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Special Libraries, April 1972

Special Libraries Association

special libraries

April 1972, vol. 63, no. 4

- ☐ Moving the Library
- ☐ Mapping a Master Plan
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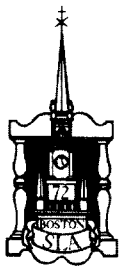

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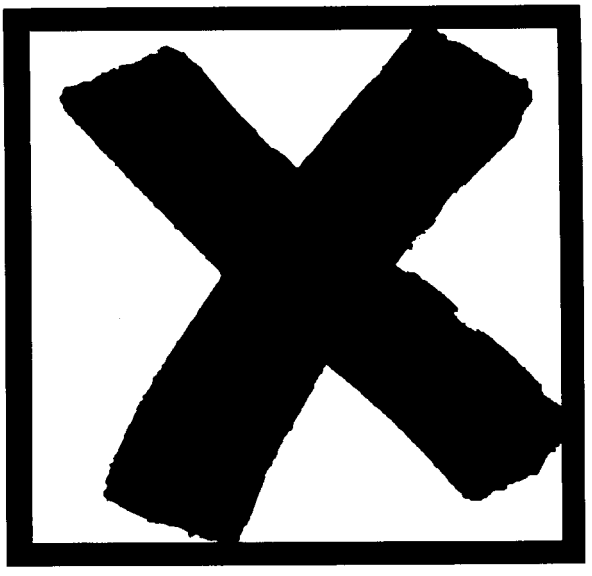

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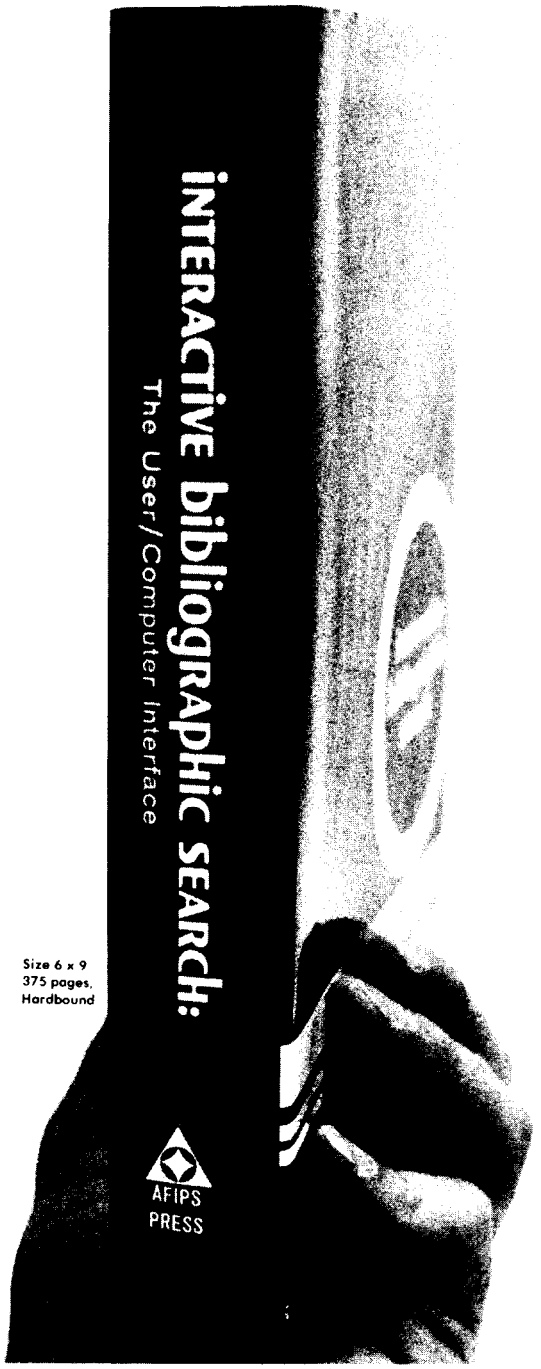

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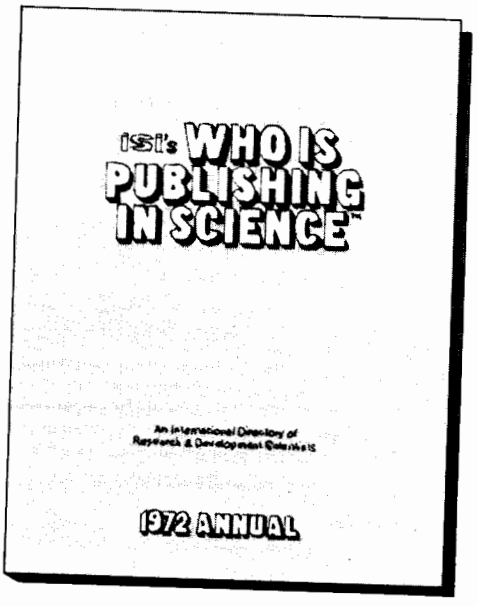

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LETTERS

Rocking the Cradle

I have read with considerable pleasure the article "Boston As She Is Spoke" by Louis Rains in the Philadelphia Chapter *Bulletin* and have seen it reprinted in at least one other Chapter bulletin in edited form. The Philadelphia Chapter version included the bibliography. This was just what I was about to start looking for in preparation for our next Annual Conference, so I was particularly pleased with this bit of special service.

Boston is a great American cradle of culture generally and of education particularly and I have no intention to disparage it. However, as we move more and more toward becoming a truly international organization I think we should cast off some parochial attitudes. We tend to believe that the term American refers exclusively and unequivocally to citizens of the US. However, Canadians and Mexicans have equal right to the term; it might come as a surprise to many that even an Argentinian might refer to himself as an American; and some do.

Because of the dominance of English culture in our contemporary life we sometimes overlook the major role of other cultures in the development of the North American continent. Perhaps because the Spanish played a larger role in the Southwest than in other parts of what is today the United States I may be somewhat more sensitive to the point, but I would like to point out that a university was chartered in Mexico City in 1551 and classes commenced in 1553. Students of the history of North and South America are well aware of the oft-repeated hoary falsehood that the English came to settle the land, but the Spanish and Portuguese came to plunder and loot. In helping lay such grade school inaccuracies to rest it might be well to remember that when the English colonists got around to establishing a center of learning in the New World, Harvard, in Mexico City, which had the first printing press and first regularly issued newspaper, a university had been functioning for over eighty years. That school is today known as the Universidad Nacional Autonoma de México.

Ray Brian
California Academy of Sciences
Golden Gate Park
San Francisco, Calif. 94118

Open Letter to Television

I am writing this letter to register a protest to the program that was shown on Channel 13 on Wednesday, January 26, 1972 at 8:00 p.m., entitled: "Private Lives of Americans: Ed Nylund, Librarian."

The newspaper descriptions of the program emphasized the librarian aspect as did much of the material shown. Mr. Nylund did mention that his is: "a civil service job, an educational assistant . . . a great deal of clerical work, filing of cards . . . in charge of magazines." This did little to remedy the misconception created that this was the day in the life of a librarian.

Briefly, I suggest this program is a serious misrepresentation of the nature of the librarians' tasks and serves to create further misunderstanding of and difficulty for the many thousands of librarians now engaged in the difficult and complex task of operating our libraries.

I do hope you will make some effort to correct the harm this program has done.

Allan Boudreau
New York, New York

More on Independence

A copy of Verner Clapp's article, "The Declaration of Independence: A Case Study in Preservation," that appeared in the December 1971 issue of *Special Libraries* (p. 503–508), just came to my attention. This is a most interesting article, and you probably are the only person who knows enough of the total story to have written it.

I am probably the only person around who is aware that the recommendations for preserving these documents were made by Dr. Herbert F. Launer about 1940. This is mentioned on page 11 of the enclosed reprint.* Dr. Launer was a member of the Paper Section [National Bureau of Standards] from 1935 to 1948. He transferred to USDA in Albany, California, and I think, is now retired.

William K. Wilson
Chief, Paper Evaluation Section
U.S. Department of Commerce
National Bureau of Standards
Washington, D.C. 20234

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* *The enclosed reprint is of: Wilson, William K. / Record Papers and Their Preservation.* Chemistry *43:p.8–12 (Mar 1970). This letter was originally addressed to Mr. Clapp. It is an appropriate reference to his recent article.*

Moving a Large Library

Robert F. Moran, Jr.

Joseph Regenstein Library, University of Chicago, Chicago, Ill. 60637

■ The University of Chicago Library move involved the transfer of 1,800,000 volumes from eleven buildings to the new Joseph Regenstein Library (a graduate research library), and the integration of 1,580,000 of these books to form the main collection in the new library. Moving began before the new building was completely finished and furnished. In this report moving plans are developed, explained and evaluated; problems arising from the incomplete state of the building discussed; and some suggestions regarding the planning of similar moves made.

EVERY LIBRARY MOVE is different and should be undertaken as a unique problem. A thorough understanding of the situation facing a move director is more important than knowledge of other library moves. Nonetheless, familiarity with other moves will provide a basis for practical planning and some specific solutions to problems which may arise. This description of the recent library move at the University of Chicago is presented in the hope that it will be helpful to others who must plan library moves.

Between July 20, 1970 and September 21, 1970 approximately 1,800,000 books, 2,700 pieces of furniture and equipment, and various specialized materials, library records, and miscellaneous items were moved into the Joseph Regenstein Library, the new graduate research library for the social sciences and humanities at the University of Chicago. The material moved had been housed in 11 buildings; the books in 26 separate collections.* Nine of these buildings were within .4 miles of the new building, one was .7 miles from the new building, and the last was 3½ miles away.

Most of the books were moved between July 20 and September 3 while summer school was in session. Books were obtained by library pages from each collection as it was closed to the public for move preparations, and book "paging" continued from the new library after the books were moved. Service continued from the major public service departments and reference collections until the end of the summer session when these areas were moved. The library was closed for 2½ weeks following the sum-

* The 26 separate collections consisted of 11 bookstack collections ranging in size from 789,000 volumes to 17,600 volumes, 14 reference collections ranging from 21,000 to 1,800 volumes in size, and a compact storage collection totaling 210,000 volumes of which 100,000 volumes were moved to the new building.

mer session, and reopened a few days before the beginning of the autumn session.

The move was performed by a Chicago moving company, Hallett and Sons,* specialists in industrial and office moving who had previously moved two large research libraries. They were awarded the contract after competitive bidding based on a 31 page specification and inventory package prepared by the library staff. The moving crew, which varied in size from 45 to 60 men, worked five days a week, 8–10 hours a day, and a smaller crew of 10–20 movers worked on Saturdays. The moving company spent a total of 18,037 man-hours on the job.

A special 35 man crew of library employees cleaned and measured the books, put move labels on the books and on the shelves in the new library, interfiled the books after they had arrived in the new library, and, finally, read the shelves. Approximately 3,100 hours were spent cleaning the books, 1,800 hours measuring, 730 hours labeling, 1,455 hours interfiling, and 1,075 hours shelf reading.

Book Move

The University of Chicago Library system was composed of a 1,025,200 volume central library, 15 departmental libraries, and a 210,000 volume storage collection. The central library had a 789,000 volume general bookstack collection, three special bookstack collections, and eight reference collections. Each departmental library had a bookstack collection and a reference collection. Each departmental library held most, but not all, of the books on a given subject or subjects, along with a small proportion of the library's books on related subjects.

The central library, six departmental libraries, part of a seventh departmental library, and approximately one-half (100,000 volumes) of the storage collection were moved to the Regenstein Library. Nine of the bookstack collections, portions of nine of the reference collections and the 100,000 volumes from the storage collection were brought together to form the 1,580,000 volume main collection in the Regenstein Library.†

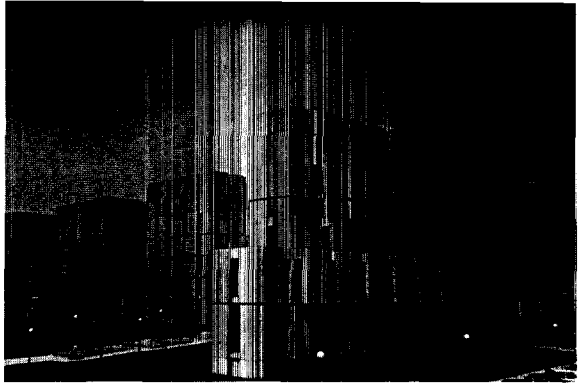
Each of the collections which were to constitute this main collection held books that had to be interfiled, that is, placed between books which had been in another collection. For example, the majority of the books classified in the Library of Congress classification subdivision **BF**‡ were part of the central general collection, but there also were books classified in **BF** in other collections: Education collection: 3,500 volumes, Business-Economics collection: 50 volumes, Oriental Institute collection: 25 volumes. Since all the books classified in **BF** in the Regenstein main collection were to be shelved together in one sequence, these 3,575 volumes had to be interfiled with the larger group from the central general collection. Of the 1,800,000 books moved, approximately 100,000 volumes from the bookstacks and reference collections and the 100,000 volumes from the storage collection had to be interfiled.

The overall shelving sequence in the bookstacks in the new library is different from that used in the bookstacks in the old libraries. Some LC subdivisions which were next to each other in the old libraries are separated in the new library. For example, in the old libraries, books classified in the LC subdivision **AZ** were followed by books classified in the LC subdivision **B.** In the new library,

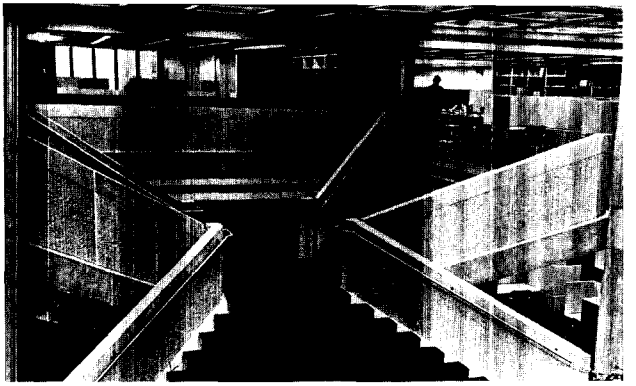
* Hallett and Sons, 10 East 70th Street, Chicago, Ill. 60637.

† Two bookstack collections (The Rare Book and Manuscript Collection and The Far Eastern Collection) remain distinct collections in the Regenstein Library. Other books not incorporated into the Regenstein main collection make up the nine Regenstein reference collections.

‡ Library of Congress classification subdivision (LC subdivision) is the secondary division within the Library of Congress classification system. It is usually identified by two letters, e.g., AC, BC, HA.



The Joseph Regenstein Library (view from the southeast).



Staircase joining the second and third floor reading rooms.

books classified in **AZ** are followed by books classified in **GF.***

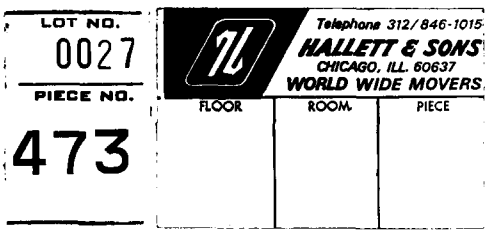
Book Move Plan

The basic plan for the book move was simple. The books were moved in groups of one shelf length (35″) or slightly less. These groups of books were called increments and were handled as units for moving purposes. A numbered label (see Figure 1) was placed on the spine of the first book in each increment. The shelf to which that increment was to move was identified with an identical label. The movers only had to match the labels on the increments with those on the shelves. The move was facilitated by color coding the labels (a different color for each of the seven floors in the new library) and by labeling consecutive shelves in the new library with consecutively numbered labels.

The size of the move and the large number of books to be interfiled complicated the move considerably and required that a refined book labeling plan be used for books moving to the Regenstein main collection. In all cases, the majority of the books classified in a LC subdivision were in one of the collections to be moved, and the remainder

Figure 1. Book label; Furniture label

Rolls of 500 book labels numbered 1—500 were used. Each roll was distinguished by a lot number which appeared on each label on the roll.



of the books in that subdivision were located in the other collections that were moving. The largest concentration of books in a LC subdivision was called, for labeling purposes, the primary collection of the subdivision. Other groups of books in this subdivision were called secondary collections of the subdivision. The first step in the labeling plan provided for measuring all books in the secondary collections of a subdivision into 35″ increments and recording the LC call number of the first book in each of these increments. These records of increments were combined to make one record of the increments in all the secondary collections of the subdivision (see Figure 2). This record was matched with the books in the appropriate primary collection, and the points in the primary collection at which the first book in each increment would interfile were marked with cardboard flags. Next, the books in the primary collection were measured into the increments in which they would be moved (35″ or slightly less) and the

* Each floor in the Regenstein Library has a subject or area orientation (e.g., third floor —humanities, fourth floor—education/philosophy/psychology). LC subdivisions were assigned to the appropriate floors according to the subject matter represented in the subdivision.

first book in each increment was tagged with a pressure sensitive label from a consecutively numbered roll. If a cardboard flag fell within an increment, the first book in the increment was labeled, and the next label on the roll was put aside (on an 8½" × 11" sheet of plastic kept in a spiral notebook). The number on this label was written on the record of the increments in the secondary collection of this subdivision. The number was written next to the call number which would interfile at the point marked by the flag (see Figure 3).

After the primary collection had been labeled, the increments in the secondary collections were tagged with the labels that had been put aside. The record of increments in the secondary collections indicated which label should be placed on the first book of an increment.

This plan provided the means by which the mover could deliver all books in secondary collections to or very near to (within a few shelves) their exact locations. Books which were not moved to exact locations by the mover were interfiled by library employees after the mover had finished in an area.

The plan for labeling the shelves in the new library was straightforward. The shelves which would hold the books in a LC subdivision were labeled consecutively with pressure sensitive labels from rolls matching the rolls used for the books in the subdivision. The shelf labeling in the new library was done after the books were labeled to allow for last minute corrections of errors in measurements or calculations.

A slightly different plan was used for labeling the books in the storage collection because these books were relatively inaccessible (shelved on their fore edge with no space left between the spines of the books and the next shelf), and shelved by size rather than by call number. A set of rolls of labels was assigned to each LC subdivision that was to be moved from storage. A labeler went through the aisles in the storage warehouse with a roll of labels for a specific subdivision. When he found books in that subdivision he measured them into

Figure 2.

Increments in Secondary Collections
Subdivision H

Collection	Call Number On First Book	Label Put Aside
Bus./Econ.	H5 .I56	
"	H23 .M9 v.1	
"	H23 .M9 v.7	
Education	H105 .H73	
Philosophy	H350 .R93	
Bus./Econ.	H425 .Q7	

Figure 3.

Increments in Secondary Collections
Subdivision H

Collection	Call Number On First Book	Label Put Aside
Bus./Econ.	H5 .I56	0005–123
"	H23 .M9 v.1	0005–369
"	H23 .M9 v.7	0005–370
Education	H105 .H73	0006–178
Philosophy	H350 .R93	0006–493
Bus./Econ.	H425 .Q7	0007–358

• •

35" increments and tagged the first book in each increment. The matching labels were put on the sixth shelves (counting from the top) of the Regenstein shelving sections* assigned to the same subdivision. After the books were moved to these shelves, they were interfiled one by one by the library staff. This plan was feasible only because, in the majority of the cases, two or more consecutive shelves in the storage collection contained books from the same LC subdivision.†

Books not covered by these plans (e.g., consecutively shelved books belonging to different LC subdivisions, books returned

* The shelving section is a 7'6" high × 36" wide × 8" deep book stack unit with seven 35" shelves.

† The library had stored large numbers of books at periodic intervals. The books to be stored had been marked and taken off the shelves in the library according to the various storage sizes, but in call number order within each size. Since large numbers of books had been stored at the same time, rather large numbers of books in each LC subdivision were shelved together in the storage building.

by borrowers after an area had been labeled) were moved to a central location on the appropriate floor in the Regenstein Library and shelved by the library staff. The number of these books was small, comprising less than 1% of the books moved.

Book Distribution Within the Regenstein Main Collection Bookstacks

Book distribution necessary to allow growth at different rates with a minimum of subsequent shifts was provided for by assigning to each LC subdivision the number of shelving sections the books in that subdivision are expected to occupy when the Regenstein bookstacks are filled to capacity (estimated year, 1988) and then spreading the books in that subdivision evenly through these sections. The number of shelving sections a subdivision is expected to fill in 1988 was calculated as follows (**X** represents any LC subdivision):

$$\text{Sections subdivision X expected to fill in 1988} = \left(\frac{\text{Estimated ft. of subdivision X in 1988}}{\text{Estimated ft. of 1988 total collection on floor to which subdivision X assigned}}\right)\left(\text{Number of sections on floor to which subdivision X assigned}\right)$$

The 1988 size (in feet) of a LC subdivision was estimated by increasing the 1970 size (in feet) by 18 years' growth at the annual growth rate of the subdivision. The size of each subdivision in 1970 was determined by physical measurement. Annual growth rates for each subdivision were estimated from a variety of growth studies prepared at the University of Chicago Library during the years immediately preceding the move. The estimated size of the 1988 total collection on each floor was calculated by adding the 1988 estimated sizes of all subdivisions assigned to that floor.

The books in each LC subdivision were distributed evenly on the middle three or four shelves in each of the assigned sections. The top and bottom shelves in each section were left empty for growth. This even distribution was accomplished by moving the books in a subdivision's primary collection in increments of an average size. This average size for each primary collection was calculated as follows:

$$\text{Increment size for primary collection of subdivision X} = \frac{\text{Ft. of books in primary collection of subdivision X}}{\left(\text{No. of shelves to be used for all books in subdivision X}\right) - \left(\text{No. of shelves to be used for books in secondary collections of subdivision X}\right)}$$

The number of feet of books in a primary collection was determined by physical measurement. The number of shelves to be used for all the books in a subdivision was determined by multiplying the number of sections assigned to the subdivision by the number of shelves to be used in each section. This number of shelves was usually three; if the growth rate of the subdivision was low, the number was four. The number of shelves to be used for books from secondary collections was known from the record of increments in the secondary collections (see Figures 2 and 3).

The books in the secondary collections were moved in standard 35″ increments. Since these books usually made up a small proportion of the total number of books in a LC subdivision(20% or less), moving them all in increments of a standard size did not substantially affect the even distribution of the books.

Method Used for Moving the Books

The books were moved in large cardboard cartons (three sizes, 36″ long × 27″ wide × 30″ deep; 36″ long × 14″ wide × 26″ deep; and, 36″ long × 14″ wide × 13″ deep) placed on wooden dollies (30″ × 20″) with rubber casters. The largest carton held six increments, two on each of three levels. Each set of two increments was placed in the carton with the fore edges of the books down, packed

tightly with cardboard filler, and covered with a cardboard liner the size of the inside of the box. The middle-sized carton was packed in the same way but had only one increment on each level. The smallest carton with a capacity of one increment had a fold-over top and was used for books needing special handling such as unbound collections and rare or expensive books. Three of these smallest cartons were placed on a single dolly. In other cases a dolly held one carton. With the exception of the instance noted below the cartons remained on the dollies until they were unpacked in the new library. They were moved to the new library in standard moving vans.

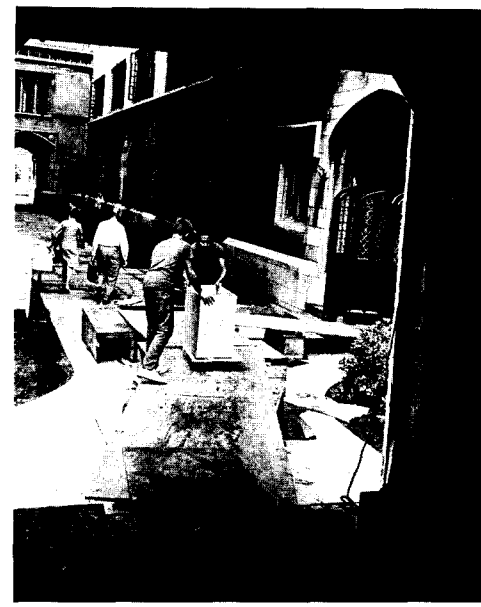
Where elevators were unavailable, stairways were negotiated by means of temporary wooden ramps made of ¾" plywood cut in 2' wide strips and laid on the stairs. "Two by fours" were nailed along the side of the ramp to guide the boxes down the ramp. The boxes were removed from the dollies for trips down all except a few short (15') straight ramps.

Furniture and Equipment Move

Furniture and equipment were sent to their new locations by use of a second matching colored label plan. Each piece of furniture was tagged with a colored label on which floor, room and position numbers were written (see Figure 1). These labels were matched with the floor, room and position numbers written on floor layouts of the new library. Each department head assumed responsibility for labeling the furniture in his department and supervised the placement of this furniture in the new library. Catalog cards were left in the old catalog case drawers for the move and transferred to drawers in new cases after arriving in the Regenstein Library.

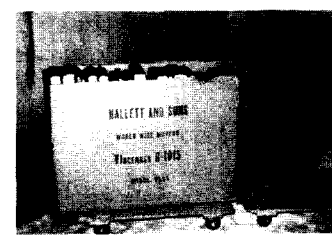
Problems Caused by the Incomplete State of the New Building

Pressure to occupy a new building grows as completion draws near and it is not unusual to find buildings occupied before they are entirely finished. This



The loaded boxes are pushed onto a waiting moving van.

The books on the top level of the moving carton are placed on the properly labeled shelf.



The primary moving equipment (the cartons and dollies used).

was true at the University of Chicago. The Chicago Teamsters strike in the spring of 1970 had caused serious delays in the delivery of the shelving and various building materials and thus in the work of the shelving installers and finishing tradesmen. For effective library operation in the 1970/71 school year, it was determined that the move should be finished, if at all possible, by early September 1970. Therefore, the move was begun before half the bookshelves were erected, the finishing work done, and all furniture delivered. The shelving installers and finishing tradesmen continued to work in the building during the entire move.

Close cooperation among the supervising architects, the construction managers, the shelving installers, and the move director, plus the utilization of a flexible moving schedule and book moving plan, limited the problems caused by the unfinished condition of the building. The shelving installer scheduled his work according to the priorities of the book move schedule. No books were moved to a floor until the stack installation on that floor was completed. The tradesmen, furniture installers, and book movers cooperated in the use of entrances, staging areas and elevators.

The most serious problem the mover faced because of the unfinished state of the building was the possibility that the moving work flow might be stopped. Crews were packing books in the old libraries at the same time that other crews were unpacking in the Regenstein Library. The boxes and dollies were cycled and used over and over again. If the moving trucks could not be unloaded because other deliveries were tieing up the unloading area, or if the elevators could not be used for a considerable length of time, the whole move operation could have come to a complete stop.

In an attempt to remove the possibility of a delay in unloading the moving trucks, the University gave the mover exclusive use of one of the two Regenstein Library loading docks. This solution worked fairly well. Periodically, however, when the mover's unloading space was not actually occupied by one of his trucks, the space was preempted by a driver who had a critical delivery for one of the building contractors, or who was unusually strong willed.* The passenger elevators in the new library were made available for use by the mover when the large freight elevators were tied up or broken down. Finally, the scheduling of large deliveries for Saturdays whenever possible provided a little more relief.

A second problem resulting from the unfinished state of the building was the lack of required staging areas. The mover needed staging areas at the library entrance for incoming material and for empty boxes and dollies returning to be reused in the old libraries. He needed staging areas outside the elevators for material waiting to be taken to upper floors. The tradesmen, their equipment, and the building material still in or coming into the building occupied much of the space which had been planned for use as the mover's staging areas. The cooperation among the book movers, tradesmen, and installers mentioned above helped alleviate this problem, but no entirely adequate solution was found.

Evaluation

In general, the move went well and it was completed very near the projected date despite the problems caused by the incomplete state of the building. All but a very few of the books arrived in good condition and, in most cases, they were placed on the shelves in good order. Fewer than twenty-five pieces of equipment, furniture, or boxes of library records were misplaced for any considerable length of time. Very little damage was

* The unloading area problems were made more difficult because all trash was removed from the building through the dock area and a large trash container often occupied one of the unloading spaces. Much time would have been saved and frustrations avoided if a different removal route could have been planned, but a suitable alternative was not available.

done to any equipment or furniture. (The library's claim for damage to furniture and equipment moved was just over $200.)

The matching label plan was especially effective for moving the books. The primary advantage of this plan was that all decisions could be made by library personnel before the actual move began. The mover merely had to pack the books, match the labels, and then unpack the books. In addition, the plan accommodated the interfiling problems, and the books did not have to be moved in the order in which they would be shelved in the new library. Other factors could determine the order of the move; for example, the readiness of a part of the new building, the need for a collection of books to remain in use a little longer, or the most efficient work flow for the movers. Furthermore, it was easy to verify that the books were delivered to the correct shelves by comparing the label on the book with the label on the shelf, and this checking did not have to be done immediately. No problems arose if a box of books went astray because the labels reserved the assigned shelves until the box arrived. Finally, the shelves that would hold large books could be adjusted before the books arrived. These shelves were identified by determining which labels were used on the large books and finding the shelves tagged with the identical labels.

Some problems related to the book labeling plan did arise. Periodically, the labelers would make a mistake in measuring or labeling, and more books were sent to a shelf than would fit on that shelf. The mover sometimes failed to pack the book with the label, and the labels came off the books in a few cases.

None of the situations described caused a significant amount of difficulty or delay. Books that would not fit on the shelf to which they were sent were placed by the mover on the bottom shelf in the shelving section to which the books had been sent. The books were placed in their correct locations later by the interfilers. When the movers discovered boxes of books which lacked some or all of the book labels, they pushed the boxes to a nearby out of the way place (sides of rooms, aisles already moved into). Library employees gathered these boxes, determined their proper location by reference to the Library of Congress call numbers on the books, and put the books on the shelves. The mistakes that caused these kinds of problems were minimal primarily because the mover placed maximum emphasis on correct packing and trained his workers accordingly.

The method used for moving the books (books stacked in large boxes on dollies) proved to be an economical, effective and acceptable method when the books were packed tightly and full box length liners were provided. The dollies made the boxes mobile, and the sides of the boxes prevented the loss of books or damage to them. The boxes were easier to load and unload in the stack aisles than book trucks would have been. No apparent damage to the books resulted from the use of this method. Although data are not available, it is possible that the bindings of the books which were packed on the lower levels in the boxes may have been damaged slightly.

Conclusions

The need for thorough planning of a large library move is clear.* Three other requirements of a successful move are not as obvious but are very important. First, it is important that each part of the plan be tested as it is developed. No amount of theoretical planning or knowledge of similar moves can bring out all the idiosyncracies of a particular move. Although many hours between January and June of 1970 were spent planning and discussing the book move plan described in this article, the plan worked only because of the constant testing and adjustment which took place during the weeks immediately preceding

* The University of Chicago Library assigned the responsibility for the move to one staff member (the writer) who spent ten months, full time, on the preparation of specifications and planning.

the move. It would have been advantageous if this testing had been initiated sooner. Second, since accuracy in measurements and calculations is most important but hard to achieve because the measurements are so large and the calculations so numerous, care should be taken to build checks into the plans and to establish points at which adjustments can be made. Finally, flexibility in plans, schedules, and, perhaps most important, the attitude of all persons involved is necessary. Any move involving hundreds of thousands of books and scores of people will not develop exactly as planned. The move director must realize this, develop plans and schedules which allow for alternate responses to day to day situations, and apply these plans and schedules with imagination. And it is as important that he communicate this flexible attitude to the library staff or they may be discouraged by the delays, last minute changes and apparently illogical decisions that are part of a large move.

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Robert F. Moran, Jr., is coordinator and reference librarian, Social Sciences Reading Area, Joseph Regenstein Library, University of Chicago, Chicago, Illinois.

Planning a Map Library? Create a Master Plan!

Stanley D. Stevens

University of California, Santa Cruz, California 95060

■ Map librarians, faced with the task of planning new quarters for the map collection, are advised to avoid temporary answers by creating a Master Plan. Seven major elements are listed as essential to the Master Plan. Although all elements interlink, the "Statement of Objectives" can reveal the direction of the entire plan. Emphasis is placed on developing a verbal description; wide latitude is given to the architect or planner to suggest the physical arrangement that seems appropriate. One must assume that a Master Plan, once accepted by the library administration, will provide the vehicle for financial support.

MAP LIBRARIANS quite often complain of inadequate space, too little money, too few full-time staff assigned to the map collection, and generally not enough attention paid to their needs. Some try to generate interest for needs on an immediate-problem basis, and when approached for specific answers some are unprepared because thinking and planning have not been thorough. Would it not be better to prepare some long-range planning and create a Master Plan?

Those who are currently faced with the task of planning new quarters or remodeling old ones quite often accomplish this with a partial, temporary answer. It is easy to fill in new space allocated to maps, but one should have a broader view of the total image of the map library, so that all moves are part of an integral whole. To avoid indecision and a sense of vagueness about who you are and where you are going, it is recommended that a Master Plan, preceded by comprehensive study of the past and projections into the future, be presented to the library administration. The Master Plan, it is assumed, will be used by either the planners within the library administration when remodeling present space or by the architect selected to design a new facility. One must assume that a Master Plan, carefully designed and discreetly presented, will receive a better hearing and therefore a better chance of being accepted. Upon acceptance of the Master Plan, the items with long-range funding implications are more likely to receive support when that time comes. Therefore, the emphasis of the Master Plan should be on planning for the ultimate of desired results, regardless of whether space or money will be available to accomplish the goal.

Since most map libraries are included in other buildings, that is, physically associated as part of a larger unit, some of the usual characteristics of separate library buildings are not pertinent to a

map library facility and therefore not mentioned here. Furthermore, since the interior arrangement of a map library is quite different from that of a book library, it is suggested that one leave placement of the physical elements to the architect. It is true that those who work with the collection daily will know whether the final physical plan as recommended by the architect will or will not be convenient from our viewpoint, but presentation to the architect of the bare Master Plan will give him the parameters with which to develop his design. More important, he will have the maximum freedom to suggest innovation and a fresh outlook.

There are several considerations that comprise the preliminary steps before compilation of the Master Plan, and most are obvious and need only a mention here: 1) read every study made of map libraries, 2) visit as many map libraries as possible, 3) examine various types and samples of equipment and supplies, and 4) consult your crystal ball.

Elements of a Map Library Master Plan

What does a map librarian need to decide about his map library and its functions in order to discuss the designing of a new facility? The Master Plan should include the following major elements:

I. The history and inter-relationship of the map library with the parent organization.

II. A Statement of Objectives.

III. A description of the collection and its sub-parts.

IV. A description of the technical processes used in the acquisition, receiving, cataloging, and preservation of the collection.

V. The physical units that require assignment of space.

VI. A budget, including requirements for support personnel.

VII. A list of specific recommendations designed to implement the Master Plan.

I. History and Inter-Relationship with the Parent Organization

Good planning suggests that one should provide the architect, or a budget analyst, a definition of the basic composition and the relationship of the map library to the parent organization.

The framework of this definition should include the following questions:

1. What has been the historic role of the unit?
2. What is the "Master Plan," if any, for the parent institution?
3. Will the relationship to the parent organization remain about the same, or as it grows will it become more independent, or will the collection be absorbed into another administrative unit?
4. Who are the library patrons and what are their areas of interest?
5. What category of public service does the library serve, and what are the special characteristics of that service?

   a) *General Higher Education Institution*

   What courses are offered and which type of maps are most likely to be needed?
   What is the enrollment in these courses: Undergraduate and Graduate?
   What special areas of research are long-range projects of faculty and staff?

   b) *Public Library*

   Is the general public of all ages served?
   What percentage of the public is composed of sophisticated high school students? Or other special interest groups?
   Is the map library part of a single urban facility or one of a multi-branch operation?

   c) *Special Subject Research Institution*

   Is the library the primary or secondary facility?
   Do patrons use the materials for *ref-*

erence only, or for primary source material for the *production* of publications, etc.?

II. Statement of Objectives

The immediate goals and long-range objectives should be listed in order of priority (not listed in that order here):

1. As the years pass, will the "public" increase substantially and therefore the work load, or can minor fluctuations be absorbed with the personnel now available?
2. Will the orientation of the collection remain constant?
3. What new characteristics will produce significant changes?
4. How much expansion will occur during this period?
5. Will the basic image change a lot, or a little?
6. What other map reference sources are available to the patrons, i.e., within the institution, community, region, or through the inter-library loan system?
7. What is the distance of the library to the next closest map collection?
8. Is the library's objective to become the best equipped map resource in the community?

III. Description of the Collection and Its Sub-Parts

Each of these parts should be described as to the present quantity, spatial volume, and the number of accessions expected on an annual basis.

1. Atlases.
2. Map sheets.
3. Reference books including bound serials (not including atlases).
4. Current issues of serials (by number of titles) on display shelving.
5. Area for restricted materials (either rare, unusual format, or military); what portion of the collection is rare and will require special preservation and storage techniques?
6. Teaching aids including maps mounted for classroom use.
7. Plastic relief maps.
8. Vertical file materials (folded maps, travel brochures, etc.) in pamphlet boxes.
9. Aerial photos.
10. Overhead projection transparencies, and 2″ × 2″ slides.

One should keep in mind that the content of some map libraries is composed of maps, atlases, cartography/geography books and serials, as well as a full range of teaching aids. Others are solely maps except for a few reference items. The description of the collection should clearly make this distinction if appropriate. It is important to distinguish a "reference only" collection, which is a collection containing world-wide, comprehensive in scale of maps and subject content, from the "classroom-instructional only" collection. The latter typically contains 25 or 30 copies of a single map, and mounted maps for classroom use. This type is generally associated with a geography department, but sometimes a library will service all the functions; if all functions are serviced from the central facility then one must make this distinction clear so that the planner can make the necessary accommodations.

IV. Statement of Technical Processes

1. What basic processes are in use today?
2. Are any changes anticipated?
3. Will any new equipment be required for the accomplishment of the new goals?
4. Is the collection now cataloged?
5. If it is decided to begin cataloging the collection, will standard card format or machine readable data be produced?
6. If machine readable data is produced, will the base data be entered onto a preliminary form (preparatory to key punching) or directly

onto IBM cards or to magnetic or paper tape?
7. What is the flow of map processes from receipt to cataloging to filing?
8. What is the physical arrangement of the various sub-collections? (Include a floor diagram with the Master Plan showing present arrangement, but leave the future to the architect's recommendation.)
9. What is the directional flow of patrons upon entry to the Map Room, and how do they circulate around to use the various physical elements?
10. Is any part of the collection circulated? (This factor will help determine the number of personnel needed.)
11. Is the acquisition of new maps handled by another department (under your direction), or is this function part of the map library's responsibility?

V. Statement of the Physical Elements

When describing the physical elements of the map library one should assign values to each category, in terms of numbers of units and physical dimensions, so that the architect will have an accurate measurement of the total space required for the element. The description should include any special features of operation of a piece of equipment (voltage of the electrical wiring, for example), or preferences as to type of shelving, or specifications as to manufacturers.

The Master Plan must describe the following:

1. Reading space for patrons (tables, chairs, etc.). Provide a minimum of 10 sq.ft., and up to 35 and 50 sq.ft., per reader; however, the number of spaces provided will vary according to the nature of the library.
2. A separated processing area.
3. Storage space for processing supplies, map tubes, folders, etc.
4. Office space. Provide 150 sq.ft. for the map librarian, 120 sq.ft. for each reference or processing assistant; standard office equipment should be provided for each.
5. Map drawers. The ideal arrangement is 3 units of 5 drawers each stacked together to provide usable sorting space on top. An accepted standard is 150 maps per drawer. But if maps are contained in individual map folders, 50 maps is a more realistic number.
6. Map tracing equipment, a drafting table, and a light table should be placed with care so that some projects might be left undisturbed for short periods of time by other activity.
7. Aerial photo stereoscopes should be provided.
8. A map projector for enlargement and reduction might be located near the map tracing equipment.
9. Poster walls for display of current maps are a must for promoting interest in current geographical events.
10. The Map Room should be separated from other parts of the library with a separate entrance that can be locked during times when other parts of the library are still open to the patrons. It is assumed that the Map Library will have shorter hours than the parent organization.
11. Book shelving for gazetteers and reference books, including display type shelving for current serials, should be provided.
12. Atlas cases for a selected assortment of handy reference atlases and those items which have loose parts or are rare and need secure housing must be carefully considered. In some libraries the main atlas collection will be shelved in the main stacks on flat shelving, accessible to patrons during the hours the map room is closed.
13. A laminator should be considered (prices will probably decrease) and other repair and preservation equipment provided.
14. Mounting facilities and supplies will probably be an asset to most map libraries, especially if the collection includes the classroom mounted maps.

VI. Statement of Support Personnel and Budget

1. The acquisitions budget should be delineated apart from the book budget of the parent library.
2. The equipment and supplies budget should be clearly itemized apart from the other elements in the budget.
3. The personnel budget can be integrated with the larger parent organization, but the number of persons assigned to the Map Collection should be specified in accordance with the Master Plan.
4. Public service hours. This factor will help determine the number of personnel needed.

In addition to the map librarian, a minimum of one full-time assistant is mandatory. If the map library is to be serviced properly the ideal staffing would be to provide three full-time persons. This will provide necessary overlapping of time to account for absences due to staff meetings, sickness, vacations, and rest breaks during the day. The best staffing that can be provided, in lieu of the above formula, is to have one full-time assistant, one full-time map librarian, and as many part-time employees as necessary to cover the times when there are regular absences of the full-time staff members; that is, part-time student assistants can be scheduled for two hours during the mid-morning, lunch, and mid-afternoon periods (assuming the usual 8 a.m.—5 p.m. work day). If the facility is to be open nights and weekends, the formula can be expanded at the same ratio.

VII. Recommendations to Implement the Master Plan

If a ready-made group does not exist, the map librarian should appoint a reviewing team which represents all interested groups. The basic purpose of this team is to review the proposed Master Plan to see if the map librarian has considered all aspects of the facility, given proper emphasis to each element, and adequately defined the needs of the patrons to be served.

Whatever the composition, the reviewing team should be constituted in such a way that its duties and powers are explicit. It should be vested with the power to make changes in the proposed Master Plan and give final approval. Naturally the team must understand that their power is only advisory and that final approval is simply endorsement to aid the map librarian in his final presentation.

The team should look carefully at the plan and express their sense of priorities. Since these long-range plans cannot be accomplished all at once, a preferred sequence should be created.

Once the Master Plan has survived the review process of this team and received its final endorsement, it can be presented to the library administration for analysis.

Conclusion

With the constant growth of map collections there is a need to present a Master Plan for long-range development so that an architect or planner can know what he is expected to invent. The writer has attempted to state elements of a Master Plan for a map library. The "checklist" includes the basic consideration that if the map librarian can successfully answer all the questions raised therein, it will not only present adequate descriptions for the architect but, and more important, he will create for himself a unique understanding of his role and his map library.

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Stanley D. Stevens is map librarian, University of California, Santa Cruz.

Library Circulation Systems

An Overview

Cecily J. Surace*

The Rand Corporation, Santa Monica, Calif.

■ The model circulation system outlined is an on-line real time system in which the circulation file is created from the shelf list and the terminal inquiry system includes the capability to query and browse through the bibliographic system and the circulation subsystem together to determine the availability for circulation of specific documents, or documents in a given subject area, or by a certain author, etc. Most of the subsystems are updated on-line, and there is minimum delay to the user. The system is designed independent of the input medium. It may be an IBM 357 data collection system, a terminal keyboard, an OCR system, etc. The only requirement is that the user does not have to be present to borrow an item. The model extends beyond the operational limits of most existing circulation systems and can be considered a reflection of the current state of the art.

A MODEL of a circulation system (Figure 1) indicating a spectrum of functions and benefits is presented. Four types of circulation systems will be discussed in an attempt to measure the capabilities of these systems against the model and each other.

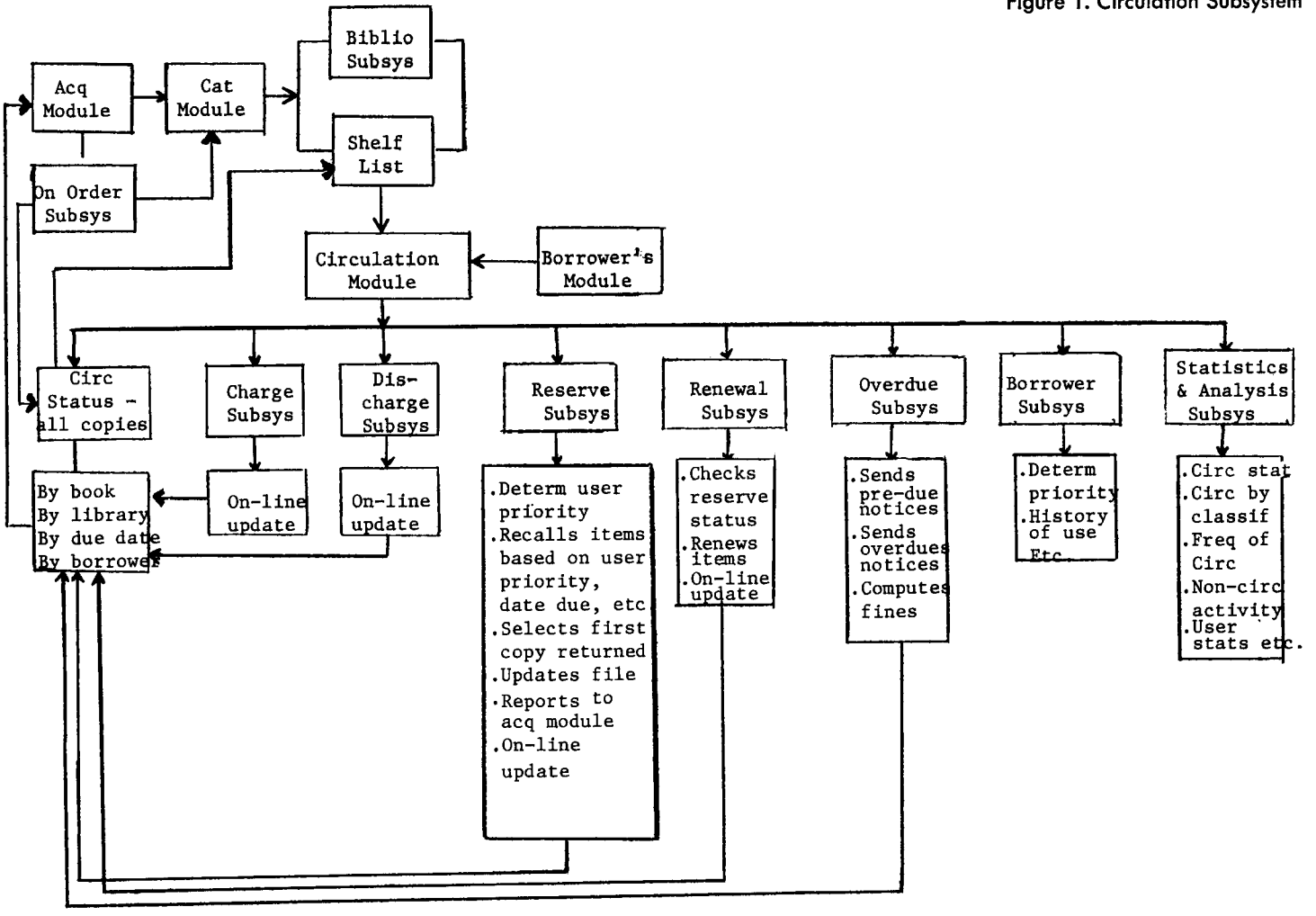
Some of the system requirements and benefits that can be derived from the model include:

1. Creation of the circulation file from the shelf list input, including complete record of holdings, etc.
2. Activity against the shelf list updates the circulation file.
3. File accuracy due to computer filing.
4. Up-to-date circulation information including charges, overdues, reserves, renewals, etc.
5. Automatic update of reserve data.
6. Automatic pre-due notices and overdue notices and calculation of circulation fines.
7. Frequency of circulation of each item, including items that *do not* circulate.
8. Feedback of frequency of circulation data to acquisition and weeding operations.
9. Feedback from reserve and renewal

* Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of The Rand Corporation or the official opinion or policy of any of its governmental or private research sponsors.

Cecily Surace is now at Metropolitan Cooperative Library System, 285 E. Walnut St., Pasadena, Calif. 91101.

Figure 1. Circulation Subsystem



subsystems to the acquisition system to provide information for purchase of duplicate copies.

10. Feedback to shelf list system when item is reported lost or missing.
11. Access to circulation file by book ID, by due date, by borrower, etc.
12. Borrower circulation lists indicating outstanding charges.
13. Statistics on circulation by classification.
14. Statistics on charges, discharges, renewals, reserves, etc.
15. Statistics on borrowers including all items borrowed, frequency of use of library, types of materials borrowed, etc.
16. On-line terminals for user reference to bibliographic file and circulation subsystem.
17. Ease of handling borrower priorities, and limitations on circulation of different types of materials.
18. A central circulation file which can be addressed to determine availability of an item in any library tied to the system.
19. Borrower does not have to fill out charge slips.

Circulation systems can be categorized into four major groups based on the mode of operation: manual, semi-automated (non-computer), data collection (batch), and on-line. Fry (1961) was able to describe and compare 28 systems, most of which were variations of two basic types: the Newark self-charge system which originated around 1900 and based on a book card system, and the transaction card system. Essentially these systems are uni-dimensional or single file systems. Modifications to these systems include the use of embossed printers to imprint the borrowers' ID number on the charge card (Gaylord system) or the entire borrower's name and address (Demco system) to eliminate the need to refer to the registration file for sending overdues. Another modification was the use of photocharging equipment for the transaction card systems.

Card Systems

In the book card systems, the borrower's name or ID is entered on a book card found in the book pocket. This card contains the book's ID. The book card and borrower's card are stamped with the due date, and the book card is later filed in the circulation file. This file is arranged either by book ID or by date due and then book ID. To reserve a book, the borrower completes a postcard or other record which is then filed by book ID in a reserve file. When a book is returned the circulation file must be cleared, the book card replaced in the book, and then the book is checked against the reserve file. In some cases the reserve file is checked against the books in the stacks, but it is possible a book on reserve will circulate again before the reserve check is taken. To send overdues, the circulation file must be searched, as well as the borrowers' file for addresses.

The transaction card system was first introduced in the late 1930's in an attempt to provide a system which would reduce manual charging and discharging time. In its initial form or design the transaction card system required the borrower to enter the book ID and borrower ID and prenumbered transaction card with a paper slip attached. The paper slip was separated from the card, stamped with the due date and inserted in the book. The transaction card was stamped and filed by transaction card number—a numeric file. To discharge a book, the paper slip was removed from the book pocket and used to clear the transaction card file. The book was ready for shelving. Overdues were easy to spot because of the numerical order of the file. Reserves on the other hand remained a problem as in the book card charge system.

According to Fry (1961) the basic self-charge transaction card system is cheaper to operate than a book charge file system. Since the burden of filling out the transaction card is on the borrower, he estimates that in a public library, for 1,000 circulations, 5.3 man-hours are required compared to 8.6 man-hours for a book

card charge system. These figures include registration, charging, discharging, overdues and reserve operations. However, Fry does not attempt to evaluate the effect of reduced benefit to the borrower and the library since the transaction card system does not provide information on the location of an item in circulation. If the book is not on the shelf, one assumes it is charged out. In this regard it is significant to note that none of the college and university libraries surveyed by Fry used the transaction card system. These libraries must know where their books are at all times.

Both systems fail to provide any meaningful statistical data to the total library system. Since the principal purpose of a library is to disseminate information found in documents, and one of the instruments for doing this is the circulation system, it is obvious the circulation system should not be treated as a purely mechanical operation which does not require statistical analysis and feedback. As indicated in the list of benefits from the model circulation system, statistical data from circulation activity can be used to influence the purchase of duplicate copies and weeding decisions. It can also assist management in analyzing the various circulation operations, reveal weaknesses in the collection, and provide data on user reading habits, etc.

Data Processing Systems

In an effort to reduce circulation costs, particularly labor costs, and to provide more meaningful statistical data and faster turn around time, libraries turned toward data processing equipment. Becker (1964) points out that mechanized circulation control started in the 1930's when edge-notched cards were used. The advantage of the edge-notched files was to permit a library to maintain its circulation charges by call number, and at the same time, by use of notches to represent the due date, the file could be searched quickly for overdue operations. With the introduction of punched cards in place of edge-notched cards, circulation systems were able to use card sorters to maintain their circulation files and to assist in locating overdue items. However, the discharge operation continued to be a manual procedure, and the reserve file was still a separate function.

Many of the early punched card circulation systems were based on keypunching the book's ID data onto a card and inserting the due date at the time of circulation. The borrower's ID was entered (usually in writing) on the card and when the book was returned the punched book card was stamped "returned" and inserted in the book pocket to be used at a later circulation to reproduce a new keypunch record.

Comparisons

To compare the manual and semi-automated systems against the model is relatively simple. The manual, transaction card and edge-notched card systems are dependent on manual manipulation of the charge and discharge operations. In all cases overdue notices are manually prepared and no meaningful statistics about circulation activity can be developed. They are essentially single file systems and do not permit fast manipulation of data nor duplication of data.

The primary benefit from these systems is a low operating cost, but only if the circulation activity is small, and there are no variations in circulation policy based on user priorities, date due policies, etc. The manual systems tend to break down when the annual circulation approaches 100,000 or more, although there is very little in the literature which clearly demonstrates the effectiveness of the different circulation systems at varying levels of activity. Bell Laboratories (Kennedy 1968) and Brooklyn College (Cox 1963) have stated their experience with manual systems and their increasing inefficiency with growing circulation activity. Flannery and Mack (1966) reported the Lehigh University manual system was ineffective when the annual circulation reached 150,000; McCoy (1965) reported the Southern Illinois University system broke down at 1,000 circulations per day. James Cox (1963)

compared three systems at UCLA and concluded that the total annual operating costs for a semi-automated system (Keysort) were the lowest at $23,000, the manual system was costed at $26,000 and a fully automated circulation system at $31,000. With improvements planned in 1963, UCLA hoped to have this latter figure down to $29,000. However, the labor costs were lowest with the automated system, and highest for the manual system. Considering the continued growth in the student body and thus library circulation, the costs for the automated system should remain constant or decrease, while the labor costs for the manual and semi-automated systems will necessarily increase.

Neither the manual nor semi-automated systems provide the opportunity to reduce the tedious labor associated with circulation systems, and they continue to be operated in an isolated mode with little interaction with other library units. The introduction of punched cards, however, did provide an opportunity to gather historical data on circulation activity, and did pave the way for the concept of single input of data and an integrated library.

Machine-Readable Cards

According to Becker (1964) the concept of a machine-readable book card and borrower's card was introduced in the 1940's by IBM when it designed "Punching Judy" for the Montclair (N.J.) Public Library. In this system the IBM book card and borrower's card were inserted in a "record control unit" machine which had a slave keypunch which reproduced on a punch card the data collected from the inserted records. The slave keypunch also punched date due information, and a serial transaction number. This then became the circulation record, and the original book card was replaced in the book. When the book was returned, the book card was inserted in the "record control unit" where the slave keypunch produced a "return" card for matching against the circulation cards. A match purged the "cleared" circulation card from the active file. This charging and discharging was a mechanized procedure. The circulation file was machine-sorted to perform overdue operations, but the reserve procedures were still external to the file.

Data Collection Systems

In 1959 IBM introduced the 357 Data Collection System for circulation control. This was a logical progression from the introduction of punched cards. The components of a 357 system include a computer, a 357 input station, a 358 control unit, and a keypunch. The control unit acts as liaison between the input station and the keypunch. A 374 cartridge reader is optional depending on whether the library has variable date due information and prefers not to have to enter the date due as it would if the 372 manual entry keyboard is used.

The 357 system requires a plastic borrower's card (similar to a credit card) and a plastic book ID card. The charging and discharging systems are similar to the "Punching Judy" system except the cards created by the slave keypunch are fed to a computer which creates a magnetic tape circulation file. This tape can be processed daily and with appropriate programs can handle not only the charging and discharging operations, but also reserves, renewals and overdues. It can also print out multiple copies of the circulation record and in varying formats: by book call number, by borrower, by due date, etc. It can also compute overdue fines and send out overdue notices. It accepts reserve information, shows this in the circulation printout, and prints a notice that the book is reserved and should not circulate again. Because it is tied to a computer the 357 system can provide a full array of statistical data. For discussions of data collection systems installed see Auld (1968), Brown (1967), Cammack (1965), Campbell (1969), Flannery (1966), McCoy (1965), Parker (1967), Payne (1966), and Stockton (1967).

The IBM 357 and other data collection systems offered an advance in the state of the art of circulation systems,

and it was not long before additional improvements were made. As originally implemented the data collection systems provided speed in charging and discharging, improved accuracy, and increased statistical and analytical reporting. However, because they were operated in a batch mode, the data collection systems did not provide real-time information and automatic, timely follow-up on reserves, nor were the computer programs operated against the entire shelf list inventory, but rather they processed only the active circulation records. These capabilities could be designed into a data collection system hooked to a computer operating the circulation system in an on-line mode, or designed into an on-line system utilizing a keyboard terminal as the input device.

Heineke (1969) at Midwestern University, and Hamilton (1968) at the Illinois State Library describe data collection systems operating with on-line circulation systems. In both libraries the reserve problem is resolved because on-line updating of the file permits the system to alert the circulation attendant that a document being discharged is on reserve. However, both systems operate against the active circulation file, rather than against the entire shelf list inventory. Another on-line system utilizing a keyboard terminal as the input device was designed without the complete library holdings as the master file at the State University of New York at Buffalo (Lazorick 1967). It was not until the Bellrel system (Kennedy 1968) was designed and implemented that an on-line real-time circulation system with the shelf list inventory as the master circulation file became a reality. (Unstead 1967 describes such a system, but there is no indication it is operational.) It is not clear, however, if the Bellrel system is an integrated

Annotated References

Auld, L. / **Automated Book Order and Circulation Control Procedures at the Oakland University Library.** *Journal of Library Automation* 1: p.93–109 (Jun 1968)

The circulation system described utilizes an IBM 357 data control unit with modifications on controlling the various operations by using "trigger cards." Such cards are used to control the type of borrower, to indicate the kind of operation: charge, discharge, reserve, missing, at bindery, etc. The circulation file is updated overnight by the 1620 computer system.

The system as designed has a maximum file capacity of 9,000 charges at one time and can handle a total of 115,000 transactions per year. No indication is given of the replaced system and the reasons for automation.

Becker, J. / **Circulation and the Computer.** *ALA Bulletin* 58: p.1007–1010 (Dec 1964)

Presents a brief history of the development of circulation systems and discusses in more detail an IBM batch processing circulation system using the 1401 with input via punch book cards which are a by-product of the shelf list. The system requires the borrower to enter his own ID data on the punch book card. This is later keypunched to produce a circulation record which is put on computer magnetic tape for processing.

Blau, E. J. / **An Automated Circulation System and Master Book File for a Medium-Sized Scientific Library.** *ASIS Proceedings:* p.21–38 (Oct 1966)

Describes a system which operates in a batch mode on the 360/91 with card input and disk storage. The file is random access with the accession number serving as the record key. Direct access is used for file maintenance and update, but for report generation the file is searched sequentially.

An improvement over most circulation systems is the fact that the entire book collection record is used for the circulation file, instead of just those items in circulation: however, the creation of this record is not an integral part of the cataloging system, but an additional input. In addition, any circulation transaction requires that a transaction sheet be prepared by the circulation desk with the appropriate codes and data elements. These sheets are later keypunched and provide the input to the system. This would appear to be a serious delay factor and one which is error prone at that.

Booz, Allen. Applied Research Inc. / **Mechanization Study of the U.S. Army** / Picatinny Arsenal, Dover, N.J. Booz, Allen. Sep 1966, 24p.

Describes in more detail the system originally

system accepting its input as a by-product of the catalog system or as duplicate input from cataloging. The latter appears to be the current design, although there are plans to implement a fully integrated circulation system. Of course the obvious advantage of a shelf list circulation system is the additional information library management will have in determining the circulation usage of its holdings, the strengths and weaknesses of the collection, additional input for weeding decisions, etc.

The Integrated System

A wholly integrated circulation system which is a subsystem of a cataloging input is within the state of the art. What is lacking is an appreciation for, and more important, an evaluation of the cost effectiveness of the various circulation systems in terms of the total collection, size of the circulation file, annual circulation activity, number of borrowers, the loan policy, the type of library (public, special or academic), the conversion and equipment costs, the equipment downtime and costs for back-up systems, labor costs and the benefits of these systems. As indicated earlier, there is very little in the literature about the cost effectiveness of these systems, particularly the automated systems. Some cost studies have been attempted (Fry 1961; Library Technology Project 1965, 1967; Kimber 1968) but they are incomplete and provide very little insight into cost tradeoffs that must be made in converting from a manual or semi-automated system to an automated batch or on-line system. Only Fry and the *Library Technology Reports* have attempted any analysis of the different systems. Unfortunately these studies are of little value since they attempted to measure and compare the sys-

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written up by Haznedari and Voos in 1964. The author concludes that the system is more efficient than the replaced manual system. It is unfortunate the authors did not attempt to compare the punch card system against a more fully automated circulation system.

Brown, W. L. / **A Computer Controlled Charging System at Essendon Public Library.** *Australian Library Journal* 16: p.231–9 (Dec 1967)

Describes a data collection system similar to the IBM 357 system, but employing Olivetti equipment. The circulation system is supported by a computer program which operates against the entire shelf list and borrower's file. The data collection system captures the transaction information which is batched for input to the computer.

Cammack, F. M. / **Remote-Control Circulation.** *College and Research Libraries* 26: p.213–218 (May 1965)

Describes the circulation system designed for the University of Hawaii library, which utilizes an IBM 1001 data collection system. The 1001 uses telephone lines connected to a Slave keypunch; the 357 uses cable. The 1001 system described operates pretty much like the 357 except the amount of data transmitted is limited to borrower's ID and book call number, collection code and loan period code. The title and author cannot be transmitted.

Cammack, F. and Mann, D. / **Institutional Implications of an Automated Circulation Study.** *College and Research Libraries* 28: p.129–132 (Mar 1967)

The Oakland University Library utilizes an IBM 357 data collection system with a 1620 computer. The authors describe data that can be collected and analyzed to assist library management. The data include charging activity patterns to assist in manpower scheduling; heaviest used portion of the collection; student and faculty usage; students and fields of study correlations; grades and library usage, etc.

Although these data can help the library to react to the needs of the users, one wonders if there are invasions of privacy lurking in the corners?

Campbell, G. R. / **The Circulation System of the McPherson Library, University of Victoria.** *LARC Reports* 2 (1): p.26–43 (Mar 1969)

Discusses a system designed for operation on the IBM 360/44 utilizing punched book cards produced from the shelf list, and an IBM 1030 data collection system. There are no unusual

tems at one point in time only, and also attempted to cover too much ground. The circulation requirements in a public, academic or special library differ and it is unfair to compare these systems as operated by the different libraries. One also wonders if Fry's prejudices against mechanization did not interfere with some of his conclusions. Ruecking (1964) attempted to develop some equations which could be used to project circulation and staffing requirements over a period of time to justify automation, but his equations are based on a circulation volume which is constantly increasing. There is no attempt to provide some fundamental understanding of all aspects of circulation, such as the reserve or overdue volume which can be critical even when total circulation volume is relatively stable. Perhaps circulation systems are unique to their institution? And yet this belies the latest activity in the design of circulation systems.

The software package designed as a general purpose system has been introduced to the library automation field. Organizations such as System Development Corporation and Computer Real Time Systems have designed general purpose circulation systems which can be implemented in any library having access to a computer, or capable of purchasing or renting a terminal to be linked to a computer. The System Development Corporation design is on-line and connects the library to the SDC computer via a teletype terminal. The actual file updating is done overnight, however. The CRTS approach requires that the library provide the computer. The system may be batch or on-line and is independent of input device. Both systems can operate against the entire shelf list as the master circulation file or just the active circulation file. The questions raised by these systems are: 1) Can a library operate an effective circulation sys-

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features in this system. It is unfortunate that the designers did not include use of the shelf list against which circulation activity could be posted.

Cox, J. R. / **(Communication) In Circulation Activities.** *College and Research Libraries* 24: p.492–495 (Nov 1963)

A very informative communication which provides some comparisons in operating costs between manual, semi-automated and fully automated circulation systems. Concludes that the manual and semi-automated systems cannot handle the loads in large university libraries, and although the fully automated systems are more expensive, they provide increased services, and in the long run will operate more efficiently and economically.

Flannery, A. and Mack, J. / **Mechanized Circulation System, Lehigh University Library.** Library systems analysis report no.4. Center for the Information Sciences, Lehigh University, 1966, 17p.

Describes an IBM 357 data collection system installed at Lehigh University for circulation control. The system is tied to a GE 225 computer and a daily printout of the circulation file is kept at the loan desk. The 357 system designed is not unique, and therefore no comments will be made regarding this design. However, instead of preparing keypunch book cards for the entire collection of 450,000 volumes, cards were prepared for only the most active books in the collection, and all new books, in advance of installation. The less active books would have book cards punched at the time of circulation. This does appear to be an economical way of adjusting the system to avoid unnecessary costs.

Interestingly enough, the authors conclude that there is no arithmetical formula to be derived from current circulation volume to indicate mechanization is required. Growth trends and the level of control desired are principal guides.

Fry, G., and Associates, Inc. / **Study of Circulation Control Systems.** Chicago, Ill., 1961, 138p.

Analyzes the components of circulation systems and attempts to provide cost comparisons. The systems studied included book card file systems, charge card file systems, and transaction card systems. The libraries surveyed included public, academic and special libraries.

This study is very useful to someone wishing to learn of the highlights of various manual systems. The cost comparisons are also useful, although not beyond question. For example, is

tem by using someone else's computer? 2) What compromises are made to install a general purpose software package?

Another area that requires study is the "big brother" aspect of circulation analysis. While much circulation data will be useful to library management in terms of acquisition, weeding, circulation desk manpower requirements, etc., and while circulation data can provide valuable insights into student and faculty use of the library, correlation between library use and academic achievement, etc., it is also possible this data could be misused to threaten or invade the privacy of library users. For instance a chairman of a department may show unusual interest in the reading habits of his faculty; or an instructor might want to know which of his students have actually read the books he assigned; or a legislator might ask a public library to provide a list of books borrowed by "questionable" citizens, etc. Some computerized circulation systems are now using the borrower's Social Security number as his identification key. Thus there is no reason why a dossier on an individual could not be built to include reading habits and fed to some national data bank. These may appear as far-fetched fancies, but it can happen!

In summary, the advances in circulation systems will be made via automation and the integration of the circulation system with the acquisition and cataloging systems. Additional work must be carried on in the area of cost benefit analysis of various systems and volume of activity.

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Cecily Surace is a member of the staff of Metropolitan Cooperative Library System, Pasadena, Calif.

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filing time constant whether the file consists of 5,000 or 50,000 items?

Geer, H. T. / **Charging Systems.** Chicago, Ill., 1955, 177p.

A guide to the selection of charging systems. Describes each system, the routines involved in charging, discharging, handling renewals and reserves, and sending overdues.

Hamilton, R. F. / **"The Illinois State Library On-Line Evaluation Control System."** *In* Proceedings of the 1968 Clinic on Library Applications of Data Processing.

Discusses an on-line circulation system which operates on an IBM 1710 system using IBM 1031 terminals for input. To charge a book the system requires a punch book card and a borrower's badge. Input through the 1031 activates a computer check of the borrower's ID card status. The computer automatically updates the borrower's record, circulation record, and related statistics reports. It is significant to note the book ID cards were generated from the shelf list which is also on punch cards, but no attempt was made to use the shelf list as the basic record against which all circulation activity could be posted. This system provides many of the features found in batch data collection systems, except it is updating the file on-line. It does, however, automatically notify the circulation desk of an on-reserve status of any discharged book, thus facilitating the control of reserved books.

Harris, M. H. / **The 357 Data Collection System for Circulation Control.** *College and Research Libraries* 26: p.119–120,158 (Mar 1965)

From questionnaires sent to 60 medium-sized academic libraries, the author concludes that 30 of the 47 libraries queried could feasibly make use of the IBM 357 data collection system based on his premise that any library spending more than $2,500 a year on filing, card pulling and overdue notices can justify the new system. There is no justification provided for this assumption except the fact that the 357 system rents for about $2,500 per year. The author assumes a computer is available for library use.

Haznedari, I. and Voos, H. / **Automated Circulation at a Government R&D Installation.** *Special Libraries:* p.77–81 (Feb 1964)

Describes a system using IBM punch cards as input to a 1401 for update of the circulation file, including a daily printout of the circulation file and reserve listings, and monthly overdue notices and borrower's active charge statements.

The punch cards are prepared at the time of circulation from request cards filled out by the borrower. A duplicate punch card is inserted in the borrowed item, later to be used as a "return" card.

The system takes advantage of the use of punch cards and computers, but as the authors indicate, in a very limited way. They do plan to enter the shelf list file as the circulation record, thereby expanding the circulation services and providing library management with more meaningful data for book purchases and weeding.

Heineke, C. D. and Boyer, C. J. / **Automated Circulation System at Midwestern University.** *ALA Bulletin:* p.1249–1254 (Oct 1969). Also Boyer, C. J. / **On-Line Library Circulation Control System at Midwestern University.** *LARC Reports* 2 (1): p.44–58 (Mar 1969)

Describes a circulation system operated in an on-line mode on an IBM 1401 coupled with an IBM 1031 data collection system. The 1401 is shared by other departments at the University; it is not a dedicated computer. Batch programs are interrupted by the on-line systems as required. To charge an item, the book card and borrower's badge are inserted in the data collection system. The program interrupts the background processing in the computer until the borrower's file is checked and the clearance to charge the book is ascertained (less than ½ second of CPU time; a total of 10 seconds). The 1033 printer prints a book slip which is inserted in the charged out book.

This system appears to be efficient, but it lacks the sophistication of circulation systems tied to the entire shelf list. Also, one wonders what the maximum limit is on circulation records? However, the system does prevent reserve books from circulating, provides borrower status information, date due and fine computations, statistical records and a daily printout of the circulation file.

Kennedy, R. A. / **Bell Laboratories' Library Real-Time System (BELLREL).** *Journal of Library Automation:* p.128–146 (Jun 1968)

Describes an on-line system consisting of terminals in three different locations, linked by Dataphone to the 360/40 computer. Direct access disk files provide information on the total collection (shelf list) and circulation activity against it. The system has a union list of all three libraries and can indicate the current status of any item in the system, even indicating the item is on the shelf and ready for circulation.

Each library has two terminals with keyboard, printer, and card read facilities. There are 22 transactions covering charging, discharging, reserves, and queries. Daily loan lists, pre-due and overdue notices, high-demand lists, statistics, etc. are batch processed. The system can handle over 300,000 transactions per year.

Although this system is perhaps the most sophisticated circulation system providing on-line update to the file, including reserve data, it does not appear to be integrated with the catalog system. This last sentence is vague because the article is vague about how the circulation file, which is the shelf list file, is produced. It appears to be duplicate input from the catalog system, and not created as an integrated file from the catalog system, although this is a stated objective of the system. In addition, the time it takes to complete a loan transaction is 23 seconds. This is longer than the manual system it replaced, and the 357 data collection system.

Kimber, R. T. / **Studies at the Queen's University of Belfast on Real-Time Computer Control of Book Circulation.** *Journal of Documentation:* p.116–122 (Jun 1966)

Presents the plans for circulation control at Queen's University of Belfast which includes on-line interrogation of the loan file which includes the complete shelf list as the master file against which all circulation transactions are made. Not much detail is given regarding the system design, but it appears the author is considering an integrated library when the shelf list data is generated by the cataloging function and input to the circulation system.

Kimber, R. T. / **An Operational Computerized Circulation System with On-Line Capability.** *Program* (no.3): p.75–79 (Oct 1968)

Describes a generalized processing system called TERPS used in a circulation system at the West Sussex County Library. The circulation system is operated in a batch mode with input via a data collection system using edge-punched cards. Interrogation of the system is via typewriter consoles in an on-line mode.

Perhaps the only unique feature of this system is the use of a general file maintenance system adapted to circulation use, and the on-line query system. There has been no attempt to broaden the circulation function and to integrate it with the shelf list file.

Kimber, R. T. / **The Cost of an On-Line Circulation System.** *Programs* (no.3): p.81–95 (Oct 1968)

Compares the cost of a normal system in operation at the Queen's University of Belfast with estimates of the cost of an on-line computerized system. Concludes that the on-line system will effect a 45% reduction in the manpower devoted to circulation activities, although it will be 15% more expensive.

Lazorick, G. J. and Herling, J. P. / **A Real-Time Library Circulation System Without Pre-Punched Cards.** *Proceedings of the American Documentation Institute* 4: p.202–206 (1967)

Describes a real-time circulation system using an IBM 2741 typewriter terminal and the CDC 6400 computer. To charge an item the borrower's ID and book call number are entered via the terminal. The typed record is inserted in the book and the transaction completed. The program includes batch automatic processing for overdue notices, save notices and circulation statistics. The books do not require book cards of any sort. The computer can be addressed via the terminal for circulation status of any item. The charge time is 20 seconds.

This on-line system handles transactions numbering over 300,000 per year at the State University of New York at Buffalo. Branch libraries are hooked into the system, but the master

circulation file consists only of charged materials, not the shelf list or record of complete library holdings.

Library Technology Reports / **The Use of Data Processing Equipment in Circulation Control.** *Library Technology Reports,* July 1965, 24p.

Describes three machine systems for circulation control, and analyzes their costs. The cost of operating a circulation control system was divided into four categories: staff time, cost of purchasing or renting equipment, supplies, installation costs.

Concludes that justification for mechanization of circulation systems "must be other than economic." Cautions librarians to analyze thoroughly their manual systems and even consider additional costs of increased labor force vs. mechanization. The conclusions are based on rather incomplete cost analyses.

Apparently the authors of this LTP do not consider the increased speed and accuracy of the three mechanized systems, as well as other benefits from mechanization, unique results available only through mechanization. They contend a manual system can do the same. Considering the three systems they have analyzed, and having the advantages of five years of continued progress, some of their conclusions seem justified. The systems they analyzed appear to be quite cumbersome and certainly do not take advantage of mechanization as much as they should. Except for the IBM system, none use computers, and only the IBM system uses data created from the shelf list.

Library Technology Reports / **The Remington Rand and Walkenhorst Photo-Charging Machines.** *Library Technology Project,* March 1966, 6p.

Describes two book charging systems based on the photo-charge method. The authors conclude these German made machines offer no advantage over American made products.

Library Technology Reports / **Three Systems of Circulation Control.** *Library Technology Reports,* May 1967, 40p.

Discusses the advantages and disadvantages of three systems used for circulation control: the Demco charging system; the IBM 357 circulation control system (one card); and the IBM 357 circulation control system using two cards.

The authors conclude these systems are superior to three mechanized systems they analyzed in 1965. However, they still reveal their prejudices for manual systems concluding that operating costs will increase, but not indicating the increased speed and benefits from the 357 systems, computer manipulation of circulation data, and the possibilities of integrated library systems. The authors feel libraries should install 357 systems only if their manual systems are breaking down, they want to provide special services to different classes of users, and can have access to a computer. They do not feel the two-card 357 system justifies the additional costs.

McCoy, R. E. / **Computerized Circulation Work: A Case Study of the 357 Data Collection System.** *Library Resources and Technical Services* 9: p.59–65 (Winter 1965)

Describes the 357 system with a 1401 computer installed at Southern Illinois University, the reasons for its adoption, the steps taken to prepare for its installation, some costs, and the benefits. The author states the Keysort and Gaylord charging system failed when the circulation activity reached 1,000 daily.

Nolan, K. P., Cardinelli, F. A., and Kozumplik, W. A. / **Mechanized Circulation Controls.** *Special Libraries:* p.47–49 (Jan 1968)

Describes a simple EAM system using keypunched book cards on which are entered the borrower's ID at the time of circulation and later keypunched. These charge cards are duplicated and two files are kept, one by book ID and one by borrower ID. The overdue process is handled by searching the borrower's file and duplicating all overdue items. These duplicate punch cards are then run through a card reader/printer to produce overdue notices. The authors contend the system saves about $38,000 annually. Still if the system does handle over 177,000 transactions per year, one wonders how well the punch cards hold up, and what difficulties the machine room operators experience.

Parker, R. H. / **Not a Shared System.** *Library Journal:* p.3967–3970 (Nov 1, 1967)

Briefly describes a computerized circulation system using the IBM 357 for data input and operated in a batch mode. The major portion of this article exhorts libraries to automate.

Payne, L. M., Small, L., and Divett, R. T. / **Mechanization in a New Medical School Library.** *Medical Library Association Bulletin* 54: p.337–350 (Oct 1966)

Describes the serials and circulation phases of the data processing system at the University of New Mexico Library of the Medical Sciences. The circulation system uses an IBM 357 data collection system and EAM equipment. It appears the use of EAM equipment is considered economical compared to the use of a computer, but this may be because the library has a collection of 5,000 volumes.

Pizer, I., Anderson, I. T., and Brodman, E. / **Mechanization of Library Procedures in the Medium-Sized Medical Library.** *Medical Library Association Bulletin* 52: p.370–385 (Apr 1964)

Describes a circulation system which is a variation of the Bookamatic system. It utilizes plastic book and borrowers' cards which are run through an addressograph machine to imprint the embossed data on an IBM charge card. This card is then keypunched with the "imprinted" data and filed in the circulation file. EAM equipment is used to produce overdue notices.

Since the system described is for a library whose total circulation file is only 3,000 cards, the system seems adequate, although it may prove feasible to use a computer in place of the continued sorting of cards by EAM equipment.

Pizer, I. H. / **A Mechanized Circulation System.** *College and Research Libraries* 27: p.5–12 (Jan 1966)

A variation of an earlier system described by Pizer, et al. (1964).

Describes a circulation system which uses an Addressograph Class 9500 Optical Code Reader and an IBM 1440 computer. Items are charged out by inserting an embossed borrower's card and plastic book card in a data recorder which imprints the embossed information from the borrower's card and book card onto an IBM punch card. The punch card is batched with others and run through the Optical Code Reader which automatically punches the borrower's information in the appropriate columns. The book ID is then manually keypunched into the card. This charge card is now ready to be manually filed in the circulation file. The 1440 is used to produce overdue notices after EAM equipment does the sorting for the circulation file.

This seems to be a cumbersome system utilizing a lot of equipment. Why could they not design the system utilizing EAM equipment only?

Radford, N. A. and Barry, J. E. / **IBM Punched Card Circulation at Sydney University Library.** *Australian Library Journal:* p.228–234 (Dec 1966)

Describes a mechanized circulation system based on that developed by the Library of Brooklyn College in N.Y. The system utilizes two types of cards: an 80 column loan card to be filled out by the borrower, and a 51 column card used as a transaction card. The system requires the entire loan file to be processed each day. The annual circulation is as high as 320,000 loans.

Ruby, H. V. / **Computerized Circulation at Illinois State Library.** *Illinois Libraries* 50: p.159–162 (Feb 1968)

Discusses in general terms how the on-line system operates. Charging takes 4 to 9 seconds, discharging 2 to 5 seconds depending on whether a reserve notice is printed out by the computer. The system operates with IBM punched book cards duplicated from the shelf list. However, the circulation activity is not against the shelf list. No information is given regarding the type of equipment used for data input, nor the computer used. Apparently the input is captured "on-line" although the file update is done overnight in batch mode.

Ruecking, F., Jr. / **Selecting a Circulation-Control System: A Mathematical Approach.** *College and Research Libraries:* p.385–390 (Sep 1964)

Develops a series of equations which the author believes were helpful in analyzing the circulation system at Rice University and which contributed to the decision to install an IBM 357 data collection.

There are very few data available to compare the effectiveness of different circulation systems. The equations offered do not satisfactorily solve the problem, and the author is aware of this when he indicates that six criteria were selected to provide a common ground for comparing effectiveness.

The author is also aware of the limitations of the comparisons made by Fry and Associates (1961) and has attempted to provide more accurate means for comparison.

Stockton, P. A. / **An IBM 357 Circulation Procedure.** *College and Research Libraries* 28: p.35–40 (Jan 1967)

Describes an IBM data collection system used in a medium-sized library. The chief weakness of the data collection systems is that they cannot provide complete control over reserves or "holds." Thus it is possible for a reserved item to circulate again before it is noticed the item is on reserve for a borrower. However, this is a weakness true of most manual systems and one which is corrected only when a circulation system has its discharge transaction on-line and the file includes on-line update or reserve data.

Trueswell, R. W. / **Two Characteristics of Circulation and Their Effect on the Implementation of Mechanized Circulation Control Systems.** *College and Research Libraries* 25: p.285–291 (Jul 1964)

Attempts to evaluate the need to prepare punched book cards for all volumes in a library based on two factors: the length of time the item has been in the library; the last previous circulation date. Indicates it is cheaper to punch a book card at time of circulation rather than in advance, although it may be possible to punch book cards in advance for all new acquisitions.

An especially useful paper for a librarian attempting to convert from a manual system to a data collection system where IBM book cards are required for machine input.

Unstead, C. R., et al. / **Compatible Automated Library Circulation Control Systems.** Redstone Arsenal, Apr 1967, 174p.

Describes five systems ranging from a manual circulation control to a fully automated on-line system with the shelf list as the master circulation file. The systems were designed so that they are compatible, and it is possible to develop from the manual system to the punch card EAM system to the "small scale control system" to the on-line system.

The Laboratory Notebook as a Research and Development Record

Martha J. Bailey

Physics Library, Purdue University, West Lafayette, Indiana 47907*

■ The literature concerning laboratory notebooks is reviewed. A procedure is described for administering laboratory notebooks. It requires the services of a librarian who has a general knowledge of the projects of the laboratory and utilizes standard library equipment. Also outlined is an indexing system which provides a method for retrieving information by laboratory notebook number, by name, and by general subjects. It is estimated that the indexing scheme would be adequate for collections up to 5,000 notebooks.

THE MANAGEMENT of information in a research or development laboratory is a complex operation. One problem is the administration of the laboratory data. The category "data," interpreted loosely, may include such items as progress reports or invention disclosures; formal memoranda, reports, or notes; correspondence; laboratory notebooks; and engineering drawings. This paper concerns only the laboratory notebook.

There is no general agreement on what a laboratory notebook is and its use. In 1958 Aspnes analyzed in detail the divergent types of records which serve the function of a laboratory notebook in 94 laboratories *(1)*. He found that *(2)*:

. . . no great fund of reliable information seems to exist on this subject, although there is no lack of conjecture, opinion, tradition, and even superstition of what kinds of lab notebooks are best and what are the best ways to fill them and file them to make sure no information is lost when in the future new research is undertaken or patent suits threaten.

A search of the indexes to the American National Standards Institute, Inc. publications indicates that there are no standards for notebooks. In 1963 a patent attorney presented recommendations in *Chemical Engineering Progress (3)* for the selection, care and use of laboratory notebooks and other patent records.

Description

A laboratory notebook may be considered as the daily record book kept by the technical personnel of the work performed. Summarizing the information in Refs. *(1)*, *(3)*, and *(4)*, notebooks should be bound but they may be any size *(5)*. On each page there should be space at

* Formerly Union Carbide Corporation, Materials Systems Division, Indianapolis, Indiana.

the top to identify the experiment and space at the bottom for the signature of the technical person, the signature of the witness, and the date *(4)*. Each page and the cover may be imprinted with the company name. The number may be printed on the cover and the spine of the book. Each man uses a separate book for each project, but the data on one project may fill several books. At a given time a man may have five or six books which he uses concurrently.

Numbering

The literature does not include instructions on how to number notebooks. The following statements are based on conversations with librarians and two patent attorneys.

Notebooks usually are pre-numbered before they are issued to the individual technical staff person. The system of numbering may be in consecutive order, such as 1001, 1002, etc. or based on the date, such as 72-1, 72-2, 72-3. The number may be based on the man's name, such as JBS-1, JBS-2, JBS-3. Or, each man could be assigned a reference number; if J. B. Smith had Ref. No. 38, his books would be 38-1, 38-2, 38-3. Or, one could formulate an acronym on the project name, i.e. HERO-1, HERO-2.

A problem one encounters in handling old files is that the same number may have been inadvertently given to more than one notebook. An easy solution is arbitrarily to assign sub-letters or -numbers; for example:

2131-A	or	2131-1	or	2131.1
2131-B		2131-2		2131.2
2131-C		2131-3		2131.3

If a technical man has a large number of photographs, charts, or graphs, which are too cumbersome to paste in a notebook, the patent group sometimes allows him to insert these supportive data in a looseleaf notebook. For control purposes, the looseleaf may be considered as a supplement to a bound laboratory notebook. Then, if the laboratory notebook is number 1313, it would be numbered 1313-A and the looseleaf notebook 1313-B, or

1313-1	or	1313.1
1313-2		1313.2

Control

The control of the books may be the bailiwick of the technical librarian, the patent attorney, the contract officer, or the file room clerk. If at all possible, the librarian should maintain the notebooks because he can very easily adapt his current circulation and indexing procedures to the efficient handling of the notebooks.

After he obtains the book, the technical person writes the title of the project and his name on the cover of the notebook and records the data every day. He has an associate witness the pages as he completes them. When he finishes the book, he assures that the contents pages are completed *(4)*. Ideally at this point the book is returned to the library temporarily for indexing and microfilming. After that it is either returned to the man or is filed. Some companies microfilm all of the data entered in notebooks every six months. Borrowing the books on weekends, the clerks film the pages and return the books to the owners on Monday morning.

The completed notebooks may be stored in a vault, in filing cabinets, on shelves in a locked area, or on open shelves. The patent department often requires that they be locked up in some manner.

The administration of notebooks is an area in which a librarian can assist in the creation of data. Since he knows what the projects are, he can scan the progress reports, notebooks, etc. as they are received to assure that each project is being documented. This is actually the supervisor's responsibility, but the librarian can "suggest" to the supervisor or patent personnel that some phases of Project A or Contract B have not yet been recorded.

Suggested Procedure

A procedure used at one installation was that each time the technical worker

withdrew a pre-numbered notebook from the library, he was asked the subject or the title of the notebook. Three records were prepared from the information: a circulation card, a security card, and an index card.

The first was a standard 3″×5″ circulation card showing the book number, the person's name, and the date (Figure 1). This was filed in numerical order and served as the circulation record. When the book was loaned from the file to another person, the new name was placed on the card with the date. The circulation cards were kept at the circulation desk but separate from the library book cards.

The second record was a 3″×5″ card for each name that listed all of the books which he had (Figure 2). Those laboratories that require this type of security record for classified material may utilize the same record for the laboratory notebooks. When a man changed projects, he was asked to verify which notebooks he still had in his possession so that the records could be updated.

The third record was the draft index card. This showed the notebook number, the person's name, and the subject or project title (Figure 3). The format is described below.

Figure 1. Circulation card

6001 Smith, J. B.

3/7/71 J.B.Smith returned 6/6/71
6/6/71 N.B.Jones

Figure 2. Security card

Smith, J. B.

2/2/70 2393 returned 3/7/71
4/7/70 5001
5/1/70 5124
3/7/71 6001 returned 6/6/71

Figure 3. Draft index card

6001 Smith, J. B.

Experimental coatings: Al_2O_3, Cr_2O_3, WC

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Index Card File

On the surface it may seem that, in a small laboratory, there is no need to develop a system for retrieving the information. The feeling may be that it is a simple task to pinpoint an equation when one has only a few thousand notebooks to search. However, management and the librarian must determine whether the time spent in searching warrants the preparation of an index.

A reason that indexing systems for laboratory notebooks are not reported in the literature may be that the indexer is too exhausted to write up the scheme! Since one is working with handwritten records, one may spend hours deciphering formulas, cryptic notes, and incorrect information. Technical personnel sometimes are careless about recording information, such as using "Zi," which could be interpreted as either "Zinc" or "Zirconium." If the original data are garbled, there is no method for the indexer to correct it without destroying the legality of the record.

For small collections, standard cards such as 3″×5″, 4″×6″, or 5″×8″ plain, edge-notched or Uniterm cards can be utilized. Although 3″×5″ cards were used in the system described, they were too small to contain all of the information. The edge-notched 5″×8″ inch or 8½″×11″ allow one card to be used for name, subject, and product information instead of preparing separate cards for each.

The procedure was that the librarian examined each book and recorded the following information on a slip of paper:

- Number of the book.
- Name of the person or persons whose signatures appeared on the pages of the book.
- The subjects or topics on which information was recorded.
- The inclusive dates during which the

work was performed, taken from the first page and the last page of the book.
- The total number of pages on which data were recorded.

The typist copied the information on sheets of card stock marked to 3″×5″ and duplicated the sheets on the Xerox 2400 (Figure 4). Using the unit card system (Figure 5) a card was prepared for each name plus each subject plus a card for the numerical file.

The cards were filed as follows:

- Numerical file: the cards were filed in numerical order 1,000 through 10,000.
- Name file: the cards were filed under each name with the highest book number in the front. The reason for this is that requests usually were for the most recent work that had been performed.
- Subject file: the cards were arranged in numerical order under each subject heading.

The subject file consisted of very broad subject headings which reflected the major projects. These included:

COATINGS
CRYOGENIC CONTAINERS
CRYSTALS
WELDING

The reason for having a numerical file was that, since the completed notebooks were filed in locked cabinets, it provided an abstract of each book without examining the book.

Each time a new book was issued, temporary index cards were prepared. These were filed in the three files (numerical, name, and subject) and provided a continuous updating of the files, with a minimum of effort.

Deep Index

Several years ago a more detailed index was initiated for certain projects. Since code numbers were assigned to the products, it was very simple to index by product numbers. The experimental products were indexed by composition.

This file consisted of 5″×8″ cards. However, a larger card such as 8½″×11″

Figure 4. Index cards

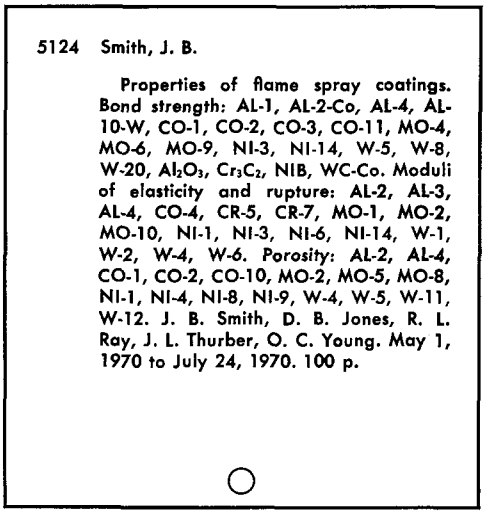
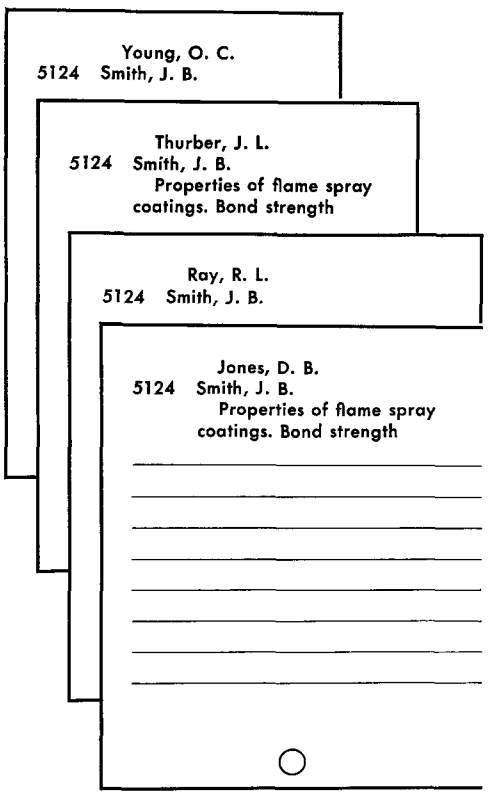


Figure 5. Unit cards



was needed. Figures 6 and 7 are the product cards and the experimental product cards. The products were metal and ceramic coatings which were applied by plasma plating, flame spray coating and other plating methods.

The sample cards include references to company confidential reports as well as to the laboratory notebooks. This indicates that even a small manual method can incorporate formal reports, progress reports, idea conception records, metallurgical evaluations, correspondence, etc.

In addition to the product numbers and experimental products, the file included the proprietary plating equipment, such as **FS-10** for **Flame Spray Machine Number 10.** There was a separate file of keywords for equipment and procedures (**powder dispensers, barrels,** or **plasma plating**) and properties of coatings and substrates (**bond strength, fatigue, thermal shock resistance,** etc.).

A breakdown of the questions which were searched during the period 1960–1970 is as follows:

40%	product code or experimental product
30%	name of scientist, engineer, or technician
20%	particular procedure or equipment
10%	specific properties.

Conclusion

In conclusion, a procedure is described for controlling and indexing laboratory notebooks which requires only standard library equipment. The index provides a method to retrieve information by notebook number, by name, and by general subjects. It is estimated that the scheme would be workable for collections up to 5,000 notebooks.

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Figure 6. Product index card

AL-4

composition: Al_2O_3

coating method: flame spray

Reports

Dev. Note 4001 powder
Dev. Note 4161 moduli of elasticity and rupture
Dev. Note 4162 finishing

Met. Eval. 21171
21172
21173
45670

Notebooks

2393 powder
5001 bond strength, moduli of elasticity and rupture, porosity
5124 bond strength, moduli of elasticity and rupture, porosity
6001 hardness, oxidation resistance, surface roughness, wear resistance

Progress report J. B. Smith 6/20/70 bond strength

Figure 7. Experimental product index card

NiCr-Al_2O_3

composition: 80 NiCr 20 Al_2O_3

coating method: plasma plated

Reports

Dev. Note 5121 powder

Met. Eval. 45561
70801

Notebooks

6001 wear resistance

Progress report J. B. Smith 6/20/70 bond strength

Appendix

The following statements do not represent an endorsement of any or all of these products. They are manual and/or small automatic systems which were considered while devising the indexing scheme.

A variation of the edge-notched or Keysort cards with detailed instructions on how to set up a small and/or personal file is available from Indecks Company, Arlington, Vermont 05250; it is called the "Indecks Information Retrieval System."

One use of Uniterm cards is the "Scan-Match" retrieval system sold by Dataflow Systems, Inc., 7758 Wisconsin Avenue, Bethesda, Maryland 20014.

"Termatrex" is an optical coincidence system for indexing fairly small data collections. It is sold by Jonker Business Machines, Gaithersburg, Maryland.

One company has a small automated system which uses either IBM cards or 5"×8" cards. The manufacturer is ACCESS, Cincinnati, Ohio. Metal tabs affixed to the cards activate the automatic searching device.

For assistance in setting up indexes one may consult *Punched Cards, Their Application to Science and Industry,* 2nd edition, by R. J. Casey et al., New York, Reinhold, 1958. Another source is Gerald Jahoda's *Information Storage and Retrieval Systems for Individual Researchers,* New York, Wiley-Interscience, 1970.

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4. Hughson, Roy V. / How to Keep Laboratory Notebooks. *Chemical Engineering* 71: p.182, 184, 186 (Dec 7, 1964)
5. Industrial Research Institute, New York, maintains a collection of laboratory notebooks which may be consulted by its members.

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Martha J. Bailey is physics librarian, Purdue University Libraries, Lafayette, Indiana.

Preservation Microfilming

Why, What, When, Who, How

Ladd Z. Sajor

New York Public Library, Photographic Service,
Fifth Avenue and 42nd Street, New York 10018

■ Preservation of library material can take many forms. It is the librarian's task to decide which of the preservation methods to use and to select the material to be preserved. Microfilming preserves the library's holdings while creating space for new acquisitions without the need for new library construction and physical expansion. In addition, microfilming protects rare originals from excessive handling, preserves material with permanent research value and makes possible economic "demand" reprinting via positive microfilm copies or hardcopy via Xerox Copyflo. At New York Public Library, preparation and microfilming are done to standard practice instructions compiled from the best existing standards available.

AS DEFINED by Webster, "Preservation is the act of preserving or keeping in safety or security from harm, injury, decay or destruction." Therefore, preservation of library materials can take many forms such as lamination (silk or acetate sheet), restoration, deacidification, and, although not in a strict sense, reprinting. It is, however, microfilming that is most particularly suited to accommodate Webster's definition to the last word.

I would like to borrow a quote from Edwin E. Williams *(1)*: "Everything in library collections is deteriorating today, was deteriorating yesterday and will continue to deteriorate tomorrow, although we ought to retard the process!" I could not agree with him more. Like our global pollution it may already be too late, as witness the thousands of books in the collections of the New York Public Library that are literally turning into confetti. This same truth is evident in many other great libraries. The task before us is not an easy one, but preservation microfilming is the tool that can help us all in our preservation efforts.

The concept of preserving all originals has many fine merits; however, common sense dictates that the storage problem created by the printing "explosion" precludes such a luxury, except as one might consider the selection and preservation of the best examples of a particular technique of printing and binding, first editions or as artifacts, etc. It falls to the librarian, therefore, to make a considered evaluation and decision as to which of the preservation methods available to him should be used (perhaps even before the material begins to deteriorate), weighing such factors (among others) as cost, facilities at hand, condition of the material, the possibility of making hard

copies available, and, not in the least, that insidious thief, TIME.

One of the ancient Slavic gods was pictured as looking forwards, backwards and to both sides simultaneously. The preservation librarian could well be the personification of this god, as the librarian looks back at his retrospective collection to select material most urgently in need of preservation, at the same time looking to one side for a means of saving space, and to the other, toward making the material available to other scholars and libraries, and looking forward to the day when more than 90% of new material will, by necessity, be published and/or available in microform.

WHY?

Why in microform? Let us consider the following information. From the middle of the fifteenth century, when Gutenberg's Bible was the first book published with movable type, to the nineteenth century, a span of 350 years, an estimated two million books were published. Just one century later, this increased tenfold to about 20 million, and now, with this century having fewer than 30 years to go, we are already at a staggering figure of some 60 million books. Sadly, as many of us know, almost all of these last 45 million are probably on very inferior paper.

This publishing explosion is creating a very real problem for libraries—the problem of space. Preservation microfilming can come to the aid of the library, in a dual manner, by preserving its holdings, while creating space. In 1952 the idea of microfilming for the sole sake of saving space was characterized as highly debatable, but by 1960, Ralph H. Carruthers *(2)*, then Chief of Photographic Service of the Research Libraries at NYPL, recognized space saving as one of the three purposes of library microfilming. Aside from preservation, a library could conceivably gain the added advantage of expansion space, by microfilming certain "low use ratio" material.

Microfilming costs money as does the provision of space and shelving; how do these compare? In a paper by Clapp and Jordan *(3)* issued in 1963, it was estimated that it is just about possible to film material for the same cost that it would take to provide new physical space and shelving. The high cost of real estate and construction in urban areas where libraries must, perforce, be located brings emphasis to the statement. Therefore, one could expect to gain physical space for new acquisitions without new construction by converting to microform.

Average page density has been estimated at 4,500 pages per foot, which yields approximately 2½ reels of 35mm microfilm or about 75 cards of COSATI microfiche. Another way of looking at it is that an average 36″ bookshelf could contain 135,000 pages. Assuming 2 pages per 35mm microfilm frame, with approximately 1,800 frames per 100 foot reel of 35mm microfilm, and an average dimension of boxed microfilm as 1¾″ × 4″ × 4″, we can then expect to shelve 90 reels of microfilm (stacked 2 high, 5 deep with the 4″sq dimension facing out) on one shelf, or the equivalent of 324,000 pages.

In all fairness, it must be stated that miniaturization is not the sole purpose of resorting to microfilm, since it can be accomplished in other ways. Note, for example, the recent acquisition in the Rare Book Division of the Library of Congress, of a book printed in Japan, containing Lincoln's Gettysburg Address on eleven pages only 9/64″ high, slightly more than ⅛″. The stem of the letters in this "book" are ⅓ the diameter of a human hair. Super miniaturization is manifested in microforms by ultrafiche, containing up to 5,000 pages on a 4″ × 6″ fiche card. Other valid reasons for microfilming include such considerations as the protection of rare originals from excessive handling, the preservation of material having permanent research value for posterity, but being heavily used and on poor paper, and the ability to effect economical "demand" reprinting via positive microfilm copies, or hardcopy via Xerox Copyflo.

Space considerations aside, it may be asked at this time, why not reprint in hardcopy, as a preservation method, in-

stead of in microfilm? It cannot be denied that hardcopy reprinting might well be the answer for a popular, much studied classical monograph, but what would you do for long run serials or newspapers? The latter in hardcopy would be a fantastic undertaking and economically justified only if hundreds of copies were sold. Here again, microfilm is the superb medium, with more and more material being published directly, and at times exclusively, in microform. Examples include the Government Scientific and Technical reports in microfiche, and Industrial and Commercial Catalogues in other microforms.

The reader's resistance to microforms is diminishing as newer and better reading machines become available. Hardly a month goes by but that some manufacturer announces a new piece of hardware. Recently the U.S. Dept. of HEW granted $50,000 to develop a portable fiche reader, now being "user" tested in libraries around the country. An independent manufacturer is also developing a battery operated, hand held unit.

WHAT?

What should be preserved on microfilm? This, in the final analysis, must be left to the discretion of the knowledgeable curator of the material, with the guidance of a trained preservation coordinator or specialist. Every kind of printed matter or illustration can, of course, be preserved on microfilm, which is not necessarily true of other preservation methods. It is admitted that photographs, halftones and beautiful illuminations suffer in the transition to microfilm, but technology is making rapid strides to overcome this shortcoming, as witness color microfiche used in the medical profession and advertising. It goes without saying that, all things being equal, if the material was originally worth adding to the collection it should be deemed a candidate for preservation, especially if it is now beginning to deteriorate. Material not available elsewhere should be also microfilmed so as to become readily available to others.

In evaluating what should be microfilmed, the preservation librarian should not fail to determine if the title has not previously been filmed by others by consulting the National Register of Microfilm Masters and like publications. Conversely, it is his duty to register the titles that his library is filming. To expand on this further, Herbert Bouscher, chief of the Photographic Service of NYPL proposes one other very valuable idea—to create a "National (or International) Clearing-House of Microform Titles," to which the prospective filmer of a title would apply to determine if anyone else is intending or has started to film a particular title, and if not, to file his intention to film as a guide to others. This would save duplication of effort, and, of course, something important to most libraries—*funds*. The National Register of Microfilm Masters, as valuable as it is, is "after the fact."

WHEN?

When should preservation microfilming be done? That question has many answers, all depending on who is asked.

Ideally, the time to microfilm is before the condition of the material is at a point that would seriously affect the quality of the microform. This is not always possible, as the availability of funds for preservation usually limits the number of items that may be filmed in any fiscal year. The choice, then, must fall to those items that are in the greatest danger of literally "disappearing." Priorities enter the question and such considerations as how long will the existing copy last, what is the demand for the title, etc. will determine "when."

The Research Libraries of the New York Public Library have instituted a policy that partially answers "when," somewhat automatically. The policy calls for the retention of the master camera negative by the library whenever a request for a copy of a complete work or substantial part of a long title is filled. This assures the library a preservation microfilm copy and, at the same time, obviates the necessity of subjecting the

material to further handling in the event of future microcopy requests. Copies of copyright material are made only with written consent of the copyright holder, which must be obtained by the party requesting the microform. The Research Libraries of the New York Public Library have designated a very high priority in their preservation program for Gazettes, in keeping with their commitments to the Official Gazettes Program.

At this point, I would like to go on record as suggesting the following:

> *That, as a condition to the granting of a Copyright there shall be deposited with the Library of Congress, in addition to the traditional copy, a master camera negative in microform processed to archival standards or the equivalent, should future technology bring forth improved micro storage forms.*

In this manner we would have preservation insurance via a microform made when the original material is in mint condition. I suspect that this suggestion will be self inaugurating by those publishers who are, or will be, publishing exclusively in microform. (Since the original presentation of this paper, the U.S. Government Printing Office has announced "printing" in microform.)

WHO?

Who should do preservation microfilming? It would be unrealistic to expect every library to do its own microfilming. Not every library has enough material to justify a microfilming installation which requires, at the minimum, the following staff and equipment: 1) The time of a qualified staff member to set up a unified, "standard practice" oriented and coordinated program, necessary to prepare the material for the camera; 2) A microfilm camera and an operator; 3) Someone with the technical know-how and the tools to inspect the finished microfilm; 4) Provision for the clerical tasks of cataloging and reporting; 5) The physical storage of the master camera negative film in an area having proper environment and security controls.

Therefore, it is the large libraries, with the cooperation of the others that would be the logical candidates for the undertaking. They are most likely to have the staff and facilities, and be organizationally structured to provide the service.

Preservation microfilming programs call for the traditional cooperation between institutions and libraries, especially in the provision of material to fill in those issues or pages that may be missing or badly mutilated in a series, volume or set. Cooperative microfilm projects have indeed contributed to the store of knowledge in microform. Every library with a unique copy of a scholarly or useful work has a duty, within its professional trust, to see to the preservation of the original and, in addition, toward making it available to the scholar or researcher. By having it microfilmed, it can share its academic worth and yet retain its treasure.

Every bit as important as cooperation is the problem of funds for preservation microfilming. So many other factors in the operation of the library have priority in the demand on available funds that preservation microfilming is too often at the bottom of the list.

As an example, it has been estimated that a reasonable budget for preservation microfilming at a research library of the magnitude of the New York Public Library could be set at a quarter of a million dollars per year. However, due to NYPL's financial position, only a small portion of that amount was able to be appropriated for preservation microfilming in the last several years.

The commercial microfilming firms who "publish in microform" must be included among the "who." All in their way assist in the program of preservation via microfilming.

HOW?

The how of microfilming has not changed basically in the last 20 or more years, but technical improvements have been made and shall continue to make

the task more efficient and the result more reader-acceptable, and archivally permanent. In the future, preservation in microform may take on such new, exotic forms as Halography and other photo-optical and electronic techniques using the Lasar, etc.

From the technical side, the "how" of preservation microfilming is covered in "Specifications for Library of Congress Microfilming" *(4)* (now in process of being revised and updated), and the ALA's Resources and Technical Services Division's "Microfilm Norms" *(5)*. These pamphlets would be basic for those libraries considering initiating microfilming programs.

Preservation microfilming at the New York Public Library is initiated by the Preservation Representative of each of the specific and general collection divisions of the Research Library. Where microfiche is concerned, the decision is partially dictated by size, number of pages (1,800 pages or less), and whether or not the material contains plates, maps or other oversized pages.

Let us now go "backstage" in the production of microfilm at NYPL. First, we shall start at the desk of the Preservation Co-Ordinator, where a deteriorating book, one of thousands on the shelves, has been brought to her attention. Usually a particular title's demand, in addition to its condition, has singled it out for immediate preservation. A Carrier Sheet, having been prepared, is next approved by the Division Chief, and then sent with the book(s) to the Photographic Service for action. The Microfilm Section of the Photographic Service, upon receipt of the Carrier Sheet, pulls the shelf cards and assembles the material in the Microfilm–Preparation Sub-Section where collation is started.

All preparation and filming is done to NYPL Standard Practice Instructions, which have been compiled from the best existing standards available. If the original material is to be discarded after filming, the next step is cutting the spine and removing the cover (in preparation to guillotining, which makes the job of filming easier). Eye legible bibliographic and information targets are made, and a master negative file card and other bibliographic information are prepared. The reduction ratio is also determined at this point. The reduction ratio at NYPL has been standardized for most material, between 12:1 and 14:1, and for newspapers, 18:1 ratio is used, although we have had to go higher to accommodate some old, oversized newspapers. Microfiche filming is at the COSATI 20:1 ratio.

After preparation is completed, the material is sent to the photo lab with markings and an instruction sheet to guide the microfilming operator. A camera and operator are assigned to the title, and after the operator has determined and adjusted the required light settings, reduction ratio, and position, filming commences.

If the material is rare and/or still usable in the original, and only insurance preservation filming is to be done, the volume is not cut during preparation. For such material an oscillating book cradle is used during filming to provide maximum protection to the material while maintaining facility of operation (Figure 1). For microfiche, a specially adapted 16mm camera is used for filming to COSATI specifications. The film is then converted to microfiche, on a GAF film to fiche printer, thereby preserving the 16mm film intact. This procedure has at least two advantages: 1) we have film (or title) integrity, since the film remains intact on a 16mm reel, and 2) we can get hardcopy via Copyflo of complete titles as required. Except for individual page printout via reader/printer, hardcopy from a fiche card at the present state of the art is not economically practical. Other methods of producing microfiche are the NB Jacket System and the step and repeat camera. The latter method films the material directly to a fiche format. The step and repeat camera is less costly, production wise, since it produces fiche directly, but the initial investment is very high, and hardcopy via "Copyflo" is not available.

The camera negative is then processed to archival specifications and the finished film is inspected by the Quality Control

& Inspection Group, which also checks the density of the negative and other parameters. A positive microfilm copy for public use is then printed and processed. Both silver and visicular film are used for reader's copy. The entire work is then returned to the microform preparation section of the Photographic Service for the completion of records and the distribution of the film. The master negative is transferred to the vault which is temperature and humidity controlled, the positive copy is made available for public use, and the original material is sent to the Preservation Coordinator who arranges for the catalogers to perform their function before it is reshelved or discarded.

For a simple monograph of about 500 pages, the entire process by the Photographic Service can usually be completed in about four days. Long runs or items with special difficulties take proportionately longer. Thus, the cycle is complete. The material has left the shelf as a book in printed form and returned reincarnated in microform.

Historically, microfilming at NYPL began in the early thirties, with a Leica camera and later with a Ludwig-Ott camera, shown, compared with a modern microfilm camera in Figure 2. In 1937 a Carnegie Grant to 1) test reader acceptance of microfilm, 2) study problems involved in microfilm, 3) study the performance of the then available cameras, 4) experiment with the retention of master negatives, and 5) experiment with high reduction ratios on 16mm film was received by NYPL. At about this same time NYPL was also the scene of field tests on wooden prototypes of the Recordak model *A* and *B* Readers. By 1938, microfilming had increased eightfold, and in 1945, the Photographic Service became a full division. Two years later, it was transferred to the newly created Business Office and was placed on a "nonprofit, self-sustaining basis." In 1951 the Microfilm Section of the Photographic Service was enlarged. By 1959, microfilming accounted for one-third of the activity of the Photographic Service. In 1966, microfiche was introduced, and the present capability of some 2.5 to 3 million frames of master negative microfilm per year was realized. However, as mentioned earlier, with budget restrictions only about half of this capability is being utilized at present.

In recapitulation, consideration of the vast number of deteriorating books makes it most important to use microfilm, the most effective tool for preserva-

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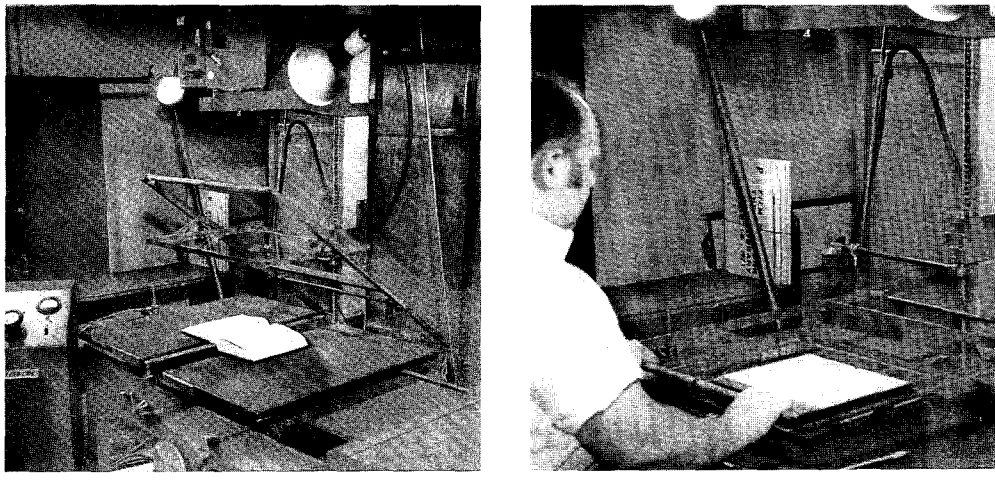
Figure 1. An oscillating book cradle is used when microfilming uncut volumes.



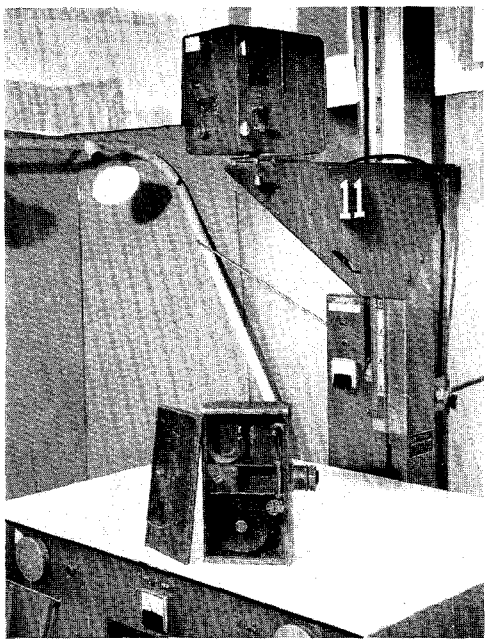


Figure 2. A modern microfilm camera compared with a Ludwig-Ott camera.

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tion to secure the knowledge and information contained therein. Microfilming is the most effective from the standpoints of fidelity, durability, and economy of funds and space. Additionally, cooperation among libraries and other concerned parties must be in concert with the problems of funds, and the ability to furnish a product with acceptable bibliographic and technical standards.

A valuable reference is "Bibliography on Preservation," in the *Library Quarterly* 40 (no.1): (Jan 1970), published by the Graduate Library School of the University of Chicago.

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Received for review May 17, 1971. Revised manuscript accepted for publication Feb 29, 1972. Presented at the New York Library Association's conference on preservation, during NYLA's annual conference Nov 12, 1970.

Ladd Z. Sajor is assistant chief, Photographic Service, New York Public Library, New York City.

This Works For Us

Blowbacks from Microcards? Here's A Way

GETTING HIGH QUALITY blowbacks from the old opaque microcards issued by Defense Documentation Center and the Atomic Energy Commission is like putting toothpaste back in the tube. Technically it is possible, but practically it is seldom done.

After numerous requests for hard copies of reports that existed only on microcards, we decided there had to be an easy way. There is. The trick is to make a microfiche from the microcard. Copy is then easily produced on any standard reader-printer.

We make the fiche by placing the emulsion side of a piece of Kalvar film against the "picture" side of the microcard and exposing it in a mercury-vapor-lighted vacuum frame—through the back of the microcard. When developed, the Kalvar film gives the usual negative-mode fiche from the positive microcard. Resolution is good, and classification markings (sometimes stamped on the backs of the microcards) don't reduce copy quality as much as one might suspect.

Exposure time varies between 11 and 15 minutes, compared with the 10 seconds normally required for fiche duplication. So far we have seen no deterioration of either the equipment or the microcards from the longer exposures.

William T. Ryan*
University of California
Lawrence Radiation Laboratory
P.O. Box 808
Livermore, California 94550

* Work performed under the auspices of the U.S. Atomic Energy Commission.

Subject-Term Index as Announcement Medium

EDWIN YORK'S ARTICLE [*Special Libraries* 61 (no.8): p.441–444 (Oct 1970)] prompted us to use the technique as announcement media for government research reports. The bulletin board is our communications vehicle, and we have modified the entries accordingly. A section of the index appears as in Fig. 1. It is a subject-term index rather than a KWOC index. Secondly, we have used author entry as the link to more complete information in the card catalog. As our reports are shelved according to the publishing agency, it also serves as a location guide. Accession numbers could be used directly in lieu of author entry, if so desired.

In an average week, we announce 24 items. Our clientele has found this service useful for its timeliness and shortening the availability route for the publications which often are the first source of formally announced new information in the field.

S. Shukla
State University of New York
College of Ceramics at
Alfred University
Alfred, N.Y. 14802

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GAMMA IRRADIATION	*Absorption centers* forming at low temperature in certain glasses of simple composition.	Orlov, N. F.
GLASS	*Fundamentals* of massive glass as a naval structural material.	U. S. National Research Council
GLASS	Nucleation phenomenon in glass-ceramic materials.	Neilson, George F.

Figure 1

Virginia Is for SLA

"Virginia Is for Lovers" was the ubiquitous pronouncement that greeted SLA members as they arrived in Richmond, Virginia, in early February for the 1972 SLA Winter Meeting of the Board and Advisory Council. The city felt the effects of its location on a hill overlooking the James River, and visitors were well advised to avoid the startling 10°–20° gusty temperatures. The frigid temperatures were more than offset by the warm welcome extended particularly by members of the Virginia Chapter. Virginia Governor Linwood Holton issued a proclamation announcing "Special Libraries Week"; a huge poster that had been carefully attached to the bus transporting guests to the opening reception announced "Virginia Is for Lovers of Special Librarians."

While the SLA Board of Directors sat in ponderous deliberation on Wednesday evening, Feb 2, other attendees were whisked by the poster-adorned bus to a delightful reception at the Valentine Museum as guests of the Virginia Chapter. The historic museum, now maintained as a typical Richmond residence of the 19th century, was charming bathed in candlelight. While sipping two kinds of punch and nibbling tasty delicacies, one could wander at will throughout the rooms. The warm interior contrasted effectively with the snow-laden gardens visible through full glass doors.

Thursday and Friday were, of course, devoted to Board of Director morning meetings and Advisory Council afternoon sessions. Several Committees were also able to hold working Committee meetings. Chapter and Division Officers dinner meetings provided still another opportunity for discussion.

Colonial Williamsburg musicians provided an 18th century musicale for feasters at the Groaning Board—Friday evening's dinner with the Virginia Chapter. The festivities began with the sight of bewigged colonial dames and gentlemen (SLA Virginia Chapter members) mingling with the commonfolk (the rest of us). A dinner bell and fife and drumming troubadours led the hungry in for feasting. After all had supped, the musicale began. Charles Harden, Master of the Music Craft program at Colonial Williamsburg, exhibited his expertise with vari-

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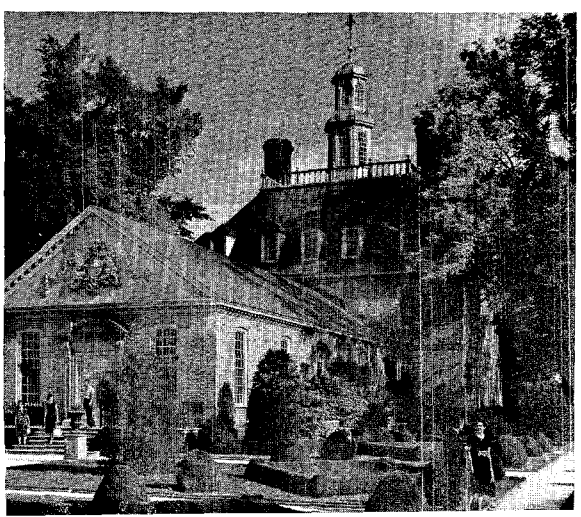
The Governor's Palace at nearby Williamsburg.

Colonial Williamsburg Photograph.



Virginia State Capitol, at Richmond, designed by Thomas Jefferson after the Maison Carrée, at Nimes, France.

Virginia Department of Conservation and Economic Development.

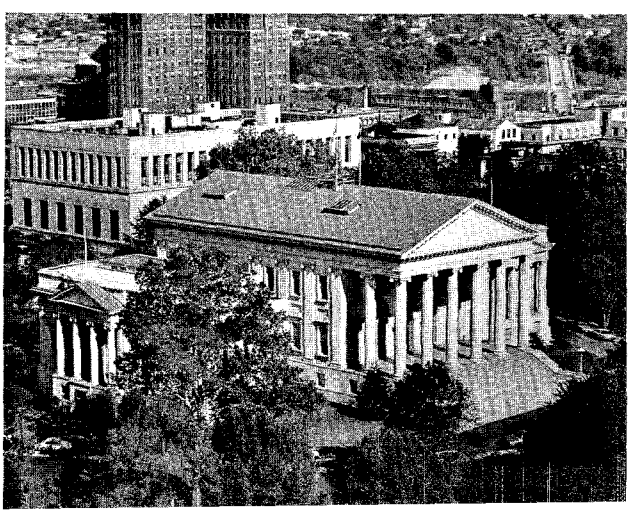


Photo by Dee

Equestrian Statue of George Washington.

* *

ous sizes of recorders, German flute, harpsichord and pipe and tabor. John Barrows performed on the krumhorn, recorder, German flute, and clarinet. Taylor Vrooman serenaded the assemblage with 18th century ballads, accompanying himself on the lute. And to stir the audience, a fife and drummer from the Colonial Williamsburg Fife and Drum Corps provided an exciting variation.

Saturday morning, alas, required a return to reality with continued Board meetings, interrupted at mid-day by a joint lunch meeting with the Virginia and North Carolina chapters.

Had anyone the time, energy or willingness to brave the elements, he would have discovered a delightful city steeped in history. Visited early in the 1600's by Captain John Smith and his adventuresome companions, incorporated as a town in 1742, and designated the capital of Virginia in 1779, the city was burned in 1865 by its inhabitants as they fled the Northern Army in the War Between the States. Fortunately, much remains of the original city, now grown to a population of nearly 500,000.

The Capitol is, of course, the most outstanding sight, designed by Thomas Jefferson after the Maison Carrée at Nimes, France. This lovely setting is inhabited in part by some audacious pigeons, squirrels and chipmunks. St. John's Church was the site of Patrick Henry's famous speech; the Confederate Museum was the White House of the Confederacy; ladies of the Association for the Preservation of Virginia Antiquities (its present owner) hold tours through Chief Justice John Marshall's House (Chief Justice of the U.S. Supreme Court 1801–1835), which he himself designed; the oldest house in Richmond, built in 1686, is now the Edgar Allan Poe Museum; General Robert E. Lee's home is now the home of the Virginia Historical Society. And much more.

A special treat was the opportunity to dine in a unique Coast Guard boat (afloat since 1880) turned waterfront restaurant, ingenuously dubbed "Pleasure Island Seafood." Anchored in the James River under the railroad tracks at 17th and Dock Sts., the meal of succulent, plump fresh oysters on the half-shell, savory crab sauté, and home-cooked hush puppies was indeed delectable.

And, of course, Richmond is only a short trip from so much of Virginia lore, including Williamsburg, the Colonial Capital, and many Civil War sites.

But the week did end, and we flew home from the new Richmond airport terminal leaving our gracious hosts to the reconstruction of their work week. Appreciation must be extended to the tireless Local Arrangements Committee: Coordinator, Mildred Mason; Virginia Chapter president, Mary Dunnigan; president-elect, Richard Miller; decorations, Bette Dillehay; entertainment, Didi Pancake; food service, Ann Flanagan; hospitality, Katherine Smith; housing, Marion Hart, meeting rooms, Paul Malkus; publicity, Ruth Eggleston; registration, Charleen Gordon. The SLA Board of Directors and Advisory Council are indeed grateful for the generous support of the sponsors: Brownson Equipment Co.; Financial Weekly (Media General); Philip Morris, USA; Reynolds Metals Co.; Richmond Hotels, Inc.; A. H. Robins Co.; Joseph Ruzicka, Inc.; Sjöstrom USA; United Virginia Bankshares; Virginia Metal Products; William Byrd Press.

Actions of the Board and Council Feb 3–5, 1972

The SLA Board of Directors and Advisory Council held their Winter Meetings Feb 3–5, 1972, at the John Marshall Hotel, Richmond, Virginia.

As they did in the fall, Board members assembled Wednesday evening, Feb 2, to hold a free-form discussion session concerning major goals and priorities of the Association. The report of that session indicated concentrated interest in acquiring additional income for the Association. In order of priority, the methods by which to accomplish this were determined to be: 1) increased membership, 2) meetings, conferences, institutes, and 3) publications.

Chapter and Division Finances—The Board abolished the existing rule that to qualify for the annual allotment, a Chapter or Division's Current Operating Fund must not exceed 3× the allotment and the Reserve Fund must not exceed 2× the allotment. The action is effective immediately with the 1972 allotments.

Related to this action, the Board accepted the CLO's recommendation that Chapter and Division subunit monies be reported separately from the parent Chapter or Division. Separately, Chapter officers and Division officers suggested some means of pooling project funds so money might be available for loan to less wealthy units to undertake projects. The Finance Committee and the CLO and DLO will explore the concept of a voluntary pool and will report to the Board in June.

Guidelines for Association Property—A statement "Guidelines for Association Property" was adopted by the Board. The guidelines apply to property acquired by Association units having a purchase value exceeding the unit's available or budgeted funds or exceeding $1,000. The statement will be published in *Special Libraries.*

ALA Committee on Accreditation—SLA has been concerned with library school accreditation, particularly in regard to the appearance of special librarianship courses within the curricula of such schools. ALA invited SLA to appear at its open hearings on the Tentative Draft of *Revised Standards for Accreditation* in January to comment. SLA President Gonzalez presented a statement at the hearings. President Gonzalez, President-Elect Edward Strable and Executive Director Frank McKenna also met for informal discussions with the ALA Committee. The SLA representatives basically reiterated their position that special librarianship must be integrated fully within library school curricula. As a result of these discussions, the Board accepted a recommendation that the Education Committee develop a list of SLA members able and competent to serve on visiting teams of the ALA Committee on Accreditation for forwarding to the chairman of the COA at the earliest possible time. The Education Committee was also charged with studying the suggestions that arose from the discussions and developing methods of implementation.

Special Committee on Association Structure—Aphrodite Mamoulides, chairman of the Committee, presented a report detailing six recommendations and eight suggestions, most of which dealt with procedure. The Committee had been studying the structure of the Association since it was formed in June 1969.

The Committee's preliminary suggestions regarding dividing the Advisory Council into two separate councils were approved in a straw vote of the Advisory Council at Midwinter 1971. [See *Special Libraries* 62 (no.3): p.153–157 (Mar 1971) for the Committee's full report.]

The new recommendations were that the Advisory Council be redefined to consist of Chapter Presidents and Presidents-Elect only, and that a representative group of recent past Division officers be impaneled to investigate how best Divisions can serve the Association and vice versa. At the Advisory Council meeting, a motion was made that the Advisory Council go on record as opposing these recommendations. After discussion, the motion was withdrawn with the provision that it be further discussed by the Advisory Council at the Boston Conference.

Membership Drive—The 1972 Membership drive is underway, with the goal of reaching a *net* gain of 400 Members and Associate Members and a *net* gain of 31 Sustaining Members. Chapters particularly are urged to actively seek new Members, Associate Members, and Sustaining Members.

Membership Committee—The Board accepted the Committee's recommendations regarding membership awards. Awards will be presented at the Banquet during the 1972 Annual Conference for (a) the Chapter with the greatest number of new Members and Associate Members in 1971; (b) the Chapter with the greatest number of new Student Members in 1971; (c) the Chapter with the greatest number of new Sustaining Members in 1971. To be announced at the banquet are the Chapters with significant numbers of new members in the same categories thus far in the 1972 campaign. At each Conference will be presented the Chapter Growth Award for the Chapter with the greatest percentage growth in membership. As an incentive, the Association will return to the Chapter $10.00 of the dues received from any new Sustaining Member the Chapter recruits.

Student Groups—Petitions from new Student Groups were approved. These are at St. John's University, Jamaica, N.Y.; University of Oregon, Eugene; University of Illinois at Urbana–Champaign; SUNY/Albany; and North Texas State University, Denton. Together with the Group at Simmons College, Boston, Mass., this brings to six the total number of SLA Student Groups established. Approval includes a contribution of $25.00 from the Association to aid in the Group's establishment. A forthcoming issue of *Special Libraries* will list the Groups that have been formed along with the student and faculty representatives.

The Board approved the Student Relations Officer's recommendation that Chapter support of student memberships be discontinued after this year except for exceptional individual cases. This practice had previously caused delay and ill feelings. A motion to consider holding a meeting for faculty and student representatives at the Boston Conference was also approved.

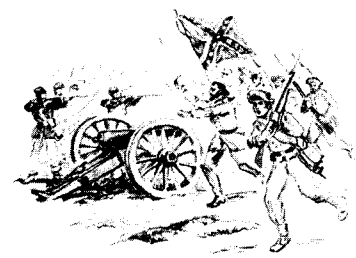
Student Member Dues—The Board approved a motion clarifying Student dues for partial years. A Student Member on graduation can now continue to the end of the membership year in that category without additional payment of dues. The Board also approved a motion permitting Student Members who go directly from school to the armed forces to continue as Student Members for a maximum of two years.

1973 Conference—SLA's 64th Annual Conference will be held Jun 10–14, 1973, at the Pittsburgh Hilton, Pittsburgh, Pa. Dr. Robert E. Fidoten is Conference Chairman. Dr. Virginia Sternberg, Conference Program Chairman, presented the proposed theme for the Conference as "Wide-Angle View of the Future." Incorporated in the theme will be expectations, planning, and adapting for the future. The Board approved the theme.

Future Conferences—The Board accepted the invitation from the South Atlantic Chapter to hold the 1978 SLA Annual Conference in Atlanta. It will be the first week of June.

The Board accepted the Florida Chapter's invitation to hold the 1975 Winter Meeting in Fort Lauderdale.

IBY 1972—The Board approved a motion supporting the activities of International Book Year 1972 and urged SLA members to support IBY programs. More information appeared in *Special Libraries* 63 (no.1): p.41 (Jan 1972). The U.S. Secretariat for IBY is at One Park Ave., N.Y. 10016.



SLA Salary Survey—Since SLA Salary Surveys had been taken in 1959, 1967 and 1970, the question of whether a survey should be undertaken in 1973 was referred to the Advisory Council. Advisory Council discussion resulted in a resolution that such a survey be taken every three years.

Planning Committee—When Association goals were established in 1969, Goal #6, "The Association should have a policy-making role and implement means for participating in information networks" was assigned to the Documentation Division. Since then, Documentation Division chairmen have encountered difficulty in determining just how to carry out the goal. It is also evident that networks are now an integral part of special librarianship and therefore the goal is unnecessary. The Board accepted the Commit-

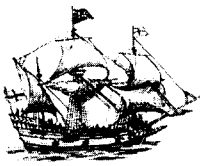
tee's recommendation to drop Goal #6. Alleen Thompson, chairman of the Planning Committee, indicated that the Committee will now seek new directions for the Association to follow.

Special Representative to ASIS—Ellis Mount, SLA Special Representative to ASIS, reported on the results of a questionnaire he had sent to Chapter and Division officers. The Board approved his recommendation that his survey be sent to Chapter and Division officers with his list of recommendations of useful activities that have resulted from the survey. Mr. Mount announced that part of his charge is to work with his counterpart at ASIS. Mrs. Margaret T. Fischer has recently been appointed ASIS Liaison Representative to SLA.

Intersociety Cooperation—The Board converted the previously abolished Special Committee for Cooperation with Related Associations to a Standing Committee. The Advisory Council adopted as a resolution a suggested definition.

The Board authorized the President to appoint special representatives to Music Library Association and American Association of Law Libraries.

Research Committee—Business details have been concluded concerning the three state-of-the-art reviews to be undertaken in FY1972 by ERIC/CLIS. The Board had approved the proposal and budget for such a project in October. Each review will cost SLA $450. The three reviews will be on the topics: 1)



the changing role of special libraries; 2) continuing education needs of special librarians; and 3) the emerging role of the para-professional in special librarianship.

Music Library Association Fire—In November, fire gutted the building in which Music Library Association headquarters are located. All their office equipment, furniture, supplies, and publications other than *NOTES* are a total loss. The SLA Board authorized a contribution of $50 to assist in salvage and restoration of Music Library Association's business office in a motion expressing its regrets for the losses suffered by Music Library Association.

Archives Committee—The Board had referred the question of continuance of the Archives Committee to the Headquarters Operations Committee for study. It has been determined that since a full-time staff member is to assume the tasks of the Committee, the Archives Committee could be dissolved. The Board approved that recommendation.

National Information Users (Federation?)

To explore the possibilities of forming a national network of technical information user groups which would enable acting in unison to attack obstacles inhibiting the free flow of scientific and technical information, a Colloquium was held Mar 22–23, 1972, at the Florida Institute of Technology, Melbourne, Florida. The program called for a workshop among more than 50 people from the regional information user groups representing over 600 organizations.

Some 78 regional user groups have been identified. For those who were unable to attend the Florida meeting and for others interested in forming user groups to look into government information sources in general, a pre-conference meeting will be held on Sunday, Jun 4, 1:30–3:30 p.m., during the SLA Annual Conference at the Conference hotel in Boston. The results of the FIT Colloquium will be presented and plans for the future discussed.

(Mrs.) Ruth S. Smith
Chairman
Government Information Services Committee

SLA Hall of Fame/1972

President Efren Gonzalez has announced the election of one member to the SLA Hall of Fame in 1972 who has made outstanding contributions to the growth and development of Special Libraries Association at the Association, Chapter and Division levels.

Janet Bogardus

For the standards she established in her uncompromising pursuit of excellence and in appreciation of the example she provided as an administrator, teacher and consultant, SLA presents Janet Bogardus with the 1972 Hall of Fame Award.

Born in Lincoln, Illinois, and brought up in Texas, Janet Bogardus received her AB from Southern Methodist University and then traveled East to earn her BS at Columbia University's School of Library Service.

A librarian since 1931, Janet was with the New York Public Library for several years before joining the staff of the Seligman Library of Economics at Columbia. In 1943, she joined the WAVES as an Ensign. After her discharge in 1945, she returned to Columbia to become librarian of the Graduate School of Business Library. However, she remained in the WAVE Reserves until 1963, retiring with the rank of Lt. Commander. Janet was Chief Librarian of the Federal Reserve Bank of New York from 1954 until her retirement in 1969.

In addition to her duties at the "Fed," she was an Associate Instructor at the Columbia University School of Library Service from 1956 to 1966, a John Cotton Dana Lecturer in 1966 and, more recently, a lecturer at the Workshop of Financial Sources sponsored by the Business & Finance Groups of the New York Chapter.

Janet actively contributed to SLA for many years. Under her chairmanship in 1954, the Committee on Publications compiled "Subject Headings for Financial Libraries." 1956/57 found her as Chairman of the Finance Division; 1957/59 a member of the Committee on Committees; 1959/60 chairman of the John Cotton Dana Lecturers. From 1960/62, she was chairman of the Personnel Survey. Indeed, many of her ideas and suggestions were incorporated into SLA's present salary surveys. From 1962/64, she was chairman of the Special Committee for the International Management Congress and she was a member of Headquarters Operations in 1965/66. Chairman of the Finance Committee from 1964/66, she remained a member of the Committee until 1967.

The "Fed" Research Library, with its extensive collection, strong staff, and standards of excellence, has been emulated by organizations here and abroad. In 1961 Miss Bogardus established the Research Library at the Central Bank of Nigeria. Paris beckoned in 1963 and Janet was asked to plan the library of the Development Center for the Organization for Economic Cooperation and Development. In 1964 she worked with the United Nations Economic Commission for Africa, in Addis Ababa, Ethiopia, to determine ways and means to expand its library facilities throughout Africa.

In her varied, occasionally glamorous career, countless individuals and organizations sought Janet's guidance and advice and benefited by her experience. Her influence and adherence to the highest professional standards have enriched the library profession and the Special Libraries Association.

SLA and the National Commission on Libraries and Information Science

On 10 Dec 1971, SLA President Efren Gonzalez presented testimony before the recently appointed National Commission on Libraries and Information Science. Joining him were Past President Florine Oltman and Treasurer Janet Rigney

A position paper explaining special librarianship and SLA in connection with special librarianship had been previously mailed to members of the Commission along with several brochures and publications.

At the end of the report, several current Association concerns were listed for the guidance of the Commission.

"Library schools—Curricula content needs to be strengthened to take greater advantage of the body of literature and experience about special librarianship—not necessarily as a separate course, but as an integral part of the overall course of instruction. The increased use of working special librarians as part-time and visiting lecturers would be, in our opinion, helpful toward this end.

"Continuing education—There is a growing desire for local and regional seminars or tutorials by people of recognized expertise using presentations of proven quality. Means to organize and finance these programs must be explored within SLA and in conjunction with other associations, library schools and sponsoring agencies.

"Research—Areas of opportunity need to be identified and encouragement given to research in areas of particular need for special librarianship. Projects in cooperation with other associations [or with] library schools, as well as direct grants-in-aid to researchers should be considered.

"Information networks—Participation in networks by special libraries needs much more examination. Special librarians must play more of a policy-making role in developing the various metropolitan and regional networks whose resources, effectiveness and funding are becoming more and more complex.

"Manpower—Projections are needed to determine the nature and level of recruitment efforts for special librarianship. Estimates by location, industry and education levels will be required and special attention given to the emerging category of 'library technician.' "

Finally, several questions expected to be useful for mutual understanding and cooperation were posed. Dr. Burkhardt, chairman of the Commission, answered these. SLA's questions and Dr. Burkhardt's answers follow:

1. *Will there be a statement of specific objectives for Commission activities?*
   For the present, none other than those stated at the time the Commission was signed into law.
2. *Will these Commission activities be operational or advisory?*
   Very definitely the Commission intends to be an advisory body.
3. *What is the best means of communication between the Commission and SLA?*
   No formal mechanism seems desirable because one of the Commissioners and the Commission's Executive Director are members of SLA and would provide informal lines of communication.
4. *Should there be a regular report of SLA activities to the Commission?*
   They would be happy to be put on our mailing list; the activities of any committees which handle our areas of concern could be brought to the Commission's attention as appropriate.
5. *Should SLA develop specific recommendations for consideration by the Commission?*
   By all means. The Commission would be anxious to hear such recommendations.
6. *Will the Commission consider a project assignment to SLA?*
   It is too early to tell but if SLA was the best organization to do certain work, the Commission would attempt to arrange such an assignment.

It was agreed that this effort was purely an introduction for orientation of the Commissioners, and that SLA would be available in the future for more testimony on specific problems.

In Memoriam

Eleanor M. Tafel

It is with deep regret that we report that Eleanor M. Tafel, special librarian for many years, died on October 8, 1971, after a short illness. A native Philadelphian, Eleanor was graduated from Beaver College and then secured her degree in library science from the Drexel Institute of Technology.

Her first position upon leaving library school was at the DuPont Company in Wilmington, Del., but thereafter her career was spent in the city which claimed her personal interest—Philadelphia. Always as a special librarian, Eleanor spent several years at the Frankford Arsenal and Naval Shipyard libraries, and then accepted the position of librarian at the Curtis Publishing Company. Here she was in charge of the company's home office general library as well as the libraries in a number of the company's far flung branch offices. An unfortunate victim of the Curtis Publishing retrenchment, Eleanor then accepted a position in the Business, Science & Industry section of the Free Library of Philadelphia. In fact, with the exception of a short stint at the Fels Institute of Local and State Government (University of Pennsylvania), the remaining years of her career were spent at the Free Library where she served in various capacities until the time of her death.

It was while Eleanor was at the Curtis Publishing Company that she served as Vice Chairman and then Chairman of the SLA Publishing Division (1960/61, 1961/62). She was continuously active in the Special Libraries Council of Philadelphia and Vicinity, having at various times served as its Bulletin Editor, Vice President and President, as well as participating on a variety of chapter committees.

Eleanor's interests and energy were never limited to the institution which paid her salary. She held memberships and was active in a host of Philadelphia cultural institutions, among them the Philadelphia Museum of Art, the Natural Academy of Sciences, and the Pennsylvania Horticultural Society. She never tired of traveling, her last trip having been to Australia in 1971 together with a group of special librarians. She truly loved sailboating, an activity begun as a girl off the Maine Coast where she spent her summers. Most of all, she showed a deep interest in anything which affected Philadelphia.

Anyone whose life was touched by her human warmth, quiet generosity and kindliness will feel the void created by her death. Her many friends have lost a good companion and loyal friend; the library profession has lost a fine librarian. We cherish her memory and mourn her departure.

A memorial fund honoring Eleanor M. Tafel has been established at The Academy of Natural Sciences, Philadelphia, Pennsylvania, to aid in the restoration of some of the old and very precious volumes. The Academy owns about 700 pre-Linnean imprints, that is, volumes published before the period 1735–50. The only care these volumes have had was oiling of bindings and reinforcement of joints on a WPA Project in the 1930's. After this restoration a special book plate would be placed in each restored volume. Contributions toward this fund may be sent to Mr. Norman Morphet, Special Libraries Council of Philadelphia, Treasurer, Sun Oil Company, Technical Information Service, Marcus Hook, Pennsylvania 19061.

We have been advised by the attorneys of Eleanor Tafel's estate that the Special Libraries Association Scholarship Fund is to receive, as a bequest, 25% of her residuary estate.

vistas

Music Library Association Checklist

The Music Library Association is planning a third edition of *A Checklist of Music Bibliographies (In Progress and Unpublished)*, which has appeared as publication no.3 in the *MLA Index Series*. The first two editions have met with much success in their attempts to lessen duplication of individual efforts, encourage cooperation among music bibliographers, and establish bibliographic control over bibliographic activities. MLA would like to continue to include the work of other music bibliographers, librarians, and musicologists in the new edition of the *Checklist*. If you have works which should be included in this *Checklist*, or any additional questions about the project, please contact the editor, (Miss) Linda Solow, Music Section, Descriptive Cataloging Division, Library of Congress, Washington, D.C. 20540, as soon as possible.

Report on the 1970 Census

Results from the 1970 Census of Population and Housing have been flowing from the Census Bureau in a steady stream. Most of the data in reports and on tapes are summary data, that is, tabulations or counts of individuals, families, and housing units in specified areas according to various characteristics.

If large quantities of data or greater detail are needed, the use of summary census data on computer tape should be considered. Census summary tapes present much more data for a greater number of geographic areas than it is feasible to include in printed reports.

Persons who are interested only in obtaining census printed reports may request order forms from the Publications Distribution Section, Bureau of the Census, Washington, D.C. 20233. To obtain both report order forms and additional information on computer tapes and other Bureau products and services, write to the Data Access and Use Laboratory, Bureau of the Census, Washington, D.C. 20233.

U.S. Department of Commerce to Hold Computer Exhibitions in Stockholm, London and Frankfurt

The Office of International Trade Promotion in the Department of Commerce recently announced three international computer exhibitions have been scheduled in Europe for U.S. producers.

"EDP IV" will be held at the U.S. Trade Center for Scandinavia, Sep 18–23, 1972, Stockholm, Sweden.

There will be a U.S. Exhibition at "COMPUTER '72" for computers and accessories at the Olympia Exhibition Hall, Dec 4–8, 1972, London, England.

"MINICOMPUTERS AND PERIPHERALS" will be featured at the U.S. Trade Center, Feb 12–16, 1973 in Frankfurt, Germany.

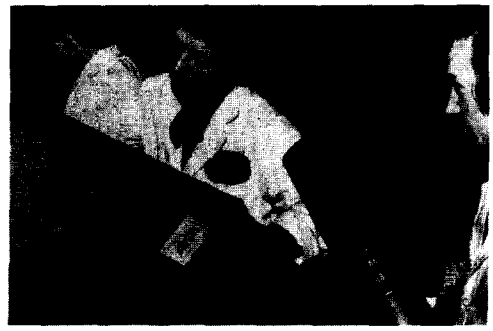
The U.S. Department of Commerce organizes such trade exhibitions abroad to assist U.S. manufacturers in increasing their export sales. Further details on the nature and scope of these markets for U.S. made computers and related equipment may be obtained from Mr. C. E. Walls, Project Officer, Northern Europe; Office of International Trade Promotion, BIC-946; U.S. Department of Commerce, Washington, D.C. 20230 or telephone (202) 967-4256.

The London Times on Microfilm

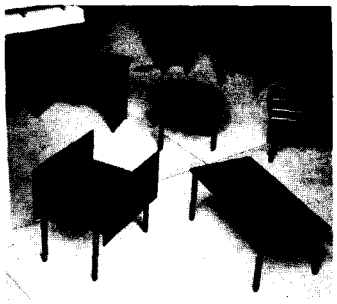
On Feb 1, 1972 the entire file of issues of *The Times* of London arrived at Microfilming Corporation of America headquarters in Glen Rock, N.J. The back files as well as current issues of *The Times* will be processed into microfilm. It has been estimated that it would take 1½ years for one man to microfilm the entire file.

Interestingly, the original first issue of Jan 1, 1785 is now in the British Museum. According to a facsimile, that first issue cost two-pence halfpenny, was actually titled *The Daily Universal Register,* and was "printed logographically by His Majesty's Patent."

The volumes were shipped from England in specially prepared waterproof bonded plywood containers. They were packed in Oct 1971, held up because of the dock strike, and finally shipped Jan 16, 1972.

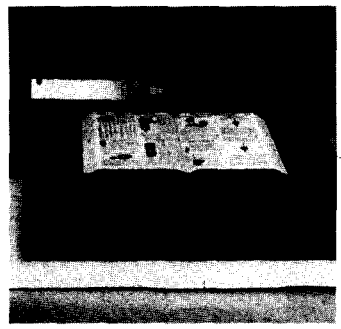


HAVE YOU SEEN ?



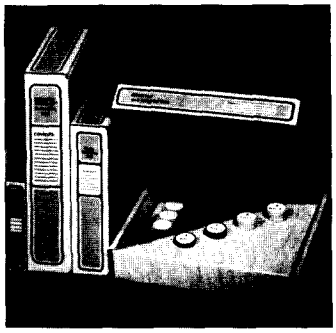
Quadrant is a collection of library furniture designed particularly for contemporary libraries. The collection is crafted in hardwood solids and veneers with hand-rubbed finishes said to protect the natural beauty of the wood grains and provide tough working surfaces. For information, contact: Myrtle Desk Company, Box 1750, High Point, North Carolina 27261.

The Model 25 Book Cradle is said to resolve the problem of edge-to-edge sharpness and efficient handling in microfilming bound material. The platform, which holds a book's pages flat against the glass frame, accepts books measuring up to 4" × 11" × 12". For information: Micro-Scan Systems, Inc., 54 South Main St., Pearl River, N.Y. 10965.

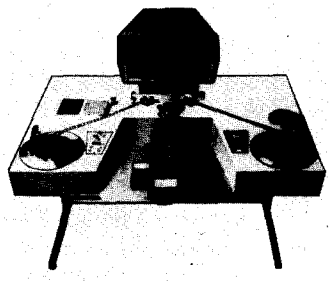


A step-and-repeat microfiche camera is capable of 42× reduction ratio. Users can make microfiche from documents that match computer-output-microfiche in format and reduction ratio and which can be used in the same retrieval systems. The camera uses standard 105mm roll microfilm to produce directly-generated 105mm × 148mm micro-

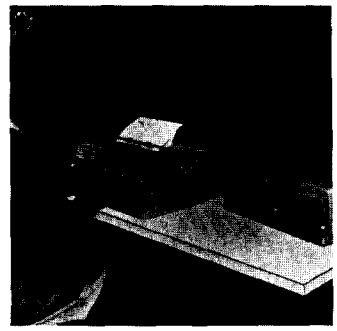
fiche, each having as many as 192 frames. It is available from Image Systems, Inc., 11244 Playa Court, Culver City, Calif. 90230.



Multi-Material file boxes are designed to provide dustproof storage for non-print material. They are constructed of corrugated board printed in two colors. The files allow such material to stand next to books on library shelves. For a copy of the Highsmith Catalog of Library Supplies and Equipment, write: The Highsmith Co., P.O. Box 25, Fort Atkinson, Wisconsin 53538.

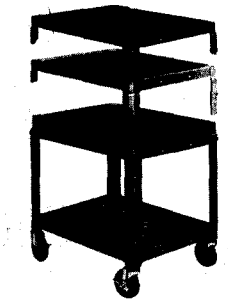


The Com-Editor 1600 provides reel-to-reel, wind/rewind, and forward-reverse editing of microfilm cartridges (Recordak, 3M, Burroughs BCom). The operator can scan and view on a 13× high contrast screen at a speed of two frames per second, 2½ documents at a time. For details, write Prestoseal Manufacturing Corp., 37-12 108th St., Corona, N.Y. 11368.

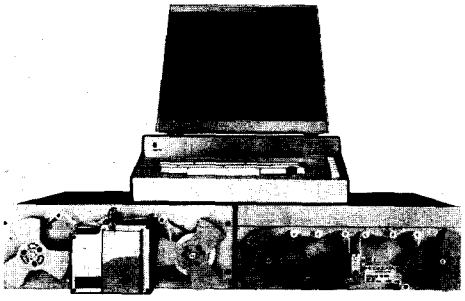


A computerized typewriter, the System 1200 Cassette Typewriter, justifies lines, centers headlines and sets tabs and margins automatically. The machine also searches any line within the document. There are two models: the 1210 one-tape system and the 1220 two-tape system. Transfer rate on the 1220 is 160 lines per minute. Delivery available in 6 months. Wang Laboratories, Inc., 836 North Street, Tewksbury, Mass. 01876.

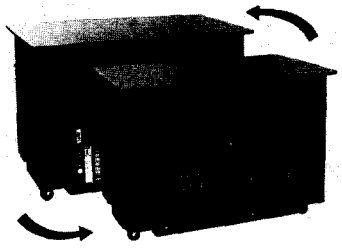
A high speed copier automatically reduces oversize originals to letter or legal size copies, while also functioning as a standard office copier providing same size copies. Originals as large as 11″ × 17″ can be reduced by 27%. The first copy access time is 8.5 seconds; copy output is 15 copies per minute. Copy cost is $0.03 or less depending on volume. The Copia III R is manufactured by Olivetti Corp. of America, 500 Park Ave., N.Y. Its price is $1,995.



An adjustable projection table is constructed of heavy gauge welded steel with three shelves to accommodate audio-visual supplies. By relocating four belts, the table top can be locked at any of four convenient heights from 24" to 38". The 4-Hi Table is available from H. Wilson Corp., 555 West Taft Drive, South Holland, Ill. 60473.



Proof Reader, Series VI, compares the text of two tapes at high speed by electronic means until a discrepancy is found. The operator determines the correct text, and a final, clean tape is produced. The device is produced by B R Squared Inc., 241 East Shore Road, Great Neck, N.Y. 11023.



The BEC Mobile Librarian is a combination film and book storage cabinet and work table. Recessed shelves on two sides convert to accommodate film cans or books. Lightweight construction and silent ball bearing swivel casters are said to allow easy maneuvering. Manufactured by Bay Electric Company, 627 First St., Menominee, Mich. 49858.

HAVE YOU HEARD ?

Librarians Invited to NMA

So that members of SLA may see the latest microfilm equipment and systems, and learn about microfilm's role in large and small businesses and institutions, National Microfilm Association has invited SLA members to NMA's 21st annual Microfilm Exposition. NMA is waiving the $2.50 entry fee for librarians. Request complimentary tickets from NMA, 8728 Colesville Rd., Silver Spring, Md. 20910. The Exposition is May 9–12 at the New York Coliseum.

Library Science Reports

Information—Part 2: Reports and Bibliographies, which began publication Feb 1972, publishes library and information science studies and state-of-the-art reports commissioned by governmental, academic and learned society sectors. For information: Science Associates/International, Inc., 23 East 26th St., N.Y. 10010.

New Quarterly Publication

Journal of Palestine Studies: A Quarterly on Palestinian Affairs and the Arab-Israeli Conflict published vol.1, no.1 in autumn 1971. Subscriptions to the quarterly publication are $8.00 per year. For the U.S. and Canada, write *Journal of Palestine Studies,* P.O.B. 329-A, R.D. 1, Oxford, Pa. 19363.

Minority Businesses

The *National Minority Business Directory—1972* is a comprehensive listing of interstate commerce, minority-owned businesses throughout the country. The listing is classified by product and service types as well as Standard Industrial Classification codes. It is available for $6.50 from the National Minority Business Campaign, 1115 Plymouth Ave., Minneapolis, Minn. 55411.

Acronyms

The 2d ed. of *Acronyms* is now available. The publication, which is designed to assist in deciphering computer acronyms, is said to contain approximately twice as many entries as the first edition. It is available for $2.00 prepaid (U.S. and Canada), $2.50 (foreign), from John P. Tutunjian, P.O. Box 93, Jericho, N.Y. 11753.

IBY News

Plans for observing International Book Year 1972 were discussed by Mrs. Sally Swing Shelley, Chief Information Officer in the New York Office of Unesco, at a briefing for the representatives of non-governmental organizations Wednesday, 16 Feb, at 10:30 a.m.

The main issues affecting books in society today, Mrs. Shelley explained, are the themes of the International Year. She hopes that the great gap which exists between the developed and the developing countries can be narrowed by 1) encouraging book production through IMF loans; 2) establishing international machinery for the easement of copyright; 3) encouraging authorship and translations; and 4) establishing and developing libraries.

Miss Walls from the U.S. Secretariat for International Book Year discussed various projects of libraries in the U.S. in connection with IBY. Information on these and other suggestions and plans can be obtained from her (One Park Avenue, New York, New York 10016). See also *Special Libraries* 63 (no.1): p.41 (Jan 1972).

The *Unesco Courier* of February 1972 is devoted to IBY with a statement by René Maheu, Director-General of Unesco, and articles by Marshall McLuhan, Alberto Moravia, Alejo Carpentier and others.

A Presidential Proclamation on IBY was issued 13 Mar 1972.

Dr. Alice E. Plowitz
NGO Observer

COMING EVENTS

May 1–4. Third International Conference on Computer Management . . . in Amsterdam. Conference Secretariat: IFIP—Administrative Data Processing Group, 6 Stadhouderskade, Amsterdam—1030.

May 4–5. Library Orientation for Academic Libraries, 2nd Annual Conference . . . at Eastern Michigan University, Ypsilanti. Registration limited to 75 persons. For information: Sul H. Lee, Associate Director of the Library, Eastern Michigan University, Ypsilanti, Mich. 48197.

May 4–6. New England School Library Association, spring conference and exhibition . . . in Portsmouth, N.H. For information: NESLA Spring Conference, Memorial Jr. High School, Laconia, N.H. 03246.

May 7–13. Institute on Environmental Science Librarianship . . . at Western Michigan University, Kalamazoo, Mich.

May 9–12. National Microfilm Association, Convention . . . at the Coliseum, New York City.

May 10–13. Society for Technical Communication, 19th Annual International Conference . . . at the Statler Hilton Hotel, Boston, Mass. *Theme:* "A Time for Reassessment."

May 12. Continuing Education: Strategies for Change, workshop . . . at Syracuse Sheraton Motor Inn, Liverpool, N.Y. For information: Syracuse University, School of Library Science, Alumni Association, 113 Euclid Ave., Syracuse, N.Y. 13210.

May 16–18. Spring Joint Computer Conference, SJCC . . . in Atlantic City, N.J. Sponsor: AFIPS, 210 Summit Ave., Montvale, N.J. 67465.

May 22–23. Institute on Teaching Special Librarianship . . . at School of Library Science, University of Michigan, Ann Arbor. Cosponsored by SLA Education Committee (Chairman: H. Robert Malinowsky, University of Kansas Libraries, Lawrence, Kansas 66044).

Jun 4–8. SLA, 63rd Annual Conference . . . at the Statler Hilton, Boston. Conference Chairman: Loyd R. Rathbun, MIT Lincoln Laboratory Library, Lexington, Mass. 02173.

Jun 10–16. Canadian Library Association . . . in Regina.

Jun 11–14. Seminar on the Acquisition of Latin American Library Materials . . . at the University of Massachusetts, Amherst. Conference Coordinator: Mrs. Pauline P. Collins, Latin American Librarian, The Library, University of Massachusetts, Amherst, Mass. 01002.

Jun 11–15. Medical Library Association, 71st Annual Meeting . . . at the Del Coronado, San Diego.

Jun 19–23. American Theological Library Association, 26th annual conference . . . at Waterloo Lutheran University, Waterloo, Ontario, Canada. Host librarian: Erich R. W. Schultz, Waterloo Lutheran University.

Jun 22–23. International Symposium on the Legal Aspects of Computerized Information Systems . . . at the National Academy of Sciences, Washington, D.C. For information: John B. Farmakides, Office of Science Information Services, COSATI, National Science Foundation, Washington, D.C. 20550.

Jun 24–30. National Education Association . . . at Convention Hall, Atlantic City, N.J.

Jun 25–Jul 1. ALA, annual conference . . . in Chicago, Illinois.

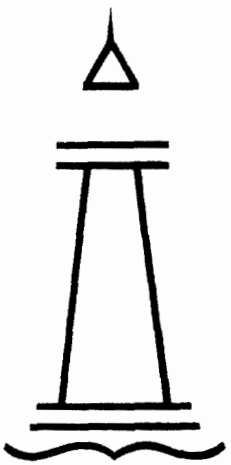
Jun 26–Jul 14. Course in medical librarianship . . . at School of Library Science, Simmons College, Boston, Mass. Contact: Eunice Wenstrom, Administrative Assistant, School of Library Science, Simmons College, Boston, Mass. 02115.

Errata

In "The Declaration of Independence: A Case Study in Preservation" by Verner Clapp [*Special Libraries* 62 (no.12): p.503–508 (Dec 1971)], the late Chief of the Manuscript Division is referred to incorrectly as Sousa. His name is actually Dr. St. George L. Sioussat.

For additional comments, see letter, p.11A, this issue.

Welcome to Booths 277-278



THE H. W. WILSON COMPANY
950 University Avenue / Bronx, New York 10452

PLACEMENT

"Positions Open" and "Positions Wanted" ads are $1.50 per line; $4.50 minimum. Current members of SLA may place a "Positions Wanted" ad at a special rate of $1.00 per line; $3.00 minimum.

In each membership year, each unemployed member will be allowed a maximum of two free "Positions Wanted" ads, each ad to be limited to 5 lines including mailing address (no blind box addresses), on a space available basis.

There is a minimum charge of $10.00 for a "Market Place" ad of three lines or less; each additional line is $3.00. There are approximately 45 characters and spaces to a line.

Copy for display ads must be received by the first of the month preceding the month of publication; copy for line ads must be received by the tenth.

Classified ads will not be accepted on a "run until cancelled" basis; twelve months is the maximum, unless renewed.

Special Libraries Association reserves the right to reject any advertisements which in any way refer to race, creed, color, age, or sex as conditions for employment.

POSITIONS WANTED

Dir. Foundation Libr. Research Center & Museum—10 yrs. exp. in development, administration; upgraded, selected, researched, classified materials; prepared interntl. exhibits. Desires business-related affiliation in NYC. Box C-173.

Law Librarian—Wishes position in law library or any other. Extensive experience as head law librarian and in general branch work. Write: Janet P. Danielsen, 4619 Thorman Avenue, NE, Salem, Oregon 97303. Relocate anywhere.

Experienced Business Librarian—Wishes position in Investment Banking or Brokerage Library. Capable of organizing and developing materials. Available in the Wall Street area. William S. Craig, 117–8th Ave., Brooklyn, N.Y. 11215. Tel. 212/783-3773.

Librarian—M.Ed. Working toward MLS. Eight years' experience in school libraries, 3 years in special library, all facets of librarianship. Details furnished upon request. Seeks position in school or special library in Boston area. Box D-186.

Man—MA, MALS, PhD, experienced, desires challenging position. Box D-187.

POSITIONS OPEN

Chief, Technical Services—(Librarian V: $12,804–$15,552). Responsible for four departments and staff of 30. *Minimum* of five years professional experience required. **Bibliographer-Collection Builder**—(Librarian IV: $11,628–$14,112). *Minimum* of four years of increasingly responsible and appropriate experience required. Responsible for coordinating disciplines collection building by faculty and by librarians and for directing development of general collections. Knowledge of books, book trade, and administrative competence required. An accredited degree and personal interview required at applicant's expense. New building. 21 working days vacation and 12 days sick leave per year. Retirement program. Optional partially-paid health plans. We are an equal opportunity employer. To apply or to obtain further information, write: Harold F. Wells, Director of the College Library, California State Polytechnic College, 3801 West Temple Avenue, Pomona, California 91768.

Assistant Engineering Librarian—Purdue University Libraries. Supervise libraries serving the Schools of Mechanical Engineering and Electrical Engineering. Coordinate their activities with other Engineering Schools' Libraries; work with the Libraries' central administration and Schools' Faculties in the management and operation of those libraries. Position involves collection development and assistance in the selection of books, journals and reference works. Provides reference and bibliographic service and maintains liaison with information sources and agencies to meet the Schools' needs.

MSLS from ALA accredited institutions; experience in an engineering or technical library including a minimum of 2 years' library experience. Salary range $10,500 to $12,000. Faculty status. 12 month appointment; annual vacation 22 working days. Apply to: Katherine M. Markee, Personnel Director, Purdue University Libraries, Lafayette, Ind. 47907.

An Equal Opportunity Employer

Area Reference Librarian—The Hennepin County Library System has a position available August 1 in new 200,000 volume area library scheduled to open June 1973. Professional staff of 9+. Unique administrative arrangement frees person of building, scheduling and clerical responsibilities. Salary $13,800–$17,616 depending on experience.

The individual we are seeking should have a public or academic background with extensive reference experience, including some supervisory responsibilities. Emphasis will be on reference capability and range of experience. Will be in charge of professional service in the first of three area libraries to be built in urban county system with 22 existing agencies and total annual materials budget over $1,000,000. Applicants should have a MALS with four years' experience, additional years of experience may be substituted for the MALS. Please submit résumés by June 10, 1972 to: Hennepin County Personnel, 438 Courthouse, Minneapoils, Minnesota 55415.

THE MARKET PLACE

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

For Sale—*Chemical Abstracts,* vols. 1–71, 1907–1969 includes all Annual Indexes except vol. 71. Includes cumulative indexes except 1961 and 1966. Set is bound through 1967. Send bids to Imperial Oil Limited, Technical Information Services, 500—6th Avenue S.W., Calgary 1, Alberta, Canada.

Foreign Books and Periodicals—Specialty: International Congresses. Albert J. Phiebig Inc., Box 352, White Plains, New York 10602.

INDEX TO ADVERTISERS

Public Garden and Swan Boats *Boston Convention and Visitors Bureau*

63rd Annual Conference
Special Libraries Association

June 4–8, 1972 **The Statler Hilton** **Boston, Mass.**

Conference Theme: **People-Centered Services**

Preliminary program appeared in Feb 1972 *Special Libraries*
Registration information mailed from Boston in early March

Combined Book Exhibit and Combined Periodical Exhibit will be open additional hours Monday and Tuesday 7:00-9:00 p.m.

PRE-REGISTRATION CLOSES MAY 10, 1972

Conference Chairman:

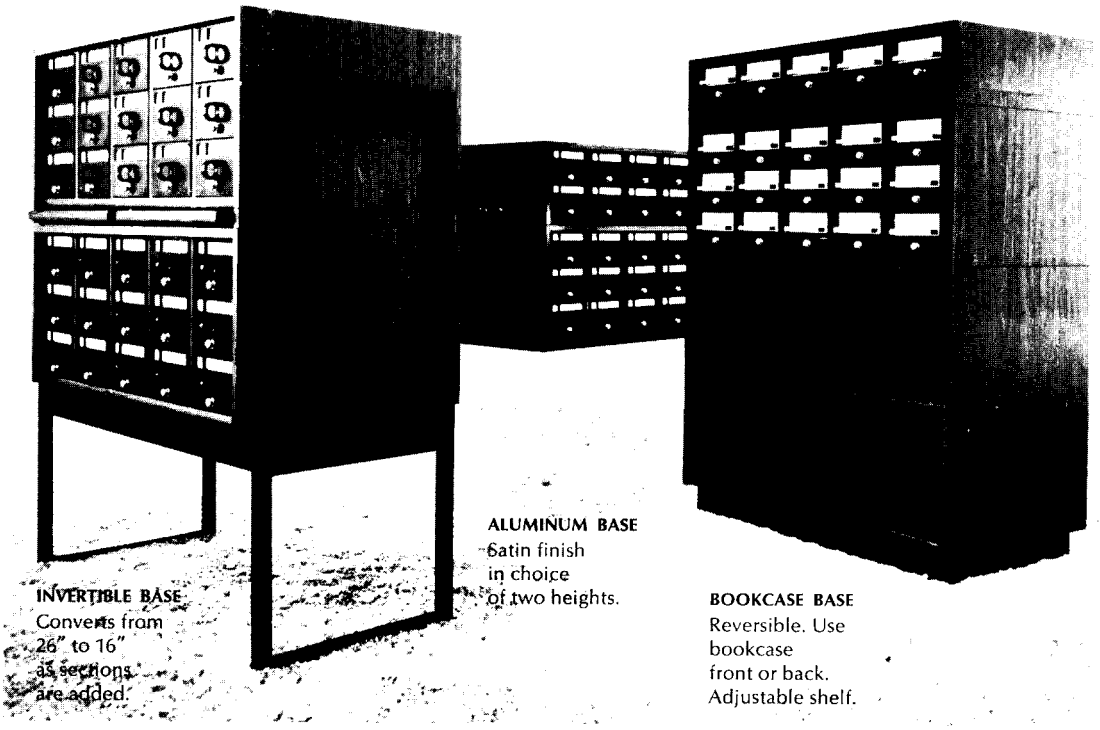
Loyd Rathbun
MIT Lincoln Laboratory
Lexington, Mass. 02173

Continuing Education Seminars

Thursday, Jun 8
9:00 a.m.–4:30 p.m.

Information included in registration packet.

Second class postage
paid at New York, N.Y.
and at additional
mailing offices



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