. In January 1963 no data-processing equipment suitable for use by the Library was available on the campus of the University. The University administration had for some time been studying the feasibility of several data-processing programs. It was immediately apparent that the Library's data-processing program could not wait upon the installation of the University's programs, and it was determined by the University administration, the Dean of the Medical School, and the Medical Librarian, that the medical library should be given its own configuration of data-processing equipment, and that this equipment should be compatible with the equipment then being planned for the University data-processing center. It was also determined that the initial funding for the equipment should come out of the regular budget of the medical library, and that no grant applications would be made for initial equipment and operation. It was felt by all parties involved in this decision that the success of such a program would be of great value to other medium-sized libraries and might set a pattern for development.

In planning the medical library program it was obvious that the work load for the equipment would have to be fairly heavy in order to make the program economically feasible. It was determined that the initial program would not be planned as an information retrieval program, but would be planned to take care of the daily routines and housekeeping chores of the Library.

Because speed in building the collection was a primary factor in choosing the program for the Library, it was necessary that the program use equipment which could be delivered with little delay. The initial program included services for acquisitions, cataloging, circulation, serials check-in and recording, interlibrary loan transactions, and accounting. It was decided that successful programs developed by others would be used if they could

be assimilated into one program, but no completely integrated program was then known to be in operation. IBM's *General Information Manual: Mechanized Library Procedures* (1) served as a basic outline for developing the acquisitions, cataloging, and circulation programs. The Washington University School of Medicine Serials Control Program provided guidelines for development of serials controls (2). The interlibrary loan program was developed locally. The accounting programs were adapted from business methodology through the assistance of the IBM account representative.

The Library could not afford from its own budget rental of a computer system. Consideration was given to the IBM 870 Document-Writing System, but this was not chosen because it was felt that it was not fast enough for the heavy initial work of the Library. Just before the start of the program the IBM Corporation announced their new IBM 407 model E8 Accounting Machine. Except for multiple-line printing and some mathematical abilities, this machine had most of the capacity of their regular 407 Accounting Machine. Because its speed and mathematical capacities seemed to be adequate for the program, it was chosen as our basic machine and as our output device. As an input device we chose the IBM 26 Printing Card Punch, and we chose the IBM 82 Sorter as our tool for manipulating the information prior to output. With educational allowance the monthly rental for these three pieces of equipment was \$406.50. After the program had been installed and in operation for six months the need for faster manipulative equipment was felt and we rented an IBM 85 Collator. With this instrument the total machine rental for the program then came to \$506.50 a month.

#### CURRENT STATUS

At the time of this writing, the machines have been available and in operation for ten months. We have implemented the acquisitions program, the cataloging program, the serials control program, and part of the accounting program. We have yet to implement the interlibrary loan program, the circulation program, and part of the accounting program.

The cataloging program has been the most successful of all. In a period of six months we cataloged over 2,600 titles, this being accomplished by the equivalent of one and a half full-time professional catalogers.

Our original acquisitions program worked quite effectively during the first few months of operation, when the quantity of our purchases was high. The program called for completion of supplementary purchase orders on the 407 accounting machine, and used an order card and an order memo card as interim records during acquisition. The acquisitions part of the program outlined below reflects a retrenchment to more traditional library techniques. When the quantity of purchases fell, it was necessary

to batch orders in order to eliminate excessive machine set-up time. The resultant delay made that program unsatisfactory. With the modifications now installed and in operation for the past three months the system appears to be working effectively.

The serials program has been the least successful of the programs instituted thus far. We have found that what looks good on paper does not necessarily work in operation. It has therefore been necessary to make many changes in the program, and as of this writing it is still not functioning as well as desired, but recent changes give promise of making the program work properly. For this reason a detailed discussion of the serials aspects of our program will be delayed until a later paper.

A word of warning should be given to all who anticipate the implementation of a mechanization program in medical libraries. Each staff member, whether professional, technical, or clerical, hired by the University of New Mexico Library of Medical Sciences was chosen because he was enthusiastic about the mechanization program and wanted to make it succeed. The success of the program to this stage has been a result of the cooperation and hard work of each of the staff members. In spite of this enthusiasm, we have discovered that our biggest failures have been because of our reluctance to discard traditional methods and to trust the machines. For example, in one evaluation session staff members reported that it was taking far longer to catalog under the new system than under the old system. This appeared incongruous. A study was made of the methods being used by the catalogers, and it was discovered that the catalogers were actually doing the same job twice—once with old traditional methods and once with new methods. After this duplication was pointed out and the traditional methodology removed, cataloging speeded up and showed a substantial decrease in time per title. Removal of old habits in favor of new ones and learning to rely upon machines can be very difficult to achieve.

Also, our failures in our serials program appear to be mostly personnel failures rather than machine failures. Machines lack the flexibility of manual methods, which human intelligence quickly adapts to handle new problems, and it is often difficult for the librarian used to manual methods to see the long-range advantages of a less flexible, apparently slower method. The value of machines is not in speed of accomplishing one single task, but in the elimination of repetitive tasks over a long period. The immediate shortcut can be disastrous in the long run, but we are all inclined to take that shortcut.

#### ORDERING

In the University of New Mexico Medical Library plan, no attempt has been made to select materials by use of mechanized methods. Search-

LIBRARY OF THE MEDICAL SCIENCES THE UNIVERSITY OF NEW MEXICO		01456
<b>BOOK PURCHASE REQUEST</b>		<b>LIBRARY USE</b>
Author <u>Clapp, Verner</u>		SOURCES CHECKED
Title <u>The Future of the Research Library</u>		<input type="checkbox"/> CATALOG
		<input type="checkbox"/> PTLA-BIP
		<input type="checkbox"/> MEDICAL BOOKS IN PRINT
		<input type="checkbox"/> CBI
Place of publication <u>Urbana, Illinois</u>		<input type="checkbox"/> NATL. UNION CATALOG
Publisher <u>University of Illinois Press</u> Price <u>\$4.50</u>		<input type="checkbox"/> NLH CATALOG
Date <u>1964</u> Edition _____ Volumes _____		<input type="checkbox"/> MONTHLY CAT GOVT PUBL.
Source of information <u>LC Inf Bull v.23 #10, 1964</u>		<input type="checkbox"/> OTHER _____
Your name <u>R. T. Divett</u> Borrower No. <u>M0002</u>		VERIFIED <u>see source</u>
Dept./Address <u>Medical Library</u>		COPIES HELD _____
Telephone <u>445</u> Date requested <u>4 13 64</u>		CALL NUMBER _____
		LC CARD NO. _____
		COPIES REQUIRED <u>1</u>
		ASSIGNMENT <u>Staceys</u>
		_____
		_____

FIG. 1.—Book purchase request card

ing of proposed acquisitions against the holdings of the Library is still done by manual methods. A book purchase request card (see Fig. 1) is filled in by the Acquisitions Librarian or by a faculty member. If it is filled in by the Acquisitions Librarian, it is referred to the department head most interested in the subject for departmental recommendation. When the book purchase request card is received from the department, one of the acquisitions staff verifies and completes the card, including the right-hand portion, from bibliographies and other sources in the Library.

Each vendor is given an annual purchase order. Individual title orders are given supplementary purchase order numbers. This supplementary purchase order number is assigned by the Acquisitions Librarian. A supplementary purchase order form (see Fig. 2) is then typed. The white, or first, copy is signed by the Librarian and sent to the vendor. The yellow, or second, copy is filed in the author and name section of the card catalog until the book is received and completely cataloged. The blue, or third, copy goes to the voucher clerk, who files it in a multi-ring binder by the vendor and supplementary purchase order number. It is filed so that only the top part of each slip is visible. It remains in the binder until the book is received and payment authorized. The goldenrod, or fourth, copy is filed by the acquisitions staff by vendor and supplementary purchase order number. The book request card is also filed alphabetically by author by the acquisition staff.

#### RECEIVING AND PROCESSING

When books purchased under supplementary purchase order numbers are received, the acquisitions staff unpacks them, checks the invoice, places the price and date of receipt on the inside of the back cover in the upper left-hand corner, and notes the supplementary purchase order number

The image shows a stack of three forms. The top form is a 'CATALOGER'S WORKSHEET' with fields for AUTHOR (CLAPP, VERNER), VENDOR (STACEYS), CALL NUMBER (4 16 64), L. C. CARD NUMBER, LIST PRICE (1.50), and ORDER DATE (4-16-64). The middle form is a 'VENDOR'S COPY' with fields for COPIES, AMOUNT OF ORDER, DATE RECEIVED, and CHECKED BY. The bottom form is a 'SUPPLEMENTARY PURCHASE ORDER' with fields for AUTHOR (CLAPP, VERNER), VENDOR (STACEYS), CALL NUMBER (4 16 64), LIST PRICE (1.50), and ORDER DATE (4-16-64). The bottom form also includes the following text:

CLAPP, VERNER  
 THE FUTURE OF THE RESEARCH LIBRARY  
 URBANA, UNIVERSITY OF ILLINOIS PRESS, 1964

ENCLOSE BILL IN TRIPlicate—SEE OUR ORIGINAL PURCHASE ORDER FOR INSTRUCTIONS

*Robert T. Divett*  
 LIBRARIAN

TO: J. W. STACEY, INC.  
 2575 HANOVER STREET  
 PALO ALTO, CALIFORNIA

LIBRARY OF THE MEDICAL SCIENCES  
 UNIVERSITY OF NEW MEXICO - ALBUQUERQUE, NEW MEXICO

ORIGINAL ORDER NO. 3

FIG. 2.—Supplementary purchase order form

on the bottom of the first recto following the title page of the book. This number then becomes the accession number for the book. The goldenrod slip is pulled from the orders outstanding file, price information, etc., is copied onto it from the invoice, and it is inserted in the book. The invoice is initialed, dated, and sent to the voucher clerk for payment. Upon receipt of the invoice the voucher clerk pulls the blue slip and prepares a voucher and attaches it to the invoice. The Librarian then signs the voucher and forwards it to the University business office for payment.

The book and goldenrod slip have meantime been sent to the Head Cataloger, who places a cataloging worksheet (see Fig. 3) in the volume and assigns it to a cataloger for cataloging. The cataloger in classifying and cataloging the book completes the cataloging worksheet, which, with the goldenrod slip attached to it, is forwarded to the data-processing section. While the cataloging worksheet is in the data-processing section, the book is placed on a hold shelf.

In the data-processing section a keypunch operator punches an order card, an order memo card, a shelflist card, and a book card, plus a card each for every line of print needed for a library catalog card, including tracings (see Fig. 4). After these cards are punched, they are taken to the sorter, where the order card, the memo card, the shelflist card, and the book card are sorted from the cards needed to produce the catalog card. The shelflist card is filed in shelf order with previous shelflist cards. Periodically, the shelflist cards are run through the 407 to produce a printed shelflist for use by the catalogers in assigning future call numbers. The order card is filed by accession number with previous order cards. The order memo card is filed alphabetically by author, or main entry, with

VENDOR	COPY NO.	NO. COPIES RCD	NET PRICE	NO. COPIES ORD	LIST PRICE	ORDER DATE	DATE RCD
STACEY	1	1	450	1	450	4/16/64	5/4/64

LIBRARY OF THE MEDICAL SCIENCES  
THE UNIVERSITY OF NEW MEXICO

ABBREVIATION: AUTHOR (16 SP.) **CLAPP, VERMER W.**  
TITLE (24 SP.) **FUTURE OF RES LIB**

CARD COLUMNS													
CLASS NUMBER	CUTTER	YEAR	LOC	CARD NO.	ACC. NO.	3	4	5	6	7	8	9	0
2	675C	53964	3758		10456								
3	1	0	15	6	3								
4	CLAPP, VERMER WARREN,	1901-											
5													
6	THE FUTURE OF THE RESEARCH LIBRARY												
7	URBANA, ILL., UNIV. OF ILLINOIS, 1964.												
8													
9	114 P. 21 CM.												
10													
1	ILL. UNIV. PHINEAS L. WINDSOR LECTURES												
2	IN LIBRIANSHIP, NO. 8												
3													
4													
5													
6													
7	LIBRARIES												
8	LIBRARY SCIENCE												
9													
10													

CARD CODES	4	5	6	-6	A
AUTHOR					
TITLE					
IMPRINT					
COLLATION					
NOTES					

CATALOGED BY **H.B.**  
DATE **5/7/64**  
NUMBER OF CATALOG CARDS **5**  
NUMBER OF BOOK CARDS **1**

FORM DIV. MESH NO. 1/2  
175431  
175627

CHECK ABBREVIATIONS  
CARD CODE  
MESH NUMBER  
SHELF LIST  
ACCESSION NUMBER

ADDITIONAL HEADINGS FOR COMPUTER									
1									
2									
3									

Fig. 3.—Cataloging work sheet

The figure displays a stack of IBM punch cards. The top card is a catalog card with the following text:
 

- CLAPP, WERNER WARREN, 1901-
- THE FUTURE OF THE RESEARCH LIBRARY
- URBANA, ILL., UNIV. OF ILLINOIS, 1964.
- 114 P., 21 CM.
- ILL. UNIV. PAINEAS L. WINDSOR LECTURES
- IN LIBRARIANSHIP, NO. 3
- LIBRARIES
- LIBRARY SCIENCE

 Call number: 5750 53954. Accession number: 1431456.

Below the catalog card are several control cards. One control card includes a barcode and the following data:
 

- CLAPP, WERNER FUTURE OF RES LIB
- CLAPP, WERNER FUTURE OF RES LIB
- CLAPP, WERNER STADY
- CLAPP, WERNER FUTURE OF RES LIB

 The control cards also contain fields for L.C. CARD NO., CALL N. MBER, UNIT PRICE, ORDER DATE, and SUPPL. ORD. NO.

At the bottom of the stack is a book card with a table for tracking borrowings:

BORROWER'S NAME	BORROWER NUMBER	DATE
1		
2		
3		
4		
5		
6		
7		
8		

FIG. 4.—IBM catalog cards and IBM control cards

order memo cards for other titles cataloged during the month. Once each month, these cards are run through the 407 and printed on ditto masters as a new book list. After printing the new book list the order memo cards are added to the files of earlier order memo cards. The book card, after being sorted from the other cards of its set, is run through the 407, where a bookplate is imprinted with the call number and accession number (see Fig. 5). The book cards and bookplates are then given to a clerk who pastes the plate on the inside front cover of the book, pastes the pocket in the book, and places the book card in the pocket. The clerk also stamps the Library's ownership on the title page at the bottom. The



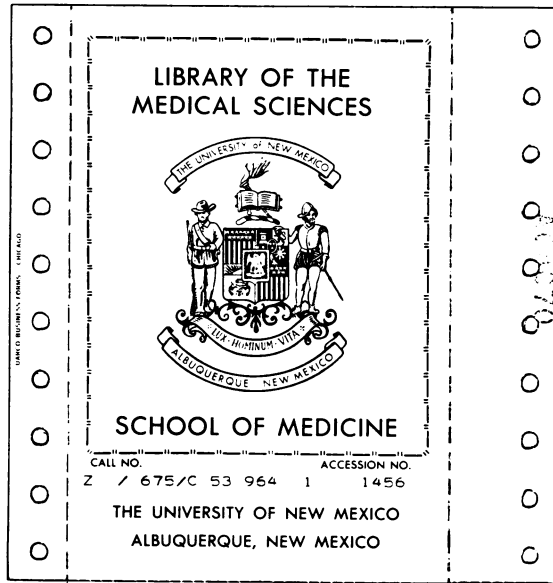


FIG. 5.—Bookplate

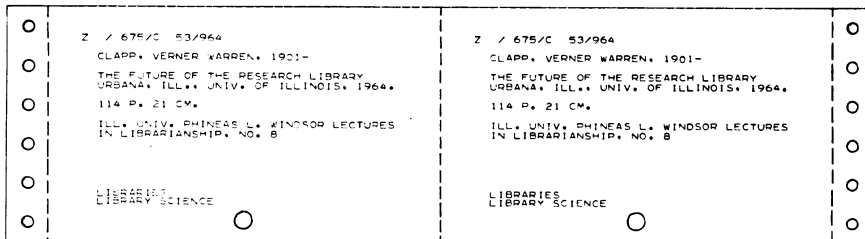


FIG. 6.—Catalog cards produced by an IBM 407 Accounting Machine

books then move to another clerk who prepares the call number labels and affixes them to the spine of the book. The book is then ready for public use.

The IBM catalog cards are run through the 407, which produces two catalog cards with each pass of the IBM cards through the machine (see Fig. 6). The IBM cards are sent through the 407 enough times to produce all the necessary catalog cards. The catalog cards produced by the 407 are then burst, sorted, and filed in the appropriate place in the public catalog. The yellow slips filed earlier are removed from the public catalog and given to the acquisitions department, where they serve as a signal that the book is completely processed. The IBM catalog cards are filed for use in preparing the annual printed catalog of the Library.

## STANDING OPEN ORDERS

When a book is received through a standing open order and is on approval, the acquisitions department opens the packages, checks the invoices, sends them to the voucher clerk, and from the book completes a purchase request card. The cost and the date received is also placed on the inside upper left hand corner of the back cover. The book purchase request cards are taken to the Xerox machine where an evaluation slip is prepared by photocopying the book purchase request card alongside a checklist. The evaluation slips are then placed in the new books and the books are placed on an "on approval shelf," where they remain for one month or until we decide to keep them, if that is sooner. The book purchase request cards are taken to the data-processing section, where the current date is gang-punched into the card. These cards are then filed alphabetically by the acquisitions staff.

Once a week the book purchase request cards are taken to the collator, and books received more than a month before the date of sorting are sorted out. The books matching these cards are pulled from the "on approval shelf," and a decision is made as to whether to keep the books or not. On the book purchase request cards for books not kept is noted the reason for not keeping them, and the cards are then sent to the voucher clerk, who pulls the invoice from her files. The book and the invoice are then packed and returned to the vendor, and the book purchase request card is returned to the acquisitions department.

For those books chosen for addition to the collection a supplementary purchase order—accession number is assigned. A supplementary purchase order form is typed and the book processed in a manner very similar to that for books ordered on regular supplementary purchase orders. In this case, however, the white original supplementary purchase order accompanies the blue third copy of the supplementary purchase order to the voucher clerk, where the white form serves as a flag to indicate that an invoice is already on file and that this is a standing open order title. The goldenrod copy, of course, goes directly with the book, rather than being temporarily filed with the orders outstanding.

## GIFTS

Books received as gifts are treated similarly. A gift request form is used in much the same manner as the supplementary purchase order form and is only slightly different. When requesting a gift, the gift request form is filled out. The white original request form goes to the prospective donor; the yellow second copy is filed in the public catalog; and the blue, goldenrod, and pink copies are filed together in the orders outstanding file. A book purchase request card is also filed in the alphabetical acquisitions

file. When a requested gift book arrives it is checked in in much the same way as purchased books. The blue, goldenrod, and pink copies are pulled. The blue third copy is completed and mailed as an acknowledgement and thanks for the gift. The pink fifth copy is filed in a multiple ring binder as a record of gifts. (At the end of the fiscal year a report is made from these copies and sent to the University's Alumni Development Office.) The goldenrod copy is completed and goes with the book to cataloging.

Unsolicited gifts are handled in a similar manner. Upon receipt, a gift request form and a book purchase request are filled out. The white original request is destroyed, the yellow second copy goes into the public catalog, the third blue copy is mailed as an acknowledgement of the gift, the goldenrod copy goes with the book for processing, and the pink copy goes into the gift record binder.

The accounting program outlined above is necessarily a manual operation because the University has not, as yet, completed its installation of IBM data-processing methods in the Comptroller's office. It is anticipated that the current methods will be revised in the near future when this installation is completed. Accounting procedures connected with circulation, interlibrary loan, and photocopying will be initiated in the near future. The target date for mechanizing circulation procedures was July 1, 1964. A report of these phases and the serials phase of the program will be made in a later paper, after they have been given time to prove themselves and are de-bugged.

#### REFERENCES

1. General Information Manual: Mechanized Library Procedures. White Plains, New York, IBM Technical Publications Department, 1962. (E20-8094-1.)
2. PIZER, IRWIN H.; FRANZ, DONALD R.; AND BRODMAN, ESTELLE. Mechanization of Library Procedures in the Medium-sized Medical Library: I. The Serial Record. BULLETIN 51: 313-338, July 1963.